

Section III - Water Supply Contracting

3.0 Final Permit and Conforming Changes

The Texas Commission on Environmental Quality (Commission) issued its Final Order dated September 16, 2016, approving issuance of Water Use Permit No. 5851 (System Operation Permit) to the Brazos River Authority (BRA). On November 30, 2016, the System Operation Permit was issued by the Commission. The Final Order and Permit did not require any conforming changes to Section III of this Technical Report in Support of the Water Management Plan. All portions of Section III remain in the form considered in the 2015 hearing conducted by the State Office of Administrative Hearings (SOAH) and subsequently by the Commission.

3.1 Contracts

The BRA supplies water to customers throughout the basin from its Water Supply System. The BRA Water Supply System includes (1) BRA's water rights in the eleven BRA System reservoirs, (2) other water rights and supply sources, such as contract water, and (3) the facilities, infrastructure and properties, such as BRA's raw water pipelines, insofar as they are related to making water available. BRA's customers include municipalities, water districts, water supply corporations, agricultural irrigators, steam electric generating facilities, manufacturing entities, and mining operations. Water is supplied to these customers through water supply contracts that are generally classified by BRA as either long-term (term greater than five years) or short-term (term of five years or less). Use of water under contracts issued by the BRA must comply with BRA's underlying water rights, as well as BRA's Water Conservation Plan and Drought Contingency Plan. Since 1991, BRA has used a standard form contract for long-term water supplies.

3.1.1 Long-Term Contracts

As of November 1, 2012, the BRA had 146 long-term water supply contracts providing for the diversion and use of approximately 696,719 acft of water per year. Table 3.1 lists these contracts and summarizes their key elements. Two subordination agreements, one between the BRA and the City of Abilene and West Central Texas Municipal Water

District, and another between BRA and the City of Lubbock, are also listed in Table 3.1. The annual amounts for these agreements, as listed in Table 3.1, represent the estimated firm yield reduction at Possum Kingdom Lake due to the subordination of Possum Kingdom Lake in these agreements. Figure 3.1 shows the total amount of water under long-term contracts by type of use. Figure 3.2 shows total authorized diversions under existing contracts by diversion location; however, it is important to note that not all of this water is currently being used.

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type¹	Contract Type²	Diversion Locations	Annual Amount (acft)	Expiration Date
439 WATER SUPPLY CORP.	439WSC SWAA 1	MU	SWAA	Lake Belton	560	8/31/2022
439 WATER SUPPLY CORP.	439WSC SWAA 2	MU	SWAA	Lake Belton	849	8/31/2029
ABILENE, CITY OF	--	--	SUB	Possum Kingdom Lake	14,000	See Note 3
ACTON MUNICIPAL UTILITY DIST.	ACTON MUD	MU	LT	Lake Granbury	1,000	12/31/2033
ACTON MUNICIPAL UTILITY DIST.	ACTON SWSA	MU	SWSA	Lake Granbury	4,000	8/31/2048
ACTON MUNICIPAL UTILITY DIST.	ACTON-OP	MU	2T	Lake Granbury	2,000	12/31/2041
ALL SEASONS TURF GRASS	ALL SEASONS 50	IR	SWAA	Hempstead gage to Richmond gage	50	8/31/2026
ALUMINUM COMPANY OF AMERICA	SES ALCOA	IN	LT	Little Rv/ San Gabriel Rv confluence to Little Rv nr Cameron gage	5,000	12/31/2019
AQUILLA WATER SUPPLY DISTRICT	AQUILLA WSD	MU	SWSA	Lake Aquilla	5,953	12/31/2040
BASA RESOURCES INC.	BASA 07	MI	SWAA	Possum Kingdom Lake	1,000	8/31/2026
BELL CO. WATER CONTROL & IMP.	BCWCID #1	MU	SWAA	Lake Belton	13,000	8/31/2031
BELL COUNTY WCID #1	BELL WCID-OP	MU	2T	Lake Belton	49,509	12/31/2041
BELTON, CITY OF	BELTON-OP	MU	2T	Lake Belton	2,500	12/31/2041
BLUEBONNET WATER SUPPLY CORP.	BLUEBONNET	MU	LT	Lake Belton	1,600	9/30/2021
BLUEBONNET WATER SUPPLY CORP.	BLUEBONNET_SW SA	MU	SWSA	Lake Belton	567	12/31/2041
BLUEBONNET WATER SUPPLY CORP.	BLUEBONNET2	MU	LT	Lake Belton	1,450	7/31/2021
BLUEBONNET WATER SUPPLY CORP.	BLUEBONNET-OP	MU	2T	Lake Belton	4,684	12/31/2041
BOSQUE GENERATING, L. P.	LS POWER 07	IN	SWAA	Lake Whitney Dam to Aquilla Creek/Brazos Rv confluence	6,500	8/31/2037
BRAZOS ELECTRIC POWER COOP	BEPC-07	IN	SWAA	Possum Kingdom Lake	8,000	8/31/2055
BRAZOS ELECTRIC POWER COOP.	FERC_MIN_FLOW	OT	LT	Possum Kingdom Lake Dam to Palo Pinto gage	3,600	3/26/2019
BRENHAM, CITY OF	BRENHAM 03	MU	SWAA	Lake Somerville	4,200	8/31/2047
BRUSHY CREEK MUD	BRUSHY CREEK	MU	SWSA	Lake Georgetown	4,000	8/31/2036
CARR-THOMAS RANCH	CARR-THOMAS	IR	SWAA	Palo Pinto gage to Dennis gage	50	8/31/2013
CENTRAL TEXAS WATER SUPPLY COR	CEN TEX 3	MU	SWSA	Lake Stillhouse Hollow	895	8/31/2017

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type¹	Contract Type²	Diversion Locations	Annual Amount (acft)	Expiration Date
CENTRAL TEXAS WSC	CEN TEX 4	MU	SWAA	Lake Stillhouse Hollow	1,000	8/31/2030
CENTRAL TEXAS WSC	CEN TEX WSC-OP	MU	2T	Lake Stillhouse Hollow	100	12/31/2041
CENTRAL TEXAS WSC	CEN TEX-OP	MU	2T	Lake Stillhouse Hollow	3,100	12/31/2041
CENTRAL TEXAS WTR SUPPLY CORP.	CEN TEX	MU	LT	Lake Stillhouse Hollow	6,950	7/31/2020
CHISHOLM TRAIL SUD	CHISHOLM SWAA	MU	SWAA	Lake Georgetown	4,760	8/31/2048
CHISHOLM TRAIL SUD	CHISHOLM TRAIL	MU	SWAA	Lake Stillhouse Hollow	6,340	8/31/2048
CITATION OIL & GAS	CITATION AA HS	MI	SWAA	Possum Kingdom Lake	175	8/31/2012
CLEBURNE, CITY OF	CLEBURNE	MU	SWSA	Lake Whitney	4,700	12/31/2032
CLEBURNE, CITY OF	CLEBURNE 2	MU	SWSA	Lake Aquilla	5,300	12/31/2032
CLEBURNE, CITY OF	CLEBURNE 3	MU	SWAA	Lake Whitney	5,000	8/31/2032
CORYELL CITY WATER SUPPLY DIST	CORYELL WSD	MU	SWAA	Lake Belton	300	8/31/2025
COUNTRY HARVEST	COUNTRY HRVST 2	IR	SWAA	Lake Stillhouse Hollow Dam to Lampasas Rv nr Belton	8	8/31/2014
DECORDOVA BEND STATES OWNERS	DECORDOVA 100	IR	SWAA	Lake Granbury	100	8/31/2021
DECORDOVA BEND STATES OWNERS	DECORDOVA 300	IR	SWAA	Lake Granbury	300	8/31/2018
DOG RIDGE WSC	DOG RIDGE	MU	SWAA	Lake Stillhouse Hollow	1,500	8/31/2030
DOUBLE DIAMOND/CLIFFS	CLIFF WTP	MU	SWAA	Possum Kingdom Lake	1,000	12/31/2034
DOW PIPELINE COMPANY	DOW	IN	2T	Richmond gage to Rosharon gage	16,000	12/31/2021
EAST WILLIAMSON CO WATER	EWCRWL	MU	FLEX	Lake Granger	13,000	See Note 4
EXELON GENERATION CO, LLC	WOLF HOLLOW	IN	SWAA	Lake Granbury	10,000	8/31/2032
FORT GATES WSC	FORT GATES WSC	MU	SWAA	Lake Belton	200	8/31/2031
FORT GRIFFIN SUD	SHACKELFORD	MU	SWAA	Possum Kingdom Lake	353	8/31/2052
FRED T. OWEN, JR.	OWEN	MU	SWSA	Lake Whitney	60	12/31/2040
GATESVILLE, CITY OF	GATESVILLE	MU	LT	Lake Belton	4,000	8/31/2021
GATESVILLE, CITY OF	GATESVILLE 2	MU	SWAA	Lake Belton	450	8/31/2045
GATESVILLE, CITY OF	GATESVILLE SWSA	MU	SWSA	Lake Belton	248	8/31/2045
GATESVILLE, CITY OF	GATESVILLE-OP	MU	2T	Lake Belton	1,200	12/31/2041
GEORGETOWN, CITY OF	GEORGETOWN	MU	SWAA	Lake Stillhouse Hollow	10,000	8/31/2040
GEORGETOWN, CITY OF	GEORGETOWN GE	MU	SWAA	Lake Georgetown	6,720	8/31/2050
GEORGETOWN, CITY OF	GEORGETOWN SH	MU	SWAA	Lake Georgetown	15,448	8/31/2040
GRAHAM, CITY OF	GRAHAM-OP	MU	2T	Possum Kingdom Lake	1,000	12/31/2041
GRANBURY RECREATIONAL ASSOC	GRANBURY REC 10	IR	SWAA	Lake Granbury	50	8/31/2029
GRANBURY, CITY OF	GRANBURY GB98	MU	SWSA	Lake Granbury	10,800	8/31/2048

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type ¹	Contract Type ²	Diversion Locations	Annual Amount (acft)	Expiration Date
GULF COAST WATER AUTHORITY	GCWA 07	IN	SWAA	Hempstead gage to Richmond gage	30,020	8/31/2027
GULF COAST WATER AUTHORITY	GCWA98	IN	SWSA	Richmond gage to Rosharon gage	9,335	12/31/2022
HARKER HEIGHTS, CITY OF	HARKER 2	MU	SWAA	Lake Stillhouse Hollow	300	8/31/2031
HARKER HEIGHTS, CITY OF	HARKER 3	MU	SWAA	Lake Belton	3,235	8/31/2031
HIGH GABRIEL WATER SUPPLY CORP	HIGH GABRIEL-OP	MU	2T	Lake Stillhouse Hollow	310	12/31/2041
HILL COUNTRY HARBOR VILLAGE	HARBOR VILLAGE	IR	SWAA	Possum Kingdom Lake	250	8/31/2046
HORIZON TURF GRASS, INC.	HORIZON 08	IR	SWAA	Little Brazos confluence to Brazos at Hwy 21 Bryan	200	8/31/2027
HORIZON TURF GRASS, INC.	HORIZON LT	IR	SWAA	Brazos at Hwy 21 Bryan to Yegua Brazos confluence	150	8/31/2021
JARRELL-SCHWERTNER WTR SUPPLY	JARRELL-SCHWERT	MU	SWAA	Lake Stillhouse Hollow	1,000	8/31/2034
JERRY GLAZE	GLAZE	IR	SWSA	Lake Stillhouse Hollow	100	8/31/2047
JOHNSON COUNTY RWSC	JOHNSON RWSC	MU	SWAA	Lake Granbury	13,210	8/31/2048
JONAH SPECIAL UTILITY DIST.	JONAH	MU	2T	Lake Stillhouse Hollow	1,239	12/31/2040
JONAH SPECIAL UTILITY DISTRICT	JONAH-SWSA	MU	SWSA	Lake Stillhouse Hollow	1,200	8/31/2045
KEMPNER WATER SUPPLY CORP.	KEMPNER	MU	LT	Lake Stillhouse Hollow	2,650	7/31/2021
KEMPNER WATER SUPPLY CORP.	KEMPNER 1	MU	SWAA	Lake Stillhouse Hollow	2,000	8/31/2031
KEMPNER WATER SUPPLY CORP.	KEMPNER SWAA	MU	SWAA	Lake Stillhouse Hollow	2,000	8/31/2029
KEMPNER WATER SUPPLY CORP.	KEMPNER-OP	MU	2T	Lake Stillhouse Hollow	500	12/31/2041
KEMPNER WATER SUPPLY CORP.	Kempner 12	MU	SWAA	Lake Stillhouse Hollow	1,750	9/30/2030
KEY ENERGY SERVICES, LLC	MATTHEWS	MI	SWAA	Dennis gage to Lake Granbury	44	8/31/2015
KING RANCH TURFGRASS, LP	KING RANCH 09	IR	SWAA	Lake Granbury	760	8/31/2021
KING RANCH TURFGRASS, LP	KING RANCH 09.1	IR	SWAA	Yegua Brazos confluence to Navasota Brazos confluence	540	8/31/2021
LAKE PROCTOR IRR AUTHORITY	LP1A 12	IR	SWAA	Lake Proctor	3,743	8/31/2020
LAKE WHITNEY WATER COMPANY	HILCO UNITED	MU	SWSA	Lake Aquilla	150	8/31/2033
LAMPASAS, CITY OF	LAMPASAS	MU	LT	Lake Stillhouse Hollow	1,000	7/31/2021
LAMPASAS, CITY OF	LAMPASAS 2	MU	SWAA	Lake Stillhouse Hollow	2,000	8/31/2029
LAMPASAS, CITY OF	LAMPASAS-OP	MU	2T	Lake Stillhouse Hollow	500	12/31/2041
LENMO INC.	LENMO 2	IR	SWAA	Lake Granbury	1,650	8/31/2015
LENMO INC.	LENMO 3	IR	SWAA	Lake Granbury	350	8/31/2015
LIBERTY HILL WATER SUPPLY CORP	LIBERTY_SWAA	MU	SWAA	Lake Georgetown	600	4/1/2034
LORENA, CITY OF	LORENA	MU	SWSA	Aquilla Creek/ Brazos Rv confluence to Highbank gage	1,000	8/31/2047
LSF DEVELOPMENT CORP.	HALL 90	MU	SWAA	Lake Granbury	90	8/31/2031
LUBBOCK, CITY OF	LUBBOCK	MU	LT	Possum Kingdom Lake	961	See Note 5
LUBBOCK, CITY OF	--	--	SUB	Possum Kingdom Lake	400	See Note 6

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type ¹	Contract Type ²	Diversion Locations	Annual Amount (acft)	Expiration Date
MARLIN, CITY OF	MARLIN 09	MU	SWAA	Aquilla Creek/ Brazos Rv confluence to Highbank gage	1,200	8/31/2040
MCGREGOR, CITY OF	MCGREGOR-OP	MU	2T	Lake Belton	810	12/31/2041
MOFFAT WATER SUPPLY CORP	MOFFAT-09	MU	SWAA	Lake Belton	500	8/31/2039
MONARCH UTILITIES I, L.P.	MONARCH	MU	SWAA	Lake Granbury	600	8/31/2022
MT LAKES RANCH PROPERTY	BLUEGREEN	IR	SWSA	Lake Granbury Dam to Glen Rose gage	200	8/31/2016
NORTH LEON RIVER IRR CORP	NLRIC 12	IR	SWAA	Lake Proctor Dam to Leon Rv at Gatesville	2,909	8/31/2020
NORTH RIDGE CORPORATION	NORTH RIDGE	MI	SWAA	Possum Kingdom Lake	235	8/31/2016
NRG TEXAS POWER, LLC	NRG-LL-LT	IN	SWAA	Lake Limestone	7,837	8/31/2037
NRG TEXAS, LLC	TXGENCO LL 2	IN	EU	Lake Limestone	5,026	12/31/2029
NRG TEXAS, LLC	TXGENCO LL 3	IN	EU	Lake Limestone	8,974	7/15/2015
NRG TEXAS, LLC	TXGENCO RICH	IN	EU	Hempstead gage to Richmond gage	83,000	12/31/2030
OAK GROVE MANAGEMENT, LLC	OAK GROVE 08	IN	SWAA	Lake Limestone	3,838	8/31/2050
PARKER COUNTY SUD	PARKER SUD	MU	SWAA	Dennis gage to Lake Granbury	700	8/31/2048
PECAN GROVE MUD	PECAN GROVE 10	MU	SWAA	Richmond gage to Rosharon gage	700	8/31/2040
PECAN GROVE MUD	PECAN GROVE MUD	MU	SWAA	Richmond gage to Rosharon gage	3,100	8/31/2057
PECAN PLANTATION OWNER'S ASSOC	PECAN PLANT 08	IR	SWAA	Lake Granbury	250	8/31/2014
PECAN PLANTATION OWNERS ASSOC.	PECAN 500	IR	SWAA	Lake Granbury	500	8/31/2021
POSSUM KINGDOM WSC	PK WSC 09	MU	SWAA	Possum Kingdom Lake	750	8/31/2048
RANCH OWNER'S ASSOCIATION	RANCH OWNER'S	IR	SWAA	Possum Kingdom Lake	250	8/31/2046
REX R. WORRELL	WORRELL	IR	SWSA	Lake Granbury	300	8/31/2021
RICHMOND, CITY OF	RICHMOND 09	MU	SWAA	Richmond gage to Rosharon gage	172	8/31/2050
RICHMOND, CITY OF	RICHMOND SWAA	MU	SWAA	Richmond gage to Rosharon gage	2,760	8/31/2050
ROSEBUD, CITY OF	ROSEBUD	MU	LT	Aquilla Creek/ Brazos Rv confluence to Highbank gage	100	3/22/2015
ROSENBERG, CITY OF	ROSENBERG SWAA	MU	SWAA	Richmond gage to Rosharon gage	4,500	8/31/2050
ROUND ROCK, CITY OF	ROUND ROCK 05	MU	SWAA	Lake Georgetown	9,484	8/31/2051
ROUND ROCK, CITY OF	ROUND ROCK 4500	MU	SWAA	Lake Georgetown	4,500	8/31/2052
ROUND ROCK, CITY OF	ROUND ROCK GG	MU	SWAA	Lake Georgetown	6,720	8/31/2050
ROUND ROCK, CITY OF	ROUND ROCK LCRA	MU	SWAA	Lake Georgetown	6,944	8/31/2051
ROUND ROCK, CITY OF	ROUND ROCK SH	MU	SWAA	Lake Georgetown	18,134	8/31/2040
SALADO WATER SUPPLY CORP.	SALADO	MU	LT	Lake Stillhouse Hollow	800	10/31/2021
SALADO WATER SUPPLY CORP.	SALADO 2	MU	SWSA	Lake Stillhouse Hollow	800	8/31/2036
SLC WATER SUPPLY	SLCWSC	MU	SWSA	Lake Limestone	200	8/31/2045
SOUTH TEXAS WATER CO.	STWC	IR	LT	Richmond gage to Rosharon gage	5,625	12/31/2024

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type ¹	Contract Type ²	Diversion Locations	Annual Amount (acft)	Expiration Date
SPORTSMAN'S WORLD M.U.D.	SPORTSMANS	MU	SWSA	Possum Kingdom Lake	125	12/31/2021
STAMFORD, CITY OF	STAMFORD	MU	SWAA	Possum Kingdom Lake	1,820	8/31/2041
STEPHENS COUNTY RURAL WSC	STEPHENS COUNTY	MU	SWAA	Possum Kingdom Lake	800	8/31/2053
SUGAR LAND, CITY OF	SUGAR LAND 10	MU	SWAA	Richmond gage to Rosharon gage	4,588	8/31/2040
SUGARTREE, INC.	SUGARTREE 12	IR	SWAA	Palo Pinto gage to Dennis gage	500	8/31/2040
SUN CITY GEORGETOWN	DEL WEBB	IR	SWSA	Lake Granger	15	8/31/2045
TEMPLE, CITY OF	TEMPLE	MU	LT	Lake Belton Dam to Leon Rv nr Belton	18,500	See Note 7
TEMPLE, CITY OF	TEMPLE 2	MU	SWAA	Lake Belton Dam to Leon Rv nr Belton	2,500	8/31/2047
TEMPLE, CITY OF	TEMPLE-OP	MU	2T	Lake Belton Dam to Leon Rv nr Belton	9,453	12/31/2041
TEXAS MUNICIPAL POWER AGENCY	SES TMPA	IN	EU	Easterly gage to Brazos Rv/Navasota Rv confluence	3,600	12/31/2030
TEXAS PARKS & WILDLIFE DEPT.	TP&W 12	IN	SWAA	Possum Kingdom Lake Dam to Palo Pinto gage	1,200	12/31/2021
THE GROVE WATER SUPPLY CORP.	GROVE_SWAA-2	MU	SWAA	Lake Belton	400	8/31/2029
TXU ELECTRIC COMPANY	SES TUECO	IN	EU	Lake Limestone	16,026	7/15/2015
TXU ELECTRIC COMPANY	SES TUECO 2	IN	EU	Lake Limestone	8,974	12/31/2029
TXU ELECTRIC COMPANY	SES TUECO_EX	IN	EU	Possum Kingdom Lake	14,000	12/31/2030
TXU ELECTRIC COMPANY	SES TUECO_GB	IN	EU	Lake Granbury	40,000	10/31/2016
TXU ELECTRIC COMPANY	SES TUECO_PK	IN	EU	Possum Kingdom Lake	43,447	10/31/2016
UPPER LEON RIVER MUNICIPAL	ULRMWD 99	MU	SWSA	Lake Proctor	2,890	8/30/2049
UPPER LEON RIVER MWD	ULRMWD	MU	LT	Lake Proctor	3,315	See Note 8
UPPER LEON RIVER MWD	ULRMWD-2	MU	SWSA	Lake Proctor	232	12/31/2042
VULCAN CONST. MATERIALS, L.P.	VULCAN 2000	MI	SWAA	Palo Pinto gage to Dennis gage	1,000	8/31/2019
WELLBORN SPECIAL UTILITY DIST.	WELLBORN_SWA A_2	MU	SWAA	Easterly gage to Brazos Rv/Navasota Rv confluence	4,000	8/31/2047
WESTERN COMPANY OF TEXAS, INC	WESTERN 11	MI	SWAA	Lake Granbury Dam to Glen Rose gage	1,000	8/31/2021

Table 3.1 BRA Long-Term Contracts

BRA Contract Name	BRA Contract ID	Use Type ¹	Contract Type ²	Diversion Locations	Annual Amount (acft)	Expiration Date
WHITE BLUFF PROPERTY OWNERS	WHITE BLUFF 12.1	IR	SWAA	Lake Whitney	1,000	8/31/2022
WHITNEY, CITY OF	WHITNEY	MU	SWSA	Lake Whitney	750	12/31/2033
WILDFLOWER COUNTRY CLUB	WILDFLOWER 12	IR	SWAA	Leon Rv nr Belton to Little Rv gage	200	8/31/2017

1 – Contract Use Types: MU-Municipal, IN- Industrial, IR- Irrigation, MI- Mining, OT- Other

2 – Long-Term Contract Types: SWAA- Surface Water Availability Agreement; SWSA -Surface Water Supply Agreement; 2T- Two Tier; EU- Electric Utility; LT- Long-Term Contract; FLEX- Water reserved in Lake Granger for the treatment capacity of the BRA East Williamson County Regional Water System(EWCRWS); SUB – Subordination Agreement

3 – Agreements between the BRA and the City of Abilene (City) and the West Central Texas Municipal Water District (District) include the subordination of the Possum Kingdom Lake to the existing authorization regarding Clear Fork Scalping into Lake Fort Phantom Hill and the District's Hubbard Creek Reservoir authorization. Additionally, Possum Kingdom Lake is subordinated to the City's proposed Cedar Ridge Project and the District's proposed Clear Fork Scalping project into Hubbard Creek Reservoir. The total estimated yield impact of these agreements is 14,000 acre-feet per year at Possum Kingdom Lake and the agreements will continue for as long as the water rights in the agreements remain in effect.

4 – BRA reserves this water internally for future treated water needs from its EWCRWS.

5 – BRA agreement with the City of Lubbock for the firm yield impacts to Possum Kingdom Lake from Lake Alan Henry, perpetual terms.

6 – An agreement between the BRA and the City of Lubbock includes subordination of existing BRA water rights to the City's proposed projects (Lake No. 7 or the Post Reservoir Project). This subordination results in a reduction of firm yield of existing BRA water rights and the System Operation Permit by an estimated 400 acre-feet per year. The term of this agreement will continue for as long as the water rights referenced in this agreement remain in effect.

7 & 8 – The City of Temple LT and Upper Leon River Municipal Water District (ULRMWD) LT contracts will remain active as long as the BRA-Army Corps of Engineers contracts remain active.

Figure 3.1 – Long-Term Contracts by Use Type

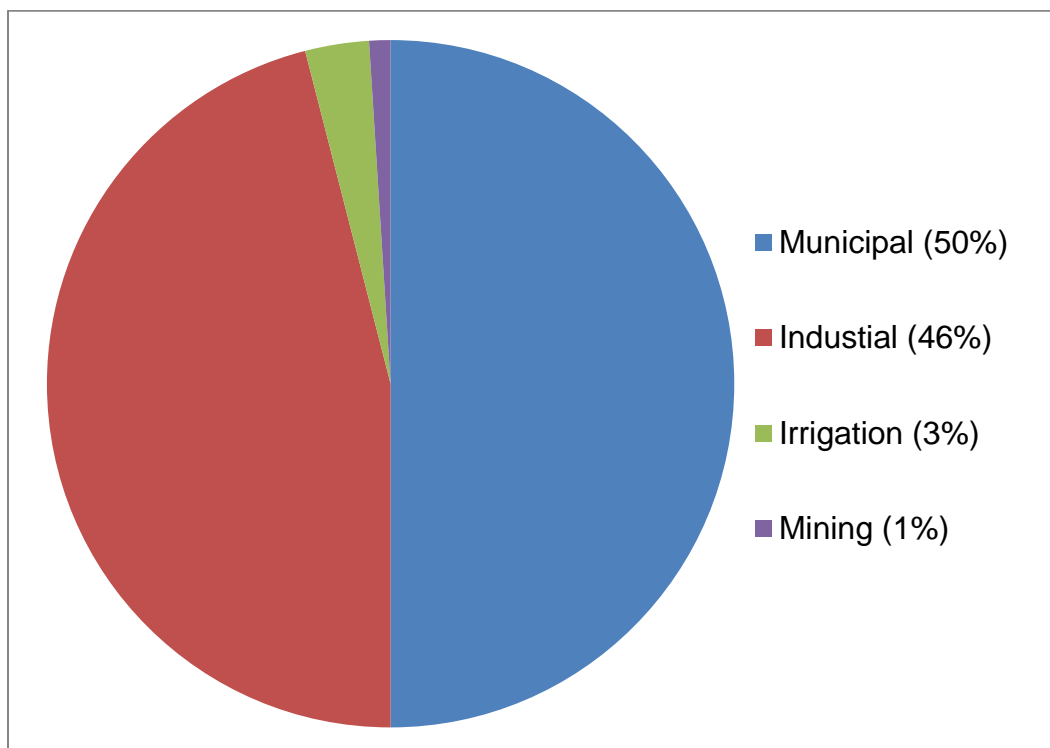
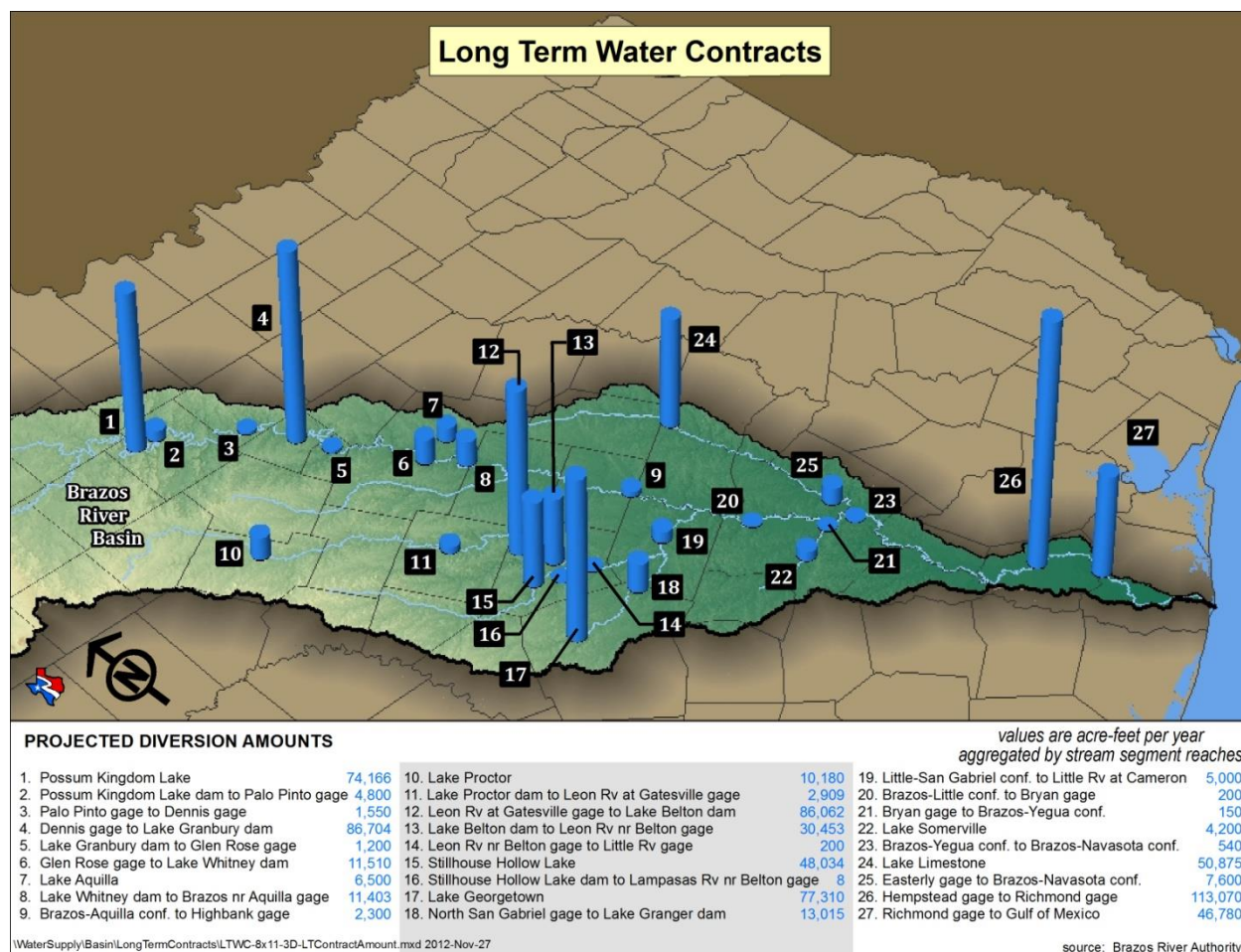


Figure 3.2 - Long-Term Water Contract Diversions



The oldest of these contracts date back over 60 years when Possum Kingdom Lake was the original and only System reservoir constructed. Today, long-term contracts are issued under a contract form referred to as a System Water Availability Agreement (SWAA). SWAAs typically have a term from six to thirty years. These agreements do not reserve water from a particular source for a customer but rather obligate the BRA to make available the quantity of water specified in the SWAA from the System under the terms and conditions of the SWAA. Particularly for customers located downstream of multiple reservoirs or sources of water, water may be delivered to the customer from any available source. SWAAs are “take or pay” agreements. The customer pays for the entire contracted amount each year regardless of how much water is actually diverted and used.

The rate per acre-foot per year for water sold under SWAAs (the System Rate¹) is established annually by the BRA Board of Directors based on a financial requirements analysis.

Long-term contracts are issued against the firm yield of the System or a portion of the System. Water obligated to be supplied under these agreements is expected to be available each year through a repeat of the drought of record. In contracting for this water, the BRA considers (1) the hydrologic capability of the System to physically provide the water through the term of the contract, and (2) the limitations of its water rights.

Currently, all water authorized for diversion and use under existing BRA water rights (i.e., water rights predating the proposed System Operation Permit) is committed under long-term contracts, except for a small emergency reserve. If the System Operation Permit is granted, future sales of long-term water will be against the new appropriation authorized by the System Operation Permit. These sales will be made using the SWAA or a subsequent standard BRA contract form, consistent with the WMP approved as part of the System Operation Permit.

3.1.2 Short-Term Contracts

Short-term contracts are issued for terms of five years or less. Currently, short-term contracts are issued under a contract form referred to as an Interruptible Water Availability Agreement (IWAA). Water supplied through IWAAs comes from storage reserved for future sediment accumulation in the existing reservoirs and unused water from prior years remaining in storage.

The amount of interruptible water that is made available from BRA's water rights is determined annually by the BRA Board of Directors. The Interruptible Water Sale Procedure, included as Appendix B-1, describes the current method for determining availability and contracting for the sale of this water.

¹ The System Rate is the rate charged to all BRA customers except for those using water for agricultural productivity purposes. The BRA Board of Directors has established an Agriculture Rate which is currently 70% of the System Rate.

Additional sources of interruptible water may be offered in the future under the System Operation Permit, if issued. This additional interruptible, or non-firm water, will be derived primarily from wastewater return flows and run-of-river flows downstream of BRA System reservoirs. The terms of use and reliability of this interruptible water may differ from that of water sold under the current IWAA, so a new interruptible contract form may be required to account for these differences and to ensure compliance with authorizations of the System Operation Permit.

Similar to SWAAs, IWAAs are “take or pay” contracts with the rate being established annually by the BRA Board of Directors. In addition to IWAAs, the BRA offers several other types of contracts for small quantities and “one-time” use of water, such as for construction and well drilling projects.

3.1.3 Customer Location

BRA supplies water to its customers from the perimeter of the System reservoirs (lakeside customers) and from the rivers downstream of the System reservoirs (downstream customers). Lakeside customers divert water from the reservoirs as needed under the terms of their contracts and report their water use to the BRA the following month. Unless diversions are being made under the Excess Flows Permit, downstream customers must request a release from storage before diverting water under their BRA contracts. BRA considers the time of travel and estimated losses from the reservoir to the diversion point downstream when making releases for downstream customers.

Diversion under BRA’s Excess Flows Permit, as discussed in Section 2.2.3, is also allowed under certain streamflow conditions for non-priority diversions and use of run-of-river flows along the Brazos River in Austin and Fort Bend Counties.

Under the proposed System Operation Permit, BRA anticipates that downstream customers will be able to divert water from the river under their BRA contracts, which could include diversions of return flows or other interruptible supplies, without a release being made from an upstream reservoir when environmental flow requirements contained in the WMP are met.

3.2 Water Sale Considerations

Requests for new long-term contracts are evaluated in accordance with the BRA's Policy for Water Sale and Use and its Raw Water Sale Procedure. These documents are included in Appendix B-2. The procedure requires the BRA to evaluate several factors when considering the sale of long-term water. Primarily, long-term water sales must fall within regulatory limitations set forth in BRA water rights, and the BRA System must be expected to be able to supply the water through a repeat of the drought of record. The proposed diversion location must be situated at or downstream of BRA sources of water supply. The BRA also evaluates the need for the water with particular attention as to whether the need is identified in the approved Regional and State Water Plans.

The amount of interruptible water made available each year under BRA water right authorizations is established annually. Consideration of interruptible water sales is documented in the Interruptible Water Sale Procedure contained in Appendix B-1.

3.3 Demands

3.3.1 Historic and Current Demands

Water use by BRA customers has been increasing, on average, by approximately three to six percent per year since 1970. Figure 3.3 depicts water use from the BRA System from 1950 – 2011. Recently, water demand by BRA customers has totaled approximately 250,000 acft/yr in normal and wet years; however, in dry years water use can easily exceed 300,000 acft/yr. In the exceptional drought of 2011, BRA customers used approximately 488,000 acft. Of this amount, approximately 340,000 acft was used under long-term contracts, and approximately 148,000 acft was used under short-term contracts. Table 3.2 summarizes water use from the BRA System from 2007 – 2011.

Figure 3.3 - Annual Water Use from the BRA System

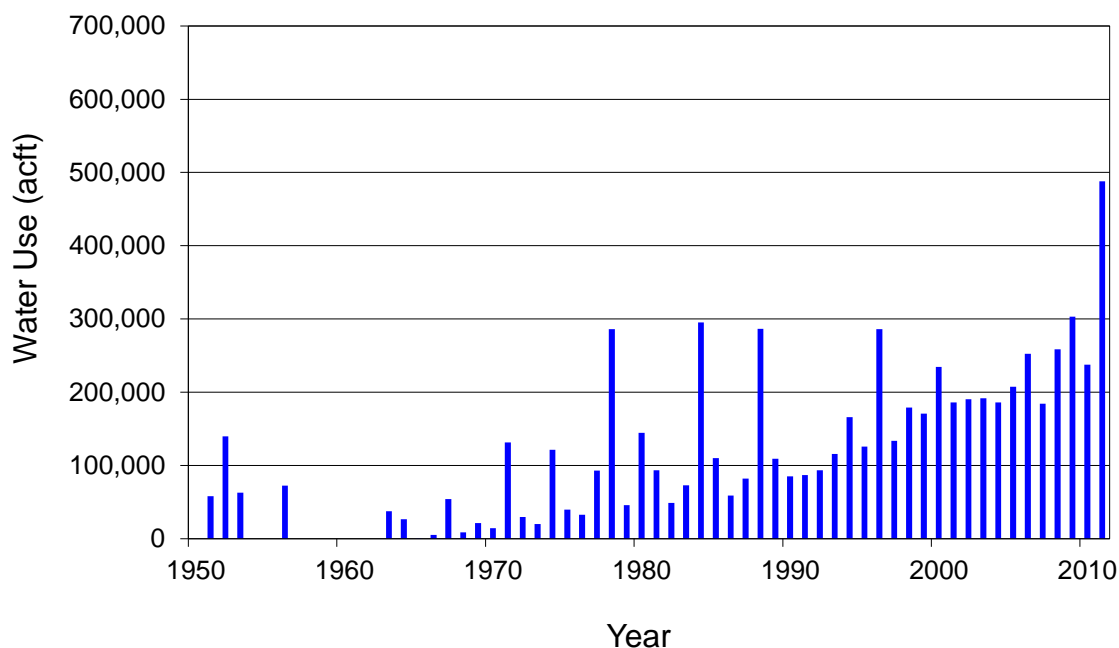


Table 3.2 - Water Use from BRA System (acft/yr)

Reservoir or Sub-System	2007 (Wet Yr)	2008	2009	2010	2011 (Dry Yr)
PK - Granbury – Whitney	57,167	93,234	97,279	64,345	170,100
Belton	36,280	52,463	95,003	45,354	75,547
Stillhouse – Georgetown	30,398	40,363	37,936	37,074	114,583
Granger	2,324	4,979	3,321	3,263	4,864
Limestone	21,009	36,242	40,905	40,645	63,878
Proctor	3,055	7,133	6,449	10,302	8,214
Aquilla	3,313	5,716	5,957	6,629	6,743
Somerville	2,752	3,499	11,978	3,488	41,507
Excess Flows	28,192	15,050	4,473	26,564	2,415
Total:	184,490	258,679	303,301	237,664	487,851

The large volatility in total water use between wet and dry years is driven primarily by three large BRA customers that divert water from the Brazos River in the lower basin: the GCWA, NRG, and the Dow Chemical Company (Dow). These customers all have their own substantial water rights for diverting water from the lower Brazos River. They

contract for water from the BRA to supplement these water rights. In most years, flows in the lower Brazos provide almost all of the water needed by these customers, and releases of upstream stored water under their BRA contracts are not needed. However, during dry years such as 2011, flows in the lower Brazos become inadequate for diversion under their water rights, and the release of upstream stored water is necessary.

3.3.2 Projected Future Demands

Projected future demands on the BRA System were estimated to determine water use at specified locations throughout the basin at various times in the future under BRA's existing water right authorizations and under the proposed System Operation Permit. The objective in developing these future demands was to analyze operation of the System under potential future demand scenarios using WAM. Additionally, anticipated reservoir drawdowns caused by future demands under existing authorizations and the proposed System Operation Permit can also be estimated. The following discussion addresses operational modeling of the BRA System under various scenarios.

Projected demands were compiled from: (1) data contained in the 2011 Brazos G and Region H Regional Water Plans; (2) information from BRA's contract and water use records; (3) operational studies conducted for the expansion of Luminant's CPNPP; and (4) results of water modeling efforts to determine shortages of large water rights located in the lower Brazos basin.

For operational modeling, if the BRA customer was not specifically listed in the regional water plans, but the customer's water demands were instead included within the aggregated water demands for a particular type of use, which is the case for many of the BRA contracts for irrigation, mining and industry, projected demands were defined by one of several methodologies:

- If the total contract amount was equal to or less than 500 acft/yr then the total contract amount was assumed.
- If use of the contract has historically been at or near the annual contract amount then the total contract amount was assumed.

- If the total contract amount was greater than 500 acft/yr and historical use under the contract was less than the annual allowable contract amount, then the historical average use for the last three years was assumed. A 10-year average (2002-2011) was assumed for demands associated with the NRG electric utilities contract near Richmond, Texas, due to the variability in use under this contract in the previous three years. In accordance with the September 23, 1980, agreement between BRA and NRG, NRG can use water under the Excess Flows Permit (COA 12-5166, as amended), when the Richmond gage exceeds 2,000 cfs. This use contributes to the variability of NRG's water use from the BRA System.

GCWA is a major water customer in the BRA System as well as a large downstream senior water right holder, with diversion locations both upstream and downstream of the USGS gage at Richmond. GCWA's run-of-river water rights from the Brazos River total 379,932 acft/yr with priority dates ranging from 1926 through 1983. Currently, GCWA also maintains 48,080 acft/yr of long-term contracts with BRA. The long-term contracts that GCWA maintains consist of 39,355 acft/yr that is held by GCWA, approximately 3,100 acft/yr that is a contract assignment from Pecan Grove Municipal Utility District, and a 5,625 acft/yr contract that was acquired from South Texas Water Company. The long-term contracts that GCWA holds serve as back-up supply when flows in the Brazos River are insufficient to meet demands using their run-of-river water rights. In developing the demands of GCWA on the BRA System, the run-of-river water rights were modeled under the Brazos WAM Run 3 (full authorization) version to determine maximum water right shortages. It is assumed that GCWA's demand will be near full authorization in the 2020 to 2030 timeframe (Daily Water Rights Accounting in the Lower Brazos basin, Intera, 2012), with shortages calculated at approximately 164,000 acft/yr. 2060 shortages for GCWA were obtained from the 2011 Region H Regional Water Plan. It is assumed that these 2060 shortages (approximately 226,000 acft/yr) will be satisfied, at least in part, from the BRA System with supply from existing long-term contracts, the System Operation Permit, and Allens Creek Reservoir.

Dow is another BRA lower basin customer with its own substantial water rights. Dow's water rights (COA 12-5328), which total 305,656 acft/yr, include diversions of 238,156

acft/yr from the Brazos River, with the remainder coming from Oyster Creek and Buffalo Camp Bayou. Priority dates for the Dow water rights range from 1929 to 1976. The Dow system includes the off-channel Brazoria and Harris reservoirs and associated canals to deliver water to Dow's facilities. Dow holds a long-term contract with BRA that authorizes an average annual use of 16,000 acft to supplement their other rights. No more than 48,000 acft may be used under this contract during a three-year period; however, all 48,000 acft may be used in a single year.

Typically Dow purchases interruptible water, if available, on 1-year to 5-year term lengths to preserve use under its long-term contract. In most years, Dow does not require water from the BRA System; however, during times of intense droughts, the streamflow downstream of Richmond becomes insufficient to meet Dow's needs for water. In these situations, requests are made by Dow for releases from BRA System reservoirs for use at Dow's diversion locations. Over the past 16 years, releases were made to Dow in four years: 1996, 2000, 2009 and 2011. In the same 16-year period, the maximum three-year average amount Dow has used is approximately 25,000 acft/yr between 2009 and 2011. In the remaining years during this period (1996-2010) the three-year average annual use ranges between 0 and about 11,000 acft/yr. Under the System demand scenarios compiled here, Dow's demand on the BRA System was limited to the existing long-term contract limit of 16,000 acft/yr.

The 2012 State Water Plan, as well as the regional plans for Brazos G and Region H, relies on the System Operation Permit as a water management strategy to meet future demands. The largest use of System Operation Permit water in the 2011 Brazos G Regional Water Plan is for water needs associated with the expansion of Luminant's CPNPP in Somervell County. Demands for the expansion were estimated from operational studies for the two new units at the facility (Supplemental Information for NRC (Nuclear Regulatory Commission) Request, Freese and Nichols, 2009). Total diversion amounts for operation of the new units are estimated at 90,152 acft/yr with a consumptive demand of 53,827 acft/yr. Approximately 36,325 acft/yr is estimated to be returned to Lake Granbury as treated blowdown. The 90,152 acft/yr total diversion for the new units at CPNPP is less than the 2011 Brazos G Regional Water Plan estimated total diversion

of 103,717 acft/yr. This higher demand level in the Brazos G plan is based on operation during high summer ambient temperatures, applied year round. The current estimated diversion of 90,152 acft/yr is based on a statistical analysis of historical air temperature conditions at CPNPP (Supplemental Information for NRC Request, Freese and Nichols, 2009).

In addition to the expansion at CPNPP, the Brazos G plan also includes use of System Operation Permit water for several water user groups with water needs totaling approximately 8,600 acft/yr in 2060. To supply the 90,152 acft/yr diversion for the Luminant expansion, it is anticipated that existing unassigned BRA contracts authorized to Luminant will be utilized (27,447 acft/yr) in addition to 62,705 acft/yr of new contractual water supplied from the System Operation Permit. The 2011 Brazos G and Region H Regional Water Plans indicate that the remaining firm yield from the System Operation Permit will be made available in the lower Brazos basin to meet projected demands primarily in Fort Bend and Brazoria Counties. The 2011 Region H Regional Water Plan recommends that approximately 25,350 acft/yr of water shortages be met with water supplied under the System Operation Permit in 2060.

Region H water shortages in the Brazos basin and adjacent coastal basins are projected to be much greater than what the 2011 Region H Regional Water Plan recommends be satisfied using water available from the System Operation Permit; however, water expected to be available from the BRA System Operation Permit is limited based upon the assumed expansion and use of water upstream at CPNPP. If the CPNPP expansion does not occur, more water can be made available from the System Operation Permit to meet projected shortages in the Region H area.

Various System demand scenarios were developed to estimate the growth of water use from the BRA System. Three time periods were selected to estimate demands:

- Current System demands (2011 water use),
- 2025 projected demands, and
- 2060 projected demands.

2011 water use was assumed for current System demands. Approximately 340,000 acft of water was used under existing long-term contracts and approximately 148,000 acft was used under interruptible supplies, which includes some unused long-term contract water sold by BRA's customers on a short-term wholesale basis to other water users.

2025 projected System demands were developed for two separate scenarios. One scenario includes Luminant's CPNPP expansion. The other scenario excludes the expansion and assumes use of water from the System Operation Permit primarily in Region H. Both 2025 scenarios include approximately 3,400 acft/yr of System Operations water use by Water Use Groups (WUGs) in Brazos G. It is anticipated that Allens Creek Reservoir will not be operational by the 2025 timeframe; however, if the expansion of CPNPP does not materialize, the additional yield from the System Operation Permit would be available within Region H. Thus, demands associated with Allens Creek Reservoir in the Region H plan are included in the 2025 demand scenario that excludes Luminant's expansion of CPNPP.

Projected System demand scenarios for 2060 parallel those for year 2025. One scenario includes Luminant's CPNPP expansion and another excludes the expansion. In each of the 2060 demand scenarios it is assumed that Allens Creek Reservoir will be operational. Additional information on projected demands can be found in Sections 2.4 and 4.3.

Projected use of water from the LCRA under House Bill 1437 is not included in any of the demand scenarios. The tabulated projected demands for each scenario can be found in Appendix C-1.

Table 3.3 - BRA System Demand Scenarios		
Scenario No.	Demand Scenario	Demands (acft)
1	Current (2011 Demands)	487,851
2	2025 without CPNPP Expansion	582,162
3	2025 with CPNPP Expansion	636,085
4	2060 without CPNPP Expansion	736,532
5	2060 with CPNPP Expansion	826,684

Table 3.3 lists the different BRA System demand scenarios along with the total system demand values compiled under each scenario. Graphical representations of each demand scenario with actual demands for each stream reach can be found in Figures 3.4 through 3.8.

Figure 3.4 - Current Demands

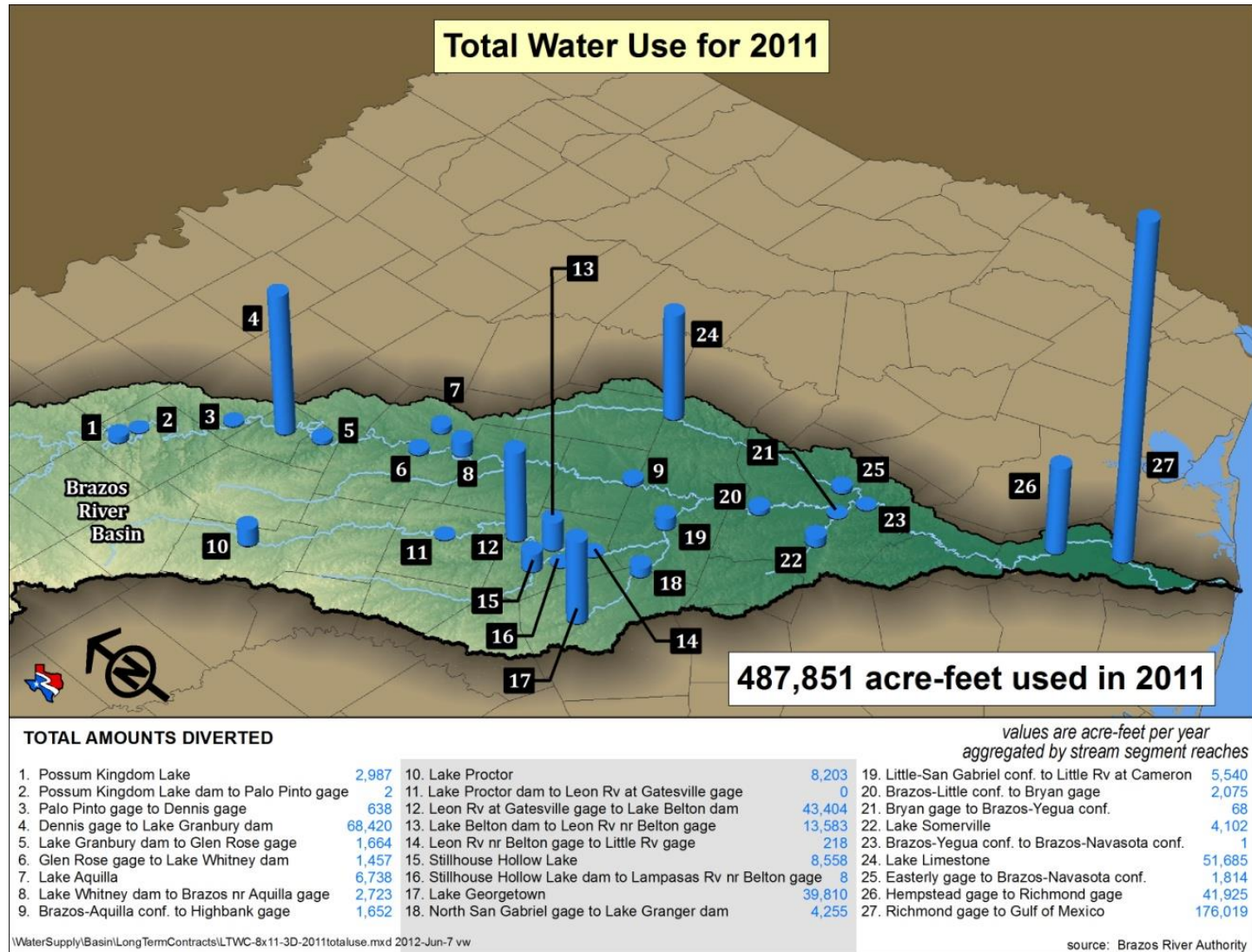


Figure 3.5 - 2025 Demands without CPNPP Expansion

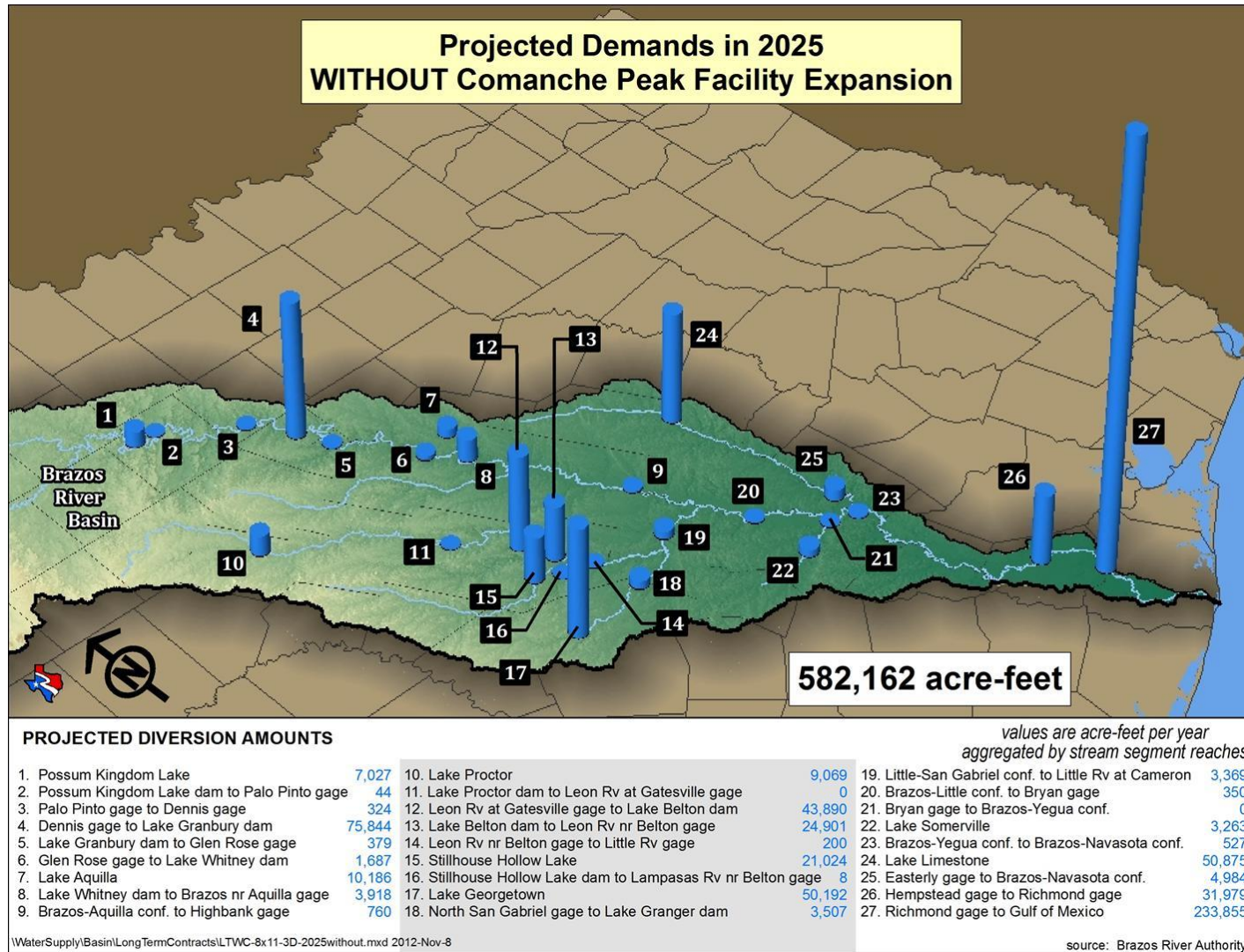


Figure 3.6 - 2025 Demands with CPNPP Expansion

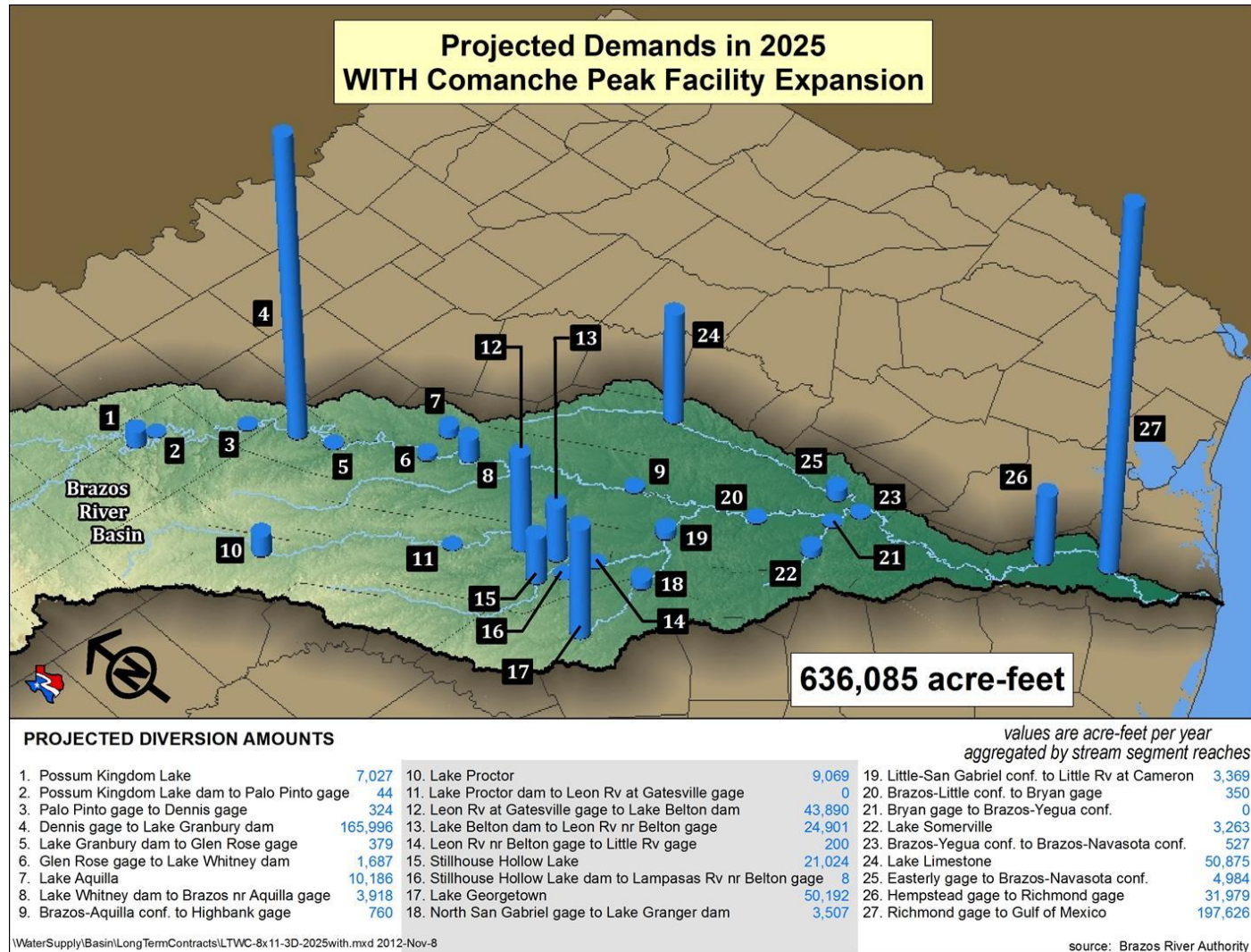


Figure 3.7 - 2060 Demands without CPNPP Expansion

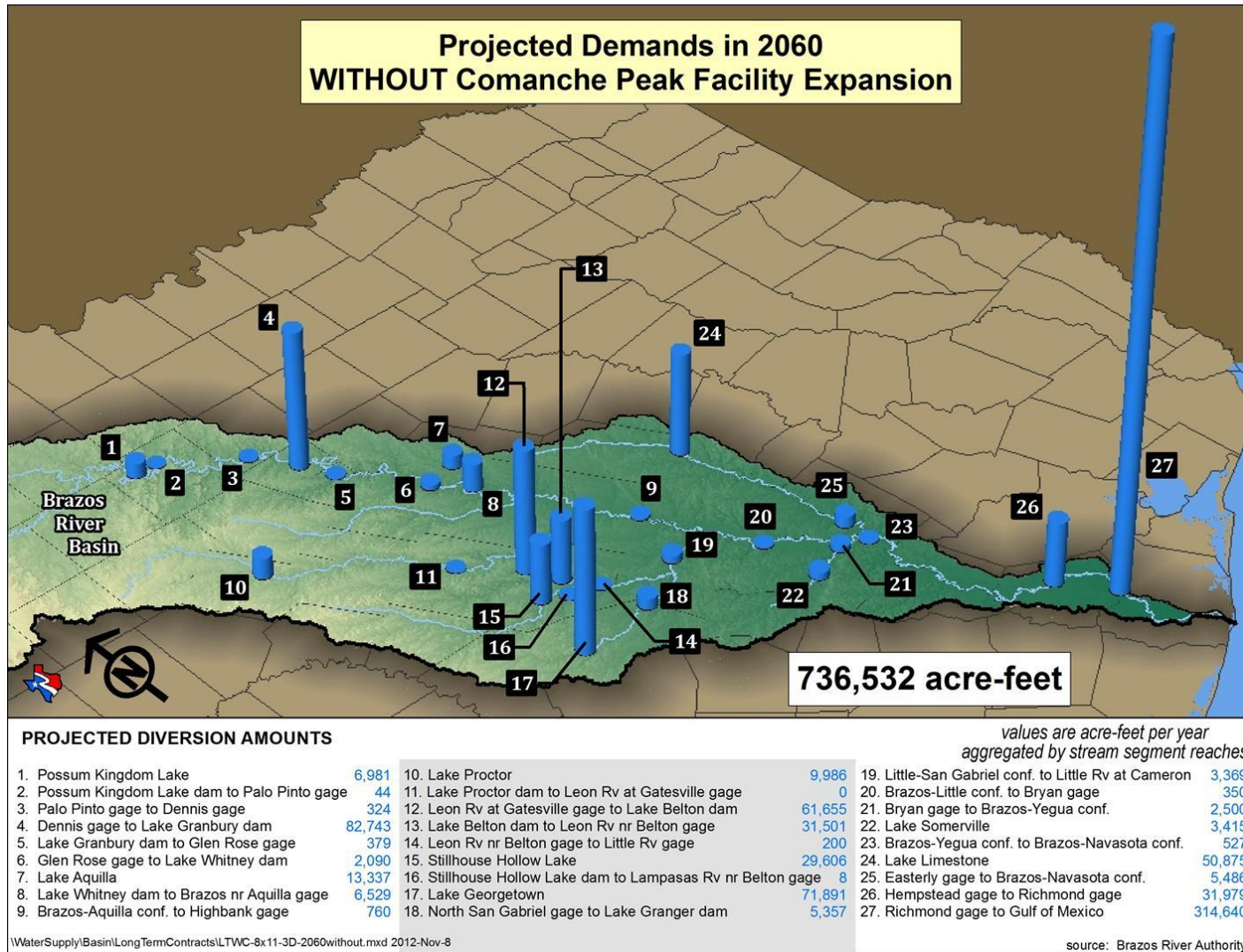


Figure 3.8 - 2060 Demands with CPNPP Expansion

