State Office of Administrative Hearings

Cathleen Parsley
Chief Administrative Law Judge

July 17, 2015

Tucker Royall, General Counsel
Texas Commission on Environmental Quality
P.O. Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-10-4184; TCEQ Docket No. 2005-1490-WR; Concerning the Application by the Brazos River Authority for Water Use Permit No. 5851 and Related Filings

Dear Mr. Royall:

The above-referenced matter will be considered by the Texas Commission on Environmental Quality on a date and time to be determined by the Chief Clerk's Office in Room 201S of Building E, 12118 N. Interstate 35, Austin, Texas.

Enclosed are copies of the Proposal for Decision on Remand and Order that have been recommended to the Commission for approval. Any party may file exceptions or briefs by filing the documents with the Chief Clerk of the Texas Commission on Environmental Quality no later than August 6, 2015. Any replies to exceptions or briefs must be filed in the same manner no later than August 17, 2015.

This matter has been designated **TCEQ Docket No. 2005-1490-WR; SOAH Docket No. 582-10-4184**. All documents to be filed must clearly reference these assigned docket numbers. All exceptions, briefs and replies along with certification of service to the above parties shall be filed with the Chief Clerk of the TCEQ electronically at http://www10.tceq.state.tx.us/epic/efilings/ or by filing an original and seven copies with the Chief Clerk of the TCEQ. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

William G. Newchurch
Administrative Law Judge

Hunter Burkhalter
Administrative Law Judge

Enclosures
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STYLE/CASE: **BRAZOS RIVER AUTHORITY**

SOAH DOCKET NUMBER: **582-10-4184**

REFERRING AGENCY CASE: **2005-1490-WR**

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SOAH DOCKET NO. 582-10-4184
TCEQ DOCKET NO. 2005-1490-WR

CONCERNING THE APPLICATION BY THE BRAZOS RIVER AUTHORITY FOR WATER USE PERMIT NO. 5851 AND RELATED FILINGS	§ § § § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

TABLE OF CONTENTS

SOAH DOCKET NO. 582-10-4184
TCEQ DOCKET NO. 2005-1490-WR

CONCERNING THE APPLICATION BY THE BRAZOS RIVER AUTHORITY FOR WATER USE PERMIT NO. 5851 AND RELATED FILINGS	**§**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

PROPOSAL FOR DECISION ON REMAND

I. INTRODUCTION

The Brazos River Authority (BRA or Applicant) has filed an amended application (Application) seeking issuance of a new System Operation water right permit ("Proposed Permit" or "SysOp Permit") and approval of its related water management plan (WMP). The Application is very complex. Through operation of 12 reservoirs as a system ("System Operation" or "SysOp"), BRA claims it will be able to take advantage of large quantities of unappropriated water that could not otherwise be put to beneficial use without the construction of significant new reservoir storage. BRA's Application also seeks to appropriate return flows that otherwise might be largely un-utilized.

BRA claims that the Proposed Permit will not impair senior water rights or required environmental flows and that approval is strongly in the public interest, will support the public welfare, is consistent with the State Water Plan and applicable regional water plans, and will satisfy anticipated needs for water in the Brazos River Basin over the next 50 years. Because no new reservoir would be required to make the water supply available, BRA contends that significant environmental harm and major capital costs would be avoided, resulting in a lower cost water supply for end users in the Brazos River Basin.

While he disagrees with BRA on some points, the Executive Director (ED) agrees that the Application should be partially approved and a permit should be issued. Some parties argue that BRA's Application fails to comply with several major legal requirements and must be denied. Other parties, including Office of Public Interest Counsel (OPIC), do not oppose the

Application. If a permit is granted, several parties suggest modified and additional permit provisions.

The ALJs recommend that the Texas Commission on Environmental Quality (Commission or TCEQ) adopt the attached proposed order, partially grant BRA's Application as amended, approve its WMP with changes, and issue the attached permit.[1]

II. PARTIES

The following are the current parties in this case:

Party	Representative(s)
BRA	Doug Caroom, Susan Maxwell, and Emily Rogers
ED	Robin Smith and Ruth Ann Takeda
OPIC	Eli Martinez
Dow Chemical Company (Dow)	Fred B. Werkenthin, Jr. and Trey Nesloney
Friends of the Brazos River, Brazos River Alliance, Helen Jane Vaughn, Lawrence Wilson, Mary Lee Lilly, and Ken W. Hackett (collectively, FBR)	Richard Lowerre and Marisa Perales
National Wildlife Federation (NWF)	Myron Hess and Annie E. Kellough
City of Granbury, Hood County, and Lake Granbury Waterfront Owners' Association (collectively, Lake Granbury Coalition or LGC)	John Turner, Ken Ramirez, Jeff Civins, Anne M. Johnson, Andrew W. Guthrie, and Shana L. Horton
Texas Parks and Wildlife Department (TPWD)	Collette Barron Bradsby
Chisholm Trail Ventures, L.P. (Chisholm)	Monica Jacobs
George Bingham, Robert Starks, Frasier Clark, William D. and Mary Carroll (collectively, CCG); William and Gladys Gavranovic; and Bradley B. Ware	Gwendolyn and Stephen Webb
NRG Texas Power, LLC (NRG)	Joe Freeland
City of Houston	Ed McCarthy and Eddie McCarthy
Possum Kingdom Lake Association (PKLA)	John Vay

[1] The attachment is BRA Ex. 132B, which is the permit in the form that BRA seeks. Later in the Proposal for Decision (PFD) the ALJs recommend changes to this permit. This is the "Proposed Permit" or the "SysOp Permit."

Party	Representative(s)
City of Round Rock	Steve Sheets
City of College Station and City of Lubbock	Jason Hill
City of Bryan	Jim Matthews
Mike Bingham	Self

Dow, FBR, NWF, and LGC (collectively, Protestants) oppose granting a permit. William and Gladys Gavranovic, Bradley B. Ware, and Mike Bingham oppose the permit, but have not actively participated in the case since 2011.

Some parties have withdrawn their protests, usually based on settlement agreements, and continue only as interested parties: Chisholm, CCG, PKLA, NRG, and the Cities of Houston, Lubbock, Bryan, College Station, and Round Rock.

Others have withdrawn their protests and been dismissed as parties: Fort Bend County Levee Improvement District Nos. 11 and 15, Sienna Plantation MUD No. 1, Texas Westmoreland Coal Company, Matthews Land and Cattle Company, Friends of Lake Limestone, Gulf Coast Water Authority, Mark Bisett, and Joe Williams.

III. PROCEDURAL HISTORY

Below is a list of the major procedural events in this case:

Date	Activity
June 25, 2004	BRA filed its Application.
October 15, 2004	Application was declared administratively complete by the ED.
April 22, 2005	Notice of the Application was issued by mail to all water right holders and navigation districts in the Brazos River Basin.
May 11–13, 2005	Notice of the Application was published in 27 newspapers in the Brazos River Basin.
May 17, 2005	Public meeting on the Application was held in Waco, Texas.
May 4, 2006	ED filed a written response to public comments on the Application.

Date	Activity
May 5, 2010	Commission issued an interim order granting hearing requests and referring Application to State Office of Administrative Hearings (SOAH) for a contested case hearing.
May 13, 2010	Notice of preliminary hearing on the Application was issued by the Chief Clerk of the TCEQ.
June 7, 2010	Preliminary hearing.
May 9, 10, 12, 13, 16, 17, 18, 19, 20, and 31, and June 2, 2011	First hearing on the merits (First Hearing).
July 29, 2011	Initial arguments filed after First Hearing (1st Initial Briefs).
August 19, 2011	Reply arguments filed after First Hearing (1st Reply Briefs).
October 17, 2011	PFD issued after First Hearing (First PFD).
January 25, 2012	TCEQ agenda to consider First PFD.
January 30, 2012	TCEQ Interim Order remanding Application to SOAH, pending preparation and technical review of BRA's WMP.
November 28, 2012	BRA filed its WMP, as an amendment to the Application.
June 12, 2013	BRA filed its revised WMP, as part of responses to the ED's technical review and requests for information.
June 28, 2013	Amended Application, with WMP, was declared administratively complete by the ED.
July 3, 2013	Notice of the amended Application, public meeting, and preliminary hearing was issued by mail to all water right holders and navigation districts in the Brazos River Basin.
July 6–July 12, 2013	Notice of the amended Application, public meeting, and preliminary hearing was published in 35 newspapers in the Brazos River Basin.
July 25, 2013	Public meeting on the amended Application was held in Hewitt, Texas.
August 26, 2013	Preliminary hearing was held on amended Application.
October 21, 2013	ALJs certified questions to TCEQ regarding applicability of new environmental flow rules to Application, and abated case schedule pending consideration of those questions.
December 17, 2013	Commission issued an interim order addressing certified questions and remanding case to SOAH for further proceedings.
January 7, 2014	ALJs issued revised scheduling order providing for WMP update and extending the abatement.
May 13, 2014	BRA filed updated WMP incorporating provisions to comply with new environmental flow rules.
August 14, 2014	Abatement ended and prehearing proceedings resumed.
August 18, 2014	ED completed technical review of environmental-flow update of the WMP.
December 8, 2014	All discovery concluded.

Date	Activity
February 17, 18, 19, 20, 23, 24, 25, and 26, 2015	Second hearing on the merits (Second Hearing).
April 20, 2015	Initial arguments after Second Hearing (2nd Initial Briefs).
May 18, 2015	Reply arguments after Second Hearing (2nd Reply Briefs).
July 17, 2015	Deadline for proposal for decision on remand.

In October 2011, the ALJs issued the First PFD recommending that the Commission either: (1) deny the Application; or (2) defer a final ruling on the Application, give BRA time to prepare a WMP, and remand the Application to SOAH for further hearings on the WMP.[2]

In January 2012, the Commission: (1) considered the First PFD, (2) remanded the matter to SOAH for abatement, (3) ordered BRA to complete and submit a WMP to the ED, (3) directed the ED to review the WMP, (4) directed the ALJs to reopen the record and hold a hearing on the Application as modified by the WMP once the ED's review was completed, and (5) directed the ALJs to issue a Second PFD within 24 months.[3]

Subsequently, in December 2013, the Commission considered questions certified by the ALJs and found that environmental flow standards TCEQ recently had adopted applied to BRA's Application.[4] This led to further delay to give BRA time to amend its Application to address those standards and all parties time to prepare and prefile evidence for the hearing. Eventually, in February 2015, the ALJ held the Second Hearing on the Application, as amended, which included the WMP.

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[2] *Concerning the Application by the Brazos River Authority for Water Use Permit No. 5851 and Related Filings*, SOAH Docket No. 582-10-4184, TCEQ Docket No. 2005-1490-WR, Proposal for Decision (Oct. 17, 2011) (First PFD).

[3] *An Interim Order Concerning the Administrative Law Judges' Proposal for Decision Regarding the Application by the Brazos River Authority for Water Use Permit No. 5851*; TCEQ Docket No. 2005-1490-WR, SOAH No. 582-10-4184 (Jan. 30, 2012).

[4] *An Interim Order Concerning the Administrative Law Judges' Request to Answer Certified Questions; the Application by the Brazos River Authority for Water Use Permit No. 5851*; TCEQ Docket No. 2005-1490-WR, SOAH No. 582-10-4184 (Dec. 17, 2013).

IV. BRA'S CURRENT WATER RIGHTS

BRA currently holds many water rights, as detailed below:

BRA's WATER RIGHTS[5]			
Permit or Certificate of Adjudication (COA) No.	**Location**	**Diversion Amount** (acre-feet)	**Priority Date**
12-5155	Possum Kingdom Lake	230,750	4/6/1938
5730	Interbasin Transfer, Williamson County	25,000	3/7/1938
12-5159	Lake Proctor	19,658	12/16/1963
12-5160	Lake Belton	100,257	12/16/1963
12-5161	Lake Stillhouse Hollow	67,768	12/16/1963
12-5164	Lake Somerville	48,000	12/16/1963
12-5156	Lake Granbury	64,712	2/13/1964
12-5162	Lake Georgetown	12,610	2/12/1968
12-5163	Lake Granger	19,840	2/12/1968
12-5165	Lake Limestone	65,074	5/6/1974
12-5158	Lake Aquilla	13,896	10/25/1976
12-5159	Lake Whitney	18,336	8/30/1982
2925A	Allens Creek Reservoir (ACR)[6]	99,650	9/1/1999
12-5167/2661 (as amended)	Interbasin Transfer, Fort Bend County	170,000	None
12-5166/2947 (as amended)	Excess Flows	650,000	None

To conserve water, BRA is also currently authorized, pursuant to a 1964 System Operation Order, as amended, to manage and operate its tributary reservoirs as elements of a system, coordinating releases and diversions from the tributary reservoirs with releases and diversions the BRA's mainstream reservoirs.[7]

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[5] Dow Ex. 3; BRA's water rights on compact disc (CD) (officially noticed by Order No. 7).

[6] BRA, the City of Houston, and the Texas Water Development Board (TWDB) co-own the water right for ACR.

[7] ED Ex. KA-3 at 1; BRA 35 at 4–7.

V. APPLICATION AND WMP DETAILS

BRA initially applied for a new water use permit, with a priority date of October 15, 2004, to appropriate 421,449 acre-feet per year of firm state water and 670,000 acre-feet per year of interruptible state water in the Brazos River Basin for domestic, municipal, agricultural, industrial, mining, recreational, and other beneficial uses.[8] Following TCEQ's remand of BRA's Application in January 2012, BRA has amended its Application to include the WMP, the related WMP Technical Report, and appendices,[9] all of which would be incorporated into the permit.[10] As amended, BRA's Application seeks:

- A new appropriation of non-firm state water in the amount of 1,001,449 acre-feet of water per year for multiple uses, including domestic, municipal, agricultural, industrial, mining, and other beneficial uses in the Brazos River Basin. This new appropriation of water can only be made available by Applicant through the system operation of its water rights, with the maximum amount of the water being available at the mouth of the Brazos River. To the extent water is diverted upstream, the amount of the water available under the new appropriation downstream is reduced and will itself vary depending upon the location of its diversion and use;

- Diversion of the water authorized by this permit from: (i) the existing diversion points authorized by Applicant's existing water rights; (ii) the Brazos River at the Gulf of Mexico; and (iii) such other diversion points that are identified and included in Applicant's WMP;

- An exempt interbasin transfer authorization to transfer and use, on a firm and non-firm basis, such water in the adjoining San Jacinto-Brazos Coastal Basin and the Brazos-Colorado Coastal Basin, and to transfer such water to any county or municipality or the municipality's retail service area that is partially within the Brazos River Basin for use, on a firm and non-firm basis, in that part of the county or municipality and the municipality's retail service area not within the Brazos River Basin;

- An appropriation of return flows (treated sewage effluent and brine bypass/return) to the extent that such return flows continue to be discharged or returned into the bed and banks of the Brazos River, its tributaries, and Applicant's reservoirs. The appropriation of return flows would be subject to interruption by direct reuse or termination by indirect

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[8] BRA Ex. 7.

[9] BRA Exs. 109, 112, 113; ED Ex. R3 at 2.

[10] *See, e.g.*, BRA Ex. 132B at 9, ¶ 5.D.1.

reuse within the discharging entity's city limits, extraterritorial jurisdiction, or contiguous water certificate of convenience and necessity boundary;

- Operational flexibility to: (i) use any source of water available to Applicant to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through Applicant's reservoirs on a priority basis; and (ii) release, pump, and transport water from any of Applicant's reservoirs for subsequent storage, diversion and use throughout Applicant's service area;

- Use of the bed and banks of the Brazos River, its tributaries, and Applicant's reservoirs for the conveyance, storage, and subsequent diversion of: (i) the appropriated water; (ii) waters that are being conveyed via pipelines and subsequently discharged into the Brazos River or its tributaries or stored in Applicant's reservoirs; (iii) surface water imported from areas located outside the Brazos River Basin for subsequent use; (iv) in-basin surface water and groundwater subject to Applicant's control; (v) waters developed from future Applicant projects; and (vi) reuse of surface and groundwater-based return flows appropriated in this permit; and

- A term permit, pursuant to Texas Water Code § 11.1381, for a term of 30 years from the issued date of this permit, or until the ports are closed on the dam impounding ACR, whichever is earlier, to allow Applicant to use the water appropriated under Water Use Permit No. 2925A, as amended, until the construction of the ACR. Applicant requested a term authorization to impound, divert, and use not to exceed 202,650 acre-feet of water per year at the Gulf of Mexico.[11]

As the ED's August 18, 2014 Water Availability Analysis Addendum[12] further details, BRA's amended Application with the WMP:

- Includes TCEQ's adopted environmental flow standards;

- Includes an updated BRA Accounting Plan for BRA reservoirs, stream reaches of the Brazos River and its tributaries where water will be delivered and/or water authorized under Permit No. 5851 will be diverted, application of the adopted environmental flow standards, and other reference and summary information;

- Specifies diversion points for the new appropriation as follows: (1) the diversion points authorized in BRA's existing water rights; (2) the Brazos River's outlet at the Gulf of Mexico; and (3) specified diversion points and reaches identified in BRA's WMP and

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[11] BRA Ex. 132B at 2–3.

[12] ED Ex. R1 at 2–3; ED Ex. R3 at 2–3.

associated technical documents, including Accounting Plans. Diversion rates at these diversion points are set out in BRA's WMP and associated technical documents, including Accounting Plans; and

- Removes the request in Application No. 5851 for recognition that Permit No. 5851 prevails over inconsistent provisions in BRA's existing water rights regarding system operation.

VI. DRAFT PERMIT AND OTHER PROPOSED PERMITS

No party, besides the ED, advocates appropriating water to BRA for impoundment, if a permit is issued in this case. Moreover, the ED actually takes a neutral stance on that point. The ALJs do not recommend that the Commission appropriate water to BRA for impoundment.

Thomas C. Gooch, P.E. is BRA's expert witness concerning hydrology, civil engineering, and complex water-resource planning in Texas and has over 30 years of experience.[13] Mr. Gooch could not recall having seen a permit that included a combined limit for diversions and refilling of storage.[14]

Robert J. Brandes, P.E., Ph.D., is Dow's expert witness in civil engineering, hydrology, and water-resources planning in Texas, with 40 years of experience in those areas.[15] He testified: "I've never heard where storage was included as an appropriation of water, in 40 years of dealing with water rights. I've heard where impoundment capacity is authorized in permits, but not the storage of water under the appropriation."[16]

After completing his review of the amended Application, the ED prepared a draft permit (Draft Permit),[17] which states, in part:

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[13] BRA Ex. 15 at 3–8; BRA Ex. 120.

[14] Tr. at 4280.

[15] Dow Ex. 48.

[16] Tr. at 3571–72.

[17] BRA Ex. 127.

> Permittee is authorized to **impound, divert, and use not to exceed 1,001,449 acre-feet of both firm and non-firm water per year at the Gulf of Mexico** for domestic, municipal, agricultural, industrial, mining and recreation use within its service area subject to special conditions.[18]

BRA believes it would be more appropriate if the permit did not appropriate an amount of water for impoundment. During the Second Hearing, BRA proposed an alternative permit[19] that the ED believes is also acceptable[20] (ED's Alternative Permit).[21] It provides, in relevant part: "Permittee is authorized to **divert and use not to exceed 512,473 acre-feet of water per year** for domestic, municipal, agricultural, industrial, mining and recreation use, **as further described and defined in the Water Management Plan (WMP),** within its service area subject to special conditions."[22]

While they would appropriate dramatically different amounts, the Draft Permit and the ED's Alternative Permit are approximately equivalent. The primary difference between them is that the ED's Alternative Permit would not appropriate water for storage.[23] BRA's existing permits already authorize it to store water in all of its reservoirs.[24] BRA actually proposes issuance of a permit (BRA's Proposed Permit)[25] that is similar in many respects to the ED's Alternative Permit, but with the following important differences:

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[18] BRA Ex. 127 at 4, ¶ 1.A (emphasis added).

[19] BRA Ex. 132A.

[20] ED 2nd Initial Brief at 33; ED Ex. R-1A; Tr. at 4027.

[21] The ALJs realize that BRA, not the ED, prepared this alternative and that the ED stands behind the Draft Permit he prepared. However, the ALJs refer to this as "ED's Alternative Permit" because the ED believes it is acceptable and the ALJs wish to avoid using even more confusing terminology.

[22] BRA Ex. 132A at 4, ¶ 1.A (emphasis added.) Unlike the equivalent paragraph in the Draft Permit, this paragraph would not provide for a diversion at the Gulf of Mexico, which Dow argues would be only a hypothetical diversion point. Relatedly, BRA Ex. 132A at 5, ¶ 1.E would also not include "impound" and "at the Gulf of Mexico" in the Term Authorization for 30 years or until the ports are closed on the dam impounding ACR.

[23] Tr. at 4112–13, 4121–22; BRA Ex. 144. There is also a difference of approximately 4,500 acre-feet/year due to a disagreement between the ED and BRA concerning return flows, which is discussed elsewhere in the PFD.

[24] *E.g.* BRA Ex. 134 at 1, ¶ 1.

[25] BRA Exhibit 132B.

- It would appropriate 516,955 acre-feet per year,[26] instead of 512,473;
- The amount of appropriated water is based on utilization of all available return flows utilizing the approach to return flows advocated by BRA;[27]
- It includes Special Condition 5.A.4, concerning groundwater-based return flows;[28] and
- It modifies Special Condition 5.D.5 to indicate that the amount of water "authorized for use," rather than "appropriated," could be adjusted if BRA fails to take steps to replace lost storage capacity.[29]

These differences are due to disagreements between BRA and the ED that are discussed in detail below in the PFD.

BRA certainly would accept a permit like the Draft Permit, which included an annual appropriation of water for impoundment and use, knowing that compliance with the terms of the WMP would effectively limit its diversion and use to approximately one-half that amount.[30] However, BRA believes that the better option is not to appropriate an amount for impoundment. NWF and FBR go further, and argue that granting a permit for 1,001,499 acre-feet per year should not even be considered.[31]

When considering future applications to appropriate water, the ED will need to know how to model the impact of BRA impoundment of water under its other permits if the permit at issue in this case is granted. The following language in both the ED's Alternative Permit and BRA's Proposed Permit[32] would address that concern: "The Commission shall consider the amount of water impounded at the October 15, 2004 priority date, consistent with the WMP and

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[26] BRA Ex. 132B at 4, ¶ 1.A. This reflects a maximum diversion amount under one scenario modeled by BRA. *See* BRA Ex. 113, WMP at 10 (Table 2.4) (Demand Level C).

[27] BRA Ex. 132B at 5, ¶ 1.D; Tr. at 4028.

[28] BRA Ex. 132B at 6–7, ¶ 5.A; Tr. at 4028–49.

[29] BRA Ex. 132B at 10, ¶ 5.D.5; Tr. at 4030.

[30] BRA 2nd Reply Brief at 22.

[31] NWF 2nd Initial Brief at 2–3; FBR 2nd Initial Brief at 30–31.

[32] BRA Ex. 132A at 8, ¶ 5.C.2; BRA Ex. 132B at ¶ 5.C.2.

approved Accounting Plans, in analyses of future applications to appropriate water from the Brazos River Basin."[33]

Given the above, the ALJs recommend not including and appropriation for impoundment. They will focus below on two possible permits: (1) The ED's Alternative Permit[34] that would appropriate 512,473 acre-feet of water per year; and (2) BRA's Proposed Permit[35] that would appropriate of 516,955 acre-feet per year. To avoid awkward writing, the ALJs will collectively refer to these two versions as "Proposed Permit" unless greater specificity is required. Ultimately, the ALJs propose issuing a modified version of BRA's Proposed Permit.

VII. OVERVIEW OF WATER RIGHT PERMITTING LAW

Many laws are applicable to BRA's Application and discussed in this PFD. The principal one is Texas Water Code § 11.134, which serves as a template for the discussion that follows and is set out at length below:

> (a) After the hearing, the commission shall make a written decision granting or denying the application. The application may be granted or denied in whole or in part.
>
> (b) The commission shall grant the application only if:
>
> (1) the application conforms to the requirements prescribed by this chapter and is accompanied by the prescribed fee;
>
> (2) unappropriated water is available in the source of supply;
>
> (3) the proposed appropriation:
>
> (A) is intended for a beneficial use;

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[33] ED Ex. R-1A at 1–3.

[34] BRA Ex. 132A.

[35] BRA Ex. 132B.

(B) does not impair existing water rights or vested riparian rights;

(C) is not detrimental to the public welfare;

(D) considers any applicable environmental flow standards established under Section 11.1471 and, if applicable, the assessments performed under Sections 11.147(d) and (e) and Sections 11.150, 11.151, and 11.152; and

(E) addresses a water supply need in a manner that is consistent with the state water plan and the relevant approved regional water plan for any area in which the proposed appropriation is located, unless the commission determines that conditions warrant waiver of this requirement; and

(4) the applicant has provided evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined by Section 11.002(8)(B).

(c) Beginning January 5, 2002, the commission may not issue a water right for municipal purposes in a region that does not have an approved regional water plan in accordance with Section 16.053(i) unless the commission determines that conditions warrant waiver of this requirement.

VIII. JURISDICTION

No one disputes that the Commission has jurisdiction over the subject matter of the Application or that required notice of the Application was given. The proposed findings of fact and conclusions of law address these points, and the ALJs will not discuss them further here.

Despite that, FBR claims that the Commission may not approve a permit that explicitly or implicitly amends or limits BRA's existing water rights or authorizes BRA to use the same water already authorized to it under the ACR Permit. FBR claims that BRA has not properly applied to amend its existing rights or satisfied the requirements for a term permit.[36]

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[36] FBR 2nd Initial Brief at 15.

Additionally, after the First Hearing, FBR claimed that BRA was required to file amendments to the Application for all the settlements that it had reached with parties to this case.[37] Further, FBR contended that providing public notice of the settlements was, or at least may have been, required.[38] FBR has not pressed these arguments in its briefs following the Second Hearing, but it has not withdrawn them either.

BRA and the ED disagree with these jurisdictional arguments of FBR. Other parties do not weigh in.

The ALJs find that the Commission has jurisdiction to grant the Application and issue a permit to BRA.

A. Settlements Do Not Require Amendments or Additional Notice

BRA has reached settlements with many of the parties in this case.[39] Some of the settlements included a specific agreement that BRA would file the settlement or the results of it with the TCEQ as an amendment to the Application. BRA did that, but it did not file application amendments for the remaining settlements.

FBR contends that BRA was required to file amendments to the Application for all the settlements. FBR also contends that providing public notice of the settlements is, or at least may be, required. BRA and the ED disagree with FBR's contention.

FBR does not flesh out its legal argument, so the ALJs are not sure that they completely understand the point that FBR is trying to make. As they understand the argument, however, the ALJs do not agree with FBR.

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[37] FBR 1st Initial Brief at 50–51.

[38] FBR 1st Initial Brief at 50–51.

[39] *E.g.* FBR Exs. 3-H, 19, 118.

FBR cites Texas Water Code §§ 11.122, 11.124, 11.125, and 11.129 to support its argument that amendments are required.[40] Section 11.122(a) states, "All holders of permits, certified filings, and certificates of adjudication . . . shall obtain from the commission authority to change the place of use, purpose of use, point of diversion, rate of diversion, acreage to be irrigated, or otherwise alter a water right. . . ." Section 11.124 sets out requirements for water permit applications. Section 11.125 requires applications to be accompanied by a map or a plat that shows and contains certain information. Section 11.129 requires the Commission to determine whether the application, maps, and other materials comply with requirements of Chapter 11 of the Texas Water Code and the Commission's rules, and the section authorizes the Commission to require amendment of those items to achieve compliance.

This is not an enforcement case. It appears, however, that BRA would be violating Texas Water Code § 11.122, absent some unnoted legal exception, if it actually diverted water at a place other than one authorized in its water rights, or engaged in some other act concerning its water rights in a way not authorized by its permits, without first obtaining authorization from the Commission to make that change. Until it acts in that way, however, BRA would not be in violation of § 11.122. The section does not mention intent, so the most reasonable way to interpret "change" is as prohibiting acting without authorization. Intending to act differently in the future would not fall within this interpretation of "change." BRA may be planning to act differently in the future in accordance with the settlements, and it may need to obtain authorization before doing so, but nothing in § 11.122 requires BRA to seek amendments now, much less as part of the current Application.

Texas Water Code §§ 11.124, 11.125, and 11.129 concern the required contents of an application. Apparently, FBR cites these provisions because BRA did not file application amendments for all of the settlements. FBR also discusses whether amendments in accordance with the settlements individually or collectively would be major amendments under the Commission's rules and what notice would be required for those amendments. Those arguments

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[40] FBR 1st Reply Brief at 8, 50.

presuppose that application amendments are required due to the settlements, but because neither Texas Water Code § 11.122 nor any other law cited by FBR requires BRA to file application amendments now, those FBR arguments lack merit.

The ALJs conclude that BRA is not required, due to the settlements, to file amendments to its current Application at this time and as part of this case. The ALJs find that the Commission has jurisdiction to consider the current Application without amendments for the settlements and that notice was not required to address settlements that are not part of the current Application.

B. BRA May Seek a New Permit Instead of Permit Amendments

Instead of the current Application for a new water right permit, FBR argues that BRA must file applications to amend its existing water right permits and possibly other applications for new appropriations. It claims that the "normal permitting process" could have been used and each application would have had a clearer set of issues under Texas Water Code § 11.134. FBR contends that BRA's new-permit approach sets a dangerous and expensive precedent.[41] Relatedly, FBR objects that the Proposed Permit would "trump" existing permit requirements. FBR proposes that no "trumping" language be included in any permit that might be issued.[42]

In particular, FBR objects that BRA is using its current Application to amend its ACR Permit without providing specific public notice and opportunity for a hearing concerning that amendment. FBR argues that BRA must instead separately apply to amend its ACR Permit. Additionally, FBR claims that BRA must file applications to amend its other permits to surrender existing diversion rights before it may obtain the authority that it seeks in this case to divert that same water.[43]

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[41] FBR 1st Initial Brief at 55–57; FBR 2nd Initial Brief at 15; FBR 2nd Reply Brief at 8.

[42] FBR 1st Initial Brief at 11–13, 18, 59, 74, 76–78.

[43] FBR also makes related arguments that BRA is seeking double permitting of the same water under the Proposed Permit and its existing permits. These double-permitting arguments are considered elsewhere in the PFD.

The ED and BRA disagree with FBR's claim that BRA must seek permit amendments instead of a new permit. BRA argues that FBR's contention that separate amendments are required lacks any legal basis.[44]

The ALJs do not agree with FBR's claim that BRA was required to separately seek amendments of existing permits instead of filing the current Application for a new permit. Nor do they agree that BRA's ACR Permit is being amended in this case or that the notices that have been given are deficient due to the ACR Permit.

To support its position, particularly as to the ACR Permit, FBR again cites Texas Water Code § 11.122(a). The title of that section is "AMENDMENTS TO WATER RIGHTS REQUIRED," which would be consistent with FBR's notion that one must seek an amendment to a particular permit if one wanted a right to do something other than what is allowed by the permit. The text of that section, however, does not support the notion that an amendment is required. Instead, it states:

> All holders of permits, certified filings, and certificates of adjudication . . . shall obtain from the commission **authority** to change the place of use, purpose of use, point of diversion, rate of diversion, acreage to be irrigated, or otherwise alter a water right. . . .[45]

By using the word "authority" rather than "amendment," § 11.122(a) recognizes that legal vehicles other than permit amendments exist to seek authorization for a new or different water right. The most obvious of those legal vehicles is the immediately preceding Texas Water Code § 11.121, which is entitled "PERMIT REQUIRED" and states:

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[44] BRA 1st Initial Brief at 46; BRA 2nd Initial Brief at 9–10; BRA 2nd Reply Brief at 7–8.

[45] Emphasis added.

> Except as provided in Sections 11.142, 11.1421, and 11.1422 of this code, no person may appropriate any state water or begin construction of any work designed for the storage, taking, or diversion of water without first obtaining a permit from the commission to make the appropriation.[46]

In the Application under consideration, BRA is seeking a new permit under § 11.121, as well as bed-and-banks and interbasin-transfer authorizations under Texas Water Code §§ 11.042 and 11.085.[47] The ALJs see no law prohibiting BRA from proceeding under those new-permit statutes or requiring BRA to instead proceed under the permit-amendment provisions of § 11.122(a), as FBR claims. The ALJs find that BRA was not required to file applications to amend its existing permits, as FBR contends, to obtain the authorizations that BRA seeks from the Commission in this case.

A few more points are worth noting. First, the Commission has a long-standing practice of issuing both amendments to existing permits and additional new permits. For example, BRA has several permits and most of them have been repeatedly amended.[48] If FBR's amendments-are-required argument was correct and taken to the extreme, only a single permit should have been issued to each water right holder, and any additional water right, including the authorization of new diversions at new locations, should have been added as amendments to that single permit. Clearly, the Commission has not done that; thus, it has never interpreted the Texas Water Code as requiring amendments instead of new permits, as FBR claims.

Second, as discussed above, notice of the Application and the right to request a hearing was mailed to all existing water right holders and navigation districts in the Brazos River Basin. That included all of those in the Allens Creek tributary, which is in the Brazos River Basin.[49] Additionally, notices of the preliminary hearings, when parties were admitted, were mailed to all

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[46] The referenced exceptions in Texas Water Code §§ 11.142, 11.1421, and 11.1422 allow certain diversions of water without a permit and are not relevant to the current analysis.

[47] *See* BRA Exs. 7A at 1, 132B at 3.

[48] BRA's water rights on CD (officially noticed in Order No. 7).

[49] *See* BRA's water rights on CD (officially noticed by Order No. 7), Permit No. 2925 (as amended) (noting that Allens Creek is a tributary of the Brazos River in the Brazos River Basin).

hearing requesters and published in newspapers in every county in the Brazos River Basin.[50] Thus, no person affected by any change that pertains to Allens Creek or the ACR Permit was denied notice of the current Application or the opportunity to participate in this case due to BRA's choosing to seek a new permit rather than an amendment of the ACR Permit.

Third, FBR objects that the instream-flow requirements proposed in the current Application would apply only to BRA's proposed new appropriations, and not to BRA's existing water rights.[51] In BRA's view, this is what leads FBR to argue that BRA must amend its existing permits. As BRA correctly notes, an instream-flow requirement could not be applied to the amounts of water previously appropriated to BRA in a permit, even if BRA were seeking to amend that existing permit in this case. Texas Water Code § 11.147(e-1) contains a "reopener" clause, which states:

> With respect to an amended water right, the [protection of instream flows or freshwater inflows] provision may not allow the commission to adjust a condition of the amendment other than a condition that applies only to the increase in the amount of water to be stored, taken, or diverted authorized by the amendment.[52]

The ALJs conclude that BRA's choice to proceed with a new-permit application rather than with permit-amendment applications did not conflict with the Commission's traditional interpretation of the laws it administers, deny any affected party a right to notice and hearing, or improperly prevent the application of instream-flow standards to BRA's current water rights.

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[50] ED Exs. A, B, C, 1A–36A.

[51] *See* FBR's counsel's comments at Tr. at 1854–55; FBR Ex. 3 at 32.

[52] *Accord* 30 Tex. Admin. Code § 297.42(b).

IX. MR. WARE'S IMPAIRMENT CLAIMS

After the First Hearing, Mr. Ware argued that approval of BRA's Application would impair his existing senior water rights and vested riparian rights, in violation of Texas Water Code § 11.134(b)(3)(B).[53] BRA and the ED disagree. The ALJs disagree as well.

Mr. Ware owns property on a bend of the Lampasas River in Killeen, Texas.[54] He also once owned term Permit No. 5594, authorizing the diversion and use of 130 acre-feet of water per year from the Lampasas River to irrigate 100 acres of land in Bell County. That term permit was granted on November 7, 1997, with a priority date of July 1, 1997. The term permit specified that it would expire on November 7, 2007.[55] Mr. Ware applied to renew Permit No. 5594,[56] but after a contested case hearing the Commission denied his renewal application on April 20, 2010.[57] Mr. Ware has petitioned for judicial review of that denial,[58] but there is no evidence that his appeal has been granted.

Many of the arguments that Mr. Ware offers in this case concern the merits of his application to renew his term permit.[59] The merits of that application are not relevant in this case, which solely concerns the merits of BRA's Application. Mr. Ware's renewal application was previously considered and denied by the Commission. This PFD does not address the merits of Mr. Ware's renewal application.

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[53] Mr. Ware did not participate in the Second Hearing, so the discussion below concerns the First Hearing arguments he co-filed with CCG to the extent they remain relevant. CCG made a similar argument in the First Hearing, but they later withdrew their protests.

[54] BBW Ex. 1 at 2.

[55] BBW Ex. 1A at 1–2.

[56] BBW Ex. 1B.

[57] *An Order Concerning the Application of Bradley B. Ware to Amend Water Use Permit No. 5594,* TCEQ Docket No. 2008-0181-WR, SOAH Docket No. 582-08-1698 (Apr. 20, 2010). *See* BBW Ex. 1C.

[58] BBW Ex. 1D.

[59] CCG 1st Initial Brief at 6–14 (concerning importance of family farming in Texas), 29 (concerning fairness).

Texas Water Code § 11.027 provides, "[a]s between appropriators, the first in time is the first in right." Texas Water Code § 11.141 states, "When the commission issues a permit, the priority of the appropriation of water and the claimant's right to use the water date from the date of filing of the application." Mr. Ware argues that the Texas Water Code does not state that applicants for perpetual water rights or return flows are entitled to full consideration of state water available for appropriation, while holders of term permits with earlier priority dates are not entitled to a full and equal consideration of water availability.

BRA claims that the applicable law and the record evidence both confirm that a term permit holder, like Mr. Ware, is not entitled to the unappropriated water or return flows being considered in this proceeding. BRA argues that Mr. Ware's opposition to its Application is grounded in a fundamentally incorrect interpretation of the law regarding term permits and permanent water rights. The ED offers essentially the same legal and factual arguments as BRA concerning rights under term permits.

The ALJs generally agree with the ED and BRA. The ALJs conclude, based on the evidence and the law, that Mr. Ware has no existing rights that are entitled to protection under the impact analysis required by Texas Water Code § 11.134(b)(3)(B). There is no evidence that Mr. Ware has a water right at this time that could even arguably be impaired by approval of BRA's Application. His Permit No. 5594 specifically stated, "The authorization to divert and use 130 acre-feet of water per year shall expire and become null and void on November 7, 2007, unless prior to such date permittee applies for an extension hereof and such application is subsequently granted for an additional term or in perpetuity."[60] On November 15, 2005, before his permit expired, Mr. Ware filed an application to renew it,[61] but on April 20, 2010, the Commission denied his renewal application.[62] It is true that Mr. Ware has sought judicial review of that denial, but there is no legal basis for reconsidering the denial in this case.

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[60] BBW Ex. 1A at 2.

[61] BBW Ex. 1B.

[62] BBW Ex. 1C at 13.

Based on the above, the ALJs conclude Mr. Ware has no existing water right that could be impaired if BRA's Application is granted.

X. GENERAL REQUIREMENTS OF TEXAS WATER CODE CHAPTER 11 AND TCEQ RULES

A. Background

Chapter 11 of the Texas Water Code and the Commission's rules implementing it contain many requirements with which BRA's Application must comply. This portion of the PFD focuses on a few of the specifics required in a water rights application. Other requirements are considered by major topic later in the PFD. Several provisions in the Texas Water Code and the TCEQ rules outline what information should be included in a water-right application, if applicable.[63] Additionally, Commission rules require certain information to be included in the water right permit application.[64] BRA claims that it has complied with all of these requirements to the extent that they apply to its Application.

The Commission is required to review an application to determine whether it complies with the requirements of Chapter 11 of the Texas Water Code and TCEQ rules.[65] Upon approval of the application, the Commission must issue a permit that includes the information described in Texas Water Code § 11.135. The ED's Alternative Permit and BRA's Proposed Permit both contain the required provisions outlined in Texas Water Code § 11.135, with the exception of the time within which to construct water works.

There is no dispute concerning BRA's compliance with many of the administrative completeness requirements. In accordance with Texas Water Code § 11.124(a), the Application is in writing and sworn, contains the name and address of the applicant, and identifies the source

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[63] *See* Tex. Water Code §§ 11.124, 11.125, 11.128.

[64] 30 Tex. Admin. Code §§ 295.3–.9; 295.14, 295.15, 295.121–.123.

[65] Tex. Water Code § 11.129.

of supply.[66] No one holds a lien on BRA's water rights.[67] BRA paid the fees required by Texas Water Code § 11.128, and notice of the Application was provided as required by Texas Water Code § 11.132, as already discussed.[68]

The ED agrees that BRA's Application complies with all other requirements for completion. The Protestants disagree. Chiefly, they complain that BRA has not properly proposed diversion rates and diversion points. Before turning to the Protestants' specific complaints, the ALJs believe it is helpful to recognize that the complaints stem from the fact that the BRA Application is markedly different from a "run-of-the-mill" water right application. In a typical application, an applicant seeks authorization to divert a specific quantity of water, at a specific location, for a specific purpose. The statutorily-required analyses of the impacts the proposed diversion may have on senior water rights and the environment can then be relatively easily modeled: the amount and location identified in the application can simply be entered into the TCEQ's Water Availability Model (WAM) to determine whether the proposed diversion will negatively impact senior water rights or the environment. If it is determined that the diversions will not negatively affect senior water rights or the environment, then the applicant is generally entitled to the permit.

The regulatory language dealing with water rights applications appears to have been written with the typical run-of-the-mill water right in mind, where water is needed immediately for a single, discrete project. For example, a water right application must include highly detailed specifics: the "total amount of water to be used" and the purposes of use must be stated "in definite terms";[69] the "maximum rate of diversion in gallons per minute or cubic feet per second" must be stated;[70] and the "location of point(s) of diversion" along with specific survey references

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[66] BRA Exs. 1 at 7, 28–29.

[67] BRA Ex. 15 at 100.

[68] BRA Ex. 7-A-1; ED Ex. RE-1 at 3.

[69] 30 Tex. Admin. Code § 295.5.

[70] 30 Tex. Admin. Code § 295.6.

must be included.[71] This envisions a level of specificity that might be hard to achieve with respect to any water right application (such as the SysOp Permit) that is intended to satisfy myriad future water needs over an extended time period. For example, a large-scale water supplier seeking to construct a new reservoir to meet the anticipated, but diverse, needs of a growing region over a 50-year time horizon might have difficulty knowing, "in definite terms," exactly where every diversion point will be placed in or downstream of the reservoir, exactly how much water will be used for each purpose of use, and so on.

Moreover, there appears to be a tension between the rules, which require highly detailed specifics in a water right application, and the clear legislative desire for water projects that can meet projected needs over the long haul. The Texas Legislature required regional water planning groups to prepare regional plans that:

> [P]rovide for the orderly development, management, and conservation of water resources . . . in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources.[72]

Among other things, each regional plan must identify "all potentially feasible water management strategies" in the region including "development of new water supplies."[73] The TWDB is then required to synthesize these regional water plans into a state water plan.[74] The regional and state plans identify water needs and possible water supply projects to meet those needs over a 50-year planning horizon. A water right application generally cannot be granted if the application does not address "a water supply need in a manner that is consistent with" the state and regional water plans.[75] In other words, on the one hand, the Texas Legislature appears to have intended that water rights can be issued to meet water needs that might not fully come into existence for

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[71] 30 Tex. Admin. Code § 295.7.

[72] Tex. Water Code § 16.053(a).

[73] Tex. Water Code § 16.053(e)(5)(C).

[74] Tex. Water Code § 16.051.

[75] Tex. Water Code § 11.134(b)(3)(E).

decades. On the other hand, when applying for such water rights, it might not be possible to know the level of specificity required to satisfy the application requirements, as those requirements are identified in a strict reading of the TCEQ's rules.

Indisputably, BRA has not filed a run-of-the-mill application. BRA clearly hopes to obtain, via the SysOp Permit, a large new water right with a great deal of flexibility as to where, when, and how to put the new water to use. BRA contends that the complexity of the application and BRA's need for flexibility are simply an outgrowth of the fact that unappropriated water is becoming increasingly hard to come by:

> BRA would simply suggest that as Texas rivers become more fully appropriated, development of new water supplies will become increasingly innovative and complex. This does not mean that such appropriations cannot be processed under existing law.[76]

While this is an understandable desire on BRA's part, the Commission must ultimately decide whether the Texas Water Code and TCEQ rules allow BRA to obtain the degree of flexibility it desires. The ALJs believe that they do.

B. The Requirements of 30 Texas Administrative Code §§ 295.5, 295.6, and 295.7 Are Directory, Not Mandatory

Along these same lines, and for the first time, BRA argued in its Second Reply Brief that the requirements of 30 Texas Administrative Code §§ 295.5, 295.6, and 295.7 are directory, rather than mandatory. BRA contends these rules are intended to provide TCEQ staff with the information needed to process a water right application. As such, they need not be complied with perfectly, so long as they are complied with sufficiently to provide the ED with the information he needs to adequately analyze an application.

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[76] BRA 2nd Reply Brief at 9.

In order to understand this argument, it is first necessary to understand the standards by which a rule is found to be directory or mandatory. Administrative rules are generally construed in the same manner as statutes.[77] There is no bright-line test for determining when an administrative rule is mandatory or directory. Rather, the main objective is to ascertain and give effect to the agency's intent in adopting the rule.[78] The word "shall" is often seen as imposing a mandatory requirement, but is also "frequently held to be directory."[79] A court must consider the plain meaning of the words used and the entire regulatory scheme, including its nature, objects, and the consequences from possible construction as mandatory and directory.[80] Provisions that are "not the essence of the act to be done," but are for the purpose of promoting the "proper, orderly, and prompt conduct of business," are not generally regarded as mandatory.[81] If the regulation at issue does not provide a sanction in cases of non-compliance, it may be an indication that the provision is directory rather than mandatory.[82]

With these rules in mind, BRA begins by acknowledging that §§ 295.5, 295.6, and 295.7 all use the word "shall," which suggests that they are mandatory requirements. However, BRA points to other indications that the rules are intended to be directory.[83] With respect to the entire regulatory scheme, the rules are found in Chapter 295, which is entitled "Water Rights, Procedural." By contrast, the subsequent chapter, Chapter 297, is entitled "Water Rights, Substantive." This suggests that the provisions in Chapter 295 are not the essence of the act to be done, but are for the purpose of promoting the "proper, orderly, and prompt conduct of business" and, therefore, are not mandatory.[84] Similarly, the rules do not state any consequence for failure to include "the amount of water to be used . . . in definite terms," "the location of

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[77] *Lewis v. Jacksonville Bldg. & Loan Ass'n*, 540 S.W.2d 307, 310 (Tex. 1974).

[78] *Lewis*, 540 S.W.2d at 310; *Texas Dept. of Pub. Safety v. Pierce*, 238 S.W.3d 832, 835 (Tex. App.—El Paso 2007, no pet.).

[79] *Lewis*, 540 S.W.2d at 310; *see also Chisholm v. Bewley Mills*, 287 S.W.2d 943, 945 (Tex. 1956).

[80] *Lewis*, 540 S.W.2d at 310; *Helena Chem. Co. v. Wilkins*, 47 S.W.3d 486, 493 (Tex. 2001).

[81] *Chisholm*, 287 S.W.2d at 403.

[82] *Pierce*, 238 S.W.3d at 836.

[83] BRA 2nd Reply Brief at 11–13.

[84] *Chisholm*, 287 S.W.2d at 403.

points of diversion," or the "maximum rate of diversion." The absence of any language imposing a consequence suggests that these provisions are directory, not mandatory.[85] Moreover, when viewing the entire regulatory scheme, including its nature, objects, and the consequences from possible construction of the rules as mandatory or directory, it is helpful to keep in mind what BRA must substantively prove in order to obtain the water right it seeks. BRA must prove the statutory requirements primarily found in Texas Water Code § 11.134. For example, BRA must prove that unappropriated water is available in the source of supply, the proposed appropriation is intended for a beneficial use and will not impair existing water rights, and so on. When viewed in this light, it seems apparent that §§ 295.5, 295.6, and 295.7 were rules adopted by TCEQ to help a water right applicant provide the TCEQ with the kinds of information that would enable the ED to evaluate the application and make determinations on the substantive questions, thereby suggesting that the rules are directory.

It is also appropriate to consider the varying consequences of construing the rules as mandatory or directory.[86] Consider a situation in which an applicant does not perfectly and completely provide all information identified in §§ 295.5, 295.6, 295.7, but he provides enough of the information requested in those rules to enable the ED to confirm that the application satisfies all the substantive requirements of Texas Water Code § 11.134. If §§ 295.5, 295.6, and 295.7 are construed to be mandatory, then the application would have to be denied, even though it complies with the substance of the Texas Water Code. If, on the other hand, §§ 295.5, 295.6, and 295.7 are construed to be directory, then the application could be granted with the assurance that the new water right meets the substantive requirements. The ALJs believe that the second option is the more reasonable result.

Finally, as will be discussed more below in the section dealing with points of diversion, BRA and the ED produced evidence that the TCEQ has an established practice of allowing at least some applicants to identify a "diversion reach" instead of an exact diversion point in their

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[85] *Pierce*, 238 S.W.3d at 836.

[86] *Lewis*, 540 S.W.2d at 310; *Wilkins*, 47 S.W.3d at 493.

applications.[87] This runs contrary to the express verbiage of § 295.7, which requires a water right application to include specific information about the discrete point where water will be diverted. This past practice of the TCEQ suggests that the agency has already made the determination that its Chapter 295 rules are directory and not mandatory. BRA argues, persuasively, that holding the rules to be mandatory now would undermine a number of prior agency actions which have approved many applications with diversion reaches.[88]

Based upon all the foregoing, the ALJs conclude that 30 Texas Administrative Code §§ 295.5, 295.6, and 295.7 are directory, rather than mandatory. This does not mean that the rules may be ignored. Rather, it means that the rules need not be complied with perfectly, so long as they are complied with sufficiently to provide the ED with the information he needs to adequately analyze an application.

C. The Application Identifies the Total Amount of Water to be Used Sufficiently to Satisfy 30 Texas Administrative Code § 295.5

Pursuant to 30 Texas Administrative Code § 295.5, an application for a water right must identify "the total amount of water to be used," and the "purpose or purposes of each use shall be stated in definite terms." In the WMP, BRA modelled the maximum possible annual diversion under the SysOp Permit for 12 different "firm use scenarios." A table showing the results is found at Table 2.11 in the Technical Report of the WMP, and is reprinted as follows:

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[87] BRA Exs. 119 at 13, 135; ED Ex. R1 at 10.

[88] BRA 2nd Reply Brief at 12–13.

	Scenario Number[89]											
	1	2	3	4	5	6	7	8	9	10	11	12
Demand Level	Demand Level A – Current Contracts			Demand Level B – Current Contracts with CPNPP Expansion			Demand Level C – Current Contracts with ACR			Demand Level D – Current Contracts with ACR and CPNPP		
Return Flow (RF)	No Return Flow	ED's Approach to RF	BRA's Approach to RF	No Return Flow	ED's Approach to RF	BRA's Approach to RF	No Return Flow	ED's Approach to RF	BRA's Approach to RF	No Return Flow	ED's Approach to RF	BRA's Approach to RF
Max. Annual Diversion in Firm Use Scenarios	354,081	366,350	381,474	304,793	321,849	344,625	477,774	496,602	516,955	424,361	447,379	482,035

As can be seen from the chart, BRA modeled four "Demand Level" scenarios:

- Demand Level A represents BRA's current water contract amounts and additional demands identified in the applicable regional water plans, with the assumptions that the proposed expansion of the Comanche Peak Nuclear Power Plant (CPNPP) and construction of the ACR have not yet occurred;

- Demand Level B represents BRA's current water contract amounts, additional demands identified in the applicable regional water plans, and the assumptions that proposed expansion of CPNPP has taken place but ACR has not yet been constructed;

- Demand Level C represents BRA's current water contract amounts, additional demands identified in the applicable regional water plans, and the assumptions that ACR has been constructed but CPNPP has not yet been expanded;

- Demand Level D represents BRA's current water contract amounts, additional demands identified in the applicable regional water plans, and the assumptions that ACR has been constructed and CPNPP has been expanded.[90]

CPNPP is a facility owned and operated by Luminant, a third party who is a water customer of BRA. There is a possibility that CPNPP will be expanded at some point in the future. The current estimate is that if this expansion takes place, the plant will need an additional 90,152 acre-feet per year of water. Of this amount, an estimated 27,447 acre-feet will be

[89] BRA Ex. 126.

[90] BRA Ex. 119 at 28–29.

supplied from an existing water supply contract that Luminant has with BRA. The applicable regional water plan assumes that the remainder would be supplied by the SysOp Permit.[91]

ACR (which will be discussed much more below in this Proposal for Decision) is a proposed reservoir that has been permitted by the TCEQ for construction, but has not yet been built. The permit is jointly owned by BRA and the City of Houston. Once built, it will provide an additional firm supply of 99,650 acre-feet per year.[92]

As will be discussed in greater detail below, there is substantial disagreement between BRA and the ED regarding how return flows should be treated in determining the amount of water available for appropriation in the SysOp Permit. Due to this ongoing dispute, BRA modeled three alternative sub-scenarios within each Demand Level. The first sub-scenario assumed that no return flows would be included in the SysOp Permit. The second sub-scenario assumed that return flows would be treated consistent with the approach recommended by the ED when calculating the appropriation amount for the SysOp Permit. The third sub-scenario assumed that return flows would be treated consistent with the approach advocated by BRA when calculating the appropriation amount for the SysOp Permit.[93]

As will be discussed below in the section addressing return flows, the ALJs have concluded that return flows should be treated consistent with the approach advocated by BRA when calculating the appropriation amount for the SysOp Permit. Thus, for the sake of simplicity, the ALJs suggest that Scenarios 1, 2, 4, 5, 7, 8, 10, and 11 shown in the table reprinted above can effectively be disregarded.

At the time of the Second Hearing, BRA was seeking authorization to appropriate 516,955 acre-feet per year, which represents Demand Level C and BRA's approach to return

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[91] BRA Ex. 119 at 30.

[92] BRA Ex. 119 at 30.

[93] BRA Ex. 119 at 31–33.

flows. It also represents the largest amount of water that could be appropriated under any of the 12 scenarios modeled.

A number of the Protestants assert that the Application does not satisfy the requirements of § 295.5. Dow, LGC, and FBR are critical of BRA's request for 1,001,449 acre-feet and complain that the amount of water to be used under the SysOp Permit has been a moving target, with BRA at times seeking 1,001,449 acre-feet and at other times seeking 516,955 acre-feet.[94] Because the ALJs have concluded that they should focus only on the ED's Alternative Permit and BRA's Proposed Permit, neither of which authorizes appropriation of 1,001,449 acre-feet, the ALJs believe this complaint is now moot.

The Protestants also complain that the use of multiple demand scenarios is confusing and not allowed by law. FBR points out that neither 516,955 acre-feet nor any of the other maximum annual diversion amounts shown in the table represents the "definite number of acre-feet annually" that BRA intends to divert under the SysOp Permit. Rather, these amounts represent the maximum amount that the modeling shows to be available in one year out of the 57-year historical period.[95] Dow disputes the notion that BRA should be entitled to a permit for anything more than 381,474 acre-feet (the amount for Demand Level A) because it represents the conditions that are actually in existence at this time. Dow contends that it makes no sense to allow BRA to appropriate any more than this amount because the other Demand Levels are based upon scenarios that might not come to pass (i.e., the expansion of CPNPP and the construction of ACR). Dow argues the TCEQ rules and Texas Water Code "do not afford BRA with the luxury" of getting authorization to appropriate the amount in Demand Level C so that it has enough water to meet demands under Demand Levels A, B, C, or D.[96] According to Dow, if, in the future, CPNPP is expanded or ACR is built, then BRA could seek to amend the SysOp Permit at that time to change the appropriation amount to the applicable Demand Level. Dow argues that the Texas Water Code and TCEQ rules require BRA "to specify one definite amount

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[94] Dow 2nd Initial Brief at 16–17; FBR 2nd Initial Brief at 19–20; LGC 2nd Initial Brief at 33.

[95] FRB 2nd Initial Brief at 20; *see also* LGC 2nd Initial Brief at 30–31.

[96] Dow 2nd Initial Brief at 17.

that it is requesting for appropriation, and mandate that the Commission can only grant this request if the water is available now."[97] According to Dow, "[a]llowing BRA to lock up and appropriate over 135,000 acre-feet of water [i.e., the difference between Demand Levels C and A] on the chance that something might occur violates 30 Tex. Admin. Code § 295.5 and Chapter 11 of the Texas Water Code."[98] LGC makes the same argument.[99]

FBR contends that BRA has failed to satisfy the requirements of § 295.5 because it has not specified the purposes of use for its proposed diversions under the SysOp Permit. According to FBR, other than BRA's existing water contracts and the needs identified in the applicable regional water plans, BRA has failed to identify "any specific uses for the additional firm yield" from the SysOp Permit.[100] On this point, it appears that FBR is mistaken. BRA has specifically identified its proposed purposes of use as "domestic, municipal, agricultural, industrial, mining and recreation use."[101] FBR has failed to demonstrate why any further specificity is legally required. Nevertheless, BRA provided extensive evidence regarding how additional yield under the SysOp Permit (over and above that used for existing water contracts and the needs identified in the applicable regional water plans) will likely be put to use.[102]

In its briefing following the Second Hearing, BRA has clarified that it no longer seeks a single appropriation amount of 516,499 acre-feet per year. Instead, BRA asks that the appropriation provision be amended to clarify that the appropriation amount in any given year will equal the amount shown for the Demand Level that is in effect for that year. BRA asks that Paragraph 1.A of BRA's Proposed Permit[103] be modified as follows:

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[97] Dow 2nd Initial Brief at 18.

[98] Dow 2nd Initial Brief at 18.

[99] LGC 2nd Initial Brief at 34.

[100] FBR 2nd Initial Brief at 22–23.

[101] BRA Ex. 132B.

[102] BRA Exs. 107 at 39–42, 116, 143; Tr. at 4037–39.

[103] BRA Ex. 132B.

> Permittee is authorized to divert and use not to exceed 516,995 acre-feet of water per year for domestic, municipal agricultural, industrial, mining, and recreation use~~, as further described and defined in the Water Management Plan (WMP)~~, within its service area, subject to special conditions. This maximum annual diversion authorization shall be further limited to the amount from the firm appropriation demand scenario that is applicable during the year in which the water is diverted and as further described and defined in the Water Management Plan (WMP).[104]

If the ALJs understand this modification correctly, the effect would be as follows:

- At any time when CPNPP has not yet been expanded and ACR has not yet been constructed, the appropriation amount would be 381,474 acre-feet per year;
- At any time when CPNPP has been expanded, but ACR has not yet been constructed, the appropriation amount would be 344,625 acre-feet per year;
- At any time when ACR has been constructed, but CPNPP has not yet been expanded, the appropriation amount would be 516,955 acre-feet per year; and
- At any time after CPNPP has been expanded and ACR has been constructed, the appropriation amount would be 482,035 acre-feet per year.

Dow contends that this revision still does not satisfy § 295.5 because it states amounts of water that **might be used** rather than amounts that **will be used**.[105] Dow argues that BRA is essentially using the appropriation process to tie up water (and thereby block others from accessing that water) that it might never use because the construction projects might never occur.[106] Again, LGC agrees with Dow.[107]

The ALJs conclude that the application complies with the directory provisions of § 295.5. Although the application is complex and, at times, confusing, the four Demand Levels clearly state a "total amount of water to be used . . . in definite terms." Moreover, as will be discussed

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[104] BRA 2nd Initial Brief at 65.

[105] Dow 2nd Reply Brief at 6.

[106] Dow 2nd Reply Brief at 7.

[107] LGC 2nd Initial Brief at 34.

more below, the WMP adds additional specificity as to diversion amounts by identifying the specific maximum amounts that BRA will divert from each of 40 "reaches" of the Brazos River and its tributaries below the dam at Possum Kingdom Reservoir (PKR).[108] Simply put, the amount of water BRA seeks to use is stated in sufficiently definite terms to satisfy the directory requirements of § 295.5.

BRA and the ED dispute the argument that § 295.5 precludes a water right from being governed by different scenarios.[109] The ALJs agree with BRA and the ED. There is nothing in the text of § 295.5 to suggest that a water right may not have different appropriation levels based upon different circumstances. The ALJs concede that, by using multiple demand scenarios (including some which have not yet come to pass), BRA is "locking up" water that might otherwise be available for appropriation by others. This is not, however, an improper thing to do. The entire concept of "first in time, first in right" envisions that an applicant can appropriate water, thereby making that water unavailable to subsequent applicants. In this case, BRA is seeking authority to make appropriations over a long planning horizon, an approach that is clearly envisioned by the Texas Water Code. The regional and state water plans specifically identify the expansion of CPNPP and the construction of ACR as projects that have some chance of occurring within the planning horizon and that will both likely involve BRA. Thus, there is nothing inappropriate about BRA seeking a permit that accounts for two large contingencies that have a reasonable probability of impacting it in the foreseeable future.

The ALJs agree with BRA's suggestion that the permit language should be revised to clarify that different appropriation amounts will govern at different times. The ALJs are convinced, however, that the language proposed by BRA does not provide the necessary clarity. The ALJs believe it would be preferable for the specific appropriation amount for each Demand Level to be explicitly stated in the permit. Accordingly, in lieu of the language proposed by BRA, the ALJs recommend that Paragraph 1.A of BRA's Proposed Permit[110] be revised to

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[108] BRA Ex. 133 (Tables G.3.14 through G.3.25 in Appendix G-3 of the WMP).

[109] BRA 2nd Reply Brief at 14; ED 2nd Reply Brief at 3.

[110] BRA Ex. 132B.

specify the four appropriation amounts that are tied to the four Demand Levels. The specific language proposed by the ALJs is found in Section XXVIII of this PFD, dealing with Additional Permit Changes Proposed by Parties.

D. The Application Now Adequately Identifies Maximum Rates of Diversion as Required by 30 Texas Administrative Code § 295.6.

Pursuant to 30 Texas Administrative Code § 295.6, an application for a water right must identify "the maximum rate of diversion in gallons per minute or cubic feet per second."

1. Background from the First Hearing

At the time of the First Hearing, the Application was silent as to rates of diversion, and BRA was seeking a permit that would not specify any maximum diversion rate.[111] The draft permits proposed by BRA and the ED would both have allowed BRA to make diversions at "unspecified rates" at any location within the Brazos River below PKR and its tributaries.[112] In the First PFD, the ALJs concluded that, by failing to identify any maximum diversion rates in the application, BRA failed to comply with the requirement of 30 Texas Administrative Code § 295.6. Therefore, the ALJs recommended that the Commission: (1) deny the Application; or (2) defer a final ruling on the Application by providing BRA with time to prepare its WMP and remanding the Application back to SOAH for further proceedings.[113]

2. The Second Hearing

BRA now contends that any deficiency with respect to rates of diversion has been cured with the addition of the WMP. BRA also raises the new argument that § 295.6 is directory, not mandatory. In the WMP, BRA has divided the Brazos River and its tributaries into 11 segments, stretching from the PKR dam to the Gulf of Mexico. For each segment, BRA has specified a

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[111] Tr. at 37.

[112] BRA Ex. 8B at 7–8; ED Ex. K2 at 11.

[113] First PFD at 19–20.

maximum diversion rate, in cubic feet per second (cfs). BRA describes these rates as "aggregated diversion rates" that apply to run-of-river diversions made under the SysOp Permit, meaning that the sum of all run-of-river diversions made within a given river segment will not exceed the specified maximum diversion rate for that segment.[114] According to Mr. Gooch, the TCEQ has issued a number of water rights that set a maximum diversion rate for a defined river segment rather than a specific diversion point.[115]

The specified maximum diversion rates do not apply to any reservoir diversions made by BRA under the SysOp Permit.[116] As to reservoir diversions, BRA explains that no new diversion rate authorization is needed because the diversion rates currently specified in BRA's existing water rights are sufficient to also account for diversions made under the SysOp Permit.[117] Somewhat puzzlingly, however, BRA explains, "if the diversion rate in BRA's existing water right [related to a reservoir] is unspecified, the unspecified rate would apply to the combination of diversions under current rights and the SysOp Permit."[118]

The ED agrees that BRA's reliance on aggregated diversion rates by river segment is acceptable. Kathy Ann Alexander, Ph.D., is a doctor of aquatic resources and a technical specialist in TCEQ's Water Availability Division. She has worked in that and related positions for TCEQ since 2000.[119] According to Dr. Alexander, the TCEQ has issued many water rights that specify a diversion rate by segment.[120]

FBR argues that BRA's use of aggregated maximum diversion rates by segment is so non-specific that it: (1) does not allow for proper modeling of the potential impacts of the

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[114] BRA Ex. 128 at 40; *see also* Tr. at 2826–27.

[115] BRA Ex. 119 at 15.

[116] BRA Ex. 113 at 45.

[117] BRA Ex. 119 at 15.

[118] BRA Ex. 119 at 15.

[119] ED Ex. R2.

[120] ED Ex. R1 at 10–11.

diversions, and (2) is not enforceable. In its briefing, FBR does not cite to evidence in the record to support these contentions.[121] Dow partially disagrees with FBR. According to Dow's modeling expert, Dr. Brandes, BRA's use of aggregated maximum diversion rates by segment is "adequate for modeling purposes," but it does not provide the information needed to adequately monitor BRA's diversions during actual operations.[122] Nevertheless, Dr. Brandes conceded that so long as the maximum diversion rates by reach as set out the WMP are clearly incorporated into the permit, then he "would probably be okay with that."[123]

However, Dow disputes BRA's and the ED's contention that the use of maximum diversion rates for defined river segments is consistent with past TCEQ practice. Dow argues that what BRA seeks in the SysOp Permit—11 river segments spanning more than 1,000 miles with aggregate maximum diversion rates applied to many different diversions within each segment—is so vastly beyond the scale of anything previously done by the TCEQ as to render any comparisons useless.[124]

In its current form, the proposed SysOp Permit states that diversion rates are: (1) the diversion rates authorized in BRA's existing reservoir water rights; and (2) the rates specified in the WMP. Dr. Brandes and Dow believe that the maximum diversion rates should be set out in the text of the permit itself, and "not left to obscurity in some table within hundreds of pages of the WMP and its appendices." According to Dr. Brandes, "this is the type of information that is normally included in a new water right permit."[125] BRA counters that this is unnecessary because the WMP is expressly incorporated into the permit.[126]

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[121] FBR 2nd Reply Brief at 10.

[122] Dow Ex. 47 at 22.

[123] Tr. at 3596.

[124] Dow 2nd Reply Brief at 9–10.

[125] Dow Ex. 57 at 24.

[126] BRA 2nd Reply Brief at 16.

NWF points out that certain of BRA's existing reservoir-based water rights have unspecified diversion rates, meaning that to the extent withdrawals are made from the same reservoir under the SysOp Permit, those withdrawals will likewise have an unspecified diversion rate. Because 30 Texas Administrative Code § 295.6 expressly requires that any proposed diversion "from a stream or reservoir" requires a statement of the maximum diversion rate, NWF argues that BRA's decision to tie the SysOp Permit to existing rights with no specified diversion rate violates the rule.[127]

The issue of diversion rates was not hotly contested in the Second Hearing. The ALJs agree with Dow that the scale of what BRA is proposing with respect to maximum diversion rates in the SysOp Permit is far beyond the scale of anything previously done by the TCEQ and, therefore, references to past TCEQ practice are not particularly helpful. This, however, is not an issue that is unique to the diversion rate. As will be seen in discussions throughout this PFD, it is difficult to find comparable TCEQ precedent for multiple aspects of the SysOp Permit.

Nevertheless, the ALJs conclude that BRA has met its burden to show substantial compliance with 30 Texas Administrative Code § 295.6. All of the modeling experts who weighed in on the subject, including Dr. Brandes, agreed that BRA's used of aggregated maximum diversion rates by segment is sufficient to enable the water availability modeling to evaluate the application. Thus, the obvious objective of § 295.6 has been achieved.

The ALJs do not believe it is necessary to add the maximum diversion rates directly into the text of the proposed permit because the WMP will be expressly incorporated into and attached to the permit.[128] Admittedly, it is somewhat unfortunate that important provisions of the SysOp Permit can only be found in "obscurity in some table within hundreds of pages of the WMP and its appendices." Again, however, this is not a problem that is unique to the issue of maximum diversion rates. In many different ways, critical details of how the SysOp Permit will

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[127] NWF 2nd Reply Brief at 2–3.

[128] BRA Ex. 132B at 9.

be utilized can only be found by reference to long, detailed, supplemental documents that are often highly technical and confusing.

Finally, the ALJs reject NWF's concerns about unspecified diversion rates in certain BRA reservoirs.[129] The WMP and Proposed Permit state that reservoir diversions will not exceed the maximum rates set out in BRA's existing reservoir-based water rights. If, as to some of the reservoirs, the TCEQ has found it acceptable to issue water rights to BRA that do not specify a maximum diversion rate, then the ALJs cannot fault BRA for deciding to make its SysOp Permit withdrawals under the same criteria.

E. The Application Now Adequately Identifies Points of Diversion as Required by 30 Texas Administrative Code § 295.7

Pursuant to 30 Texas Administrative Code § 295.7, an application for a water right must:

> [S]tate the location of point(s) of diversion . . . . These locations shall also be shown on the application maps with reference to a corner of an original land survey and/or other survey point of record, giving both course and distance. The distance and direction from the nearest county seat or town shall also be stated.

A "diversion point" signifies a specific location on a watercourse from which water will be diverted pursuant to a water right.[130]

1. Background from the First Hearing

At the time of the First Hearing, the Application identified four hypothetical "control points"—Glen Rose, Highbank, Richmond, and the Gulf of Mexico—and then, for each control point, BRA identified the maximum quantity of water that could be diverted at that control point without negatively impacting senior water rights or the environment. The Application then asked for the right to appropriate those amounts. However, BRA had no intention of actually

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[129] It is unknown from the record how many reservoirs operate under permits that do not specify diversion rates.

[130] Tr. at 46.

making diversions at any of the control points. Rather, the control points were merely selected for hypothetical modeling purposes. BRA conceded that the control points were theoretical, were chosen solely for modeling purposes, and were not meant to be used by BRA as *actual* diversion points. At the First Hearing, the ED conceded that it had "no idea" how or where BRA would actually use the water authorized by the permit it sought,[131] and that BRA would probably not make any diversions from the control points identified in the application.[132]

At the time of the First Hearing, the draft SysOp Permit authorized diversions at:

(1) All existing diversion points authorized by BRA's existing water rights;

(2) Glen Rose;

(3) Highbank;

(4) Richmond;

(5) The Gulf of Mexico;

(6) At any other location within "the Brazos River below PKR, its tributaries and [BRA's] authorized reservoirs;"

(7) Any location that may be identified in BRA's subsequently-developed WMP; and

(8) Any other location "as may be otherwise authorized in the future."[133]

In the First PFD, the ALJs concluded that the Application failed to comply with the requirement in § 295.7 to identify the specific locations where water will be diverted pursuant to the SysOp Permit. The ALJs concluded that the Application identified either: (1) *no* diversion

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[131] Tr. at 2129.

[132] Tr. at 2160–61.

[133] BRA Ex. 8B at 6–7; ED Ex. K2 at 6, 11.

points, or (2) *infinite* diversion points, and neither approach complied with the requirements of § 295.7.[134]

2. Points of Diversion in the Second Hearing

BRA now contends that any deficiency with respect to points of diversion has been cured with the addition of the WMP. BRA also raises the new argument that § 295.7 is directory, not mandatory. Both the ED Alternative Permit and BRA's Proposed Permit would authorize diversions at:

(1) The diversion points authorized by BRA's existing water rights;

(2) The mouth of the Brazos River at the Gulf of Mexico; and

(3) Other such locations "identified and included in Permittee's WMP."[135]

With the exception of BRA's existing diversion points, the WMP still does not identify all points where water will be diverted under the SysOp Permit. Rather, it identifies 40 diversion "reaches" in the Brazos River Basin below PKR. To create the reaches, BRA divided the entirety of the river and its major tributaries below PKR into 40 defined subparts.[136] Collectively, the 40 reaches comprise roughly 1,300 miles.[137] A number of the individual reaches are over 100 miles long, with the longest being 129 miles long. Only six of the 40 reaches are less than 10 miles long.[138] Under the WMP, BRA would have the right to divert water anywhere along all 40 reaches.[139] There is no limitation as to how many diversion points could be added within a given reach, nor is there any limitation as to where within a given reach

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[134] First PFD at 20–30.

[135] BRA Exs. 132A, 132B.

[136] BRA Ex. 113 at 51–52; BRA Ex. 119 at 11–12; BRA Ex. 121.

[137] Tr. at 2986–88.

[138] BRA Ex. 113 at 23–25.

[139] BRA Ex. 119 at 12–13.

a diversion point could be added.[140] The WMP states that diversions under the SysOp Permit would be allowed to occur anywhere within all of the reaches.[141] Currently, BRA does not know where future customers will want SysOp Permit water diverted, so it does not know where a number of actual diversion points for the permit will ultimately be located.[142]

BRA would limit itself to a maximum diversion amount in each reach. The maximum diversion amount per reach would be the greater of 1,460 acre-feet or the maximum amount specified for a reach in the WMP.[143] However, there was conflicting testimony from BRA as to which maximum specified by the WMP for a reach should apply. BRA conducted numerous modeling runs using the 12 Demand Level scenarios discussed earlier. Detailed results are found in Tables G.3.14 through G.3.25 of Appendix G-3 to the WMP Technical Report.[144] For each of the twelve demand Level scenarios, the tables demonstrate the "maximum" diversion modeled for each of the 40 reaches (i.e., the largest amount of water the model showed BRA diverting under the SysOp Permit from a reach in a single year of the modeling period under that particular scenario). The maximum amount for any specific reach can vary greatly depending upon the scenario modeled. At times during his testimony, Mr. Gooch testified that the maximum authorized diversion in each reach should equate to the largest single-year diversion modeled for that reach under **any of the modeled scenarios** (Option 1).[145] At other times, Mr. Gooch testified that the maximum authorized diversion in each reach should equate to the largest single-year diversion modeled from that reach **for the particular scenario which exists at the time of the diversions** (Option 2).[146] Regardless of which of the two options is adopted, for each reach

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[140] Tr. at 2982.

[141] BRA Ex. 113 at 52; Tr. at 2978–81.

[142] Tr. at 2981–82.

[143] BRA 2nd Initial Brief at 13; BRA Ex. 113 at App. G-3; BRA Ex. 119 at 40.

[144] BRA Ex. 133.

[145] Tr. at 4209–10.

[146] Tr. at 3154–57.

in which the maximum modeled diversion was less than 1,460 acre-feet per year in any of the scenarios, BRA seeks authority to divert up to 1,460 acre-feet per year in the reach.[147]

Mr. Gooch conceded that Tables G.3.14 through G.3.25 of Appendix G-3 to the WMP Technical Report are currently treated by the WMP as "informational" items rather than as imposing explicit limits on diversions by reach. Thus, Mr. Gooch and BRA's counsel have conceded that it would be appropriate to add language to the SysOp Permit clarifying that the tables impose enforceable diversion limits by reach.[148] Moreover, in its briefing, BRA has clarified that Option 2 should apply to the SysOp Permit, whereby the maximum authorized diversion in each reach should equate to the largest single-year diversion modeled from that reach **for the particular scenario which exists at the time of the diversions**.[149] In order to implement Option 2 and to make the diversion limitations by reach enforceable, BRA proposes the following provision be added to the WMP, as a new paragraph at the bottom of page 9:

> The maximum annual use for each reach is limited to the largest maximum annual diversion under "SysOp" for that reach in Tables G.3.14 through G.3.25 of Appendix G-3 of the WMP Technical Report for the firm appropriation demand scenario that is applicable during the year in which water is diverted, or 1,460 acre-feet, whichever is greater.[150]

The ED agrees with this suggested revision.[151]

In the First Hearing, BRA conducted its water availability modeling by modeling water usage at each of the four hypothetical diversion points identified in the application at that time. In the Second Hearing, BRA stresses that it did not use hypothetical points when conducting its water availability modeling. Instead, BRA modeled:

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[147] BRA Ex. 119 at 40.

[148] Tr. at 3155–56.

[149] BRA 2nd Initial Brief at 65–66.

[150] BRA 2nd Initial Brief at 66.

[151] ED 2nd Reply Brief at 3.

- Current Demands—the demands at diversion points authorized by BRA's existing water rights, including current contractually authorized points on stream channels downstream from PKR;

- Plan Demands—the demands in specific reaches in which the applicable 2011 Regional Water Plans list the SysOp Permit as a source of supply to meet the demands; and

- Remaining Demands—all remaining unappropriated water was assumed to be diverted in the reach from the Richmond gage to the Gulf of Mexico.

Thus, BRA stresses that, unlike the First Hearing, it now uses "actual and planned" diversion points to determine water availability.[152]

For the Current Demands, BRA provided in the Application the locations of the diversion points for its existing water rights and current contracts. As to this category, Dow concedes that the information provided by BRA was "probably sufficient" to satisfy the requirement to identify diversion points as set out in § 295.7.[153] The Plan Demands and Remaining Demands were treated differently. BRA modeled the Plan Demands as if they would be diverted from the reaches where BRA projects them to occur. BRA modeled all the Remaining Demands as if they would be diverted from the most downstream reach in the river, from the Richmond gage to the Gulf. Dow contends this is qualitatively not much different than the approach used by BRA in the First Hearing. That is, rather than modeling at four hypothetical locations, BRA is now modeling hypothetical reaches.[154]

BRA contends that its use of reaches is consistent with past TCEQ practice. Mr. Gooch testified that, on 56 prior occasions, the TCEQ has issued or amended a water right to allow diversions from a defined segment or reach in the Brazos Basin rather than a specific diversion point.[155] He conceded that he was unaware of any prior TCEQ water right that authorized

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[152] BRA 2nd Initial Brief at 13, 18; BRA Ex. 119 at 12–13.

[153] Dow 2nd Initial Brief at 22.

[154] Dow 2nd Initial Brief at 22.

[155] BRA Ex. 119 at 13; *see also* BRA Ex. 135.

diversions from more than two reaches.[156] Mr. Gooch further testified that water availability modeling can be done using reaches just as well as it can be done using discrete diversion points. According to Mr. Gooch, "the precise location of a diversion within a reach will not affect the modeling results in any substantial way."[157]

BRA points out that Dow has a water right that allows diversions by reach, instead of a specific diversion point.[158] But Dow and LGC argue that examination of that water right illustrates how much the TCEQ's past practice of issuing an occasional water right by reach differs from what BRA is proposing with respect to the SysOp Permit. Dow's water right, Certificate No. 12-5328C, authorizes diversions from a 3.5 mile stretch of the Brazos River defined by specific latitude and longitude readings and by measured distances from survey corners. Dow argues that, unlike the SysOp Permit, Dow's permit includes the survey, course, and distance information specifically required by § 295.7.[159] Moreover, the 3.5-mile stretch of river is all owned by Dow, such that there can be no intervening water rights held by third parties anywhere along the 3.5-mile stretch. In other words, when TCEQ issued Certificate No. 12-5328C, it knew that no intervening water right would be negatively impacted depending upon where within the 3.5-mile reach Dow placed its diversion works.[160] Likewise, the preponderance of the evidence indicates that none of the 56 permits previously issued by TCEQ that allow diversions within a defined reach involves a situation in which a third party might also divert within a given reach.[161] Thus, argues LGC, no previously issued permit that authorizes diversions by reach comes close to approaching the magnitude of diversion reaches contemplated in the SysOp Permit.[162]

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[156] Tr. at 3161–62.

[157] BRA Ex. 119 at 13–14.

[158] BRA 2nd Initial Brief at 13–14; BRA Ex. 135.

[159] Dow 2nd Reply Brief at 13; BRA Ex. 141.

[160] Dow 2nd Reply Brief at 15–16; Tr. at 3598.

[161] Tr. at 3179, 3598.

[162] LGC 2nd Initial Brief at 22.

The ED takes the position that the use of the 40 reaches in the WMP brings the Application into compliance with § 295.7, and is consistent with the past TCEQ practice of authorizing diversions from a river reach.[163] Dr. Alexander conceded, however, that the TCEQ has never authorized diversions from anything close to 40 reaches or from reaches extending hundreds of miles. Dr. Alexander estimated that the longest reach authorized by TCEQ was in the range of 15 miles, but she conceded that most of the previously authorized reaches were much shorter.[164] The ED maintains that the Application identifies diversion points sufficiently to comply with § 295.7. The ED stresses that each of the 40 reaches would have a maximum diversion amount specified for the reach, thereby limiting the amount that could be diverted within any given reach.[165]

OPIC finds the use of diversion reaches, rather than discrete diversion points, to be "problematic," but is "reassured" that senior rights would be adequately protected by the SysOp Permit with an appropriation amount of 516,955 acre-feet per year.[166] NWF, Dow, FBR, and LGC all take issue with the reliance on reaches as opposed to specific diversion points. Dow points out that BRA has not provided survey information (reference to a corner of an original land survey and/or other survey point of record) for any of the diversion points, as required by § 295.7.[167] Dow also argues, convincingly, that the BRA application envisions the use of diversion reaches on a scale that makes comparisons to prior TCEQ practice meaningless.[168] The evidence in the record demonstrates that the TCEQ has, in the past, issued water rights authorizing diversions from one or a few, short diversion reaches. TCEQ has never, however, issued a water right allowing diversions from anything close to 40 diversion reaches extending

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[163] Tr. at 3808–09, 3814–15.

[164] Tr. at 3815–16.

[165] ED 2nd Reply Brief at 6–7.

[166] OPIC 2nd Initial Brief at 9.

[167] Dow 2nd Initial Brief at 21.

[168] Dow 2nd Initial Brief at 26–27.

well over 1,200 miles. LGC states that the act of slicing the Brazos River Basin into 40 reaches "should be seen for what it is—window dressing."[169]

In sum, the Protestants contend that, as to diversion points, nothing has meaningfully changed between the First and Second Hearing: BRA still seeks authorization to make diversions anywhere along the Brazos River and its tributaries. As such, they contend that the Application still fails to comply with § 295.7.[170]

The ALJs conclude that BRA has adequately complied with the directory requirements of § 295.7. It is true that, in some respects, the Application in the Second Hearing is similar to the one in the First Hearing: BRA still seeks surprisingly wide latitude to make diversions from anywhere along over 1,200 miles of the Brazos River and its tributaries; and BRA still relies, at least partially, on hypothetical diversion points for its modeling purposes. The ALJs further agree that there is an air of artificiality to BRA's exercise of dividing the Brazos River Basin into 40 reaches. Nevertheless, there are a number of changes that make the application in the Second Hearing superior to the application in the First Hearing. BRA's modeling is no longer based solely on four purely hypothetical diversion points. Much of the modeling is now done at the actual diversion points used for BRA's existing rights, and another substantial component of the modeling is done using specific reaches where the Regional Water Plans identify the SysOp Permit as a source of supply for demands identified in the plans. It is true that there is TCEQ precedent for the use of diversion reaches. However, the ALJs caution that the use of reaches contemplated in the SysOp Permit goes far beyond anything previously authorized by the TCEQ. It is helpful that BRA has committed itself to maximum diversion limitations per reach, and the ALJs find that the verbiage proposed by BRA to be added to page 9 of the WMP should be adopted to clarify that those limits are binding and enforceable. The specific language proposed by the ALJs is found in Section XXVIII of this PFD, dealing with Additional Permit Changes Proposed by Parties.

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[169] LGC 2nd Reply Brief at 12; *see also* FBR 2nd Initial Brief at 21–22.

[170] Dow 2nd Initial Brief at 27; LGC 2nd Initial Brief at 19–26.

Mr. Gooch and Dr. Alexander both testified that water availability modeling can be performed using diversion reaches just as well as it can be done using discrete diversion points. In other words, both experts testified that the information provided by BRA pursuant to § 295.7 was sufficient to enable the ED to perform the analysis necessary in order to determine whether the application meets the substantive requirements of Texas Water Code § 11.134. Thus, the obvious objective of § 295.7 has been achieved. For these reasons, the ALJs conclude that BRA has met its burden to substantially comply with § 295.7.

F. New Water Facilities and Maps

In the First Hearing, the Protestants alleged that BRA's application did not comply with Texas Water Code § 11.124(a)(5)-(7) (concerning facilities) and § 11.125 (concerning maps). BRA does not propose to construct any new water works to exercise the water right that it is seeking. Instead, it plans to rely on its existing facilities and improved operations of those facilities. Because BRA plans no new construction, it argued in the First Hearing that there was no necessity to state the location, description, commencement and completion dates for the construction, and the time required for application of the water to the proposed uses, as normally required by Texas Water Code § 11.124(a)(5)-(7).[171] BRA also argued that the map requirement in Texas Water Code § 11.125 was not applicable because no facilities are proposed to be constructed. Nevertheless, BRA provided maps that show its existing reservoirs and diversion points, stream reaches for the bed-and-banks authorization, and primary control points. BRA also provided electronic data identifying discharges for return flows. In the First PFD, the ALJs found that BRA has complied with Texas Water Code §§ 11.124(a)(5)-(7) and 11.125 to the extent they are applicable when no new facilities are proposed.[172]

In the Second Hearing, BRA provided additional maps and other information regarding BRA's system of reservoirs, and locations where BRA intends to divert and use water under the

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[171] BRA Ex. 15 at 100.

[172] First PFD at 30–31.

SysOp Permit.[173] No additional arguments or evidence were offered during the Second Hearing that would alter the ALJs' prior conclusion. For these reasons, the ALJs again find that BRA has complied with Texas Water Code §§ 11.124(a)(5)-(7) and 11.125.

G. Other Compliance Issues

BRA's compliance with the other applicable requirements of Chapter 11 of the Texas Water Code and the TCEQ's rules is considered in detail below, organized by major topic.

XI. WATER AVAILABILITY, DROUGHT OF RECORD, AND IMPAIRMENT OF EXISTING RIGHTS

In compliance with Texas Water Code § 11.134(b)(2) and (b)(3)(B), BRA has proven that the full amount of water sought to be diverted under the SysOp Permit is available and that the diversion will not impair existing water-right holders. The water availability issues are considered in this portion of the PFD.

A. Overview

Pursuant to Texas Water Code § 11.134(b)(2), an application for a water right cannot be granted unless the TCEQ first finds that "unappropriated water is available in the source of supply." Pursuant to § 11.134(b)(3)(B), an application for a water right cannot be granted unless the TCEQ first finds that it will "not impair existing water rights or vested riparian rights." "Unappropriated water" means "the amount of water remaining after taking into account all existing uncancelled permits and filings valued at their recorded levels."[174] Thus, § 11.134(b)(2) and (b)(3)(B) address both sides of the same coin. For example, if an applicant proves that he can divert 100 acre-feet of water without adversely impacting senior water rights holders, then he has essentially proven both statutory requirements: (1) that there are 100 acre-feet of

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[173] BRA Ex. 113, WMP Tech. Rep. at 1-2, 2-2, 4-1, 4-42, 4-44, 4-45.

[174] *Lower Colorado River Auth. v. Texas Dep't of Water Res. (Stacy Dam)*, 689 S.W.2d 873 (Tex. 1984).

"unappropriated water" available to satisfy his application, and (2) that his diversion of 100 acre-feet will "not impair existing water rights or vested riparian rights."

For the SysOp Permit, there are three sources of unappropriated water: unappropriated riverine flows; return flows of treated wastewater; and water available for appropriation from BRA's existing reservoirs, especially PKR.[175] The Brazos River has a large uncontrolled drainage area downstream from BRA's reservoirs. The flows in this uncontrolled drainage area vary greatly, and during times of high flows there is water that cannot be used by existing water rights. However, these flows are not reliable because at times of low flow, all the water in the stream is needed for existing water rights and for the environment.[176] Because BRA has a great deal of storage throughout the basin, BRA can convert this unappropriated water into a reliable supply by using stream flows not being used by senior water rights when that water is available, and providing water from storage when there are little or no stream flows available for use.[177]

The amount of unappropriated water available for appropriation is determined by using TCEQ's Brazos River Basin WAM, a "highly complex model incorporating over 1,200 water rights" in the Brazos River Basin and the San Jacinto-Brazos Coastal Basin.[178] The WAM is a dataset that includes geospatial, hydrology, and water rights information for the river basin. The Water Rights Analysis Package (WRAP) is a suite of computer models that processes the WAM information and generates output for both river flows and water rights. The specific WAM dataset that is relevant for determining water availability is known as the "Full Authorization" dataset or "Run 3." Run 3 assumes all existing basin water rights are being exercised at their fully authorized amounts, including the amount of reservoir storage that is authorized to these water rights, and does not include return flows.[179]

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[175] BRA Ex. 15 at 34–35; BRA Ex. 21.

[176] BRA Ex. 15 at 36–37; ED Ex. KA-1 at 29; ED Ex. KA-3.

[177] BRA Ex. 15 at 34; ED Ex. KA-1 at 29.

[178] BRA Ex. 15 at 23.

[179] ED Ex. KA-1 at 13–14.

BRA's Proposed Permit[180] would authorize use of up to 516,955 acre-feet per year. The WMP examined alternative water availability scenarios because the amount of water available depends, in part, upon the location of uses of water, as well as the development of authorized but not yet constructed projects. These scenarios are referred to as Demand Levels A, B, C, and D.[181] Using BRA's approach to return flows, Demand Level A shows 381,474 acre-feet per year as the maximum annual use. The maximum annual use under Demand Level B with BRA's approach to return flows is 344,625. Demand Level C, with BRA's approach to return flows, results in the largest amount of unappropriated water being available: 516,955 acre-feet per year in the maximum year. Finally, Demand Level D produces a maximum year's unappropriated water of 482,035 acre-feet using BRA's return flow approach.[182]

As discussed above, BRA believes (and the ALJs agree) that the SysOp Permit should authorize BRA's diversion and use of water according to the facts that exist at any given time in the future. Thus, BRA would operate at the authorization of Demand Level A prior to construction of ACR or expansion of CPNPP. Following CPNPP expansion, BRA would operate under Demand Level B's authorization, or Demand Level D if ACR is also constructed. Finally, if ACR is constructed without expansion of CPNPP, Demand Level C would govern.[183]

The water availability quantities in the 12 WMP firm appropriation scenarios are those required to generate a firm water supply and do not include water for interruptible or non-firm water sales. Although the WMP examined the potential availability of additional water on a non-

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[180] BRA Ex. 132B.

[181] A table showing the amounts of water available under each Demand Level is found at Table 2.11 in the Technical Report of the WMP, and is reprinted in the section of this PFD addressing compliance with Tex. Water Code § 295.5.

[182] BRA Exs. 124, 126.

[183] BRA 2nd Initial Brief at 17.

firm 75/75 reliability basis,[184] that authorization is not being sought by BRA at this time and would require a major amendment of the WMP.[185]

The First PFD identified four water availability issues from the First Hearing. The first was a general issue relating to the two-step process. Additionally, three specific instances were identified in which it was determined that the SysOp Permit would negatively impact existing water rights. BRA contends that all of these issues have been addressed and cured by the WMP. In addition, many of the Protestants assert other arguments relevant to the claim that BRA failed to prove that there is sufficient unappropriated water to support the Application. Protestants raise several complaints about how the water availability modeling was done by BRA and the ED which, according to Protestants, resulted in overstatements of the amount of water available for the SysOp Permit. Each of these arguments will be discussed in turn.

B. The Two-Step Process is No Longer a Concern

At the time of the First Hearing, BRA had elected to pursue a two-step approach whereby BRA would first be issued the SysOp Permit, then prepare the WMP supporting the SysOp Permit and return for a Second Hearing on the WMP. In the First PFD, the ALJs concluded that the two-step process was unprecedented, lacking in legal support and, among other things, made it impossible to fully analyze how much unappropriated water will be available for the SysOp Permit.[186] The Commissioners agreed, which is why they remanded the application for further proceedings. This concern, however, is no longer present. As already discussed, the WMP has now been prepared and the entire Application (including the WMP) is before the ALJs.

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[184] "75/75 reliability" means that at least 75% of the water requested will be available at least 75% of the time. 30 Tex. Admin. Code § 297.42(c).

[185] BRA Ex. 107 at 36.

[186] First PFD at 165.

C. Non-Firm Water

At the beginning of the Second Hearing, BRA was seeking a permit for 1,001,449 acre-feet per year. That amount included a potential "non-firm" supply of over 300,000 acre-feet. Dow points out that, according to the WMP Technical Report, BRA "has not identified specific customers or developed policies for long-term use of non-firm water that would be made available through the proposed [SysOp Permit]."[187] Accordingly, Dow argues that BRA should not be entitled to this non-firm supply.[188] With BRA's decision to no longer seek a permit for 1,001,449 acre-feet per year, this issue has been rendered moot. As explained by BRA, "the water availability quantities in the WMP firm appropriation scenarios are those required to generate a firm water supply and [no longer] include water for interruptible or non-firm water sales. Although the WMP examined the potential availability of additional water on a non-firm 75/75 basis, that authorization is not being sought by BRA at this time."[189]

D. The SysOp Permit Continues to Overstate the Amount of Water Available from BRA's Reservoirs because Storage Capacity in the Reservoirs has been Lost to Sedimentation

1. Background from the First Hearing

At the First Hearing, many of the Protestants contended that the water availability analyses conducted by BRA and the ED overstated the amount of water available for appropriation by BRA because the analysis was wrongly based, in part, on the **permitted** storage capacity in the BRA reservoirs underlying the Application rather than the **actual** storage capacity of the reservoirs. Although this concern applies to all BRA reservoirs, the discussion of this issue focused on the PKR. The permitted capacity for PKR is 724,739 acre-feet.[190] In the many

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[187] BRA Ex. 113 at 2–45.

[188] Dow 2nd Initial Brief at 53.

[189] BRA 2nd Initial Brief at 17.

[190] Tr. at 266.

decades since the permit for PKR was issued, however, sedimentation has filled in a substantial portion of the lake's capacity. As of January 2005, actual capacity at PKR had been reduced to an estimated 540,340 acre-feet.[191] In other words, by 2005, 184,399 acre-feet (roughly 25% of the original permitted storage capacity) had been lost to sedimentation. As time goes on, the storage capacity of the lake will continue to decline. Thus, at the time of the First Hearing, the actual storage capacity at PKR was something less than 540,340 acre-feet and it was continuing to decrease as sedimentation continued.[192] BRA has no plans to increase the storage capacity at PKR by removing sedimentation.[193]

Notably, at all stages of these proceedings, the parties have agreed that sedimentation is steadily decreasing the amount of water available for appropriation under the SysOp Permit. The dispute appears to be about how the effects of sedimentation should be represented in the modeling used to estimate the amount of unappropriated water available for the SysOp Permit, and the appropriate assumptions or changes to the model, if any, which should be made for these analyses. During the First Hearing, BRA's witness Mr. Gooch described the so-called "dual pass simulation" modeling used by BRA and the ED as follows:

> The system operation model basically works by running through the seniority loop of water rights twice. I described earlier how the WAM operates from the most senior right to the most junior right. And in the system operation, the -- all existing water rights in the basin, including BRA's, are modeled in the first loop, and the water available to senior water rights, in the order of their seniority, is taken out of the river. In the model for the system operation, BRA's water rights associated with their reservoirs, the amount they can deplete -- take out of the river, divert, or impound -- is set aside, and then all the water rights are run through a second time. And all senior water rights get the same amount of water they're entitled to, and all the BRA existing reservoir depletions, impoundments, diversions, the amount of water they could use, is made available to system operation to meet the demands set out in that operation of the system model so that senior water rights are not affected. They all get the amount they could currently get. But the BRA rights are operated differently. Without affecting

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[191] Dow Ex. 27.

[192] Tr. at 321–22, 668.

[193] Tr. at 270.

> other water rights, they are to use the water they're entitled to in a different way to combine it with junior diversions under the system operation permit to make a larger supply available.[194]

In other words, the first loop of the dual pass simulation is meant to simulate the full usage of existing water rights, and the second loop simulates the authorization for the SysOp Permit.

The point of contention is what assumptions should be made with respect to reservoir capacities during each loop of the dual pass simulation. The parties agree that, as to an existing water right associated with a reservoir, the correct approach assumes permitted capacity rather than actual capacity. The rationale is that the holder of a reservoir permit is entitled to the fully permitted amount of the reservoir and is free to restore the reservoir to its fully permitted capacity by removing sedimentation. According to BRA and the ED, if modeling of existing water rights in the first loop of the dual pass simulation is done based upon actual capacity rather than permitted capacity, then there is a risk that water to which the holder of a reservoir right is entitled might be given to other appropriators.[195] The Protestants generally agree.[196]

On the other hand, Dow argues that if modeling in the second loop of the dual pass simulation is also done based upon permitted capacity rather than actual capacity, then the amount of water available for the SysOp Permit will be overstated.[197] Dow contends, "BRA's use of permitted storage instead of actual storage of its reservoirs in the model makes it look like there is more water available for the requested appropriation than what is actually available."[198] At the First Hearing, Dow's expert witness, Dr. Brandes, estimated that modeling of actual storage at PKR would reduce the SysOp Permit's yield by roughly 14,600 acre-feet,[199] and

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[194] Tr. at 263–64.

[195] Tr. at 1945–46.

[196] *See, e.g.*, Dow 2nd Initial Brief at 32–33.

[197] Dow 2nd Initial Brief at 32–34.

[198] Dow 1st Initial Brief at 10; *see also* Dow Ex. 19 at 22.

[199] Dow Ex. 19 at 22–23.

modeling of actual storage at **all** of the reservoirs involved in the SysOp Permit would reduce the SysOp Permit yield by roughly 33,000 acre-feet.[200]

In the First Hearing, BRA and the ED chose to run the model using the permitted capacity in both loops of the dual pass simulation. Also at the First Hearing, DOW presented an alternative modeling method that used the actual reservoir capacity in both loops of the dual pass simulation. Dow argues that neither approach was ideal: the BRA/ED approach overstated the amount of water available for the SysOp Permit while the Dow approach understated the amount of water available to existing senior water right holders. However, Dow explains that limitations in the WAM in 2011 necessitated the use of one or the other of these two, imperfect options:

> Unfortunately, at the time of the 2011 Hearing, the dual simulation feature of the water availability model created a Morton's Fork, where the situation offered two possibilities, neither of which completely satisfied Texas water rights law. In the model, one could either: (1) use the permitted storage capacity of BRA's reservoirs, and overstate the available water supply for BRA's SysOp Permit in the second simulation loop, or (2) use the actual storage capacity of BRA's reservoirs, and short BRA's existing water rights in the first simulation loop.[201]

At the time of the First Hearing, BRA's modeling expert, Mr. Gooch, did not know whether it would be possible to revise the WAM so that permitted capacity could be modeled in the first loop and actual capacity could be modeled in the second loop.[202] Also at the First Hearing, Dow's modeling expert, Dr. Brandes, suggested that the model needed to be revised to allow modeling of permitted capacity in the first loop and modeling of actual capacity in the second loop.[203]

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[200] Tr. at 1585–86.

[201] Dow 2nd Initial Brief at 32–33.

[202] Tr. at 284–85.

[203] Tr. at 1608–09.

Based on these facts, the ALJs concluded in the First PFD that the water availability analyses conducted by BRA and the ED for the SysOp Permit should have been based on the actual storage capacity of the reservoirs, rather than the permitted capacity.[204]

2. The Commissioners' Discussion of the First PFD

On January 25, 2012, the Commissioners[205] considered the First PFD in this matter. As noted above, the Commissioners agreed to remand the application primarily based on their concerns about the two-step process. However, the Commissioners expressed their opinions about various issues, including the permitted/actual capacity issue. The following discussion took place during the agenda meeting:

> Chairman Shaw: I've heard us all agree that we believe that it would be appropriate to consider the permitted, not the actual capacity. . . . But it's possible, I think, for special conditions to be in place that would limit the use to actual capacity. In other words, respect the *Stacy Dam* decision and recognize that we base that on permitted capacity, yet recognize that that water availability is indeed limited very realistically to actual capacity. I think that could be done through a special condition or some other type of approach that would recognize that.
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> Commissioner Rubenstein: I agree a hundred percent on your take, Chairman. . . . And I think that I would be comfortable in the judges continuing to look at the actual [capacity] for protectiveness matter, but recognize the permitted [capacity could] come back [via dredging]. And I think that that could effectively be done with special conditions.
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> Commissioner Garcia: No objection.[206]

The Commissioners did not issue an interim order that made a final ruling on any particular issue because they did not want to foreclose future evidence and discussion of the

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[204] First PFD at 49–53.

[205] At the time, the Commission was comprised of Chairman Shaw and Commissioners Rubenstein and Garcia.

[206] BRA Ex. 130 (January 15, 2012 transcript) at 8–9.

issues.[207] Commissioner Rubenstein explained that, by not issuing a detailed interim order, "we're not resolving or giving direction to the judges on what we want to do going forward."[208] So, Commissioner Rubenstein suggested, "we can talk a little bit about those [issues], but I wouldn't want to do it in a way that impedes future discussion on the issue[s] either."[209]

3. The Second Hearing

At the Second Hearing, BRA stood by its decision to model water availability for the permit using the permitted (rather than actual) capacity of its reservoirs in both loops of the dual pass simulation.[210] BRA calls this type of modeling its "appropriation modeling." However, as part of its work in developing the WMP, BRA also conducted a second type of modeling which it calls "operational modeling." In its operational modeling, BRA compared how: (1) the BRA System operates under current demands; (2) the BRA System including the SysOp Permit would operate under expected conditions in 2025; and (3) the BRA System including the SysOp Permit would operate under expected conditions in 2060. Unlike the appropriation modeling, the operational modeling used actual and projected reservoir capacities.[211] In addition, the ED has suggested the inclusion of Special Condition 5.D.5 in the ED's Alternative Permit, which would read as follows:

> In the first reconsideration or major amendment of the WMP after issuance of this permit, Permittee shall demonstrate that it has additional sources of supply sufficient to offset any reduction in its system reservoirs due to sedimentation or shall, at a minimum, provide evidence demonstrating that Permittee has worked diligently and continuously to develop such alternate sources of supply. Should Permittee fail to either demonstrate that such supplies are available or that it has pursue diligent development of those supplies the amount of water **appropriated** under this permit may be reduced.[212]

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[207] BRA Ex. 130 at 4–5.

[208] BRA Ex. 130 at 5.

[209] BRA Ex. 130 at 5.

[210] Dow Ex. 47 at 31–33.

[211] BRA Ex. 119 at 43–48.

[212] BRA Ex. 132A at 10 (emphasis added).

BRA has offered its own proposed version of Special Condition 5.D.5 that is almost identical to the ED's. The only difference is that the word "appropriated" in the ED's version (bolded above) is replaced with the words "authorized for use" in BRA's version.[213] BRA and the ED argue their respective approaches mirror the recommendation of the Commissioners at their January 25, 2012 meeting.[214]

The ED contends that the Commission's order remanding this matter back to SOAH so that BRA could prepare the WMP (the 2012 Remand Order) directed that "the water availability finding should be based on the permitted amounts in existing water rights, including permitted storage."[215] The ED argues that if the Commission authorizes the SysOp Permit based on actual capacity instead of permitted capacity, this "could allow some of this permitted water to be permitted to others at a later date," in violation of *Stacy Dam.*[216]

Dow advocates a different approach that it contends is more consistent with Texas water law. In the interim between the First and Second Hearings, Dow constructed a revised WAM that utilized permitted capacity on the first pass of the dual simulation and actual capacity on the second. With Dow's new model, BRA's fully authorized existing streamflow depletions are simulated in the first loop based on permitted capacity; in the second loop, the actual storage capacity of PKR[217] is used for quantifying the amount of water available for the SysOp Permit.[218] Dr. Brandes opined that this approach addresses the permitted/actual capacity issue in a logical way that protects existing reservoir rights at their permitted amounts while avoiding issuing a SysOp Permit that relies on storage that does not exist.[219]

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[213] BRA Ex. 132B at 10.

[214] BRA 2nd Initial Brief at 19; ED 2nd Initial Brief at 9–10.

[215] ED 2nd Initial Brief at 9.

[216] ED 2nd Initial Brief at 9.

[217] Dow revised the model to account for reduced storage capacity in PKR, but not in the other BRA reservoirs.

[218] Dow Ex. 47 at 34–35; Dow Ex. 57 at 6–7.

[219] Dow Ex. 47 at 34.

According to Dr. Brandes, Dow's proposed modeling approach significantly reduces the amount of water available for the SysOp Permit. For example, when the revised model is applied to Demand Level D in the WMP with BRA's approach to return flows (whereby it is assumed that all current BRA contracts are fully utilized, ACR has been constructed, and the CPNPP expansion has taken place), then the overall supply available to BRA would be reduced by 69,000 acre-feet per year.[220] When the model is applied to Demand Level C with BRA's approach to return flows (whereby it is assumed that all current BRA contracts are fully utilized and ACR has been constructed), then the overall firm supply available for the SysOp Permit would be reduced by 71,500 acre-feet.[221]

Dow did not modify the WAM to account for actual storage capacity of BRA's reservoirs other than PKR. However, Dr. Brandes estimated the effect of nonexistent storage capacity at the other reservoirs by making downwards adjustments that were proportional to the adjustments needed for PKR. Using this approach, Dow estimates that, in Demand Level C, the overall firm supply available would be reduced by another 1,602 acre-feet at the Rosharon gage. In total, Dow estimates that when actual capacity at all BRA reservoirs is taken into account, the overall firm supply available for the SysOp Permit would be reduced by 73,102 acre-feet per year in Demand Level C.[222] Dow contends its revised WAM that utilizes actual capacity on the second loop of the dual pass simulation should be used for determining the amount of water available for the SysOp Permit.[223]

Dow disagrees with BRA as to the significance of the Commissioners' January 25, 2012, comments on this issue. First, Dow correctly notes that the discussion did not amount to an official decision by the Commission, but only non-binding comments. Second, Dow argues that the comments can be read to favor Dow's approach:

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[220] Dow Ex. 47 at 35.

[221] Dow Ex. 57 at 7; Dow Ex. 59.

[222] Dow Ex. 57 at 7; Dow Ex. 59.

[223] Dow 2nd Initial Brief at 41–42.

> [The Commissioners' discussion regarding] protection of permitted storage was directed solely at the existing water rights, not the new appropriation. What Dow believes the Commissioners were stating is that they did not want to violate the *Stacy Dam* decision and fail to protect existing water rights that happen to belong to the applicant at their full face value by using the actual storage instead of the permitted storage in the water availability modeling. But the Commissioners also wanted the availability of the new SysOp appropriation to be based on the actual capacity.[224]

Dow suggests that the Commissioners only suggested a special permit condition to address the problem of actual capacity because they did not know at the time that the dual pass simulation model could be modified to use permitted capacity in the first loop and actual capacity in the second loop.[225] According to Dow, its new modeling solves the storage capacity issue, rendering the exercise of trying to draw a concrete interpretation from the Commissioners' comments during the 2012 agenda meeting unnecessary.[226] Dow's position is that the new modeling is an accurate way to address the permitted/actual capacity issue, and is preferable to adding a special condition to the permit. If, however, the ALJs and Commission adopt the special condition approach, then Dow argues that the condition should reduce the SysOp Permit's "appropriation" amount and not just the amount BRA can "divert and use," if the permitted capacity is not restored within three years. As explained by BRA, "[s]imply reducing the amount that BRA can divert and use if the storage capacity is not restored accomplishes nothing. BRA will still have appropriated more water than is available and this inflated number will block future applicants from having access to the . . . unappropriated water that is left in the Brazos River after the SysOp Permit [is] issued."[227]

LGC agrees that the import of the Commissioners' discussion should not be overstated. LGC further points out that two of the three Commissioners who participated in that discussion

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[224] Dow 2nd Initial Brief at 37.

[225] Dow 2nd Initial Brief at 38.

[226] Dow 2nd Reply Brief at 21.

[227] Dow 2nd Reply Brief at 22.

are no longer with the TCEQ.[228] LGC doubts the value of BRA's operational modeling which used actual capacities of the reservoirs. LGC points out that the operational models impose no actual limit on the amount of water BRA can divert and use.[229] Indeed, BRA itself describes the operational models as "primarily informational, to assist BRA with management after the permit is granted."[230]

LGC also argues that the special permit condition proposed by the ED and BRA does not truly limit appropriations based on actual reservoir capacities and, therefore, does not satisfy the intent of the Commissioners as expressed at the January 25, 2012 meeting.[231] NWF agrees, pointing out that, because the condition only states that the amount of water used "may" be reduced, it does not protect against reliance on storage that does not actually exist. NWF contends that the terms of the special condition proposed by BRA and the ED should be reversed. That is, rather than allowing BRA to appropriate water based on non-existent storage until a later date when the diversion amount may be reduced, NWF argues that the permit condition ought to allow BRA to appropriate less water until BRA can show that it has restored capacity to the reservoirs.[232]

The ALJs continue to believe that the Protestants have the better argument. As with any water right application, the SysOp Permit may be granted only if the TCEQ concludes that there is unappropriated water available for the permit.[233] "Unappropriated water" has been defined to mean "the amount of water remaining after taking into account all existing uncancelled permits and filings valued at their recorded levels."[234] All parties agree that the first loop in the dual pass simulation modeling achieves this requirement by modeling all existing rights at their full

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[228] LGC 2nd Initial Brief at 48–49.

[229] LGC 2nd Reply Brief at 23.

[230] BRA 2nd Initial Brief at 3.

[231] LGC 2nd Reply Brief at 23.

[232] NWF 2nd Reply Brief at 4–5.

[233] Tex. Water Code § 11.134(b)(2).

[234] *Stacy Dam*, 689 S.W.2d at 874.

permitted capacity. However, all parties (even BRA and the ED) agree that using the permitted capacity in the second loop results in an overstatement of the amount of water available for appropriation for the SysOp Permit. The special permit condition proposed by BRA and the ED would not be necessary if this were not the case. Even BRA concedes that "using current capacity provides a more accurate assessment of water currently available."[235]

Indeed, the text of the special permit condition proposed by BRA and the ED reads like an express acknowledgement that the SysOp Permit is based, at least in part, on water that is **not** available. The provision states that, in the future, the appropriation amount "may" be reduced if BRA fails to obtain "additional sources of supply sufficient to offset any reduction in its system reservoirs due to sedimentation." In other words, as proposed by BRA and the ED, the SysOp Permit would give to BRA the authority to appropriate water that is not available, based upon a vague assurance that, at some time in the future, the unavailable water might be taken away if BRA fails to cure the unavailability. This is simply contrary to what is required by Texas Water Code § 11.134.

The ALJs are not persuaded that the approach advocated by BRA and the ED is mandated by the Commission's discussion in 2012. Clearly, the Commissioners had no intention that their comments should be viewed as the final word on the permitted/actual capacity issue. When they issued the 2012 interim order, the Commissioners decided not to rule on specific issues so as not to foreclose future evidence and discussion. In the words of Commissioner Rubenstein, the Commissioners did not want to "impede future discussion of the issues."

Moreover, the ALJs are not persuaded that the approach advocated by BRA and the ED is even consistent with the Commission's discussion in 2012. The Commissioners clearly wanted a special condition that prevented over-appropriation by the SysOp Permit. Yet the special permit condition proposed by BRA and the ED is worded so weakly that it almost certainly does not

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[235] BRA 2nd Reply Brief at 23.

prevent over-appropriation during the first 10 years after issuance of the SysOp Permit, and it probably does not prevent over-appropriation thereafter. The condition merely indicates that in 10 years[236] the "appropriation" amount (or "authorized for use" amount) "may" be reduced if BRA fails to obtain additional supplies to offset losses due to sedimentation. Moreover, even if BRA fails to obtain these additional supplies, the appropriation amount will not be reduced if BRA can show that it has "pursued diligent development of those supplies." Even if BRA fails to obtain additional supplies and fails to pursue diligent development, BRA might still not have its appropriation amount reduced.

The ALJs find persuasive Dow's arguments regarding the inadequacy of both modeling approaches utilized in the First Hearing—BRA's and the ED's approach (using permitted capacity in both loops) overstated the amount of water available for the SysOp Permit, while Dow's approach (using actual capacity in both loops) understated the amount of water available to senior water right holders. Dow argues it is plausible that, in 2012, the Commissioners were unaware that the WAM could be modified to fix the problem. BRA concedes that this argument "is not necessarily unreasonable."[237] The ALJs think so, too.

In light of the problems with the models, Dow's expert, Dr. Brandes, developed a revised WAM which allowed modeling of permitted capacity in the first loop and actual capacity in the second loop. This is precisely the kind of new evidence, argument, and discussion that the Commissioners appear to have envisioned in 2012. Moreover, Dr. Brandes's revised WAM appears to address Chairman Shaw's acknowledgement that "water availability is indeed limited very realistically to actual capacity."[238] No party meaningfully challenged the accuracy of Dr. Brandes's revised WAM or his estimates of the reductions to water availability for the SysOp Permit caused by taking into account actual reservoir capacities.

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[236] The condition states "at the time of the first reconsideration of the WMP" which, pursuant to Permit Condition 5.D.3, will likely occur 10 years after issuance.

[237] BRA 2nd Reply Brief at 24.

[238] BRA Ex. 130 at 8.

The ALJs disagree with the ED's contention that the 2012 Remand Order directs that "the water availability finding should be based on the permitted amounts in existing water rights, including permitted storage."[239] The 2012 Remand Order actually says nothing about the permitted/actual capacity issue.

The ALJs also disagree with the ED's argument that Dow's approach would violate the requirements of *Stacy Dam*. In that case, the Texas Supreme Court relied on Texas Water Code § 11.134(b)(2) and (3) to conclude that a grant of an appropriation of water cannot be based on a determination that a portion of an existing water right is not being used.[240] In conformity with the holding in *Stacy Dam*, TCEQ staff must determine the availability of unappropriated water by assuming that all existing water rights are being fully exercised.[241] The modeling proposed by Dow does just that. Moreover, the holding in *Stacy Dam* is intended to prevent the over-appropriation of water. In this case, as to the SysOp Permit, the ALJs are making a conservative recommendation to prevent over-appropriation.

The ALJs conclude that the Commission should grant the Application in amended form, with the reductions in the appropriation amounts as indicated by the revised modeling utilized by Dow. Assuming that the permit would be issued for 516,955 acre-feet per year (the Demand Level C amount), Dr. Brandes recommended that the appropriation amount of 516,955 be reduced by 73,102 to 443,853 acre-feet per year to account for the effect of nonexistent reservoir storage capacity.[242] The ALJs believe this general approach should be adopted. However, as discussed above in the section addressing compliance with 30 Texas Administrative Code § 295.5, the ALJs are recommending that the SysOp Permit specify not one, but four appropriation amounts, each corresponding to the Demand Level that happens to be in effect at the time. Thus, each of the four appropriation amounts must be reduced to account for nonexistent storage capacity. The best evidence in the record demonstrates that the effect of

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[239] ED 2nd Initial Brief at 9.

[240] *Stacy Dam*, 689 S.W.2d at 876, 882.

[241] ED Ex. KA-2 at 14–15.

[242] Dow Ex. 57 at 25.

nonexistent storage capacity at all BRA reservoirs reduces overall firm supply available by 73,102 acre-feet per year in Demand Level C, and by 69,000 acre-feet per year in Demand Level D. No evidence was offered as to the size of the reduction in Demand Levels A and B. However, the reductions in Demand Levels C and D both equate to 14% reductions. Therefore, the ALJs recommend that 14% reductions likewise be applied to the appropriation amounts in Demand Levels A and B. Accordingly, the ALJs recommend that Paragraph 1.A of BRA's Proposed Permit (BRA Ex. 132B) be revised to specify that the four appropriation amounts are reduced to account for actual storage. The specific language proposed by the ALJs is found in Section XXVIII of this PFD, dealing with Additional Permit Changes Proposed by Parties.

E. The "Glen Rose Scenario" is No Longer a Concern

At the time of the First Hearing, the Application identified four hypothetical diversion points—Glen Rose, Highbank, Richmond, and the Gulf—and then, for each point, BRA identified the maximum quantity of water that could be diverted at that point without negatively impacting senior water rights or the environment. In the First PFD, the ALJs concluded that the way in which modeling was done for the "Glen Rose Scenario" (*i.e.*, the scenario in which all SysOp Permit diversions take place at Glen Rose) resulted in inappropriate "double-permitting" or "stacking" of water rights because it required an assumption that more than 100,000 acre-feet of BRA's existing water rights would not be exercised. As a consequence, the amount of water available for appropriation in the SysOp Permit was overstated because it was based upon an analysis that assumed some portion of BRA's existing water rights was not fully utilized.[243]

The problem in the "Glen Rose Scenario" has now been corrected by BRA. As noted above, the SysOp Permit no longer uses the four hypothetical diversion points. Moreover, the WMP and its modeling show that there is sufficient reliable water supply to satisfy all of BRA's existing water rights as well as the SysOp Permit.[244] FBR is the party that raised the issue of the

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[243] First PFD at 60–62.

[244] BRA Ex. 119 at 61; BRA 2nd Initial Brief at 20.

Glen Rose Scenario in the First Hearing. FBR now concedes that the scenario is no longer an issue in this case.[245]

F. The Drought of Record

1. Evidence and Arguments Before the Record Closed

The water availability data upon which the WAM is based use hydrologic data from 1940 through 1997. The "drought of record" is currently considered to be the multi-year drought that occurred in the late 1940s and 1950s (the 1950s drought).[246] In water availability modeling, it is the drought of record that determines a water supply's firm yield. That is, a reservoir or other water supply is considered to reliably produce only as much water as it could have produced in the drought of record.[247]

In late 2013, Mr. Gooch's consulting firm issued a report on behalf of BRA entitled "Initial Analysis of Extended Hydrology." That report, together with an update, concludes that during the period beginning in June 2010 and continuing at least through June 2014 (which is the last time the consultants performed a drought analysis), PKR was in a new drought of record (meaning a drought that eclipsed the severity of the 1950s drought). As to BRA's other reservoirs, the report concluded that the drought of record for Lake Proctor is from 1998 to 2000, while the drought of record for all other BRA reservoirs probably remained the 1950s drought.[248] The consultants determined that this new drought of record reduced the firm yield of PKR by roughly 105,000 acre-feet per year.[249] As explained by Dow's expert, Dr. Brandes, the firm yield of PKR could continue to decline as the drought continues.

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[245] FBR 2nd Reply Brief at 12.

[246] Dow Ex. 47 at 27.

[247] BRA Ex. 119 at 73; Tr. at 3059–60.

[248] Dow Ex. 47 at 25–26; Dow Ex. 51.

[249] Dow Ex. 47 at 26.

> [I]t is almost certain that as long as the drought persists and inflows to the reservoir remain low, the firm yield will continue to fall. It will not be possible to calculate the final firm yield value for the current drought until rainfall . . . produces more inflows to the reservoir and it becomes apparent that the reservoir will completely fill.[250]

BRA's legal counsel admitted that the new drought of record in PKR will impact the hydrology for the SysOp Permit, and he conceded that the new drought of record raises a "hard, legitimate issue" as to the SysOp Permit.[251]

On behalf of Dow, Dr. Brandes performed his own modeling and estimated that the new drought of record reduces the firm yield for the SysOp Permit in Demand Level C by 98,507 acre-feet per year (of which 49,500 acre-feet is reduced in firm supply at the Rosharon gage, and 49,007 acre-feet is reduced in lakeside supply at PKR).[252] Similarly, BRA's expert, Mr. Gooch, estimates that firm yield from PKR has been reduced by roughly 100,000 acre-feet per year due to the new drought of record.[253]

For several reasons, BRA and the ED oppose the effort to take the new drought of record into account when determining whether to issue the SysOp Permit and the size of the appropriation allowed under the permit. The ED's modeling expert, Dr. Alexander, is not convinced there has been a new drought of record in PKR. While she concedes that inflows have been very low into PKR, she does not believe the evidence conclusively establishes a drought of record. She describes the official process to determine a new drought of record as "a very time-consuming, detailed, and extensive process."[254] None of the other modeling experts in this case doubt the existence of a new drought of record for PKR. BRA's expert, Mr. Gooch readily admits that the reservoir is in a new drought of record. Indeed, it was his consulting firm that

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[250] Dow Ex. 47 at 26.

[251] Tr. at 2753–54.

[252] Dow Ex. 57 at 9–10; BRA Ex. 59.

[253] Tr. at 3063–64.

[254] Tr. at 3689.

conducted the analysis that discovered it.[255] However, Mr. Gooch testified that it is possible that the lower flows into PKR might be offset by higher flows in other locations in the Brazos Basin, such that the basin as a whole is not experiencing a drought of record. Therefore, Mr. Gooch does not know whether a new drought of record has occurred for the BRA water supply system as a whole.[256]

Brad Brunett is BRA's Water Services Manager. He holds a bachelor degree in hydrology and water resources, and oversees day-to-day operation and management of BRA's water supply system.[257] According to Mr. Brunett, although the new drought of record for PKR means that the reservoir's firm yield is reduced, this does not necessarily mean that the overall firm yield of the SysOp Permit is reduced.[258] Dr. Alexander explained this concept as follows:

> Droughts can be variable around a river basin. So one area can be in really low flows, but the rest of the area can be in normal to higher flows. So to say that the amount available for appropriation for any specific application would be influenced on a specific portion of the drought, without looking to see if the basin itself has been in a new drought or record, I don't know how you could say that.[259]

Indeed, Mr. Gooch produced evidence suggesting that the Brazos River Basin as a whole is not experiencing a new drought of record. For example, an analysis performed by him indicates that the cumulative gaged flow at the Richmond gage, near the bottom of the basin, during the 1950s drought of record was substantially lower than the cumulative gaged flow at the Richmond gage for a comparable time period ending in January 2014.[260] This is so even though there are many more diversions from the river and more reservoirs on the river (resulting in

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[255] BRA Ex. 119 at 73.

[256] BRA Ex. 119 at 73–74.

[257] BRA Ex. 107 at 3–4; BRA Ex. 108.

[258] Tr. at 2853.

[259] Tr. at 3953.

[260] BRA Ex. 150.

greater evaporation) now than there were in the 1950s. This suggests to Mr. Gooch that the basin overall might not be in a new drought of record.[261]

Even if there is a new drought of record for PKR, BRA and the ED do not believe that the WAM should be revised to incorporate the new drought of record before the SysOp Permit is issued. Rather, they recommend issuance of the SysOp Permit now. Thereafter, once PKR refills and the drought ends, BRA would perform a detailed evaluation of the drought. If it is confirmed that a new drought of record has taken place, then appropriate adjustments could be made to the WMP.[262] According to Dr. Gooch, if a new drought of record was found, then BRA would develop hydrologic data to model whether the drought makes less supply available for the SysOp Permit. It would use this data to determine how much reliable supply is available from the SysOp Permit, which would impact how much BRA would be willing to commit to its customers.[263] In order to implement this concept, at the time of the Second Hearing the ED recommended that the following provision be added to the WMP:

> In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the current drought represents a drought worse than the drought of the 1950s based on inflows to Lake Possum Kingdom. BRA shall begin this evaluation when Lake Possum Kingdom refills, indicating that the current drought is over. BRA shall provide a report to the TCEQ documenting its finding within nine months after Lake Possum Kingdom refills.[264]

BRA agreed with this recommendation and incorporated the provision into the WMP.[265]

BRA describes the possible new drought of record as a "management issue" not a "permitting issue."[266] BRA opposes any abatement or delay to the processing of the application

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[261] Tr at 4151–53.

[262] Tr. at 3688–89.

[263] BRA Ex. 119 at 74–75.

[264] ED Ex. R3 at 12.

[265] BRA Ex. 113 at 3.

[266] BRA 2nd Reply Brief at 30–31.

in response to the new drought of record. Mr. Gooch testified that any such delay would be unworkable because it would unreasonably delay the ability of an applicant to develop new supplies.[267] According to Mr. Gooch, it is not possible to fully determine the impacts of a possible new drought of record until the drought has ended.[268] Moreover, if there is indeed a new drought of record in the making, then the existence of the SysOp Permit will actually help conditions at PKR and the other BRA reservoirs because it will enable BRA to divert water from run-of-the-river flows to the extent possible and thereby conserve storage in the reservoirs.[269] Dr. Alexander and Mr. Gooch both testified that it would be inconsistent with established TCEQ policy if the agency were to issue the SysOp Permit with a condition specifying that the appropriation amount might be lowered in the future to account for the possible new drought of record. Neither could recall, however, another water right that was issued in circumstances similar to those in this case (i.e., a water right issued post-*Stacy Dam* and at a time when it is known that a new drought of record is occurring in at least some of the relevant area, but the full extent of the drought is not known).[270]

Finally, BRA doubts the contention that a new drought of record would result in a lower appropriation amount for the SysOp Permit: "[B]ecause the permit's 516,955 acre-feet per year use authorization is based on a single year, which will be retained even if the period modeled is extended to include the current drought, [the 516,955 appropriation amount] is unlikely to change." In other words, because the 516,955 acre-feet per year is not a firm yield authorization, but a maximum possible annual use authorization, BRA believes it is unlikely that the incorporation of additional drought data into the WAM would reduce the maximum possible annual use authorization in the SysOp Permit.[271]

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[267] BRA Ex. 119 at 75.

[268] Tr. at 4153–54.

[269] Tr. at 4155.

[270] *See, e.g.*, Tr. at 4261–62.

[271] BRA 2nd Reply Brief at 32–33.

The Protestants largely believe that the new drought of record for PKR should be taken into account when calculating the amount of water available for appropriation by the SysOp Permit. NWF and LGC assert that, because the new drought of record is a known fact, it cannot be ignored when calculating the amount of water available for appropriation under the SysOp Permit. Rather, as required by Texas Water Code § 11.134, the new drought of record must be taken into account in determining the amount of unappropriated water available for the SysOp Permit.[272] The Protestants stress that the importance of a new drought of record at PKR cannot be overstated because PKR is much larger than all of the other BRA reservoirs combined.[273]

At the Second Hearing, Dr. Alexander and Mr. Gooch admitted that the proposed condition to be added to the WMP (quoted above) only mandates that BRA study the drought of record in the future. They agreed that the BRA drought study could ultimately reveal that the current estimate of the amount of water available for the SysOp Permit (as laid out in the Application) is overstated. However, they maintained that, in that event, BRA would not and should not be required to make any cutbacks to the appropriation amount in the SysOp Permit.[274] In light of this fact, NWF argues that: (1) the provision is inadequate because it fails to require meaningful action as a result of the study, and (2) because the provision is inadequate, it is even more imperative that the appropriation amount in the SysOp Permit not be overstated due to the new drought in the first place.[275]

Dow points out that there is TCEQ precedent for rethinking issuance of a water right in light of revelations concerning a possible new drought of record. According to Dr. Brandes, in 2012 the Lower Colorado River Authority (LCRA) submitted a draft WMP plan to the TCEQ for review. Due to concerns about a possible new drought of record in the Colorado River Basin, the ED decided to postpone analysis of the draft WMP until the WAM could be updated with

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[272] NWF 2nd Initial Brief at 5; LGC 2nd Initial Brief at 36–40.

[273] *See, e.g.*, Dow Ex. 52.

[274] Tr. at 3076–77, 3880–81, 3955–56, 4000, 4201.

[275] NWF 2nd Initial Brief at 7, 11.

hydrologic data from 1998 through 2013. In that case, it ultimately turned out that no new drought of record existed in the Colorado River Basin.[276]

Nevertheless, Dow argued at the hearing that the best approach would not be to wait until the current drought ends before assessing its effect on the SysOp Permit. Dow advocates placing a condition on the SysOp Permit requiring the appropriation amount to be recalculated (and likely reduced) once PKR refills when the current drought ends and the WAM can be updated with the new drought of record data for PKR. Dow notes that it is critical that the "appropriation" amount be reduced, because if only the "divert and use" amount is reduced, then BRA would still be appropriating more water than is available to it, thereby reducing the likelihood that future applicants will have access to unappropriated water.[277]

2. Developments After the Record Closed

The evidentiary record in this case closed on May 18, 2015. Shortly thereafter, on May 26, 2015, heavy rains led to the complete filling of PKR and the end of the drought at the reservoir. In response, Dow filed a motion asking that the ALJs to take official notice of that fact.[278] The ED, BRA, and LGC all agreed that PKR has filled and the drought has ended, and did not object to the taking of official notice of same.[279] In Order No. 34, issued on July 7, 2015, the ALJs took official notice that PKR "has refilled, thereby ending the drought that was ongoing when the record in this case closed."

In light of this new development, the ED and BRA suggest that the language they propose adding to the WMP needs tweaking. The language the ED and BRA proposed at the Second Hearing (which is quoted above) would have required BRA to submit to the TCEQ a report on the impacts of the PKR drought "within nine months after Lake Possum Kingdom

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[276] Dow Ex. 47 at 27–28; Dow Ex. 57 at 11.

[277] Dow 2nd Initial Brief at 42–45; Dow 2nd Reply Brief at 26.

[278] Dow's Motion to Take Official Notice (Jun. 29, 2015).

[279] ED's Response to Dow's Motion to Take Official Notice (Jul. 6, 2015); BRA's Response to Dow's Motion to Take Official Notice (Jul. 6, 2015); LGC's Response to Dow's Motion to Take Official Notice (Jul. 6, 2015).

refills." Because PKR has now already refilled but the SysOp Permit has not yet been issued and will not likely be issued for several more months, BRA and the ED agree that revised language in the WMP should require BRA to submit to the TCEQ a report on the impacts of the PKR drought "within nine months after the [SysOp] permit is issued."[280]

3. The ALJs' Analysis

The ALJs agree with the assessment of BRA's legal counsel—the new drought of record in PKR raises a "hard, legitimate issue" that "impacts the hydrology" of the SysOp Permit. The record in this case establishes the following facts by a preponderance of the evidence:

- The portion of the Brazos River Basin that flows into and includes PKR until very recently was in a new drought of record;
- PKR is by far the largest and most significant reservoir in the BRA System;
- Through the date of the Second Hearing, the new drought of record for PKR had reduced the firm yield from PKR by at least roughly 100,000 acre-feet per year, and the size of the reduction continued to increase until the drought ended;
- It could not be determined at the time of the Second Hearing whether the entire Brazos River Basin was in a new drought of record or whether the yield of the SysOp Permit had been reduced by the new drought of record in PKR; and
- Although the full effects of the new drought of record on the SysOp Permit cannot accurately be understood until a detailed assessment of the drought can be performed, it is possible that the effects will reduce the amount of water available for appropriation by the permit.

The ALJs agree with BRA and the ED that, as a practical matter, the SysOp Permit Application cannot be placed on indefinite hold until the drought is over and its effects, if any, are assessed. On the other hand, it is BRA's burden to prove the amount of water that is available for appropriation and it is undisputed that the new drought of record at least has the potential to reduce the available amount. As a matter of law, BRA cannot be issued a permit to

[280] ED's Response to Dow's Motion to Take Official Notice at 2; BRA's Response to Dow's Motion to Take Official Notice at 2.

appropriate more water than is available to it. BRA and the ED contend that the risk of over-appropriation is ameliorated by the special provision requiring BRA to study the drought after it ends. The ALJs are not convinced. The special provision merely requires BRA to study the issue; it does not require any action in response to the study.

By all appearances, BRA finds itself in unusual circumstances. It is applying for an appropriation amount based upon WAM modeling that might be out-of-date because it does not include new drought of record data. In other words, it is known that the appropriation amount sought **might** be overstated based on an ongoing drought in the basin. The evidence in the record indicates that there has been only one other incident involving similar circumstances since issuance of the *Stacy Dam* opinion—when a WMP was submitted for review by the LCRA. In that case, the ED considered the problem sufficiently serious to warrant delaying review of the WMP until the end of the drought. Because the SysOp Permit has been pending for 11 years, two evidentiary hearing have already been held, and the evidentiary record has already closed, the ALJs do not have the luxury of mandating yet another delay in the processing of the SysOp Permit Application. Nevertheless, the ALJs believe that the risks posed by the new drought of record need to be addressed in the SysOp Permit in a meaningful way.

For these reasons, the ALJs conclude that Dow offers the most reasonable and appropriate method for addressing the risks created by the new drought of record. Consistent with Dow's proposal, the ALJs recommend: (1) the Commission issue the SysOp Permit now without a new drought of record-based reduction to the appropriation amounts; (2) the special provision recommended by the ED (whereby BRA is to study the effects of the new drought within nine months of issuance of the permit) should not be added to the WMP, but to the Permit itself (specifically as a new Special Condition C.7); and (3) an additional sentence should be added at the end of Special Condition C.7 specifying that, if the results of the BRA study indicate that a new drought of record has decreased the amount of water available for the SysOp Permit, then the appropriation amounts specified in Section 1.A of the Permit shall be correspondingly decreased. The specific language proposed by the ALJs is found in Section XXVIII of this PFD, dealing with Additional Permit Changes Proposed by Parties.

G. Junior Refills

A water right applicant must show that there is sufficient unappropriated water available for appropriation in the source of supply,[281] and the proposed appropriation will not impair existing water rights or vested riparian rights.[282] BRA acknowledges that refilling storage capacity in a reservoir with water at the priority date of BRA's existing water rights when that storage was emptied under the SysOp permit would violate the rights of the holders of water rights senior to the SysOp permit.[283] Accordingly, the Proposed Permit states as follows:

> Permittee may not exercise a priority call on water rights in the Brazos River Basin with priority dates senior to October 15, 2004, for purposes of refilling storage in Permittee's system reservoirs where Permittee's system reservoir storage was emptied by diversion of water under this permit.[284]

With slightly different wording and elaboration, the WMP reiterates this condition.[285]

Nevertheless, Dow contends that BRA failed to account for the effects of unauthorized junior refills of storage under its existing 1964 System Operation Order and the permit BRA seeks in this case. Dow claims these failures led BRA and the ED to overestimate the amount of unappropriated water available for appropriation to BRA. BRA and the ED disagree.

1. Dow's Arguments[286]

Dow claims properly accounting for junior refill is important in two distinct contexts:

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[281] Tex. Water Code § 11.134(b)(2).

[282] Tex. Water Code § 11.134(b)(3)(B).

[283] BRA Ex. 119 at 71.

[284] BRA Ex. 132A at 8, ¶ 5.C.2; BRA Ex. 132B at 8, ¶ 5.C.2.

[285] BRA Ex. 113, WMP Tech. Rep. at 5–13, § 5.4.6.2.

[286] Dow 2nd Initial Brief at 45–51; Dow 2nd Reply Brief at 27–31.

> (1) During operation, because refilling BRA's storage emptied under junior water rights with inflows only available at a senior priority date would impair water rights with priority dates senior to the Proposed Permit and the System Order,[287] and
>
> (2) During modeling to determine the amount of water available for appropriation, because refilling storage emptied under BRA's junior water rights with water only available at the priority date of BRA's senior water rights overstates the amount of available unappropriated water.[288]

Dow argues that BRA is relying on WMP modeling that allows the refilling of storage emptied by the SysOp Permit or under the 1964 System Operation Order to be refilled at the priority of the existing reservoir rights rather than the junior priority of the SysOp Permit.

Dr. Brandes agrees that BRA's Accounting Plan appears to preclude BRA from refilling storage emptied under the SysOp Permit at a senior priority.[289] He does not, however, believe that the Accounting Plan prevents BRA from refilling storage emptied under its 1964 System Operation Order with senior priority water.[290] Further, Dr. Brandes testified that the WAM used by BRA and the ED to assess water availability is not configured to prevent BRA from refilling storage emptied under the SysOp Permit and the 1964 System Operation Order with water only available at the priority date of BRA's existing reservoir water rights.[291]

Dr. Brandes presented a bar chart showing the maximum drawdown in PKR as simulated with BRA's Scenario 12 Firm Appropriation during selected drought periods and the corresponding diversions and/or releases in excess of BRA's existing water rights during the selected drought periods.[292] The volumes of depleted storage shown by the bars on the chart reflect values accumulated for the entire duration of the droughts shown, thus indicating that the

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[287] Dow Ex. 57 at 15.

[288] Dow Ex. 47 at 38.

[289] Dow Ex. 57 at 15.

[290] Dow Exs. 47 at 36, 57 at 15.

[291] Dow Ex. 47 at 38.

[292] Dow Ex. 55.

issue of refilling junior-priority storage is not related to a single time step during a WAM simulation but rather to the continuous operation of the model over multiple time steps during droughts. According to Dr. Brandes, this demonstrates that the junior priority refill simply is not correctly modeled in the WAM.[293]

According to Dr. Brandes, this modeling exercise suggests that substantial quantities of junior priority inflows would be available and used to refill the storage emptied under the SysOp Permit and/or the 1964 System Operation Order.[294] Dr. Brandes did not contend that his exercise demonstrates that the WAM does not properly refill storage at the correct priority date. It merely demonstrates, according to him, that during drought periods for PKR, as simulated with the models, there is a substantial portion of the storage that would be emptied under junior water rights.[295]

In his supplemental testimony, Dr. Brandes addressed the issue of junior refills in more depth.[296] He stated that "[t]he WAM appropriation model simulations, including the Scenario 9 Firm Appropriation model simulation that forms the basis for the appropriation in BRA's [Proposed Permit], do not address junior-priority refills for either the system order or the SysOp permit."[297]

Dr. Brandes also explained that it is important to properly account for junior refills in the WAM. He stated:

> The whole purpose of using the WAM to evaluate the amount of water available for appropriation is to make sure there is sufficient unappropriated water for a

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[293] Tr. at 3607.

[294] Dow Ex. 47 at 39.

[295] Dow Ex. 47 at 39.

[296] Dow Ex. 57 at 14–20.

[297] Dow Ex. 57 at 15. Dr. Brandes also states that the BRA SysOp Accounting Plan addresses junior refills associated with the Proposed Permit, but does not address junior refills associated with the 1964 System Operation Order at all. *See* Dow Ex. 57 at 15.

> proposed new water right. If there is not sufficient unappropriated water available for the appropriation authorized for the new water right, then the appropriation for the new water right will be based on water that is already appropriated by other existing water rights. This is likely happening with BRA's appropriation models because they do not properly account for the junior-priority refills of reservoir storage capacity.[298]

Dr. Brandes presented the step-by-step procedure used in the WAM dual simulation approach as applied by BRA to determine water availability.[299] According to Dr. Brandes, this step-by-step procedure demonstrates that the model logic can only address the junior refill issue within a model time step, and then not always to the extent necessary, and that after one time step is completed, any remaining unfilled junior-priority storage can be inappropriately refilled during a subsequent time step with water from BRA's senior water rights.

Dr. Brandes evaluated the WAM results for PKR as if the SysOp Permit was in operation during the 1950s drought as simulated with BRA's Appropriations model for Scenario 9.[300] He determined that approximately 175,000 acre-feet of senior-priority inflows to the reservoir during the drought were used improperly to refill junior-priority storage previously emptied during the simulation process to meet SysOp Permit demands. According to Dr. Brandes, these 175,000 acre-feet of inflows to PKR, if properly accounted for in the WAM, should have been passed downstream for use by other water rights.

According to Dow, Dr. Brandes's analysis clearly demonstrates that there is a problem with the dual-simulation process in the WAM for properly accounting for the refilling of junior-priority storage emptied by use of water under both the proposed SysOp Permit and BRA's 1964 System Operation Order. Dow claims that the modeling allows the use of senior-priority inflows rather than junior-priority inflows. Dow argues that neither BRA nor the ED controverted Dr. Brandes's testimony that the water availability modeling on which BRA's proposed

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[298] Dow Ex. 57 at 16.

[299] Dow Ex. 53.

[300] Dow Ex. 57 at 17–18.

appropriation is based improperly refills storage emptied by diversion and/or release of water under the 1964 System Operation Order or the Proposed Permit with water at the priority date of BRA's senior water rights.

2. BRA's Arguments[301]

While conceding that Dr. Brandes is well qualified and respected, BRA argues that other evidence discredits his conclusion that the WMP modeling allows the refilling of storage at other than the junior priority. BRA claims Dr. Brandes's analysis has at least three flaws:

> (1) It misconstrues provisions of the 1964 System Operation Order that are incorporated into BRA's existing reservoir permits as requiring refilling of storage capacity emptied under the order at a junior priority;[302]
>
> (2) It does not recognize that the WAM, as implemented in the WMP, refills storage capacity emptied at a junior priority with water at the same junior priority;[303] and
>
> (3) It fails to properly take into account evaporation and the availability of water to refill storage at a junior priority.[304]

According to BRA, Dr. Brandes misconstrued a provision of BRA's PKR water right[305] as requiring storage under a junior priority. Both Mr. Gooch and Dr. Alexander agreed that the provision does not impose a junior priority on water filling storage space emptied.[306] Instead, they claim it allows storage at the existing priority and makes the water so stored subject to release for downstream needs at TCEQ's direction.[307]

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[301] BRA 2nd Initial Brief at 22–23; BRA 2nd Reply Brief at 24–26.

[302] Tr. at 3138–39, 3690–91.

[303] Tr. at 3138–39, 3690–91.

[304] Tr. at 4165–68; BRA Exs. 151a, 151b, 151c.

[305] BRA Ex. 134 at 4, ¶ 5.J.

[306] Tr. at 3138–39, 3689–91.

[307] Tr. at 3138–39, 3689–91.

In BRA's view, Dr. Brandes's criticism does not go to the WAM runs developed in the WMP. Instead he applies the principles from BRA's proposed Accounting Plans,[308] which track storage emptied by the SysOp Permit and limit its refilling to the SysOp Permit's junior priority. So far as the WMP modeling is concerned, according to Mr. Gooch and Dr. Alexander, the WAM operates in such a fashion that water storage capacity emptied at the junior priority is refilled at the junior priority.[309]

BRA further contends that Dr. Brandes's exhibit tracks storage emptied in PKR during droughts as well as diversions and releases in excess of the PKR permit authorization during the same drought.[310] From this he concludes that excess diversions and releases are so large that storage emptied under the 1964 System Operation Order at a junior priority (according to Dr. Brandes) must have been refilled at the senior PKR priority.[311] Mr. Gooch analyzed the exhibit Dr. Brandes prepared and relied on[312] and concluded the exhibit had shortcomings.[313] First, by not accounting for evaporation properly, Dr. Brandes overstated the volume of storage that will be refilled at the SysOp Permit priority. Second, and most importantly, Dr. Brandes inferred that the storage emptied at a junior priority was being filled with water at a senior priority, but he did not actually analyze the availability of water to refill that storage at a junior priority. In all cases but one, according to Mr. Gooch, water was available to refill that storage at a junior priority.[314]

BRA suggests that Dr. Alexander and Mr. Gooch have considerably better credibility regarding the WMP's WAM modeling than does Dr. Brandes. BRA argues that Dr. Alexander likely knows the WAM better than any other expert because it is the primary tool she uses in a

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[308] BRA Ex. 113, WMP Tech. Rep. Apps. H, H-1, H-2.

[309] Tr. at 4156–59, 3691–92.

[310] Dow Ex. 55.

[311] Dow Ex. 47 at 38–39.

[312] Dow Ex. 55.

[313] BRA Exs. 151a, 151b, 151c.

[314] BRA Ex. 151c; Tr. at 4165–68.

job that she has been doing for 14 years.[315] Similarly, Mr. Gooch (like Dr. Brandes) is one of the state's leading consultants in the area of hydrology and water management.[316] More importantly, though, Dr. Gooch has been working on BRA's WMP and modeling intensely since 2012.

3. The ED's Arguments[317]

The ED also maintains that Dr. Brandes is incorrect when asserting the models allow refilling of the reservoirs at the reservoir permits' priority dates instead of the junior priority date. Dr. Alexander testified that the storage filled at the priority date of existing rights has not been emptied by the SysOp Permit.[318] The ED agrees with Mr. Gooch that the diversion of senior priority water is limited to the depletions available to the senior water rights, which has the effect of preventing the fill of extra storage emptied by diversions beyond senior priority rights at the senior diversions.[319]

Dr. Alexander also testified that the Accounting Plan included in the Application will preclude refilling at the senior water rights' dates. BRA will have to maintain a record of its diversions of run-of-river flows, reservoir inflows, and reservoir storage as part of its accounting.[320] The daily reservoir accounting will calculate inflow, assign diversions and downstream releases to either inflows or reservoir storage according to the procedures described in the plan, and calculate conditions under which water is being impounded under the SysOp Permit.[321]

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[315] ED Ex. R1 at 1–2; ED Ex. R2.

[316] BRA Ex. 15 at 3–8.

[317] ED 2nd Initial Brief at 7–9.

[318] Tr. at 3692.

[319] Tr. at 4266.

[320] Tr. at 3914.

[321] BRA Ex. 113 at 49.

4. ALJs' Analysis

Water availability modeling is so complex that the ALJs must rely almost entirely on the opinions of experts to determine whether the modeling was performed correctly. In this case, the modeling experts disagree. Mr. Gooch and Dr. Alexander testified that the modeling was performed correctly, and Dr. Brandes claimed it was not. All three are highly qualified and credible.

The ALJs must choose, based on the evidence, which expert to believe. They conclude that Dr. Alexander, who has worked with the model very intensely for many years to analyze water-availability questions for the Commission,[322] is most likely to be correct. She testified that the amount of unappropriated water that is required to refill the existing reservoirs due to diversions made under the SysOp Permit, is taken out of the WAM at the new priority date of the Application, October 15, 2004.[323]

As to Dr. Brandes's critique, Dr. Alexander testified that the WAM operates in such a fashion that water storage capacity emptied at the junior priority is refilled at the junior priority.[324] She also correctly noted that the special condition in BRA's PKR Permit does not impose a junior priority on water filling storage space emptied by the 1964 System Operation Order, as Dr. Brandes assumed.[325] In relevant part, the PKR permit states:

> [BRA] shall store in the system reservoirs only appropriable waters of the Brazos River and its tributaries, subject to the rights of holders of other water rights. Subsequent to the diversion or release of water from any system reservoir in excess of the amount authorized as a priority right for that reservoir, [BRA's] right to impound any additional water in that reservoir is subject to the rights of holders of downstream senior and junior water rights to require passage of inflows to which they would be entitled in the absence of this additional use under the

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[322] ED Ex. KA-1 at 1–8; ED Ex. KA-2; ED Ex. R1 at 1–2.

[323] Tr. at 3961.

[324] Tr. at 3691–92.

[325] Tr. at 3690–91.

> systems operations. Whenever the Commission determines that [BRA] is storing any water to which holders of other water rights are entitled, [BRA] shall release said water.[326]

The ALJs see nothing in that PKR permit provision imposing a junior priority on water stored to refill capacity created when BRA exercises its water right. Instead, the provision recognizes that water stored during refilling is subject to, thus stored for, downstream **senior** water rights, and TCEQ may order BRA to release the water to the holders of those senior rights.

The ALJs conclude that the water availability analysis is correct, and does not allow unauthorized junior refill of storage under the 1964 System Operation Order and/or SysOp Permit, as Dow alleges.

H. Impairment of Existing Water Rights

BRA and the ED contend that no existing water rights would be impaired if the Application is granted. Dow contends that its existing water rights would be impaired due to increases in salinity if BRA's application is granted. Dow and Chisholm also argue that existing water rights could be impaired unless the permit granted to BRA requires the continued existence of a watermaster. FBR argues that granting the permit would impair BRA's own, existing water rights.

The ALJs conclude that no existing water rights will be impaired if BRA's request for a permit is granted as proposed by the ALJs. The arguments concerning salinity and impairment of BRA's own water rights are considered immediately below. The claims that a watermaster should be required are separately considered and rejected later in the PFD.

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[326] BRA Ex. 134 at 4, ¶ 5.J.

1. Salinity

Dow and FBR make several arguments concerning the impact that granting the permit to BRA would have on salinity in the Brazos River Basin.[327] They contend that BRA and the ED failed to fully assess the impact on salinity. FBR mostly focuses on salinity in the portion of the Brazos River Basin above PKR (Upper Basin) and complains that there is no evidence concerning the impact on salinity there. Dow is mostly concerned about salinity in the area of the Brazos River Basin from PKR to the Gulf of Mexico (Lower Basin), where it holds water rights. Dow claims BRA is required but has failed to show that water salinity at Dow's diversion points would not rise to unusable levels. In fact, Dow contends that BRA's operation under the Proposed Permit may adversely impact salinity, and Dow asks for a stream flow restriction to mitigate that impact.

These salinity arguments concern possible impairment of existing water rights and quality, and the public interest and welfare. Because these salinity arguments are extremely intertwined, the ALJs consider all of them here.

a. Dow's Water Rights and Concerns

Dow's 1929 water right is senior to all of BRA's water rights. Dow's 1942 and 1960 water rights are senior to all of BRA's water rights except those associated with PKR. The following table summarizes Dow's and BRA's water rights:

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[327] Dow 1st Initial Brief at 25–45; Dow 2nd Initial Brief at 65; FBR's 1st Initial Brief at 36–39.

BRA'S AND DOW'S WATER RIGHTS[328]			
Permit or COA No.	**Location**	**Diversion Amount** (acre-feet)	**Priority Date**
DOW 12-5328	Brazos River	20,000	2/28/1929
BRA 12-5155	PKR	230,750	4/6/1938
BRA 5730	Interbasin Transfer in Williamson County	25,000	3/7/1938
DOW 12-5328	Brazos River; Harris Reservoir	150,000	2/14/1942
DOW 12-5328	Brazoria Reservoir		4/7/1952
DOW 12-5328/(BRA 12-5366)	Brazos River	65,000	4/4/1960
BRA 12-5159	Lake Proctor	19,658	12/16/1963
BRA 12-5160	Lake Belton	100,257	12/16/1963
BRA 12-5161	Lake Stillhouse Hollow	67,768	12/16/1963
BRA 12-5164	Lake Somerville	48,000	12/16/1963
BRA 12-5156	Lake Granbury	64,712	2/13/1964
BRA 12-5162	Lake Georgetown	12,610	2/12/1968
BRA 12-5163	Lake Granger	19,840	2/12/1968
BRA 12-5165	Lake Limestone	65,074	5/6/1974
DOW 12-5328	Brazos River	3,136	3/8/1976
BRA 12-5158	Lake Aquilla	13,896	10/25/1976
BRA 12-5159	Lake Whitney	18,336	8/30/1982
BRA 2925A	Allens Creek[329]	99,650	9/1/1999
BRA 12-5167/2661 (as amended)	Interbasin Transfer, Fort Bend County	170,000	None
BRA 12-5166/2947 (as amended)	Excess Flows	650,000	None

Chloride refers to the chloride ion which combines with cations to form substances such as potassium chloride and sodium chloride, which are salts.[330] Dow's witness, David Dunn, testified that the total dissolved solids (TDS) in natural water are largely comprised of salts, so the terms salinity and TDS are used interchangeably.[331] The parties and witnesses have not

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[328] Dow Ex. 3; BRA's water rights officially noticed by Order No. 7 (CD). BRA also has a 1964 System Operation Order, as amended, which covers PKR, Granbury, Proctor, Belton, Stillhouse Hollow, Somerville, Georgetown, Granger, Limestone, Aquilla, and Whitney.

[329] BRA, the City of Houston, and TWDB are co-owners of the ACR water right.

[330] Dow Ex. 15A at 4.

[331] Dow Ex. 15A at 4.

always made fine distinctions and frequently have used the terms TDS, salts, chlorides, and salinity interchangeably. Similarly, the ALJs will use the terms interchangeably unless greater specificity is required.

Primarily, Dow is concerned that the SysOp Permit would adversely affect chloride and TDS levels in the Brazos River near Dow's diversion points.[332] Dow's main diversion points are the Harris Reservoir, the Brazoria Reservoir, and their diversion works.[333] All of BRA's reservoirs are upstream of the diversion points for Dow's water rights.[334]

High salinity in water can have drastically negative effects on the industrial and municipal uses of water in the Freeport, Texas area where Dow's facilities are located.[335] Chloride in particular can be very damaging to industrial equipment. Damage to that equipment from elevated chlorides can amount to millions of dollars.[336] Not treating for chloride when chloride concentrations in the river are high results in failure and corrosion of Dow's equipment.[337]

BRA does not dispute Dow's evidence that elevated levels of TDS and chlorides in diverted water can harm Dow's industrial operations. Instead, BRA argues that the salinity levels in the Brazos River occur naturally, BRA's reservoir operations have not caused them, and its operations under the SysOp Permit would not increase salinity significantly, if at all.

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[332] Dow Ex. 1 at 16–18.

[333] Dow Ex. 1 at 4–6.

[334] BRA Ex. 20.

[335] Dow Ex. 1 at 17–18.

[336] Dow Ex. 1 at 18.

[337] Dow Ex. 1 at 17–18.

b. No Specific Water Quality Terms in Dow's Water Rights

Dow proposes that a new special condition be added to the Proposed Permit that would prohibit operations under it when chloride concentrations exceed 250 milligrams per liter (mg/L) and TDS exceeds 500 mg/L at the Richmond gage.[338] Dow is effectively claiming that it is entitled to water of that quality or better 100% of the time.

Dow's most senior water right, COA No. 12-5328,[339] provides no support for Dow's claim that it has a right to 250 mg/L-chloride and 500 mg/L-TDS water 100% of the time. In fact, there is no evidence that any of Dow's water rights includes a specific provision entitling Dow to water of that quality. Salinity, TDS, and chlorides are not mentioned in the certificate, nor does it specifically mention any other water quality criteria or contain other quality related provisions.

c. Legally-Mandated Water Quality for Water Rights

During and after the First Hearing, BRA claimed that it had no legal obligation to address these salinity arguments. BRA maintained that Dow's claim that a water right holder has a right to a certain quality of water was legally incorrect. BRA also claimed that Dow—and presumably FBR, as well—was incorrectly conflating the concept of water quality with salinity, chlorides and TDS in a water right permitting context.[340] In the First PFD, the ALJs disagreed with these legal arguments by BRA, and BRA has not pressed them since.

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[338] Dow 1st Initial Brief at 48–49, 51.

[339] Dow Ex. 3.

[340] BRA 1st Initial Brief at 40–41; BRA 1st Reply Brief at 30–32.

In their briefs after the First Hearing, Dow and BRA discussed *Hale v. Colorado River Municipal Water District*[341] and other cases from Texas[342] and other jurisdictions.[343] They argued over whether the case law supported Dow's position that its senior water rights entitled it to a certain quality of water. In *Hale*, the court reversed a lower court's summary judgement denying a claim that a water district had unconstitutionally taken property by intentionally releasing highly saline water that damaged a downstream irrigator's crop. The court said, "Texas courts have consistently held that a landowner's riparian rights may involve not only the quantity of a stream flow, but also the quality."[344]

BRA claims that no Texas case law identified by Dow or found by BRA has upheld the right of a senior appropriator to divert water of a certain quality and to hold another entity responsible to prevent a naturally occurring condition such as salinity from affecting that water quality.[345] It is true that *Hale* did not hold that. Moreover, BRA seems, at least in part, to be discounting *Hale* because it involved a riparian water right holder. However, the court in *Hale* noted that the plaintiff also held a permit from the Texas Water Commission.[346] In any event, neither *Hale* nor any of the cases that Dow cites held that a water right holder has a right to a specific quality of water.

However, the Commission has adopted the "No Injury" Rule, which states:

> (a) The granting of an application for a new water right or an amended water right shall not cause an adverse impact to an existing water right as provided by this section. . . . For the purposes of this section, **adverse impact to another**

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[341] 818 S.W.2d 537 (Tex. App. – Austin 1991, no writ).

[342] *Bigham Bros. v. Port Arthur Canal & Dock Co.*, 97 S.W. 686 (Tex. 1906); *Houston Transp. Co. v. San Jacinto Rice Co.*, 163 S.W. 1023 (Tex. Civ. App.—El Paso 1914, no writ); *Biggs v. Lee*, 147 S.W. 709 (Tex. Civ. App.—El Paso 1912, writ dism'd w.o.j.).

[343] *United States v. Gila Valley Irrigation Dist.*, 920 F. Supp. 1444, 1448 (D. Ariz. 1996); *Wright v. Best*, 19 Cal.2d 368, 378, 121 P.2d 702, 709 (1942).

[344] *Hale*, 818 S.W.2d at 541.

[345] BRA 1st Reply Brief at 31.

[346] *Hale*, 818 S.W.2d at 540.

> **appropriator includes: the possibility of depriving an appropriator of the equivalent** quantity or **quality of water that was available with the full, legal exercise of the existing water right before the change** . . . .
>
> . . . .
>
> (d) The burden of proving that no adverse impact to other water right holders or the environment will result from the approval of the application is on the applicant.[347]

In the adoption preamble, the Commission stated that it adopted the "No Injury" Rule "pursuant to Texas Water Code § 11.134(b)(3)(B) providing that an application may not be approved if it would impair an existing water right or vested riparian right . . . ."[348] Section 11.134(b)(3)(B) does not specifically refer to the impairment of water *quality*. Instead, it says, "the commission shall grant the application only if . . . the proposed appropriation . . . does not impair existing water rights." Thus, the Commission either recognized that a senior appropriator had a pre-existing legal right to quality water or it chose to extend such a right.

Additionally, the Commission has adopted 30 Texas Administrative Code § 297.54(a), which concerns assessment of the water quality impact of a proposed water right and provides in part:

> Assessment of water quality impacts shall consider the maintenance of State of Texas Surface Water Quality Standards provided by Chapter 307 of this title (relating to Texas Surface Water Quality Standards) and the need for all existing instream flows to be passed up to that amount necessary to maintain the water quality standards for the affected stream. . . .

The Commission's water quality standards (WQS) state: "Concentrations and the relative ratios of dissolved minerals such as chlorides, sulfates, and total dissolved solids must be maintained such that existing, designated, presumed, and attainable uses are not impaired."[349]

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[347] 30 Tex. Admin. Code § 297.45 (emphasis added).

[348] 24 Tex. Reg. 1166 (Feb. 19, 1999).

[349] 30 Tex. Admin. Code § 307.4(g)(1).

The WQS include maximum levels for chlorides and TDS for classified segments, including the following Brazos River Basin segments pertinent to this case:[350]

Segment No.	Segment Name	Chlorides (mg/l)	TDS (mg/l)
1202	Brazos River Below Navasota River	300	750
1203	Whitney Lake	670	1,500
1204	Brazos River Below Lake Granbury	750	1,600
1205	Lake Granbury	1,000	2,500
1206	Brazos River Below Possum Kingdom Lake	1,036	2,325

Segment 1202 includes the Richmond gage and Dow's Harris diversion point. Dow's Brazoria diversion point is just south of the line separating Segment 1201 from 1202.[351] The Commission has not set specific criteria for chlorides and TDS in Segment 1201; however, the typical TDS in tidal segments, like Segment 1201, is 2,000 mg/L or greater.[352]

d. Permit Will Not Cause Violation of WQS

The Commission has recently adopted environmental flow standards for surface water.[353] These are considered at length later in the PFD. There the ALJs conclude, as a matter of law, that issuing a water right permit that complies with those standards will maintain water quality while considering all public interests. Accordingly, the ALJs also conclude that BRA's compliance with the environmental flow standards will maintain the WQS for chlorides and TDS for classified segments in the Brazos River Basin. Moreover, the evidence shows that salinity levels, specifically for chlorides and TDS, would not rise above the Commission's WQS due to

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[350] 30 Tex. Admin. Code §§ 307.4(g)(2), .10(1), App. A. *See* Dow Ex. 30.

[351] Tr. at 1500, 1876; *see also,* 30 Tex. Admin. Code § 307.10(3), App. C – Segment descriptions. Segment 1201 Brazos River Tidal runs from the confluence with the Gulf in Brazoria County to a point 100 meters (110 yards) upstream of State Highway 332 in Brazoria County.

[352] 30 Tex. Admin. Code § 307.3(a)(50) (defining "Saltwater") and 30 Tex. Admin. Code § 307.3(a)(69) (defining "Tidal" and indicating tidal waters are considered to be saltwater).

[353] 30 Tex. Admin. Code ch. 298.

BRA's operation under the Proposed Permit. Thus, the ALJs conclude that approval of the SysOp Permit would not alter salinity in the Brazos River Basin to an extent that was detrimental to the public welfare, impaired water quality, or impaired senior water rights, including Dow's.

The salinity of the Brazos River is naturally occurring, from outcrops of salt in the Upper Basin.[354] The natural salt load in the river is a function of rainfall and water moving down the river at various locations; BRA does nothing to increase that natural salt load.[355] FBR and Dow do not dispute these points. Instead, they contend that BRA's withdrawal of water will, or at least may, increase the concentration of salts in the remaining water in the Brazos River Basin.

BRA quite reasonably contends that the proportion of the Brazos River Basin's drainage area above Lake Whitney, and the significant uncontrolled drainage area downstream of all BRA reservoirs, substantially limit BRA's degree of control over salinity conditions.[356] Additionally, hydroelectric and flood flow releases, which BRA does not control, play a major role in salinity conditions in the Brazos River.[357] These large "hydro" releases from Lake Whitney have a demonstrated correlation with the chloride levels at Dow's Harris diversion point. Conversely, BRA's data on water supply releases (from tributary reservoirs versus the higher salinity Lake Whitney) do not show a correlation with the downstream salinity levels.[358]

According to BRA, the salinity levels in the Brazos River Basin are not caused by and cannot be cured by BRA's reservoir operations. BRA contends that it takes salinity implications into consideration when reasonably feasible, for example when making releases for downstream customers.[359]

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[354] Tr. at 2243–44; ED Ex. DG-1 at 5.

[355] Tr. at 2244.

[356] Tr. at 2246–48, 2380; BRA Ex. 81.

[357] Tr. at 1905, 2248, 2254–57; BRA Ex. 82.

[358] Tr. at 2260–62; BRA Ex. 83.

[359] Tr. at 2245, 2263–65; BRA Ex. 84.

Dr. Ralph Wurbs is a professor of civil engineering at Texas A&M University. He has taught engineering courses in water resources and hydrology for more than 30 years. Much of his research over the years has been funded by, among others, BRA, the TCEQ, and the Texas Water Development Board. Since 1986, Dr. Wurbs has been the primary developer of the WRAP modeling system, which is a suite of computer models that process the TCEQ's WAM. He is a published author on water rights issues in Texas.[360] Dr. Wurbs served as a water availability modeling consultant to BRA on the Application, and testified on BRA's behalf.[361] Dr. Wurbs testified:

> My conclusion is basically that the system operation permit will have very little impact on salinity in the Lower Brazos, and it may actually help. . . . There's [sic] multiple factors. . . . Some of them make the salinity go a little bit up, some a little bit down, but the little increments are so small that it sort of gets lost that there's not much change. If you sort of run the model and look at it, there's really not much change due to these operating scenarios.[362]

Another BRA witness, Tim Osting, P.E., also concluded that operations under the SysOp Permit will not impact the attainment of chloride or TDS standards that have been historically observed in the Brazos River Basin.[363] Records from 1992 through 2014 show that water quality attainment for chlorides and TDS has varied between "supporting" and "non-supporting" in many segments of the Brazos River Basin because of natural sources of chlorides in the upper basin.[364]

Dow's expert, Mr. Dunn, presented an operational-flexibility hypothetical.[365] Mr. Dunn compared scenarios that he referred to as "With and Without System Operation Permit," or

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[360] BRA Ex. 27 at 2-14.

[361] BRA Ex. 27 at 15.

[362] Tr. at 675, 685–87.

[363] BRA Ex. 128 at 50–51.

[364] BRA Ex. 128 at 50–51.

[365] Dow Ex. 18A.

"With SysOp" and "Without SysOp." From that study, Mr. Dunn concluded that BRA's operation under the requested permit would increase:

- The average percentage of flow at the Richmond gage that originates from Lake Whitney;
- The average TDS and chloride concentrations at Richmond;
- The average TDS and chloride concentrations to a more severe degree during drought periods;
- The percent of time that TDS and chloride concentrations would exceed 625 mg/L and 200 mg/L, respectively; and
- The number of consecutive monthly periods in which the TDS and chloride concentrations would exceed 625 mg/L and 200 mg/L, respectively.[366]

Much of Mr. Dunn's study is based on facts that are undisputed. Salinity is a naturally occurring condition in the upper reaches of the main stem of the Brazos River. That leads to high concentrations of salts in the Possum Kingdom, Granbury, and Whitney reservoirs. Because Whitney is downstream of those other two reservoirs and water in it is so saline, releases from it account for a very high percentage of the TDS and chloride downstream at the Richmond gage, near where Dow diverts.[367] A 2009 report by BRA's expert, Dr. Wurbs, notes those and related facts and conclusions.[368]

For both his "With SysOp" and "Without SysOp" modelings, Mr. Dunn assumed that all reservoirs are full, water is diverted at the fully authorized amounts, and there are no return flows. For his Without SysOp modeling, Mr. Dunn assumed all authorized diversions are diverted lakeside at their respective reservoir locations. For the With SysOp modeling, however, he assumed that all of those currently authorized diversions plus the additional diversions for

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[366] Dow Ex. 18A at 7.

[367] Dow Ex. 18A at 1–5.

[368] Dow Ex. 34.

which BRA seeks authorization in the Proposed Permit would occur at Richmond.[369] That last assumption is vigorously disputed by BRA.

BRA's expert, Mr. Gooch, responded that there was a flaw inherent in Mr. Dunn's "With SysOp" analysis that led to an over-prediction of TDS and chloride concentrations at Richmond.[370] For the Without SysOp modeling, Mr. Dunn assumed that all upstream water diversions would occur as they currently do. That means that he assumed that the 7.6 million tons of chlorides and 21.7 million tons of TDS, which naturally occur in that diverted water in the Upper Basin, would continue to be removed from Possum Kingdom, Granbury, and Whitney, combined.

Yet for his With SysOp modeling, Mr. Dunn assumed that all of the current diversions from those upstream lakes would cease. That means that those additional millions of tons of chlorides and TDS were modeled as if they would flow to the Lower Basin. Mr. Gooch testified that, if the Proposed Permit is issued, the current upstream diversions will not cease and nothing in BRA's Application would change those diversions.[371] Moreover, Dr. Wurbs testified that those upstream diversions are to municipalities who use the water then put it back into the Brazos River as "return flow [which] goes down the river, and it is good quality that's helping during the low flow—it's helping lower concentrations during the low-flow period."[372]

The ALJs assign little evidentiary weight to Mr. Dunn's With SysOp modeling because it makes unrealistic assumptions. It is true that the operational flexibility provision in the Proposed Permit would give BRA the right to use any source of water available to it to satisfy the diversion requirements of senior water rights, like Dow's, to the same extent that those rights would have been satisfied by passing inflows on a priority basis through BRA's reservoirs.[373]

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[369] Dow Ex. 18A at 6.

[370] Tr. at 2371–73, 2667–68; BRA Ex. 97.

[371] Tr. at 2371–73, 2667–68; BRA Ex. 97.

[372] Tr. at 686.

[373] ED Ex. K2 at 16–17; BRA Ex. 8B at 11.

That would allow BRA to treat water as a fungible commodity and use any of its stored supplies to ensure that senior water rights are satisfied. But no evidence indicates that BRA would cease diverting water from Possum Kingdom, Granbury, and Whitney for its upstream customers and thereby dramatically increase the salinity of the water flowing downstream to Dow.

Even if Mr. Dunn's With SysOp modeling were based on reasonable assumptions, it does not indicate that the WQS for chlorides would be violated at Richmond in Segment 1202. The WQS for Segment 1202 are 300 mg/L for chlorides and 750 mg/L for TDS.[374] Mr. Dunn's With SysOp study predicted that chlorides would never rise above the 300 mg/l standard.[375] Mr. Gooch sponsored an exhibit comparing the WQS for chlorides to the concentrations at the Richmond gage that Mr. Dunn's study predicted With SysOp and Without SysOp.[376] Based on historical flow data, Mr. Dunn's modeling indicates that chloride concentrations would be significantly **lower** with SysOp than without SysOp. In the 17 years with the worst historical water quality, the concentrations would be better if the SysOp Permit were issued.

On the other hand, Mr. Dunn's study predicted that TDS concentrations would rise above the 750 mg/l WQS at Richmond 5% of the time. Additionally, in 10% of the simulation periods with the lowest naturalized flows, Mr. Dunn's study predicted that TDS concentrations would rise above 750 mg/l nearly 20% of the time. Without the approval of the SysOp Permit, he predicted that TDS would never rise above 750 mg/l.[377] Dow attaches high importance to the possibility of even a short-term rise in TDS, which could have a detrimental effect on its equipment, operations, and costs.[378] However, as indicated above, these predictions are based on the unrealistic assumption that upstream diversions would cease, leaving more TDS to float downstream toward Dow. That assumption is not reasonable.

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[374] 30 Tex. Admin. Code §§ 307.4(g)(2), .10(1), App. A. *See* Dow Ex. 30.

[375] Dow Ex. 18A at 12–13.

[376] BRA Ex. 98; Tr. at 2374–75.

[377] Dow Ex. 18A at 12–13.

[378] Dow Ex. 1 at 18.

The ALJs find that the evidence discussed above is sufficient to assess the impact of BRA's requested permit on salinity in the Brazos River Basin, and it shows that the Commission's WQS for salinity, including TDS and chlorides, will not be violated due to BRA's operation under the SysOp Permit.

Even if the WQS for TDS and chlorides would not be violated, Dow claims that it is entitled to even higher quality of water to avoid impairment of its senior water rights. The ALJs disagree. In its General Policy Statement explaining the purpose of its WQS rules,[379] the Commission stated:

> It is the policy of this state and the purpose of this chapter to maintain the quality of water in the state consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life, operation of existing industries, and taking into consideration economic development of the state; to encourage and promote development and use of regional and area-wide wastewater collection, treatment, and disposal systems to serve the wastewater disposal needs of the citizens of the state; and to require the use of all reasonable methods to implement this policy.[380]

Given that extremely broad statement, the Commission clearly concluded that the WQS were protective of a wide range of uses, interests, rights, concerns, and the public welfare. Based on that, the ALJs conclude that the WQS are protective of water rights.

Based on the above, the ALJs conclude that BRA's operation under the SysOp Permit would not increase salinity to levels that would impair water quality or existing water rights and would not be detrimental to the public welfare.

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[379] 30 Tex. Admin. Code ch. 307.

[380] 30 Tex. Admin. Code § 307.1.

2. Other Impairment Arguments

FBR argues that granting the permit would impair BRA's own, existing water rights. The ALJs disagree and further conclude that no existing water rights would be impaired if the permit is granted to BRA.

a. The ED's Arguments[381]

The ED maintains that no existing water rights, including BRA's, will be impaired because in calculating that water is available for BRA's Application, the WAM protected the full permitted amount of all existing permits at their locations and priority dates. Dr. Alexander testified that she performed water availability modeling using TCEQ's WAM for the Brazos River Basin and found that approximately 1,001,449 acre feet of non-firm water were available on a non-firm basis at the Gulf.[382] This amount of water is required for this Application because, along with the increased diversions, the amount of water to refill the reservoirs that release water under the system operation must be taken out of the remaining unappropriated water in the WAM.[383] The amount of unappropriated water that is required to refill these existing reservoirs due to diversions made under the system operation, is taken out of the WAM at the new priority date of the Application, October 15, 2004.[384] Dr. Alexander further concluded that there will be no impact on senior water rights because the new water can only be taken at a junior priority date and BRA's Accounting Plan protects senior water rights.[385]

According to the ED, parties arguing that the ED has failed to protect existing water rights at their existing priority dates are incorrect. Dr. Alexander testified that the water availability analysis she performed included all of BRA's existing water rights, at their locations,

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[381] ED 2nd Initial Brief at 13–14.

[382] ED Ex. R1 at 4.

[383] Tr. at 3961–62.

[384] Tr. at 3961.

[385] ED Ex. R3 at 14.

and at their priority dates.[386] Therefore, according to the ED, the analysis fully protects those water rights. Dr. Alexander testified that in the WAM, once BRA's existing water rights are exercised at their existing locations and at their full authorized amounts, BRA can use that water in accordance with the terms and conditions of its permits.[387]

b. FBR's Arguments[388]

FBR contends that BRA seeks to rely on water that is already permitted to achieve the appropriation amounts it requests in this case. According to FBR, BRA's appropriation model, which was used to support the 516,995 acre-feet appropriation request, does not assume full exercise of BRA's existing water rights. Consequently, FBR claims that granting the SysOp Permit would run afoul of the decision by the Supreme Court of Texas in the *Stacy Dam* case.[389]

FBR's expert, Joe Trungale, testified that the ED's modeling results "indicate that the exercise of the new System Operation Permit would significantly impact the reliability of BRA's existing water rights, essentially stealing water from existing water rights to satisfy the new appropriation in the System Operations permit."[390]

FBR notes that Scenario 9 corresponds to the maximum diversion amount—516,995 acre-feet per year[391] and the diversion amount included in BRA's Proposed Permit.[392] According to FBR, Scenario 9 produces the greatest increase of water available for the SysOp Permit—329,109 acre-feet of firm water—by assuming maximum diversions up to 516,995 acre-feet of non-firm water under the SysOp Permit. FBR claims that when the 329,109 acre-feet per

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[386] ED Ex. R1 at 5.

[387] ED Ex. R1 at 6.

[388] FBR 2nd Initial Brief at 31–36; FBR 2nd Reply Brief at 12–14.

[389] *Stacy Dam*, 689 S.W.2d 873.

[390] FBR Ex. 16 at 10.

[391] BRA Ex. 113, WMP at 10, WMP Tech. Rep.at 2–39.

[392] BRA Ex. 132B at 4, ¶ 1.A.

year is added to BRA's existing water rights—761,551 acre-feet, assuming ACR is built—the total amount of water available from the BRA system operation would be 1,090,660 acre-feet. According to FBR, this could be stated another way:

- BRA must divert up to 516,995 acre-feet of non-firm water (which is the maximum diversion amount that was available in the wettest year of the 57-year historical period);[393]
- To produce 329,109 acre-feet of additional firm water from the system operation;[394]
- Which totals 1,090,660 acre-feet of firm water available from the entire system (761,551 in existing water rights and 329,109 in firm new water from the SysOp Permit).[395]

To achieve the 329,109 acre-feet increase of firm water, via the SysOp Permit, FBR contends BRA must reduce the amount of water it derives from its existing water rights.

FBR also points to Scenario 12 and claims it better illustrates this phenomenon because BRA's WMP provides additional detail about water availability during the 57-year historical period for Scenario 12.[396] Under Scenario 12 for the historical period 1940 through 1997, the maximum diversion amount of non-firm SysOp water, 482,035 acre-feet, would occur in 1973.[397] BRA claims that under Scenario 12, a total of 1,086,365 acre-feet is available from the system, which is the total of BRA's existing water rights (761,551 acre-feet) plus the increase in water supply due to the SysOp permit (324,814 acre-feet).

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[393] BRA Ex. 113, WMP Tech. Rep. at 2–39. Note that this does not take into account the maximum diversion amounts by reach, which are reflected in App. G-3 of the WMP.

[394] BRA Ex. 113, WMP Tech. Rep. at 2–44.

[395] BRA Ex. 113, WMP Tech. Rep. at 2–44.

[396] BRA Ex. 113 at 2-38.

[397] BRA Ex. 113, WMP Tech. Rep. 2–38. When describing modeling results, hydrologists frequently and confusingly speak of a certain amount of water having been diverted in a specified year in the past. By this they mean the amount that the model predicts could be diverted in a future year having the same conditions as the specified past year. Tr. at 3153. To reduce confusion, the ALJs have rephrased some evidence to eliminate references to the past and substitute future predictions.

According to FBR, BRA is assumed to have diverted only 661,901 acre-feet from its existing water rights in a year like 1973, which is **less than** BRA's total authorized appropriation under its existing water rights, 761,551 acre-feet. In other words, according to FBR, to make use of the maximum diversion amount under the SysOp Permit—482,035 acre-feet in 1973, for Scenario 12—BRA could not exercise the full amount of its existing water rights. It would have to use about 100,000 acre-feet **less than** the authorized appropriation amount under those existing water rights, even though those water rights have not been cancelled or reduced.

Mr. Trungale testified that the same water would be "doubly appropriated under two separate permits"[398] if the SysOp Permit were issued. He claimed the same water "is used to meet the appropriation under the existing permits and that same water is used to meet the appropriation that has been sought under this new [SysOp] permit."[399] According to FBR, this is contravenes the holding in the *Stacy Dam* decision.

In sum, FBR claims that BRA has failed to prove that the 516,995 acre-feet that it proposes for appropriation are available, assuming full exercise of its existing water rights. Because BRA has not assumed full exercise of its existing water rights and has not curtailed them, FBR argues that BRA would retain the right to divert 761,551 acre feet per year under its existing priority water rights and be authorized to divert an additional 516,995 acre feet per year under its new SysOp Permit. These authorizations would allow for the total authorized diversion amount of 1,278,546 acre feet every year, and this amount is not supported by any of BRA's models,[400] according to FBR.

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[398] Tr. at 3494; *see also* Tr. at 3490.

[399] Tr. at 3528.

[400] *See* FBR Ex. 16 at 21–22 for a similar discussion regarding Scenario 3.

c. BRA's Arguments

In response to FBR's argument that the *Stacy Dam* case requires full utilization of BRA's existing rights in the determination of water availability, BRA responds that in the context of WAM modeling, BRA's existing rights are fully utilized. Both Dr. Alexander and Mr. Gooch testified that in the WAM modeling BRA's existing rights are fully utilized.[401] BRA contends that FBR is incorrectly attempting to apply the *Stacy Dam* case in an operational context. According to BRA, there is no legal requirement—outside the world of water availability modeling—that water rights be fully exercised each year, and most are not.

BRA's expert Mr. Gooch testified that the WMP modeling did result in complete utilization of BRA's existing rights.[402] Additionally, the ED's expert, Dr. Alexander, agreed that Mr. Trungale's criticism was invalid and would frustrate the purpose and goal of system operation.[403]

FBR relatedly argues that BRA might somehow utilize the full 761,551 acre-feet per year authorized by its existing rights (including ACR) plus the 516,995 acre-feet it seeks in this case to divert a total of 1,278,546 acre-feet per year. BRA responds that FBR's fear is completely unwarranted because the WMP modeling shows that could not happen. Nevertheless, BRA would not object to modifying the Proposed Permit[404] to state as follows:

> Permittee is authorized to divert and use not to exceed 516,995 acre-feet of water per year for domestic, municipal, agricultural, industrial, mining, and recreation use, as further described and defined in the Water Management Plan (WMP), within its service area, subject to special conditions. <u>This maximum annual diversion authorization shall be further limited to the amount from the firm appropriation demand scenario that is applicable during the year in which the water is diverted and as further described and defined in the Water Management</u>

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[401] Tr. at 3948, 4139.

[402] BRA 149; Tr. at 4138–41, 4148.

[403] Tr. at 3677–78.

[404] BRA Ex. 132B at 4, ¶ 1.A.

> Plan (WMP) and shall not, in combination with uses pursuant to BRA's existing rights, exceed the total supply available from the System for the applicable demand scenario in the WMP.

If this were included in the permit, BRA contends that the row in Table 2.13 of the WMP Technical Report labeled "Total Available from System" would serve as a limit for the total use under both existing rights and the SysOp Permit, under the applicable demand scenario. This limitation could be presented in a new table inserted for this purpose if the WMP is revised to reflect the Commission's rulings, as BRA suggests.

In addition to contending that FBR's "complete utilization" argument is legally incorrect, BRA contends that operating in accord with it would result in wasting water by forcing BRA to unnecessarily release stored water when run-of-river water is available to satisfy downstream demands. Mr. Gooch testified that this would result in wasting an average of 87,609 acre-feet per year of water that would otherwise be available for beneficial use.[405]

d. ALJs' Analysis

The ALJs conclude that no existing water rights would be impaired if the permit is granted to BRA. Specifically, they do not agree with FBR's claim that granting the permit would impair BRA's existing rights by doubly appropriating the same water, contrary to the decision in the *Stacy Dam* case.

In *Stacy Dam*, the Supreme Court of Texas based its decision on Texas Water Code § 11.134(b)(2) and (3)(B) and (C),[406] which provide:

> The commission shall grant the application only if:
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> . . . .

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[405] BRA Ex. 149; Tr. at 4138–41, 4148.

[406] *Stacy Dam*, 689 S.W.2d at 875.

(2) unappropriated water is available in the source of supply; [and]

(3) the proposed appropriation:

. . . .

(B) does not impair existing water rights or vested riparian rights; and

(C) is not detrimental to the public welfare.

The court wrote: "We hold that the term 'unappropriated water' means the amount of water remaining after taking into account all existing uncancelled permits and filings valued at their recorded levels."[407] The court also noted that the staff of the Texas Department of Water Resources, TCEQ's predecessor agency, used a computer model and:

> The computer model assumed that all existing recorded water rights in the . . . basin would be exercised in the maximum amounts authorized, or to the extent of water available from the inflows. The staff study concluded that "very little water would be available for appropriation at the proposed reservoir site." . . . The study also concluded that the proposed reservoir would adversely affect two existing downstream lakes . . . by reducing the firm yield of each by approximately fifteen percent.[408]

Despite that uncontroverted evidence in *Stacy Dam*, the department issued the new water right after concluding, based on other evidence, that not all of the existing water rights would be used in the future. The supreme court reversed the judgments of the courts below, which had upheld the grant of the permit,[409] and concluded:

> We hold that second grants that overlay uncancelled water permits are not authorized, and . . . existing rights may not be impaired or forfeited until cancelled in whole or in part. . . . [410] Under the law, the Department may not grant permits

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[407] *Stacy Dam*, 689 S.W.2d at 874.

[408] *Stacy Dam*, 689 S.W.2d at 875.

[409] *Stacy Dam*, 689 S.W.2d at 874, 883.

[410] *Stacy Dam*, 689 S.W.2d at 876.

> when its own records show that the supply must come from an existing downstream permittee's water that the Department speculates he will not actually need. . . .[411]

In this case, as in *Stacy Dam*, TCEQ staff conducted modeling that considered all existing water rights exercised to their maximum extent. Dr. Alexander testified:

> I think that the water availability determination for new appropriation of water considers all water rights at their fully authorized amount, and I think that's what's happened here. . . . In the first round of the dual simulation as described in the manuals, all of BRA's water rights are diverted at their full authorized amount; and not just diversions, but storage. Everything associated with that water right is taken out at its full authorized amount, at its priority date, and at its location so that other water rights that come after it are – see the effect of BRA's existing water rights authorized at their full authorized amount.[412]

Having done that, and accounted for the required environmental flows,[413] Dr. Alexander concluded that up to 1,001,449 acre-feet per year of water is available for the permit that BRA requests.[414] With all the same conditions and assumptions, Mr. Gooch reached the same conclusion, because the model inherently protects senior water rights.[415]

Thus, unlike in the *Stacy Dam* case, the ED's modeling indicates the requested amount of water is available for the requested permit after accounting for the full exercise of existing water rights. To the extent that FBR argues otherwise, it is incorrect.

Additionally, the Proposed Permit contains several conditions to prevent any impact to existing water rights, as required by the "No Injury" Rule.[416] Dr. Alexander testified that BRA's

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[411] *Stacy Dam*, 689 S.W.2d at 882.

[412] Tr. at 3948–49; *see also* ED Ex. R–1 at 4–6.

[413] ED Ex. R-1 at 5.

[414] ED Ex. R-1 at 5–6.

[415] BRA Ex. 119 at 41.

[416] 30 Tex. Admin. Code § 297.45.

review indicated some potential for very small impacts to existing water rights.[417] Mr. Gooch explained that there would be an impact on the mean storage of five to seven percent of the water rights, usually less than one acre-foot per year.[418] Dr. Alexander testified that special conditions included in the Proposed Permit would address these concerns and protect the existing water rights.[419] These include a requirement that BRA have an Accounting Plan demonstrating compliance with the terms and conditions of the permit and the WMP[420] and a requirement that BRA comply with the rules and orders of the watermaster, once the watermaster program is established.[421]

As BRA claims, FBR seems focused on how BRA will operate in the future if the permit is granted in this case. In wetter years, BRA likely will divert more water under the new permit and less under its currently existing water rights, so as to minimize releases of water from its reservoirs and save that stored water for future, drier years.[422] That would be prudent water management, and obtaining that option apparently is the principal reason BRA applied for the new permit. That does not mean, however, that BRA's existing rights will be impaired in violation of the holding in *Stacy Dam*. Because any new permit would be junior to existing permits, BRA could instead fully exercise its fully protected, currently existing rights.

I. Appropriation Amount Based on a Single Year

FBR contends that BRA is obligated to prove that the amount of water BRA seeks (516,995 acre-feet per year) is available on a firm basis. However, the modeling shows that 516,955 acre-feet are only available in one year out of the 57-year historical period. Thus, FBR

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[417] ED Ex. R-1 at 8.

[418] BRA Ex. 119 at 42; BRA Ex. 113, WMP Tech. Rep., appendix G-3, table G.3.1 (CD).

[419] ED Ex. R-1 at 8; *see* BRA Ex. 132B at 6–10, ¶ 5.A–5.D.

[420] BRA Ex. 132B at 6–10, ¶ 5.A–5.D.

[421] BRA Ex. 132B at 10, ¶ 5.F.

[422] BRA Ex. 113, WMP Tech. Rep. at 2–38, Fig. 2.3; BRA Ex. 149; Tr. at 4288–91.

argues that the diversion amount "is simply not realistic and provides no meaningful and enforceable limits on the amount of water that BRA may divert."[423]

BRA and the ED disagree. As a general rule, an applicant seeking to make streamside diversions must prove that at least 75% of the water requested will be available at least 75% of the time without impairing senior water rights (75/75 reliability).[424] There is an exception to the rule, however. The determination of water availability for certain types of projects, including a project involving "system operation in conjunction with other water rights," need not "be based upon the continuous availability of historic, normal stream flow."[425] Thus, BRA and the ED argue, convincingly, that BRA need not prove a specific level of reliability for the SysOp Permit (such as 75/75 reliability).[426]

The SysOp Permit conserves stored water (authorized under BRA's existing rights) by substituting available downstream run-of-river water for releases from storage under BRA's existing rights. In doing so, it produces significant additional supply, as does supplying water from storage from reservoirs that are relatively full, while conserving those with limited supplies and other actions authorized under the System Operation Order.[427] This clearly constitutes operating the SysOp Permit **in conjunction with** existing water rights, thereby bringing the BRA's Application under the exception to the reliability rule.

The fact that the full 516,955 acre-feet would rarely be fully available for use does not, however, mean that the SysOp Permit imposes no enforceable limits. The limitations in the WMP and permit are imposed by express requirements to honor senior water rights, satisfy environmental flow requirements, and stay within annual-use and reach-diversion-rate limitations for the reaches. Without satisfying these requirements, none of the 516,955 acre-feet

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[423] FBR 2nd Initial Brief at 38.

[424] 30 Tex. Admin. Code § 297.42(c).

[425] 30 Tex. Admin. Code § 297.42(d).

[426] BRA 2nd Reply Brief at 29–30; ED 2nd Initial Brief at 10–11.

[427] BRA 2nd Reply Brief at 29.

per year can be diverted or stored. In fact, it is satisfaction of these requirements that results in the 516,955 acre-feet being available only in one year.[428]

XII. BENEFICIAL USE

BRA met its burden to prove that the SysOp Permit appropriations are intended for beneficial use. Pursuant to Texas Water Code § 11.134(b)(3)(A), an application for a water right cannot be granted unless the TCEQ first finds that the appropriation contemplated in the application "is intended for a beneficial use." The requirement for showing beneficial use follows from the concept that the state holds the water of the state in trust for the benefit of the people of the state. It is in the state's interest, therefore, to make sure that a person seeking an appropriation of water will beneficially use it, because appropriating water to an applicant reduces the amount of water the state will have available to others.

The Texas Water Code describes municipal, agricultural, industrial, mining, hydroelectric power, navigation, and recreation, as among the types of beneficial uses for which state water may be appropriated.[429] BRA is asking that its appropriations pursuant to the SysOp Permit be authorized for all of these recognized beneficial uses, save hydroelectric power and navigation.[430] In the event the SysOp Permit is issued, BRA intends to put all water available from the permit to beneficial use.[431] BRA currently has virtually no uncommitted water to meet future additional water supply demands.[432] BRA holds 705,000 acre-feet of existing water rights. Ninety-nine percent of those 705,000 acre-feet (702,500) is already committed under BRA contracts to be used by BRA customers. The remaining 2,500 acre-feet is being held by BRA as a discretionary reserve to address unforeseen circumstances that might require water.[433]

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[428] BRA 2nd Reply Brief at 30.

[429] Tex. Water Code § 11.023.

[430] BRA Ex. 132B at 4.

[431] BRA Exs. 7 at 6, 15 at 86, 107 at 43.

[432] BRA Ex. 1 at 17; Tr. at 98; BRA Ex. 107 at 34–35.

[433] BRA Exs. 1 at 16, 35 at 12.

In normal years, water demand by existing BRA customers totals roughly 250,000 acre-feet per year; in dry years it can exceed 300,000 acre-feet per year; and in the exceptionally dry year of 2011, BRA's existing customers used roughly 488,000 acre-feet.[434]

Projected water demand in the basin through 2060 exceeds BRA's existing water rights. Many of BRA's existing customers need additional water to meet their future needs, and other entities that are not currently BRA customers have future needs that could be met by BRA if it had additional water rights.[435]

The Protestants make essentially two arguments regarding beneficial use.[436] First, they argue that not all water would, or could, be beneficially used under the SysOp Permit. Dow concedes that "the water that can actually be diverted and used under the SysOp Permit," which Dow calculates to be a maximum of approximately 157,000 acre-feet per year, will be beneficially used. Dow argues, however, that the remainder will never actually be diverted or used due to four errors that were made in the modeling to support the SysOp Permit: (1) reservoir storage that does not exist; (2) yield that is no longer available because of a new drought of record; (3) refilling of storage emptied by the SysOp Permit and the System Order with senior priority water; and (4) the assumption that all water diverted pursuant to the SysOp Permit would be diverted at the Gulf of Mexico.[437] Thus, Dow argues that because the remainder can never be diverted in reality, it should not and cannot be viewed as being intended for beneficial use.[438]

BRA admits that if the SysOp Permit is granted, then a reasonable estimate of the additional amount of long-term water supply contracts would be in the range of 100,000 to 150,000 acre-feet per year, or possibly even less if the ongoing drought ultimately results in a

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[434] BRA Ex. 107 at 34; BRA Ex. 113 at 3–11 through 3–13.

[435] BRA Ex. 35 at 12.

[436] *See* Dow 1st Initial Brief at 15–18; NWF 1st Initial Brief at 5–7; FBR 1st Initial Brief at 28–34.

[437] The merits of these assumptions are addressed elsewhere in this PFD, and are not discussed again here.

[438] Dow 2nd Initial Brief at 59–60; Dow 2nd Reply Brief at 36–37.

reduction of the amounts estimated to be available on a firm basis.[439] In light of this, Dow argues[440] that it makes no sense to issue BRA a permit for over 1,000,000 acre-feet[441] or over 500,000 acre-feet.[442]

LGC makes a similar argument, contending that BRA has asked for a reservation of more water than it will actually be able to use, thereby reducing the amount of water the state will have to appropriate to others in the future.[443] FBR contends that BRA proved beneficial use of only roughly 110,000 acre-feet per year, which represents the amount projected to be needed from the SysOp Permit in the State Water Plan and the Regional Water Plans for Regions G and H. Moreover, FBR points out that, of the 110,000 acre-feet identified in the plans, roughly two-thirds was earmarked for the expansion of the CCNPP, an expansion which has now been suspended indefinitely.[444]

NWF points out that Texas Water Code § 11.134(b)(3)(A) requires a showing that the desired water "is intended for a beneficial use," whereas 30 Texas Administrative Code § 297.42(d) requires a showing that non-firm water "will be beneficially used without waste." NWF argues that the rule imposes a more stringent beneficial use test than the statute, and that BRA fails to meet this more stringent standard.[445]

BRA disputes the factual accuracy of the Protestants' arguments. That is, BRA presented a substantial amount of evidence to prove that it intends to place all water appropriated under the SysOp Permit that can be used on a firm basis to beneficial use.[446] BRA argues that the need for

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[439] BRA Ex. 107 at 43.

[440] Dow 2nd Initial Brief at 60.

[441] BRA Ex. 127.

[442] BRA Ex. 132B.

[443] LGC 2nd Initial Brief at 50–53; LGC 2nd Reply Brief at 24–25; *see also* FBR 2nd Initial Brief at 40–41.

[444] FBR 2nd Initial Brief at 41; FBR Ex. 1A at 11.

[445] NWF 2nd Initial Brief at 8–9.

[446] Tr. at 2837–38, 2911–12; BRA 2nd Reply Brief at 37.

new water supplies in the Brazos River Basin is greater than merely that identified in the Regional Water Plans and the State Water Plan. According to BRA witness Mr. Brunett, BRA has been approached by a large number of entities—such as the Gulf Coast Water Authority (GCWA), the City of Sugarland, and Luminant—to request additional water in the event the SysOp Permit is granted. Those requests total in excess of 300,000 acre-feet of additional water per year.[447] BRA produced a letter it received from GCWA in which GCWA explains it has "committed to purchase 36,000 ac-ft of additional firm/stored water from [BRA]" upon issuance of the SysOp Permit.[448] BRA has made it clear that it intends to sell all additional firm water made available by the SysOp Permit.[449] Further, based on its review of the regional and state water plans, information obtained from BRA's current customers, and other sources, BRA made a projection of future water demands on the BRA system at specified locations throughout the basin. That study indicated that a number of BRA's customers are expected to have significant demands for SysOp Permit water in the future.[450]

Moreover, as discussed elsewhere in this PFD concerning consistency with state and regional water plans, the current, approved Regional Water Plans for Regions G and H and the current State Water Plan all forecast that substantial additional water supplies will be needed in the basin between now and 2060.[451] The increase in demand for water in both regions is primarily due to population growth and its resulting effect on the need for increased municipal water supply and electricity generation. However, there are also projected shortages for irrigation and manufacturing uses.[452] To exacerbate matters for Region H, water users in Fort Bend County must convert a large portion of their current water use from groundwater to surface water.[453] The reduced availability of groundwater in Region H will create additional

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[447] BRA Ex. 107 at 39–42; BRA Ex. 143.

[448] BRA Ex. 116.

[449] BRA Ex. 107 at 42.

[450] BRA Ex. 107 at 39–45

[451] BRA Exs. 12, 13, 14.

[452] BRA Ex. 10 at 10, 13–15; BRA Exs. 12, 13.

[453] BRA Ex. 10 at 14.

demand for surface water sources in that area, and BRA anticipates the SysOp Permit will provide a badly needed surface water supply to help meet those demands.[454] BRA is not limited to meeting only those demands that the plans allocate to the SysOp Permit. That is, BRA could use SysOp Permit water to satisfy demands identified in the plans regardless of whether the plans currently predict that the demands will be met using SysOp Permit water.[455]

BRA contends it is likely that SysOp Permit water could be placed under contract within five to ten years after the water supply becomes available. BRA argues that this is a reasonable time frame, given that full use of major new water supplies can often take several decades.[456] Having this water available is beneficial, even if it is not immediately fully utilized, because it allows the customers to plan and rely on having the supply in the future.[457] BRA and the ED argue that all this evidence proves that water from the SysOp Permit is intended to be used for beneficial purposes.[458]

BRA and the ED both reject NWF's argument that the rule relating to beneficial use is more stringent than the statute.[459] The ALJs do as well. The rule, § 297.42(d), requires a showing that non-firm supplies "will be used beneficially without waste." In context, beneficial use and waste are two sides of the same coin: if the water is not wasted, then it is beneficially used. None of the Protestants alleges that BRA is intending to **waste** the water allocated in the SysOp Permit, and there is ample evidence that it will be used beneficially.

The Protestants' second argument is essentially that BRA cannot obtain the SysOp Permit based on "speculation" that it will be able to sell its water rights to others. The Texas Water Code defines "beneficial use" as "use of the amount of water which is economically necessary

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[454] BRA Ex. 10 at 15.

[455] Tr. at 2814–15; BRA 2nd Reply Brief at 37.

[456] BRA Ex. 15 at 86–87.

[457] BRA Ex. 15 at 86–87; Tr. at 97; ED 2nd Initial Brief at 14.

[458] ED 1st Reply Brief at 6; BRA 1st Initial Brief at 5–7.

[459] ED 2nd Reply Brief at 9; BRA 2nd Reply Brief at 38.

for a purpose authorized by this chapter, when reasonable intelligence and reasonable diligence are used in applying the water to that purpose and shall include conserved water."[460] In reliance on that definition, NWF asserts that BRA must identify specific unmet demands that will be met by the SysOp Permit. NWF asserts that BRA has failed to do so because, for example, the amount of total demands for SysOp Permit water projected in the approved water plans for Regions G and H is only about 110,000 acre-feet, whereas BRA is requesting much more than that.[461] Similarly, NWF notes that, while roughly 700,000 of BRA's existing water rights are already committed to be used by BRA customers, actual annual use is much lower.[462]

Similarly, FBR contends that BRA bears the burden to prove that the requested amount of water is necessary and reasonable for the authorized purposes.[463] FBR relies heavily on a body of case law from western states to contend that water rights in Texas should not be issued "based upon the speculative sale or transfer of . . . appropriative rights."[464] That is, FBR contends that, in order to show beneficial use, BRA must prove an actual, current need for the water, such as by showing that it currently has in hand executed contracts to sell all the water to be appropriated under the SysOp Permit.[465] In reliance upon out-of-state case law, Dow argues that BRA is attempting to achieve a monopoly in the Brazos River Basin, and that this runs contrary to BRA's obligation to prove its intention to beneficially use the SysOp Permit water.[466] LGC argues that the beneficial use requirement in Texas Water Code § 11.134 "demands more than simply speculation that BRA will be able to sell the water at some point in the future."[467]

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[460] Tex. Water Code § 11.002(4).

[461] NWF 1st Initial Brief at 6.

[462] NWF 1st Initial Brief at 6; BRA Ex. 35 at 10.

[463] FBR 1st Initial Brief at 29.

[464] FBR 1st Initial Brief at 29 (*quoting, Upper Yampa Water Conservancy Dist. v. Dequine Family L.L.C.*, 249 P.3d 794, 798 (Colo. 2011)); *see also* FBR 2nd Initial Brief at 42–44.

[465] FBR 1st Initial Brief at 28–31.

[466] Dow 1st Initial Brief at 18.

[467] LGC 2nd Initial Brief at 53.

FBR concedes that some of the SysOp Permit water is projected in the regional and state water plans to be needed over the next 50 years, but argues that the TCEQ should not issue permits now for water that will only be needed far into the future. FBR points out that the plans are subject to revision every five years. Thus, argues FBR, it does not make sense to issue a permit for a need that a regional plan projects in 50 years, when a later plan might project different needs. FBR also cites to *Stacy Dam*,[468] for the proposition that beneficial use "within a reasonable time" must be proven in order to obtain a water right.[469] According to FBR, issuing the SysOp Permit to meet needs 50 years hence would be "unprecedented and dangerous."[470]

The Protestants' anti-speculation arguments lack merit. The Texas Water Code does not obligate BRA to prove that every drop of water authorized by the SysOp Permit will instantly be put to use. As noted by BRA, many large water rights in the Brazos River Basin, including, for example, Dow's water right, authorize appropriation in an amount greater than the permittee can actually use in many years.[471] The question posed by Texas Water Code § 11.134(b)(3)(A) is whether the appropriation contemplated in the application "is intended for a beneficial use." The ED contends this is a low threshold to overcome,[472] and the ALJs agree. Contrary to Protestants' suggestions, there are no requirements that BRA must specifically identify each diversion and the amount needed at each diversion to demonstrate the proposed appropriation is intended for beneficial use.

BRA points out, convincingly, that there are a number of statutory provisions in the Texas Water Code which support a flexible construction of "intended for beneficial use."[473] For example, the TCEQ may initiate cancellation proceedings if a water right is not put to beneficial

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[468] *Stacy Dam*, 689 S.W.2d at 882.

[469] FBR 2nd Initial Brief at 43.

[470] FBR 2nd Initial Brief at 44–48.

[471] BRA 2nd Reply Brief at 36–37; Tr. at 3580–81.

[472] ED 2nd Reply Brief at 8.

[473] BRA 1st Reply Brief at 21–22.

use in whole or in part for a period of ten years.[474] However, water rights are exempt from cancellation "if a significant portion of the water authorized . . . has been used in accordance with a specific recommendation for meeting a water need included in the regional water plan," or "was obtained to meet demonstrated long-term public water supply . . . needs" and "is consistent with projections of future water needs contained in the state water plan."[475]

Similarly, BRA has identified Texas case law which supports the notion that BRA need not have actual water use contracts in hand in order to prove beneficial use.[476] For example, in *City of San Antonio v. Texas Water Commission*,[477] the Guadalupe-Blanco River Authority (GBRA) applied to a predecessor agency of the TCEQ seeking a right to appropriate a large quantity of water from a reservoir for municipal purposes. While conceding that there were no contracts between GBRA and any municipality for use of the water being sought, the court noted with approval that GBRA's evidence included testimony that many uses would be made of the water by various cities, towns, and industrial groups, and testimony as to the municipal need within GBRA's boundaries and "prospective urban needs which to some extent support the premise that the Guadalupe River Basin is a developing and growing industrial area and that urban communities within the basin are increasing in size."[478] This is very similar to the kinds of evidence BRA produced in this case. The ED also stresses that applicants for municipal use, particularly water suppliers, must be granted water rights sufficient to meet not only current needs, but also future anticipated needs.[479]

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[474] Tex. Water Code § 11.173(a).

[475] Tex. Water Code § 11.175(b).

[476] BRA 1st Reply Brief at 22–24 (*citing, Texas River Protection Assoc. v. TNRCC*, 910 S.W.2d 147 (Tex. App. – Austin 1995, writ denied)).

[477] *City of San Antonio v. Texas Water Comm'n.*, 407 S.W.2d 752 (Tex. 1966).

[478] *City of San Antonio*, 407 S.W.2d at 759–63.

[479] ED 2nd Reply Brief at 9.

The ALJs also note that the permit (now held by BRA) for the construction of ACR was first issued in 1973,[480] yet the reservoir is still unconstructed and need not be constructed before 2025. This certainly suggests that an applicant need not have water contracts in place and imminent water needs before a water right may be issued.

BRA argues as follows:

> The statutory requirements and the case law regarding beneficial use, particularly when viewed in light of the Texas Constitution's policy statement "to encourage the optimum development" of the limited feasible sites for dams and reservoirs, and coupled with Texas' state and regional water planning requirements that evaluate and manage the state's water needs and supply strategies, make it clear that full development of the state's water resources is paramount. Tex. Const. art. III, § 49-d(a); TEX. WATER CODE §§ 16.051, 16.052. BRA's [SysOp Permit] will further the state's optimal development policy and will do so, as BRA demonstrates, by making a substantial amount of water available to meet the long-term water needs in Regions G and H. BRA has carried its burden to demonstrate that the water is intended for beneficial use.[481]

The ALJs agree and find that BRA met its burden to prove that the SysOp Permit appropriations are intended for beneficial use.

XIII. LAWS CONCERNING ENVIRONMENTAL AND INSTREAM FLOWS

The water right permitting laws concerning environmental flows, inflows to bays and estuaries, instream uses, water quality, fish and wildlife habitat, public interest, and public welfare frequently overlap and extensively cross-reference each other. There is no perfect place to begin an analysis and no perfect path to take from any chosen starting point. To simplify the Commission's consideration of these laws as much as possible, the ALJs discuss them as a group below.

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[480] FBR Ex. 3-F, Item 14.

[481] BRA 1st Reply Brief at 27.

A. Permitting Standards

Texas Water Code § 11.134(b)(3)(D) provides a broad overview of the intertwined permitting requirements. It provides:

> The commission shall grant the [water right] application only if . . . the proposed appropriation . . . considers any applicable environmental flow standards established under Section 11.1471 and, if applicable, the assessments performed under Sections 11.147(d) and (e) and Sections 11.150, 11.151, and 11.152 . . . .

Each of the referenced provisions is considered in more depth below. In general, they concern:

- Environmental flow standards that the Commission is required to adopt;[482]
- Maintenance of existing instream uses;[483]
- Effects on and maintenance of water quality;[484]
- Effects on and maintenance of fish and wildlife habitats;[485] and
- Effects on groundwater and groundwater recharge.[486]

The Commission must include provisions in a water right permit to protect instream uses, water quality, and fish and wildlife habitats. Texas Water Code § 11.147(d) and (e) provide:

> (d) In its consideration of an application to store, take, or divert water, the commission shall include in the permit, to the extent practicable when considering all public interests, those conditions considered by the commission necessary to maintain existing **instream uses and water quality of the stream or river to which the application applies**. In determining what conditions to include in the permit under this subsection, the commission shall consider among other factors:

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[482] Tex. Water Code § 11.1471.

[483] Tex. Water Code § 11.147(d).

[484] Tex. Water Code §§ 11.147(d), .150.

[485] Tex. Water Code §§ 11.147(e), .152.

[486] Tex. Water Code § 11.151.

(1) the studies mandated by Section 16.059;[487] and

(2) any water quality assessment performed under Section 11.150.

(e) The commission shall include in the permit, to the extent practicable when considering all public interests, those conditions considered by the commission necessary to maintain **fish and wildlife habitats**. In determining what conditions to include in the permit under this subsection, the commission shall consider any assessment performed under Section 11.152.[488]

For purposes of its substantive water right rules, however, the Commission has defined "instream use" as:

> The beneficial use of instream flows for such purposes including, but not limited to . . . **recreation**, . . . **fisheries,** . . . **aquatic** . . . **wildlife habitat**, . . . and any other instream use recognized by law. An instream use is a beneficial use of water. Water necessary to protect instream uses for . . . **aquatic** . . . **wildlife habitat, recreation,** . . . and other public purposes may be reserved from appropriation by the commission.[489]

Also, the phrase "instream uses" appears in a TCEQ rule that paraphrases the requirements of Texas Water Code § 11.147(d).[490] That indirectly indicates that TCEQ intended its definition of "instream use" to apply in construing Chapter 11 of the Texas Water Code. The ALJs conclude that the phrase "instream uses" as used in Chapter 11 of the Texas Water Code has acquired the meaning set out in the Commission's rules.

Texas Water Code § 11.150 states: "In consideration of an application for a permit under this subchapter, the commission shall assess the effects, if any, of the issuance of the permit on

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[487] The studies required by Texas Water Code § 16.059 concern a determination of appropriate methodologies for determining flow conditions in the state's rivers and streams necessary to support a sound ecological environment. The studies have been completed for the Brazos River Basin. 38 Tex. Reg. 6176–77 (Sep. 20, 2013).

[488] Emphasis added.

[489] 30 Tex. Admin. Code § 297.1(25) (emphasis added).

[490] 30 Tex. Admin. Code § 297.56(a).

water quality in this state." Commission rule 30 Texas Administrative Code § 297.54(a) fleshes out what that means. The rule states:

> In its consideration of an application for a new or amended water right to store, take or divert water, the commission shall assess the effects, if any, of the granting of the application on water quality of the stream or river to which the application applies, as well as associated bays and estuaries. Assessment of water quality impacts shall consider the maintenance of State of Texas Surface Water Quality Standards provided by Chapter 307 of this title (relating to Texas Surface Water Quality Standards) and the need for all existing instream flows to be passed up to that amount necessary to maintain the water quality standards for the affected stream. Such flows may also be used to protect uses of existing, downstream water rights by providing water of a usable quality and to provide, in part, for the protection of vested riparian water rights and domestic and livestock uses.

Texas Water Code § 11.152 allows the Commission to require a water right permit applicant to mitigate impacts on fish and wildlife habitats. It reads:

> In its consideration of an application for a permit to store, take, or divert water in excess of 5,000 acre feet per year, the commission shall assess the effects, if any, o[f] the issuance of the permit on fish and wildlife habitats and may require the applicant to take reasonable actions to mitigate adverse impacts on such habitat. In determining whether to require an applicant to mitigate adverse impacts on a habitat, the commission may consider any net benefit to the habitat produced by the project. The commission shall offset against any mitigation required by the U.S. Fish and Wildlife Service pursuant to 33 C.F.R. Parts 320–330 any mitigation authorized by this section.

Texas Water Code § 11.151 requires the Commission to assess the impact that the requested water right would have on groundwater and groundwater recharge. It provides, "In considering an application for a permit to store, take, or divert surface water, the commission shall consider the effects, if any, on groundwater or groundwater recharge."

Yet another statute, Texas Water Code § 11.147(b), requires consideration of the effects a water right permit would have on bays and estuaries. It states:

> In its consideration of an application for a permit to store, take, or divert water, the commission shall assess the effects, if any, of the issuance of the permit on the bays and estuaries of Texas. For permits issued within an area that is 200 river miles of the coast, to commence from the mouth of the river thence inland, the commission shall include in the permit any conditions considered necessary to maintain beneficial inflows to any affected bay and estuary system, to the extent practicable when considering all public interests and the studies mandated by Section 16.058 as evaluated under Section 11.1491.

Additionally, Texas Water Code § 11.046(b) provides:

> In granting an application for a water right, the commission may include conditions in the water right providing for the return of surplus water, in a specific amount or percentage of water diverted, and the return point on a watercourse or stream as necessary . . . to provide flows for instream uses or bays and estuaries.

More generally, the state has a policy of maintaining the biological soundness of the state's rivers, lakes, bays, and estuaries, because they are of great importance to the public's economic health and general well-being.[491] Additionally, the state's policy when granting permits is to provide for the freshwater inflows and instream flows "necessary" to maintain the viability of the state's streams, rivers, and bay and estuary systems "to the extent practicable while balancing all other public interests."[492]

Finally, Texas Water Code § 11.147(e-3) requires application of the TCEQ's environmental flow standards, notwithstanding several other statutes:

> Notwithstanding Subsections (b)-(e) [of § 11.147], for the purpose of determining the environmental flow conditions necessary to maintain freshwater inflows to an affected bay and estuary system, existing instream uses and water quality of a stream or river, or fish and aquatic wildlife habitats, the commission shall apply any applicable environmental flow standard, including any environmental flow set-aside, adopted under Section 11.1471 instead of considering the factors specified by those subsections.

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[491] Tex. Water Code § 11.0235(b).

[492] Tex. Water Code § 11.0235(c).

B. Statutory Requirements Give TCEQ Broad Discretion

The ALJs note that the above statutes concerning the impact a water right will have on certain natural resources and instream uses do not impose rigid standards or heavy burdens of proof. Instead, they require the Commission to "assess"[493] and "consider"[494] certain effects, studies, standards, and assessments concerning water quality, groundwater, groundwater recharge, bays, estuaries, and fish and wildlife habitat. After these assessments and reviews, the Commission is required to include permit conditions to protect the resources and uses, but only to the extent the Commission considers such protections "necessary" and "practicable" "when considering" or "while balancing" "all public interests."[495] Further emphasizing the Commission's discretion, one statute provides the Commission "may" impose requirements to protect fish and wildlife habitats.[496] Given the many qualifiers, the ALJs read these laws as requiring the Commission to look at a broad range of factors and giving the Commission broad discretion, consistent with what the Commission finds to be in the public interest, to determine what restrictions should be included in a water right permit to protect certain natural resources and instream uses.

C. SB 3 Environmental Flow Rules

Texas Water Code § 11.1471 was enacted in 2007[497] as part of what is commonly referred to as "Senate Bill 3,"[498] or more simply "SB 3." Section 11.1471(a) requires TCEQ by rule to:

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[493] Tex. Water Code §§ 11.150, .151, .152.

[494] Tex. Water Code §§ 11.134(b)(3)(D), .147(d).

[495] Tex. Water Code §§ 11.0235(c), .147(b), (d), (e).

[496] Tex. Water Code § 11.152.

[497] Acts 2007, 80th Leg., R.S., Ch. 1351 (H.B. 3), Sec. 1.15–1.16, Ch. 1430 (S.B. 3), Sec. 1.15–1.16, eff. September 1, 2007.

[498] Actually, § 11.1471 was enacted by two bills; one originated in the House and one in the Senate. However, they are informally referred to collectively as "Senate Bill 3."

> (1) adopt appropriate environmental flow standards for each river basin and bay system in this state that are adequate to support a sound ecological environment, to the maximum extent reasonable considering other public interests and other relevant factors;
>
> (2) establish an amount of unappropriated water, if available, to be set aside to satisfy the environmental flow standards to the maximum extent reasonable when considering human water needs . . . .

In adopting environmental flow standards, TCEQ must consider many factors, including "the specific characteristics of the river basin and bay system"[499] and "the human and other competing water needs in the river basin and bay system."[500]

As required, TCEQ has adopted environmental flow standards for surface water,[501] commonly referred to as the "SB 3 rules." Some SB 3 rules are specifically applicable to the Brazos River and its associated bay and estuary system.[502] On September 4, 2013, TCEQ considered and approved publication of the proposed environmental flow standards for the Brazos River Basin and other basins.[503] The TCEQ adopted the environmental flow standards for the Brazos River Basin on February 12, 2014, and the rules became effective on March 6, 2014.[504] TCEQ applies its environmental flow rules to water right applications pending or filed after September 1, 2007,[505] which would include BRA's Application.

After considering certified questions submitted by the ALJs, the Commissioners determined, in December 2013, that the SB 3 rules would immediately apply to BRA's

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[499] Tex. Water Code § 11.1471(b)(6).

[500] Tex. Water Code § 11.1471(b)(8).

[501] 30 Tex. Admin. Code ch. 298.

[502] 30 Tex. Admin. Code ch. 298, subch. G.

[503] 38 Tex. Reg. 6176–95 (Sep. 20, 2013). The ALJs take official notice of this rule proposal. Any objection to the ALJs having done so should be filed as an exception to the PFD.

[504] 39 Tex. Reg. 1416–50 (Feb. 28, 2014). The ALJs take official notice of this rule adoption. Any objection to the ALJs having done so should be filed as an exception to the PFD.

[505] 30 Tex. Admin. Code § 298.10(a)(1).

Application in this case.[506] Pursuant to the modified schedule in the ALJs' Order No. 22, BRA updated the WMP to incorporate the newly adopted environmental flow standards into the SysOp Permit and submitted the updated WMP to the ED on May 13, 2014.[507] The ED completed his review of the updated WMP on August 18, 2014.[508]

D. Compliance with SB 3 Rules Satisfies All Environmental and Instream Use Requirements

BRA and the ED contend that compliance with the SB 3 rules satisfies all applicable statutory requirements concerning environmental flows for issuance of a water right permit.[509] They also contend that compliance with the SB rules protects the public interest in instream uses, including recreation, fish and aquatic life habitat, and water quality.[510]

FBR argues that complying with the SB 3 rules is merely a beginning, the statutes also require BRA to assess and prove a great deal more, and the permit should be denied because BRA failed to do that.[511] LGC makes similar arguments.[512]

It is true, as FBR notes, that Texas Water Code §§ 11.147(d) and (e), 11.150, and 11.152 require the Commission to assess how granting BRA's permit will affect water quality, instream uses, and certain natural resources. Additionally, Texas Water Code § 11.134(b)(3)(D) requires the Commission to consider "any applicable environmental flow standards established under Section 11.1471 and, if applicable, the assessments performed under Sections 11.147(d) and (e)

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[506] *An Interim Order Concerning the Administrative Law Judges' Request to Answer Certified Questions; the Application by the Brazos River Authority for Water Use Permit No. 5851*; TCEQ Docket No. 2005-1490-WR, SOAH No. 582-10-4184 (Dec. 17, 2013).

[507] BRA Ex. 113.

[508] *See* BRA Ex. 127; ED Exs. R3, R10.

[509] BRA 2nd Initial Brief at 28–29; BRA 2nd Reply Brief at 38–39; ED 2nd Initial Brief at 14–17; ED 2nd Reply Brief at 10–12.

[510] BRA 2nd Reply Brief at 38–39, 58–59; ED 2nd Initial Brief at 16, 20; ED 2nd Reply Brief at 10–16.

[511] FBR 2nd Initial Brief at 49–70, 83–84; FBR 2nd Reply Brief at 20–21.

[512] LGC 2nd Initial Brief at 54–60; LGC 2nd Reply Brief at 25–27.

and Sections 11.150, 11.151, and 11.152 . . . ." However, Texas Water Code § 11.147(e-3) states:

> Notwithstanding Subsections (b)–(e) [of § 11.147], for the purpose of determining the environmental flow conditions necessary to maintain freshwater inflows to an affected bay and estuary system, existing instream uses and water quality of a stream or river, or fish and aquatic wildlife habitats, the commission shall apply any applicable environmental flow standard, including any environmental flow set-aside, adopted under Section 11.1471 instead of considering the factors specified by those subsections.

If § 11.147(e-3) requires application of the SB 3 rules instead of §§ 11.147 (b) though (e), it logically follows that the SB 3 rules are to be applied instead of the requirements to which § 11.147(b) though (e) refer, including those of §§ 11.150 and 11.152. Otherwise § 11.147(e-3)'s direction to "instead" apply the SB 3 rules would be meaningless, contrary to the laws of statutory interpretation.[513]

Even if the law does not require more than complying with the SB 3 rules, FBR contends the Commission may and should require more. FBR notes that one of the SB 3 rules states that the Commission specifically retains its statutory authority to impose special conditions on water rights to protect environmental flows.[514] But that rule also states that the SB 3 rules do not expand the Commission's authority to impose special conditions on water right permits beyond the authority granted to the Commission in chapter 11 of the Texas Water Code.[515] Section 11.147(e-3) of that chapter limits the Commission's authority by requiring it to apply the SB 3 rules instead of considering factors specified in §§ 11.147 (b) though (e), and by reference §§ 11.150 and 11.152.

Moreover, crafting and imposing new requirements in a specific case beyond what an agency's rules require, as FBR suggests, is contrary to a general principle of administrative law.

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[513] Statutes must be construed to be effective and attain the object sought. Tex. Gov't Code §§ 311.021(2), .023(1).

[514] 30 Tex. Admin. Code § 298.10(b).

[515] 30 Tex. Admin. Code § 298.10(b).

As the Supreme Court of Texas has written: "A presumption favors adopting rules of general applicability through the formal [notice-and-comment] rulemaking procedures as opposed to administrative adjudication. Allowing an agency to create broad amendments to its rules through administrative adjudication rather than through its rulemaking authority undercuts the Administrative Procedure Act (APA)."[516]

In effect, FBR contends that the SB 3 rules are inadequate to ensure the necessary environmental flows. The Commission has already concluded otherwise. In a general SB 3 rule, the Commission states: "The commission finds that the environmental flow standards adopted herein are adequate to support a sound ecological environment, to the maximum extent reasonable, considering other public interests and other relevant factors as described in TWC, § 11.1471(b)."[517] That Commission regulatory finding is extremely broad. It effectively means that in adopting the SB 3 rules, the Commission has considered all of the environmental flow and instream use considerations of the statutes discussed above and determined that the SB 3 rules adequately address all of them.

Accordingly, the ALJs conclude, as a matter of law, that issuing a water right permit that complies with the SB 3 rules will maintain water quality and instream uses, including recreation and habitat for fish and aquatic wildlife, and provide necessary beneficial flows to bays and estuaries while considering all public interests. Thus, compliance with the SB 3 rules fully satisfies Texas Water Code §§ 11.0235(b) and (c); 11.046(b) as to bays and estuaries; 11.134(b)(3)(D); 11.147(b), (d), (e), and (e-3); 11.150; and 11.152; and 30 Texas Administrative Code § 297.54(a).

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[516] *Rodriguez v. Service Lloyds Ins. Co.*, 997 S.W.2d 248, 255 (Tex. 1999).

[517] 30 Tex. Admin. Code § 298.5.

XIV. APPLICATION'S COMPLIANCE WITH ENVIRONMENTAL FLOW RULES

BRA contends that the Application, WMP, and Proposed Permit implement and comply with the Texas Water Code provisions concerning environmental flow and TCEQ rules implementing those provisions. The ED agrees with BRA. Dow, FBR, and NWF disagree, emphasizing different points that are discussed below. OPIC contends that the SysOp Permit, WMP, and Accounting Plan should be modified to require compliance with environmental flow standards at the both upstream and downstream measurement points. OPIC does not agree with BRA and the ED that a single measurement point is all that is required by the Commission's environmental flow standards.

The ALJs conclude that BRA's and the ED's environmental flow review was sufficiently complete and the environment flow provisions in the Proposed Permit and WMP comply with all applicable law, including the SB 3 rules.

A. Description of Proposed Environmental Flow Regime

1. Applicable Measurement Points

The environmental flow conditions applicable to the SysOp Permit are set out in Tables 4.3A – 4.3L of the WMP.[518] These tables describe the minimum flows that must exist at each identified measurement point during specified hydrologic conditions within a season before diversions under the SysOp Permit may occur.[519] The measurement points in the WMP coincide exactly with the applicable measurement points for the Brazos River Basin specified in the SB 3 rules.[520] Table 4.4 of the WMP describes which measurement point is applicable to each river

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[518] BRA Ex. 113, WMP at 29–40, WMP Tech. Rep. at 4-63 to 4-74.

[519] BRA Ex. 128 at 19.

[520] BRA Ex. 128 at 21; *see* 30 Tex. Admin. Code § 298.480(a)(6)–(8), (10)–(11), (13)–(19). Some of the measurement points identified in the rules are excluded because they are located outside of the geographic area that is covered by the SysOp Permit. BRA Ex. 128 at 21.

reach.[521] The environmental flow conditions applicable to a diversion are determined based upon the reach in which the diversion is located.[522]

To divert SysOp Permit water, whether the diversion point or reach is upstream or downstream of the applicable measurement point, the flow passing the measurement point gage must not be lower than the environmental flow requirement.[523] For diversions upstream of the applicable measurement point, the daily maximum allowable run-of-river diversion under the SysOp Permit will be limited such that the daily flow at the measurement point gage is not reduced below the applicable environmental flow standard.[524] For diversions located downstream of a measurement point, the environmental flow requirement will be calculated by adding the aggregate downstream SysOp Permit diversion rate to the applicable environmental flow standard at the corresponding measurement point gage.[525]

PKR and Lake Whitney are each at the dividing line between the geographic areas of the basin; however, these reservoirs primarily impact instream flow downstream of them.[526] Thus, the passage of inflows through the dams will be governed by the measurement point immediately downstream of each respective dam.[527] Lakeside diversions under the SysOp Permit occurring within PKR or within Lake Whitney will be governed by the applicable measurement point that lies upstream of each respective lake.[528] Similarly, for diversions above and within Lake Granbury and Lake Belton, the applicable measurement point is upstream of the lake, and for

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[521] BRA Ex. 113 at 41–43.

[522] BRA Ex. 113 at 40.

[523] BRA Ex. 128 at 27.

[524] BRA Ex. 113, WMP at 40.

[525] BRA Ex. 113, WMP at 41.

[526] BRA Ex. 113, WMP Tech. Rep. at 4–75.

[527] BRA Ex. 113, WMP Tech. Rep. at 4–75.

[528] BRA Ex. 113, WMP Tech. Rep. at 4–75.

flows passing through those lakes, the applicable measurement point is downstream of the lake.[529]

2. Determining the Environmental Flow Requirement

One Brazos River Basin SB 3 rule[530] designates the environmental flow requirement at each measurement point based on three seasons: Winter (November 1 through the last day of February), Spring (March 1 through June 30), and Summer (July 1 through October 31); and three hydrologic conditions: Dry, Average, and Wet.[531] For each season and each hydrologic condition, there is a corresponding environmental flow requirement at the measurement point, which must be met before diversions under the SysOp Permit may occur.[532]

Each measurement point is located in a defined geographic area that is used to determine the hydrologic condition.[533] The WMP identifies three geographic areas of the basin, which coincide with the TCEQ's rules[534] and are delineated by major existing reservoirs along the main stem of the Brazos River.[535] The Upper Basin includes all of the drainage area between the Brazos River's headwaters and the dam that forms PKR.[536] The Middle Basin includes the drainage area between the dam that forms PKR and the dam that forms Lake Whitney.[537] The

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[529] BRA Ex. 113, WMP at 41–42.

[530] 30 Tex. Admin. Code § 298.480.

[531] The subsistence flow condition is not a "hydrologic" condition but rather a special case applicable during Dry hydrologic conditions. BRA Ex. 128 at 34. These are the "streamflows needed during critical drought periods necessary to maintain tolerable water quality conditions and to provide minimal aquatic habitat space for survival and recolonization of aquatic organisms." 30 Tex. Admin. Code § 298.1(10).

[532] 30 Tex. Admin. Code § 298.480; BRA Ex. 113, WMP at 29–40.

[533] BRA Ex. 113, WMP at 41–43.

[534] *See* 30 Tex. Admin. Code § 298.455(4), (5), (11).

[535] BRA Ex. 128 at 22.

[536] BRA Ex. 128 at 22.

[537] BRA Ex. 128 at 22.

Lower Basin includes the drainage area below the dam that forms Lake Whitney and the Gulf of Mexico.[538]

The Average hydrologic condition is the status that the basin is in approximately 50% of the time, the Dry hydrologic condition is the status approximately 25% of the time, and the Wet hydrologic condition is that status approximately 25% of the time.[539] The WMP determines the hydrologic condition using the Palmer Hydrological Drought Index (PHDI), as required by TCEQ.[540] Because the climate zones used by the National Climatic Data Center (NCDC) to calculate the PHDI each month do not exactly coincide with the WMP geographic areas, an area-weighted composite PHDI is calculated by adding together the NCDC's PHDI for each climate zone that has first been multiplied by the fraction area intersecting the geographic area.[541] The composite PHDI is then compared to the values described in Table 4.12 of the WMP Technical Report to determine whether the hydrologic condition is Dry, Average, or Wet.[542]

Because the NCDC does not report the preceding month's PHDI on the first day of the succeeding month, BRA will operate under an interim hydrologic condition between the first day of the season and the day the final hydrologic condition is determined.[543] To determine the interim hydrologic condition, the interim PHDI values provided by the NCDC will be used.[544] The interim PHDI values will closely approximate the NCDC's final PHDI because most of the data used to determine the final PHDI is also used by the NCDC to calculate the interim PHDI.[545] It is reasonable to use the interim PHDI values to determine an interim hydrologic condition because it is likely the hydrologic condition will not change once the NCDC's PHDI

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[538] BRA Ex. 128 at 22.

[539] 30 Tex. Admin. Code § 298.455(1), (3), (12); BRA Ex. 128 at 23.

[540] BRA Ex. 128 at 23; *see* 30 Tex. Admin. Code § 298.455(6), (7).

[541] BRA Ex. 113, WMP Tech. Rep. at 4-62 (Table 4.13); BRA Ex. 128 at 23–24.

[542] BRA Ex. 113, WMP Tech. Rep. at 4-63; BRA Ex. 128 at 24; *see* 30 Tex. Admin. Code § 298.470(c).

[543] BRA Ex. 113, WMP Tech. Rep. at 4-62; BRA Ex. 128 at 24–25.

[544] BRA Ex. 113, WMP Tech. Rep. at 4-62; BRA Ex. 128 at 24–25.

[545] BRA Ex. 128 at 25.

values are finalized. Moreover, if there is any non-achievement of environmental flow conditions as a result of using the interim PHDI and hydrologic condition in the first few weeks of a season, BRA will report those non-achievements in its annual Environmental Flow Achievement Report to the TCEQ.[546]

3. High Flow Pulses

High flow pulses are "relatively short-duration, high flows within the stream channel that occur during or immediately following a storm event."[547] For each measurement point a certain number of high flow pulses are required per season, depending on the hydrologic condition.[548]

Under 30 Texas Administrative Code § 298.475(d)(1), a "water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level." BRA claims that means that a high flow pulse begins after the flow at the measurement point becomes higher than the applicable pulse trigger flow and the pulse ends when either the applicable volume condition or duration condition is achieved.[549]

The WMP prohibits BRA from diverting or storing water under the SysOp Permit without meeting a seasonal schedule or individual high flow pulse at the applicable measurement point.[550] Storage and diversion under the SysOp Permit are authorized during high flow pulse events if: (1) the stream flow is not reduced below the pulse trigger flow; or (2) the number of

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[546] BRA Ex. 128 at 26.

[547] 30 Tex. Admin. Code § 298.1(8).

[548] *See* 30 Tex. Admin. Code § 298.480; BRA Ex. 113, WMP at 29–40.

[549] BRA Ex. 128 at 36.

[550] BRA Ex. 113, WMP at 29.

pulse events exceeds the frequency criteria.[551] Storage and diversion under the SysOp Permit may also continue during a pulse as long as the storage or diversion amounts are lower than the applicable diversion rate trigger level.[552] The diversion rate trigger levels operate to exclude small diversions that are unlikely to impact high flow pulses, were developed in accordance with TCEQ rules, and are defined as 20% of the pulse trigger flow.[553] BRA has very few customers with diversions that are large enough to affect a pulse flow.[554] Most of the diversions by BRA customers are very small compared to a pulse flow; and even in aggregate, the possibility of their affecting achievement of a high pulse flow is limited.[555]

As part of the development of the WMP, BRA evaluated how high flow pulses relate between adjacent selected measurement points.[556] That evaluation illustrated the complex temporal relationship between pulses occurring at adjacent upstream and downstream measurement points because of travel time between measurement points, existing structural and operational influences, and pulse magnitude relative to diversion rates.[557] Because of these factors, operations and accounting under the WMP will manage storage and diversion within a reach according to the measurement point applicable to that reach.[558]

The WMP allows BRA to temporarily store pulse events. If impounded flows under the SysOp Permit would prevent the achievement of a high flow pulse event at the applicable measurement point and should be released, BRA will coordinate with the United States Army Corps of Engineers (USACE), if the reservoir's dam is operated by the USACE, and releases of

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[551] BRA Ex. 128 at 36.

[552] BRA Ex. 113, WMP at 43–45 (Table 4.5), WMP Tech. Rep. at 4-79.

[553] BRA Ex. 113, WMP Tech. Rep. at 4-80; *see* 30 Tex. Admin. Code § 298.485(b).

[554] BRA Ex. 113, WMP Tech Rep at 4-80.

[555] BRA Ex. 113, WMP Tech Rep at 4-80.

[556] BRA Ex. 113, WMP Tech. Rep., appendix G-6.

[557] BRA Ex. 128 at 38.

[558] BRA Ex. 128 at 38.

the pulses will conform to existing BRA and USACE water control plans.[559] Because of the uncertainty related to managing releases of a pulse when storing water under the SysOp Permit, BRA will need to coordinate its operational release pattern with downstream flow patterns to increase the chance that an intended pulse achievement will occur at a downstream measurement point and to ensure the release conforms to any applicable water control plan.[560]

4. Accounting for Environmental Flows

The environmental flows portion of the WMP Accounting Plan tracks compliance with the environmental flow requirements.[561] The Accounting Plan also includes calculations that classify high flow pulses according to flow.[562] BRA will enter daily stream gage flows at the WMP measurement points into the Accounting Plan spreadsheets.[563] Each day, the Accounting Plan spreadsheet will automatically classify the day as either base flow or high flow pulse according to the applicable criteria.[564] When storage emptied under the SysOp Permit is being refilled, the BRA staff will monitor the inflows to see if these inflows qualify as a high flow pulse.[565] If so, this information will be recorded in the Accounting Plan.[566] Also, if high flow pulses are impounded and subsequently released, the schedule of release will be recorded in the Accounting Plan for each reservoir.[567]

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[559] BRA Ex. 113, WMP at 50, WMP Tech. Rep. at 4-80; BRA Ex. 128 at 38.

[560] BRA Ex. 113, WMP at 50, WMP Tech. Rep. at 4-80; BRA Ex. 128 at 38–39.

[561] BRA Ex. 113, WMP at 49.

[562] BRA 113, WMP Tech. Rep. at 5-4 to 5-7, appendices H-1, H-2.

[563] BRA 113, WMP Tech. Rep. at 5-4 to 5-7, appendices H-1, H-2.

[564] BRA Ex. 113, WMP at 49–50.

[565] BRA Ex. 113, WMP at 55.

[566] BRA Ex. 113, WMP at 55.

[567] BRA Ex. 113, WMP at 50.

5. Annual Environmental Flow Achievement Report

In addition to the Accounting Plan, BRA will generate and submit to the TCEQ an Environmental Flow Achievement Report once per year.[568] The report will summarize storage and diversions under the SysOp Permit that occurred during the previous year and the environmental flow conditions at each measurement point.[569] If the report indicates that any of the WMP environmental flow conditions were not achieved because of storage or diversions under the SysOp Permit, BRA will include in the report an action plan that describes how BRA will prevent further non-achievement from occurring during SysOp Permit storage and diversion.[570]

B. Disputes Concerning Compliance with SB 3 Rules

According to BRA, its SysOp Permit and WMP will implement and comply with the environmental flow standards adopted by the TCEQ.[571] The ED agrees. According to Dr. Alexander, the WMP:

- Incorporates TCEQ's standards for establishing hydrologic conditions;
- Develops reasonable interim values for hydrologic conditions before the final PDHI is available;
- Provides a schedule of flow quantities including subsistence flows, base flows, and high pulse flows;
- Identifies reaches that are applicable to specific measurement points;
- Protects subsistence flows;

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[568] BRA 113, WMP Tech. Rep. at 4-88 to 4-89.

[569] BRA Ex. 128 at 41–42.

[570] BRA Ex. 128 at 42.

[571] BRA Ex. 128 at 44; ED Ex. R1 at 17; *see* 30 Tex. Admin. Code ch. 298, subchs. A, G.

- Includes seasonally variable base flows under certain hydrologic conditions;
- Includes criteria for determining how high flow pulses limit run-of-river diversions in specific reaches; and
- Includes diversion rates and diversion trigger rate levels.[572]

The WMP environmental flow conditions include the exact measurement points, seasons, and hydrologic conditions found in the TCEQ rules. The flow values at each measurement point are the flow values adopted by TCEQ.[573]

Additionally, as required by TCEQ rules, the environmental flow conditions for the SysOp Permit are subject to adjustment by the Commission pursuant to Texas Water Code § 11.147(e-1).[574] A change to the environmental flow conditions in the WMP will be subject to the requirements of 30 Texas Administrative Code § 298.25.[575]

Despite all of that, some parties do not agree that the WMP complies with the SB 3 rules.

1. Use of One Measurement Point Per Diversion

FBR, NWF, OPIC, and Dow object to BRA's proposed application of the environmental flow standards at only one environmental flow measurement point per diversion point and reach. BRA and the ED contend that using only one measurement point complies with the SB 3 rules and using more than one measurement point would be complicated, challenging, impractical, and unreasonable.

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[572] ED Ex. R1 at 17; ED Ex. R3.

[573] BRA Ex. 128 at 44.

[574] BRA Ex. 113, WMP at 3; BRA Ex. 132B at 10, ¶ 5.E.; BRA Ex. 128 at 45.

[575] BRA Ex. 113, WMP at 3.

a. FBR's Arguments[576]

FBR does not agree that the environmental flow standards need only be met at one measurement point for refilling reservoirs such as PKR. It contends that a single upstream measurement point cannot be used to define both the base flow and pulse requirements when SysOp water is being stored in a reservoir. FBR also argues that satisfying environmental flow standards in the WAM model for an appropriation does not prove the standards will be met for the SysOp permit and WMP. It also does not agree that a provision in the permit concerning BRA's accounting assures compliance with the environmental flow standards.

According to FBR, neither the statutes nor TCEQ's rules state that a diversion of a new appropriation can be made if the permit assures compliance with the environmental flow standard at only one measurement point. It agrees that sometimes compliance at only one measuring point is adequate and appropriate. According to FBR, however, there should never be an assumption that one measurement point is sufficient. FBR maintains that an applicant should be required to present facts and analyses to justify a proposal for compliance at only one downstream point, but BRA has not done that.

If a large appropriation to refill a reservoir is upstream of two control points, possibly one on a tributary and one immediately downstream of the confluence with the main river, FBR claims the diversion could impact flows at both measurement points. A simple evaluation would determine if this is so. According to FBR, neither the Applicant nor the ED has performed such an evaluation. Moreover, according to FBR, a significant diversion and capture of a pulse flow in a reservoir clearly could foreclose pulse flows many miles downstream.

FBR notes that the Texas Legislature has determined that appropriations within 200 miles of the coast can affect flows into the bay and require special considerations.[577] FBR claims that

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[576] FBR 2nd Initial Brief at 70–73.

[577] *See* Tex. Water Code § 11.147(b).

compliance at one measurement point 150 miles from a bay does not automatically assure compliance at the entrance to the bay. Compliance is possible, but cannot be assumed.

A large water right holder might divert much or all of the remaining water downstream of the measurement point, claims FBR. It points to repeated senior priority calls by Dow for water as clear evidence that in some segments of the river, existing appropriations can exceed the flows, especially if new appropriations are allowed upstream.

Moreover, according to FBR, compliance with environmental flow standards at multiple points is relatively easy. The person wanting to divert water, or the watermaster, can simply look at the gages at the appropriate downstream measurement points to determine if there is adequate flow to proceed with the diversion.

In particular, FBR objects to the use of a single measurement point in a permit to assure compliance with the environmental flow standards requiring pulses when BRA has downstream reservoirs. There are three major problems with this approach, according to FBR. First, a pulse flowing down the river can be a significant environmental asset for many miles downstream if the water is not diverted in a reservoir. Second, the approach assumes that all BRA reservoirs can pass a pulse, when some cannot. Third, there is no requirement in the permit or elsewhere for timely release of a pulse once BRA captures the pulse in a reservoir.

b. NWF's Arguments[578]

NWF claims that the "traditional application of the standards" would be in the context of a single diversion point or a single impoundment. According to NWF, that would present a much simpler challenge than this very complex case. NWF maintains the SB 3 rules should be harmoniously interpreted and implemented to accomplish their underlying purpose. Applying the flow standards in a complex situation like this one requires individual evaluation and

[578] NWF 2nd Initial Brief at 10–17.

judgment to craft permit language to achieve the protections established in the flow standards. NWF claims that additional conditions, restrictions, limitations, and provisions, beyond those found in BRA's Proposed Permit, are reasonably necessary to ensure compliance with the environmental flow standards.

According to NWF, the flow standards establish levels of subsistence flows, base flows, and pulse flows that are required to be protected and they establish specific locations at which those levels must be protected. NWF notes that the specific conditions that should be included in any permit in order to accomplish that protection are not set out in those flow standards. Instead one of the rules states: "The commission will incorporate into every water right permit any condition, restriction, limitation, or provision, as provided in Chapter 297 of this title (relating to Water Rights, Substantive) that is reasonably necessary to protect environmental flow standards."[579]

NWF argues that BRA should be required to meet the environmental flow conditions at measurement points that are both upstream and downstream of BRA's diversion locations. NWF claims that the SB 3 rules do not provide for the use of only one measurement point to govern permit activities in a given diversion reach or set of reaches. Moreover, nothing in the standards suggests long diversion reaches—like those that BRA proposes—were even contemplated when the standards were adopted. NWF contends the standards contain language supporting the use of multiple measurement points for individual diversions. Furthermore, whether only one measurement point in the standards governs a given diversion reach or set of reaches is a separate inquiry from what permit conditions should be required in order to ensure that the flow standards are adequately protected.

According to NWF, BRA has failed to show that BRA's Proposed Permit will ensure that diversions and the refilling of storage regulated by a single upstream measurement will not reduce flows below the required environmental flow levels. That is particularly true, according

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[579] 30 Tex. Admin. Code § 298.15(c).

to NWF, when the permit would allow an unlimited number of diversions and one or more sites for refilling of storage in long reaches.

NWF contends that it cannot be reasonably argued that the flow standards allow dewatering of a tributary stream even if sufficient flow will reach a single distant measurement point from some other source or the main stem of the Brazos River. NWF claims that the permit fails to ensure that no portion of tributary streams or the Brazos River would be completely dewatered. If BRA does get a permit, additional permit conditions should be included to ensure that dewatering does not occur, according to NWF.

NWF offers an example of how dewatering might occur. The measurement point on the Brazos River near Hempstead is used to control diversions from three reaches on the Brazos River and Yegua Creek.[580] From those reaches, a combined diversion rate of 524 cfs would be authorized for diversions under BRA's Proposed Permit.[581] That diversion rate can occur anywhere within those combined diversion reaches.[582] In addition, that same measurement point controls diversions from and refilling of storage in Lake Somerville.[583] No maximum diversion rate is specified for diversions from Lake Somerville.[584]

By relying on a single measurement point to control diversions from long stretches of the Brazos River and from Yegua Creek—as well as diversions and refilling of storage of Lake Somerville, also located on Yegua Creek—the Proposed Permit would fail to adequately protect the environmental flow standards, according to NWF. It claims the permit would allow diversions or refilling of storage that could dry up Yegua Creek, as long as there was adequate

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[580] BRA Ex. 113, WMP at 42 (Table 4.4). The measurement point is shown on BRA Ex. 121 as "33." Diversion reaches numbers 30, 34, and 38 on the Brazos River and numbers 32–33 on Yegua Creek are controlled by that measurement point. Lake Somerville is shown on BRA Ex. 121 as "31."

[581] BRA Ex. 113, WMP at 45 (Table 4.6, Segment ID E); Tr. at 3265.

[582] Tr. at 3265–66.

[583] Tr. at 3264–65.

[584] BRA Ex. 113, WMP Tech. Rep. at 2-6 (Table 2.2).

flow in the Brazos River to satisfy the flow requirement at the Brazos River near the Hempstead gage.[585]

NWF also complains that the permit fails to ensure that diversions or refilling of storage governed by a single measurement point under the permit would not reduce flows downstream at other measurement points governing other diversions under the permit. This could result in increased allowable diversion levels when the "50% rule"[586] is in effect, claims NWF.

NWF claims that BRA's proposed Accounting Plan does not track the WMP. For eight reservoirs, flows passing through the reservoirs are based on downstream measurement points. According to NWF, the Accounting Plan only reflects that approach for PKR and Lake Whitney.[587] NWF contends that BRA has not established that its modeling reflects the currently proposed approach so it is unclear that the amounts predicted to be available for appropriation would actually be available even if all other aspects of the modeling were correct.

NWF maintains that nothing in the SB 3 rules for the Brazos River Basin mandates that only a single measurement point is allowed to be used to control a specific diversion point, much less one or more diversion reaches. NWF argues that nothing in the rules precludes the use of more than one measurement and some language in the standards is ambiguous about the number of measurement points. To support these arguments, NWF points to 30 Texas Administrative Code § 298.475 (c), which provides in part:

> For a water right holder to which an environmental flow standard applies, at a measurement point that applies to the water right, the water right holder is subject to the base flow standard for the hydrologic condition prevailing at that time. For all measurement points, the water right will be subject to one of the following: a dry, an average, or a wet base flow standard. . . .

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[585] Tr. at 3267–68.

[586] 30 Tex. Admin. Code § 298.475(b).

[587] *See* BRA Ex. 113, WMP Tech. Rep, App. H-1 at 32, row SO22 (noting the distinction between using a downstream measurement point for those reservoirs and all other reservoirs).

NWF notes that the rule does not say at "the single" measurement point applicable to the water right. Instead, the rule merely describes how hydrologic conditions for base flow requirements are determined at "a" measurement point applicable to the water right. Nothing in that language is inconsistent with having more than one measurement point apply to a water right or diversion reach.

Even if the Commission determined that only one measuring point is applicable, NWF maintains that nothing in the rules precludes incorporating permit conditions at intermediate compliance points in order to more effectively serve the purpose of the environmental flow standards established at the measurement point. For example, in a given diversion reach or reaches governed by a downstream measurement point, permit conditions might allow diversions from a tributary only if flows at that measurement point were adequate and if flows at another USGS gage located on the tributary were also met, with those flows representing a specified increment of the flow at the measurement point.

c. OPIC's Arguments[588]

Given the complexity and size of the Application and the ambiguity of the diversion reach approach, OPIC agrees with NWF's position that both upstream and downstream measurement points should be used.

d. Dow's Arguments[589]

Dow notes that no SB 3 rule specifies which measuring points apply to a particular water right. The SB 3 rules tabulate the numeric standards that apply to each of 20 measurement points in the Brazos River Basin that have been selected[590] and define a "measurement point" as "a

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[588] OPIC 2nd Initial Brief at 9–11.

[589] Dow 2nd Initial Brief at 62–63.

[590] 30 Tex. Admin. Code § 298.480.

specific geographical location on a watercourse where environmental flow standards are established."[591]

Dow claims that the WMP would only require BRA to comply with the SB 3 standards at the first downstream measurement point. Dow argues that this is not a function of the SB 3 rules but is a judgment the ED made in preparing the ED's Alternative Permit.[592] Dow contends that BRA and the ED provided little or no evidence showing that complying with the SB 3 flow standards at only the first downstream measurement point is adequate. Accordingly, Dow contends that BRA failed to meet its burden of proof on this issue.

BRA intends to detect a potential high flow pulse by monitoring changes in the surface elevation of its impoundments.[593] Testimony indicated that measurement of inflows based on surface elevation level is inaccurate on a real-time basis.[594] According to BRA witness Mr. Osting, BRA intends to impound the water for some period of time and then release the amount of water it calculates it would have released, had it passed the qualifying high flow pulse. Mr. Osting admitted that there is no limit on the time that BRA may store water that comprises a potential high flow pulse.[595]

Dow claims that it is not clear how BRA's plan to impound and later release high flow pulses complies with the requirements of the SB 3 rules. Accordingly, Dow maintains that BRA did not meet its burden to show that it would comply with those rules.

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[591] 30 Tex. Admin. Code § 298.1(6).

[592] Tr. at 3317–18.

[593] BRA Ex. 113, WMP at 50.

[594] Tr. at 255–57, 1084–87.

[595] Tr. at 3300.

e. BRA's Arguments[596]

BRA argues that multiple measurement points are not required or appropriate. It notes that the Brazos River Basin SB 3 rules concerning schedule of flow quantities repeatedly use the singular forms "a measurement point" and "the measurement point."[597] Nowhere do the rules specifically require that a diversion made under a water right must comply with the environmental flow standards at multiple measurement points.

BRA claims using a single measuring point makes sense. The flows between measurement points are affected by various factors, including intervening flows—such as at major confluences—and intervening structures—such as dams.[598] Travel time, channel losses, attenuation, and relative magnitude between the upstream pulse and downstream base flow conditions are also factors.[599] There are complex temporal relationships between flows, including pulses, occurring at adjacent upstream or downstream measurement points in the Brazos River Basin because of existing structural and operational influences, and because of pulse magnitude relative to diversion rates.[600] The statistical correspondence of the flows between two measurement points is not guaranteed.[601] Because travel times between measurement points are similar to SB 3 pulse durations, and because of the large magnitude pulses in the Brazos River Basin, BRA maintains it is appropriate to manage storage and diversion within a reach according to a single measurement point applicable to that reach.[602]

FBR's witness, Mr. Trungale, testified that BRA should be required to meet flow requirements at all measurement points downstream of a diversion before being allowed to divert

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[596] BRA 2nd Reply Brief at 44–47.

[597] *See* 30 Tex. Admin. Code § 298.475(b), (c), (d).

[598] BRA Ex. 113, WMP Tech. Rep., App. G-6; Tr. at 3201–02, 3359.

[599] BRA Ex. 113, WMP Tech. Rep., App. G-6; BRA Ex. 128 at 38; Tr. at 3233.

[600] BRA Ex. 113, WMP Tech. Rep., App. G-6; BRA Ex. 128 at 38.

[601] BRA Ex. 113, WMP Tech. Rep., App. G-6; Tr. at 3299, 3353.

[602] BRA Ex. 113, WMP Tech. Rep., App. G-6; Tr. at 3752–53.

or store water under the SysOp Permit.[603] BRA responds that Mr. Trungale presented no evidence showing that the use of a single measurement point for a reach rather than multiple measurement points will be detrimental. His opinion simply assumes multiple downstream measurement points must be better, according to BRA. Also, BRA claims that the evidence shows that Mr. Trungale did not evaluate this issue and acknowledged that using all downstream measurement points is complicated by travel times, attenuation, and intervening reservoirs.[604]

BRA does not agree that it should be required to use an upstream and downstream measurement point, as NWF and OPIC claim. BRA notes that Dr. Alexander testified that requiring the standard at more than one measurement point would be impractical and unreasonable.[605] Additionally, Mr. Trungale agreed that to require a diversion to meet all measurement points downstream of a diversion would be complicated and challenging.[606] There would not be an instantaneous response, and BRA would be required to predict future flows at downstream gages.[607] Travel times will vary at different places.[608] Therefore, BRA maintains that using upstream and downstream measurement points is not required, necessary, or appropriate.

NWF argues that BRA, by having only one measurement point for each reach, will be able to "dewater" parts of the Brazos River under certain conditions. However, according to BRA, the conditions presented by NWF are worst-case scenarios and unlikely to actually occur.[609] For NWF's worst-case scenario to occur, the correspondence between flows at the two locations would need to be exactly as described by NWF and when base flow was very close to

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[603] FBR Ex. 16 at 23–25.

[604] Tr. at 3504–05.

[605] Tr. at 3916–17.

[606] Tr. at 3500.

[607] Tr. at 3503–04.

[608] Tr. at 3504.

[609] Tr. at 3251–52.

the Dry condition.[610] The scenario also assumes that BRA would allow such a situation to occur, despite BRA's repeatedly demonstrating its commitment to protecting the Brazos River and its tributaries.[611]

BRA also claims that safeguards will be in place to ensure that a worst-case scenario, if it occurred, would not be repeated. BRA will be annually submitting to TCEQ an Environmental Flow Achievement Report.[612] This report will provide an opportunity for BRA and TCEQ to implement operational changes to ensure that any problems resulting from the SysOp Permit are addressed to prevent its repetition.[613] Similarly, the adaptive management provisions in the TCEQ rules, which are incorporated into the SysOp Permit, will allow TCEQ to reconsider applicable measurement points if, through the SB 3 process, new data shows that different or additional measurement points are warranted.[614] Some of these studies are already underway.[615]

Based on the above, BRA contends that the SB 3 rules permit the use of a single measurement point to determine when diversions are allowable in a reach and that requiring the use of multiple measurement points is not warranted, given the complexities. BRA claims that none of the protestants have presented credible or compelling evidence mandating a different approach.

f. The ED's Arguments[616]

The ED believes that nothing in the SB 3 statutes or rules addresses what measuring point or points are "applicable" to a water right. For diversions upstream of a measurement point

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[610] Tr. at 3331.

[611] Tr. at 3239, 3252, 3333–34, 3344; BRA Exs. 9, 39, 131.

[612] BRA 113, WMP at 46, WMP Tech. Rep. at 4-88 to 4-89.

[613] Tr. at 3239–41, 3757.

[614] Tr. at 3344–45, 3757.

[615] Tr. at 3344–45, 3757.

[616] ED 2nd Initial Brief at 17–18; ED 2nd Reply Brief at 14.

gage, the first downstream gage will be the applicable gage.[617] For diversions downstream of a measuring point gage, the environmental flow requirement will be the addition of the aggregated downstream diversion rate to the flow standard at the measurement point gage.[618] If several measurement points are applicable, Dr. Alexander would recommend using the measurement point closest to the diversion point.[619] For PKR and Lake Whitney, passage of inflows will be governed by the adopted standards at the downstream measurement point and lakeside diversions will be governed by the upstream measurement point.[620] Dr. Alexander testified that requiring compliance with the flow standard at more than one measurement point would be impractical and unreasonable.[621]

Much of FBR's closing argument discusses whether the measurement points are in the right locations and what the science team proposed. The ED contends that the number and location of the measurement points is set by rule and cannot be changed in this proceeding. Arguments about the number and location of measurement points were decided by the Commission when it adopted the rule, claims the ED.

NWF argues that the effects of diversions and refilling of storage in reaches at one measurement point on flows at other measurement points are completely ignored in the WMP. The ED claims that is incorrect. This issue was evaluated in the WMP.[622] The ED reviewed this information and determined that compliance with the environmental flow standards should be based on the next downstream gage.[623]

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[617] BRA Ex. 113, WMP at 40–43 (Table 4.4).

[618] BRA Ex.113, WMP at 40–41.

[619] Tr. at 3930.

[620] ED Ex. K1 at 19–20.

[621] Tr. at 3916–17.

[622] BRA Ex. 113, WMP Tech. Rep., App. G-6.

[623] ED Ex. R1 at 9.

g. ALJs' Analysis

The ALJs conclude that BRA's obligation to forego a particular diversion and pass environmental flows under the SB 3 rules should only apply at the measurement point nearest the particular diversion. The WMP and SysOp Permit will comply with that standard.

To be clear, it is undisputed that BRA will need to comply with environmental flow standards at 20 separate measurement points if the permit is granted. The SB 3 rules establish 20 environmental flow measurement points in the Brazos River Basin,[624] and 30 Texas Administrative Code § 298.475(b), (c), and (d)(1) and (2) provide in part:

> (b) Subsistence flow. . . . For a water right holder to which an environmental flow standard applies, at a measurement point that applies to the water right, the water right holder may not store or divert water unless the flow at the measurement point is above the applicable subsistence flow standard for that point. If the flow at the applicable measurement point is above the subsistence flow standard but below the applicable dry condition base flow standard, then the water right holder must allow the applicable subsistence flow, plus 50% of the difference between measured streamflow and the applicable subsistence flow, to pass its measurement point and any remaining flow may be diverted or stored, according to its permit, subject to senior and superior water rights, as long as the flow at the measurement point does not fall below the applicable subsistence flow standard.
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> (c) Base flow. . . . For a water right holder to which an environmental flow standard applies, at a measurement point that applies to the water right, the water right holder is subject to the base flow standard for the hydrologic condition prevailing at that time. . . . For a water right holder to which an environmental flow standard applies, at a measurement point that applies to the water right, when the flow at the applicable measurement point is above the applicable base flow standard, but below any applicable high flow pulse levels, the water right holder may store or divert water according to its permit, subject to senior and superior water rights, as long as the flow at the applicable measurement point does not fall below the

[624] 30 Tex. Admin. Code § 298.480.

applicable base flow standard for that hydrologic condition except during dry conditions as described in subsection (b) of this section.

(d) High flow pulses. . . .

(1) . . . The water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level. A water right holder can divert water in excess of an applicable pulse flow trigger requirement as long as its diversions do not prevent the occurrence of the pulse flow trigger level of an applicable larger pulse.

(2) If the applicable high flow pulse trigger level does not occur in a season, then the water right holder need not stop storing or diverting water to produce a high flow pulse. The water right holder is not required to release water lawfully stored to produce a high flow pulse.

What is disputed is whether BRA's obligation to pass environmental flows under the above rules will apply at one, some, or all of the 20 points before BRA diverts water at a particular point in the Brazos River Basin if the permit is granted. The SB 3 rules do not state that a water right holder may not divert at a particular point unless the required environmental flows will continue at multiple measurement points.

Words and phrases in the Commission's rules must be read in context and construed according to the rules of grammar and common usage unless they have acquired a technical or particular meaning by legislative definition or otherwise.[625] BRA correctly notes that the pertinent portions of § 298.475 quoted above all use the singular forms "a measurement point" and "the measurement point" when describing a water right holder's obligation to let an environmental flow pass.[626] That suggests that only one environmental flow measurement point applies to a particular diversion.

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[625] Tex. Gov't Code §§ 311.002(4), .011(a)–(b).

[626] *See* 30 Tex. Admin. Code § 298.475(b)–(d).

Additionally, the expert testimony indicates that requiring compliance at multiple measurement points for a single diversion would be complicated, challenging, impractical, and unreasonable.[627] That would be due to the distance between measurement points, the amount of time water takes to move between measurement points, intervening inflows at confluences with other creeks and rivers, different hydrologic conditions in different geographic areas, and intervening reservoirs.[628]

It is presumed that the Commission intended a reasonable result in adopting the SB 3 rules.[629] Because the SB 3 rules do not specifically require the use of more than one measurement point per diversion point or reach, it would be unreasonable to interpret the rules as requiring that, when using more than one point would be complicated, challenging, impractical, and unreasonable, and often have no effect at the more distant point.

2. Use of Upstream Measurement Points

NWF and FBR object to BRA's proposed use of upstream environmental flow measurement points if the permit is granted. BRA and the ED contend using upstream measurement points as proposed is appropriate.

a. Description of Upstream Measurement Points

Of the 40 reaches of rivers and lakes proposed in BRA's Application, there are nine for which an upstream measurement point would be used for diversions from all or a part of the reach:

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[627] Tr. at 3500, 3916–17.

[628] BRA Ex. 113, WMP Tech. Rep., App. G-6; BRA Ex. 128 at 38; Tr. at 3201–02, 3233, 3299, 3353, 3359.

[629] Tex. Gov't Code §§ 311.002(4), .021(3).

- PKR (Reach No. 1);
- Palo Pinto gage to Dennis gage (Reach No. 3);
- Dennis gage to Lake Granbury dam (Reach No. 4);
- Glen Rose gage to Lake Whitney dam (Reach No. 6);
- Aquilla Creek / Brazos River Confluence to Highbank gage (Reach No. 11);
- Leon River at Gatesville to Lake Belton dam (Reach No. 14);
- Cameron gage to Brazos River / Little River confluence (Reach No. 27);
- Easterly gage to Brazos River / Navasota River confluence (Reach No. 37); and
- Richmond gage to Gulf of Mexico (Reach No. 40).[630]

Reaches 1, 4, 6, and 14 are associated with reservoirs.[631] For these reservoirs, the upstream measurement point is only used to determine the environmental flow conditions for diversions above or within the lake.[632] Downstream measurement points are used to determine environmental flow conditions for refilling storage under the SysOp Permit.[633]

For Reaches 11 and 40, the applicable measurement point is the middle of each reach. In these cases, whether the diversion is upstream or downstream of the measurement point is dependent on where the diversion point is located. For the reach from the Aquilla Creek/Brazos River confluence to Highbank gage (Reach No. 11), the applicable measurement point is the Brazos River near Waco gage. The next downstream measurement point in the TCEQ rules is the Brazos River at State Highway 21 near Bryan,[634] which is downstream of the Little River and

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[630] BRA Ex. 113, WMP at 41–43 (Table 4.4); BRA Ex. 121.

[631] BRA Ex. 113, WMP at 41–43.

[632] There will be no diversions of SysOp Permit water above PKR, so Table 4.4 of the WMP was modified to more accurately reflect this fact. Tr. at 3220.

[633] BRA Ex. 113, WMP at 41–43; Tr. at 3094–95, 3202, 3204, 3231, 3282, 3291–30.

[634] 30 Tex. Admin. Code § 298.480(5).

Brazos River confluence.[635] In the case of the Richmond gage to the Gulf of Mexico (Reach No. 40), the Rosharon gage is the most downstream measurement point in the Brazos River Basin.[636]

There are only three reaches where all diversions in the reach will look to an upstream measurement point: Reaches 3, 27, and 37. For the reach from the Palo Pinto gage to the Dennis gage (Reach No. 3), the Palo Pinto gage measurement point is used.[637] The next downstream measurement point is the Brazos River near Glen Rose gage, which is below Lake Granbury.[638] The Cameron gage to the Brazos River and Little River confluence reach (Reach No. 27) uses the Little River near Cameron gage as its applicable measurement point.[639] The next downstream measurement point listed in the TCEQ rules is the Brazos River at SH 21 near Bryan, which is on the main stem of the Brazos River downstream of the confluence of the Brazos River and the Little River.[640] The Easterly gage to the Brazos River and Navasota River confluence reach (Reach No. 37) uses the Navasota near Easterly gage as its applicable measurement point.[641] The next downstream measurement point listed in the TCEQ rules is the Brazos River near Hempstead gage, which is on the main stem of the Brazos River downstream of the confluences of the Brazos River and Little River and the Brazos River and Navasota River.[642]

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[635] BRA Ex. 113, WMP at 41–43; BRA Ex. 121.

[636] *See* 30 Tex. Admin. Code § 298.480(19); BRA Ex. 113, WMP at 43; BRA Ex. 121; Tr. at 3788.

[637] BRA Ex. 113, WMP at 41.

[638] 30 Tex. Admin. Code § 298.480(8); BRA Ex. 121.

[639] BRA Ex. 113, WMP at 42.

[640] 30 Tex. Admin. Code § 298.480(15); BRA Ex. 121.

[641] BRA Ex. 113, WMP at 43.

[642] 30 Tex. Admin. Code § 298.480(17); BRA Ex. 121.

b. NWF's Arguments[643]

NWF complains that the draft WMP contemplates using only a single **upstream** measurement point to determine compliance with environmental flow requirements for "eight" specific diversion reaches.[644] Because those reaches include PKR, Dennis gage to Lake Granbury, Glen Rose gage to Lake Whitney dam, and Rosharon gage to Gulf of Mexico, NWF notes that they actually include most of the potential diversions postulated in BRA's appropriation runs.[645]

The WMP, including the Accounting Plan, seeks to authorize diversions using upstream measurement points as follows: "For diversions located downstream of a measurement point, the environmental flow requirement will be calculated by adding the aggregated downstream SysOp Permit diversion rate to the applicable environmental flow standard at the corresponding measurement point gage."[646]

According to NWF, that approach would deprive the river and the estuary of the protections required by the environmental flow standards, because so many diversions have already been authorized under existing water rights, including rights held by BRA. If the aggregated rate for diversions under the SysOp Permit in the reach downstream of the measurement point was 100 cfs, those diversions would be allowed if flow at the upstream measurement equaled the applicable flow standard plus 100 cfs.[647] NWF claims that would be allowed regardless of the amount of diversions under existing rights also taking place downstream of the measurement point and within the reach. As a result, according to NWF, much of the reach could be deprived of any protected environmental flows and certainly of the

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[643] NWF 2nd Initial Brief at 17–20.

[644] NWF 2nd Initial brief at 17.

[645] *See, e.g.*, BRA Ex. 133, WMP Tech. Rep., App. G-3 (Table G.3.22). Numerous modeling runs were performed. This run represents one of the key ones on which BRA seeks to rely. Diversions under the Proposed Permit are shown in the columns labelled as "SysOp."

[646] BRA Ex. 113, WMP at 41.

[647] Tr. at 3274–79.

levels of flows the standards require to be protected, even as diversions under the SysOp Permit were occurring.

According to NWF, several examples of this deficiency were discussed in the hearing, including a discussion with Dr. Alexander about impacts on inflows to the Brazos River estuary. NWF contends that Dr. Alexander acknowledged that the permit should provide a mechanism to translate the flow requirement of the standards downstream to the point below where diversions under BRA's requested permit are taking place.[648] Otherwise, according to NWF, the permit conditions will fail to account for the cumulative effect of diversions under existing water rights and the permit at issue in this case, meaning the permit would not comply with applicable environmental flow standards and cannot be issued.

To address NWF's concern, Dr. Alexander agreed that a paragraph in the WMP could be amended to add the underlined language as follows:

> The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard at a point immediately below BRA's point of diversion and additionally will not exceed provisions set forth in Section IV.D.4.b below.[649]

The ED believes that this amendment would appropriately clarify that the environmental flow standard must pass BRA's diversion points. BRA has not objected to that amendment.

However, NWF does not believe that the proposed amendment would be sufficiently specific to achieve the needed changes in BRA's operations. It recommends two alternative additions. The first would require BRA to comply with flow standards at both an upstream and a

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[648] Tr. at 3735–38, 3794.

[649] BRA Ex. 113, WMP at 41; Tr. at 3996–97.

downstream measurement point. The second option NWF proposes would have two parts. First, another paragraph in the WMP would be amended to add the underlined language that follows:

> For diversions located downstream of a measurement point, the environmental flow requirement will be calculated by adding the aggregate downstream System Operation Permit diversion rate plus the rate of all diversions made under other rights senior to the System Operation Permit, including other rights held by BRA, within the reaches controlled by the same upstream measurement point to the applicable environmental flow standard at the corresponding measurement point gage.[650]

Additionally, corresponding changes would be needed in the technical report and the Accounting Plan to accurately reflect permit requirements.

NWF contends that the second, two-part option would provide an actual mechanism for correcting the specific shortcoming in complying with the environmental flow standards. BRA would have the responsibility to obtain the necessary information about diversion rates under non-BRA water rights from the watermaster.

NWF claims the current WMP purports to authorize diversions by BRA when remaining flows would not comply with applicable environmental flow standards due to other diversions. According to NWF, it is unclear to what extent that deficiency affects the model runs BRA used to generate the various scenarios reflected in the WMP Technical Report.[651] If the modeling also assumed the availability of those diversions, it overstates water availability, according to NWF.

c. FBR's Arguments[652]

FBR also objects to the use of upstream measurement points, particularly for the PKR. According to FBR, the permit requires release from PKR of the pulse identified for the upstream

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[650] BRA Ex. 113, WMP at 41.

[651] BRA 113, WMP Tech. Rep., App. G-6.

[652] FBR 2nd Initial Brief at 72–74.

measurement point, South Bend.[653] FBR proposes that the permit also require BRA to release the larger pulse associated with the downstream Palo Pinto measurement point. It notes that Mr. Osting's testimony shows that there are ways to determine, from rainfall patterns and time of travel, if the pulse flow coming into PKR would have resulted in the size of pulse in the SB 3 rules for the Palo Pinto measurement point. That approach could also be used to determine if the size of the pulse when it reached Glen Rose would have qualified under the SB 3 standards, according to FBR.

FBR contends that 30 Texas Administrative Code § 298.475(d)(1) requires those who store water, like BRA, to pass the pulse to the applicable measurement point. The rule reads, in part, as follow:

> (d) High flow pulses. High flow pulses are relatively short-duration, high flows within the watercourse that occur during or immediately following a storm event.
>
> (1) For all measurement points, one, two, three, or four pulses per season are to be passed (i.e., no storage or diversion by an applicable water right holder), if applicable, and as described in §298.480 of this title, if streamflows are above the applicable subsistence or base flow standard, and if the applicable high flow pulse trigger level is met at the applicable measurement point. **The water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point** or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level. A water right holder can divert water in excess of an applicable pulse flow trigger requirement as long as its diversions do not prevent the occurrence of the pulse flow trigger level of an applicable larger pulse.[654]

According to FBR, BRA and the ED provide no evidence to support their argument that the applicable point is upstream. FBR contends this approach adversely affects the downstream

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[653] BRA Ex. 113, WMP at 41 (Table 4.4).

[654] Emphasis added by FBR.

segment and is not needed to protect the upstream segment where the applicable point would be located. The upstream segment will benefit from the pulse whether or not BRA is storing SysOp Permit water downstream. FBR claims the South Bend point cannot be the applicable measurement point and it should not be assumed that the Palo Pinto point is the only applicable measurement point.

d. BRA's Arguments[655]

BRA claims that using an upstream gage to measure an environmental flow requirement is not unusual and something that the TCEQ has included in water rights prior to the adoption of the SB 3 environmental flow standards.[656] BRA contends that upstream measurement points were selected for some reaches because of their geographic area for determining hydrologic condition,[657] intervening flows (*i.e.*, a downstream measurement point is below a major river confluence), and intervening structures (*i.e.*, a downstream measurement point is below a dam).[658] It claims that pulse flows at a downstream measurement point do not always correlate with the pulse flows occurring upstream.[659] Statistical correspondence between points is not guaranteed.[660]

To comply with the environmental flow conditions where the reach is downstream of its applicable measurement point, the environmental flow requirement is calculated as the environmental flow condition[661] plus the aggregated BRA diversions downstream of the

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[655] BRA 2nd Reply Brief at 44–47.

[656] Tr. at 3680–81.

[657] The dam at PKR is the dividing line between the Upper Basin and Middle Basin geographic areas for determining the applicable hydrologic condition. BRA Ex. 128 at 39; Tr. at 3911. The dam forming Lake Whitney is the dividing line between the Middle Basin and the Lower Basin. BRA Ex. 128 at 39.

[658] Tr. at 3201–02, 3359.

[659] BRA Ex. 113, WMP Tech. Rep., App. G-6.

[660] Tr. at 3353.

[661] BRA Ex. 113, WMP Tech. Rep. at 41 (Table 4.4).

applicable measurement point.[662] The diversion rate is added to the applicable environmental flow standard to help ensure that the applicable flow rate will exist in the stream downstream of the diversion point.[663]

Mr. Osting explained that BRA selected the nearest measurement point to a reach (whether upstream or downstream of the reach) in part because there is not a consistent history between adjacent measurement points or across the entire basin.[664] According to BRA, the Richmond and Rosharon measurement points are good examples of this. The environmental flow conditions for Richmond were derived from an 88-year period of record that reflects patterns of infrastructure, diversions, and return flows that change over time upstream of that location.[665] The environmental flow conditions at the Rosharon measurement point were derived from a 39-year period of record, which lacks the early period reflective of less water management.[666] Thus, upstream measurement points will likely more closely reflect the conditions downstream of those points than other measurement points further away, according to BRA.

NWF states that there are eight BRA reservoirs that use an upstream measurement point to determine environmental flow conditions before diverting inflows above or within a reservoir.[667] BRA claims that is incorrect and upstream measurement points would be used for only four BRA reservoirs: PKR, Lake Granbury, Lake Whitney, and Lake Belton.[668]

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[662] BRA Exs. 113, WMP at 40, WMP Tech. Rep at 4-75; BRA Ex. 128 at 30–36; Tr. at 3270–71.

[663] Tr. at 3271, 3728.

[664] BRA Ex. 128 at 27–28; Tr. at 3354, 3911.

[665] BRA Ex. 128 at 28.

[666] BRA Ex. 128 at 28.

[667] NWF 2nd Initial Brief at 29. NWF likely miswrote. Elsewhere it contends there are "eight specific diversion reaches" "using only a single upstream measurement point." *See* NWF 2nd Initial Brief at 17.

[668] BRA Ex. 113, WMP at 41–43.

According to BRA, FBR repeatedly mischaracterizes which measurement point BRA will use to determine the environmental flow conditions when refilling storage under the SysOp Permit. The record is clear on this point. Mr. Gooch and Mr. Osting stated on numerous occasions that BRA must use the environmental flow conditions at the downstream measurement point when refilling storage at any of its reservoirs under the SysOp Permit.[669]

As to the substance of NWF's concern about using upstream measurement points, BRA contends it is speculative and sufficient protections will be in place to avoid the results NWF fears. BRA concedes that it is theoretically possible that a senior water right holder could divert all the additional flow that BRA would be required to let pass its diversion point to meet the environmental flow condition, but claims that scenario is unlikely and is worst-case.[670]

First, the Brazos Watermaster will have the final decision on any BRA diversion of run-of-river water under its SysOp Permit and will ensure that BRA complies with the environmental flow conditions.[671] Second, BRA will be annually preparing an Environmental Flow Achievement Report for TCEQ.[672] These reports will provide an opportunity for BRA and the TCEQ to implement operational changes to address problems and ensure environmental flow standards are met in the future.[673] Third, the adaptive management provisions in the TCEQ rules, which will be incorporated into the SysOp Permit, will allow TCEQ to reconsider applicable measurement points if new data shows that different or additional measurement points are warranted.[674]

BRA also objects to the additional requirements NWF proposes to address its concerns about upstream points. According to BRA, requiring it to daily determine the diversion rates of

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[669] Tr. at 3094–95, 3202, 3204, 3231, 3282, 3291, 3330.

[670] Tr. at 3331.

[671] Tr. at 3682, 3723, 3725–28.

[672] BRA Ex. 113, WMP at 46, WMP Tech. Rep at 4-88 to 4-89.

[673] Tr. at 3239, 3340–41, 3757.

[674] Tr. at 3344–45, 3757.

senior water rights and add those to the applicable environmental flow condition is not practical.[675]

e. The ED's Arguments[676]

The ED notes that for diversions downstream of a measurement point, the aggregated downstream diversion rate for all BRA diversions within an applicable reach will be added to the value of the adopted environmental standards for that gage. For PKR and Lake Whitney, passage of inflows will be governed by the adopted standards at the downstream measurement point and lakeside diversions will be governed by the upstream measurement point.[677]

NWF argues that there may be some deficiency related to the standards in the WAM that could affect water availability. According to the ED, this is incorrect because the WAM fully and appropriately includes and implements the adopted environmental flow standards.[678]

f. ALJs' Analysis

With one recommended clarification, the ALJs find that BRA's proposed use of some upstream measurement points as described above complies with the requirements of the SB 3 rules. Thus, using an upstream measurement point is proper and using both an upstream and a downstream measurement point is not necessary.

The SB 3 rules do not prohibit the use of upstream measurement points. The Commission has authorized their use in permits in the past for similar purposes.[679] Moreover, as BRA notes, it is reasonable and practical to use the upstream points for determining hydrologic

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[675] Tr. at 3359, 3723.

[676] ED 2nd Reply Brief at 13–14.

[677] ED Ex. K1 at 19–20.

[678] ED Ex. R3 at 3; Tr. at 3679.

[679] Tr. at 3680–81.

condition, due to the geographic areas where the points lay, intervening flows, and intervening structures.[680] Further, pulse flows at a downstream measurement point do not always correlate with the pulse flows occurring upstream,[681] and statistical correspondence between points is not guaranteed.[682] Additionally, in some cases, upstream measurement points will likely more closely reflect the conditions downstream of those points than other measurement points further downstream.[683] Calculating the environmental flow requirement as the environmental flow condition in the SB 3 rules[684] plus the aggregated BRA diversions downstream of the applicable measurement point[685] will assure compliance with those SB 3 rules where the diversion reach is downstream of its applicable measurement point.[686]

The ALJs recommend amending one paragraph in the WMP by adding the underlined language shown below to clarify one point:

> The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard <u>at a point immediately below BRA's point of diversion</u> and additionally will not exceed provisions set forth in Section IV.D.4.b below.[687]

Dr. Alexander testified that addition would be fine and reflect the way the ED intended to implement the standards.[688]

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[680] Tr. at 3201–02, 3359.

[681] BRA 113, WMP Tech. Rep., App. G-6.

[682] Tr. at 3353.

[683] BRA Ex. 128 at 27–28; Tr. at 3354, 3911.

[684] BRA Ex. 113, WMP at 41 (Table 4.4).

[685] BRA Ex. 113, WMP at 40, WMP Tech. Rep. at 4-75; BRA Ex. 128 at 30–36; Tr. at 3270–71.

[686] Tr. at 3271, 3728.

[687] BRA Ex. 113, WMP at 41.

[688] Tr. at 3996–97.

The ALJs conclude that the option NWF suggests, requiring BRA to daily determine the diversion rates under senior water rights and add those to the applicable environmental flow condition, is not practical. The real-time data concerning senior water right diversions are not available to BRA.[689] Rather than assure compliance, NWF's proposed option would likely result in flows well in excess of the requirements of the SB 3 rules;[690] hence, it is not necessary.

3. BRA's Treatment of High Flow Pulses in the SysOp Permit Is Consistent with the TCEQ Rules

a. Proposed Treatment of High Flow Pulses

The WMP would prohibit BRA's diverting or storing water under the SysOp Permit without meeting a seasonal schedule of individual high flow pulses at the applicable measurement points.[691] Storage and diversion under the SysOp Permit are authorized during high flow pulse events if: (1) the stream flow is not reduced below the pulse trigger flow; or (2) the number of pulse events exceeds the frequency criteria.[692] Storage and diversion may also continue during a pulse as long as the storage or diversion amounts are lower than the applicable diversion rate trigger level.[693] The diversion rate trigger levels operate to exclude small diversions that are unlikely to impact high flow pulses, were developed in accordance with TCEQ rules, and are defined as 20% of the pulse trigger flow.[694] BRA has very few customers with diversions that are large enough to affect a pulse flow.[695] Most of the diversions by BRA customers are very small when compared to a pulse flow, and even in aggregate, would have a limited possibility of affecting the achievement of a pulse flow.[696]

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[689] Tr. at 3359.

[690] Tr. at 3723.

[691] BRA Ex. 113, WMP at 29.

[692] BRA Ex. 128 at 36.

[693] BRA Ex. 113, WMP at 43–45 (Table 4.5), WMP Tech. Rep. at 4-79.

[694] BRA Ex. 113, WMP Tech. Rep. at 4-80; *see* 30 Tex. Admin. Code § 298.485(b).

[695] BRA Ex. 113, WMP Tech. Rep at 4-80.

[696] BRA Ex. 113, WMP Tech. Rep at 4-80.

As part of the development of the WMP, BRA evaluated the relationship between high flow pulses and adjacent selected measurement points.[697] That evaluation illustrated that the temporal relationship between pulses occurring at adjacent upstream and downstream measurement points is very complex, due to travel time between measurement points, existing structural and operational influences, and pulse magnitude relative to diversion rates.[698] Because of these factors, operations and accounting under the WMP will manage storage and diversion within a reach according to the measurement point applicable to that reach.[699]

The WMP allows BRA to temporarily store pulse events. If impounded flows under the SysOp Permit would prevent the achievement of a high flow pulse event at the applicable measurement point and should be released, BRA will coordinate with the USACE (if the reservoir's dam is operated by the USACE) and releases of the pulses will conform to existing BRA and USACE water control plans.[700] BRA will need to coordinate its operational release pattern with downstream flow patterns to increase chances that an intended pulse achievement will occur at a downstream measurement point and ensure the release conforms to any applicable water control plan.[701]

b. NWF's Arguments[702]

NWF argues that BRA's proposed impoundment of pulse flows is a particularly important issue in this case because diverting or storing water upstream can determine whether a pulse trigger level occurs downstream.[703] While there are exceptions, NWF notes that BRA's proposed high-flow-pulse volumes and trigger levels tend to increase in size as you move down

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[697] BRA Ex. 113, WMP Tech. Rep., App. G-6.

[698] BRA Ex. 128 at 38.

[699] BRA Ex. 128 at 38.

[700] BRA Ex. 113, WMP at 50, WMP Tech. Rep. at 4-80; BRA Ex. 128 at 38.

[701] BRA Ex. 113, WMP at 50, WMP Tech. Rep. at 4-80; BRA Ex. 128 at 38–39.

[702] NWF 2nd Initial Brief at 25–30.

[703] *See* Tr. at 3296, 3300–03.

the Brazos River Basin.[704] Flow levels generally increase because, as one travels downstream, there is additional surface area contributing runoff.[705] NWF contends that allowing temporary impoundment, as BRA proposes, could effectively preclude pulse trigger levels being reached at one or more downstream measurement points, thereby largely negating pulse flow protections at those downstream locations.

According to NWF, the permit would authorize temporary impoundment of pulses in contradiction of the plain language of the flow standards. NWF cites the following language from one of the SB 3 rules and argues that it quite clearly provides that storage of protected pulse flows is generally not authorized:

> The water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level.[706]

NWF argues that water temporarily stored in accordance with this rule might have to be released if needed to satisfy the volume component of the pulse event.

The rule also illustrates, according to NWF, that appropriate permit conditions must be developed in the context of an individual application, particularly one as complex as BRA's. Taken literally as constituting the permit condition, NWF maintains the rule would not reasonably allow the use of upstream measurement points because it would allow permanent impoundment of a pulse just downstream of an upstream measurement point if the required flow volume and duration had already occurred at the upstream measurement point. According to

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[704] *See, e.g.*, BRA Ex. 113, WMP at 30, 36, 38. (Dry condition, winter high flow pulses: Brazos River near Waco, Trigger: 2,320 cfs, volume: 12,400 acre-feet; Brazos River at SH 21 near Bryan Trigger, 3,230 cfs, volume: 21,100 acre-feet; and Brazos River near Hempstead Trigger: 5,720 cfs; volume 49,800 acre-feet.)

[705] *E.g.*, Tr. at 3295.

[706] 30 Tex. Admin. Code § 298.475(d)(1), in part.

NWF, that would deprive the flow standards of practical meaning and not protect flows in the river.

If a pulse flow event may be temporarily impounded in an upstream reservoir, NWF claims that pulse flows are less likely to be protected downstream. It argues that a delayed release of a pulse is unlikely to coincide with high flows at a downstream location from the same storm event, reducing the likelihood of a pulse trigger flow occurring at downstream locations. NWF contends that nothing in BRA's WMP, the technical report, or Accounting Plan describes when or in what pattern temporarily impounded pulse flow events would be released.

Mr. Osting, BRA's expert witness on environmental flows, testified, "If you intend to use water under the system operation permit and if you're going to use water inside the season, then you should be meeting the pulse condition inside the season."[707] However, he acknowledged that nothing in the WMP addresses this point.[708] NWF notes that if a released pulse does not satisfy the pulse trigger level at another measurement point downstream, it would be available for diversion or impoundment under the SysOp Permit as long as the then-applicable base flow amount is allowed to continue downstream.

According to NWF, the SysOp Permit fails to incorporate appropriate conditions to address this pulse flow impoundment issue. NWF proposes not allowing temporary impoundment of pulse flows, except for that portion of a pulse flow that exceeds the applicable pulse trigger level. It also contends that the permit should specify how to determine whether the impounded portion must be released and, if so, the timing and pattern of the release.

NWF also suggests another option, while claiming that the environmental flow rules do not appear to allow it: temporary impoundment of pulse flows would be allowed only if a comparable pulse flow event was occurring at the next measurement point downstream. NWF

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[707] Tr. at 3198.

[708] Tr. at 3200.

believes that would significantly lessen pulse timing problems, although specific permit provisions would still be necessary to specify the timing and pattern of release of temporarily impounded water.

On another point, NWF claims that BRA's proposal to base diversion from several reservoirs on flows at upstream measurement points and to pass flows on downstream measurement points[709] is inconsistent with the SB 3 rules. NWF argues that under the rules neither diversion nor impoundment is authorized once a high flow pulse trigger level has been reached until the pulse flow requirements have been satisfied. Additionally, NWF argues that any protection afforded by limiting diversions from a reservoir based on an upstream measurement point is illusory. The upstream flows will either have occurred or not and nothing that happens in the reservoir will affect that.

NWF also argues that BRA must demonstrate that it has the ability to pass the pulse flows required by the flow standards at all reservoirs, and BRA has not done so. Mr. Osting testified that various things can affect BRA's ability to pass pulse flows, including infrastructure constraints and operational constraints imposed by the USACE.[710] According to NWF, Mr. Osting acknowledged that he had not completely evaluated BRA's ability to comply with pulse flow requirements.[711]

c FBR's Arguments[712]

FBR claims there is no assurance that a captured pulse flow released after a significant rain event will provide the ecological benefits downstream that were assumed when environmental flow standards were developed. It argues that neither BRA nor the ED presented any evidence to justify any delay in the release of a pulse. For example, FBR contends it cannot

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[709] BRA Ex. 113, WMP at 41–43 (Table 4.4).

[710] Tr. at 3293–94.

[711] Tr. at 3190–91.

[712] FBR 2nd Initial Brief at 75–76.

be assumed that a required pulse timed to provide the trigger for fish spawning can be delayed until after spawning season year after year with no adverse impact. FBR argues that nothing in the SB 3 rules, the Texas Water Code, or the evidence suggests that delaying the passage of required pulses is allowed or appropriate.

d Dow's Arguments[713]

Dow contends that it is not clear that BRA's plan to impound and later release high flow pulses would comply with SB 3 requirements. Dow notes that BRA intends to detect a potential high flow pulse by monitoring changes in the surface elevation of its impoundments.[714] However, Dow contends that the evidence shows that measuring inflows based on changes in surface elevation level is inaccurate on a real-time basis.[715] Further, Mr. Osting admitted that there is no limit on the time that BRA may store water that comprises a potential high flow pulse.[716]

e. BRA's Arguments[717]

BRA notes that the WMP acknowledges that BRA might temporarily store water associated with pulse events.[718] BRA claims that temporary storage of this water is simply a practical reality: a pulse event coming into a reservoir will be captured inside the reservoir.[719] This temporary storage of a pulse may be necessary to determine: (1) if storage is occurring in the reservoir under the SysOp Permit; and (2) whether applicable environmental flow conditions

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[713] Dow 2nd Initial Brief at 63–64.

[714] BRA Ex. 113, WMP at 50.

[715] Tr. at 255–57, 1084–87.

[716] Tr. at 3300.

[717] BRA 2nd Reply at 51–54.

[718] BRA 113, WMP at 50.

[719] Tr. at 3198, 3287, 3303.

are being met at the measurement point.[720] Once the pulse enters a reservoir, BRA will calculate the flow rate and volume associated with the pulse event based on changes in water levels in the lake.[721]

According to BRA, meeting the environmental flow conditions at a downstream measurement point is not solely predicated on releases from reservoirs.[722] Given the magnitude of many of the pulses, it is likely that BRA will be able to operate under the SysOp Permit without having to actively manage and forecast pulses and their passage downstream.[723]

While the WMP does not specify a period of time in which a qualifying pulse must be released (if one, or part of one, is required to be released), the pulse requirements will need to be satisfied in accordance with the environmental flow conditions if BRA intends to use the water under the SysOp Permit.[724] BRA's best chance of meeting the environmental flow conditions will be to make the release consistent with other hydrological events that are occurring at the same time.[725] It is to BRA's advantage to release a qualifying pulse while a large event is occurring and there are other inflows and runoff to assist BRA in making sure that its release hits the applicable environmental flow condition target.[726]

NWF complains that BRA is not required to "protect" a pulse event so that it passes through multiple downstream locations. BRA argues that the complaint is without merit and contrary to TCEQ's rules. BRA claims this is essentially a variation of the arguments raised by NWF and FBR regarding the use of a single measurement point. BRA maintains that it has no ability to prevent non-BRA water rights holders downstream of BRA from diverting water BRA

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[720] BRA Ex. 113, WMP at 50; Tr. at 3199.

[721] Tr. at 3231, 3288–89.

[722] Tr. at 3194.

[723] Tr. at 3302.

[724] Tr. at 3198, 3200, 3233, 3294.

[725] Tr. at 3232, 3292–93.

[726] Tr. at 3304, 3325.

has passed to meet the environmental flow conditions. Moreover, BRA claims that it is only required to ensure that environmental flow conditions for a reach are met at the measurement point.[727] If a pulse would be a qualifying pulse at multiple downstream measurement points, BRA might choose to release the qualifying pulse and pass that pulse downstream in order to be able to meet the environmental flow conditions.[728]

f. The ED's Arguments[729]

While the WMP would allow BRA to temporarily store pulse events, the ED contends that stored water would have to be released if impoundment would prevent achievement of a qualifying high flow pulse at the applicable measurement point.[730] The ED believes impoundment is necessary because BRA must determine the volume and the duration of the flow so that BRA would know how much to pass.[731] BRA will have to maintain a record of its diversions from run-of-river flows, reservoir inflows, and reservoir storage as part of its accounting.[732]

g. ALJs' Analysis

The ALJs conclude that BRA's proposed treatment of high pulse flows conforms to the requirements of the Texas Water Code and the SB 3 rules and should be approved. For each measurement point,[733] trigger levels are specified in cfs[734] and vary according to the season[735]

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[727] Tr. at 3299.

[728] Tr. at 3301.

[729] ED 2nd Reply Brief at 13.

[730] BRA Ex. 113, WMP at 50.

[731] Tr. at 3784–85.

[732] Tr. at 3914; BRA Ex. 113, WMP at 49.

[733] 30 Tex. Admin. Code § 298.480 specifies the measurement points.

[734] 30 Tex. Admin. Code § 298.480.

[735] 30 Tex. Admin. Code § 298.455(8), (10), and (13) define the seasons.

and the hydrologic condition—dry, average, or wet.[736] The requirement to pass high flow pulses is set out in 30 Texas Administrative Code § 298.475(d), which provides:

> (d) High flow pulses. High flow pulses are relatively short-duration, high flows within the watercourse that occur during or immediately following a storm event.
>
> (1) For all measurement points, one, two, three, or four pulses per season are to be passed (i.e., no storage or diversion by an applicable water right holder), if applicable, and as described in §298.480 of this title, if streamflows are above the applicable subsistence or base flow standard, and if the applicable high flow pulse trigger level is met at the applicable measurement point. The water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level. A water right holder can divert water in excess of an applicable pulse flow trigger requirement as long as its diversions do not prevent the occurrence of the pulse flow trigger level of an applicable larger pulse.
>
> (2) If the applicable high flow pulse trigger level does not occur in a season, then the water right holder need not stop storing or diverting water to produce a high flow pulse. The water right holder is not required to release water lawfully stored to produce a high flow pulse.
>
> (3) Each season is independent of the preceding and subsequent seasons with respect to high flow pulse frequency.
>
> (4) High flow pulses at the applicable measurement point are dependent on the hydrologic conditions set out in §298.470 of this title.
>
> (5) For measurement points in the Brazos River Basin described in §298.480(7) - (8) of this title, if a pulse flow requirement for the large seasonal pulse is satisfied for a particular season, one of the

[736] 30 Tex. Admin. Code § 298.455(1), (3), and (12) define the conditions.

> smaller pulse requirements is also considered to be satisfied for that season.

Complying with the prohibitions on storage will be very complicated for BRA. First, the prohibitions on storing water set out in the SB 3 rules will not apply to BRA's water rights under its other permits. The SB 3 rules only apply to applications pending or filed after September 1, 2007.[737] BRA's other water rights were granted before that date. Thus, BRA will not always have an obligation to pass water to achieve a high pulse downstream.

Second, BRA will generally be able to store water under the permit at issue in this case, if granted, unless a trigger pulse flow is occurring. BRA reasonably proposes to determine if a triggering level is occurring based on changes in the water level in the lake. There is no evidence of any other way to make that determination.

Third, if a pulse trigger level flow is occurring, BRA will need to determine whether additional water is being stored in the reservoir under the SysOp Permit or some other permit.

Fourth, if a pulse trigger level flow is occurring, BRA could still store some water under the SysOp Permit. Water could be arriving at the measurement point from sources downstream of BRA's reservoir. BRA's obligation would be limited to assuring that a specified flow of water passed the measurement point for a specified duration or a specific amount of water had passed the measurement point.[738] BRA would only be obligated to pass sufficient additional water to assure the required volume and duration of flow was achieved at the measurement point.

As NWF correctly notes, 30 Texas Administrative Code § 298.475(d)(1) provides that a water right holder may not divert or store water if: (1) streamflows are above the applicable

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[737] *See* 30 Tex. Admin. Code § 298.10(a).

[738] "The water right holder shall not divert or store water until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level." 30 Tex. Admin. Code § 298.475(d)(1).

subsistence or base flow standard, and if the applicable high flow pulse trigger level is met at the applicable measurement point; and (2) until either the applicable volume amount has passed the applicable measurement point or the duration time has passed since the high flow pulse trigger level occurred except during times that streamflow at the applicable measurement point exceeds the applicable high flow pulse trigger level. However, words and phrases in TCEQ's rules must be read in context.[739] Further, it is presumed that in adopting rules, the Commission intended a reasonable result that is feasible of execution.[740]

The ALJs conclude that BRA's proposal complies with TCEQ's high flow pulse rule for the Brazos River Basin, 30 Texas Administrative Code § 298.475(d). At most, BRA proposes a delay in passing water in order to determine whether the rule requires BRA to pass the water. It would appear that BRA has no reasonable alternative to feasibly execute the rule's requirement. It could instead release amounts to assure the trigger flow rates, durations, and volumes specified in the environmental flow standards[741] are always achieved. However, that likely would result in BRA releasing water stored under its other permits to produce high flow pulses when it had no obligation to do so.[742]

4. Operational Flexibility and the Environmental Flow Standards

BRA is seeking flexibility in complying with the requirement to honor senior water rights; it asks to be allowed to use any source of water available to BRA instead of passing flows in priority order.[743] That is new authority that BRA does not currently have.[744] NWF opposes inclusion of operational flexibility language in the SysOp Permit.

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[739] Tex. Gov't Code §§ 311.002(4), .011(a).

[740] Tex. Gov't Code §§ 311.002(4), .021(3), (4).

[741] 30 Tex. Admin. Code § 298.480.

[742] 30 Tex. Admin. Code § 298.475(d)(2), (e).

[743] *See* BRA Ex. 132B at 3, at 8, ¶ 5.C.3.

[744] Tr. at 3083, 3800.

a. NWF's Arguments[745]

If the permit is granted and BRA no longer passes water downstream as it currently does, NWF contends that operational flexibility has the potential to affect flow levels in various stretches of streams and rivers.[746] It claims that BRA and the ED did not evaluate the potential extent or impacts of those changes in flow levels.[747] NWF notes that BRA's existing permits do not impose restrictions to protect environmental flows, and contends that granting operational flexibility to BRA could adversely affect environmental flows and the extent of the impact is unknown and unlimited.[748]

To address this concern, NWF proposes that a permit condition substantially similar to the following be added to any permit that might be issued:

> BRA's exercise of flexibility as authorized by Special Condition . . . of the permit may not cause, or contribute to causing, flows at any measurement point or compliance point specified in the Water Management Plan to fall below the lesser of (1) the flow level protected by any component of the flow standards then in effect for that measurement point, or (2) the flow at that measurement point as it would have existed without the exercise of that flexibility. BRA shall document its use of that flexibility and its compliance with this special condition in the accounting/delivery plan.

b. BRA's Arguments[749]

BRA disagrees with NWF's assertion that the operational flexibility provision would exempt BRA from complying with the applicable environmental flow conditions. Mr. Gooch provided an example of how the provision might be applied.[750] If a Lower Basin senior water

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[745] NWF 2nd Initial Brief at 30–31.

[746] Tr. at 3083–84, 3801.

[747] Tr. at 3084, 3801.

[748] Tr. at 3803.

[749] BRA 2nd Reply Brief at 55–56.

[750] Tr. at 3082.

right on the main stem of the Brazos River made a call for water, BRA could elect to provide water from one of its reservoirs with less demand on it instead of from one of its reservoirs with less senior priority. As a result, BRA could impound inflows at the reservoir faced with a greater demand even if its priority were lower. BRA would still be required to comply with the environmental flow conditions,[751] and would not be able to impound or divert water under the SysOp Permit unless it met them.[752]

Even though BRA considers the possibility unlikely, and even though no evidence in the record supports it, BRA does not oppose adding to Special Condition 5.C.3[753] the clarifying language underlined below:

> Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan, or Special Condition 5.C.2, or prevent the achievement of environmental flow requirements that would have otherwise been achieved.

c. ALJs' Analysis

The ALJs find, as NWF and BRA agree, that including an operational flexibility condition in the permit must not allow BRA to evade compliance with the environmental flow standards. The ALJs agree that clarifying that point is appropriate, but they find NWF's suggested language would impose unduly cumbersome restrictions that go beyond the requirements of the environmental flow standards. They recommend including in the permit, if

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[751] Tr. at 3301.

[752] BRA Ex. 132B; Tr. 3802–03.

[753] *See* BRA Ex. 132B at 10, ¶ 5.C.3.

one is issued, BRA's proposed modification of Special Condition 5.C.3, which would more succinctly clarify the point without imposing unnecessary and awkward additional requirements.

5. Compliance With and Enforceability of Environmental Flow Standards

a. NWF's Arguments

NWF contends that BRA must demonstrate that it has the ability to pass the pulse flows required by the flow standards, but it has not done so. It contends that Mr. Osting, BRA's expert witness, acknowledged that various things can affect BRA's ability to pass pulse flows[754] and he has not completely evaluated BRA's ability to comply with pulse flow requirements.[755] Also, according to NWF, constraints on the infrastructure at a dam or operational constraints imposed by the USACE may preclude compliance. NWF admits that these constraints may not apply at all locations, but it contends that BRA must demonstrate that it can ensure compliance with pulse flow requirements at all locations.

b. FBR's Arguments[756]

According to FBR, BRA has the burden of proving it can meet the requirements of the environmental flow standards. FBR claims that some of BRA's dams, such as Lake Proctor, cannot pass significant pulse flows when the water level in the lake is below the spillway for the dam. It contends that BRA has provided no evidence that all its reservoirs can pass the required pulses when storing SysOp water below the top of the spillway.

FBR also argues that TCEQ's environmental flow standards are not enforceable because they do not retain priority dates for purposes of enforcement. FBR also contends that the ED takes the position that they are unenforceable. Without providing a citation, FBR argues that the

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[754] Tr. at 3293–94.

[755] Tr. at 3190–91.

[756] FBR 2nd Initial Brief at 78–79.

BRA's Proposed Permit includes a unique provision that would give BRA the right to try again, year after year, to comply with the environmental flow standards if it failed to meet them. There would be no deadline for BRA to comply, according to FBR. It claims that there would be no enforceable environmental flow standards until the ED determined that BRA had been given enough time to try to comply.

c. The ED's Arguments[757]

The ED claims priority dates are not required to implement the environmental flow standards. They would be required by a permit special condition[758] and also set out in the WMP, which would be a part of the permit.[759] If BRA violated the special conditions or the WMP, the ED claims that would be a permit violation. BRA will be required to record its diversions from run-of-river flows, reservoir inflows, and reservoir storage as part of its Accounting Plan.[760]

d. BRA's Arguments[761]

BRA notes that some parties contend it is possible for BRA to be in a situation where it is unable to pass a pulse because of limitations of facilities at the dams of BRA reservoirs. The Protestants use the Lake Proctor dam as the example. BRA contends that the situation described by the Protestants is unlikely. Most of the SysOp Permit storage occurring at any of its reservoirs will likely be at the top of conservation pool, above the spillways.[762]

If faced with the unlikely situation where the facilities at one of the reservoirs was unable to pass high flow pulses because of physical limitations of the dam, BRA contends it will operate

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[757] ED 2nd Reply Brief at 13–14.

[758] *See* BRA Ex. 132B at 10, ¶ 5.E.

[759] Tr. at 3914; BRA Ex. 113, WMP at 28–56, specifically at 49.

[760] Tr. at 3914; BRA Ex. 113, WMP at 49–51.

[761] BRA 2nd Reply Brief at 56–57.

[762] Tr. at 3328.

its system and supply water out of its reservoirs in a manner that provides some reasonable expectation that BRA will be able to refill storage emptied by the SysOp Permit and pass the required pulse events, if necessary.[763] Alternatively, BRA can avoid emptying space in a reservoir under the SysOp Permit, so that all storage will be occurring under its existing water rights, which are not subject to SB 3 environmental flow requirements.

BRA concedes it may have to limit reservoirs from which SysOp Permit water is used if BRA is unable to comply with the terms and conditions for storing and releasing that water in order to meet high flow pulse requirements. BRA contends that in the final analysis, this is an enforcement or management issue, not a basis for denial of BRA's Application.

BRA notes that TCEQ's rules state that the priority date for the environmental flow standards for the Brazos River Basin is March 1, 2012, and that priority date is used in the water availability determinations, and "has no other purpose."[764] Moreover, enforcement of the environmental flow standards is not predicated on a priority date, according to BRA. The rules expressly state that water rights permits issued after the effective date of chapter 298, subchapter G, "shall contain flow restriction special conditions that are adequate to protect the environmental flow standards for the Brazos River Basin."[765] These flow restriction special conditions are included in the SysOp Permit.[766] TCEQ will have the authority to enforce those permit conditions.[767]

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[763] Tr. at 3328–29, 3338–39.

[764] 30 Tex. Admin. Code § 298.465; Tr. at 3913–14.

[765] 30 Tex. Admin. Code § 298.485.

[766] BRA Ex. 132B at 10, ¶ 5.E.

[767] Tr. at 3913–14; *see also* Tex. Water Code § 7.002 (stating that TCEQ may initiate legal proceedings to compel compliance with its permits), § 11.082 (relating to civil penalties for violations of Chapter 11), § 11.0842(a) (relating to administrative penalties for violation of Chapter 11 and water rights permits), § 11.0843 (relating to field citations for violations of Chapter 11 and water rights permits).

e. ALJs' Analysis

The ALJs know of no law requiring BRA to disprove speculation by NWF and FBR that BRA could encounter problems complying with SB 3 rules, such as possible problems with the USACE or the inability of BRA's dams to pass flows. The SysOp Permit, if issued, would require BRA to comply with the SB 3 environmental flow standards if it diverts water under the permit. Nothing would relieve BRA of that obligation.

Under chapter 7 of the Texas Water Code and other statutes, the Commission has authority to enforce its rules and the requirements of permits it issues, through the assessment of administrative penalties, ordering corrective action, and seeking civil penalties and injunctive relief in court.[768] If BRA diverts water in the future under the SysOp permit without letting the required environmental flows pass, it would be violating the permit, and the Commission could take enforcement action.

Also the ALJs see no basis for FBR's claim that the environmental flow standards will not be enforceable against BRA if the SysOp Permit is granted. Compliance with the standards will be required by the SB 3 rules and special conditions in the permit. As provided by rule, the environmental flow standards will have a March 1, 2012 effective date.[769]

FBR appears to believe that the requirement in BRA's Proposed Permit for BRA to file annual Environmental Flow Achievement Reports with TCEQ[770] would waive TCEQ's rights to enforce its rules and permit provisions concerning the environmental flow standards. That is incorrect. The annual report provision would require BRA to identify whether its operation under the permit caused non-achievement of the environmental flow standards.[771] If so, BRA

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[768] *See* Tex. Water Code §§ 7.002, .032, .051, .052, .101–.105, 11.082, .0842(a), .0843.

[769] 30 Tex. Admin. Code § 298.465.

[770] *E.g.* BRA Ex. 132B at 9, ¶ 5.D.1, incorporating by reference WMP, including Tech. Report; BRA Ex. 113, WMP Tech. Rep. at 4-88 to 4-89.

[771] BRA Ex. 113, WMP Tech. Rep. at 4-88 to 4-89.

would be required to propose changes in its operations to prevent further non-achievement.[772] Nothing in the annual report provision would waive TCEQ's right to take enforcement action if BRA failed to comply with the environmental flow standards.

Lest there be any doubt, BRA has already stipulated, through its briefing in this case as summarized above, that the ED will retain authority to enforce BRA's compliance with the environmental flow standards.

C. No Dispute Concerning Bays and Estuaries

BRA and the ED contend that approval of BRA's proposal would not lead to an adverse effect on the bays and estuaries of the state. No party disagrees. The Brazos River estuary is river-dominated and has no directly associated barrier island embayment.[773] The mouth of the Brazos River discharges directly into the Gulf of Mexico, and there is limited commercial fishing in the area. The original mouth of the Brazos River now serves as the harbor of Freeport, Texas.[774] In recognition of these facts, the SB 3 environmental flow standards provide sufficient inflows to support a sound ecological environment at the mouth of the Brazos River.[775] Because the Brazos River has no natural bay and limited connection to associated existing bays, the SysOp Permit is not anticipated to have an impact on any bay. Moreover, because the Brazos River estuary is dominated by river flows, the limited estuary is not anticipated to be affected by the SysOp Permit.[776]

Both BRA's and the ED's experts agree that it is not necessary to include specific special conditions for the bay and estuary system as the instream flow requirements sufficiently protect

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[772] BRA Ex. 113, WMP Tech. Rep. at 4-88 to 4-89.

[773] BRA Exs. 29 at 13, 33 at 9, 128 at 54.

[774] BRA Exs. 15 at 92, 92 at 2–10, 29 at 13, 31 at 11; ED Exs. DG-1 at 12, DG-3 at 12.

[775] BRA Ex. 128 at 55.

[776] BRA Ex. 128 at 55.

the limited system.[777] Further, no Protestant has argued that additional protections are necessary. The ALJs conclude that BRA's Proposed Permit, as modified by this PFD, includes all conditions necessary to maintain beneficial inflows to the Brazos River's bay and estuary system.

XV. NO DISPUTE CONCERNING GROUNDWATER

The proposed appropriation is not expected to have a significant negative impact on groundwater resources in the Brazos River Basin. No party disputes that.

BRA's expert Mr. Gooch testified that BRA's Proposed Permit would not significantly impair existing uses of groundwater, groundwater quality, or spring flow.[778] He noted the surface water that BRA seeks to appropriate might serve as a substitute for further development of groundwater in some parts of the Brazos River Basin, potentially reducing aquifer declines and subsidence. The water may also be used conjunctively with groundwater resources.[779] During the Second Hearing, Mr. Gooch noted that his testimony on this issue from the First Hearing remained valid.[780]

The ALJs conclude that BRA's operation under the Proposed Permit would have no adverse effect on groundwater or groundwater recharge.

XVI. PUBLIC WELFARE, PUBLIC INTEREST, AND INSTREAM USES

Texas Water Code § 11.134(b)(3)(C) provides that "[t]he commission shall grant the application only if: . . . the proposed appropriation . . . is not detrimental to the public welfare."

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[777] BRA Exs. 29 at 13, 33 at 9; ED Ex. DG-1 at 12.

[778] BRA Ex. 15 at 94.

[779] BRA Exs. 10 at 15, 15 at 93–94.

[780] BRA Ex. 119 at 98.

Additionally, as discussed above, other statutes require consideration of the "public interest."[781] Because public interest and public welfare considerations are closely related and overlap, the ALJs consider them together in this portion of the PFD.

A. Overview of Parties' Concerns

The parties clearly have different perspectives and values. This leads them to view the public's interest and welfare very differently and to emphasis different issues.

BRA contends that approval of its Application is strongly in the public interest and will support the public welfare. It focuses on the adequacy, reliability, and cost of water supplied to the public. It claims that the SysOp Permit is the least expensive and most readily available new source of water to meet demands in the Brazos River Basin with the least environmental impact. BRA claims that instream flow restrictions beyond those it has proposed are not warranted, but it agrees to additional restrictions to support wildlife, recreation, and aesthetic values.[782]

FBR claims to be "amazed" that BRA never mentions, as part of the public welfare test, the value that instream flow and water in lakes provide to local communities, adjacent property owners, recreation, tourism, culture, aesthetics, and the economy.[783]

Dow largely equates the public welfare with keeping salinity levels low in the Brazos River.[784] Dow also contends that it is contrary to the public welfare to appropriate water to BRA that is only theoretically available[785] and can never be beneficially used.[786]

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[781] Tex. Water Code §§ 11.0235(b)–(c), .147(b), (d), (e).

[782] BRA 1st Initial Brief at 9–11; BRA 2nd Initial Brief at 37–43.

[783] FBR 1st Reply Brief at 20–21; FBR 2nd Initial Brief at 80–84; FBR 2nd Reply Brief at 20–23.

[784] Additionally, Dow equates the beneficial use requirement with the public welfare when arguing that BRA has not shown that all of the water it seeks is intended for a beneficial use. Dow 1st Initial Brief at 41–42. The ALJs consider those Dow arguments as beneficial-use arguments elsewhere in the PFD.

[785] Dow 1st Reply Brief at 39–41.

[786] Dow 2nd Initial Brief at 64.

LGC equates the public interest with avoiding lower water levels in Lake Granbury, which could adversely affect recreation and fishing in the lake.[787]

NWF attaches special importance to instream flow and conservation.[788] NWF argues that granting the SysOp Permit is not in the public interest because the permit fails to account for the ongoing drought and to protect a sound environment. NWF also claims that BRA has failed to show that it would put the water to beneficial use, and the SysOp Permit and incorporated documents are contrary to the public interest because they are almost impossible to understand.[789]

Mr. Ware argues that the public interest and welfare should be centered on family farmers and their need for water to maintain their farms. Based on that, he asks the Commission to change the way it issues term permits and models water availability, recognize the importance of water use by traditional family farmers, address the public interest associated with those farmers' loss of their livelihoods, require mediation to avoid applicants reaching agreements with only some stakeholders, and satisfy the public interest by reserving some amount of water for pending applications by farmers.[790]

B. Scope of the Public Interest and Public Welfare Inquiry

Citing the decision of the Supreme Court of Texas in the *Texas Citizens* case,[791] the ED claims that TCEQ should only consider those factors relating to "public welfare" and "public interest" that TCEQ has the authority to regulate.[792] In *Texas Citizens*, an oil and gas waste case,

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[787] LGC 2nd Initial Brief at 54–57, 60–64; LGC 2nd Reply Brief at 25–27.

[788] NWF 2nd Initial Brief at 21; NWF 2nd Reply Brief at 2, 4.

[789] NWF 2nd Initial Brief at 31–32.

[790] CCG 1st Reply Brief at 13–15, 22–25. Although CCG has withdrawn, Mr. Ware joined CCG's argument after the First Hearing, and he has not withdrawn the argument.

[791] *Railroad Comm'n of Tex. v. Texas Citizens for a Safe Future & Clean Water*, 336 S.W.3d 619 (Tex. 2011).

[792] ED 1st Initial Brief at 28–29, ED 2nd Initial Brief at 18–19.

the Railroad Commission of Texas (RRC) was required to find that the use or installation of a proposed injection well was in the public interest. The court noted that the crux of the dispute was whether the term "public interest" was a broad, open-ended term encompassing any conceivable subject potentially affecting the public, or a more narrow term that did not include a subsidiary issue like traffic safety but was limited to matters related to oil and gas production.[793] The court found that there was no statutory directive for the RRC to consider matters related to traffic safety or any other specific factor in its public interest evaluation.[794] It found that the RRC's determination that "public interest" did not include traffic-safety matters was reasonable because: (1) the RRC has unique competence as the state agency overseeing oil and gas production[795] and (2) the RRC had declined to consider public-safety evidence in its public interest analysis for almost fifty years.[796]

NWF responds that the public interests at stake in this case are fundamentally different from those in an injection well case like *Texas Citizens*. It contends that water right permitting raises many unique issues, TCEQ has specific public trust responsibilities in the management of water, and the water rights are perpetual once granted. Additionally, NWF claims that TCEQ does not have a long-standing interpretation concerning the scope of the public interest, as the RRC did in *Texas Citizens*.[797]

The ALJs agree that *Texas Citizens* provides guidance for determining the scope of the public welfare and public interest inquiry in this case. In *Texas Citizens*, the court noted that it generally avoids construing individual provisions of a statute in isolation from the statute as a whole.[798] Many of the issues about which the parties are concerned are matters over which the

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[793] *Texas Citizens*, 336 S.W.3d at 624.

[794] *Texas Citizens*, 336 S.W.3d at 629.

[795] *Texas Citizens*, 336 S.W.3d at 630.

[796] *Texas Citizens*, 336 S.W.3d at 632.

[797] NWF 1st Reply Brief at 2–3.

[798] *Texas Citizens*, 336 S.W.3d at 628 (citing *City of San Antonio v. City of Boerne*, 111 S.W.3d 22, 25 (Tex. 2003); *also see* Tex. Gov't Code §§ 311.002(4), .011(a).

Commission has some jurisdiction and competence under the Texas Water Code. The ALJs find that those are within the scope of the public interest and welfare inquiry in accordance with the guidance from the *Texas Citizens* case. Those would include:

- Avoidance of impacts to fish and wildlife habitat;[799]
- Recreational uses of water;[800]
- Salinity's impact on water quality and impairment of existing water rights;[801]
- Adequate and reliable water supplies at a just and reasonable cost;[802]
- Agricultural use of water;[803]
- Avoidance of adverse environmental impacts caused by reservoir construction;[804] and
- Water conservation.[805]

Other factors that some parties contend are appropriate public interest or welfare considerations in this case are not referred to in the Texas Water Code or TCEQ's rules. As such, the Texas Legislature has not directed the Commission to consider them, they are outside the Commission's jurisdiction and field of special competence, and there is no evidence that the Commission has ever considered them in a water right permitting case. Accordingly, the ALJs find that they are not within the scope of the public interest and welfare inquiry in this case. Those include:

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[799] Tex. Water Code § 11.147(e).

[800] Tex. Water Code §§ 11.023(6), .024(6); 30 Tex. Admin. Code § 297.1(25).

[801] *See* discussion of salinity for citations.

[802] Tex. Water Code §§ 11.036, .041, 12.013.

[803] Tex. Water Code §§ 11.023(2), .02362(f)(2)(A)(i), .024(2).

[804] Tex. Water Code §§ 11.0235(b)–(c), .134(b)(3)(D), .147(b)–(e), .1471, .150–.152.

[805] Tex. Water Code § 11.1271.

- FBR's and LGC's interests in leaving water stored in reservoirs to benefit tourism, culture, the economy, and nearby landowners and communities; and
- Mr. Ware's interest in various measures aimed at the preservation of family farms.

Additionally, Mr. Ware seeks a variety of changes in Commission policies concerning mediation, modeling, term permitting, and reservation of water for pending applications.[806] To the extent that Mr. Ware is re-urging arguments concerning the merits of his claim that he has senior water rights that would be impaired, the ALJs considered those arguments and found Mr. Ware does not have water rights that would be impaired. There is no need to reconsider those same arguments under a public interest and welfare heading. To the extent that Mr. Ware is seeking changes in Commission policies that go beyond the merits of BRA's Application, there is no legal basis for injecting the merits of those policy proposals into a particular contested case.

C. Burden of Proof Concerning Public Welfare and Public Interest

If the Application meets the requirements of the other statutes and rules, the ED takes the position that it should not be considered to be detrimental to the public welfare absent facts indicating that it would be detrimental.[807] NWF objects to this suggestion by the ED.[808] NWF claims that the requirement to consider the public welfare is not just a redundant way of referring to the factors that other laws require to be considered. NWF argues—and FBR and Mr. Ware concur—that each provision of a statute must be given substantive effect, including the public welfare provisions.[809] NWF also claims that the ED is improperly suggesting a shifting of the burden of proof from BRA, to whom 30 Texas Administrative Code § 80.17(a) assigns it, to the other parties.

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[806] CCG and Ware 1st Reply Brief. CCG no longer opposes BRA's application, but Mr. Ware has not withdrawn these arguments.

[807] ED 1st Initial Brief at 29.

[808] NWF 1st Reply Brief at 2–3.

[809] *City of Marshall v. City of Uncertain*, 206 S.W.3d 97, 105 (Tex. 2006).

The ALJs agree with NWF that BRA has the burden of proof. In accordance with Texas Water Code § 11.134(b)(3)(C), BRA's burden is to show that its proposed appropriation is not detrimental to the public welfare. The ALJs also agree with NWF that BRA's Application cannot simply be deemed non-detrimental to the public welfare if it complies with other applicable requirements.

Largely because they attach more value to some concerns than BRA does, NWF, FBR, Dow, and CCG argue that BRA has ignored the public welfare and not carried its burden of proof. With that the ALJs do not agree. As discussed below, BRA has offered undisputed, persuasive evidence that its Application is in the public interest and not detrimental to it because the Proposed Permit is the least expensive and most readily available new source of water to meet demands in the Brazos River Basin with the least environmental impact. In the absence of evidence to the contrary, the ALJs would find that BRA's evidence is sufficient to carry BRA's burden of proof under Texas Water Code § 11.134(b)(3)(C).

D. Public Interest and Welfare Concerns Already Addressed

As discussed above, BRA's operation under the SysOp Permit would not adversely affect senior water rights,[810] groundwater, groundwater recharge, bays, or estuaries. Thus, as to those concerns, BRA's operation under the SysOp Permit would not be detrimental to the public welfare or interest.

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[810] Dow has a particular argument concerning salinity that is considered below.

E. Instream Uses, Water Quality, Fish, and Wildlife Habitats

1. Compliance with SB 3 Rules Protects the Public Interest

FBR and LGC argue that BRA's proposed Application is not in the public interest due to the impact it would have on recreation and fisheries in streams[811] and reservoirs.[812] FBR claims that BRA and the ED have completely ignored the public's interest in recreational use of water.[813] Dow contends that BRA's Application could have a negative effect on water quality, specifically with regard to salinity.[814] BRA and the ED disagree. Among other things, they contend that compliance with the SB rules will maintain instream uses, including recreation and fish and aquatic life habitat, and protect water quality.[815]

The ALJs agree with BRA and the ED. Texas Water Code § 11.147(d) and (e) provide:

> (d) In its consideration of an application to store, take, or divert water, the commission shall include in the permit, to the extent practicable **when considering all public interests**, those conditions considered by the commission necessary to maintain existing instream uses and water quality of the stream or river to which the application applies. In determining what conditions to include in the permit under this subsection, the commission shall consider among other factors:
>
> (1) the studies mandated by Section 16.059; and
>
> (2) any water quality assessment performed under Section 11.150.
>
> (e) The commission shall include in the permit, to the extent practicable **when considering all public interests**, those conditions considered by the commission necessary to maintain fish and wildlife habitats. In

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[811] FBR 2nd Initial Brief at 80–84; FBR 2nd Reply Brief at 20–23.

[812] LGC 2nd Initial Brief at 54–64; LGC 2nd Reply Brief at 25–27.

[813] FBR 1st Reply Brief at 20–21; FBR 2nd Initial Brief at 80–84.

[814] Dow 1st Initial Brief at 25–45; Dow 2nd Initial Brief at 66.

[815] BRA 2nd Initial Brief at 38–41; BRA 2nd Reply Brief at 38–39, 58–59; ED 2nd Initial Brief at 16, 20; ED 2nd Reply Brief at 10, 14–16.

> determining what conditions to include in the permit under this subsection, the commission shall consider any assessment performed under Section 11.152.[816]

As discussed above, however, Texas Water Code § 11.147(e-3) requires the Commission to apply its SB 3 rules, instead of considering the factors in § 11.147(d) and (e), to determine the environmental flow conditions necessary to maintain freshwater inflows to an affected bay and estuary system, existing instream uses and water quality of a stream or river, or fish and aquatic wildlife habitats. The evidence shows that BRA's operation under the Proposed Permit would comply with the SB 3 rules. Accordingly, the ALJs conclude that the SysOp Permit, to the extent practicable when considering all public interests, contains those conditions necessary to maintain instream uses of water, including recreation and fish and aquatic habitats, and water quality, including salinity WQS.

2. Additional Provisions to Protect Instream Recreational Uses

Beyond compliance with the SB 3 rules, BRA proposes additional provisions to support the public's interest in water-oriented recreation. BRA is asking that water be appropriated to BRA for recreational beneficial use.[817] To further protect instream recreational use in the John Graves Scenic Riverway (JGSR) and Lake Granbury, BRA proposes to do more than the SB 3 rules require.

The JGSR is that portion of the Brazos River Basin, and its contributing watershed from the dam at PKR to the upper reaches of Lake Granbury.[818] The Texas Water Code includes provisions for additional regulation of quarrying, wastewater discharges, and other measures to

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[816] Emphasis added.

[817] BRA Ex. 15 at 86.

[818] Tex. Water Code § 26.551(2); BRA Exs. 3, 14.

protect water quality in the JGSR.[819] The JGSR is the only "water quality protection area" designated in the Texas Water Code, and the only scenic riverway in Texas.[820]

The JGSR also appears to be an important resource for instream recreation that is tied to flows from PKR. Dakus Geeslin is the ED's expert witness on environmental flows. He holds bachelor and master degrees in environmental science and is an aquatic scientist on the Commission's water quality standards team. He has worked for the Commission since 2007 and previously worked as an environmental consultant.[821] Mr. Geeslin wrote:

> There are plenty of gravel bars and islands for stopping and camping in the upper portions of the river below Possum Kingdom Dam . . . The suitability of this section of the Brazos for recreational use depends upon water being generated from Possum Kingdom Dam. The water coming from the dam is cold and clear. A common occurrence for the river is the rising of 2 or 3 feet in a matter of minutes when the dam is generating [power]. If the dam is not generating, the river is relatively shallow which results in the river being difficult to float.[822]

BRA's witness, Mr. Brunett, testified that BRA agreed, as part of its application to the Federal Energy Regulatory Commission (FERC) to decommission hydroelectric facilities at PKR, to maintain the environmental flows required by its current FERC license.[823] Further, in response to questioning by FBR's counsel, Mr. Brunett stated that it would not be a problem to add such flow requirements to BRA's Proposed Permit.[824]

Consistent with Mr. Brunett's testimony, BRA proposes the following special condition[825] to protect recreation in the JGSR below Possum Kingdom Dam:

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[819] Subchapter M of chapter 26 of the Texas Water Code.

[820] Tr. at 799–803.

[821] ED Ex. DG-1 at 1–4.

[822] ED Ex. DG-3 at 115.

[823] Tr. at 2242–43.

[824] Tr. at 2292–93.

[825] *See* BRA Ex. 132A at 9, ¶ 5.C.5; BRA Ex. 132B at 9, ¶ 5.C.5.

Permittee shall maintain, at a minimum, the following continuous release schedule from PKR:

Reservoir Elevation	March – June	July – September	October – February
Above 994.5 msl	100 cfs	75 cfs	50 cfs
990 msl – 994.5 msl	50 cfs	37.5 cfs	25 cfs
Below 990 msl	Leakage (20 cfs)	Leakage (20 cfs)	Leakage (20 cfs)

No party opposes that special condition for the JGSR, and the ALJs recommend that the Commission include it in any permit issued in this case.

Moreover, BRA has developed general guidelines for daily reservoir operations. Release decisions are made to provide for beneficial use of water downstream while at the same time considering local water supply needs around the reservoirs, environmental needs, and recreational uses.[826] Although the primary purpose of BRA's system of reservoirs is for water supply, BRA will make an effort to coordinate water supply releases to benefit or avoid negatively impacting recreational activities, when possible.[827]

3. Level of Lake Granbury

LGC advocates requiring BRA to keep sufficient water in Lake Granbury to maintain a high water level.[828] It offered evidence that failing to keep water levels high in the lake would be detrimental to the public interest because tourism, culture, the economy, and nearby landowners and communities would be adversely affected.

BRA and the ED contend that LGC's concerns and the evidence it offered are not relevant. Alternatively, BRA offered responsive evidence that was admitted without objection. It shows that BRA and TPWD have developed operating guidelines to manage the frequency and

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[826] BRA 113, WMP Tech. Rep. at 4-9.

[827] BRA 113, WMP Tech. Rep. at 4-16.

[828] LGC 2nd Initial Brief at 54–64; LGC 2nd Reply Brief at 25–26.

magnitude of reservoir level fluctuations to avoid or minimize impacts on reservoir fisheries, and incorporated those guidelines into the WMP.[829] Additionally, BRA offered evidence that shows that operations under the SysOp Permit will not significantly increase the number of lakeside recreational facilities out of service, except during the most severe droughts.[830]

Prior to the hearing, the ALJs sustained objections to most of the evidence LGC offered. They ruled that it was not relevant to any issue in this case, including the public interest and welfare issues because it concerned matters over which TCEQ had no jurisdiction or expertise. But the ALJs overruled other objections and admitted some of LGC's evidence that concerned the impact that lower lake levels would have on fisheries and recreation within the lake. At the time, the ALJs indicated that they were less than sure that the Commission had jurisdiction and expertise concerning those matters. Nevertheless, they admitted the evidence in an abundance of caution, and said they would revisit the issue in the PFD.[831] On further consideration, the ALJs conclude that none of LGC's concerns about lake levels are relevant to this case.

The ED maintains that recreation, lake levels, and economic impact are not protected rights or relevant factors, under Texas Water Code § 11.134, when TCEQ considers whether to grant a water right application.[832] He claims that TCEQ would have no right to enforce a lake level requirement and a new appropriation does not require protection of recreation.[833] BRA claims that LGC refers to fisheries and recreation in an attempt to have TCEQ wade into issues over which TCEQ has no jurisdiction or expertise, including the impact of lake levels on recreation and the economy near Lake Granbury.[834]

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[829] BRA Ex. 113, WMP at 27–28, WMP Tech. Rep. at 4-57 to 4-59, App. G-5.

[830] Tr. at 4126–36; BRA Exs. 145–148.

[831] *See* ALJs' official audio recording of Feb. 13, 2015 preliminary hearing at 00:06:00–00:07:10.

[832] ED 2nd Initial Brief at 18–20.

[833] ED 2nd Initial Brief at 18–20.

[834] BRA 2nd Reply Brief at 60.

LGC points to Texas Water Code §§ 11.147, 11.150, and 11.152 and claims they give the Commission jurisdiction to set lake levels to protect instream uses, water quality, and fish and wildlife habitat. True, but those sections are thoroughly addressed above, and the ALJs conclude, in accordance with § 11.147(e-3), that BRA's compliance with the SB 3 rules precludes further consideration of measures to protect instream uses, water quality, and fish and wildlife habitat.

Taking another tack, LGC argues that the SB 3 rules only concern instream flows and it would be illogical not to separately and additionally consider the aquatic and riparian environment of the state's reservoirs. In the absence of a citation to a specific statute giving TCEQ jurisdiction over the riparian environment, the ALJs do not find that riparian-environment argument persuasive.

As to the aquatic environment, TCEQ extensively regulates activities "to maintain the quality of water in the state consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life," and further related policies.[835] However, the ALJs see no basis for an ad hoc reconsideration of the state's water quality program. LGC points to nothing in the water-quality statutes giving the Commission jurisdiction to regulate lake levels for the sake of the aquatic environment.

F. Adequate and Lower Cost Water Supplies

BRA claims that the SysOp Permit is the most reliable, least expensive and most readily available new source of water to meet demands in the Brazos River Basin.[836] That is not disputed.

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[835] *See* Tex. Water Code § 26.003.

[836] BRA Ex. 1 at 35–37; BRA Ex. 10 at 21–22; BRA Ex. 113; BRA Ex. 130 at 2, 27–28.

BRA contracts with wholesale-water customers throughout the basin to allow them to divert water made available through BRA's water rights. BRA's rates for wholesale-water service are calculated to recover its net revenue requirement and its income from those sales is dedicated to covering BRA's operation and maintenance expenses and as a pledge against debt service for the bonds BRA issues.[837]

BRA currently has little uncommitted water available to meet future additional water supply demands.[838] Of the 705,000 acre-feet of water rights owned by BRA, 99% of this available water is under contract.[839] To the extent any of BRA's customers have over-contracted for water and have subsequently returned the water to BRA, the returned water has been immediately resold.[840]

As discussed in more detail elsewhere in the PFD, the current State Water Plan was adopted by the TWDB in 2012[841] and incorporates the 2011 Regional Water Plans. The 2012 State Water Plan and the 2011 Regional Plans have been officially noticed in this contested case.[842] The 2011 Regional Water Plans for Region G and Region H forecast that substantial additional water supplies will be needed between now and 2060.[843] The increase in demand for water in both regions is primarily due to population growth and its resulting effect on the need for increased municipal water supply and electricity generation. However, there are also projected shortages for irrigation and manufacturing uses.[844] To exacerbate matters for Region H, groundwater users in Fort Bend County must convert a large portion of their current

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[837] BRA Ex. 1 at 11–14.

[838] BRA Ex. 1 at 1; BRA Ex. 107 at 34–35; BRA Ex. 113, WMP Tech Rep. at 3-11 to 3-13; Tr. at 98.

[839] BRA Exs. 1 at 16, 35 at 12.

[840] BRA Ex. 1 at 17.

[841] BRA Ex. 107 at 37.

[842] *See* Order Nos. 7, 27.

[843] BRA Exs. 12–14.

[844] BRA Ex. 10 at 10, 13–15; BRA Exs. 12–13.

use to surface water, due to subsidence.[845] The reduced availability of groundwater in Region H will create additional demand for surface water sources in that area, and BRA anticipates the SysOp Permit will provide a badly needed surface water supply to help meet those demands.[846]

Quantifying the demand, Region G anticipates needing approximately 100,000 acre-feet of additional annual supplies by 2060.[847] Some of the shortages anticipated in Region G are in municipal supplies and are expected to develop starting as early as 2010.[848] The 2011 Region G Plan anticipates that the SysOp Permit will supply 86,429 acre-feet per year of water by 2060 to meet municipal and steam-electric power generation demands.[849] Region H projects that between 2010 and 2060 the water supply needs region-wide will grow from 2,376,414 acre-feet per year to 3,524,666 acre-feet per year.[850] The 2011 Region H Plan anticipates that the SysOp Permit will supply a total of 25,347 acre-feet per year of water to meet municipal, manufacturing, mining, and other demands in the region between 2010 and 2060.[851]

Since the First Hearing, the SysOp Permit has been adopted as a water supply strategy in the 2012 State Water Plan, which recommends that 110,249 acre-feet per year of water be supplied for various uses from the SysOp Permit.[852] Also, BRA has continued to receive requests for additional long-term water and to date has received requests from 28 entities for over 300,000 acre-feet per year of water.[853]

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[845] BRA Ex. 10 at 14; Tr. at 2941–42.

[846] BRA Ex. 10 at 15.

[847] BRA Ex. 10 at 9; BRA Ex. 12 at ES-12; Tr. at 163–64.

[848] BRA Ex. 10 at 9; BRA Exs. 12–14.

[849] BRA Ex. 10 at 12; BRA Ex. 12.

[850] BRA Ex. 10 at 8; BRA Ex. 13.

[851] BRA Ex. 10 at 16; BRA Ex. 13.

[852] BRA Ex. 107 at 37–38; BRA Ex. 115.

[853] BRA Ex. 107 at 41; BRA Ex. 143.

The evidence shows there is an immediate need for additional water supplies in a large portion of the Brazos River Basin, and BRA intends to beneficially use the newly appropriated water by contracting with its existing and future customers who have a need for these additional supplies. Water supplies and contracts need to be in place prior to actual water shortages materializing.[854] Based on the demand projections in the 2011 Region G and Region H water plans, it is likely that SysOp Permit water could be placed under contract within five to ten years after the water supply becomes available.[855] Having this water available, even if it is not immediately fully utilized, is beneficial because it allows the customers to plan and rely on having the supply in the future.[856]

There is virtually no evidence refuting BRA's evidence showing that there is a need for additional water supplies in the Brazos River Basin. Water retailers and others are looking to BRA to provide wholesale water to them, and the SysOp Permit would allow BRA to supply that demand. The ALJs find that approval of BRA's Application would serve the public interest and support the public welfare by making additional reliable water available to the public and reducing pressure on BRA to increase its rates.

The SysOp Permit does not require the construction of a new reservoir or extensive groundwater development, both of which would be substantially more expensive than the cost to obtain the water under the SysOp Permit.[857] As compared to other alternative water supply strategies identified in the 2011 Region G and H water plans, the unit cost of the Proposed Permit water is about $10 per acre-foot of diverted water from the river, as opposed to $182 per acre-foot of water for the ACR, $424 per acre-foot for the proposed, but abandoned, Millican Reservoir, and $1,325 per acre-foot for the Carrizo-Wilcox aquifer water supply for Williamson County.[858] BRA argues that by simply looking at the entire expense of the project and dividing

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[854] BRA Ex. 4; BRA Ex. 5 at ¶ 4; BRA Exs. 13–14; BRA Ex. 15 at 86–87.

[855] BRA Ex. 15 at 86.

[856] BRA Ex. 15 at 86–87; Tr. at 97.

[857] BRA Ex. 1 at 39–40; BRA Ex. 15 at 88.

[858] BRA Ex. 15 at 89–91; BRA Exs. 25–26.

the cost by the annual water supply, it is evident that the Proposed Permit water is substantially less expensive than the cost of water from a reservoir, such as ACR.[859]

Water under the Proposed Permit would be readily available and not require significant land acquisitions, permitting, and construction.[860] The low cost of the water coupled with its availability in the near-term means that BRA's water rates would be stable and lower than if BRA has to develop other sources of supply.[861] Moreover, BRA will be able to leverage the income from the sale of water from the Proposed Permit to create more sources of water to sustain BRA's ability to meet future needs and demands.[862]

The ALJs agree with BRA that the public has an extremely strong interest in adequate and reliable water supplies provided at reasonable rates. As indicated above, the Texas Water Code refers to those considerations in provisions concerning wholesale-water utility service and gives the Commission broad jurisdiction and responsibility to ensure that those public interests are protected.

G. Avoiding Environmental Impacts of Reservoir Construction

Additionally, several BRA expert witnesses testified that the SysOp Permit would have a smaller environmental impact than construction of a new reservoir to meet the growing need for water.[863] BRA contends that if its Application is approved, future permittees in the Brazos River Basin would be required to honor the environmental flow provisions that BRA proposes because those provisions would be part of a more senior water right.[864] BRA has also committed to providing water out of the amount it seeks in this permit to the Texas Water Trust, which is

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[859] BRA Ex. 1 at 23.

[860] BRA Ex. 10 at 18.

[861] BRA Ex. 1 at 36–37; BRA Ex. 10 at 18, 21; BRA Ex. 15 at 91.

[862] BRA Ex. 1 at 36; BRA Ex. 39.

[863] BRA Ex. 1 at 39; BRA Ex. 15 at 89; BRA Ex. 29 at 42; BRA Ex. 39 at 21–22.

[864] BRA Ex. 29 at 42; BRA Ex. 33 at 19–20.

administered by the TWDB, in consultation with TPWD under Texas Water Code § 15.7031, for environmental needs including instream flows.[865]

No party offered evidence to contradict BRA's evidence on these points. The ALJs conclude that approval of the SysOp Permit would be in the public interest because it would avoid the environmental impact of the construction of additional reservoirs to provide the same amount of water, and it would protect environmental flows from future appropriations through the environmental flow restrictions included in the permit and the dedication of additional water to the Texas Water Trust for environmental needs including instream flows.

H. Agricultural Use of Water

The ALJs see no evidentiary basis for finding that the SysOp Permit will adversely affect the public's interest in agricultural use of water, as Mr. Ware suggests. BRA is specifically seeking the appropriation of water for agricultural use.[866] To the extent that additional water will be needed in the future for agriculture, BRA would be in a position to make that water available. Also, as explained elsewhere in the PFD, BRA would be able through system operation to make more water available for all uses than would be available without system operation, which would include agricultural use. Further, the Regional Water Plans for both Regions H and G project essentially flat agricultural demand for water between now and 2060.[867]

I. BRA's Application Is Not Detrimental to the Public Welfare

Based on the above, the ALJs conclude, in accordance with Texas Water Code § 11.134(b)(3)(C), that the proposed appropriation to BRA is not detrimental to the public welfare. To the contrary, the ALJs find that BRA has shown that approval of its Application is strongly in the interest of the public.

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[865] BRA Ex. 1 at 38–39; BRA Ex. 39 at ¶ 1.

[866] BRA Ex. 8B at 1; BRA Ex. 15 at 86.

[867] BRA Ex. 12 at ES-7; BRA Ex. 13 at 2–16.

XVII. CONSISTENCY WITH WATER PLANS

A. Texas Water Code § 11.134(c) Is not an Impediment to Permit Issuance in this Case

Pursuant to Texas Water Code § 11.134(c), the TCEQ generally cannot issue a water right for municipal purposes in a region that does not have an approved regional water plan. The great majority of the Brazos River Basin and BRA's service area are encompassed within three regional water planning areas–Regions G, H, and O.[868] On BRA's motion, the ALJs took official notice of the 2007 State Water Plan and the 2011 Regional Water Plans of Regions G, H, and O, as approved by the TWDB.[869] Region O overlies the extreme northwest portion of the Brazos River Basin, upstream of all of BRA's existing water supplies and water rights and, therefore, upstream of the area involved in the BRA Application.[870] Regions G and H adopted their most current respective 2011 Regional Water Plans in late 2010. Each of those plans was adopted by the TWDB on November 18, 2010.[871] Accordingly, Texas Water Code § 11.134(c) does not prohibit the Commission's issuance of a water right to BRA for municipal purposes.

B. As required by Texas Water Code §§ 11.134(b)(3)(E) and 11.1501, the BRA Application and the Proposed SysOp Permit Are Consistent with the Adopted State and Regional Water Plans

Pursuant to Texas Water Code § 11.1501, when considering an application for a water right, the TCEQ "shall consider the state water plan and any approved regional water plan for the area or areas in which the water is proposed to be stored, diverted, or used." Pursuant to Texas Water Code § 11.134(b)(3)(E), an application for a water right generally cannot be granted unless it "addresses a water supply need in a manner that is consistent with" the state water plan and the approved regional water plans for the area.

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[868] Small portions of the basin lie within Regions B, C, K, and F. BRA Ex. 10 at 5.

[869] Order No. 7.

[870] BRA Ex. 10 at 5, 17.

[871] BRA Ex. 10 at 7.

John Hofmann, BRA's Lower and Central Basin Regional Manager, provided testimony on the question of whether the Application is consistent with the plans. He testified that, by the year 2060, a total of 399,185 acre-feet per year of additional water supply will be needed in Region G based on demand projections from the 2011 Region G Water Plan.[872] The evidence demonstrates, however, that Mr. Hofmann's testimony on this point is incorrect. The most recent plan for Region G concluded that there would be no water shortage before roughly the year 2045, and that, by 2060, there will be a shortage in the region of roughly only 100,000 acre-feet per year.[873] The plan then identifies a number of "recommended water supply strategies," including the SysOp Permit which, in total, could provide an additional 399,185 acre-feet of "new supplies of water" per year by 2060.[874] Because it recommends water management strategies that would provide new supplies well in excess of projected demands, however, the Region G plan acknowledges that not all of the recommended water management strategies would be necessary in order to meet demand.[875] Of the 399,185 acre-feet in new supplies, the Region G plan estimates that the BRA SysOp Permit will provide 86,429 acre-feet per year.[876]

According to the most recent Regional Plan for Region H, an additional roughly 1.15 million acre-feet of water will be needed in that region yearly by 2060.[877] The plan then identifies a number of potential "water supply strategies," including the SysOp Permit, which could provide additional new supplies in Region H by 2060.[878] Of the more than one million acre-feet in new supplies needed, however, the Region H plan estimates that the BRA SysOp Permit will provide only 25,350 acre-feet per year.[879]

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[872] BRA Ex. 10 at 10.

[873] BRA Ex. 12 at ES-12; Tr. at 163–64.

[874] BRA Ex. 12 at ES-16-18. The plan erroneously states that "799,185" acre-feet in total new supplies would be created by the strategies. However, the parties agree that this was a typographical error in the plan, and that the correct total is 399,185 acre-feet. Tr. at 173–74.

[875] BRA Ex. 12 at ES-16-18; Tr. at 170–71.

[876] BRA Ex. 10 at 12; BRA Ex. 12 at ES-16-18; Tr. at 162-63.

[877] BRA Ex. 13 at ES-6; BRA Ex. 10 at 13.

[878] BRA Ex. 13 at ES-6-10.

[879] BRA Ex. 10 at 16; BRA Ex. 13 at ES-9; Tr. at 163, 187, 230–31.

With minor revisions to the amounts, the 2012 State Water Plan basically adopts the recommendations from the Region G and H plans. Specifically, the State Water Plan recommends that: (1) 84,899 acre-feet per year be supplied from the SysOp Permit to meet projected water needs in Region G by 2060 (of which 81,492 is allocated to "industrial steam-electric demands" and 3,407 is allocated to municipal demands); and (2) 25,350 acre-feet per year be supplied from the SysOp Permit to projected water needs in Region H by 2060 (of which 19,377 is allocated to municipal demands, 4,477 to manufacturing, and 1,496 to mining). In total, the amount of water supplied by the SysOp Permit as recommended by the 2012 State Water Plan is 110,249 acre-feet per year.[880]

Although the plans identify a number of specific water needs that could be met by the SysOp Permit, BRA acknowledged that when it allocates the water it seeks to appropriate through the SysOp Permit, it would not necessarily have to meet the specific unmet needs identified in the plans.[881]

As noted above, an application for a water right generally cannot be granted unless it "addresses a water supply need in a manner that is consistent with" the state water plan and any applicable approved regional water plan. In this context, "consistency" is undefined. BRA and the ED both argue for a fairly low threshold as to what constitutes consistency. They contend that, because the proposed SysOp Permit is included as a possible water management strategy in the plans for Regions G and H and in the State Water Plan,[882] the BRA Application is consistent with the plans.[883] Kristin Wang, an expert witness for the ED, offered her opinion that the SysOp Permit is consistent with the regional plans and the State Water Plan, and she stressed the fact that the SysOp Permit is identified in the plans as a recommended water management strategy.[884]

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[880] BRA Ex. 107 at 37–38; BRA Ex. 115.

[881] Tr. at 232–34.

[882] BRA Ex. 10 at 7, 15, 17; ED Ex. KW-1 at 7–11; ED Ex. KW-4; Tr. at 156–57.

[883] BRA 1st Initial Brief at 16; ED 1st Initial Brief at 25–26.

[884] ED Exs. ED-R6 at 3, 8–9; ED-R9.

FBR and LGC argue for a more stringent standard as to what qualifies as "consistent with" the plans. FBR contends that the Application is not consistent, or is not fully consistent, with the plans because the details of the Application differ from the details within the plans.[885] For example, the plans envision that the SysOp Permit will supply only roughly 110,000 acre-feet of water by 2060, yet the BRA Application is seeking authority to appropriate more than one million (or 500,000) acre-feet. FBR and LGC contend that, in order to be consistent with the plans, BRA's application should be granted to authorize diversions of no more than 110,000 acre-feet.[886]

The issue is whether the BRA Application "addresses a water supply need in a manner that is consistent with" the plans. Certainly, the plans identify various water supply needs, and identify the SysOp Permit as one of many possible solutions to meet those needs. On the other hand, the BRA Application seeks much more water than was envisioned in either of the plans. Likewise, it is troubling that, if the SysOp Permit were granted, BRA would not be required to actually meet the specific unmet needs identified in the plans. Equally troubling, if the SysOp Permit is granted, it will reduce the viability of other water management strategies identified in the regional plans. For example, the Region G plan analyzes the impact of the SysOp Permit on the yields from nine reservoirs that were identified as other potential water management strategies. According to the plan, if the SysOp Permit is granted, the firm yields on all of those other projects will be substantially reduced, in some cases, by more than 80%.[887] Nevertheless, it can fairly be stated that, if granted, the SysOp Permit would enable BRA to address water supply needs identified in the plans. In the absence of any legal guidance to the contrary, the ALJs believe it is appropriate to apply a low threshold as to what constitutes consistency. The statute does not require that the Application **exclusively** address water supply needs identified in the plans. Thus, the ALJs conclude that the BRA Application addresses water supply needs in a manner that is consistent with the plans.

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[885] FBR 1st Reply Brief at 16–17.

[886] FBR 1st Reply Brief at 16; LGC 2nd Initial Brief at 64–65; FBR 2nd Initial Brief at 85–86.

[887] BRA Ex. 50 at 4B.4-18.

XVIII. CONSERVATION AND DROUGHT PLANNING

BRA contends that it has demonstrated that it will use reasonable diligence to avoid waste and achieve water conservation through its water conservation plan (WCP), its water supply contracts, and operation under the SysOp Permit. It also argues that it has complied with other applicable requirements to conserve and avoid wasting water. Additionally, BRA claims that it has adopted and requires compliance with its WCP and its drought contingency plan (DCP). The ED agrees with BRA.

NWF and FBR argue that BRA has failed to show that its Application complies with water conservation and drought requirements. The ALJs conclude that BRA's Application complies with all applicable legal requirements regarding drought planning and water conservation.

A. Applicable Law

Texas Water Code § 11.134(b)(4) provides: "The commission shall grant the application [to appropriate water] only if . . . the applicant has provided evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined by Section 11.002(8)(B)."[888] This requirement is reiterated in Texas Water Code § 11.1271, which provides:

> (a) The commission shall require from an applicant for a new or amended water right the formulation and submission of a water conservation plan and the adoption of reasonable water conservation measures, as defined by Subdivision (8)(B), Section 11.002, of this code.
>
> . . .
>
> (c) Beginning May 1, 2005, all water conservation plans required under this section must include specific, quantified 5-year and 10-year targets for

[888] *See also* 30 Tex. Admin. Code § 297.41(a)(4), which paraphrases this requirement.

> water savings. The entity preparing the plan shall establish the targets. Targets must include goals for water loss programs and goals for municipal use in gallons per capita per day.

Texas Water Code § 11.002(8)(B) and 30 Texas Administrative Code § 297.1(13) define "[c]onservation" as:

> [T]hose practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

Texas Water Code § 11.002(8)(A) also includes "the development of water resources" in the definition of conservation.

Wholesale-water suppliers applying to appropriate water must submit a WCP meeting the chapter 288 guidelines,[889] and applicants to appropriate water for municipal, industrial, mining, or agricultural use must submit a DCP meeting the chapter 288 guidelines.[890] The WCP requirements for wholesale-water suppliers are in 30 Texas Administrative Code § 288.5, and the DCP requirements are in 30 Texas Administrative Code § 288.22. Those plans must be reviewed and approved by the Commission.[891] The WCP requirements for a system providing agricultural water to more than one user are in 30 Texas Administrative Code § 288.4(a)(3). Additionally, 30 Texas Administrative Code § 297.50(b) states:

> A water conservation plan submitted with an application requesting an appropriation for new or additional state water must include data and information which:
>
> (1) supports the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;
>
> (2) evaluates conservation as an alternative to the proposed appropriation; and

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[889] 30 Tex. Admin. Code § 295.9(2).

[890] 30 Tex. Admin. Code § 295.9(1).

[891] 30 Tex. Admin. Code § 288.30(8).

(3) evaluates other feasible alternatives to new water development, including but not limited to, waste prevention, recycling and reuse, water transfer and marketing, **reservoir system operations**, and optimum water management practices and procedures. It shall be the burden of proof of the applicant to demonstrate that the requested amount of appropriation is necessary and reasonable for the proposed use.[892]

B. Overview of BRA's Drought and Water Conservation Planning

BRA included a WCP, dated February, 17, 2005, with its Application.[893] In 2009, BRA updated its WCP for water it provides as a wholesale-water supplier[894] and submitted a WCP for irrigation use.[895] After the First Hearing, BRA updated and filed with TCEQ both its WCP and its DCP, in conformity with the general statutory timetables and also to address TCEQ's amended rules for WCPs.[896] The ED has approved these plans and determined they are consistent with the requirements in Chapter 288, Title 30 of the Texas Administrative Code.[897]

BRA requires its customers to comply with its adopted WCP and DCP. BRA's water-supply contracts require its customers to implement water conservation plans and meter water usage. The customers also must operate and maintain facilities in a manner that will prevent the unnecessary waste of water.[898] The SysOp Permit will also include a provision requiring BRA to submit updated WCPs and DCPs in connection with future applications for reconsideration or amendment of its WMP.[899]

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[892] Emphasis added.

[893] BRA Ex. 7E.

[894] BRA Ex. 37; Tr. at 1772–73; ED Ex. KW-1 at 8.

[895] ED Ex. KW-1 at 8.

[896] BRA Ex. 107 at 34.

[897] BRA Ex. 5; BRA Ex. 35 at 36–40, 37–38; BRA Ex. 113, WMP Tech. Rep. App. E-1, E-2; BRA Ex. 119 at 88-92, 94; ED Ex. KW-1 at 6–9; ED Ex. KW-3; ED Ex. KW-4; ED Ex. R6 at 5–8; ED Ex. R8; ED Ex. R9; ED Ex. R10.

[898] BRA Ex. 5; BRA Ex. 35 at 10–11; BRA Ex. 113, WMP Tech. Rep. App. E-1, E-2.

[899] BRA Ex. 132B at 6, ¶ 4.B.

Significant changes to the DCP since the First Hearing included the addition of a fourth drought stage (Stage 4–pro rata curtailment), establishment of new trigger levels for the four defined drought stages, and more aggressive water-use reduction targets.[900] BRA's DCP requirements apply to all of BRA's water-supply customers, not just those who would obtain new supplies following approval of the SysOp Permit.[901] With the latest WCP amendment, BRA combined two previously separated plan documents—one for BRA as a wholesale-water supplier, and one concerning irrigation water users—into one WCP with two distinct parts.[902] These latest approved versions supersede the BRA plans that were considered during the First Hearing, and are included as Appendices to the WMP Technical Report.[903] Building on similar evidence from the First Hearing, BRA's Mr. Brunett described how BRA requires compliance with its WCP and DCP through its water supply contracting policies and practices.[904]

C. FBR's Argument

FBR contends that BRA's DCP is too discretionary and does little to ensure conservation of water resources when it is most essential.[905] FBR claims that BRA's DCP provides its general manager with complete discretion to determine when circumstances warrant curtailment.[906] For that reason, BRA has failed to present an enforceable plan, according to FBR. To illustrate its point, FBR complains that, at the time of the Second Hearing, BRA was under only Drought Contingency Stage 2 (of four stages) even though PKR was experiencing a drought of record.[907] FBR argues Texas Water Code § 11.134(b)(4) and Article 16, § 59 of the Texas Constitution require more of BRA, but FBR does not cogently explain why that might be so.

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[900] BRA Ex. 107 at 49–50.

[901] Tr. at 2914, 3380; LGC Ex. 1A at 70.

[902] BRA Ex. 107 at 50–51.

[903] BRA Ex. 113, WMP Tech. Rep. App. E-1 (DCP, approved October 29, 2012), E-2 (WCP, approved April 28, 2014); *see also* BRA Ex. 113, WMP Tech. Rep. at 4-89 to 4-92.

[904] Tr. at 2860–62, 2914, 2931–33.

[905] FBR 2nd Initial Brief at 87.

[906] Tr. at 2872.

[907] Tr. at 2851.

Following the First Hearing, FBR contended that BRA had not submitted a WCP or even a plan to have a plan, but merely a promise to do something related to the requirements in the rules.[908] FBR insisted that more is required and complained that BRA has not addressed what were normal losses, when it would act to stop leaks, how often pipelines and pump stations would be inspected, and how quickly repairs would be made. Citing 30 Texas Administrative Code § 288.5(1)(A) and (D), and the *Martinez* case,[909] FBR insisted that more was required than BRA provided.

D. NWF's Argument

NWF claims that BRA's DCP does not meet applicable requirements. It contends that DCP fails to comply with 30 Texas Administrative Code § 288.20(a)(1)(G), which requires that "the drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan . . . ." NWF complains that the BRA's general manager will have total authority to decide when to initiate a drought stage level and what to implement. Instead of specifying measures to be implemented, the DCP instead includes a list of measures that may or may not be implemented, according to NWF.

NWF notes that when a trigger level is met, BRA's general manager or his designee "may" initiate conditions under the applicable drought stage.[910] NWF contends that permissive language is also used for the termination of a drought stage.[911] It notes that BRA's Mr. Brunett agreed that the general manager will have discretion to determine when to implement certain drought responses, even when specific trigger levels set out in the DCP are met.[912] Even if the

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[908] FBR 1st Initial Brief at 44–46.

[909] *BFI Waste Systems of North America, Inc. v. Martinez Environmental Group*, 93 S.W.3d 570 (Tex. App.—Austin 2002, pet. denied).

[910] BRA Ex. 113, Tech. WMP Tech. Rep. App. E-1 at 5.

[911] BRA Ex. 113, WMP Tech. Rep. App. E-1 at 6.

[912] Tr. at 4082–83.

general manager decides to initiate a new drought stage, NWF contends that the conditions that will be implemented to deal with the drought are improperly permissive and not mandatory.[913]

After the First Hearing, NWF also offered several criticisms of the WCP, but it has not re-argued them regarding the most recently revised WCP. The ALJs conclude that NWF has withdrawn those arguments.

E. LGC's Argument

Daniel Opdyke, Ph.D., P.E., an expert in civil engineering and hydrology, testified for LGC.[914] He recommends changing the DCP so that drought stages would be triggered based on the combined amount of water stored in PKR, Lake Granbury, and Lake Whitney, as follows:

> Until reevaluation of the Drought Contingency Plan based on provision 4(B) of the SysOp Permit, the following trigger levels for the combined storage in Possum Kingdom Reservoir, Lake Granbury, and Lake Whitney apply to drought Stages 1 to 4: Stage 1 Drought Watch: 630,000 ac-ft; Stage 2 Drought Warning: 560,000 ac-ft; Stage 3 Drought Emergency: 420,000 ac-ft; Stage 4 Pro-rata Curtailment: 350,000 ac-ft.[915]

Dr. Opdyke recommends these changes in order to help maintain a high water level in Lake Granbury.[916] He believes these elevation triggers should require conservation by downstream customers and curtailment would be fair if based on the source of supply.[917]

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[913] BRA Ex. 113, WMP Tech. Rep. App. E-1 at 10–14.

[914] LGC Exs. 1, 2.

[915] LGC Ex. 1 at 77; Tr. at 3377–78.

[916] Tr. at 3381–82.

[917] Tr. at 3384.

F. Dow's Argument

On behalf of Dow, Dr. Brandes testified about Dr. Opdyke's recommended changes to BRA's DCP. Dow opposes the proposed change in curtailment trigger levels because it could cause firm supplies of contract water to BRA's customers to be reduced.[918] Mr. Brandes testified that Dr. Opdyke's proposed trigger levels would impact Dow.[919] Dr. Brandes believes it is unreasonable to impose conditions reducing the amount of water supplied to customers in order to maintain higher lake levels for recreation, and he was not aware of any DCP doing that.[920]

G. The ED's Argument

The ED's expert, Ms. Wang, testified that TCEQ staff reviewed BRA's 2014 WCP and found it complied with applicable TCEQ rules, including requirements for quantified five- and ten-year water-use goals and strategies reasonably designed to achieve those goals within BRA's service area.[921] In a memo of June 28, 2013, Ms. Wang stated that BRA's 2012 WCP had five- and ten-year water-use goals of 153 gallons per capita per day (gpcd) for the year 2015 and 140 gpcd for the year 2025, and that the plan included reasonable strategies to achieve the goals within BRA's service area.[922] The strategies included measures for conservation pricing, water-supply operation, leak detection, public education, public awareness, reuse, wholesale-water contracts, meter calibration and repair, and maintaining water loss at no more than 12%.[923] In a memo dated August 18, 2014, Ms. Wang stated that BRA's 2014 WCP updated BRA's five- and

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[918] Dow Ex. 47 at 42.

[919] Tr. at 3609.

[920] Tr. at 3609.

[921] ED Exs. R6 at 3–5, R9 at 1–2, R10 at 1–2.

[922] ED Ex. R9 at 1.

[923] ED Ex. R9 at 1.

ten-year water-use goals to 147 gpcd and 140 gpcd, respectively.[924] The plan includes the same reasonable strategies identified in BRA's 2012 WCP to achieve the goals.[925]

As to BRA's 2012 DCP, Ms. Wang testified that it meets the requirements in 30 Texas Administrative Code chapter 288.[926] Ms. Wang's testimony listed the minimum requirements for a wholesale water supplier's DCP and explained how BRA's DCP met those requirements.[927]

BRA's Proposed Permit contains the same conservation-related special condition, recommended by TCEQ staff, as was included in the draft permit following the First Hearing.[928] It also includes an additional provision, to which BRA has agreed, requiring BRA to update and submit its WCP and DCP when it files future applications for reconsideration or amendment of its WMP.[929] The ED believes BRA's Application complies with applicable TCEQ requirements for a DCP and a WCP. Because TCEQ rules require response stages based on water-supply reasons, the ED would not recommend including trigger levels for recreation, economic, or environmental reasons as LGC proposes.[930]

H. BRA's Argument

BRA believes it has shown that it has complied with all applicable legal requirements for drought and water conservation planning. Its expert outlined how BRA's WCP satisfies each TCEQ regulatory requirement for wholesale-water suppliers and agricultural use.[931] BRA argues it has demonstrated that it will use reasonable diligence to avoid waste and achieve water

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[924] ED Ex. R10 at 1.

[925] ED Ex. R10 at 1–2.

[926] ED Ex. R6 at 7.

[927] ED Exs. R6 at 4–8, R10 at 2.

[928] ED Exs. R6 at 6, R9 at 2–3; BRA Ex. 132B at 6 ¶ 4.A.

[929] BRA Ex. 132B at 6 ¶ 4.B.

[930] ED Ex. R1 at 11.

[931] BRA Ex. 119 at 88–91.

conservation.[932] It contends that it has also shown that water conservation alone is not a feasible alternative to the additional supply the SysOp Permit will make available.[933]

As a wholesale-water supplier, BRA does not have direct contact with retail customers who are the ultimate users of the municipal water it supplies, nor does BRA own or operate the industrial or agricultural facilities it supplies.[934] BRA contends that appropriate water conservation efforts for a wholesale supplier differ from those of a retail supplier or an industrial or agricultural user, and TCEQ conservation requirements recognize this difference.[935]

Mr. Gooch testified that BRA's WCP meets the wholesale supplier requirements in 30 Texas Administrative Code § 288.5[936] and the requirements for a supplier to agricultural users in 30 Texas Administrative Code § 288.4.[937] Mr. Gooch also outlined how BRA's DCP satisfies each of TCEQ's regulatory requirements for DCPs of wholesale-water suppliers, which are found in 30 Texas Administrative Code § 288.22.[938]

BRA disputes NWF's and FBR's assertions that the DCP is inadequate and fails to comply with TCEQ rules. BRA contends that FBR and NWF incorrectly argue that the law requires BRA to do more to guarantee water savings. It notes that TCEQ's DCP rules for wholesale-water suppliers, such as BRA, expressly state that the required "specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought . . . are not enforceable."[939] The ED agrees the targets are unenforceable.[940]

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[932] BRA Ex. 119 at 94.

[933] BRA Ex. 119 at 95.

[934] BRA Ex. 119 at 87.

[935] BRA Ex. 119 at 87.

[936] BRA Ex. 119 at 88–89.

[937] BRA Ex. 119 at 90–91.

[938] BRA Ex. 119 at 92–94.

[939] 30 Tex. Admin. Code § 288.22(a)(6).

[940] *See* Tr. at 3654–55.

Nevertheless, BRA claims the evidence demonstrates that it consistently and meaningfully implements its DCP and actively works with its customers to do so, and no evidence indicates otherwise. Mr. Brunett testified that BRA intends to enforce its DCP.[941] Mr. Brunett clarified that BRA's DCP applies to all BRA water-supply customers,[942] and gave examples of how BRA has dealt with customers under various drought-stage situations, including Stage 4 curtailments.[943] As Mr. Brunett emphasized:

> But I can tell you that our intent is when we hit the trigger levels, that we're going to go into those drought stages. And I can't think of any case where that hasn't been the case since we've been operating under the drought plan dating back to you know, 10, 15 years ago.[944]

Mr. Brunett also explained that BRA uses "may" language in the plan to give its customers flexibility to determine which of the plan's specific water-saving measures are most feasible and effective in their respective situations, and to allow BRA to require a particular action only when it will actually accomplish water savings.[945] BRA contends that its DCP is not toothless or unenforceable, but is in and for the real world.

In addition to the conservation measures promoted and required under BRA's WCP and water-supply contracts, Mr. Gooch described how the SysOp Permit itself will work as a water conservation strategy. It will reduce the waste of water, improve the efficient use of water by coordinating reservoir operations with unappropriated stream flows, increase the recycling and reuse of water, make more water available from facilities that are already in place, require the implementation of WCPs to help reduce or maintain water-consumption levels, prevent or reduce waste of water, and maintain and improve the efficient use of water.[946]

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[941] Tr. at 4037; *see also* BRA Ex. 143.

[942] Tr. at 2914, 4070–71.

[943] Tr. at 2870–71, 2932–33, 4084–86.

[944] Tr. at 2871.

[945] Tr. at 2872–73, 4081–82.

[946] BRA Ex. 119 at 86.

BRA contends that water conservation works well within the context of municipal retail systems, but it is difficult for a raw water wholesale provider, such as BRA, to implement conservation measures that save a significant amount of water.[947] Nevertheless, BRA has evaluated other feasible alternatives to new water development, including water conservation, desalination, and new reservoirs.[948] These alternatives either do not provide the same amount of water as the Proposed Permit or require significant financial resources to develop.[949]

BRA believes that LGC's proposal to include a special condition in the permit that would modify the drought trigger levels in BRA's DCP based on the combined storage of PKR, Lake Granbury, and Lake Whitney should be rejected.[950] From an operational perspective, BRA is particularly concerned about LGC's proposed Stage 4 drought restriction. It would disproportionately burden one part of BRA's reservoir system when the reservoirs are still at 50% capacity.[951] Indeed, LGC's Dr. Opdyke acknowledged that LGC had not even considered how its proposed special condition would impact BRA's existing water supply customers elsewhere in the basin.[952] Also, Dr. Alexander opined that Dr. Opdyke's suggested special condition could affect the firm yield in the WMP.[953]

BRA notes that there is no precedent for DCPs, or permit conditions governing such plans, being used to protect lake levels for recreational use, particularly in water supply reservoirs such as Lake Granbury.[954] Moreover, BRA claims to have shown that using Dr. Opdyke's proposed trigger levels would not significantly affect, compared to present

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[947] BRA Ex. 1 at 22; Tr. at 23–24.

[948] BRA Ex. 1 at 22.

[949] BRA Ex. 1 at 22.

[950] LGC Ex. 1A at 68, 70–72, 77–78; LGC Ex. 26.

[951] Tr. at 4035–36.

[952] Tr. at 3383.

[953] ED Ex. R1 at 11.

[954] Tr. at 4137; ED Ex. R1 at 11.

conditions, storage or lake levels in the PKR, Granbury, and Whitney reservoirs, about which LGC is solely concerned.[955]

I. ALJs' Analysis

The ALJs agree with BRA and the ED and conclude that the evidence they cite shows that BRA's Application complies with all applicable DCP and WCP legal requirements. BRA filed a WCP[956] and a DCP[957] that are extremely detailed and specific. Both Ms. Wang and Mr. Gooch testified in detail that the WCP and DCP complied with the requirements in 30 Texas Administrative Code Chapter 288, and there is no evidence to contradict their testimony.

FBR and NWF offer a few pointed criticisms, but the ALJs disagree with those. FBR claims the WCP fails to comply with 30 Texas Administrative Code § 288.5(1)(A) and (D),[958] which state:

> All WCPs for wholesale water suppliers must include the following elements:
>
> (A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;
>
> . . .
>
> (D) a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply . . . .

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[955] Tr. at 4034–45; BRA Ex. 142.

[956] BRA Ex. 113, WMP Tech. Rep App. E-2.

[957] BRA Ex. 113, WMP Tech. Rep. App. E-1.

[958] FBR claimed this after the First Hearing before the WCP was revised. It is not clear if FBR is still claiming this deficiency exists.

FBR's criticism is unfounded. BRA's WCP describes its service area[959] and includes population, customer, water use, water supply, and wastewater system data.[960] It also describes the practices that BRA will use to measure and account for diversions,[961] and its metering, records management, leak detection, and repair procedures.[962] Further, the plan states that BRA has implemented a program of regular inspection, maintenance, and repair of pipelines and pump stations, focusing on monitoring for unaccounted water and detection and repair of leaks.[963]

The ALJs do not agree with FBR's argument that more is required from BRA due to the *Martinez* case. The solid waste landfill requirement at issue in *Martinez* was for "operating procedures for the site management and site operating personnel in sufficient detail to enable them to conduct the day-to-day operations" of the landfill.[964] Nothing in Texas Water Code § 11.134(b)(4) or 30 Texas Administrative Code § 288.5 states or suggests that a comparable level of detail is required for a WCP, as FBR contends.

NWF specifically claims that BRA's DCP fails to comply with 30 Texas Administrative Code § 288.20(a)(1)(G), which states:

> The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:
>
> (i) curtailment of non-essential water uses; and
>
> (ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary

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[959] BRA Ex. 113, WMP Tech. Rep., App. E-2 at 1.

[960] BRA Ex. 113, WMP Tech. Rep., App. E-2 at 10–12.

[961] BRA Ex. 113, WMP Tech. Rep., App. E-2 at 6.

[962] BRA Ex. 113, WMP Tech. Rep., App. E-2 at 7.

[963] BRA Ex. 113, WMP Tech. Rep., App. E-2 at 7.

[964] *Martinez*, 93 S.W.3d at 579 (*citing to former* 30 Tex. Admin. Code § 330.114).

> use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

Essentially, NWF criticizes the DCP because it provides the required details but leaves BRA's general manager broad discretion when implementing them in response to a drought.[965] While less specific than NWF, FBR joins this criticism.[966]

Legally, BRA cannot enforce rigid requirements on its customers. As BRA and the ED note, another rule, 30 Texas Administrative Code § 288.22(a)(6), states:

> The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. **The goals established by the entity under this paragraph are not enforceable.**[967]

FBR very broadly claims the Texas Constitution[968] and Texas Water Code § 11.134(b)(4) require more than what BRA has included in the WCP and DCP. The Commission and the ALJs have no jurisdiction to decide constitutional issues,[969] so those are outside the scope of this case. As to Texas Water Code § 11.134(b)(4), it requires a water right applicant to provide "evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined by Section 11.002(8)(B)." Very similarly, Texas Water Code § 11.1271(a) requires "an applicant for a . . . water right [to formulate and submit] a water conservation plan and the adoption of reasonable water conservation measures, as defined by Subdivision (8)(B), Section 1.002, of this code." But § 11.1271 goes on to state:

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[965] BRA Ex. 113, WMP Tech. Rep., App. E-1 at 5–15.

[966] FBR 2nd Initial Brief at 87.

[967] Emphasis added.

[968] Tex. Const. art. XVI, § 59.

[969] In accordance with separation of powers, jurisdiction over constitutional questions vests exclusively in government's judicial branch. *City of Dallas v. Stewart*, 361 S.W.2d 562, 579 (Tex. 2012) (noting that "the power of constitutional construction is inherent in, and exclusive to, the judiciary").

(f) The commission shall adopt rules:

(1) establishing criteria and deadlines for submission of water conservation plans, including any required amendments, and for submission of implementation reports; and

(2) requiring the methodology and guidance for calculating water use and conservation developed under Section 16.403 to be used in the water conservation plans required by this section.

The Texas Legislature first adopted § 11.134(b)(4) and what is now § 11.1271(a), with minor subsequent changes, immediately adjacent to each other in the same bill in 1985.[970] From that context, it is clear that § 11.134(b)(4) does not impose a boundless water-conservation duty, as NWF and BRA seem to believe. Instead, an applicant must comply with the rules that § 11.1271 directs the Commission to adopt, and which TCEQ has adopted in chapter 288. BRA has complied with those rules, as already discussed.

Importantly, BRA evaluated water conservation as an alternative to the SysOp Permit. It found conservation was insufficient to produce the amount of water needed or required significant financial resources to develop, and the SysOp Permit itself is a form of water conservation.[971]

The ALJs find that LGC's proposed special permit condition that would trigger conservation stages based on the water levels in three reservoirs should be rejected. It is not required by the drought contingency rules in chapter 288 and would grant unprecedented protection for recreation, impose significant burdens on BRA's customers, interfere with BRA's flexible operation of its reservoir system, and not significantly raise elevation levels in the lakes LGC seeks to protect.[972]

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[970] Acts 1985, 69th Leg., ch. 133, §§ 1.08, 1.09.

[971] BRA Ex. 1 at 22; BRA Ex. 7-A-4 at 4-1, 5-1, App. B; BRA Ex. 10 at 5-17; BRA Ex. 12; BRA Ex. 13; BRA Ex. 15 at 96; BRA Ex. 119 at 95.

[972] Tr. at 4035–36; BRA Ex. 142.

XIX. RETURN FLOWS

The BRA Application raises a number of issues related to return flows that arguably comprise the most complex portion[973] of the most complex water right application[974] ever filed with the TCEQ. Due to this complexity, and due to the fact that the issues evolved significantly between the First and Second Hearing, the ALJs believe that an extensive discussion of the issues at play in both the First and Second Hearing is warranted.

The Application treats return flows[975] from any source as "state water" available for appropriation to the extent that such return flows continue to be discharged or returned to the Brazos River or its tributaries. In the First Hearing, BRA based its requested appropriation, at least in part, on the availability of return flows, current and future, from all sources once they are discharged into a watercourse. Under the approach advocated by BRA, the original sources of the return flows would include groundwater, surface water from the Brazos River Basin, and surface water imported from other basins.[976] If discharged return flows were treated as state water available for appropriation, the results would be as follows:

- Once discharged, all return flows would be available for appropriation pursuant to Texas Water Code § 11.046(c) for beneficial use by any existing water right holder or future appropriator.
- Once discharged, all return flows would be subject to established rules regarding the use and appropriation of state water.
- To the extent return flows make up part of a new appropriation, return flows would be subject to environmental flow requirements.

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[973] TPWD 1st Initial Brief at 9.

[974] BRA Ex. 130 at 17.

[975] Return flows are treated wastewater or unused portions of diversions that are discharged into watercourses in the state. BRA Ex. 15 at 46.

[976] BRA Ex. 8B at 9; BRA Ex. 15 at 46.

- The appropriation of current return flows would be permitted only to the extent they are available as unappropriated water after meeting the needs of all existing senior water rights.[977]

The ED disagrees with the BRA approach and instead, proposes a different treatment for the appropriation of return flows. Rather than proposing a new appropriation, the ED proposes to give BRA a "bed and banks" permit to transport only those return flows originating from BRA's water rights or from wastewater treatment facilities owned or operated by BRA. Under the ED's approach, BRA would not be entitled to appropriate return flows originating from sources other than BRA's water rights or wastewater treatment facilities owned or operated by BRA.[978] Under the ED's approach, use of return flows would be implemented as follows:

- A Texas Water Code § 11.042(c) bed and banks authorization for indirect reuse could be obtained by the holder of the base water right, the owner or operator of the wastewater treatment facility, or a third party with contractual rights from either of them.

- The authorization, while not considered an appropriation, would be given the priority date of the application insofar as it applies to historically discharged return flows in order to protect existing rights.

- Historically discharged return flows would be subject to environmental flow and beneficial inflow requirements.

- Discharges in excess of historically discharged amounts would not be subject to call by senior water rights and would have no environmental flow requirements.

- The maximum bed and banks authorization would be limited to the current Texas Pollutant Discharge Elimination System (TPDES) permitted discharge amount. Any increase in the TPDES permitted discharge would necessitate an amendment of the bed and banks permit to authorize use of the increased volume.[979]

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[977] BRA 1st Initial Brief at 56–57.

[978] BRA Ex. 15 at 48; ED Ex. K2 at 6–14.

[979] BRA points out that the ED's approach has not been explicitly adopted by Commission rule or order. Thus, BRA worries there would be little assurance that Texas Water Code § 11.042 will necessarily be implemented in the same manner in the future.

A. Applicable Law

The disputes regarding the treatment of return flows for the SysOp Permit largely turn on the construction of Texas Water Code §§ 11.042 and 11.046. Those statutory provisions provide, in relevant part, as follows:

> Sec. 11.042. DELIVERING WATER DOWN BANKS AND BEDS. (a) Under rules prescribed by the commission, a person . . . may use the bank and bed of any flowing natural stream in the state to convey the water from the place of storage to the place of use or to the diversion point of the appropriator.
>
> . . .
>
> (b) A person who wishes to discharge and then subsequently divert and reuse the person's existing return flows derived from privately owned groundwater must obtain prior authorization from the commission for the diversion and the reuse of these return flows. The authorization may allow for the diversion and reuse by the discharger of existing return flows, less carriage losses, and shall be subject to special conditions if necessary to protect an existing water right that was granted based on the use or availability of these return flows. Special conditions may also be provided to help maintain instream uses and freshwater inflows to bays and estuaries. A person wishing to divert and reuse future increases of return flows derived from privately owned groundwater must obtain authorization to reuse increases in return flows before the increase.
>
> (c) Except as otherwise provided in Subsection (a) of this section, a person who wishes to convey and subsequently divert water in a watercourse or stream must obtain the prior approval of the commission through a bed and banks authorization. The authorization shall allow to be diverted only the amount of water put into a watercourse or stream, less carriage losses and subject to any special conditions that may address the impact of the discharge, conveyance, and diversion on existing permits, . . . instream uses, and freshwater inflows to bays and estuaries. Water discharged into a watercourse or stream under this chapter shall not cause a degradation of water quality to the extent that the stream segment's classification would be lowered. . . .
>
> Sec. 11.046. RETURN SURPLUS WATER. (a) A person who takes or diverts water from a watercourse or stream for the purposes authorized by this code shall conduct surplus water back to the watercourse or stream from which it was taken if the water can be returned by gravity flow and it is reasonably practicable to do so.

> (b) In granting an application for a water right, the commission may include conditions in the water right providing for the return of surplus water, in a specific amount or percentage of water diverted, and the return point on a watercourse or stream as necessary to protect senior downstream permits . . . or to provide flows for instream uses or bays and estuaries.
>
> (c) Except as specifically provided otherwise in the water right, water appropriated under a permit . . . may, prior to its release into a watercourse or stream, be beneficially used and reused by the holder of a permit . . . for the purposes and locations of use provided in the permit . . . . Once water has been diverted under a permit . . . and then returned to a watercourse or stream, however, it is considered surplus water and therefore subject to reservation for instream uses or beneficial inflows or to appropriation by others unless expressly provided otherwise in the permit . . . .

B. The Return Flows Issues During the First Hearing

1. Once Discharged into a Watercourse, Return Flows are "State Water" and, therefore, Available for Appropriation by Others

At the First Hearing, the primary question regarding return flows was: Once return flows are discharged into a watercourse, should they be considered "state water" and, therefore, available for appropriation by anyone, or do they remain the property of (or at least reserved for) the original water-right holder or discharger? BRA described this issue as possibly "the most significant legal issue presented by this proceeding" with "far-reaching impacts" in the state.[980] The dispute centered on the construction of two provisions, Texas Water Code §§ 11.042 and 11.046(c), both amended as part of Senate Bill 1 in 1997 (SB 1).[981] BRA relied primarily upon § 11.046(c), which states that once water has been diverted and is returned to a watercourse "it is considered surplus and therefore subject to . . . appropriation by others." The ED relied primarily upon § 11.042(c), which states that a person who wishes to "convey and subsequently divert water in a watercourse" must obtain approval of the Commission through a bed and banks permit.

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[980] BRA 1st Initial Brief at 51.

[981] Act of 1997, 75th R.S., ch. 1010, General and Special Laws of Texas.

a. BRA's Arguments

In support of its approach, BRA began by examining the state of the law regarding return flows in place at the time the Texas Legislature passed SB 1. BRA argued that TCEQ policy regarding return flows and reuse prior to passage of SB 1 was clear and consistent with the approach advocated by BRA.[982] The ED disputed the claim that TCEQ policy prior to SB 1 was clear or consistent.[983] On this point, the evidence in the record appears to support BRA. That evidence indicates that, prior to SB 1:

- Return flows discharged into a state watercourse were considered "state water;"
- Direct reuse (*i.e.,* reuse of the water **prior to discharge**) was authorized unless the water right provided otherwise;
- Indirect reuse (*i.e.*, reuse of the water **following discharge into a watercourse**) required a new water right; and
- Bed and banks permits were available for developed water (groundwater-based discharges and imported water) that had not been historically discharged.[984]

Historically, return flows were available for appropriation as recognized in the water rights adjudication process: they were included in the water availability analysis for permitting on a case-by-case basis; they were included in early "legacy" WAMs; and they were specifically recognized in the Commission's Regulatory Guidance Document as being available for appropriation and included in then-current WAMs.[985]

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[982] BRA 1st Initial Brief at 52–53.

[983] ED 1st Reply Brief at 3–4. The ED's claim on this point is undercut by his admission that the treatment of return flows in water rights appropriation "changed when the TCEQ created its new models as required by Senate Bill 1."

[984] BRA Ex. 58 (Interoffice memo documenting Commission's December 13, 1996 work session); *see also Domel v. City of Georgetown*, 6 S.W.3d 349, 353–54, 360 (Tex. App. – Austin 1999, pet. denied); *South Texas Water Co. v. Bieri*, 247 S.W.2d 268, 272–73 (Tex. Civ. App – Galveston 1952, writ ref'd n.r.e.); Hutchins, The Texas Law of Water Rights 155 (1961); BRA Ex. 72.

[985] BRA Ex. 71 (Summary of Historical Treatment of Return Flows); BRA Ex. 56 (Excerpts from Regulatory Guidance Document).

Against this backdrop, SB 1 amended Texas Water Code §§ 11.042 and 11.046(c) in 1997. BRA contended that the SB 1 amendments, with the exception of groundwater-based return flows, confirmed rather than revised the then-existing law with respect to the treatment of return flows.[986] BRA argued that the Texas Legislature did not intend to radically change the existing law regarding return flows when, in SB 1, it adopted § 11.042(c), particularly because SB 1 also enacted § 11.046(c), which appears to restate existing law regarding return flows.

Prior to SB 1, § 11.042 simply authorized delivery of stored or conserved water via a bed and banks permit, essentially as reflected by the current subsection (a). SB 1 added Subsections (b) and (c). Subsection (b) allows the Commission to authorize bed and banks permits for delivery and indirect reuse of **groundwater-based return flows**, subject to conditions described therein. Subsection (c) allows the Commission to authorize bed and banks permits "for a person who wishes to convey and subsequently divert water," also subject to conditions. BRA pointed out that Subsection 11.042(b) specifically addresses "reuse" of "return flows," while Subsection 11.042(c) generically refers to "water" and does not explicitly mention "return flows" or "reuse."[987] As construed by BRA, the reference in Subsection (c) to "water" necessarily implies some ownership interest in the water sought to be transported, such as would be present for "developed water" (imported surface water or raw groundwater not naturally part of the water in the basin) but would not be present in return flows once discharged into a watercourse.[988] TPWD agreed with this interpretation.[989]

BRA contended that if, as the ED suggests, Subsection 11.042(c) deals with return flows, then Subsection 11.042(b) would be entirely unnecessary because return flows, whether based on groundwater or surface water, would already be covered by Subsection (c). BRA argued that, because it specifically addresses return flows (and limits its authorization to **groundwater-based**

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[986] BRA 1st Initial Brief at 53–55.

[987] The ED incorrectly asserts that § 11.042(c) "specifically discuss[es] **reuse** of return flows." ED Initial Brief at 16 (emphasis in original).

[988] BRA 1st Initial Brief at 7.

[989] TPWD 1st Initial Brief at 2.

return flows), the existence of Subsection (b) suggests that Subsection (c) must be addressing a category of water other than return flows.[990]

As to § 11.046, SB 1 added Subsections (b), (c), and (d). In BRA's view, the amendments simply codified existing law regarding return flows. Significantly, Subsection (c) authorizes direct reuse, but then explicitly states that, once the water is returned to the watercourse, "it is considered surplus water and therefore subject to reservation for instream uses or beneficial inflows or **to appropriation by others**. . . ."[991] In BRA's view, this means that return flows are state water, available for appropriation "by others," so long as those flows are not otherwise required for senior rights or environmental needs.[992] TPWD and OPIC agree.[993]

In BRA's view, the two statutes can only be construed so that no conflict exists between them by defining the word "water" in Section 11.042(c) to mean "developed water" (*i.e.*, imported surface water or raw groundwater not naturally part of the water in the basin).[994] BRA contends that the benefits of its approach include:

- All return flows would be available for appropriation and beneficial use;
- All return flows would be available for satisfaction of environmental flow needs, and the needs of senior water rights, often enhancing the reliability of senior water rights. By contrast, the ED's approach would generally subject only historically discharged return flows to such requirements, while future discharges would not be subject to the priority system or environmental flow requirements;
- The BRA approach is consistent with historical permitting decisions;

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[990] BRA 1st Initial Brief at 54.

[991] Emphasis added. BRA contends that the final phrase of the subsection—"unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication"— provides a vehicle for the water right holder to seek reuse authorization by amendment of the underlying water right.

[992] BRA 1st Initial Brief at 40.

[993] TPWD 1st Initial Brief at 3; OPIC 1st Initial Brief at 5–6.

[994] TPWD makes the same argument. TPWD 1st Initial Brief at 2.

- The BRA approach does not result in multiple categories of water with independent accounting requirements, facilitating enforcement under the prior appropriation system; and

- Under the BRA approach, all return flows would be subject to well-established requirements applicable to all state water. By contrast, because it is not mandated by statute or defined by rules, much of the ED's approach could be modified in the future if the ED or Commission chose to do so.[995]

BRA submits that these public policy considerations clearly support treating return flows as state water available for appropriation following their discharge into a watercourse.

b. The ED's Arguments

Under the ED's approach, specific accounting provisions would be imposed to require that the discharge and diversion of return flows be accounted for separately from other water in the river.[996] The ED believed that its approach does a better job at accounting for return flows in order to protect water rights.[997] In the ED's view, there is a conflict between §§ 11.042 and 11.046,[998] that can only be resolved by defining "others" in Section 11.046(c) to mean that only the discharger of return flows, the owner of the base water right, or someone having contractual rights with either of them can be the ones to apply to reuse the return flows.[999] Dow agreed with this interpretation, because Dow considers it to be "more conservative and likely to be more protective of existing water rights."[1000]

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[995] BRA Exs. 77, 78.

[996] Tr. 1975–81.

[997] ED 1st Initial Brief at 13.

[998] *See, e.g.*, BRA Ex. 59 (Chenoweth Feb. 25, 2005 memo).

[999] BRA Ex. 59 (Chenoweth Feb. 25, 2005 memo); TPWD Ex. 1 at 35–36 (Chenoweth Deposition); Tr. at 2060, 2079–80.

[1000] Dow 1st Initial Brief at 47.

The ED construed Subsection 11.042(c) to apply to, among other things, all return flows other than groundwater-based return flows, which are addressed by Subsection 11.042(b).[1001] The ED disagreed with BRA's contention that the word "water" in Subsection 11.042(c) should be construed to mean "developed water." The ED argued that Subsection 11.042(c) is addressing a wider category than Subsection (b), which only addresses "return flows." Thus, the ED contends that Subsection (c) deals with a broad array of different kinds of water, including return flows.[1002] BRA countered that when Subsection 11.042(c) is construed as broadly as the ED proposes, it not only creates a significant break from pre-existing law, but it also creates the "conflict" with Subsection 11.046(c) that results in the ED's strained and otherwise unsupported limitation of "appropriation by others" to three specific categories of persons not identified in the statute.[1003]

The ED based his approach, at least in part, on Commissioner statements made at the Commission's August 12, 2005 work session.[1004] BRA counters that this Commission work session is a "slender and ambiguous reed" upon which the ED relies. For example, at the conclusion of the work session, the Commission directed the staff to prepare a memo memorializing its decisions. However, the staff was never able to do so because it could not reach consensus on what had been decided as to how to implement §§ 11.042 and 11.046.[1005]

Further, the ED's position on § 11.046 at the time of the First Hearing was inconsistent with the Commission's decision regarding construction of that statute in a prior contested hearing, ironically a position that was adopted by the Commission at the urging of the ED. That case involved accounting for inflows and storage in Lake Grapevine among three holders of

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[1001] ED 1st Reply Brief at 4.

[1002] ED 1st Reply Brief at 4–5.

[1003] BRA 1st Initial Brief at 55.

[1004] BRA Ex. 66 (Interrogatory Nos. 2 & 3). None of the current Commissioners was serving at that time.

[1005] TPWD Ex. 1 at 47–48.

water rights of different priorities.[1006] In response to exceptions filed by the ED and by Dallas County Park Cities Municipal Utility District (DCPCMUD), the Commission ruled that return flows discharged by the City of Grapevine, the most junior water right holder, and subject to Grapevine's pending indirect reuse application were properly allocated to the senior water rights first. The senior water right holder, DCPCMUD, asserted a prior right to Grapevine's return flows, unsupported by any contract or other agreement with Grapevine. In making its decision, the Commission relied upon § 11.046, holding that upon discharge Grapevine's return flows became state water subject to the prior appropriation system.[1007] Among other things, the ED told the Commission that "if a water right holder uses water, then returns it to the watercourse or stream it is considered unappropriated state water and may be used by others."[1008]

c. The ALJs' Analysis in the First PFD

In the First PFD, the ALJs disagreed with both parties' competing analyses of §§ 11.042(c) and 11.046(c). As noted by TPWD, the return flows issues raised by the BRA Application are "extremely complex," and involve a great deal of ambiguity about confusing legal and regulatory issues.[1009] In its 1st Initial Brief, TPWD stated:

> There is no adopted TCEQ policy that controls the outcome of the application [regarding return flows]. The ED staff is using its own interpretation of existing law to review the application, and it simply has a different approach than TPWD and BRA. It is up to the Administrative Law Judges to examine the different approaches and determine how to apply the law. There is no commission policy that guides the resolution of these contested issues.

[1006] *An Order Granting the Executive Director's Petition to Amend Certificate of Adjudication No. 08-2363 of Dallas County Park Cities Municipal Utility District, Certificate of Adjudication No. 08-2458 of City of Dallas, and Certificate of Adjudication No. 08-2362 of City of Grapevine*; TNRCC Docket Nos. 95-1626-WR and 96-1017-WR; SOAH Docket Nos. 582-96-1213 and 582-96-1214 (Apr. 4, 2000).

[1007] Exs. BRA 74, 75, 76.

[1008] BRA Ex. 75 at 5.

[1009] TPWD 1st Initial Brief at 9.

The ALJs agreed. A considerable amount of evidence was introduced by the parties at the First Hearing attempting to prove that the TCEQ had an established approach to reuse issues.[1010] On balance, however, this evidence demonstrated that no consistent Commission policy existed. As such, there was no official TCEQ interpretation to which the ALJs might defer. Accordingly, the ALJs made the following conclusions regarding the proper application of the bed and banks and return flow provisions of the Texas Water Code to the SysOp Permit.

i. BRA misconstrued Texas Water Code § 11.042(c): The bed and banks authorization contemplated in § 11.042(c) applies to a wide array of types of water, including return flows

Section 11.042(c) authorizes a person to obtain a bed and banks authorization to "convey and subsequently divert **water** in a watercourse."[1011] BRA argued that the only way this section could be read so as to avoid a conflict with § 11.046(c) is to interpret the word "water" in § 11.042(c) to mean developed water, but not return flows. In the 1st PFD, the ALJs concluded that BRA's interpretation is not reasonable and is contrary to the plain wording of the statute. If the Legislature had intended for § 11.042(c) bed and banks authorizations to only be available for raw surface water imported from another basin or raw groundwater, then it could easily have so stated in the statute. There is ample evidence that the Legislature knows how to be specific when it wishes to. For example, in § 11.042(a-1) the Legislature authorized bed and banks permits for a different type of imported water—water imported from another state. Similarly, in § 11.042(b), the Legislature chose to allow beds and banks authorizations for a highly specific category of water—"existing return flows derived from privately owned groundwater." The use of the broad and generic word "water" in § 11.046(c) indicates a legislative intent that the bed and banks authorization contemplated in that subsection should apply to a wide array of various types of water, including return flows.

[1010] *See, e.g.*, TPWD Ex. 1; BRA Exs. 56–58, 61, 67, 70, 72–73, 75; ED Exs. A1, C1, D1, E1, F1, G1; *see also* Tr. at 2005 (Dr. Alexander acknowledging that return flow issues were historically handled on "case-by-case" basis, without a fixed policy).

[1011] Emphasis added.

ii. The ED misconstrued Texas Water Code 11.046(c): The right to appropriate return flows provided by § 11.046(c) applies only to persons *other than* the discharger of those return flows, the owner of the base water right from which the return flows originated, or someone having contractual rights with either of them

Section 11.046(c) provides that once water has been diverted and returned to a watercourse "it is considered surplus and therefore subject to . . . appropriation **by others**."[1012] The ED argued that the only way §§ 11.042(c) and 11.046(c) can be read so as to avoid a conflict is to interpret the phrase "by others" in § 11.046(c) to mean that only the discharger of return flows, the owner of the base water right from which the return flows originated, or someone having contractual rights with either of them can be the ones to apply to reuse the return flows. In the First PFD, the ALJs concluded that the ED's interpretation is not reasonable and is contrary to the plain wording of the statute. Clearly, the legislative intent behind this language was that once a holder of a water right discharges his return flows back into a watercourse, then third parties (*i.e.*, "others") could seek to appropriate that returned water. The ED would define the universe of "others" to include only the discharger, and those related to the original water right. For example, assume City X holds a permit to divert and use Brazos River water. Under the ED's approach, if City X discharges its return flows into the Brazos River, then the only "other" that would be entitled to seek to appropriate those return flows would be City X. This result is directly contrary to the clear statutory language. Moreover, the ALJs found that the ED's interpretation is exactly the opposite of what the statute allows. As discussed further below, because § 11.046(c) states that discharged return flows are available for appropriation "by others," the discharger of the return flows is *not* among those who can seek to appropriate the flows pursuant to § 11.046(c).

[1012] Emphasis added.

iii. Texas Water Code §§ 11.042(c) and 11.046(c) are reconcilable because they address mutually exclusive scenarios

In the First PFD, the ALJs concluded that no conflict exists between §§ 11.042(c) and 11.046(c) because the two sections deal with different subject matters. As noted by TPWD[1013] and OPIC,[1014] § 11.042(c) does not create an independent right to appropriate water. It merely entitles a person to "convey and subsequently divert" water for which he already holds an appropriative right. Stated differently, a bed and banks authorization can only be issued to a person who already has the right to use the water he seeks to convey. On the other hand, and again as noted by TPWD[1015] and OPIC,[1016] § 11.046(c) deals with an appropriative right. It is well-settled in Texas that water becomes state water once it enters a watercourse.[1017] Section 11.046(c) simply codifies this rule by making it clear that once the water has been returned to a watercourse, it can be appropriated.

Section 11.046(c) expressly states that return flows, once discharged into a watercourse, become available for appropriation "by others" (*i.e.*, persons **other than** the discharger). In other words, § 11.046(c) does not enable a discharger of return flows to obtain a new appropriative right for those discharges. Instead, if a discharger wishes to retain the right to divert its return flows after they have been discharged back into a watercourse, the only mechanism available to the discharger is through § 11.042(c).[1018] In such cases, when BRA seeks to reuse its own return flows, it is seeking to "convey and subsequently divert" water for which it already has a diversion right. In the First Hearing, the parties agreed that BRA could, if it so desired, fully utilize its appropriative right through direct reuse. Thus, by seeking to

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[1013] TPWD 1st Initial Brief at 1.

[1014] OPIC 1st Initial Brief at 7.

[1015] TPWD 1st Initial Brief at 3–4.

[1016] OPIC 1st Initial Brief at 6.

[1017] Tex. Water Code § 11.021(a); *see also Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814 (Tex. 2012).

[1018] In effect, the bed and banks authorization granted in § 11.042(c) works as an exception to the general rule in § 11.046(c) that once return flows are discharged into a watercourse, the discharger loses claim to those waters.

indirectly reuse its water via a bed and banks permit, BRA is simply seeking to do what it is otherwise entitled to do via direct reuse.

This means that the determination of which section is applicable to a request to appropriate return flows depends upon the relationship of the requestor to the return flows being sought. In the First PFD, the ALJs concluded that, when BRA seeks to reuse its own surface water-based return flows,[1019] it must obtain a bed and banks authorization pursuant to § 11.042(c) and it must have an appropriative right to the return flows. If BRA's existing water rights allow it to indirectly reuse water, then BRA has the necessary appropriative right to the return flows. If BRA's existing rights do not authorize indirect reuse, then BRA must obtain a permit amendment authorizing direct reuse.[1020]

Conversely, the ALJs concluded in the First PFD that when BRA seeks to divert someone else's surface water-based return flows it need only obtain an appropriative right pursuant to § 11.046(c), and need not obtain a bed and banks authorization pursuant to § 11.042(c). In such a case, and consistent with the wording of § 11.046(c), BRA would clearly be an "other" person seeking to appropriate someone else's return flows. Likewise, BRA would not be seeking to "convey," as required by § 11.042(c), someone else's return flows, but to appropriate those flows.

In the First PFD, the ALJs noted a caveat to this general rule. In order to address the needs of in-basin dischargers and many of its own customers, BRA's version of the proposed SysOp Permit adopted a return flow policy that encouraged direct reuse and indirect reuse of return flows by dischargers, within their boundaries or service areas, by allowing BRA's appropriation of others' return flows to be interrupted for these purposes. Additionally, as a result of an agreement with the Cities of Bryan and College Station, a provision addressing

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[1019] For the sake of convenience, throughout this discussion, the ALJs refer to the "discharger" of the return flows. However, the ALJs broadly define "discharger" as "the discharger of return flows, the owner of the base water right from which the return flows originated, or someone having contractual rights with either of them."

[1020] *See* First PFD as revised pursuant to the ALJs' letter responding to exceptions to the PFD, dated December 19, 2011.

groundwater-based return flows, without any service-area limitation, has also been requested and is included in the BRA-preferred draft of the permit. In this respect, BRA's position differed from a pure "state water" approach to return flows that might prevent future indirect reuse by dischargers.[1021] Because this deviation from the general rule—that return flows become state water upon discharge into a watercourse—is agreed to by BRA and serves as a limitation upon BRA's permit, the ALJs found no reason to reject it.

iv. BRA's request to divert "future" return flows (*i.e.*, return flows that are not already being discharged into the Brazos River Basin) is reasonable and preferable to the approach advocated by the ED

In the First Hearing, BRA sought to appropriate both current and future return flows, "to the extent that such return flows continue to be discharged or returned to the bed and banks of the Brazos River, its tributaries, and BRA reservoirs."[1022] In BRA's modeling, future return flows for the year 2060 were estimated based on projected population multiplied by current per capita return flows based on historical data. In certain cases, future return flows were reduced to account for existing or proposed reuse projects.[1023] BRA then included those estimated future return flows in the WAM and assumed they would be available to all water rights in order of seniority. Any amounts left over were assumed to be available to the SysOp Permit, subject to environmental flow requirements.[1024]

The ED argued that granting BRA an appropriation based upon future return flows poses a risk of harm to senior water rights holders because the water availability analysis will likely find more water available than actually exists in the stream.[1025] Dow agreed: "If the water availability is inflated because the amount of return flows assumed to be discharged into the river

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[1021] BRA Ex. 1 at 30–32; BRA 1st Initial Brief at 61–62.

[1022] BRA Ex. 15 at 16.

[1023] BRA Ex. 15 at 46.

[1024] BRA Ex. 15 at 46.

[1025] ED Ex. KA-1 at 18, 33-34; ED 1st Initial Brief at 18.

exceeds the amount that is actually discharged into the river, the water availability analysis will overestimate the unappropriated water."[1026]

BRA responded that over-appropriation is not a risk because the objective of the SysOp Permit was to ensure that, in actual practice, BRA is able to divert return flows only to the extent that they are actually being discharged into the basin, and to not interfere with the ability of return flow dischargers to reuse their own return flows if they wish to do so.[1027] A number of special permit conditions were included in the draft permit to achieve those goals.

At the time of the First Hearing, OPIC had no objection to BRA's approach regarding appropriation of future return flows, contending that all diversions of return flows by BRA under the SysOp Permit, regardless of whether those diversions are of existing or future return flows, should be treated as new appropriations and, therefore, subject to all legal requirements for new appropriations including instream flow requirements.[1028] That issue will be discussed more in the next section.

The ED argued that granting BRA an appropriation based upon future return flows poses a risk of harm to senior water rights holders because the water availability analysis will likely find more water available than actually exists in the stream. However, the ED's treatment of return flows in the ED's modeling efforts and draft SysOp Permit was not consistent with that approach. Under the ED's approach at the time of the First Hearing, BRA would obtain authorization to divert return flows up to the amount of return flows that each discharger can discharge pursuant to its TPDES permit.[1029] The ED calculated that the total discharge amount for all applicable TPDES permits was 120,625 acre-feet.[1030] The ED conceded, however, that

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[1026] Dow 1st Reply Brief at 39.

[1027] Tr. at 423.

[1028] OPIC 1st Initial Brief at 5.

[1029] ED Ex. KA-1 at 30; ED 1st Initial Brief at 18.

[1030] ED Ex. K2 at 13; Tr. at 2107.

the actual current discharge total might be much less than 120,625 acre-feet.[1031] In other words, at the time of the First Hearing, the ED's version of the SysOp Permit would have authorized BRA to divert future return flows that do not currently exist in the stream, albeit for a smaller quantity of such return flows. Moreover, the ED's draft SysOp Permit then explicitly allowed BRA to appropriate future return flows (*i.e.*, return flows over and above the TPDES total of 120,625 acre-feet).

In the First PFD, the ALJs concluded that BRA's approach as to future return flows was sufficiently tailored so as to avoid authorizing diversions of return flows that are not actually in the river at the time, and the special conditions in the SysOp Permit were sufficient to ensure that, in actual practice, BRA will be authorized to divert only return flows that are actually being discharged, and without interfering with the ability of return flow dischargers to reuse their own return flows if they wish to do so.

v. BRA's diversions of return flows, both current and future, should be treated as new appropriations subject to satisfying instream flow requirements

In the First Hearing, NWF and OPIC contended that all diversions of return flows by BRA under the SysOp Permit, regardless of whether those diversions are of existing or future return flows, should be treated as new appropriations and, therefore, subject to all legal requirements for new appropriations, including instream flow requirements.[1032] BRA agreed with them.

The ED took a different approach. As noted above, as to what he considered "current" return flow discharges (*i.e.*, the TPDES total of 120,625 acre-feet), the ED would appropriate to BRA those return flows at a 2004 priority date and would make those diversions subject to

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[1031] Tr. at 2007–08, 2107–08.

[1032] NWF 1st Reply Brief at 7; OPIC 1st Initial Brief at 5.

instream flow requirements.[1033] As to what he considered "future" return flow discharges (*i.e.*, those over and above 120,625 acre-feet), the ED would appropriate to BRA those return flows at a 2004 priority date, but the diversions would not be subject to instream flow requirements.[1034] The rationale behind this different treatment is that future return flows "have not been present in the river" and, thus, have not been relied upon in the past to satisfy instream needs.[1035]

In the First PFD, the ALJs found that the Commission did not have to decide if the ED's position was legally correct. BRA was willing to make all of its diversions of return flows (both current and future) subject to instream flow requirements.[1036] BRA asserted, convincingly, that its approach is more protective of the environment because it makes more water subject to instream flows protections.[1037] In light of BRA's consent to such treatment of future return flows, the ALJs concluded that all BRA diversions of return flows under the SysOp Permit, both current and future, should be treated as subject to satisfying instream flow requirements.

vi. Both BRA's and the ED's versions of the SysOp Permit comply with 30 Texas Administrative Code § 297.42(g)

Pursuant to 30 Texas Administrative Code § 297.42(g), a water right may be granted based upon the availability of return flows. However, a water right granted upon return flows might cease in the future because of new or increased direct or indirect reuse by the discharger. Thus, § 297.42(g) states that a water right granted based upon the availability of return flows must "be granted with the express provision that the water available for the water right is dependent upon potentially interruptible return flows or discharges."

[1033] ED Ex. K2 at 13; ED Ex. KA-1 at 26, 31; Tr. at 2108–09.

[1034] ED Ex. K2 at 13–14; ED Ex. KA-1 at 26, 31; Tr. at 437, 2107.

[1035] ED Ex. KA-1 at 31.

[1036] BRA Ex. 8B at 8.

[1037] Tr. at 2722–23.

In reliance upon this rule, the ED crafted the draft SysOp Permit to make a distinction between the quantities of water available under the permit as "firm" water and as "non-firm" water (with "non-firm" being the water based upon the availability of return flows).[1038] At the First Hearing, the ED contended that this is the required approach in order to comply with § 297.42(g).[1039] BRA's version of the SysOp Permit at the First Hearing made no distinction between "firm" and "non-firm" water. It did, however, expressly note that diversions of return flows are based upon potentially interruptible return flows.[1040] Thus, in the First PFD, the ALJs concluded that both approaches complied with the requirements of 30 Texas Administrative Code § 297.42(g). Accordingly, the ALJs concluded that, having proven that its version is compliant, BRA was entitled to its choice of approach over the ED's.

C. The Commission's Discussion of the Return Flows Issues Following the First Hearing

On January 25, 2012, the Commissioners considered the First PFD in this matter. As noted above, the Commissioners agreed to remand the application primarily based on their concerns about the two-step process. However, the Commissioners expressed their opinions about various issues, including the return flows issues. In one respect, the Commissioners disagreed with the First PFD's treatment of return flows. Specifically, all three Commissioners stated their belief that, while current return flows should be available for new appropriation, future return flows should not. Chairman Shaw stated, "I think it would be useful for the Judges to make their analysis and evaluation [following the Second Hearing] not based on projected future return flows, but on actual return flows."[1041] Commissioners Rubenstein and Garcia agreed.[1042]

[1038] ED Ex. KA-1 at 23–24, 30; ED Ex. K2 at 5–6; Tr. at 2009–10.

[1039] ED Ex. KA-1 at 23–24.

[1040] BRA Ex. 8B at 8–9.

[1041] BRA Ex. 130 (Jan. 15, 2012 transcript) at 11.

[1042] BRA Ex. 130 at 11.

In all other respects, the Commissioners agreed with the analyses and conclusions reached by the ALJs in the First PFD on the issues related to return flows.[1043]

D. The Return Flows Issues During the Second Hearing

The scope of return flows issues contested in the Second Hearing was narrower than it was in the First Hearing. Consistent with the direction given by the Commissioners, BRA is no longer seeking to appropriate future return flows.[1044] In all other respects, BRA is seeking essentially the same appropriation of return flows that it sought in the First Hearing.

1. BRA's and the ED's Competing Approaches to Return Flows

The primary issue in the Second Hearing concerns whether BRA can appropriate the return flows of others. As noted above, in the First PFD, the ALJs concluded that BRA could reuse its own return flows (by obtaining a bed and banks authorization pursuant to § 11.042(c)) and appropriate the return flows of others (by obtaining obtain an appropriative right pursuant to § 11.046(c)). BRA agrees and continues to seek this authorization in the SysOp Permit Application (the BRA Return Flows Approach). The ED continues to argue that BRA may only appropriate return flows derived from water supplied by BRA or from wastewater treatment plants owned or operated by BRA (the ED Return Flows Approach).

Other than the ED, no party mounts a meaningful legal challenge to the BRA Return Flows Approach or a meaningful defense of the ED Return Flows Approach. TPWD agrees with the First PFD's treatment of return flows, including adoption of the BRA Return Flows Approach.[1045] OPIC and LGC are silent on the issue, and FBR simply references NWF's arguments.[1046] NWF does not challenge the use of the BRA Return Flows Approach. Instead, as

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[1043] BRA Ex. 130 at 6, 12, 23–24, 28–29.

[1044] BRA Ex. 119 at 78.

[1045] TPWD 2nd Initial Brief.

[1046] OPIC 2nd Initial Brief at 11–12; LGC 2nd Initial Brief at 65; FBR 2nd Initial Brief at 88.

will be discussed more below, NWF argues that the verbiage of the permit needs to be tightened to ensure that BRA does not divert more return flows than it is entitled to.[1047] Dow concedes that the First PFD's interpretations of Texas Water Code §§ 11.042 and 11.046 (including the approval of the BRA Return Flows Approach) are reasonable. However, Dow advocates adoption of the ED Return Flows Approach due to the large size of the SysOp Permit. Dow simply argues that BRA's proposed appropriation in this case is so large and speculative that the ED's approach is more protective of existing water rights in the basin.[1048]

The BRA Return Flows Approach results in significantly more water being available for the SysOp Permit. Specifically, BRA's modeling indicates that between 20,000 and 27,000 acre-feet more water is available for the SysOp Permit appropriation amount when using the BRA Return Flows Approach as opposed to the ED Return Flows Approach.[1049] The ED agrees that the modeling shows a 20,000 to 27,000 acre-feet difference, but argues that, in the context of a permit as big as the SysOp Permit, the difference is not significant.[1050]

The ED continues to advocate the ED Return Flows Approach, in spite of the First PFD and the Commission's discussion of it. According to the ED, adoption of the BRA Return Flows Approach will be onerous for Staff because it will necessitate revisions to the state's WAMs which might, in turn, cause a delay in permit processing elsewhere in the state.[1051] Dr. Alexander explained that the WAMs were not developed in a manner consistent with the treatment of return flows envisioned in the BRA Return Flows Approach. Therefore, if that approach is adopted, then Staff would need to include estimated return flows in streamflow amounts in the WAM.[1052]

[1047] NWF 2nd Initial Brief at 33–37.

[1048] Dow 2nd Initial Brief at 72; *see also* Dow 2nd Reply Brief at 41–42.

[1049] BRA Ex. 119 at 78–79; BRA Ex. 124.

[1050] Tr. at 3710–12.

[1051] ED Ex. R1 at 13–14.

[1052] Tr. at 3706–09.

The ALJs do not find this to be a compelling argument. TPWD and BRA agree with the ED that adoption of the BRA Return Flows Approach might necessitate revisions to the state's WAMs, but argue that that is no reason to ignore the law.[1053] Moreover, BRA suggests that revisions to the WAM need not be significant or especially difficult. Because current return flows are already incorporated into Run 8 of the WAM,[1054] BRA posits that adding the return flows to other WAM runs ought not be terribly difficult.[1055] In addition, BRA is receptive to the ED's suggestion of adding an ordering provision to the SysOp Permit that would eliminate the need for revisions to the WAM.[1056]

The ED next expressed concerns that the Accounting Plan included in the WMP does not adequately account for return flows in the future, and therefore does not provide adequate protection of senior downstream water rights.[1057] Dr. Alexander pointed out that if BRA is granted authorization to appropriate the return flows of others, then some quantity of those return flows might cease to exist in the future (because the dischargers might decide to directly reuse their water and cease discharging it into the river). Dr. Alexander's concern is that BRA's Accounting Plan does not adequately explain how, on an ongoing basis, BRA would track discharges to make sure it was not diverting return flows that are not actually in the river. In other words, the ED believes BRA's Accounting Plan should be more specific in how it is going to handle the determination of whether actual return flow volumes are changing, and should track individual discharges from their point of discharge to the point of diversion.[1058]

NWF makes similar complaints about the specificity (or lack thereof) of BRA's Proposed Permit as to return flow issues. NWF complains that BRA's Proposed Permit does not specifically quantify the amount of return flows that may be appropriated by BRA. NWF also

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[1053] TPWD 2nd Initial Brief at 4; BRA 2nd Initial Brief at 51.

[1054] Tr. at 3707–08.

[1055] BRA 2nd Initial Brief at 51.

[1056] BRA 2nd Initial Brief at 51; *see also* Tr. at 3706–09.

[1057] ED Ex. R1 at 15–16.

[1058] Tr. at 3985–86.

notes that it allows for "modifications" to be made to the permit which could allow increased use of return flows without notice and an opportunity for hearing. NWF is concerned that these modification procedures are too vague and open-ended.[1059]

The ED and BRA dispute NWF's argument that, in the future, the amount of return flows appropriated by BRA could be increased without notice and opportunity for hearing. The ED would consider any request by BRA to increase the amount of return flows to be a major modification requiring notice and opportunity for hearing.[1060] BRA disputes NWF's contention that the proposed permit is too vague or non-specific as to the treatment of return flows. BRA points out that the WMP contains the list of sources and amounts of return flows appropriated.[1061]

BRA disputes the contention that the Accounting Plan does not adequately address return flows or is inadequately specific. BRA's expert, Mr. Gooch, testified that, in calculating the amount of existing return flows in the basin, BRA used the lowest reported monthly discharge amount in the 2007 through 2011 time period for each discharger. Mr. Gooch described this as a conservative approach that makes it unlikely that future discharges will be lower than those assumed in the water availability modeling for the SysOp Permit.[1062] Mr. Gooch also provided extensive testimony disputing the notion that the Accounting Plan does not adequately track return flows.[1063] According to the Accounting Plan, in the unlikely event that, sometime in the future, it is found that actual return flows are less than the conservative amounts used in the model, then the assumptions used in the model will be adjusted and the firm yield of the permit will be reduced.[1064] BRA has agreed to track actual discharges from wastewater treatment plants against the values used in its modeling, and if actual return flows are substantially less than

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[1059] NWF 2nd Initial Brief at 33–34; NWF 2nd Reply Brief at 25–26.

[1060] ED 2nd Reply Brief at 19.

[1061] BRA 2nd Reply Brief at 69; BRA Ex. 113 at WMP Tech. Rep. App. G-2.

[1062] BRA Ex. 119 at 79–80.

[1063] BRA Ex. 119 at 80–85.

[1064] BRA Ex. 119 at 83.

modeled return flows, then the model will be adjusted downward. Moreover, BRA points out that tracking individual discharges from the point of discharge to the point of diversion is not appropriate under the law because return flows, once discharged into a watercourse, are state waters subject to appropriation just like any other waters. As such, BRA views tracking as a burdensome requirement that has no practical value.[1065]

Nevertheless, in response to concerns about specificity as to return flows, BRA has offered an amendment to the WMP. The amendment would modify the final paragraph beginning on page 5-7 of the WMP Technical Report as follows:

> [Initial portion of paragraph unchanged] The BRA approach version of the Accounting Plan includes reported monthly return flows for dischargers that have a permitted discharge greater than or equal to 1 million gallons per day (MGD). Within one month after this data is available from TCEQ for the prior calendar year the total annual amount of return flows ~~These monthly amounts~~ will be compared to the assumed amount used during the time period of this initial WMP. If actual return flows are ~~substantially less than the amounts used in the modeling the assumptions used in the model will be adjusted and the model re-run to examine the impacts on yield~~ less than the amount used in modeling by 5% or greater, BRA will revise the models and submit results to TCEQ.[1066]

The ED concedes that tracking actual discharges as envisioned in the above language is a "step in the right direction."[1067] The ALJs agree and conclude that the revised language proposed by BRA adequately addresses the specificity concerns expressed by the ED and NWF. The specific language proposed by the ALJs is found in Section XXVIII of this PFD, dealing with Additional Permit Changes Proposed by Parties.

NWF next seeks to have a special provision added to the permit. Texas Water Code § 11.046(b) provides that when TCEQ grants a water right, it may include conditions "providing for the return of surplus water, in a specific amount or percentage of water diverted, and the

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[1065] BRA Ex. 154; Tr. at 4187–90.

[1066] BRA 2nd Initial Brief at 66–67.

[1067] ED 2nd Initial Brief at 28.

return point on a watercourse or stream as necessary . . . to provide flows for instream uses or bays and estuaries." Pursuant to this authority, NWF contends that the following special condition should be added to the permit to provide protection of instream uses and beneficial inflows:

> Permittee shall ensure that 50% of water diverted under this permit and not consumed in its initial use under this permit shall be returned to the source of supply at a point reasonably close to the place of use and shall be reserved for protection of instream uses and beneficial inflows. This requirement does not apply to water that is lawfully used outside of the Brazos River Basin. Permittee shall track compliance with this requirement in its accounting/delivery plan on a monthly basis.[1068]

The ED and BRA oppose inclusion of the permit condition proposed by NWF because they believes that instream flows will be adequately protected by the S.B. 3 rules, and because BRA has additionally agreed, through a Memorandum of Understanding (MOU) with TPWD, to perform additional studies related to environmental flows, meet additional flow requirements, and dedicate up to 100,000 acre-feet of additional water to the Texas Water Trust.[1069] The ALJs agree and do not find a compelling reason to impose the permit condition sought by NWF.

Finally, while maintaining that the ED Return Flows Approach is the legally correct one, the ED states that he could agree to issue the SysOp Permit for the appropriation amount of 516,995 acre-feet per year (which was based on modeling using the BRA Return Flows Approach), but then perform accounting for the use of return flows using the ED Return Flows Approach. In this way, the ED contends that the SysOp Permit would not constitute a precedent on return flow issues in other water rights proceedings. Along with this hybrid approach, the ED would insert the following paragraph in the permit:

[1068] NWF 2nd Initial Brief at 36–37.

[1069] ED 2nd Reply Brief at 19–20; BRA 2nd Reply Brief at 69–70; BRA Ex. 131.

> The parties have agreed that this permit and order will have no impact on any future reuse authorization and is not precedent for any particular interpretation of reuse of return flow law and policy.[1070]

Dow supports this proposed paragraph.[1071] Alternatively, if the Commission simply adopts the BRA Return Flow Approach, the ED suggests that the following paragraph be added to the permit:

> BRA's application for a new appropriation is only possible because of BRA's system of reservoirs and its detailed accounting and water management plans. The decision in this case on return flows is limited to BRA's application because of its unique facts and is not a precedent for how the ED would analyze reuse applications in other river basins in the future.[1072]

BRA opposes the inclusion of either of these special provisions.[1073] The ALJs agree with BRA. The ALJs see no legal basis for either proposal.

Consistent with the First PFD and the Commission's discussion of same, the ALJs continue to believe that the BRA Return Flows Approach is the legally correct one. All parties other than the ED either explicitly or tacitly agree. The ALJs are also convinced that the treatment of return flows is a significant issue. By anyone's measure, a difference of 20,000 to 27,000 acre-feet between the two approaches is significant. Accordingly, the ALJs conclude that BRA has met its burden with respect to the return flows issues and BRA correctly took return flows into account when calculating the appropriation amount for the SysOp Permit.

[1070] ED 2nd Initial Brief at 29.

[1071] Dow 2nd Reply Brief at 54.

[1072] ED 2nd Initial Brief at 30.

[1073] ED 2nd Reply Brief at 69.

2. Privately Owned Groundwater-Based Return Flows

As in the First Hearing, BRA seeks authority to appropriate not only surface water-based return flows, but also groundwater-based return flows. The ED opposes granting an appropriation for groundwater-based return flows, arguing that pursuant to Texas Water Code § 11.042(b) only the discharger of privately owned groundwater-based return flows may seek authorization to divert and reuse those return flows.[1074] Section 11.042(b) reads as follows:

> (b) A person who wishes to discharge and then subsequently divert and reuse the person's **existing return flows derived from privately owned groundwater** must obtain prior authorization from the commission for the diversion and the reuse of these return flows. . . .[1075]

Based on this language, the ED argues that, with respect to groundwater-based return flows, BRA can only obtain authorization to divert those return flows derived from its own privately owned groundwater, but it cannot obtain authorization to use return flows derived from anyone else's privately owned groundwater. The ED argues that legal developments since the First PFD confirm the ED's position. In a permitting matter involving the City of Lubbock decided by the Commission in late 2012, the Commission held that the city could only obtain authority to divert its own groundwater-based return flows via the authority granted by § 11.042(b).[1076]

BRA and TPWD disagree with the ED. They both argue that when groundwater-based return flows are discharged into a river by an owner who has not obtained authorization under § 11.042(b), then those waters lose their character as groundwater and become state (i.e., surface) water, appropriable by BRA or anyone else pursuant to Texas Water Code § 11.121. BRA and TPWD also argue that legal developments since the First PFD validate use of the

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[1074] ED 2nd Initial Brief at 24–26.

[1075] Emphasis added.

[1076] ED 2nd Initial Brief at 25–26 and Attachment A (*citing to Application by City of Lubbock for Amendment to Water Use Permit No. 3985*, SOAH Docket No. 582-11-3522, TCEQ Docket No. 2010-0837-WR).

BRA's approach to groundwater-based return flows. In a recent Texas Supreme Court case,[1077] the court acknowledged that the "character of water as groundwater or state [i.e. surface] water can change." Thus, the court acknowledged that once groundwater flows into a watercourse, it ceases being groundwater and becomes state water. The court specifically addressed Texas Water Code § 11.042(b), saying it was the "exception that proved the rule" and that it necessarily implied that groundwater discharged into a watercourse without a § 11.042(b) authorization becomes state water.[1078] According to BRA and TPWD, the ED's approach to groundwater-based return flows is flatly contradicted by the court's holding in the *Day* case.[1079]

On this issue, BRA and TPWD have the better argument. Because the ED provided only portions of documents from the *City of Lubbock* case, it is difficult to understand the significance or context of many of the holdings in that case. Nevertheless, the specific Conclusion of Law (COL) upon which the ED places great weight does not appear to conflict with the ALJs' reading of §§ 11.042 and 11.046. COL No. 6 states that, pursuant to § 11.042(b), Lubbock "must obtain prior authority from the TCEQ to convey the flows created by the discharge of its developed groundwater-based treated effluent."[1080] The ALJs agree with that holding. It is clear from the wording of § 11.042(b) that if BRA wishes to discharge and subsequently divert and reuse existing return flows derived from **BRA's own** groundwater, then it must obtain prior authorization from the TCEQ to do so.[1081] This holding does not, however, mean that BRA is barred from appropriating existing return flows derived from **a third party's** groundwater in a case where the third party has not obtained authorization under § 11.042(b) and the discharged waters have lost their character as groundwater and thereby become state water appropriable by anyone. The holding in the *Day* case further buttresses the ALJs' conclusion that BRA's and TPWD's reading of the law with respect to groundwater-based return flows is the correct one.

[1077] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814 (Tex. 2012).

[1078] *Day*, 369 S.W.3d at 822–23.

[1079] BRA 2nd Initial Brief at 52–53; TPWD 2nd Initial Brief at 3–4; BRA 2nd Reply Brief at 67–68.

[1080] ED 2nd Initial Brief, Attachment A at 21.

[1081] There is nothing in the record to suggest that BRA generates its own groundwater-based return flows or that it seeks to appropriate such return flows.

Accordingly, the ALJs conclude that BRA has met its burden of proof as to all issues related to return flows, and that the appropriation amounts in the SysOp Permit were properly calculated using the BRA Return Flows Approach and BRA's interpretation as to groundwater-based return flows.

XX. BED AND BANKS AUTHORIZATION

BRA's application for a bed and banks authorization complies with Texas Water Code § 11.042, which provides, in relevant part:

> (a) Under rules prescribed by the commission, a person . . . may use the bank and bed of any flowing natural stream in the state to convey the water from the place of storage to the place of use or to the diversion point of the appropriator.
>
> (b) A person who wishes to discharge and then subsequently divert and reuse the person's existing return flows derived from privately owned groundwater must obtain prior authorization from the commission for the diversion and the reuse of these return flows. The authorization may allow for the diversion and reuse by the discharger of existing return flows, less carriage losses, and shall be subject to special conditions if necessary to protect an existing water right that was granted based on the use or availability of these return flows. Special conditions may also be provided to help maintain instream uses and freshwater inflows to bays and estuaries. A person wishing to divert and reuse future increases of return flows derived from privately owned groundwater must obtain authorization to reuse increases in return flows before the increase.
>
> (c) Except as otherwise provided in Subsection (a) of this section, a person who wishes to convey and subsequently divert water in a watercourse or stream must obtain the prior approval of the commission through a bed and banks authorization. The authorization shall allow to be diverted only the amount of water put into a watercourse or stream, less carriage losses and subject to any special conditions that may address the impact of the discharge, conveyance, and diversion on existing permits, . . . instream uses, and freshwater inflows to bays and estuaries. Water discharged into a watercourse or stream under this chapter shall not cause a degradation of water quality to the extent that the stream segment's classification would be lowered. . . .

The permits proposed by both BRA and the ED grant to BRA authorization to:

> [U]se the bed and banks of the Brazos River below Possum Kingdom Lake, the Brazos River tributaries and Permittee's authorized reservoirs for the conveyance, storage, and subsequent diversion of the water authorized herein, subject to identification of specific losses and special conditions.[1082]

BRA explains that it needs bed and banks authorization as a part of the SysOp Permit because many of its wholesale-water customers are located downstream of BRA's reservoirs. Delivering water by the bed and banks of the Brazos River and its tributaries avoids the cost and environmental impacts of constructing water transmission facilities to deliver the water and of using electric power for pumping. It also has an environmental benefit because it puts additional instream flows into the river.[1083]

Special conditions in the SysOp Permit address the use of the bed and banks of the Brazos River and its tributaries to transport water in a manner that satisfies the requirements of Texas Water Code § 11.042. The permit authorizes the use of the bed and banks, subject to identification of specific losses and various other conditions, including a requirement that BRA maintain an accounting/delivery plan to estimate daily deliveries of water that considers losses and travel time.[1084] Special Condition 5.B.1 specifies that use of the bed and banks of Allens Creek below ACR requires an amendment of the ACR Permit.[1085] Special Condition 5.B.2 identifies the specific stream reaches to which the bed and banks authorization applies.[1086] The WMP lays out specific information on loss rates and accounting methods for bed and banks delivery of water under the permit, and includes the Accounting Plan that will be used to track bed and banks delivery.[1087]

[1082] BRA Ex. 132A at 4; BRA Ex. 132B at 4.

[1083] BRA Ex. 15 at 95.

[1084] BRA Ex. 132B at 8.

[1085] BRA Ex. 132B at 7.

[1086] BRA Ex. 132B at 7–8.

[1087] BRA Ex. 127 at 8; BRA Ex. 119 at 100; BRA Ex. 47 at 47–48; BRA Ex. 113.

The evidence introduced at the hearing demonstrates that there should not be any effect on water quality in the Brazos River Basin as a result of the bed and banks authorization. The water to be transferred in the bed and banks of the Brazos River and its tributaries originates in the basin and will have water quality consistent with the natural water quality of the Brazos River. While there could be changes in timing and magnitude of existing flows which could affect water quality by changing river velocities or depths and concentration of constituents in the water, the SysOp Permit places restrictions on the exercise of the water right so that river conditions are maintained within the range of historically occurring conditions.[1088]

BRA, the ED, and TPWD all argue that the evidence demonstrates compliance with the statutory and regulatory requirements for obtaining a bed and banks authorization.[1089] No party meaningfully contended otherwise. The ALJs find that BRA's requested bed and banks authorization should be approved.

XXI. INTERBASIN TRANSFERS

BRA's Proposed Permit grants to BRA so-called "exempt interbasin transfers," authorizing the transfer of water to any county, municipality, or retail public utility's retail service area that lies partially in the Brazos River Basin, San Jacinto-Brazos Coastal Basin, or Brazos-Colorado Coastal Basin for use on a firm and non-firm basis in that part of the county, municipality, or retail service area that lies within the Trinity, Red, Colorado, Guadalupe, Lavaca, or San Jacinto River basins.[1090]

The BRA application for an interbasin transfer complies with Texas Water Code § 11.085. Pursuant to that section, a person wishing to transfer water from one river basin to another typically must apply for and obtain "interbasin transfer" authorization from the TCEQ

[1088] BRA Ex. 15 at 95–96; BRA Ex. 29 at 41–42.

[1089] BRA 1st Initial Brief at 20–21; BRA 2nd Initial Brief at 53–55; ED 1st Initial Brief at 8; ED 2nd Initial Brief at 30; TPWD 2nd Initial Brief at 5.

[1090] BRA Ex. 132B at 5.

after completing extensive review, analysis, and contested case hearing procedures.[1091] Certain types of interbasin transfers, however, are exempt from many of the review, analysis, and hearing procedures. Among the types of interbasin transfers that are considered exempt are proposed transfers "from a basin to its adjoining coastal basin" or "from the part of the geographic area of a county or municipality, or the part of the retail service area of a retail public utility . . . that is within the basin of origin for use in that part of the geographic area of the county or municipality, or that contiguous part of the retail service area of the utility, not within the basin of origin."[1092] The interbasin transfer authorization sought by BRA fits within these exemptions, and no water availability analysis specific to the interbasin transfer was required.[1093] No party contends otherwise.

FBR is the only party challenging BRA's right to conduct exempt interbasin transfers pursuant to the SysOp Permit. FBR makes three primary arguments. First, FBR asserts that any interbasin transfer must itself satisfy not only the requirements of § 11.085, but also the requirements of § 11.134. Thus, FBR argues that BRA is obligated to prove, for example, that each interbasin transfer will not be detrimental to public welfare, will be consistent with the regional and state water plans, will be placed to beneficial use, identifies diversion points, identifies a specific amount of water, and so on. FBR points out that the draft permit would authorize transfers into the Red River Basin, and then contends that BRA has failed to show a need for the water in the Red River Basin. FBR contends that the BRA Application lacks the information needed to determine whether the interbasin transfers comply with § 11.134 and, therefore, interbasin transfer authorization ought not be included in the SysOp Permit.[1094] Other than a reference to § 11.134, FBR cites no legal authority for this argument.

BRA and the ED both dispute FBR's argument. BRA readily admits that it has the burden of proving that the Application satisfies the requirements of § 11.134. However, BRA

[1091] Tex. Water Code § 11.085.

[1092] Tex. Water Code § 11.085(v)(3), (4).

[1093] ED Ex. KA-1 at 35–36; ED Ex. KA-3 at 4; BRA Ex. 15 at 97–98.

[1094] FBR 2nd Initial Brief at 90–92.

and the ED agree that there is no requirement for BRA to then also independently prove each element of § 11.134 with respect to the interbasin transfer component of the permit.[1095] The ALJs agree. Texas Water Code § 11.085(a) provides:

> No person may take or divert any state water from a river basin in this state and transfer such water to any other river basin without first applying for and receiving a water right or an amendment to a permit, certified filing, or certificate of adjudication from the commission authorizing the transfer.

In this proceeding, BRA has applied for a water right and has included in that application a request for authorization for exempt interbasin transfers. Assuming the Application as a whole satisfies the requirements of § 11.134, there is no legal authority for the proposition that BRA must also somehow independently prove that the exempt interbasin transfer component of the application satisfies the requirements of § 11.134.

Second, FBR argues that the interbasin transfer authorization would constitute an illegal amendment of BRA's existing water rights because many of those rights allow only specified amounts of water to be transferred out of the Brazos Basin and the SysOp Permit would effectively remove those limits.[1096] Again, FBR cites no legal authority for this argument.

In response, BRA points out that the SysOp Permit would not remove any volume limitations contained in other interbasin transfer authorizations that BRA already holds. That is, any exempt interbasin transfer authorization contained in the SysOp Permit would apply only to water appropriated pursuant to the SysOp Permit, and would in no way alter limits contained in other BRA permits. The ALJs agree and conclude that the inclusion of exempt interbasin transfer authorization in the SysOp Permit would not constitute an amendment to any of BRA's interbasin transfer authorizations contained in its existing permits.

[1095] BRA 2nd Reply Brief at 70–71; ED 2nd Reply Brief at 20–21.

[1096] FBR 2nd Initial Brief at 93–94.

Third, FBR complains that BRA's Proposed Permit contains no limit on the maximum amount of water that could be transferred out of the Brazos River Basin. FBR advocates revised language in the permit that would, primarily, require BRA to include in its WMP an "interbasin transfer Accounting Plan" that includes details on how and where those transfers will be used.[1097] However, information such as "a detailed description of the proposed uses and users under each category [of water use]" is exactly the kind of information that need not be shown for an exempt interbasin transfer.[1098] Thus, the ALJs conclude that the revised permit language sought by FBR is not warranted.

XXII. OTHER CONCERNS REGARDING THE PROCESS

A. The Two-Step Process is No Longer an Issue of Concern

At the time of the First Hearing, BRA had elected to pursue a two-step approach whereby BRA would first be issued the SysOp Permit, then prepare the WMP supporting the SysOp Permit and return for a second hearing on the WMP. In the First PFD, the ALJs concluded that the two-step process was unprecedented and lacking in legal support.[1099] The Commissioners agreed, which is why they remanded the application for further proceedings. This concern is, however, is no longer present. As already discussed, the WMP has now been prepared and the entire application (including the WMP) is before the ALJs.

B. There is No Longer a Concern with the Finality of Any Order Issued Granting the SysOp Permit

In the First Hearing, a number of Protestants argued that any order granting the SysOp Permit would not constitute a legally binding final and appealable order because many of the details of the permit would have to be resolved in a second hearing concerning the WMP. The

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[1097] FBR 1st Initial Brief at 72–76.

[1098] *See* Tex. Water Code § 11.085(b)(2), (v)(3), (4).

[1099] First PFD at 165.

ALJs agreed.[1100] Following the remand, the SysOp Permit now includes the WMP. Because it is no longer pursuing the two-step process in the application, BRA contends that the concern about finality has been removed. The ED agrees, as do most of the Protestants. Following the Second Hearing, LGC is the only party still maintaining that an order granting the SysOp Permit would not meet the standard for finality set out in relevant case law.

Pursuant to the Administrative Procedure Act, in order for a party to obtain judicial review of an order issued following a contested case hearing, the order must be a "final order."[1101] In *Texas-New Mexico Power Co. v. Texas Indus. Energy Consumers* (*TNP*),[1102] the Texas Supreme Court held that, although there is no single rule dispositive of all questions of finality, a court should consider the statutory and constitutional context in which the agency operates and should consider an order as final if it is:

(1) Definitive in nature;

(2) Promulgated in a formal manner;

(3) One with which the agency expects compliance; and

(4) Imposes an obligation, denies a right, or fixes some legal relationship as a "consummation" of the administrative process.[1103]

In order to understand the concept of finality, it is helpful to understand the background and context of the *TNP* case. In that case, Texas-New Mexico Power Company (TNP) had applied to the Public Utility Commission of Texas (PUC) for a permit to construct a power plant. The PUC granted the permit, but it was conditioned upon TNP obtaining all permits necessary from other state or federal agencies. When TNP attempted to challenge the terms of the permit

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[1100] First PFD at 173. Strictly speaking, the question of whether an agency order is final and, therefore, appealable, is not before the ALJs. Rather, the issue relates to the subject matter jurisdiction of the judiciary and is properly left to the judicial courts to decide. Nevertheless, in the First PFD, the ALJs believed the Commission would benefit from a discussion of the issue.

[1101] Tex. Gov't Code § 2001.171.

[1102] 806 S.W.2d 230 (Tex. 1991).

[1103] *TNP*, 806 S.W.2d at 232.

in district court, an opponent party successfully argued in the lower courts that the district court lacked jurisdiction to hear the case because the underlying order was not final and appealable. The Austin Court of Appeals reasoned that the absence of the necessary permits from other agencies and the inability to know whether TNP would succeed in obtaining the permits from the other agencies rendered the PUC order conditional and therefore non-final.[1104]

The Texas Supreme Court disagreed with this ruling because it would place TNP in a "Catch-22":

> An examination of the process for obtaining one of the permits upon which the [PUC] conditioned TNP's certificate reveals a potentially impossible Catch-22 predicament in which a utility would be placed if the arguments of TIEC were accepted. Before it can build a new power plant, a utility must obtain a certificate from the PUC. Prior to receiving this approval, TNP must acquire all the necessary permits from various governmental agencies. These entities, however, cannot statutorily issue all permits until construction has begun or is completed. For example, only after sixty days of operation may TNP apply for an operating permit under the Texas Clean Air Act. . . . Shuffling citizens in such an endless, inefficient circle from one agency to the next in search of permits, licenses, and stamps of approval that cannot be issued until some other office acts represents government at its worst. . . . A more pragmatic and flexible approach must be employed to evaluate the finality of an agency's order. This requires recognition of the need both to minimize disruption of the administrative process and to afford regulated parties and consumers with an opportunity for timely judicial review of actions that affect them.[1105]

Accordingly, the Texas Supreme Court adopted the standard for finality set forth above.

LGC argues that an order granting the SysOp Permit will not meet the first and fourth required elements for finality as set out in *TNP*; that is, the order will not be "definitive in nature" and will not "fix" legal relationships. LGC argues that the SysOp Permit would be insufficiently definitive because: (1) the quantity of water appropriated under the permit would be unclear and could change based upon uncertain future events; and (2) BRA continues to use

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[1104] *TNP*, 786 S.W.2d 795, 796–97 (Tex. App. – Austin 1990, *rev'd and remanded*).

[1105] *TNP*, 806 S.W.2d at 231–32.

theoretical rather than actual diversion points. LGC argues that the WMP vests BRA with so much flexibility that it does not "fix" the legal relationships arising from the permit.[1106]

BRA counters that an order granting the SysOp Permit will meet the *TNP* finality test. The ALJs agree with BRA. The permit will be sufficiently definitive in nature and it will consummate the administrative process, resulting in a permit that fixes BRA's rights. Unlike after the First Hearing, if the SysOp Permit is now granted, BRA will be able to immediately divert and use water pursuant to the permit. No additional contested case hearing will be required. The level of specificity in the application is much greater in the Second Hearing than it was in the First Hearing. For example, in the first round, the application relied upon four wholly theoretical diversion points. In the second round, the application identifies a number of actual diversion points plus forty specific diversion reaches, and BRA is held to maximum diversion amounts in each reach.[1107] The SysOp Permit will grant to BRA substantial water rights, and the details of where, when, how, and how much of that water can be utilized are worked out in the permit and the accompanying WMP.

Most importantly, the main impediment to finality that was present in the First Hearing is no longer present. In *Texas Utilities Co. v. Public Citizen, Inc.*,[1108] the Austin Court of Appeals held that completion of only the first step of a two-step permitting process results in a non-final order. Simply put, in the present case, BRA's finality problems disappeared when the two-step process disappeared. For these reasons, the ALJs conclude that any order granting the SysOp Permit at this stage would likely be considered a final and appealable order.

[1106] LGC 2nd Initial Brief at 66–67.

[1107] BRA Ex. 113 at 51–52 and Table G.3.14; BRA Ex. 119 at 11; BRA Ex. 121.

[1108] 897 S.W.2d 443, 446–67 (Tex. App. – Austin 1995, no pet.).

XXIII. BEFORE AND AFTER CONSTRUCTION OF THE ALLENS CREEK RESERVOIR

ACR is a proposed reservoir that would be built on Allens Creek in southeast Texas, near the Gulf of Mexico. It is intended to serve as an "off channel" reservoir to impound not only water flowing in Allens Creek, but also to impound Brazos River water that will be diverted from the Brazos River channel into the reservoir. BRA is the co-owner, along with the City of Houston and the TWDB, of a water right issued for the construction and use of the reservoir.[1109] The water right for the reservoir allows 202,000 acre-feet per year to be diverted from the Brazos River and impounded in the reservoir, and allows 99,650 acre-feet per year to be diverted from the reservoir, with a 2002 priority date.[1110] Of that 99,650 acre-feet, BRA owns 30% (or 29,825 acre-feet), and the City of Houston owns the remaining 70%.[1111] ACR has not yet been constructed, might not be constructed anytime soon, and might never be constructed.[1112] Indeed, the deadline for the initiation of construction of ACR has been extended from 2018 to 2025.[1113] ACR creates issues for the SysOp Permit that come into play both before and after construction of the reservoir.

A. Before Construction of ACR

As written at the time of the First Hearing, the SysOp Permit Application asked that, for the period before ACR is constructed, BRA be allowed to appropriate under the SysOp Permit water that was already appropriated to BRA (and the City of Houston) under the existing ACR Permit.[1114] In the First PFD, the ALJs concluded that this approach resulted in a prohibited "double-permitting" or "stacking" of water rights. That is, the ALJs concluded that, until the ACR is constructed, the SysOp Permit would have impermissibly resulted in the water allocated

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[1109] BRA Ex. 1 at 20; BRA Ex. 15 at 43; FBR Ex. 3-F, Item 14.

[1110] BRA Ex. 15 at 43; FBR Ex. 3-F, Item 14.

[1111] FBR Ex. 3 at 34; Tr. at 412.

[1112] BRA Ex. 1 at 20.

[1113] BRA 1st Reply Brief at 16, n. 13.

[1114] Tr. at 938–39.

to that reservoir being double-appropriated by BRA, once via the ACR Permit and again via the SysOp Permit. This resulted in the amount of water available for appropriation in the SysOp Permit being overstated because it was based upon analysis that assumed the ACR Permit did not exist. In the First PFD, the ALJs concluded that when evaluating the availability of water for the SysOp Permit, the ED should have assumed that the ACR Permit was being fully utilized, even during the period of time prior to construction of ACR. For this reason and others, in the First PFD the ALJs recommended denial or a remand of the application. The ALJs also suggested that the Commission might consider whether to grant BRA a term permit for water associated with ACR for the period prior to its construction.[1115]

In response to the First PFD, BRA amended the SysOp Permit Application. Now, for the period before construction of ACR, BRA is asking for a term permit to use up to 202,650 acre-feet per year. The term permit would last for 30 years or until the ports are closed on the dam impounding ACR, whichever is earlier.[1116] BRA and the ED argue that this cures the "double-permitting" problem identified in the First PFD and that the term permit should be issued.[1117] The ALJs agree, with a caveat that will be discussed below.

The Commission may issue a term permit pursuant to Texas Water Code § 11.1381, which reads as follows:

> (a) Until a water right is perfected to the full extent provided by Section 11.026 of this code, the commission may issue permits for a term of years for use of state water to which a senior water right has not been perfected.
>
> (b) The commission shall refuse to grant an application for a permit under this section if the commission finds that there is a substantial likelihood that the issuance of the permit will jeopardize financial commitments made for water projects that have been built or that are being built to optimally develop the water resources of the area.

[1115] First PFD at 53–60.

[1116] BRA Ex. 132B at 5.

[1117] BRA 2nd Initial Brief at 57–58; ED Initial Brief at 31.

> (c) The commission shall refuse to grant an application for a term permit if the holder of the senior appropriative water right can demonstrate that the issuance of the term permit would prohibit the senior appropriative water right holder from beneficially using the senior rights during the term of the term permit. Such demonstration will be made using reasonable projections based on accepted methods.
>
> (d) A permit issued under this section is subordinate to any senior appropriative water rights.

Pursuant to Subsection (a), a term permit may be issued to use state water to which a senior water right "has not been perfected." Pursuant to Texas Water Code § 11.026, a water right becomes "perfected" when water is first placed to beneficial use pursuant to the right. Currently, the ACR Permit, which is a water right that is senior in priority to the SysOp Permit, has clearly not yet been perfected because ACR has not yet been built. Pursuant to § 11.1381(b), a term permit cannot be issued if the Commission finds there is a substantial likelihood that issuance of the term permit would jeopardize financial commitments made for water projects in the area. In this case, BRA offered uncontradicted evidence that issuance of the term permit would not jeopardize the financial commitments to develop ACR.[1118] Finally, pursuant to § 11.1381(c), a term permit cannot be issued if issuance would prevent the senior appropriative water right holder from beneficially using the senior rights during the term of the term permit. In this case, BRA also offered uncontradicted evidence that issuance of the term permit will not prevent BRA and the City of Houston from beneficially using ACR during the term permit.[1119] Indeed, common sense dictates that it is not the term permit, but the absence of a reservoir, that would prevent BRA and the City from beneficially using the ACR Permit during the term permit.

[1118] BRA Ex. 119 at 100–01.

[1119] BRA Ex. 118; BRA Ex. 119 at 100–01.

The moment the reservoir is built, the term permit will cease to exist. In short, BRA proved all the elements required to obtain the term permit it seeks as a component of the SysOp Permit.[1120]

In the Second Hearing, FBR is the only party that opposed issuance of the term permit. FBR contends, without citation to any supporting authority, that BRA, "as one of the holders of the underlying water right permit [i.e., the ACR Permit], may not be granted a term permit for appropriation of the same water," but instead, should be "seeking an amendment to the [ACR Permit]."[1121] FBR also contends that if BRA wishes to use water pursuant to the term permit, it must first comply with the various protective measures required in the ACR Permit.[1122] Both arguments are unconvincing. It is clear from the language of Texas Water Code § 11.1381 that BRA, just like anyone else, may obtain a term permit to use state water to which a senior water right "has not been perfected." Moreover, there is nothing in § 11.1381 to suggest that, once a term permit is obtained, its holder must comply with the provisions of the underlying senior but unperfected water right.

As discussed above in the section addressing compliance with 30 Texas Administrative Code § 295.5, the ALJs have recommended that the SysOp Permit should specify four appropriation amounts, each corresponding to the Demand Level that happens to be in effect at the time. The ALJs believe this approach is doubly important in light of the ACR. If BRA is issued a SysOp Permit with: (1) a single appropriation amount for 516,499 acre-feet per year; **plus** (2) a term permit for 202,650 acre-feet per year prior to completion of the ACR, then BRA will effectively be enabled to "have its cake and eat it, too." In other words, if, during the time prior to construction of ACR, BRA is allowed to appropriate 516,499 acre-feet per year (which is premised on ACR's existence) **and** appropriate an additional 202,650 acre-feet under a term

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[1120] NWF contends that an issue related to the term permit remains unresolved. Specifically, NWF argues there is an "unaddressed contingency" whereby the "term permit could expire without [ACR] having been constructed." The ALJs agree that the term permit could expire before the reservoir has been constructed, but do not believe this creates a problem with the term permit. If that were to happen, BRA's right to divert water pursuant to the term permit would simply cease.

[1121] FBR 2nd Initial Brief at 8.

[1122] FBR 2nd Initial Brief at 8–9.

permit (which is premised on ACR's non-existence), then the water associated with ACR will have been double-permitted. Accordingly, the ALJs believe this warrants an additional reason why the SysOp Permit should specifically authorize four, alternative appropriation amounts, one for each Demand Level scenario.

B. After Construction of ACR

At the time of the First Hearing, there was disagreement between BRA and the ED regarding how ACR, once constructed, should be treated in the SysOp Permit. As a general rule, all of the reservoirs in the BRA system, as part of the SysOp Permit, would be allowed to trap and store additional water that is made available through system operations at the 2004 priority date. In its modeling, BRA limited diversions into ACR under the ACR Permit to 202,000 acre-feet at the permit's 2002 priority date. BRA then allowed additional diversions into the reservoir at the 2004 priority date of the SysOp Permit at times when there is unappropriated flow available under the terms of the SysOp Permit and there is empty storage in the reservoir. As a result, if the SysOp Permit were issued, total diversions from the Brazos River into ACR could exceed 202,000 acre-feet per year.[1123]

In the ED's modeling at the time of the First Hearing, additional diversions from the Brazos River into ACR at the priority of the SysOp Permit were not allowed. However, impoundment of additional flows from Allens Creek into the reservoir at the priority date of the SysOp Permit was allowed. As compared to BRA's approach, the ED's treatment of ACR reduced the yield available for the SysOp Permit by 50,000 to 55,000 acre-feet per year.[1124]

BRA contends that its approach to ACR is superior to the ED's because it recognizes the full benefit of system operation in increasing the amount of water available for use in the Brazos River Basin. BRA contends that diversions into the reservoir should be treated comparably to additional water that could be impounded in any other BRA reservoir in the BRA system. BRA

[1123] BRA Ex. 15 at 43–44; Tr. at 2387–88.

[1124] BRA Ex. 15 at 45; Tr. at 1960, 2388–89.

argues that the ED's approach would unnecessarily prevent the full utilization of a large investment in storage capacity needed in the basin, and would effectively exclude ACR from the BRA system of reservoirs for purposes of the SysOp Permit.[1125]

At the First Hearing, the ED argued that its approach was required because BRA lacked the legal authority to increase diversions into ACR via the SysOp Permit. The ED contended that if BRA wished to divert more Brazos River water into ACR, it had to apply to amend its ACR Permit.[1126] However, at the First Hearing, the ED was conceptually open to BRA's approach, provided that the SysOp Permit included a special provision mandating that the additional diversions into ACR could not be made until BRA amended its ACR Permit.[1127]

In the First Hearing, the ALJs rejected the ED's argument, noting that BRA already holds an existing "excess flows" permit that authorizes diversions from the Brazos River at four specific locations, including a location along the "west bank of the Brazos River in the R.M. Williamson Grant, Abstract 105, Austin County, Texas."[1128] That location coincides, in part, with ACR.[1129] As such, the ALJs concluded that because BRA's existing excess flows permit already authorizes BRA to divert excess Brazos River flows into ACR:[1130] (1) BRA already had the authority to make diversions into the reservoir over and above the 202,000 acre-feet limit;[1131] and (2) BRA can make those diversions at the diversion point authorized in the excess flows permit without necessitating any amendment to the ACR Permit. Thus, in the First PFD, the ALJs concluded that BRA did not need to obtain an amendment to its ACR Permit

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[1125] BRA Ex. 15 at 45–46; BRA 1st Initial Brief at 48–50.

[1126] ED 1st Initial Brief at 12; Tr. at 1960–63.

[1127] Tr. at 1959–63, 2203–04.

[1128] Dow Ex. 42, § 2.A.

[1129] BRA Ex. 104.

[1130] Tr. at 2400–02.

[1131] Tr. at 2402.

because it already possessed the right to divert more than 202,000 acre-feet into ACR at points authorized in its excess flows permit.[1132]

Nevertheless, to ameliorate the ED's concerns, in 2012 BRA applied for an amendment to its excess flows permit to specifically add the Brazos River diversion points already authorized in the ACR Permit. The TCEQ granted that amendment in 2013.[1133] Thus, BRA now has express authority to divert excess Brazos River flows into ACR in amounts over and above the 202,000 acre-feet limit of the ACR Permit. This eliminates the ED's concerns.

XXIV. COASTAL MANAGEMENT PLAN

The ED and BRA maintain that BRA's current Application and the Proposed Permit are consistent with applicable coastal management plan (CMP) requirements.[1134] FBR disagrees.

An application for a new water right proposing appropriation of 5,000 acre-feet of water or more per year within the CMP program boundary[1135] must be reviewed by the ED for consistency with CMP goals and policies, and the ED must provide a brief summary of such analysis and other statements and recommendations in the draft permit and technical summary.[1136] The applicable CMP standards are set out at 31 Texas Administrative Code § 501.33(a)(1), (3), (4), (5), (7) and (8).

Based on his review of those policies and the conditions in the draft permit that the ED proposed then, BRA's witness, Mr. Geeslin, testified during the First Hearing that BRA's

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[1132] First PFD at 173–75.

[1133] BRA Ex. 107 at 51–52.

[1134] 30 Tex. Admin. Code, ch. 281; 31 Tex. Admin. Code § 501.33.

[1135] The boundary is defined in 31 Tex. Admin. Code § 503.1, and includes areas within the following Texas counties: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Aransas, Refugio, Calhoun, Victoria, Jackson, Matagorda, Brazoria, Galveston, Harris, Chambers, Jefferson, and Orange; *see* 30 Tex. Admin. Code § 281.42 (10).

[1136] 30 Tex. Admin. Code §§ 281.43, .45(a)(2)(A)(i).

Application should not have significant adverse impacts on coastal natural resource areas.[1137] Mr. Geeslin set out his analysis and rationale that led to his conclusion.[1138] FBR points to no evidence to contradict Mr. Geeslin. The permits proposed in the Second Hearing state, "the issuance of this permit is consistent with the goals and policies of the Texas CMP."[1139]

Many of the factors that are required to be considered under 31 Texas Administrative Code § 501.33(a) are also required to be considered under Texas Water Code § 11.134(b)(3)(D), concerning environmental flow standards. Examples include protection of instream uses, water quality, bays, estuaries, and fish and wildlife habitat. Elsewhere in the PFD, the ALJs discuss the evidence concerning those and related issues and conclude that the evidence shows BRA's Application complies with those standards. There is no need to repeat that discussion here.

No representative of the ED testified concerning the CMP during the Second Hearing. As previously discussed, BRA extensively amended its Application between the First and Second Hearings. Pertinent to the CMP review, BRA replaced a case-specific environmental-flow analysis and proposal with measures that comply with the SB 3 rules. This leads FBR to argue that Mr. Geeslin's prior testimony is no longer applicable, and there is no evidence to show that BRA's current Application is consistent with the CMP.

As to the CMP review, the only significant change in the Application since the First Hearing was the substitution of measures to comply with the SB 3 rules for a case-specific environmental flow regime considered in the First Hearing. That means Mr. Geeslin's CMP consistency testimony remains valid except to the extent that it was premised on the pre-SB 3 environmental flow regime.

[1137] ED Exs. DG-1 at 12, DG-3A at 12–13.

[1138] ED Exs. DG-1 at 12, DG-3A at 12–13.

[1139] BRA Exs. 132A at 4, 132B at 4.

As discussed above, the ALJs conclude that BRA's currently proposed environmental flow regime complies with the SB 3 rules. Further, as the ED notes, the Commission found that the SB 3 rules for the Brazos River Basin were consistent with the CMP when it adopted them.[1140] As stated in the rule adoption preamble:

> The commission reviewed the adopted rulemaking and found that the proposal is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 et seq., and, therefore, must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the adopted rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §505.22, and found the adopted rulemaking is consistent with the applicable CMP goals and policies.[1141]

Given the above, the ALJs conclude that BRA's Application is consistent with the CMP requirements.

FBR notes that, under 30 Texas Administrative Code § 281.43(c), the permit or order in this case must include a written explanation supporting the ED's determination that issuing a permit to BRA will have no adverse effect impacts on the coastal natural resource areas. That requirement would be satisfied by a Final Order in this case, which would contain detailed findings that the permit will comply with the overlapping standards of Texas Water Code § 11.134(b)(3)(D) and the SB 3 rules, have no significant adverse impacts on the coastal natural resources, and be consistent with the goals and policies of the Texas CMP.

[1140] ED 2nd Reply Brief at 22. The ED appears to have provided an incorrect citation and meant to cite 39 Tex. Reg. 1416–1450 (Feb. 28, 2014).

[1141] 39 Tex. Reg. 1416, 1420, 1426. As previously indicated, the ALJs take official notice of the rule adoption package. Any objection to the ALJs having done so should be filed as an exception to the PFD.

XXV. WETLANDS

FBR argues that BRA has failed to meet its burden of proof on statutory and regulatory criteria concerning protection of wetlands.[1142] FBR claims that BRA and TCEQ should have explicitly considered the impact the SysOp Permit would have on wetlands periodically inundated by overbanking flows in the Brazos River.[1143]

BRA and the ED respond that no law concerning wetlands is applicable to the approval of BRA's Application. Although FBR includes background information and references to authority regarding TCEQ's consideration of wetlands protection in other contexts, BRA claims that FBR cites to no authority for its ultimate proposition that "TCEQ includes protection of wetlands in its water quality standards that apply to federal and state actions, including BRA's Application."[1144] The ED agrees with BRA. He maintains that nowhere in the Commission's rules or the Texas Water Code is there any requirement for the Commission to require overbanking or any similar type of extra condition to be placed in this type of permit.

Nevertheless, BRA has agreed to consult with the USACE on federal projects to determine whether intentional overbanking, which FBR advocates due to its wetland concerns, might be feasible or advisable in light of the potential for liability.[1145] Moreover, when FBR cross-examined BRA's experts on this subject, they testified that the draft permit's high-flow pulse provisions would accomplish some of this overbanking effect.[1146] The ED argues that there is nothing in the record to suggest that granting this permit will negate or hinder this overbanking.

[1142] FBR 1st Initial Brief at 1.

[1143] FBR 1st Initial Brief at 39–42.

[1144] FBR 1st Initial Brief at 41.

[1145] BRA Ex. 8B at 23; ED Ex. K-2 at 28.

[1146] Tr. at 754, 788–92.

The ALJs conclude that wetlands issues are outside the scope of and not relevant to this case.

XXVI. WATERMASTER

In another case, the Commission recently granted a petition to appoint a watermaster for the lower Brazos River Basin, which includes the area in and below PKR.[1147] In the present case, evidence was admitted to show that the existence of a watermaster will make it easier to properly enforce the SysOp Permit, if granted.[1148] Despite that, several parties, including BRA, correctly note that the existence of a watermaster does not alter BRA's burden of proof in this case. The ALJs agree that the existence of a watermaster does not alter BRA's burden of proof.

Nevertheless, some parties argue that BRA relied on the future existence of a watermaster to carry its burden of proof.[1149] With this, the ALJs disagree. As set out above, BRA has met its burden of proving that the permit should be granted. In determining that BRA carried its burden of proof, the ALJs' did not assume the existence of a watermaster.

If a permit is granted, however, Dow and Chisholm propose that it be conditioned on the continued existence of the watermaster for the lower Brazos River Basin.[1150] With that, too, the ALJs disagree. They see no legal basis for adding a condition to the permit requiring the continued existence of a watermaster in the lower Brazos River Basin.

[1147] *An Order Granting the Petition for the Appointment of a Watermaster in the Brazos River Basin Filed by the Brazos River Coalition*; TCEQ Docket No. 2013-0174-WR; SOAH Docket No. 582-13-3040 (Apr. 21, 2014).

[1148] *E.g.* Tr. at 2750, 2827, 2845, 2915, 3680, 3686, 3725, 3729, 3758, 3819.

[1149] FBR 2nd Initial Brief at 104–05; FBR 2nd Reply Brief at 29; Dow 2nd Initial Brief at 74–77; LGC 2nd Initial Brief at 68.

[1150] Dow 2nd Initial Brief at 75, 77; Chisholm 2nd Initial Brief at 3–17.

XXVII. POSSIBLE FUTURE LOSS OF USGS GAGES

FBR, NWF, and OPIC raise concerns about what could happen if one or more of the United States Geological Survey (USGS) stream flow gages listed in the WMP is taken out of service.[1151] NWF and FBR suggest permit language that would require BRA to replace a designated USGS gage if it is removed. BRA opposes including such a requirement in the permit.[1152]

The parties advocating a gage-replacement condition point to no law requiring, allowing, or suggesting that permits contain special conditions requiring replacement of USGS gages. There is no evidence in the record showing that any of the specific gages listed in the WMP is in actual danger of being lost or decommissioned. The ED contends that it would be unusual for the Commission to require such a permit condition, and none of the many permits in the record contains such a provision.[1153] Moreover, the environmental flow measurement points in BRA's WMP are incorporated directly from TCEQ's adopted SB 3 rules,[1154] meaning the Commission, not BRA, would need to act if one or more of them was lost.

The ALJs do not find that a permit issued to BRA in this case should contain a USGS gage replacement provision as suggested by FBR, NWF, and OPIC.

XXVIII. ADDITIONAL PERMIT CHANGES PROPOSED BY PARTIES

The ALJs recommend issuance of a permit substantially in the form of BRA Exhibit 132B, with some changes. Some of the parties have advocated various special

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[1151] FBR 1st Initial Brief at 70–71; FBR 2nd Initial Brief at 106; FBR 2nd Reply Brief at 31–33; NWF 1st Initial Brief at 16–17; NWF 2nd Reply Brief at 29; OPIC 1st Initial Brief at 9.

[1152] BRA 2nd Initial Brief at 63; BRA 2nd Reply Brief at 80–81.

[1153] ED 1st Reply Brief at 9.

[1154] BRA Ex. 128 at 21; *see* 30 Tex. Admin. Code § 298.480(a)(6)–(8), (10)–(11), (13)–(19). Some of the measurement points identified in the TCEQ's rules were excluded because they are located outside of the geographic area that is covered by the SysOp Permit.

conditions and other revisions to the text of the SysOp Permit and the WMP. To the extent that those suggested changes are not discussed and dealt with in other sections of this PFD, they are dealt with here.

A. Appropriation Amounts Tied to Applicable Demand Levels/Appropriation Amounts Reduced to Account for Reduced Actual Reservoir Storage/Appropriation Amount Prior to Construction of ACR

As discussed at length above (in the sections addressing maximum diversion rates, the permitted vs. actual reservoir storage capacity issue, and the period prior to construction of the ACR), the ALJs have concluded that the SysOp Permit should be amended to clarify that not one, but four, appropriation amounts should be specified in the permit, one for each applicable Demand Level scenario modeled in the WMP. The ALJs have further concluded that each of the four appropriation amounts should be reduced by 14% to account for storage capacity in BRA's reservoirs that has been lost to sedimentation. Accordingly, the ALJs recommend that Paragraph 1.A of BRA Ex. 132B be revised to read as follows:

1. USE

A. APPROPRIATION

Permittee is authorized to divert and use, ~~not to exceed 516,955 acre-feet of water per year~~ for domestic, municipal, agricultural, industrial, mining and recreation use, water in the applicable amount shown below, as further described, ~~and~~ defined, and limited by ~~in~~ the Water Management Plan (WMP), within its service area, subject to special conditions:

1) not to exceed 328,068 acre-feet per year at all times prior to: (1) an expansion of the Comanche Peak Nuclear Power Plant (CPNPP) in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the point when the ports are closed on the dam impounding Allens Creek Reservoir;

2) not to exceed 296,378 acre-feet per year at all times when: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but

(2) the ports on the dam impounding Allens Creek Reservoir have not yet been closed;

3) not to exceed 443,853 acre-feet per year at all times when: (1) CPNPP has not yet been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but (2) the ports have been closed on the dam impounding Allens Creek Reservoir; or

4) not to exceed 413,035 acre-feet per year at all times after: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the ports on the dam impounding Allens Creek Reservoir have been closed.

B. Reach Limitations

As discussed at length above (in the sections addressing points of diversion and diversion by reach), the ALJs agree with BRA's recommendation that the WMP be amended by adding the following as a new paragraph at the bottom of page 9 of the WMP in BRA Ex. 132B:

> The maximum annual use for each reach is limited to the largest maximum annual diversion under "SysOp" for that reach in Tables G.3.14 through G.3.25 of Appendix G-3 of the WMP Technical Report for the firm appropriation demand scenario that is applicable during the year in which water is diverted, or 1,460 acre-feet, whichever is greater.

C. Drought of Record

As discussed at length above (in the section addressing the new drought of record at PKR), the ALJs have concluded that the following new Special Condition 5.C.7 should be added to BRA Ex. 132B:

> In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought: (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and (2) decreases the amount of water available for appropriation under this permit.

> BRA shall provide a report to the TCEQ documenting its findings within nine months after issuance of this permit. If the report concludes that the recently-ended drought decreases the amount of water available for appropriation under this permit, then the appropriation amounts specified in Paragraph 1.A of this permit shall be correspondingly reduced.

D. Accounting for Return Flows

As discussed at length above (in the section discussing return flows), the ALJs have agreed with BRA that the following amendment should be made to modify the final paragraph beginning on page 5-7 of the WMP Technical Report as follows:

> [Initial portion of paragraph unchanged] The BRA approach version of the Accounting Plan includes reported monthly return flows for dischargers that have a permitted discharge greater than or equal to 1 million gallons per day (MGD). Within one month after this data is available from TCEQ for the prior calendar year the total annual amount of return flows ~~These monthly amounts~~ will be compared to the assumed amount used during the time period of this initial WMP. If actual return flows are ~~substantially less than the amounts used in the modeling the assumptions used in the model will be adjusted and the model re-run to examine the impacts on yield~~ less than the amount used in modeling by 5% or greater, BRA will revise the models and submit results to TCEQ.

E. The Term Permit Prior to Construction of ACR

The SysOp Permit would authorize BRA to divert 202,650 acre-feet of water for a term of 30 years or until the ports are closed on the dam impounding ACR, whichever is earlier.[1155] However, the ACR Permit only authorizes a diversion of 202,000 acre-feet of water from the Brazos River to the reservoir.[1156] The number of acre-feet should match. BRA asks that the term authorization be revised downward to 202,000 acre-feet.[1157] BRA did not note this error until it filed its 2nd Reply Brief, so other parties have not had an opportunity to respond. Because it is clearly an error, however, the ALJs recommend that this change be made to the

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[1155] BRA Ex. 132B at 5, ¶ 1.E.

[1156] *See* BRA Ex. 113 at A-1 (Water Use Permit No. 2925).

[1157] BRA 2nd Reply Brief at 75, 83.

permit, if one is issued. A similar conforming amendment should also be made to one of the recitals in the permit.[1158]

F. Conforming Changes in WMP

BRA requests that the Commission's Order approving the SysOp Permit and WMP direct it to revise the WMP to provide an "approved" version of the WMP to reflect the Commission's rulings on contested issues (*e.g.*, return flows), eliminate scenarios that are no longer required, and make other corrections and changes which are reflected in the record, but not currently incorporated into the WMP (*e.g.*, annual use limitations by reach and modifications of return flow accounting identified by Mr. Gooch). The ED's approval of the revised WMP should be required to ensure that only revisions conforming to the Commission's rulings are made.[1159] The ALJs recommend approval of this proposal, if a permit is issued.

G. Inclusion of Rosharon Streamflow Requirement

Dow asks for a permit condition that would require a streamflow restriction, absent the existence of a watermaster, at the Rosharon Gage equal to the lesser of Dow's permitted diversion rate (630 cfs) or Dow's actual daily pumping rate.[1160] BRA would not object to the following condition:

> Permittee shall not divert or impound water pursuant to the authorizations in the permit if such diversions or impoundments would cause the flow at USGS Gage 081166550 (Brazos River near Rosharon) to fall below the lesser of 630 cfs, or Dow Chemical Company's projected daily pumping rate. This provision is not effective if (a) Dow Chemical Company has not provided its projected daily pumping rate to Permittee, or (b) a watermaster having jurisdiction over the lower Brazos River has been appointed and continues to function.

[1158] BRA Ex. 132B at 3.

[1159] BRA 2nd Initial Brief at 68.

[1160] Dow 1st Initial Brief at 47–49; Dow 2nd Initial Brief at 78.

The ALJs recommend including the above language in the permit as a new Special Condition 5.C.6.

H. Elimination of Demand Levels C and D if ACR is Not Built

NWF argues that ACR may never be built and that a condition should be included in the permit providing for termination of the portions of the authorization that depend upon ACR if it is not built.[1161] BRA opposes inclusion of such a special condition and argues it is unnecessary. BRA notes that authorizations for Demand Levels C and D come into effect only after construction of ACR.[1162] The ALJs agree that the special condition sought by NWF is unnecessary. The four appropriation amounts in the SysOp Permit are mutually exclusive. Thus, if the scenarios in Demand Levels C and D never come to pass, then the appropriation amounts for those scenarios will never come into effect.

I. Environmental Flow Requirements at the Diversion Points

NWF proposes additional language for the WMP that would require BRA to ensure that required environmental flows pass BRA diversion points.[1163] As already discussed above, the ALJs do not recommend adoption of NWF's suggestion and instead recommend the following related change to a paragraph on page 41 of the WMP, with which BRA and the ED agree:

> The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard at a point immediately below BRA's point of diversion and additionally will not exceed provisions set forth in Section IV.D.4.b below.

[1161] NWF 2nd Initial Brief at 4–5.

[1162] *See* BRA Ex. 113 at A-1.

[1163] NWF 2nd Initial Brief at 19.

J. "Flexibility" and Environmental Flow Standards

As already discussed, NWF proposes adding a permit condition substantially similar to the following:

> BRA's exercise of flexibility as authorized by Special Condition 5.C.2 of the permit may not cause, or contribute to causing, flows at any measurement point or compliance point specified in the Water Management Plan to fall below the lesser of (1) the flow level protected by any component of the flow standards then in effect for that measurement point, or (2) the flow at that measurement point as it would have existed without the exercise of that flexibility. BRA shall document its use of that flexibility and its compliance with this special condition in the accounting/delivery plan.[1164]

The ALJs do not recommend adding the provision NWF suggests. However, they recommend altering Paragraph 5.C.3 in BRA Ex. 132B, as BRA suggests, to add the language underlined below:

> Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan, or Special Condition 5.C.2, or prevent the achievement of environmental flow requirements that would have otherwise been achieved.

K. Dedication of 50% of SysOp Permit Return Flows

NWF contends that the Commission may, under Texas Water Code § 11.046(b), and should include the following provision in the permit:

[1164] NWF 2nd Initial Brief at 30–31.

> Permittee shall ensure that 50% of water diverted under this permit and not consumed in its initial use under this permit shall be returned to the source of supply at a point reasonably close to the place of use and shall be reserved for protection of instream uses and beneficial inflows. This requirement does not apply to water that is lawfully used outside of the Brazos River Basin. Permittee shall track compliance with this requirement in its accounting/delivery plan on a monthly basis.[1165]

Texas Water Code § 11.046(b) provides:

> In granting an application for a water right, the commission may include conditions in the water right providing for the return of surplus water, in a specific amount or percentage of water diverted, and the return point on a watercourse or stream as necessary to protect senior downstream permits, certified filings, or certificates of adjudication or to provide flows for instream uses or bays and estuaries.

BRA objects to NWF's proposal. It claims that the record lacks evidence supporting the provision and that BRA has already "gone the extra mile" regarding protection of environmental flows in its agreements with TPWD.[1166]

The ALJs do not recommend including the 50% return provision that NWF suggests. As set out above, the ALJs conclude, as a matter of law, that issuing a water right permit that complies with the SB 3 rules will maintain water quality and instream uses, including recreation and habitat for fish and aquatic wildlife; and provide necessary beneficial flows to bays and estuaries while considering all public interests. Thus, the 50% return provision is unnecessary. Moreover, crafting and imposing new requirements in a specific case beyond what an agency's rules require is contrary to a general principle of administrative law.[1167]

[1165] NWF 2nd Initial Brief at 34–37.

[1166] *See* BRA Ex. 131.

[1167] *See Rodriguez*, 997 S.W.2d at 255.

XXIX. TRANSCRIPTION COSTS

BRA paid the full cost of the transcript for the First Hearing and does not now seek to have that cost allocated among the parties. However, it claims that the cost of the transcript for Second Hearing was $11,052[1168] and asks that cost be allocated as follows:

Party	Allocation
BRA	$3,684
Dow	$2,456
FBR	$2,456
LGC	$2,456
Other parties	$0

Recognizing that FBR may have benefitted less than others from the transcript, BRA alternatively proposes the following allocation:

Party	Transcript Cost Share
BRA	$3,684
Dow	$3,684
LGC	$3,684
Other parties	$0

The other parties who have addressed the issue argue that BRA should bear the entire cost of the transcript for the Second Hearing.[1169] The ALJs agree that BRA should bear the entire cost.

[1168] BRA 2nd Initial Brief, Attach. 3. No party objected to this offer of evidence concerning the transcript cost. Attachment 3 to BRA's 2nd Initial Brief is admitted into evidence as BRA Ex. 155.

[1169] Dow 2nd Initial Brief at 79; LGC 2nd Initial Brief at 72–73; NWF 2nd Initial Brief at 39; FBR 2nd Initial Brief at 108–10.

Commission rule 30 Texas Administrative Code § 80.23(d) provides that the Commission will not assess transcript costs against the ED or the OPIC and that it will consider the following relevant factors in allocating reporting and transcription costs among the other parties:

- The party who requested the transcript;
- The financial ability of the party to pay the costs;
- The extent to which the party participated in the hearing;
- The relative benefits to the various parties of having a transcript;
- The budgetary constraints of a state or federal administrative agency participating in the proceeding;
- In rate proceedings, the extent to which the expense of the rate proceeding is included in the utility's allowable expenses; and
- Any other factor which is relevant to a just and reasonable assessment of costs.

The ALJs ordered preparation of a transcript, so no party requested it. Only BRA, Dow, FBR, NWF, LGC, OPIC, and the ED extensively participated in the Second Hearing. This is not a rate proceeding. No party contends that it lacks resources to pay a share of the transcript cost. It can be reasonably inferred that Dow, LGC, and FBR, which retained multiple attorneys and expert witnesses to participate in the hearing, have sufficient resources to pay a share of the costs of the transcript.

Dow, LGC, NWF, and BRA argue that the Second Hearing was only necessary because BRA's Application as considered during the First Hearing was deficient, and the Commission gave BRA an opportunity to extensively amend it and have it reconsidered in the Second Hearing. Under these circumstances, they contend that it would be more just if BRA paid the entire cost of the second-hearing transcript. The ALJs agree with this argument.

The ALJs recommend that the Commission allocate the entire cost of the Second Hearing transcript, $11,052, to BRA and order BRA to pay that cost.

XXX. RECOMMENDATIONS

The ALJs recommend that the Commission adopt the attached proposed order; allocate the entire Second Hearing transcript cost of $11,052 to BRA; partially grant BRA's Application; and issue to BRA the attached permit, derived from BRA Ex. 132B, with the following changes:

a. An unnumbered, bulleted paragraph on page 3 should be amended to read as follows:

A term permit, pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, to allow Applicant to use the water appropriated under Water Use Permit No. 2925, as amended, until construction of the Allens Creek Reservoir. Applicant requested a term authorization to impound, divert, and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year at the Gulf of Mexico; and

b. Paragraph 1.A should be amended to read as follows:

Permittee is authorized to divert and use, ~~not to exceed 516,955 acre-feet of water per year~~ for domestic, municipal, agricultural, industrial, mining and recreation use, water in the applicable amount shown below, as further described, and defined, and limited by ~~in~~ the Water Management Plan (WMP), within its service area, subject to special conditions.:

1) not to exceed 328,068 acre-feet per year at all times prior to: (1) an expansion of the Comanche Peak Nuclear Power Plant (CPNPP) in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the point when the ports are closed on the dam impounding Allens Creek Reservoir;

2) not to exceed 296,378 acre-feet per year at all times when: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but (2) the ports on the dam impounding Allens Creek Reservoir have not yet been closed;

3) not to exceed 443,853 acre-feet per year at all times when: (1) CPNPP has not yet been expanded in a manner that results in the plant needing at least

90,000 acre-feet per year of additional water; but (2) the ports have been closed on the dam impounding Allens Creek Reservoir; or

4) not to exceed 413,035 acre-feet per year at all times after: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the ports on the dam impounding Allens Creek Reservoir have been closed.

c. Paragraph 1.E should be amended to read as follows:

Pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, Permittee may use the water appropriated under Water Use Permit No. 2925, as amended. As part of the amount appropriated in Paragraph 1.A, during the term of this authorization Permittee may divert and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year, subject to Special Conditions 5.C.1-~~5~~7.

d. Paragraph 5.C.3 should be amended to read as follows:

Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan, or Special Condition 5.C.2, or prevent the achievement of environmental flow requirements that would have otherwise been achieved.

e. A new Special Condition 5.C.6 should be added to read as follows:

Permittee shall not divert or impound water pursuant to the authorizations in the permit if such diversions or impoundments would cause the flow at USGS Gage 081166550 (Brazos River near Rosharon) to fall below the lesser of 630 cfs, or Dow Chemical Company's projected daily pumping rate. This provision is not effective if (a) Dow Chemical Company has not provided its projected daily pumping rate to Permittee, or (b) a watermaster having jurisdiction over the lower Brazos River has been appointed and continues to function.

f. A new Special Condition 5.C.7 should be added to read as follows:

In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought: (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and

(2) decreases the amount of water available for appropriation under this permit. BRA shall provide a report to the TCEQ documenting its findings within nine months after issuance of this permit. If the report concludes that the recently-ended drought decreases the amount of water available for appropriation under this permit, then the appropriation amounts specified in Paragraph 1.A of this permit shall be correspondingly reduced.

The ALJs further recommend that BRA's WMP, which was admitted as BRA Exhibit 113 and includes the Water Management Plan Technical Report, all appendices and other attachments, should be approved and incorporated as a part of the permit, with the following changes:

a. A new paragraph should be added at the bottom of page 9 of the WMP to read as follows:

The maximum annual use for each reach is limited to the largest maximum annual diversion under "SysOp" for that reach in Tables G.3.14 through G.3.25 of Appendix G-3 of the WMP Technical Report for the firm appropriation demand scenario that is applicable during the year in which water is diverted, or 1,460 acre-feet, whichever is greater.

b. A paragraph on page 41 should be amended to read as follows:

The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard at a point immediately below BRA's point of diversion and additionally will not exceed provisions set forth in Section IV.D.4.b below.

c. The last paragraph on page 5-7 and continuing on page 5-8 of the WMP Technical Report should be amended as follows:

[Initial portion of paragraph unchanged] The BRA approach version of the Accounting Plan includes reported monthly return flows for dischargers that have a permitted discharge greater than or equal to 1 million gallons per day (MGD). Within one month after this data is available from TCEQ for the prior calendar year the total annual amount of return flows~~These monthly amounts~~ will be compared to the assumed amount used during the time period of this initial WMP.

If actual return flows are ~~substantially less than the amounts used in the modeling the assumptions used in the model will be adjusted and the model re-run to examine the impacts on yield~~ less than the amount used in modeling by 5% or greater, BRA will revise the models and submit results to TCEQ.

SIGNED July 17, 2015.

WILLIAM G. NEWCHURCH
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS

HUNTER BURKHALTER
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS

Attachment
BRA Exhibit 132B

BRA Exh 132B

BRA Alternative Version Draft Permit (BRA Version) – Post WMP (February 24, 2015)

RECORD COPY
FEB 24 2015
LS

WATER USE PERMIT

PERMIT NO. 5851

TYPE §§ 11.121, 11.042, 11.085, & 11.1381

Permittee:	Brazos River Authority	Address:	P.O. Box 7555 Waco, Texas 76714-7555
Filed:	October 15, 2004	Granted:	
Purposes:	Domestic, Municipal, Agricultural, Industrial, Mining, and Recreation	Counties:	Parmer, Castro, Swisher, Bailey, Lamb, Hale, Floyd, Cochran, Hockley, Archer, Lubbock, Crosby, Baylor, Dickens, King, Knox, Jack, Terry, Lynn, Mitchell, Chambers, Young, Garza, Throckmorton, Kent, Haskell, Stonewall, Parker, Palo Pinto, Dawson, Scurry, Borden, Fisher, Stephens, Jones, Shackelford, Johnson, Hood, Nolan, Erath, Eastland, Taylor, Callahan, Somervell, Hill, Comanche, Bosque, Brown, Freestone, Hamilton, McLennan, Limestone, Mills, Coryell, Leon, Falls, Lampasas, Robertson, Bell, Madison, Milam, Burnet, Brazos, Grimes, Williamson, Burleson, Travis, Lee, Washington, Bastrop, Fayette, Waller, Harris, Austin, Colorado, Fort Bend, Galveston, Matagorda, Wharton, and Brazoria
Watercourses:	Multiple Tributaries of the Brazos River and the Brazos River	Watersheds:	Brazos River Basin, Trinity River Basin, Red River Basin, Colorado River Basin, San Jacinto River Basin, San Jacinto-Brazos Coastal Basin, Brazos-Colorado Coastal Basin, Lavaca River Basin, Guadalupe River Basin

WHEREAS, the Brazos River Authority, Applicant, owns the water rights and reservoirs authorized by Certificate of Adjudication (Certificate) No. 12-5155 (Possum Kingdom Lake), Certificate No. 12-5156 (Lake Granbury), Certificate No. 12-5165 (Lake Limestone), and Water Use Permit No. 2925, as amended, (Allens Creek Reservoir in conjunction with the Texas Water Development Board and the City of Houston); and

WHEREAS, Applicant also owns the water rights and has contracts with the United States Army Corps of Engineers for storage authorized by Certificate No. 12-5157 (Lake Whitney), Certificate No. 12-5158 (Lake Aquilla), Certificate No. 12-5159 (Lake Proctor), Certificate No. 12-5160 (Lake Belton), Certificate No. 12-5161 (Lake Stillhouse Hollow), Certificate No. 12-5162 (Lake Georgetown), Certificate No. 12-5163 (Lake Granger), and Certificate No. 12-5164 (Lake Somerville); and

WHEREAS, Applicant also owns the water rights authorized by Certificate Nos. 12-5166, as amended, and 12-5167, which authorize various uses of water within Applicant's other certificates and permits; and

WHEREAS, Applicant is authorized, pursuant to the 1964 System Operation Order (System Order), as amended, to manage and operate its tributary reservoirs as elements of a system, coordinating releases and diversions from the tributary reservoirs with releases and diversions from Applicant's mainstem reservoirs to minimize waste, and to conserve water in reservoirs in which the supply is short by making releases from tributary reservoirs in which the supply is more abundant; and

WHEREAS, Applicant's service area includes all or part of the following counties: Parmer, Castro, Swisher, Bailey, Lamb, Hale, Floyd, Cochran, Hockley, Archer, Lubbock, Crosby, Baylor, Dickens, King, Knox, Jack, Terry, Lynn, Mitchell, Chambers, Young, Garza, Throckmorton, Kent, Haskell, Stonewall, Parker, Palo Pinto, Dawson, Scurry, Borden, Fisher, Stephens, Jones, Shackelford, Johnson, Hood, Nolan, Erath, Eastland, Taylor, Callahan, Somervell, Hill, Comanche, Bosque, Brown, Freestone, Hamilton, McLennan, Limestone, Mills, Coryell, Leon, Falls, Lampasas, Robertson, Bell, Madison, Milam, Burnet, Brazos, Grimes, Williamson, Burleson, Travis, Lee, Washington, Bastrop, Fayette, Waller, Harris, Austin, Colorado, Fort Bend, Galveston, Matagorda, Wharton, and Brazoria; and

WHEREAS, Applicant initially applied for a new appropriation of state water in the amount of 421,449 acre-feet per year for multiple uses, including domestic, municipal, agricultural, industrial, mining, and other beneficial uses on a firm basis in the Brazos River Basin. The amount of the new appropriation of water included the current and future return flows requested in Applicant's application. Applicant also requested an appropriation of an interruptible supply of 670,000 acre-feet of water per year utilizing 90,000 acre-feet of water per year of the firm supply plus other unappropriated flows. The entire annual amount of 1,001,449 acre-feet of water (331,449 acre-feet of firm water and 670,000 acre-feet of interruptible water) is available only if all of it is diverted at the mouth of the Brazos River, and can only be made available by Applicant through the system operation of its water rights; and

WHEREAS, Applicant amended its initial application with the filing of its Water Management Plan and applied for this Water Use Permit to authorize:

- A new appropriation of non-firm state water in the amount of 1,001,449 acre-feet of water per year for multiple uses, including domestic, municipal, agricultural, industrial, mining, and other beneficial uses in the Brazos River Basin. This new appropriation of water can only be made available by Applicant through the system operation of its water rights, with the maximum amount of the water being available at the mouth of the Brazos River. To the extent water is diverted upstream, the amount of the water available under the new

appropriation downstream is reduced and will itself vary depending upon the location of its diversion and use;

- Diversion of the water authorized by this permit from: (i) the existing diversion points authorized by Applicant's existing water rights; (ii) the Brazos River at the Gulf of Mexico; and (iii) at such other diversion points that are identified and included in Applicant's Water Management Plan (WMP);

- An exempt interbasin transfer authorization to transfer and use, on a firm and non-firm basis, such water in the adjoining San Jacinto-Brazos Coastal Basin and the Brazos-Colorado Coastal Basin, and to transfer such water to any county or municipality or the municipality's retail service area that is partially within the Brazos River Basin for use, on a firm and non-firm basis, in that part of the county or municipality and the municipality's retail service area not within the Brazos River Basin;

- An appropriation of return flows (treated sewage effluent and brine bypass/return) to the extent that such return flows continue to be discharged or returned into the bed and banks of the Brazos River, its tributaries, and Applicant's reservoirs. The appropriation of return flows would be subject to interruption by direct reuse or termination by indirect reuse within the discharging entity's city limits, extraterritorial jurisdiction, or contiguous water certificate of convenience and necessity boundary;

- Operational flexibility to (i) use any source of water available to Applicant to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through Applicant's reservoirs on a priority basis; and (ii) release, pump and transport water from any of Applicant's reservoirs for subsequent storage, diversion and use throughout Applicant's service area. (Applicant's "service area" includes all counties listed above);

- Use of the bed and banks of the Brazos River, its tributaries and Applicant's reservoirs for the conveyance, storage, and subsequent diversion of (i) the appropriated water; (ii) waters that are being conveyed via pipelines and subsequently discharged into the Brazos River, its tributaries or stored in Applicant's reservoirs; (iii) surface water imported from areas located outside the Brazos River Basin for subsequent use; (iv) in-basin surface water and groundwater subject to Applicant's control; (v) waters developed from future Applicant projects; and (vi) reuse of surface and groundwater based return flows appropriated in this permit;

- A term permit, pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, to allow Applicant to use the water appropriated under Water Use Permit No. 2925, as amended, until the construction of the Allens Creek Reservoir. Applicant requested a term authorization to impound, divert, and use not to exceed 202,650 acre-feet of water per year at the Gulf of Mexico; and

WHEREAS, the Texas Commission on Environmental Quality (Commission) finds that jurisdiction over the application is established; and

WHEREAS, the Commission adopted environmental flow standards for the Brazos River Basin on February 12, 2014, which are required to be followed in any water right permit for new appropriation issued following that adoption; and

WHEREAS, based on the Executive Director's recommendations, the Commission finds that in order to protect senior and superior water rights owners, special conditions should be included in the permit; and

WHEREAS, to avoid ambiguities between this system operation authorization and Applicant's previous system operation authorizations reflected by the System Order and existing permits, based on the Executive Director's recommendations, the Commission concludes that this permit is subject to all provisions included in the Commission's July 23, 1964 System Order, as amended, authorizing system operation of certain reservoirs in the Brazos River Basin, and to all terms and conditions of Applicant's authorizations in Certificates Nos. 12-5155, 12-5156, 12-5165, 12-5157, 12-5160, 12-5159, 12-5164, 12-5161, 12-5163, 12-5162, 12-5158, 12-5166 and 12-5167 and Water Use Permit No. 2925, as amended, except to the extent specifically provided otherwise by conditions in this permit regarding the total amount of water appropriated and available for storage, use and diversion and purpose of use, and as may be modified in the future by Commission approval of amendments to Applicant's WMP or these water rights; and

WHEREAS, the application supporting this permit is subject to the Texas Coastal Management Program (CMP) and must be consistent with the CMP goals and policies; and

WHEREAS, the Commission finds that the issuance of this permit is consistent with the goals and policies of the Texas CMP; and

WHEREAS, this permit, if granted, is subject to the requirements and orders of the Brazos Watermaster; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this permit;

NOW, THEREFORE, Water Use Permit No. 5851 is issued to the Brazos River Authority (Permittee), subject to the following terms and conditions:

1. USE

A. APPROPRIATION

Permittee is authorized to divert and use not to exceed 516,955 acre-feet of water per year for domestic, municipal, agricultural, industrial, mining and recreation use, as further described and defined in the Water Management Plan (WMP), within its service area, subject to special conditions.

B. USE OF BED AND BANKS

Permittee is authorized to use the bed and banks of the Brazos River below Possum Kingdom Lake, the Brazos River tributaries and Permittee's authorized reservoirs for the conveyance, storage, and subsequent diversion of the water authorized herein, subject to identification of specific losses and to special conditions.

C. INTERBASIN TRANSFER

Permittee is hereby granted an exempt interbasin transfer authorization to transfer and use the water authorized herein in Permittee's service area in the adjoining San Jacinto-Brazos Coastal Basin and the Brazos-Colorado Coastal Basin and to transfer such water to the part of the geographic area of any county or municipality or a retail public utility's retail service area that is partially within the Brazos River Basin, San Jacinto-Brazos Coastal Basin, or Brazos-Colorado Coastal Basin for use on a firm and non-firm basis in that part of the geographic area of the county or municipality or that contiguous part of the utility's retail service area within the Trinity, Red, Colorado, Guadalupe, Lavaca and San Jacinto River Basins.

D. RETURN FLOWS

Permittee is authorized to impound, divert and use return flows discharged into the Brazos River Basin subject to special conditions to protect water rights granted based on the presence of those return flows as well as other senior rights. The storage and diversion of return flows is subject to the requirements set out in Special Condition 5.A. and to environmental flow conditions set out in Special Condition 5.E.

E. TERM AUTHORIZATION

Pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, Permittee may use the water appropriated under Water Use Permit No. 2925, as amended. As part of the amount appropriated in Paragraph 1.A., during the term of this authorization Permittee may divert and use not to exceed 202,650 acre-feet of water per year, subject to Special Conditions 5.C.1-5.

2. DIVERSION

Permittee is authorized to divert and use the water authorized by this permit as follows:

A. POINTS

1) At the diversion points authorized by Permittee's existing water rights, as amended.

2) At the mouth of the Brazos River at the Gulf of Mexico at Latitude 28.8783°N, Longitude 95.379111°W in Brazoria County.

3) At other such locations identified and included in Permittee's WMP.

B. RATES

1) At the diversion rates authorized by Permittee's Certificates of Adjudication and Water Use Permit, No. 2925, as amended, authorizing each of the reservoirs comprising the system operation as defined in this permit; and

2) At rates specified in Permittee's WMP.

3. PRIORITY

The priority date for the rights authorized by this permit, including diversion of return flows, is October 15, 2004.

4. CONSERVATION

A. Permittee shall implement water conservation plans that provide for the utilization of those reasonable practices, techniques, and technologies that will reduce on a per unit basis the consumption of water, prevent or reduce the loss or waste of water, improve the efficiency in the use of water, increase the recycling and reuse of water, and prevent the pollution of water, so that a water supply is made available for future or alternative uses. The practices, techniques, and technologies used shall be designed to achieve a level of efficiency of use that is equal to or greater than the level provided for in Permittee's most recent water conservation plans on file with the Commission as of the date of the issuance of this permit. Such plans shall include a requirement that in every wholesale water supply contract entered into on or after the date of this permit, including any contract extension or renewal, each successive wholesale customer develop and implement conservation measures meeting the requirements of this provision. If the customer intends to resell the water, then the contract for resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water is required to implement water conservation measures meeting the requirements of this provision.

B. At least once every ten years after the issuance date of this permit and in connection with an application for reconsideration or amendment of the WMP, Permittee shall submit for review and approval updated water conservation plans and drought contingency plans demonstrating compliance with the requirements of the Commission rules then in effect for applications for new water rights and with the requirements of this Paragraph 4, applied as of the date of the filing of the application under consideration.

5. SPECIAL CONDITIONS

Unless expressly otherwise provided, the requirements of the Special Conditions of this permit apply only to diversion and storage under the authority of this permit and do not address or limit diversion or storage of water authorized by other water rights held by Permittee.

A. SPECIAL CONDITIONS RELATIVE TO USE OF RETURN FLOWS

1) Permittee's authorization to divert and use return flows under this permit is limited to return flows that are authorized for discharge by Texas Pollutant Discharge Elimination System (TPDES) Permits in effect as of the issuance date of this permit, and as authorized by future modifications of this permit or the WMP.

2) Permittee shall maintain a record of return flows as a part of its accounting plan required by Special Conditions 5.C and 5.D (return flow accounting plan). The return flow accounting plan must account, by source, for all return flows

discharged. The return flow accounting plan shall include amounts discharged by outfall. Computation of the amount of additional water supply available due to return flows actually discharged is determined in the WMP, taking into account environmental flow conditions and demands of senior water rights. Permittee's use of additional water supply attributable to the presence of return flows is limited to the amount shown to be available, based upon amounts discharged as determined in the WMP. The return flow accounting plan shall be included as part of Permittee's accounting/delivery plan.

3) Permittee's storage, diversion and use of that portion of the appropriation based on return flows is dependent upon potentially interruptible return flows. Permittee's storage, diversion and use of that portion of the appropriation based on return flows will be interrupted by direct reuse or will be terminated by indirect reuse within the discharging entity's corporate limits, extraterritorial jurisdiction, or contiguous water certificate of convenience and necessity boundary, provided the discharging entity has applied for and been granted authorization to reuse the return flows.

4) Permittee's storage, diversion and use of groundwater based return flows is subject to interruption by direct reuse or indirect reuse upon issuance of a bed and banks authorization pursuant to Texas Water Code § 11.042(b) by the Commission to the discharging entity.

5) Permittee shall, at a minimum, use the return flow (effluent discharges) volumes reported monthly to the Commission by wastewater dischargers that have permitted discharges of greater than or equal to one (1) million gallons per day, and by other wastewater dischargers as provided by the accounting plan, to verify the available return flows for the accounting plan.

B. SPECIAL CONDITIONS RELATIVE TO USE OF BED AND BANKS

1) The use of the bed and banks of Allens Creek from below Allens Creek Reservoir to the Brazos River is not authorized until Permittee applies for and is granted an amendment to Water Use Permit No. 2925B authorizing such use.

2) Permittee is authorized to use the following reaches, authorized in Permittee's certificates and amendments, for conveyance of water previously appropriated to Permittee and water authorized by this permit, downstream for diversion within these reaches in accordance with the WMP:

a. Brazos River from Possum Kingdom Lake to the Gulf of Mexico;
b. Leon River from Lake Proctor to the confluence with the Little River;
c. Lampasas River from Lake Stillhouse Hollow to the confluence with the Little River;
d. Little River from the junction of Leon and Lampasas Rivers to the confluence with the Brazos River;
e. Yegua Creek from Lake Somerville to the confluence with the Brazos River;
f. Navasota River from Lake Limestone to the confluence with the Brazos River;
g. San Gabriel River from Lake Granger to the confluence with the Little River and downstream to its confluence with the Brazos River;

h. North Fork San Gabriel River from Lake Georgetown to the confluence with the San Gabriel River, to its confluence with the Little River and downstream to its confluence with the Brazos River;

i. Aquilla Creek from Lake Aquilla downstream to its confluence with the Brazos River; and

j. Allens Creek, following construction of Allens Creek Reservoir, downstream from Allens Creek Reservoir to its confluence with the Brazos River, subject to Special Condition 5.B.1.

3) Permittee shall maintain an accounting/delivery plan that describes the procedure to estimate daily deliveries of water using the bed and banks identified in Special Condition 5.B.2. above. This procedure should be in electronic format and detail by source, type and priority date, the amounts to be conveyed and delivered, losses associated with the conveyance, specific points of diversion, associated travel times, and times of commencement and termination of transit for conveyed waters. Documentation of actual deliveries as well as the accounting/delivery plan shall be maintained by Permittee in electronic format and made available to the general public during normal business hours and to the Executive Director upon request. Modifications to the accounting/delivery plan must be approved by the Executive Director.

4) Before using the bed and banks of streams and tributaries in the Brazos River Basin not identified in the WMP for conveyance of water appropriated under this permit, or other sources available to Permittee, Permittee shall obtain approval by the Commission of an application by Permittee that identifies specific sources and types of water, specific points of discharge and diversion, and conveyance and other losses, and that satisfies the requirements of Texas Water Code § 11.042.

C. SPECIAL CONDITIONS RELATIVE TO APPROPRIATION

1) Permittee shall maintain an accounting/delivery plan as part of its WMP. Permittee shall maintain the accounting/delivery plan in electronic format and make it available to the general public during normal business hours and to the Executive Director upon request. Modifications to the plan must be approved by the Executive Director.

2) Permittee may not exercise a priority call on water rights in the Brazos River Basin with priority dates senior to October 15, 2004 for purposes of refilling storage in Permittee's system reservoirs where Permittee's system reservoir storage was emptied by diversion of water under this permit. The Commission shall consider the amount of water impounded at the October 15, 2004 priority date, consistent with the WMP and approved accounting plans, in analyses of future applications to appropriate water from the Brazos River Basin.

3) Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan or Special Condition 5.C.2.

4) Permittee may divert water from storage in its permitted reservoirs and store that water in Permittee's other reservoirs for use within Permittee's service area so long as all diversions and storage are included in the accounting/delivery plan.

5) Permittee shall maintain, at a minimum, the release schedule from Possum Kingdom Lake at or above the appropriate value in the following table, except when inflow to Possum Kingdom Lake is less than the defined release value. In such instances, the release may be adjusted downward to match inflow. Additionally, temporary deviations from this release requirement may be made to accommodate maintenance or operational issues associated with Possum Kingdom Lake's Morris Sheppard Dam:

Reservoir Elevation	March – June	July – September	October - February
Above 994.5 msl	100 cfs	75 cfs	50 cfs
990 msl – 994.5 msl	50 cfs	37.5 cfs	25 cfs
Below 990 msl	Leakage (≈20 cfs)	Leakage (≈20 cfs)	Leakage (≈20 cfs)

D. WATER MANAGEMENT PLAN SPECIAL CONDITIONS

1) Permittee shall maintain the Water Management Plan (WMP), which is attached to and incorporated into this permit, and which shall include, in addition to the specific requirements listed in Special Condition 5.D.4, such studies and other information as may be required by the Commission to demonstrate Permittee's compliance with and its ability to comply with all of the Special Conditions included in this permit.

2) Proceedings to consider any major amendment of the WMP shall be pursuant to contested case procedures. Any proceeding to consider a major amendment of the WMP shall be preceded by notice and opportunity to request a hearing, in accordance with the Commission's regulations applicable to water rights permitting proceedings.

3) At a minimum, every ten years after the issued date of this permit, Permittee shall submit to the Executive Director an application for reconsideration or amendment of the WMP.

4) Permittee shall maintain an approved WMP that includes the following:

a. Accounting/delivery plans;

b. Environmental flow conditions-that comply with adopted environmental flow standards for the Brazos River Basin; and

c. Maximum diversion rates for diversions of water authorized in this permit, and a method to determine the amounts of firm and non-firm water available at any location, subject to the limitations on permit amounts in this permit.

5) In the first reconsideration or major amendment of the WMP after issuance of this permit, Permittee shall demonstrate that it has additional sources of supply sufficient to offset any reduction in its system reservoirs due to sedimentation or shall, at a minimum, provide evidence demonstrating that Permittee has worked diligently and continuously to develop such alternate sources of supply. Should Permittee fail to either demonstrate that such supplies are available or that it has pursued diligent development of those supplies, the amount of water authorized for use under this permit may be reduced.

E. ENVIRONMENTAL FLOWS SPECIAL CONDITION

Environmental flow conditions for this permit shall be included in the WMP, and are subject to adjustment by the Commission pursuant to Texas Water Code §11.147(e-1) and 30 TAC §298.25.

F. BRAZOS WATERMASTER SPECIAL CONDITIONS

Upon implementation of the Brazos Watermaster Program, the diverter, as defined in 30 TAC §304.3(9), shall comply the rules and orders of the watermaster. Specifically, the diverter shall comply with the following special conditions pursuant to 30 TAC §304, Subchapter B.

1) Diverter shall install a measuring device which accounts for, within 5% accuracy, the quantity of water diverted from the diversion point. Diverter shall allow representatives of the TCEQ Brazos Watermaster reasonable access to the property to inspect the measuring device.

2) Diverter shall contact the Brazos Watermaster prior to diversion of water authorized by this permit.

This permit is issued subject to all superior and senior water rights in the Brazos River Basin.

Permittee agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by this permit are denied.

This permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of state water resources exercised by the Commission.

_____

For the Commission

ISSUED:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER GRANTING IN PART THE AMENDED APPLICATION BY THE BRAZOS RIVER AUTHORITY FOR WATER USE PERMIT NO. 5851 AND APPROVING ITS WATER MANAGEMENT PLAN; TCEQ Docket No. 2005-1490-WR; SOAH Docket No. 582-10-4184

On _____, the Texas Commission on Environmental Quality (Commission or TCEQ) considered an amended application by the Brazos River Authority for Water Use Permit No. 5851 and its incorporated Water Management Plan (WMP). A proposal for decision on remand (PFDR) was presented by William G. Newchurch and Hunter Burkhalter, Administrative Law Judges (ALJs) with the State Office of Administrative Hearings (SOAH), who conducted hearings concerning the original application, the amended application, and the WMP on May 9–20, and 31, and June 2, 2011, and February 17–20 and 23–26, 2015, in Austin, Texas.

After considering the ALJs' PFDR, the Commission adopts the following Findings of Fact and Conclusions of Law:

I. FINDINGS OF FACT

Procedural History

1. On June 25, 2004, the Brazos River Authority (BRA or the Applicant) filed an application (Application No. 5851) for an appropriative water right.

2. Application No. 5851 was declared administratively complete by Commission staff on October 15, 2004, and was filed with the Office of Chief Clerk.

3. Notice of the application was issued by mail to all water right holders in the Brazos River Basin on April 22, 2005. Notice was published in 27 newspapers on May 11 – 13, 2005.

4. A public meeting on Application No. 5851 was held on May 17, 2005, in Waco, Texas. On May 4, 2006, the Executive Director of the TCEQ filed a written response to comments received at that meeting and written comments received after that meeting.

5. Numerous persons filed requests for a contested case hearing on the application. On May 5, 2010, the Commission issued an interim order granting hearing requests and referring this case to SOAH for a contested case hearing.

6. Notice of a preliminary hearing on the application before SOAH was issued by the Chief Clerk of the TCEQ on May 13, 2010.

7. The ALJs held the preliminary hearing on the application on June 7, 2010, in Austin, Texas. The ALJs issued Order No. 1 on June 8, 2010, memorializing the preliminary hearing, naming persons or entities admitted as a party to the proceeding, and setting a hearing schedule. In addition to the statutory parties, the following parties were named: Matthews Land and Cattle Company; Dow Chemical Company (Dow); Texas Westmoreland Coal Company; the City of Lubbock; Fort Bend County Levee Improvement District Nos. 11 and 15; Sienna Plantation Municipal Utility District (MUD) No. 1; the City of Bryan; the City of College Station; the Friends of the Brazos River; Helen Jane Vaughn; Lawrence Wilson; Mary Lee Lilly; the National Wildlife Federation (NWF); the Texas Parks and Wildlife Department (TPWD); the Gulf Coast Water Authority (GCWA); the City of Round Rock; Bradley B. Ware; Mike Bingham; and George Bingham, William D. and Mary L. Carroll, Frasier Clark, and Robert Starks, who collectively aligned themselves as the Comanche County Growers (CCG).

8. In accordance with settlement agreements, Fort Bend County Levee Improvement District Nos. 11 and 15, Sienna Plantation MUD No. 1, Texas Westmoreland Coal Company, and Matthews Land and Cattle Company withdrew their protests and were formally dismissed as parties.

9. In accordance with settlement agreements, the City of Lubbock, the City of Bryan, the City of College Station, GCWA, and the City of Round Rock withdrew their protests, but remained parties to the proceeding.

10. The ALJs held the evidentiary hearing on Application No. 5851 on May 9-20, and 31, and June 2, 2011, in Austin, Texas.

11. The record was closed on August 19, 2011, after the parties submitted written closing arguments and responses.

12. The ALJs issued a Proposal for Decision (PFD) on October 17, 2011; and the Commission considered Application No. 5851 and the PFD on January 25, 2012.

13. The Commission, after considering the PFD and Application No. 5851, issued an interim order dated January 30, 2012, that: (1) remanded Application No. 5851 to SOAH with instructions to abate the hearing to allow the Applicant to provide additional information

to the Executive Director related to its permit application in the form of a WMP; (2) required the Applicant to submit its WMP to the Executive Director within 10 months of the date of the Commission's January 30, 2012 Interim Order; (3) provided the Executive Director with 7 months to review the WMP; (4) directed the ALJs to reopen the record upon completion of the Executive Director's review and compliance with additional application public participation requirements; (5) directed the ALJs to hold a hearing on the new information, including Application No. 5851 as modified by the WMP; and (6) directed the ALJs to issue a revised PFD and proposed order.

14. The Applicant prepared and filed its WMP on November 28, 2012, which was further revised on June 12, 2013. The Executive Director completed his review on June 28, 2013.

15. On July 3, 2013, the Chief Clerk of the TCEQ mailed the combined revised notice of Application No. 5851, a public meeting, and the preliminary hearing to the persons and entities on the mailing list for Application No. 5851 and to those persons and entities required to be mailed notice under 30 Texas Administrative Code § 295.153.

16. Between July 6 and July 12, 2013, the combined revised notice of Application No. 5851 was published in 35 newspapers of general circulation within the 81 counties that are within the Brazos River Basin.

17. The Commission conducted a public meeting regarding Application No. 5851 at the Midway Independent School District Performing Arts Center in Hewitt, Texas, on July 25, 2013, to receive public comment.

18. The ALJs convened a preliminary hearing on August 26, 2013, in Austin, Texas. The ALJs issued Order No. 18 on August 28, 2013, memorializing the preliminary hearing, naming additional persons and entities admitted as parties to the proceeding, and setting the hearing schedule for the second evidentiary hearing. In addition to the statutory parties, the following parties were named in this matter: Dow; the City of College Station; the City of Lubbock; the City of Bryan; Friends of the Brazos River, Helen Jane Vaughn, Lawrence Wilson, Mary Lee Lilly, Brazos River Alliance, Ken W. Hackett, and Joe Williams (collectively, FBR); NWF; TPWD; GCWA; Chisholm Trail Ventures, L.P.; George Bingham; Robert Starks; Frasier Clark; William D. and Mary Carroll; William and Gladys Gavranovic; Bradley B. Ware; NRG Texas Power, LLC (NRG); Friends of Lake Limestone and Mark Bissett; the City of Houston; Possum Kingdom Lake Association (PKLA); City of Round Rock; Mike Bingham; and the City of Granbury, Hood County, and Lake Granbury Waterfront Owners' Association (collectively, the Lake Granbury Coalition or LGC).

19. On October 21, 2013, the ALJs abated the matter and certified questions to the Commission regarding the applicability to Application No. 5851 of the environmental flow rules for the Brazos River Basin that the Commission would later adopt on February 12, 2014.

20. After considering the certified questions on December 11, 2013, the Commission issued its December 17, 2013 Interim Order stating that Texas Water Code § 11.147(e-3) required the environmental flow standards to be applied immediately to Application No. 5851 and remanding the case to SOAH.

21. On January 7, 2014, the ALJs issued a revised scheduling order (Order No. 22) that abated this matter until August 14, 2014, to allow the Applicant to revise its WMP and update its application to incorporate the environmental flow standards.

22. The Applicant submitted an updated WMP to the Executive Director on May 13, 2014, and the Executive Director completed his review of the application and updated WMP on August 18, 2014.

23. During the period leading up to the second evidentiary hearing, the following protesting parties withdrew their protests of Application No. 5851 and were granted the right to participate in this case only as non-aligned, interested parties: Chisholm Trail Ventures, L.P.; City of Houston; George Bingham; Robert Starks; Frasier Clark; William D. and Mary L. Carroll; PKLA; and NRG. Additionally, GCWA, Friends of Lake Limestone, Mark Bissett, and Joe Williams withdrew as parties.

24. The second evidentiary hearing on Application No. 5851 and its WMP was held on February 17 - 20 and 23 - 26, 2015 in Austin, Texas. William and Gladys Gavranovic, Bradley B. Ware, and Mike Bingham did not attend nor were they represented at the evidentiary hearing.

Background

25. The Applicant owns the water rights and reservoirs authorized by Certificate of Adjudication (Certificate) No. 12-5155 (Possum Kingdom Lake), Certificate No. 12-5156 (Lake Granbury), Certificate No. 12-5165 (Lake Limestone), and Water Use Permit No. 2925 (Allens Creek Reservoir, which the Applicant owns in conjunction with the Texas Water Development Board and the City of Houston).

26. The Applicant also owns the water rights and has contracts with the United States Army Corps of Engineers for storage authorized by Certificate No. 12-5157 (Lake Whitney), Certificate No. 12-5158 (Lake Aquilla), Certificate No. 12-5159 (Lake Proctor), Certificate No. 12-5160 (Lake Belton), Certificate No. 12-5161 (Lake Stillhouse Hollow), Certificate No. 12-5162 (Lake Georgetown), Certificate No. 12-5163 (Lake Granger), and Certificate No. 12-5164 (Lake Somerville).

27. The Applicant owns the water rights authorized by Certificate Nos. 12-5166 and 12-5167, which authorize various uses of water within the Applicant's other certificates and permits.

28. The Applicant is currently authorized, pursuant to the 1964 System Operation Order, as amended, to manage and operate its tributary reservoirs as elements of a system, coordinating releases and diversions from the tributary reservoirs with releases and

diversions from the Applicant's mainstem reservoirs to minimize waste, and to conserve water in reservoirs in which the supply is low by making releases from tributary reservoirs in which the supply is more abundant.

29. The TCEQ recently amended the Applicant's Excess Flows Permit (Certificate No. 12-5166) to include the diversion points for the proposed Allens Creek Reservoir.

30. The Applicant abandoned its Certificate No. 12-2939 that was associated with diversions for steam electric power generation downstream of Lake Belton.

31. TCEQ amended Permit No. 2925, the Allens Creek Reservoir water right, based on the statutory change in 2011 that modified the timeframe for construction of this new reservoir. The Allens Creek Reservoir must now be constructed by 2025.

Application No. 5851

32. The Applicant initially applied for new Water Use Permit No. 5851 (Permit No. 5851 or the System Operation Permit), with a priority date of October 15, 2004, to authorize a new appropriation of state water in the amount of 421,449 acre-feet per year (af/yr) in firm water and 670,000 af/yr in interruptible water for multiple uses, including domestic, municipal, agricultural, industrial, mining, recreation, and other beneficial uses on a firm basis in the Brazos River Basin.

33. The Applicant amended the application to include as a part of Permit No. 5851 the WMP and Technical Report and Appendices (collectively, the WMP), all of which would be incorporated into proposed Permit No. 5851.

34. The amended and updated Application No. 5851 seeks:

    a. A new appropriation of non-firm state water in the amount of 1,001,449 af/yr of water at the Gulf of Mexico for multiple uses, including domestic, municipal, agricultural, industrial, mining, recreation, and other beneficial uses in the Brazos River Basin. This appropriation request was clarified during the 2015 hearing on the merits to be limited to the amount of water available as shown in the WMP. This new appropriation of water can only be made available by the Applicant through the system operation of its water rights. To the extent water is diverted upstream, the amount of the water available under the new appropriation downstream is reduced and will itself vary depending upon the location of its diversion and use;

    b. Diversion of the water authorized by this permit from: (1) the existing diversion points authorized by the Applicant's existing water rights (including contractually authorized diversion points); (2) the Brazos River at the Gulf of Mexico; and (3) at such other diversion points that are identified and included in the Applicant's WMP;

c. An exempt interbasin transfer authorization to transfer and use, on a firm and non-firm basis, such water in the adjoining San Jacinto-Brazos Coastal Basin and the Brazos-Colorado Coastal Basin, and to transfer such water to any county or municipality or the municipality's retail service area that is partially within the Brazos River Basin for use, on a firm and non-firm basis, in that part of the county or municipality and the municipality's retail service area not within the Brazos River Basin;

d. An appropriation of return flows (treated sewage effluent and brine bypass/return) to the extent that such return flows continue to be discharged or returned into the bed and banks of the Brazos River, its tributaries, and the Applicant's reservoirs. The appropriation of return flows would be subject to interruption by direct reuse or termination by indirect reuse within the discharging entity's city limits, extraterritorial jurisdiction, or contiguous water certificate of convenience and necessity boundary;

e. Operational flexibility to: (1) use any source of water available to the Applicant to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Applicant's reservoirs on a priority basis; and (2) release, pump, and transport water from any of the Applicant's reservoirs for subsequent storage, diversion and use throughout the Applicant's service area;

f. Use of the bed and banks of the Brazos River, its tributaries, and the Applicant's reservoirs for the conveyance, storage, and subsequent diversion of: (1) the appropriated water; (2) waters that are being conveyed via pipelines and subsequently discharged into the Brazos River or its tributaries or stored in the Applicant's reservoirs; (3) surface water imported from areas located outside the Brazos River Basin for subsequent use; (4) in-basin surface water and groundwater subject to the Applicant's control; (5) waters developed from future Applicant projects; and (6) reuse of surface and groundwater-based return flows appropriated in this permit; and

g. A term permit, pursuant to Texas Water Code § 11.1381, for a term of 30 years from the issued date of the permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, to allow the Applicant to use the water appropriated under Water Use Permit No. 2925, as amended, until the construction of the Allens Creek Reservoir. The Applicant requested the term permit to impound, divert, and use not to exceed 202,000 af/yr of water per year at the Gulf of Mexico.

35. The Applicant's amended application with the WMP:

a. Includes TCEQ's adopted environmental flow standards;

b. Includes an updated BRA accounting plan for BRA reservoirs, stream reaches of the Brazos River and its tributaries where water will be delivered and/or water authorized under Permit No. 5851 will be diverted, application of the adopted environmental flow standards, and other reference and summary information;

c. Specifies diversion points for the new appropriation as follows: (1) the diversion points authorized in BRA's existing water rights (including contractually authorized diversion points); (2) the Brazos River's outlet at the Gulf of Mexico; and (3) specified diversion points and reaches identified in BRA's WMP and associated technical documents, including accounting plans. Diversion rates at the diversion reaches are set out in BRA's WMP and associated technical documents, including accounting plans; and

d. Removes the request in Application No. 5851 for recognition that Permit No. 5851 would prevail over inconsistent provisions in BRA's existing water rights regarding system operation.

36. During the evidentiary hearing on remand, the Applicant clarified that it was seeking an appropriation of water as shown by the appropriation runs for the various use scenarios in the WMP. Thus, the Applicant, with its amended application, seeks to appropriate a maximum amount of 516,955 af/yr of water as a result of system operations. This appropriation will be subject to and limited by Permit No. 5851 and the WMP. The amount of this new appropriation of water includes the current return flows requested in this application.

Texas Water Code §§ 11.124, 11.125, 11.128, and 11.135 Requirements

37. Permit No. 5851 contains the required provisions outlined in Texas Water Code § 11.135, with the exception of the time within which to construct water works. The Applicant does not propose to construct any new water works to exercise Permit No. 5851. The Applicant, instead, plans to rely on existing facilities and coordinated operations of those facilities. Because the Applicant plans no new construction, location and description information, commencement and completion dates for the construction, and the time required for the application of the water to the proposed use are not necessary.

38. The application is in writing and sworn, contains the name and address of the Applicant, and identifies the source of supply.

39. No one holds a lien on the Applicant's water rights.

40. The Applicant has paid the fees required by Texas Water Code § 11.128.

41. The Applicant in its application, as amended to include the WMP, provided maps that show existing reservoirs and diversion points and reaches, stream reaches for the bed and banks authorization, and locations where BRA intends to use the water. The Applicant also provided data identifying discharges for return flows.

Diversion Amount, Diversion Rates, and Diversion Points

42. Permit No. 5851 states maximum annual water diversion limits that are equal to the annual use by the demand level scenario that is effective at the time of the diversion.

43. The four demand levels are: (1) Current Contracts (Level A); (2) Current Contracts with Comanche Peak Nuclear Power Plant (CPNPP) Expansion (Level B); (3) Current Contracts with Allens Creek Reservoir (Level C); and (4) Current Contracts with Allens Creek Reservoir and CPNPP Expansion (Level D). Current contracts include demands shown to be satisfied by the System Operation Permit in the Region G and Region H Water Plans. The demand levels represent four different possible scenarios that could happen in the future based on the State and Regional Water Plans and other information available to BRA. For each of the demand levels, the permit identifies the total maximum amount of water that BRA can use throughout the basin depending on the applicable demand level, and a total maximum amount of water that BRA can divert in each reach, depending on the applicable demand level.

44. BRA's use of water within a reach will be limited in two ways: (1) BRA will be limited to the total maximum amount of water available under the applicable demand scenario identified in the permit; and (2) BRA's water use within a reach will be limited to 1,460 af/yr or the maximum amount of water identified in Tables G.3.2 through G.3.25 of the WMP, whichever is more, for that reach and the applicable demand level.

45. The amount of water BRA is authorized to use is stated in definitive terms.

46. The WMP prescribes the maximum diversion rate limits by reach for run-of-river diversions under the System Operation Permit. The sum of all diversions under Permit No. 5851 within each reach cannot exceed that maximum diversion rate.

47. Setting the maximum diversion rate by a defined reach is consistent with TCEQ practice.

48. No additional diversion rates are proposed for diversions from reservoirs because the authorized diversion rates in BRA's current reservoir water rights will govern diversions that are lakeside.

49. Permit No. 5851, through its WMP, specifies diversion points and diversion reaches which are: (1) diversion points authorized by BRA's existing water rights, including those that have been added contractually on stream channels downstream of BRA reservoirs; (2) locations where future demands are identified in the 2011 Regional Water Plans (Regions G and H) as using supplies from the System Operation Permit; and (3) the Richmond to Gulf of Mexico reach where BRA anticipates additional supplies from the System Operation Permit would be used.

50. The WMP evaluates the impacts resulting from the use of the System Operation Permit appropriation at those actual and proposed diversion points and diversion reaches. There are 40 defined diversion reaches described in the WMP. Demands within these reaches were modeled as part of the WMP, and include the following:

a. Demands at diversion points authorized by BRA's existing water rights, including current contractually authorized diversion points on stream channels downstream of BRA reservoirs;

b. Demands in reaches in which the 2011 Regional Water Plans (Region G and Region H) list the System Operation Permit as a recommended source of supply to meet demands; and

c. Demands in the reach from Richmond to the Gulf of Mexico.

51. Identifying a diversion reach is an accepted practice of TCEQ.

52. Modeling diversions by reach where specific diversion points are anticipated is not problematic from a modeling perspective and the modeling for the application shows how much water can be developed under the System Operation Permit without affecting senior water rights.

53. The System Operation Permit authorizes storage of System Operation Permit water. Therefore, BRA may use 30 Texas Administrative Code § 297.102(b) to add diversion points in the future and those new diversion points will be specifically identified and provided to the TCEQ before diversions can occur at the new location.

54. To the extent that new diversion points are added in the future based on new contracts, the new diversions of System Operation Permit water must be within the amount authorized for the reach in which the customer's diversion is located and the customer's diversion rate must not cause BRA to exceed the applicable maximum aggregate diversion rate in Table 4.6 of the WMP.

55. Permit No. 5851 and the WMP use actual and planned diversion points to determine water available for appropriation.

Water Availability, Drought of Record, Impairment of Existing Rights

56. BRA's preferred permit is BRA Exhibit No. 132B, which proposes to reduce the amount of water BRA is authorized to use to 516,955 af/yr.

57. For Permit No. 5851, there are three sources of unappropriated water: unappropriated riverine flows; return flows of treated wastewater; and water available for appropriation from BRA's existing reservoirs.

58. The Brazos River has a large uncontrolled drainage area downstream from BRA's reservoirs. The flows in this uncontrolled drainage area vary greatly. During times of high flow, there is water in the area that cannot be used by existing water rights and that is not needed to meet environmental flow requirements, but these flows are not reliable.

59. Through the use of its storage, BRA can make this unappropriated water into a reliable supply by using stream flows not being used by senior water rights when that water is

available, and providing water from storage when there are little or no stream flows available for use.

60. In determining water availability, the permitted capacity of a reservoir is used when considering a new appropriation from the same reservoir.

61. The Applicant's WMP examined alternative water availability scenarios because the amount of water available depends, in part, upon the location of uses of water, as well as the development of authorized but not yet constructed projects. These scenarios are referred to as Demand Levels A, B, C, and D.

62. Demand Level A is a current conditions approach. It models all of BRA's existing customers and all demands shown by the 2011 Regional Water Plans (Regions G and H) to be supplied by the System Operation Permit with the remainder of the water available for appropriation being taken in the reach below Richmond. As modeled by the Applicant, Demand Level A shows 381,474 af/yr as the maximum possible use.

63. Demand Level B anticipates expansion of the CPNPP, a major demand located relatively high in the basin. The location of this demand results in an overall reduction in water availability as compared to Demand Level A. As modeled by the Applicant, the maximum possible use under Demand Level B is 344,625 af/yr.

64. Demand Level C anticipates construction of the Allens Creek Reservoir without the CPNPP expansion. As modeled by the Applicant, this results in the largest possible use of unappropriated water: 516,955 af/yr.

65. Demand Level D anticipates both expansion of the CPNPP and construction of the Allens Creek Reservoir. As modeled by the Applicant, it produces a maximum possible use of unappropriated water of 482,035 af/yr.

66. Permit No. 5851 authorizes the Applicant's diversion and use of water according to the Demand Level facts that exist at any given time in the future.

67. The water availability quantities in the WMP firm appropriation scenarios are those required to generate a firm water supply and do not include water for interruptible or non-firm water sales. Any amount of additional water appropriated would be a new appropriation at a junior priority.

68. The WMP uses authorized reservoir storage capacity for its appropriation models, but actual or projected capacity for its operational models.

69. In calculating the appropriation amounts for the permit for the four Demand Levels, the WMP failed to properly account for the fact that BRA's reservoirs have lost capacity due to sedimentation.

70. When the losses of reservoir capacities are properly taken into account, the maximum annual diversion amounts under the Demand Levels, and the correct appropriation amounts for the permit, are:

- Demand Level A – 328,068 af/yr;
- Demand Level B – 296,378 af/yr;
- Demand Level C – 443,853 af/yr; and
- Demand Level D – 413,035 af/yr.

71. The permit should authorize the Applicant to appropriate a diversion amount depending on the applicable demand scenario.

72. The Applicant is not required in modeling the availability of water for Permit No. 5851 to fully utilize all of its existing storage rights every year before run-of-river water under the System Operation Permit can be used.

73. WMP modeling resulted in complete utilization of the Applicant's existing rights without the necessity of making releases. Requiring the Applicant to fully utilize its existing rights before using run-of-river water is not required and would frustrate the purpose and goal of system operation.

74. The Applicant's existing water rights permits do not require that storage under the 1964 System Operation Order be at a junior priority. Instead, they allow storage at the existing priority but the water so stored is subject to release for downstream needs at TCEQ's direction.

75. The Water Availability Model (WAM) used by TCEQ operates in such a fashion that water storage capacity emptied at the junior priority is refilled at the junior priority.

76. The Brazos River Basin has experienced serious drought conditions since mid-2008, particularly the upper portion of the basin above Possum Kingdom Lake Reservoir.

77. The recent drought ended on May 26, 2015.

78. It is possible that the recent drought reduced the amount of water available for appropriation below the amounts shown in the WMP. It is likely it was a worse drought than the drought of record for the watershed above Possum Kingdom Reservoir.

79. It is unknown whether the Brazos River Basin as a whole suffered a worse drought than the 1950s drought of record.

80. Determining the ultimate impact of this drought on water availability under Permit No. 5851 will require a major effort to evaluate the current impact of the drought, and halting permit processing to undertake this analysis is not justified.

81. No purpose would be served by either delaying permit processing until complete evaluation of the recent drought or abating it until new hydrologic models could be developed to include the recent drought hydrology.

82. In order to properly account for the recent drought, the following condition should be included in Permit No. 5851:

> In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought: (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and (2) decreases the amount of water available for appropriation under this permit. BRA shall provide a report to the TCEQ documenting its findings within nine months after issuance of this permit. If the report concludes that the recently-ended drought decreases the amount of water available for appropriation under this permit, then the appropriation amounts specified in Paragraph 1.A. of this permit shall be correspondingly reduced.

83. Under TCEQ's water availability rule (30 Texas Administrative Code § 297.42), no specific degree of reliability is required for water appropriated by Permit No. 5851 because it is one of the recognized exceptions of subsection (d). Instead, the required availability of unappropriated water for these special type projects is determined on a case-by-case basis based upon whether the proposed project can be viable for the intended purposes and the water will be beneficially used without waste.

84. TCEQ's consideration of subsequent amendments to the WMP (including certain changes to the accounting plan) will be treated as an amendment to the permit, and depending on the type of amendment, may be subject to TCEQ's notice and contested case hearing requirements as well as all other requirements applicable to a major water right amendment.

85. To protect existing water rights, the WAM uses a "dual simulation" modeling technique that prevents any existing BRA water right from using more water at its original priority date than it could have without the System Operation Permit.

86. There are multiple protections for existing water rights in the System Operation Permit, including the accounting plan and the other provisions of the WMP. The environmental flow conditions in Permit No. 5851 will prohibit diversions at times of low flow, leaving water that can be used by existing downstream senior water rights that are not subject to the same environmental flow requirements.

87. The Applicant's ability to make water available through system operation, while protecting senior rights and environmental flows, will be improved by giving the Applicant operational flexibility to: (1) use any source of water available to the Applicant to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Applicant's

reservoirs on a priority basis; and (2) release, pump, and transport water from any of the Applicant's reservoirs for subsequent storage, diversion, and use throughout the Applicant's service area.

88. Environmental flow conditions would apply to any impoundment of inflows at a reservoir under Permit No. 5851 even when BRA is exercising this operational flexibility.

89. Vested riparian rights will be fully protected by the environmental flow requirements in the System Operation Permit.

90. There will be no adverse effect on existing water rights by the System Operation Permit.

91. The water requested by BRA is available for appropriation.

Beneficial Use

92. The System Operation Permit would authorize diversion of water for domestic uses, municipal uses, agricultural and industrial uses, mining, and recreation, which are all recognized beneficial uses.

93. Of the 705,000 af/yr of water rights currently owned by BRA, 99% of this available water is under contract already.

94. There is demand for additional water supplies in the Brazos River Basin. BRA has pending requests for additional long-term water supply. The approved 2011 Regional Water Plans for Regions G and H forecast that substantial additional water supplies will be needed between now and 2060. The increase in demand for water in both regions is primarily due to population growth. There are projected shortages for irrigation and manufacturing uses. Water users in Fort Bend County must convert a large portion of their current water use from groundwater to surface water.

95. The adopted 2012 State Water Plan, based on the 2011 Regional Water Plans for Regions G and H, recommends a total amount of 110,249 af/yr of water to be supplied from the System Operation Permit to meet projected demands for a combination of municipal, industrial steam-electric, manufacturing, and mining uses in the Regions G and H planning areas.

96. BRA has been approached by a number of current and prospective customers that have requested additional long-term water supply from the System Operation Permit. To date, BRA has received requests from 28 entities for over 300,000 af/yr of water.

97. There is an immediate need for additional water supplies in a large portion of the Brazos River Basin and BRA intends to beneficially use the newly appropriated water by contracting with its existing and future customers who have a need for these additional supplies.

Environmental Flows

98. The environmental flow conditions that are applicable to the System Operation Permit are set out in Tables 4.3A–4.3L of the WMP. These tables describe the minimum flows that must exist at each identified measurement point during specified hydrologic conditions within a season before diversions under the System Operation Permit may occur. The measurement points in the WMP coincide exactly with the applicable measurement points for the Brazos River Basin in the TCEQ rules. 30 Texas Administrative Code §§ 298.480(a)(6)-(8), (10)-(11), (13)-(19).

99. Table 4.4 of the WMP describes which measurement point is applicable to each river reach. The environmental flow conditions applicable to a diversion are determined based upon the reach in which the diversion is located.

100. Of the 40 river and lake reaches identified in the WMP, nine use an upstream measurement point to govern all or part of the diversions in the reach. Four of these reaches are associated with reservoirs: Possum Kingdom Lake, Dennis gage to Lake Granbury dam, Glen Rose gage to Lake Whitney dam, and Leon River at Gatesville to Lake Belton dam. For two of the reaches, the applicable measurement point is in the middle of the reach: Aquilla Creek/Brazos River confluence to Highbank gage, and Richmond gage to the Gulf of Mexico. There are three reaches where all diversions in the reach will look to an upstream measurement point: Palo Pinto gage to Dennis gage; Cameron gage to Brazos River and Little River confluence; and Easterly gage to the Brazos River and Navasota River confluence.

101. Storage at BRA system reservoirs under Permit No. 5851 will be governed by the measurement point immediately downstream of each respective dam. Except for Possum Kingdom Lake, Lake Whitney, Lake Granbury, and Lake Belton, lakeside diversions will be governed by the next downstream measurement point. Lakeside diversions under the System Operation Permit occurring within Possum Kingdom Lake, Lake Whitney, Lake Granbury, and Lake Belton will be according to the applicable measurement point that lies upstream of each respective lake. For diversions above Lake Granbury, Lake Whitney, and Lake Belton, the applicable measurement point is upstream of each lake.

102. To divert System Operation Permit water, whether the reach is upstream or downstream of the applicable measurement point, the flow passing the measurement point gage must not be lower than the environmental flow requirement. For diversions upstream of the applicable measurement point, the daily maximum allowable run-of-river diversion under the System Operation Permit will be limited such that the daily flow at the measurement point gage is not reduced below the applicable environmental flow standard. For diversions located downstream of a measurement point, the environmental flow requirement will be calculated by adding the aggregate downstream System Operation Permit diversion rate to the applicable environmental flow standard at the applicable measurement point gage.

103. For each season and each hydrologic condition at the measurement point, there is a corresponding environmental flow condition which must be met before diversions under the System Operation Permit may occur.

104. Each measurement point is located in a defined geographic area which is used to determine the hydrologic condition. The WMP identifies three geographic areas, which coincide with the TCEQ's rules and are delineated by major existing reservoirs along the main stem of the Brazos River.

105. The WMP determines the hydrological condition using the Palmer Hydrological Drought Index (PHDI), as required by TCEQ.

106. Because the climate zones used by the National Climatic Data Center (NCDC) to calculate the PHDI each month are not exactly coincident with the WMP geographic areas, an area-weighted composite PHDI is calculated by adding together the NCDC's PHDI for each climate zone that has first been multiplied by the fraction of the area intersecting the geographic area.

107. The composite PHDI is then compared to the values described in Table 4.12 of the WMP Technical Report to determine whether the hydrologic condition is dry, average, or wet. 30 Texas Administrative Code § 298.470(c).

108. Because the NCDC does not report the preceding month's PHDI on the first day of the succeeding month, the Applicant will operate under an interim hydrologic condition between the first day of the season and the day the final hydrologic condition is determined. To determine the interim hydrologic condition, the interim PHDI values provided by the NCDC will be used.

109. It is reasonable to use the interim PHDI values to determine an interim hydrologic condition because it is likely the hydrologic condition will not change once the NCDC's PHDI values are finalized. If there is any non-achievement of environmental flow conditions as a result of using the interim PHDI and hydrologic condition in the first few weeks of a season, BRA will report the non-achievement in an annual Environmental Flow Achievement Report to the TCEQ.

110. For each measurement point, a certain number of high flow pulses is required per season depending on the hydrologic condition. 30 Texas Administrative Code § 298.480.

111. A high flow pulse begins when the flow at the measurement point becomes higher than the applicable pulse trigger flow and the pulse ends when either the applicable volume condition or the applicable duration condition is achieved.

112. Consistent with the TCEQ rules, the WMP prohibits the Applicant from diverting or storing water under the System Operation Permit if such storage or diversion would prevent meeting a seasonal schedule or individual high flow pulse at the applicable measurement point, unless the seasonal schedule has already been met.

113. Storage and diversion under the System Operation Permit are authorized during high flow pulse events if: (1) the stream flow is not reduced below the pulse trigger flow; or (2) the number of pulse events exceeds the frequency criteria. Storage and diversion under the System Operation Permit may also continue during a pulse as long as the storage amount or diversion amount is lower than the applicable diversion rate trigger level.

114. The diversion rate trigger levels in the WMP were developed in accordance with TCEQ rules and are defined as 20% of the pulse trigger flow. 30 Texas Administrative Code § 298.485(b).

115. As part of the development of the WMP, the Applicant evaluated how high flow pulses relate between adjacent selected measurement points. The evaluation illustrated the complex temporal relationship between pulses occurring at adjacent upstream and downstream measurement points because of travel time between measurement points, existing structural and operational influences, and pulse magnitude relative to diversion rates. Because of these factors, operations and accounting under the WMP will manage storage and diversion within a reach according to the measurement point applicable to that reach.

116. The use of one measurement point and the use of upstream measurement points are permitted by TCEQ's rules and are justified considering the distance between measurement points, travel time, channel losses, attenuation, magnitude of pulses relative to base flow conditions, intervening inflows at large confluences, intervening structures, and different hydrologic conditions in different geographic areas.

117. The WMP allows BRA to temporarily store pulse events. If impounded flows under the System Operation Permit would prevent the achievement of a qualifying pulse event at the applicable measurement point and should be released, BRA will coordinate with the United States Army Corps of Engineers (USACE) (if the reservoir's dam is operated by the USACE), and releases of the pulses will conform to existing BRA and USACE water control plans. BRA will coordinate its operational release pattern with downstream flow patterns to increase the probability that an intended pulse achievement will occur at a downstream measurement point and to ensure the release conforms to any water control plan.

118. Temporary storage of pulse events is a practical reality. A pulse event coming into a reservoir will be captured inside the reservoir. Temporary storage of a pulse is necessary to determine: (1) if storage is occurring under the System Operation Permit; and (2) whether applicable environmental flow conditions are being met.

119. While the WMP does not specify a period of time in which a qualifying pulse must be released (if one is required to be released), the pulse requirements will need to be satisfied in accordance with the environmental flow conditions if BRA intends to use the water under the System Operation Permit. BRA's best chance of meeting the environmental flow conditions will be to make the release consistent with other hydrological events that are occurring at the same time.

120. The environmental flow portion of the WMP Accounting Plan tracks what happens with respect to the environmental flow requirements, includes calculations that classify high flow pulses according to flow, duration and volume, and tracks releases of high flow pulses that are temporarily stored.

121. BRA will generate and submit to the TCEQ an Environmental Flow Achievement Report once per year. The report will summarize storage and diversions under the System Operation Permit occurring during the previous year with respect to the environmental flow conditions at each measurement point. If the report indicates that the WMP environmental flow conditions were not achieved due to storage or diversion under the System Operation Permit, BRA will include in the report an action plan that describes how BRA will prevent further non-achievement from occurring during System Operation Permit storage and diversion.

122. The environmental flow conditions for Permit No. 5851 include the exact measurement points, seasons, and hydrologic conditions as those found in the TCEQ rules. The flow values at each measurement point are the flow values adopted by TCEQ.

123. The environmental flow conditions for the System Operation Permit are subject to adjustment by the Commission pursuant to Texas Water Code § 11.147(e-1).

124. Even though a separate analysis under Texas Water Code §§ 11.150, 11.151, and 11.152 is no longer required with the adoption of the Senate Bill 3 environmental flow standards for the Brazos River Basin, BRA has nevertheless assessed the effects of Permit No. 5851 on fish and wildlife habitat, water quality, bays and estuaries, and groundwater.

125. With respect to the assessment of the effects of BRA's application on fish and wildlife habitat, the environmental flow conditions in the permit, which are consistent with TCEQ's adopted environmental flow standards, will be protective of instream uses. The System Operation Permit uses already-permitted reservoirs. This limits the effect of construction of new reservoirs on fish and wildlife habitat. The System Operation Permit will use run-of-river flows during times when these flows are available instead of using BRA's existing water rights. This strategy will allow BRA to save water in storage under its existing water rights for delivery downstream when river flows are not high enough to meet environmental flow conditions and allow for diversions under the System Operation Permit. This strategy will benefit instream uses by providing more times of higher stream flows closer to the environmental flow conditions than would have otherwise occurred without the System Operation Permit. BRA has adopted and implemented reservoir operating guidelines to manage the frequency and magnitude of reservoir level fluctuations to avoid or minimize impacts on reservoir fisheries, including fish and wildlife habitat.

126. With respect to water quality, recent studies on the Brazos, Little, and Navasota rivers relating to water quality conditions (temperature and dissolved oxygen) evaluated flow levels lower than or consistent with the System Operation Permit's environmental flow conditions. These studies showed achievement of temperature and dissolved oxygen

goals at those flow conditions that are comparable to the System Operation Permit's environmental flow conditions.

127. BRA has agreed in its amended Memorandum of Understanding with TPWD to limit operations under the System Operation Permit so that its operations do not reduce flows to less than the lowest average flow for seven consecutive days in a two-year period (7Q2) at seven locations, which are in addition to the applicable measurement points, and BRA will collect routine water quality monitoring data at or near eight locations.

128. The bay and estuary system for the Brazos River is limited. The Brazos River estuary is a river-dominated estuary that has no directly associated barrier island embayment. In recognition of these facts, the Senate Bill 3 environmental flow standards provide sufficient inflows to support a sound ecological environment at the mouth of the Brazos River. Because the Brazos River has no natural bay and limited connection to associated existing bays and the Brazos River estuary is dominated by river flows, the System Operation Permit is not anticipated to have an adverse impact on any bay or estuary.

129. The System Operation Permit will not affect groundwater resources or impair existing uses of groundwater, groundwater quality, or spring flow in the Brazos River Basin.

Public Welfare, Public Interest, Instream Uses

130. The approved 2011 Regional Water Plans for Regions G and H forecast that substantial additional water supplies will be needed between now and 2060.

131. The 2011 Region G Regional Water Plan anticipates that Permit No. 5851 will supply 86,429 af/yr of water by 2060 to meet municipal and steam-electric generation demands.

132. Region H projects that between 2010 and 2060 the water supply needs region-wide will grow from 2,376,414 af/yr to 3,524,666 af/yr. The 2011 Region H Regional Water Plan anticipates that Permit No. 5851 will supply a total of 25,347 af/yr to meet municipal, manufacturing, mining, and other demands in the region between 2010 and 2060.

133. The System Operation Permit water supply strategy has been adopted as a recommended water supply strategy in the 2012 State Water Plan, which recommends that 110,249 af/yr of water be supplied for various uses from the System Operation Permit.

134. BRA has continued to receive requests for long-term water supply and to date has received requests from 28 entities for over 300,000 af/yr of water.

135. The water made available from Permit No. 5851 will address anticipated water shortages that are identified in the current adopted State and Regional Water Plans. Without the System Operation Permit, the Brazos River Basin will be faced with water supply shortages.

136. As compared to alternative water supply strategies, such as new reservoir construction, identified in the 2011 Region G and Region H water plans, the unit cost of the System Operation Permit water is substantially less.

137. Permit No. 5851 water is readily available and does not require significant land acquisitions, permitting, and construction.

138. The low cost of the water coupled with its availability in the near-term will help the Applicant stabilize its water rates.

139. The environmental impacts of the System Operation Permit are far less than the environmental impacts that might be associated with an alternative new water supply project, such as the construction of a new reservoir.

140. BRA is committed to providing water out of the System Operation Permit to the Texas Water Trust and executed an amendment to its Memorandum of Understanding with TPWD reaffirming this commitment. BRA has also committed to limiting operations under the System Operation Permit so that such operations do not reduce flows to less than 7Q2 flow values at seven identified locations within the Brazos River Basin, and will be conducting additional environmental studies at eight locations in the Brazos River Basin for the benefit of the basin and bay area stakeholder committee.

141. BRA has agreed to maintain environmental flows that were required by BRA's Federal Energy Regulatory Commission (FERC) license for its now-decommissioned hydroelectric facilities at Possum Kingdom Lake. Those conditions are incorporated into Permit No. 5851 as Special Condition 5.C.5.

142. With the environmental flow conditions included in the System Operation Permit, the permit will maintain adequate flow for a wide variety of recreational uses below Possum Kingdom Lake in the John Graves Scenic Riverway.

143. BRA, along with TPWD, has developed operating guidelines to manage the frequency and magnitude of reservoir level fluctuations to avoid and minimize impacts on reservoir fisheries and has incorporated those guidelines into the WMP. These guidelines will provide direction to TPWD fisheries managers on how BRA can be anticipated to manage the reservoirs, and allow TPWD to minimize or mitigate impacts to fisheries, or adjust its management and stocking strategies.

144. BRA has developed general guidelines for daily reservoir operations. Release decisions are made to provide for beneficial use of water downstream while at the same time considering local water supply needs around the reservoirs, environmental needs, and recreational uses.

145. Operations under the System Operation Permit as set out in the WMP will not cause chloride or total dissolved solid concentrations in the Brazos River Basin to exceed TCEQ's water quality standards.

146. The System Operation Permit complies with and implements the TCEQ's adopted environmental flow standards.

147. The System Operation Permit will allow BRA to provide water for a wide variety of beneficial uses including municipal, industrial, and agricultural uses.

148. BRA has adopted and implemented water conservation and drought contingency plans and these plans are consistent with the requirements of Chapter 288, Title 30 of the Texas Administrative Code.

149. The System Operation Permit is a water conservation strategy that reduces the waste of water and improves the efficient use of water through coordinating reservoir operations with unappropriated stream flows, increases BRA's recycling and reuse of water for the benefit of its customers, and makes additional water available for future and alternative uses.

150. The System Operation Permit will not be detrimental to the public welfare, and in fact provides significant public welfare benefits.

Consistency with Water Plans

151. The System Operation Permit is a recommended water management strategy in the approved 2011 Regional Water Plans for the Region G and Region H planning regions and is a recommended strategy in the most recently adopted state water plan, *2012 Water for Texas*, and is therefore consistent with those plans.

Conservation and Drought Planning

152. BRA has adopted water conservation and drought contingency plans. TCEQ has approved these plans and determined they are consistent with the requirements in Chapter 288, Title 30 of the Texas Administrative Code.

153. BRA requires compliance with its adopted water conservation plan and drought contingency plan. BRA's water supply contracts require customers to implement a water conservation plan and meter water usage. The customers must operate and maintain facilities in a manner that will prevent unnecessary waste of water.

154. The System Operation Permit itself reduces the waste of water, improves the efficiency in water use by coordinating reservoir operations with unappropriated stream flows, increases the recycling and reuse of water, makes more water available from the facilities that are already in place, and requires the implementation of water conservation plans to help reduce or maintain the consumption of water, prevent or reduce waste of water, maintain or improve the efficient use of water, and prevent the pollution of water.

155. BRA will use reasonable diligence to avoid waste and achieve water conservation.

156. BRA presented evidence that supports the proposed use of the water with consideration of the water conservation goals in its plan and demonstrates that BRA evaluated water conservation as an alternative, but found it was insufficient to produce the amount of water needed or required significant financial resources to develop. The System Operation Permit itself is a form of water conservation.

157. The System Operation Permit also includes an additional provision requiring BRA to submit updated water conservation and drought contingency plans in connection with future applications for reconsideration or amendment of its WMP.

Return Flows

158. Return flows, once returned to a state watercourse, are unappropriated flows available for appropriation.

159. The System Operation Permit appropriates current return flows from all sources once they are discharged into a watercourse. This is consistent with state law and with prior Commission practice; therefore, it is reasonable. Through the WMP, BRA will account for the total discharges of return flows and adjust its water availability computation if total discharges decrease by 5% or more.

160. Permit No. 5851 has a special condition that states that BRA's storage, diversion, and use of the portion of the appropriation based on return flows will be interrupted by direct reuse or will be terminated by indirect reuse within the discharging entity's corporate limits, extraterritorial jurisdiction, or contiguous water certificate of convenience and necessity.

161. Another special condition in the permit expressly makes BRA's authorization to use groundwater-based return flows subject to the discharger's ability to obtain an authorization under § 11.042(c).

162. As a result of an agreement with the Cities of Bryan and College Station, a provision addressing groundwater-based return flows, without any service area limitation, is included in Permit No. 5851, which will allow for future indirect reuse by dischargers of such water.

163. Accounting for individual discharges and diversions of return flows is not necessary for the protection of senior water rights.

Bed and Banks Authorization

164. Permit No. 5851 authorizes the use of the bed and banks of the Brazos River and its tributaries subject to identification of specific losses and various special conditions. BRA, through its WMP accounting procedures, will estimate daily deliveries of water that considers losses and travel time.

165. The water to be transferred in the bed and banks of the Brazos River and its tributaries originates in the basin and will have water quality consistent with the natural water quality of the Brazos River. There should not be any effect on water quality in the Brazos River Basin as a result of the bed and banks authorization.

Interbasin Transfer

166. BRA requests authorization for exempt interbasin transfers of water to any county or municipality that is partially in the Brazos River Basin for use in that part of the county or municipality within the Guadalupe, Lavaca, Trinity, Red, Colorado, or San Jacinto river basins, and for use in San Jacinto-Brazos Coastal Basin and the Brazos-Colorado Coastal Basin.

167. BRA has demonstrated that its Application No. 5851, as amended to include the WMP, complies with all requirements for exempt interbasin transfer authorization.

Allens Creek Reservoir and Term Permit Authorization

168. Allens Creek Reservoir (Water Use Permit No. 2925) is a yet-to-be-constructed off-channel reservoir that may be filled with diversions from the Brazos River. The Allens Creek Reservoir permit limits annual diversions from the Brazos River to 202,000 af/yr. Diversions from the Brazos River to Allens Creek Reservoir in excess of 202,000 af/yr are authorized by BRA's Certificate No. 12-5166.

169. For the period before the construction of Allens Creek Reservoir, BRA is seeking a term permit to use up to 202,000 af/yr of water for a period of 30 years or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier. The Allens Creek Reservoir permit is not yet perfected and the use of the water under the term permit will not jeopardize the financial commitments to develop the reservoir and will not prevent BRA or the City of Houston from beneficially using the Allens Creek Reservoir during the term permit authorization.

170. Until construction of the Allens Creek Reservoir is completed, it is reasonable and consistent with Commission practice to authorize the use of the water appropriated under the Allens Creek Reservoir permit on a term basis.

171. BRA's Application No. 5851 requests that all of its system reservoirs, including the Allens Creek Reservoir, be allowed to store additional water at the System Operation Permit priority date if storage capacity and unappropriated water are available.

172. BRA has entered into an agreement with the City of Houston that allows BRA to use Houston's share of the storage capacity in the Allens Creek Reservoir for System Operation Permit water.

173. BRA obtained an amendment to its Excess Flows Permit (Certificate No. 12-5166) to include the diversion points for the proposed Allens Creek Reservoir. The amendment to

the Excess Flows Permit allows BRA to divert water from the Brazos River into the reservoir thereby increasing the supply of water that could be made available from the Allens Creek Reservoir.

174. The inclusion of Allens Creek Reservoir in the System Operation Permit after the reservoir is constructed and the recognition of existing authority to divert from the Brazos River to Allens Creek Reservoir in excess of 202,000 af/yr are reasonable.

Texas Coastal Management Program

175. BRA's operation under Permit No. 5851, as approved by this order, should not have significant adverse impacts on coastal natural resources and is consistent with the goals and policies of the Texas Coastal Management Program.

Permit Conditions/Revisions

176. Water use Permit No. 5851 should be issued in the form attached with the following changes:

a. An unnumbered, bulleted paragraph on page 3 should be amended to read as follows:

A term permit, pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, to allow the Applicant to use the water appropriated under Water Use Permit No. 2925, as amended, until construction of the Allens Creek Reservoir. The Applicant requested a term authorization to impound, divert, and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year at the Gulf of Mexico; and

b. Paragraph 1.A should be amended to read as follows:

Permittee is authorized to divert and use, ~~not to exceed 516,955 acre-feet of water per year~~ for domestic, municipal, agricultural, industrial, mining and recreation use, water in the applicable amount shown below, as further described, ~~and~~ defined, and limited by ~~in~~ the Water Management Plan (WMP), within its service area, subject to special conditions~~.~~:

1) not to exceed 328,068 acre-feet per year at all times prior to: (1) an expansion of the Comanche Peak Nuclear Power Plant (CPNPP) in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the point when the ports are closed on the dam impounding Allens Creek Reservoir;

2) not to exceed 296,378 acre-feet per year at all times when: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000

acre-feet per year of additional water; but (2) the ports on the dam impounding Allens Creek Reservoir have not yet been closed;

3) not to exceed 443,853 acre-feet per year at all times when: (1) CPNPP has not yet been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but (2) the ports have been closed on the dam impounding Allens Creek Reservoir; or

4) not to exceed 413,035 acre-feet per year at all times after: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the ports on the dam impounding Allens Creek Reservoir have been closed.

c. Paragraph 1.E should be amended to read as follows:

Pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, Permittee may use the water appropriated under Water Use Permit No. 2925, as amended. As part of the amount appropriated in Paragraph 1.A., during the term of this authorization Permittee may divert and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year, subject to Special Conditions 5.C.1-~~5~~7.

d. Paragraph 5.C.3 should be amended to read as follows:

Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan, or Special Condition 5.C.2, or prevent the achievement of environmental flow requirements that would have otherwise been achieved.

e. A new Special Condition 5.C.6 should be added to read as follows:

Permittee shall not divert or impound water pursuant to the authorizations in the permit if such diversions or impoundments would cause the flow at USGS Gage 081166550 (Brazos River near Rosharon) to fall below the lesser of 630 cfs, or Dow Chemical Company's projected daily pumping rate. This provision is not effective if: (a) Dow Chemical Company has not provided its projected daily pumping rate to Permittee; or (b) a watermaster having jurisdiction over the lower Brazos River has been appointed and continues to function.

f. A new Special Condition 5.C.7 should be added to read as follows:

In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought: (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and (2) decreases the amount of water available for appropriation under this permit. BRA shall provide a report to the TCEQ documenting its findings within nine months after issuance of this permit. If the report concludes that the recently-ended drought decreases the amount of water available for appropriation under this permit, then the appropriation amounts specified in Paragraph 1.A. of this permit shall be correspondingly reduced.

177. BRA should be directed to revise its WMP, which was admitted as BRA Exhibit 113 and includes the WMP Technical Report, all appendices, and other attachments, and is approved and incorporated as a part of the permit, with the following changes:

a. A new paragraph should be added at the bottom of page 9 of the WMP to read as follows:

The maximum annual use for each reach is limited to the largest maximum annual diversion under "SysOp" for that reach in Tables G.3.14 through G.3.25 of Appendix G-3 of the WMP Technical Report for the firm appropriation demand scenario that is applicable during the year in which water is diverted, or 1,460 acre-feet, whichever is greater.

b. A paragraph on page 41 should be amended to read as follows:

The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard at a point immediately below BRA's point of diversion and additionally will not exceed provisions set forth in Section IV.D.4.b below.

c. The last paragraph on page 5-7 and continuing on page 5-8 of the WMP Technical Report should be amended as follows:

[Initial portion of paragraph unchanged] The BRA approach version of the Accounting Plan includes reported monthly return flows for dischargers that have a permitted discharge greater than or equal to 1 million gallons per day (MGD). Within one month after this data is available from TCEQ for the prior calendar year, the total annual amount of return flows ~~These monthly amounts~~ will be compared to the assumed amount used during the time period of this initial WMP. If actual return flows are ~~substantially less than the amounts used in the modeling the assumptions used in the model will be adjusted and the model re-run to examine the impacts on yield~~ less than the amount used in modeling by 5% or greater, BRA will revise the models and submit results to TCEQ.

178. All other changes proposed by the parties to Permit No. 5851 and the WMP are unreasonable or unnecessary.

Transcript Costs

179. BRA paid the full cost of the transcript for the first hearing and does not now seek to have that cost allocated among the parties.

180. Reporting and transcription of the remanded second hearing on the merits was warranted because the hearing lasted eight days. The total cost of the transcript for the second hearing was $11,052.50, which has been paid by BRA subject to allocation among the parties by the Commission.

181. Several parties did not participate in the second hearing: the Cities of Lubbock, Round Rock, Bryan, and College Station, Mike Bingham, William and Gladys Gavranovic, and Bradley B. Ware. The following parties had no or limited participation at the second hearing because of their status as non-aligned, interested parties: Chisholm Trail Ventures, L.P., City of Houston, George Bingham, Robert Starks, Frasier Clark, William D. and Mary L. Carroll, PKLA, and NRG. TPWD's participation was limited to certain issues.

182. Neither the Executive Director of the TCEQ nor the Office of Public Interest Counsel may be assessed transcription costs because they cannot appeal a TCEQ order.

183. BRA, Dow, NWF, LGC, and FBR fully and actively participated in the second hearing. These parties benefit equally with BRA from the availability of a hearing transcript, both in terms of preparation of written argument and exceptions, and possible appeal.

184. BRA, Dow, NWF, LGC, and FBR each had multiple attorneys participating in the hearing, and each had one or more retained expert witness.

185. BRA, Dow, LGC, and FBR, which retained multiple attorneys and expert witnesses to participate in the hearing, have sufficient resources to pay a share of the costs of the transcript.

186. NWF is a non-profit entity.

187. The second hearing was only necessary because BRA's application as considered during the first hearing was deficient, and the Commission gave BRA an opportunity to extensively amend it and have it reconsidered in the second hearing.

188. BRA should pay the entire cost of the second-hearing transcript, $11,052, and no portion of that cost should be allocated to any other party.

II. CONCLUSIONS OF LAW

1. The Commission has jurisdiction over permits to use state water and to issue Permit No. 5851 under Texas Water Code §§ 5.013, 11.121, 11.134, and 11.1381.

2. SOAH has jurisdiction over all matters relating to the conduct of a hearing in this proceeding, including the preparation of a PFD and findings of fact and conclusions of law, under Texas Government Code Ch. 2001 and 2003.

3. BRA published notice and the Commission mailed notice to navigation districts and water rights holders in the Brazos River Basin as required by Texas Water Code § 11.132 and 30 Texas Administrative Code Ch. 295.

4. BRA has complied with Texas Water Code § 11.124(a)(5)-(7), concerning facilities, and Texas Water Code § 11.125, concerning maps, to the extent they are applicable when no new facilities are proposed.

5. Notice of the application, the opportunity for a hearing, and the hearing were provided as required by Texas Water Code §§ 11.128 and 11.132, and Texas Government Code §§ 2001.051 and 2001.052.

6. The Commission has jurisdiction to consider the application without amendments for settlements and notice was not required to address the settlements that are not part of the current application.

7. BRA's choice to proceed with a new permit application rather than a permit amendment application does not conflict with the Commission's traditional interpretation of the laws it administers, deny any affected party a right to notice or hearing, or avoid the application of environmental flow requirements to BRA's existing water rights.

8. The Commission's jurisdiction and broad authority over the appropriation of state water allows it to grant Permit No. 5851 and require the submittal and approval of a WMP to be included as part of Permit No. 5851.

9. Application No. 5851 is administratively complete, includes all of the required information, was accompanied by all required fees, and was properly noticed, and therefore complies with Texas Water Code § 11.134(b)(1), and 30 Texas Administrative Code Ch. 295.

10. Application No. 5851 sufficiently identifies the total amount of water to be used in definitive terms in accordance with 30 Texas Administrative Code § 295.5.

11. Application No. 5851 sufficiently identifies the maximum diversion rate in accordance with 30 Texas Administrative Code § 295.6.

12. Application No. 5851 sufficiently identifies diversion points and reaches and complies with 30 Texas Administrative Code § 2956.7.

13. New diversion points may be added in the future in accordance with 30 Texas Administrative Code § 297.102(b).

14. Application No. 5851 complies with the applicable procedural rules in Chapter 295 of Title 30 of the Texas Administrative Code.

15. Water is available for appropriation by Permit No. 5851 in the amounts indicated in this order, in accordance with the applicable Demand Level in effect at the time of diversions. Texas Water Code § 11.134(b)(2).

16. Return flows, once discharged into a state watercourse, are subject to appropriation by others. Texas Water Code § 11.046(c).

17. There is no conflict between Texas Water Code § 11.042 and § 11.046(c). Section 11.042(c) does not operate to reserve return flows for the discharger or water right holder. Therefore, current return flows by third parties, subject to the limitations in Permit No. 5851, are appropriated to BRA.

18. The appropriation of return flows by BRA is a new appropriation subject to the environmental flow requirements for the Brazos River Basin in 30 Texas Administrative Code Chapter 298.

19. BRA has demonstrated that the proposed appropriation is intended for a beneficial use. Texas Water Code § 11.134(b)(3)(A).

20. Permit No. 5851 will not impair existing water rights or vested riparian water rights. Texas Water Code § 11.134(b)(3)(B); 30 Texas Administrative Code § 297.45.

21. Permit No. 5851 will not be detrimental to the public welfare. Texas Water Code § 11.134(b)(3)(C).

22. Texas Water Code § 11.134(b)(3)(D) requires the TCEQ to consider applicable environmental flow standards under Texas Water Code § 11.1471. This provision is further clarified by Texas Water Code § 11.147(e-3). The environmental flow standards adopted by TCEQ in Chapter 298, Title 30 of the Texas Administrative Code are the standards that must be applied to any new water rights application.

23. A water right permit that complies with the environmental flow standards of Chapter 298, Title 30 of the Texas Administrative Code will maintain water quality and instream uses, including recreation and habitat for fish and aquatic wildlife, and provide necessary beneficial flows to bays and estuaries while considering all public interests and fully satisfying the requirements of Texas Water Code §§ 11.0235(b) and (c); 11.046(b);

11.134(b)(3)(D); 11.147(b), (d), (e), and (e-3); 11.150; and 11.152; and 30 Texas Administrative Code § 297.54(a).

24. Environmental flow restrictions may only be applied to a new appropriation of water or to the increase in the amount of water to be stored, taken, or diverted that is authorized by an amendment to an existing permit. Texas Water Code § 11.47(e-1). Therefore, the environmental flow requirements in the System Operation Permit may not be applied to BRA's existing water rights.

25. The environmental flow conditions in Permit No. 5851 implement and are consistent with the environmental flow standards adopted for the Brazos River Basin. 30 Texas Administrative Code Ch. 298, Subchapters A and G.

26. Permit No. 5851, as approved by this order, will maintain water quality and instream uses, including recreation and habitat for fish and aquatic wildlife, and provide necessary beneficial flows to bays and estuaries while considering all public interests and fully satisfying the requirements of Texas Water Code §§ 11.0235(b) and (c); 11.046(b); 11.134(b)(3)(D); 11.147(b), (d), (e), and (e-3); 11.150; 11.151; and 11.152; and 30 Texas Administrative Code §§ 297.54(a), 307.4(g)(1) and (2), and 307.10(1), and Chapter 298.

27. The environmental flow limits in Permit No. 5851, as approved by this order, are subject to adjustment by the Commission.

28. All of the regional planning areas within the Brazos River Basin have an approved regional water plan. Texas Water Code § 11.134(c).

29. Application No. 5851 and Permit No. 5851 are consistent with the adopted State Water Plan, and applicable regional water plans. Tex. Water Code § 11.134(b)(3)(E).

30. BRA will use reasonable diligence to avoid waste and achieve water conservation. Tex. Water Code § 11.134(b)(4).

31. BRA has an approved water conservation plan and drought contingency plan, and conservation measures and alternatives were evaluated in considering Application No. 5851. Tex. Water Code § 11.1271(a), (c); 30 Tex. Admin. Code §§ 288.4, 288.5, 288.7 288.20, 288.22, 297.50.

32. Application No. 5851's requests for a bed and banks authorization and an exempt interbasin transfer authorization comply with the TCEQ rules. Tex. Water Code §§ 11.1042 and 11.085(v).

33. The term permit to use water appropriated under Water Use Permit No. 2925 (Allens Creek Reservoir) prior to reservoir construction complies with Texas Water Code § 11.1381.

34. The Commission has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the Coastal Coordination Council and has determined that the action is consistent with the applicable CMP goals and policies. 30 Tex. Admin. Code Ch. 281.

35. BRA should be assessed the entire cost of the transcript of the First and Second Hearings in this case. 30 Texas Administrative Code § 80.23.

36. BRA has demonstrated that Application No. 5851 satisfies each applicable statutory and regulatory requirement for appropriation of water.

37. The evidence admitted in this case shows that Application No. 5851 should be granted in part and Permit No. 5851 should be issued, as that permit is proposed by BRA Exhibit No. 132B and that permit and its WMP are amended as provided in this order. The changes BRA is ordered to make to conform the WMP to the Commission's order are clerical and do not affect the finality of the order.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. Application No. 5851 is granted in part and Water Use Permit No. 5851 is issued to the Brazos River Authority in the form attached with the following changes:

   a. An unnumbered, bulleted paragraph on page 3 is amended to read as follows:

   A term permit, pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, to allow Applicant to use the water appropriated under Water Use Permit No. 2925, as amended, until construction of the Allens Creek Reservoir. Applicant requested a term authorization to impound, divert, and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year at the Gulf of Mexico; and

   b. Paragraph 1.A is amended to read as follows:

   Permittee is authorized to divert and use, ~~not to exceed 516,955 acre-feet of water per year~~ for domestic, municipal, agricultural, industrial, mining and recreation use, water in the applicable amount shown below, as further described, ~~and~~ defined, and limited by ~~in~~ the Water Management Plan (WMP), within its service area, subject to special conditions~~.~~:

   1) not to exceed 328,068 acre-feet per year at all times prior to: (1) an expansion of the Comanche Peak Nuclear Power Plant (CPNPP) in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the point when the ports are closed on the dam impounding Allens Creek Reservoir;

2) not to exceed 296,378 acre-feet per year at all times when: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but (2) the ports on the dam impounding Allens Creek Reservoir have not yet been closed;

3) not to exceed 443,853 acre-feet per year at all times when: (1) CPNPP has not yet been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; but (2) the ports have been closed on the dam impounding Allens Creek Reservoir; or

4) not to exceed 413,035 acre-feet per year at all times after: (1) CPNPP has been expanded in a manner that results in the plant needing at least 90,000 acre-feet per year of additional water; and (2) the ports on the dam impounding Allens Creek Reservoir have been closed.

c. Paragraph 1.E is amended to read as follows:

Pursuant to Texas Water Code § 11.1381, for a term of thirty (30) years from the issued date of this permit, or until the ports are closed on the dam impounding Allens Creek Reservoir, whichever is earlier, Permittee may use the water appropriated under Water Use Permit No. 2925, as amended. As part of the amount appropriated in Paragraph 1.A., during the term of this authorization Permittee may divert and use not to exceed ~~202,650~~ 202,000 acre-feet of water per year, subject to Special Conditions 5.C.1-~~5~~7.

d. Paragraph 5.C.3 is amended to read as follows:

Permittee may use any source of water available to Permittee to satisfy the diversion requirements of senior water rights to the same extent that those water rights would have been satisfied by passing inflows through the Permittee's system reservoirs on a priority basis. Permittee's use of water previously stored in Permittee's reservoirs or available for appropriation by Permittee's senior water rights shall be documented in the accounting/delivery plan. Use of this option shall not cause Permittee to be out of compliance with the accounting/delivery plan, or Special Condition 5.C.2, or prevent the achievement of environmental flow requirements that would have otherwise been achieved.

e. A new Special Condition 5.C.6 is added to read as follows:

Permittee shall not divert or impound water pursuant to the authorizations in the permit if such diversions or impoundments would cause the flow at USGS Gage 081166550 (Brazos River near Rosharon) to fall below the lesser of 630 cfs, or Dow Chemical Company's projected daily pumping rate. This provision is not effective if: (a) Dow Chemical Company has not provided its projected daily pumping rate to Permittee; or (b) a watermaster having jurisdiction over the lower Brazos River has been appointed and continues to function.

f. A new Special Condition 5.C.7 is added to read as follows:

In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought: (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and (2) decreases the amount of water available for appropriation under this permit. BRA shall provide a report to the TCEQ documenting its findings within nine months after issuance of this permit. If the report concludes that the recently-ended drought decreases the amount of water available for appropriation under this permit, then the appropriation amounts specified in Paragraph 1.A. of this permit shall be correspondingly reduced.

2. Brazos River Authority's WMP, which was admitted as BRA Exhibit 113 and includes the WMP Technical Report, all appendices, and other attachments, is approved and incorporated as a part of the permit, with the following changes:

a. A new paragraph is added at the bottom of page 9 of the WMP to read as follows:

The maximum annual use for each reach is limited to the largest maximum annual diversion under "SysOp" for that reach in Tables G.3.14 through G.3.25 of Appendix G-3 of the WMP Technical Report for the firm appropriation demand scenario that is applicable during the year in which water is diverted, or 1,460 acre-feet, whichever is greater.

b. A paragraph on page 41 is amended to read as follows:

The maximum allowable System Operation Permit diversion amount with a reach applies to the aggregate of all diversions in the reach. An allowable System Operation Permit diversion, whether upstream or downstream of the reach's applicable measurement point, will not reduce flow below the environmental flow standard at a point immediately below BRA's point of diversion and additionally will not exceed provisions set forth in Section IV.D.4.b below.

c. The last paragraph on page 5-7 and continuing on page 5-8 of the WMP Technical Report is amended as follows:

[Initial portion of paragraph unchanged] The BRA approach version of the Accounting Plan includes reported monthly return flows for dischargers that have a permitted discharge greater than or equal to 1 million gallons per day (MGD). Within one month after this data is available from TCEQ for the prior calendar year, the total annual amount of return flows ~~These monthly amounts~~ will be compared to the assumed amount used during the time period of this initial WMP. If actual return flows are ~~substantially less than the amounts used in the modeling the assumptions used in the model will be adjusted and the model re-run to examine the impacts on yield~~ less than the amount used in modeling by 5% or greater, BRA will revise the models and submit results to TCEQ.

3. The Executive Director shall make changes in Permit No. 5851 to conform to this order.

4. The Brazos River Authority shall make changes to the WMP to conform with this order and submit them to the Executive Director for approval as to form.

5. Brazos River Authority shall pay the full cost of the transcript for the hearing.

6. The effective date of this Order is the date the Order is final.

7. All other motions, requests for entry of specific Findings of Fact or Conclusions of Law, and any other requests for general or specific relief not expressly granted herein, are hereby denied for want of merit.

8. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

9. The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this Order to the parties.

Issue Date:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Bryan W. Shaw, Ph.D., P.E., Chairman
For the Commission