



Welcome

***Presented by
Phil Ford
General Manager/CEO***

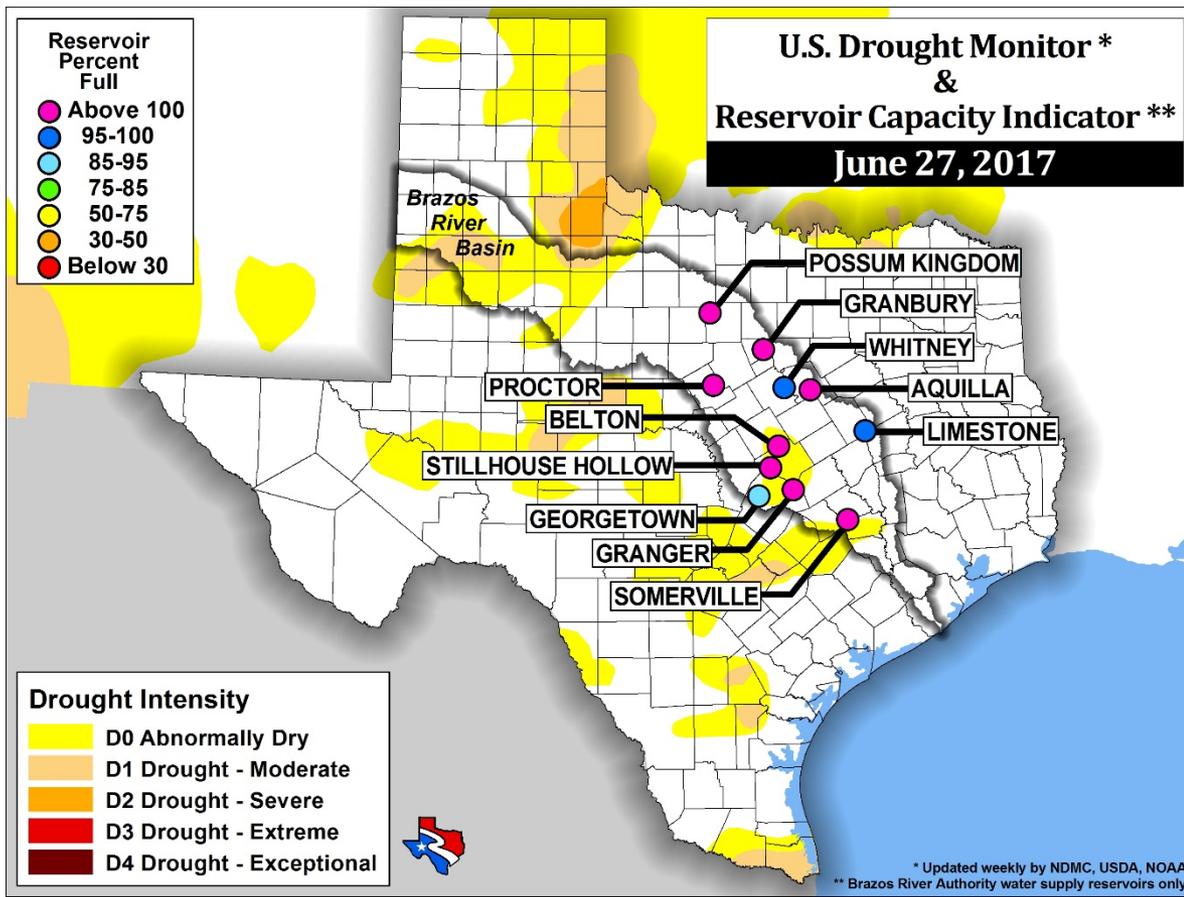
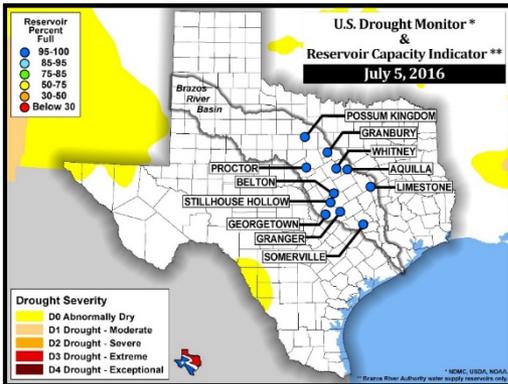
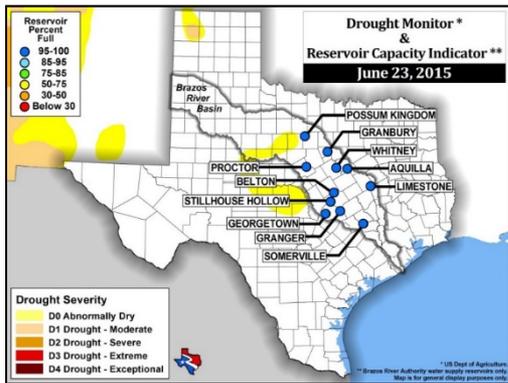


Water Supply

***Presented by
Brad Brunett
Water Services Manager***



Drought Monitor & Reservoir Status

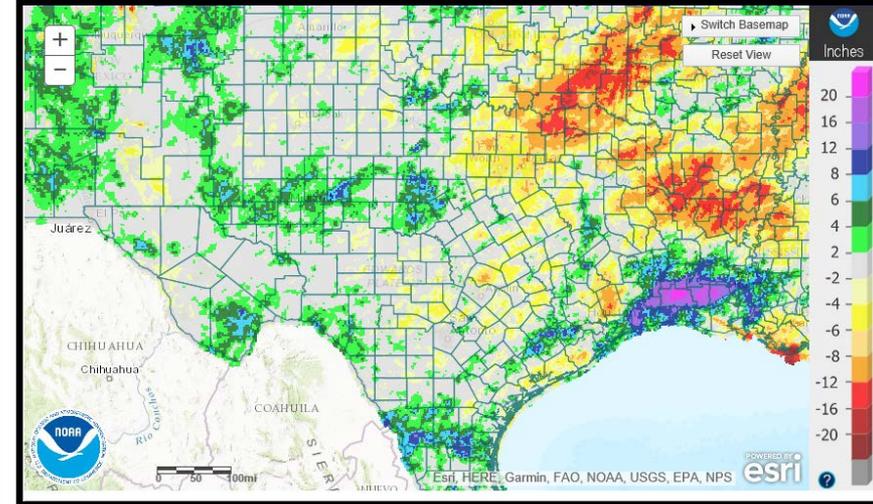
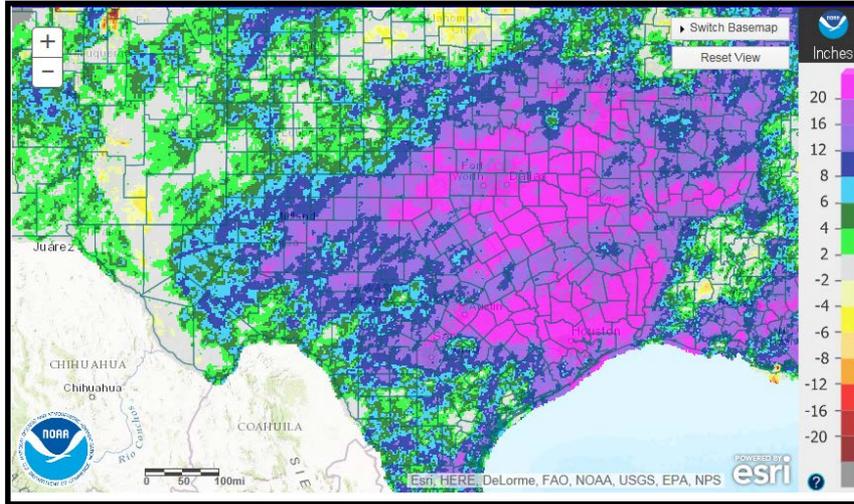




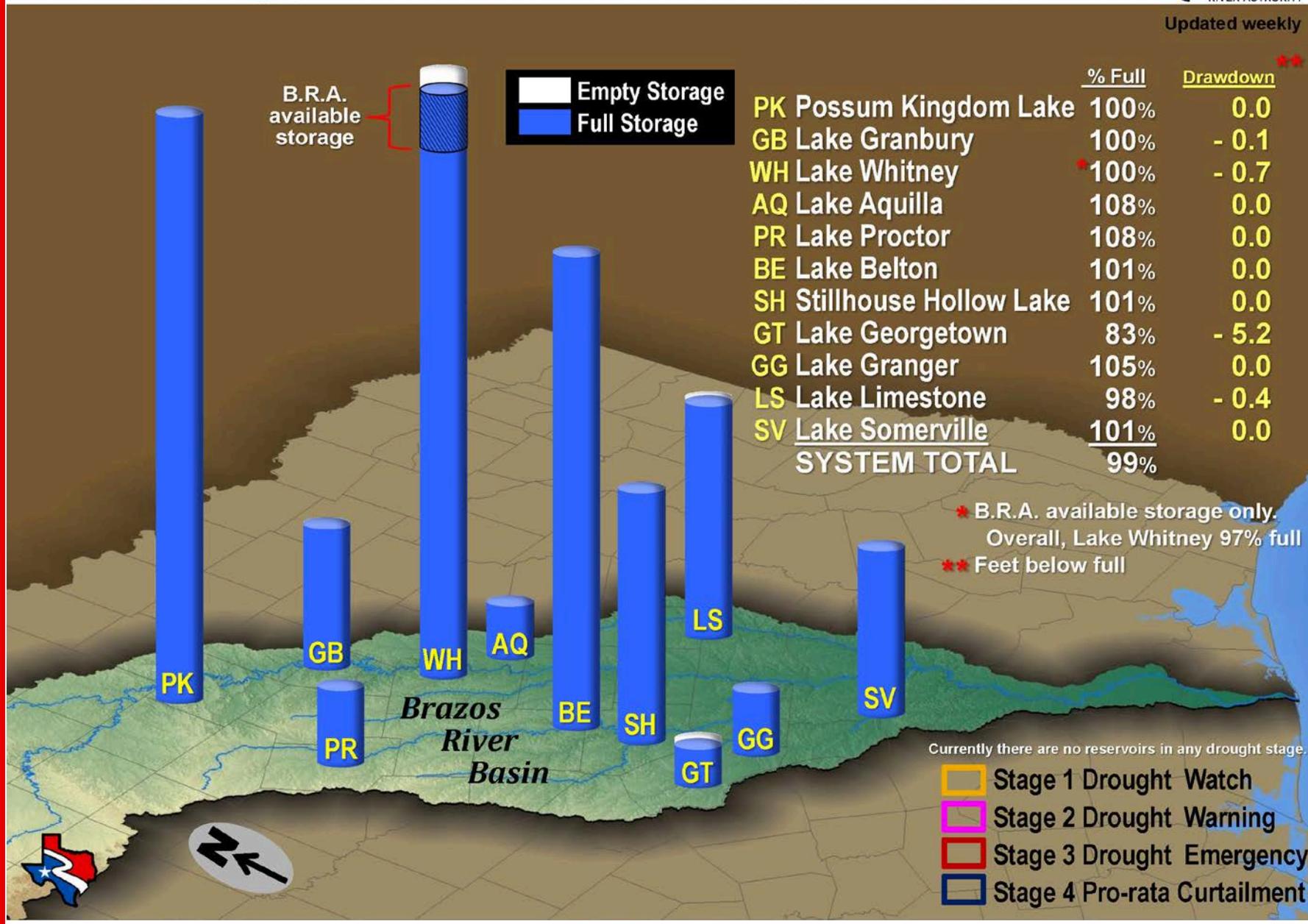
Departure from Normal Rainfall

October 1, 2015 – July 8, 2016

October 1, 2016 – June 14, 2017



B.R.A. Water Supply Reservoirs "PERCENT FULL" July 5, 2017





Drought Study Required by Sys Ops Permit

Requirement and Questions from the Permit:

In recognition of current drought conditions, BRA shall perform a detailed evaluation of whether the recently-ended drought:

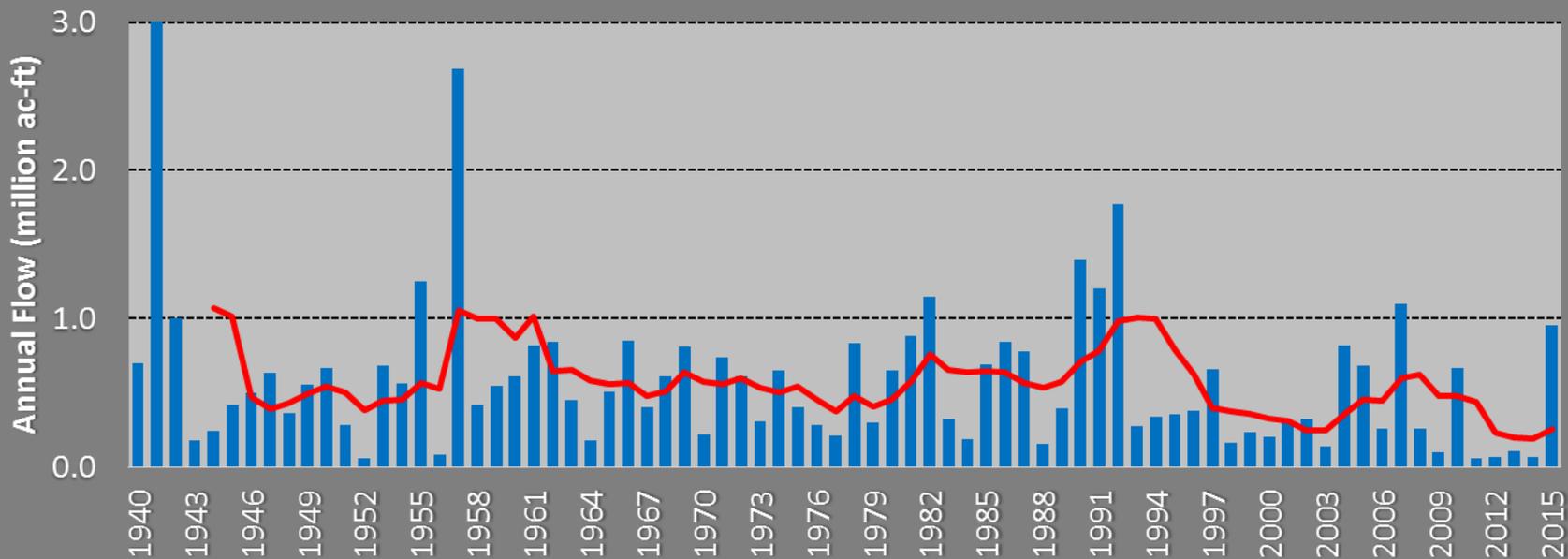
- (1) represents a drought worse than the drought of record of the 1950s in the Brazos River Basin; and***
- (2) decreases the amount of water available for appropriation under this permit.***



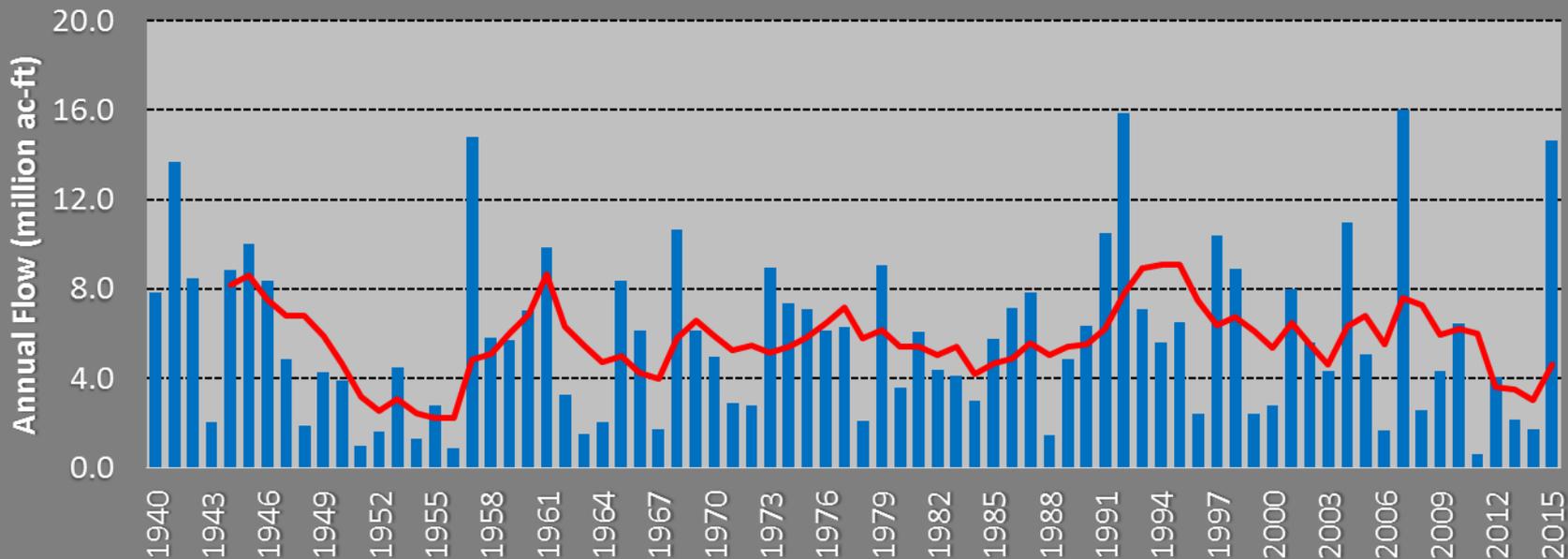
Brazos River Authority

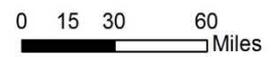
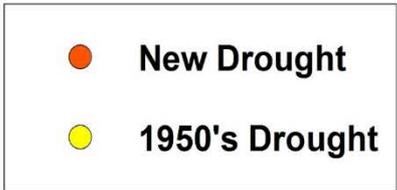
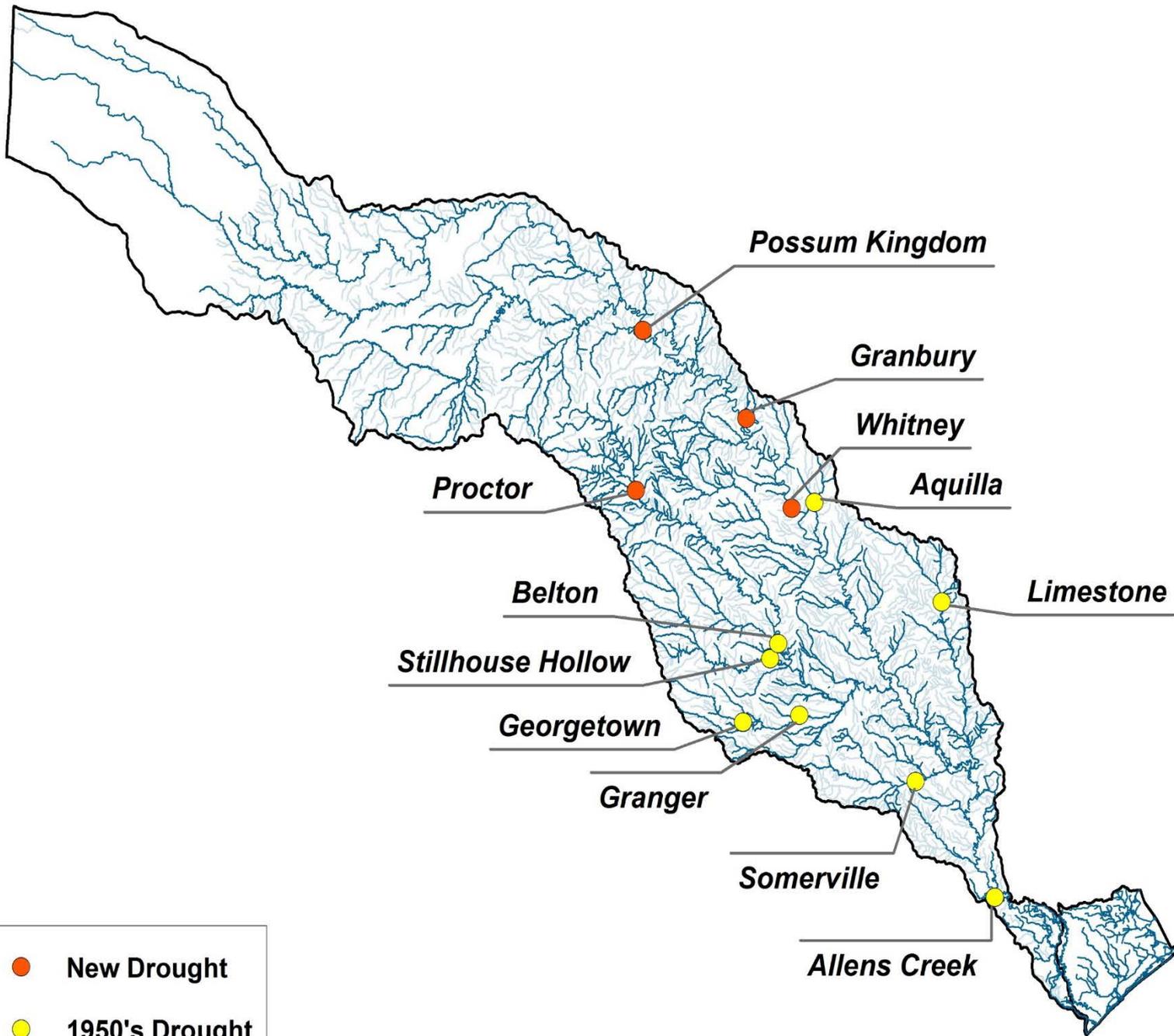
Brazos River Authority

Brazos River nr South Bend



Brazos River at Richmond

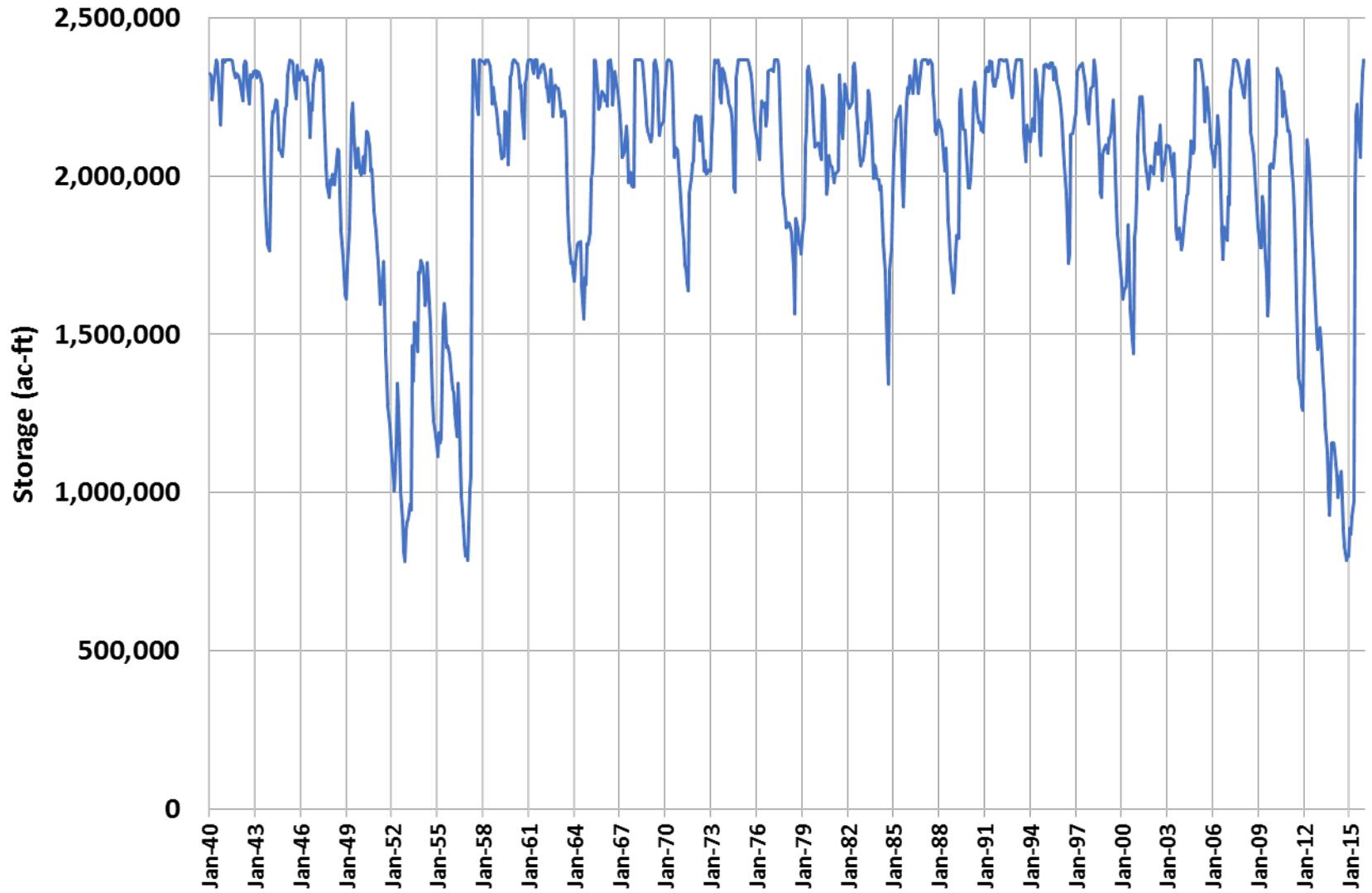






Total Reservoir System Storage

(TCEQ WAM Run 3)





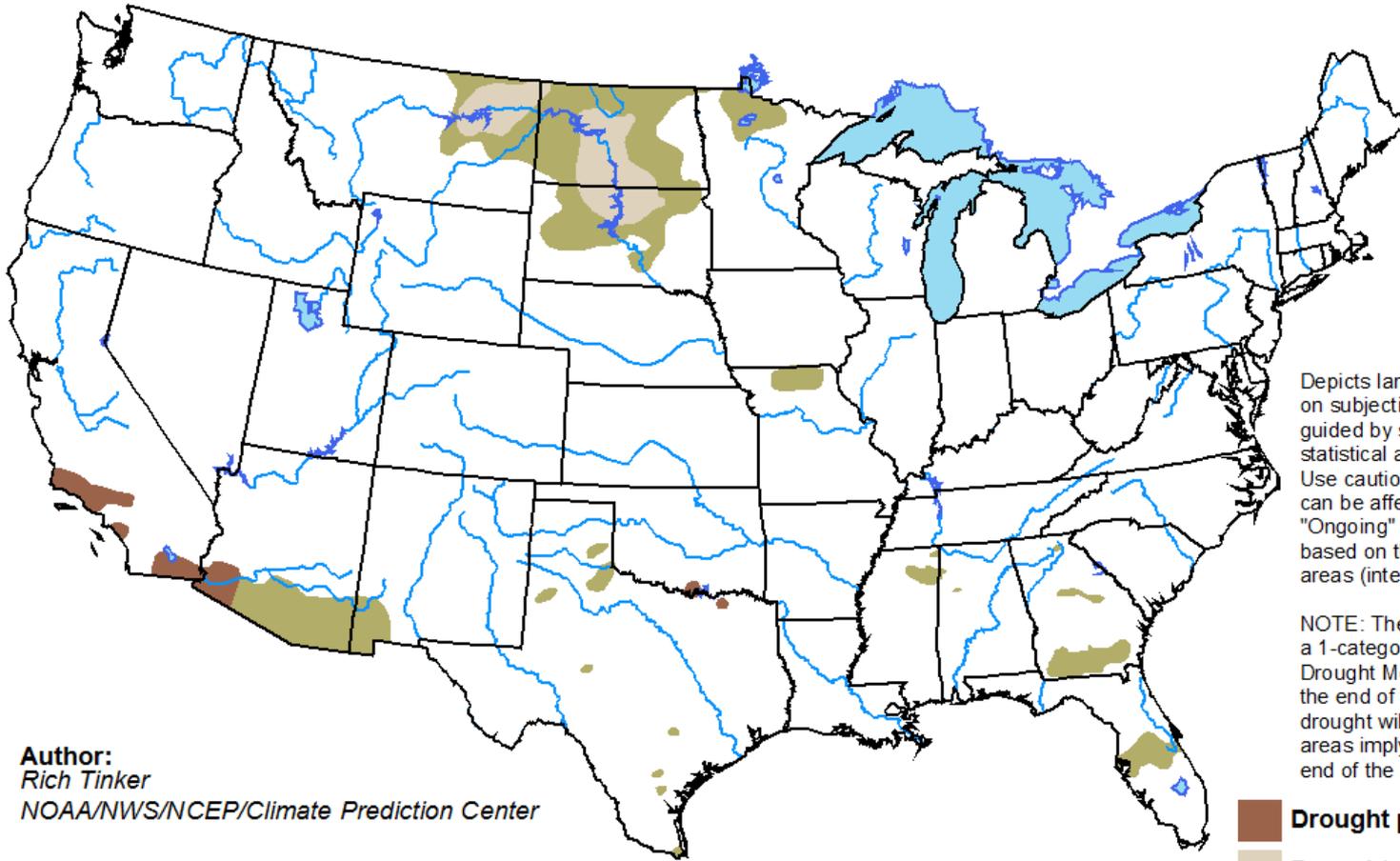
System Operation Permit and Water Management Plan

- **Results of Drought Study – Summary**
 - **2011-2015 Drought**
 - **Worse for Upper Basin Only**
 - **1950's for entire Basin**
 - **Availability of Water under System Operation Permit**
 - **Unchanged from approved Permit**

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for June 15 - September 30, 2017
Released June 15, 2017

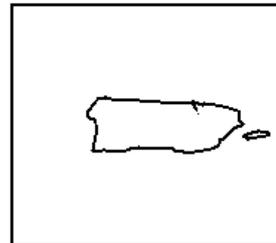
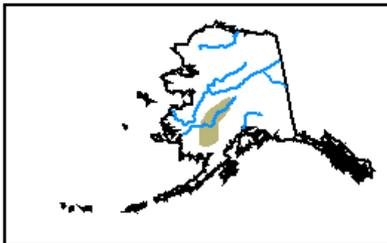


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Rich Tinker
NOAA/NWS/NCEP/Climate Prediction Center

-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



<http://go.usa.gov/3eZ73>



2016 Annual Water Use & Reservoir Accounting

Summary now Available on BRA Website

Brazos River Authority 2016 Customer Water Use and Reservoir Accounting Summary

2016 WATER USE BY PRIMA WATER CUSTOMERS

CUSTOMER	VOLUME (ACRE-FEET)
POSSUM KINGDOM LAKE	
DOUBLE DIAMOND PROPERTIES, INC	553
POSSUM KINGDOM HOIC	745
BANCH OWNERS ASSOCIATION	375
SPORTSMAN'S WORLD MFG	598
TORRE PARKS & WILDLIFE DEPT	12,093
WEST CENTRAL BRAZOS PIPELINE	2,257
SUBTOTAL:	14,619
BRAZOS RIVER BELOW POSSUM KINGDOM LAKE	
TEGUM TREE, INC	228
BRADCO REGIONAL PUBLIC UTILITY AGENCY	646
VULCAN COND. MATERIALS, L.P.	508
SUBTOTAL:	1,382
LAKE GRANBURY	
ACTON MUNICIPAL UTILITY DIST.	9
BRADCO REGIONAL PUBLIC UTILITY AGENCY	2,487
SECORDIA BOND ESTATES OWNERS	21
GRANBURY RECREATIONAL ASSOC	21
GRANBURY CITY OF	145
KING BANCH TURGRASS, L.P.	3
LENER, INC.	2,423
USP DEVELOPMENT CORP.	40
MONARCH UTILITIES, L.P.	533
TRU-LUMBERT ELECTRIC COMPANY	751
TRU-LUMBERT ELECTRIC COMPANY	40,227
WSP HOLDING SERVICES, LLC	1,931
SUBTOTAL:	53,824
LAKE WHITNEY	
WHITE BUZZ PROPERTY OWNERS ASSOC	374
BRAZOS RIVER BELOW LAKE WHITNEY	
LAJUNE BRIDGE ENERGY CENTER, LLC	3,867
WIND TRAIL, LLC	27,384
SUBTOTAL:	30,795
LAKE AQUILLA	
AQUILLA WATER SUPPLY DISTRICT	2,527
CUBBERNE, CITY OF	842
SUBTOTAL:	3,370
LAKE PROCTOR	
LAKE PROCTOR IRRIGATION AUTH.	212
UPPER LEON RIVER MUNICIPAL	3,477
SUBTOTAL:	3,689
LEON RIVER BELOW LAKE PROCTOR	
LAKE PROCTOR IRRIGATION AUTH.	626
NORTH LEON RIVER IRRIGATION	4,464
SUBTOTAL:	5,091
LAKE BELTON	
483 WATER SUPPLY CORP.	208
BELL CO. WATER CONTROL & MFG	30,259
CONNELL CITY WATER SUPPLY DIST	305
FORT WATTS WCD	138
THE GRACE WATER SUPPLY CORP.	2,008
BLUEBERRY WATER SUPPLY CORP.	2,633
MATTHEWS, CITY OF	5,077
SUBTOTAL:	39,524
LEON RIVER BELOW LAKE BELTON	
TAMPELL CITY OF	1,584
WALDFORD COUNTRY CLUB, INC.	226
SUBTOTAL:	3,310
LAKE STILLHOUSE HOLLOW	
CENTRAL TEXAS WATER SUPPLY CORP.	3,763
RODMAN WATER SUPPLY CORP.	2,467
WINDMILL CITY OF	3,363
SUBTOTAL:	9,593
LAMPASAS RIVER BELOW LAKE STILLHOUSE HOLLOW	
COUNTRY HARBOR	1
SUBTOTAL:	1
LAKE GEORGETOWN	
GEORGETOWN CITY OF	12,363
ROUND ROCK CITY OF	16,485
BROUGHT CREEK MFG	2,831
SUBTOTAL:	31,679
LAKE GRANBY	
TRU WILLIAMSON CO. REGIONAL WATER SYSTEM	3,961
SUBTOTAL:	3,961
WIND TRAIL, LLC	
WIND TRAIL, LLC	11,676
TRU-LUMBERT ELECTRIC COMPANY	16,307
SUBTOTAL:	28,225
WINDMILL SPECIAL UTILITY DIST	
WINDMILL CITY OF	754
SUBTOTAL:	754
TOTAL	212,463

2016 TOTAL WATER USE

226,348 Acre-Feet

2016 WATER USE BY TYPE

ACRE-FEET

INDUSTRIAL (49%)	110,461
MUNICIPAL (46%)	103,531
IRRIGATION (4%)	1,958
MINING (1%)	30,402

2016 WATER USE BY INTERMEDIATE AND LAKE/RESERVOIR LOCAL WATER CUSTOMERS

CUSTOMER	VOLUME (ACRE-FEET)
POSSUM KINGDOM LAKE	
ALL WILLIAMS, INC.	1
HILL COUNTRY HARBOR, L.P.	156
LAKESHORE HOME OWNERS	1
INLAND WOODWORKS, INC.	1
TORRE PARKS & WILDLIFE DEPT.	9
WIND TRAIL, LLC	27,384
LAKE/RESERVOIR LOCAL USE	244
WEST CENTRAL BRAZOS PIPELINE	85
SUBTOTAL:	28,807
LAKE GRANBURY	
BRAZOS NATURAL BIODIVERSITY	26
COUNTY OF SOMERVELL	256
LENER, INC.	1,380
LOWELL UNDERWOOD	3
LAKE/RESERVOIR LOCAL USE	345
SUBTOTAL:	1,991
BRAZOS RIVER BELOW LAKE GRANBURY	
LOUISIANA POWER & LIGHTS DIV	45
NOBAM CONCRETE, LLC	85
LATHROP MATERIALS	40
LOWELL UNDERWOOD	28
REAR HOLDING	303
SUBTOTAL:	501
LAKE WHITNEY	
DOUBLE DIAMOND PROPERTIES, INC.	305
LONGVIEW HILL FARMING	17
WHITE BUZZ PROPERTY OWNERS ASSOC	300
LAKE/RESERVOIR LOCAL USE	11
SUBTOTAL:	633
BRAZOS RIVER BELOW LAKE WHITNEY	
3-D FORMING	171
BIG CREEK CONSTRUCTION	56
BRADCO REGIONAL HOIC, INC.	82
CRESBERRY NURSERY, LLC	118
HOBSON TOP CRACK, INC.	632
ANNE RIVER CORPORATION	117
RENAISSANCE TRUST PARTNERSHIP	234
W. C. HELBERT FAMILY TRUST	304
SUBTOTAL:	1,695
LAKE PROCTOR	
LAKE/RESERVOIR LOCAL USE	1
SUBTOTAL:	1
LAKE BELTON	
LAKE/RESERVOIR LOCAL USE	21
SUBTOTAL:	21
LEON RIVER BELOW LAKE BELTON	
LAKE/RESERVOIR LOCAL USE	28
SUBTOTAL:	28
LAKE STILLHOUSE HOLLOW	
LAKE/RESERVOIR LOCAL USE	1
SUBTOTAL:	1
LAKE GEORGETOWN	
LAKE/RESERVOIR LOCAL USE	94
SUBTOTAL:	94
LAKE GRANBY	
BRADCO VALLEY CORPORATION	21
WIND TRAIL, LLC	3,312
LAKE/RESERVOIR LOCAL USE	84
SUBTOTAL:	3,617
WINDMILL SPECIAL UTILITY DIST	
WINDMILL CITY OF	754
SUBTOTAL:	754
WINDMILL ENERGY OPERATIONS, LLC	
WINDMILL ENERGY OPERATIONS, LLC	113
NEW REP RESOURCES, LLC	36
SUBTOTAL:	226
TOTAL	8,883

HISTORICAL ANNUAL WATER USE

Brazos River Authority 2016 Reservoir Accounting (acre-feet)

Reservoir	Volume (acre-feet)
AQ	128,463
BE	1,462,550
GB	2,056,002
GT	0
GR	61,385
LS	375,223
PK	474,177
PR	302,557
SV	889,558
SH	306,848
WH	401,804
TOTAL	2,549,853

Category	Volume (acre-feet)
Inflow	128,463
1) Pumped in from Stillhouse	0
2) Flood Release	128,463
3) Pumped out to Georgetown	0
4) Detention Release to SB	0
5) Hydro Electric Release	0
6) Undetention Release (Evaporation and/or Environmental Releases)	482,653
7) Undetention Release used for Water Supply	482,653
8) Water Supply Release**	12,840
9) Evaporation	2,061
10) Cooperation	18
TOTAL	2,549,853

* Evaporation has not been quantified by the US Army Corps of Engineers for Lake Georgetown, Granger and Proctor.
 ** 12,840 acre-feet of the USACE's share of water released for water supply from Lake Belton for the City of Richmond under its water right. Therefore, this 12,840 acre-feet is not reflected in BRA's water use total for 2016.
 *** 21,683 acre-feet of water used under the City of Richmond's contract with the City of Richmond under the BRA's Coates Flow permit.
 Note: Lubbock Water use (185,202 acre-feet) - Water Supply Release (5,318 acre-feet) - Undetention Release used for Water Supply (21,683 acre-feet) - Temple Water Right (2,100 acre-feet) - Coates Flow (27,383 acre-feet) = Total 2015 BRA Water Use (226,348 acre-feet)



Data source: Brazos River Authority, 2017



Brazos Basin Freshwater Mussel Candidate Species Update

***Presented by
Tiffany Morgan
Environmental and Compliance Manager***



Proposed Listing of Freshwater Mussels as Endangered in Brazos River Basin

- **Three species in basin candidates for Endangered Species Act (ESA) protection**
 - **Final Decision 2018**
 - **Texas fawnsfoot**
 - **False spike**
 - **Consideration 2020**
 - **Smooth pimpleback**

Texas Fawnsfoot



False Spike

Smooth Pimpleback





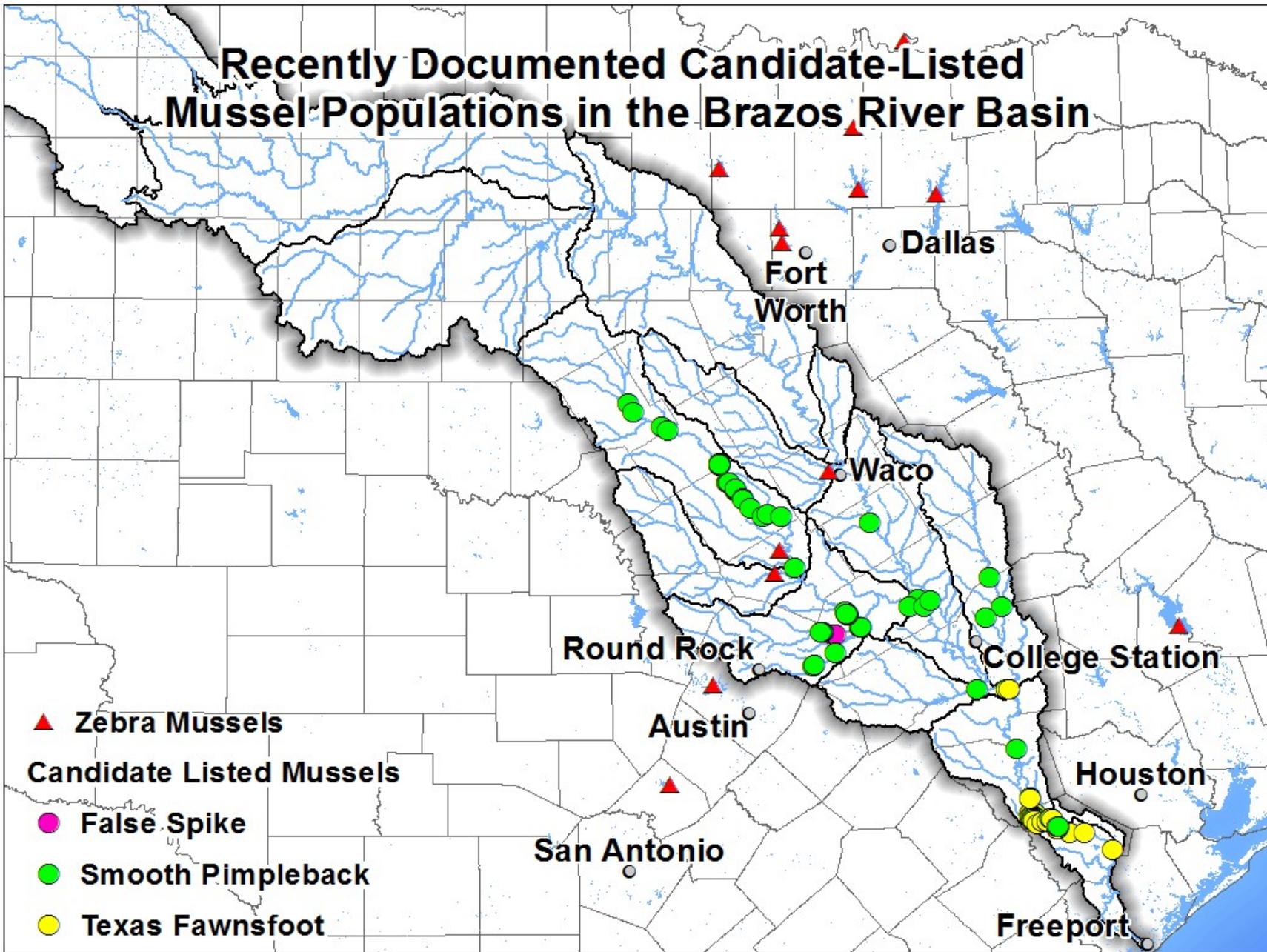
Freshwater Mussels v. Zebra Mussels

- **Freshwater Mussels**
 - Native
 - Rivers and lakes
 - Filter feeders
 - Soft Substrate
 - Riverine species dependent on fish
- **Zebra Mussels**
 - Non-native
 - Lakes, generally
 - Aggressive breeders
 - No know predators
 - Hard substrates





Recently Documented Candidate-Listed Mussel Populations in the Brazos River Basin





Why do we Care?

- **Since 1973, the ESA has proven to be one of the nation's strongest conservation laws**
 - Has been widely upheld in the court system
 - Never substantially defeated
- **ESA can and has affected state-based water rights and regulations**
 - Can limit the traditional exercise of established water rights
 - Restrict or modify new water projects
 - Any water use that results in the direct or incidental take or harm of listed species falls within the ESA's reach



What's Being Done?

- **BRA has been working issue for past year**
 - Stream Surveys
 - Customer interaction
 - Comptroller Work Group
- **Comptroller's Freshwater Mussel Stakeholder Work Group**
 - Meghan.Hope@cpa.texas.gov
 - <http://comptroller.texas.gov/programs/species-economy/>
- **USFWS - Species Status Assessment Lead**
 - gary_pandolfi@fws.gov

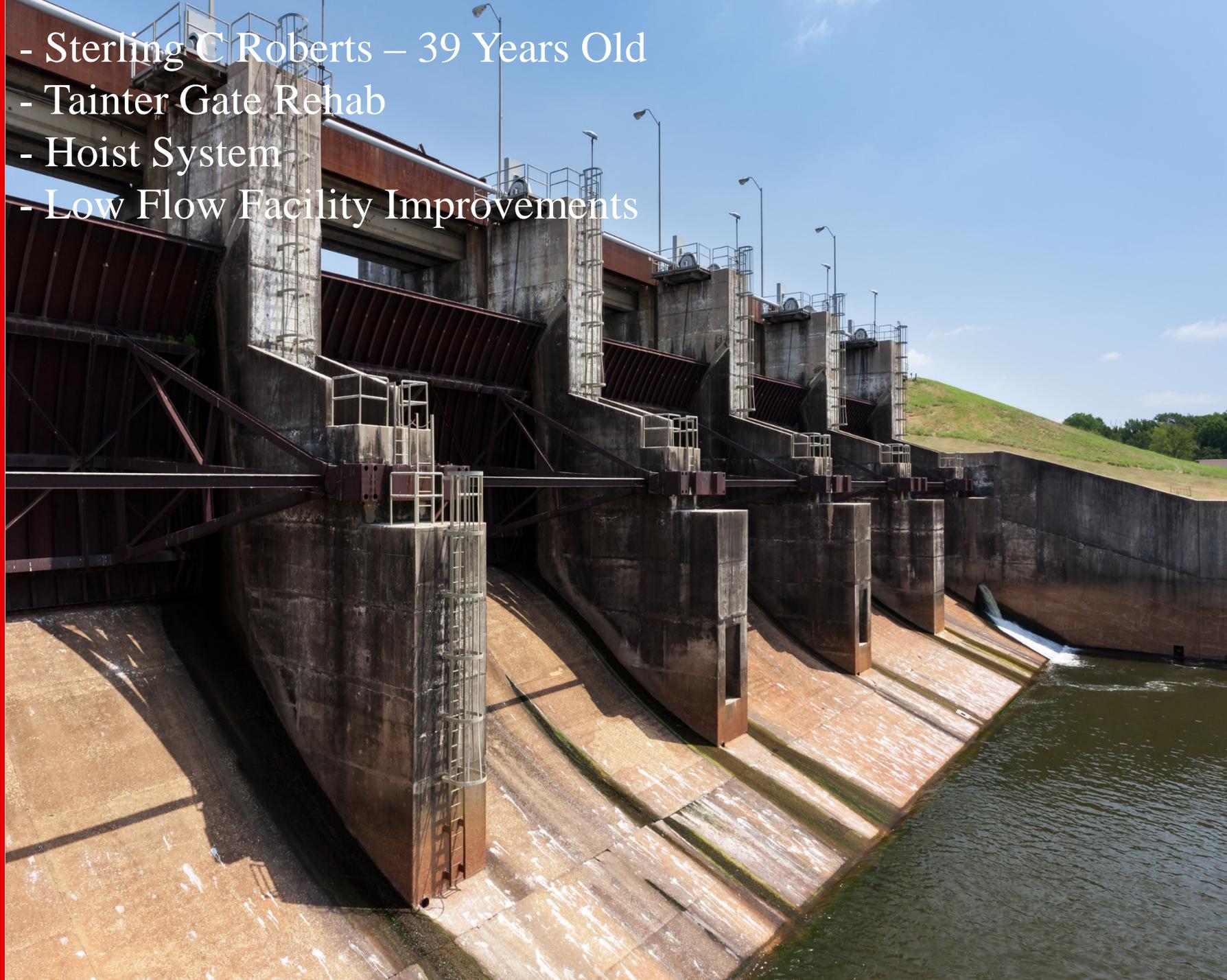


Capital Projects Overview

***Presented by
Basin Regional Manager***



- Sterling C Roberts – 39 Years Old
- Tainter Gate Rehab
- Hoist System
- Low Flow Facility Improvements





Brazos River Authority





Brazos River Authority





~\$4M in Projected FY 18 Expenditures

- CAASLE Project
- Hearth & Bank Project
- COC Access Platforms
- Spillway Pump





Brazos River Authority





~\$2.7M in Projected FY 18 Expenditures

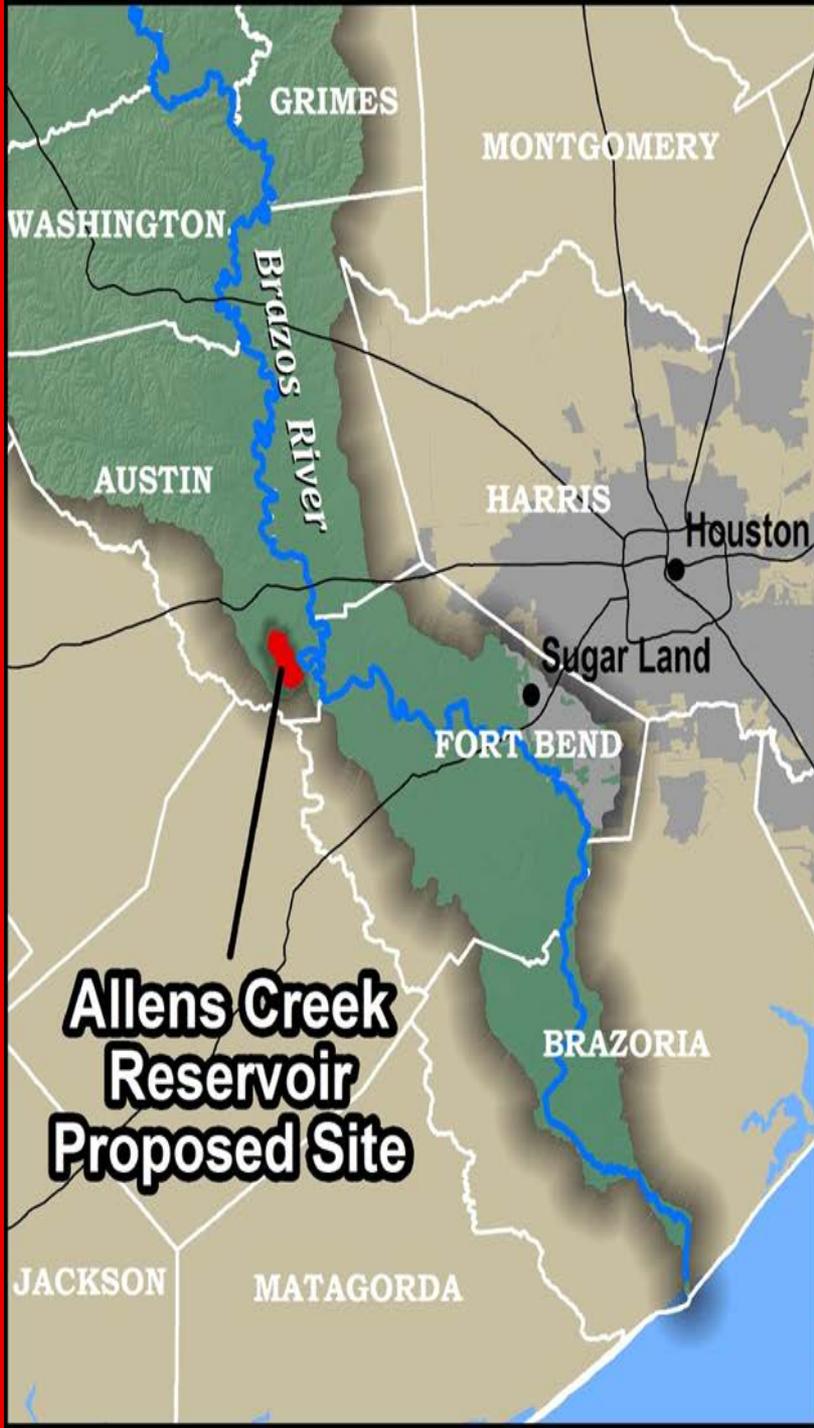
- Trolley Replacement Project
- Low Flow Project
- Reinforced Concrete Project



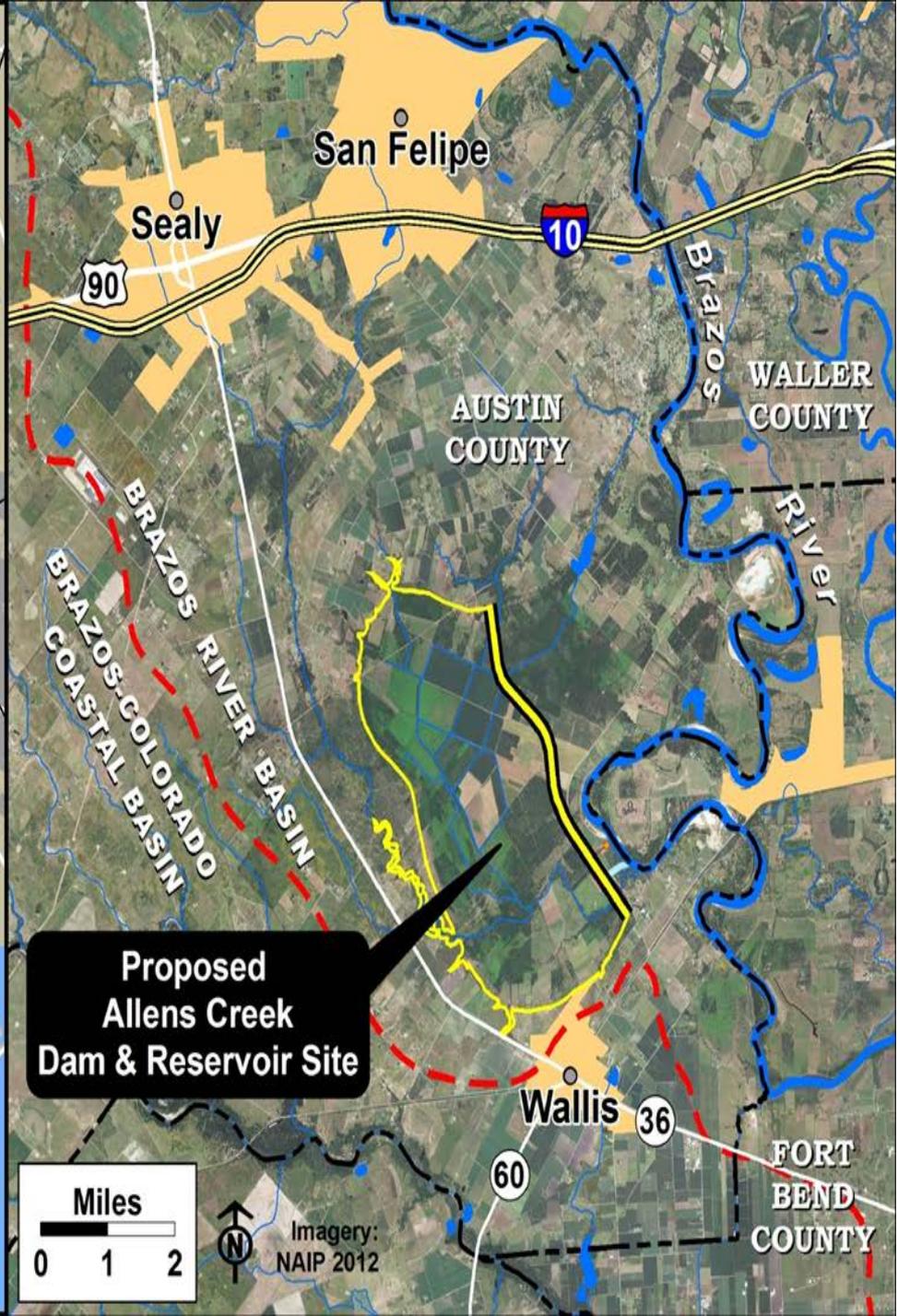


Brazos River Authority

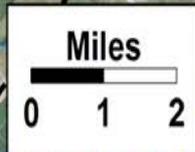




**Allens Creek
Reservoir
Proposed Site**



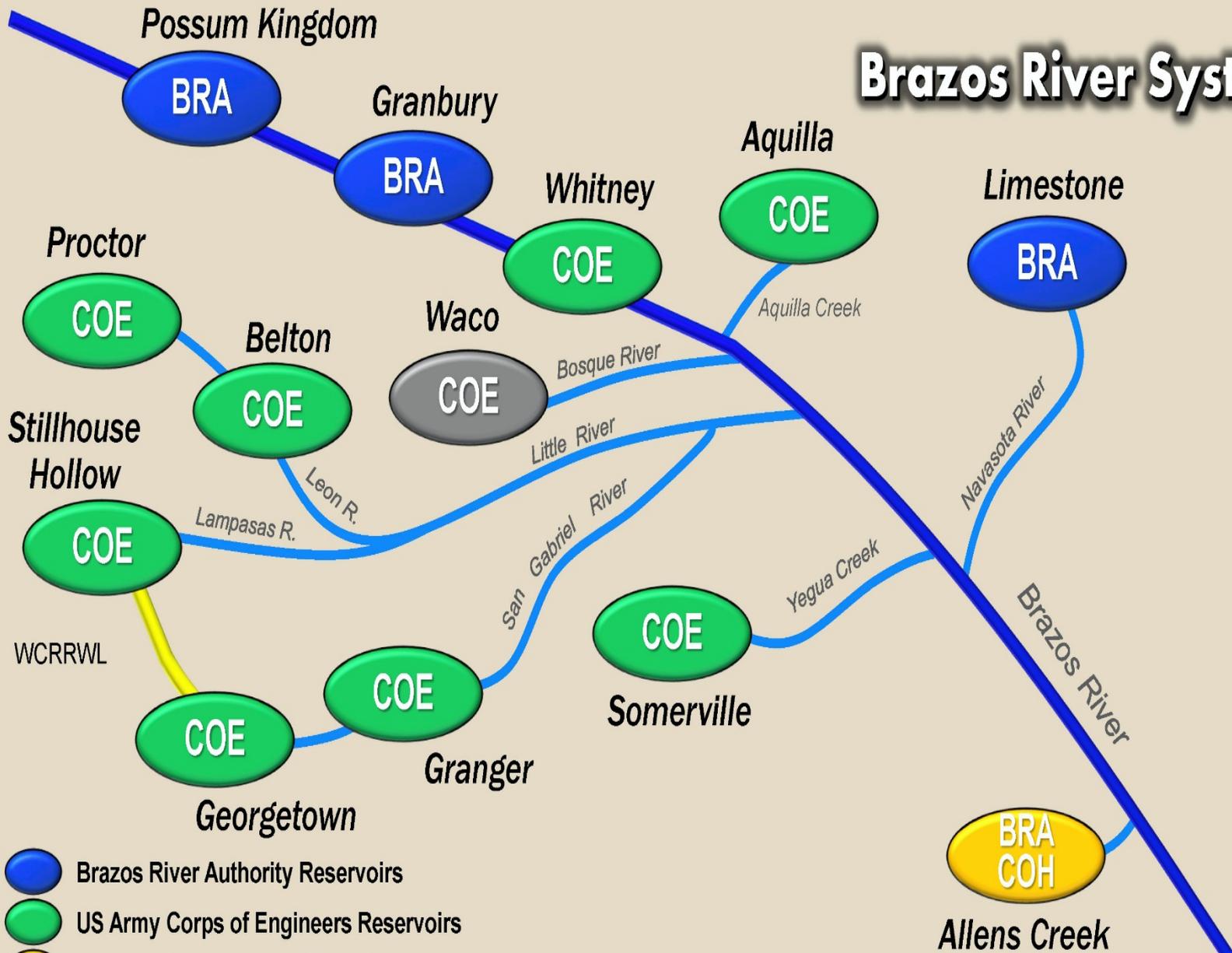
**Proposed
Allens Creek
Dam & Reservoir Site**



Imagery:
NAIP 2012



Brazos River System



- Brazos River Authority Reservoirs
 - US Army Corps of Engineers Reservoirs
 - Brazos River Authority Reservoir yet to be Constructed
 - US Army Corps of Engineers/City of Waco
- WCRRWL = Williamson County Regional Raw Water Line

DRAWING NOT TO SCALE

Gulf
Of
Mexico

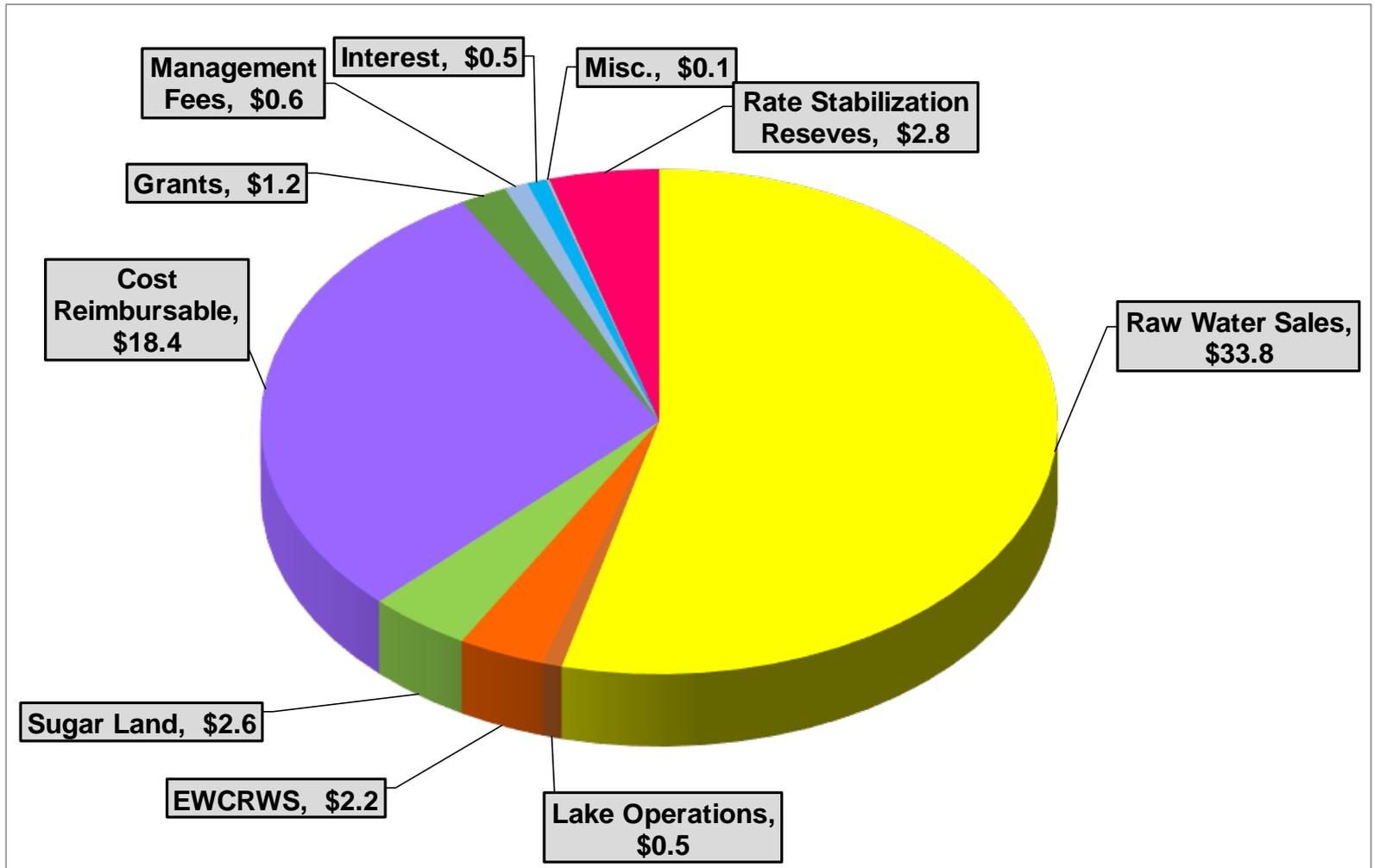


Financial Overview

***Presented by
David Thompson
Chief Financial Officer***

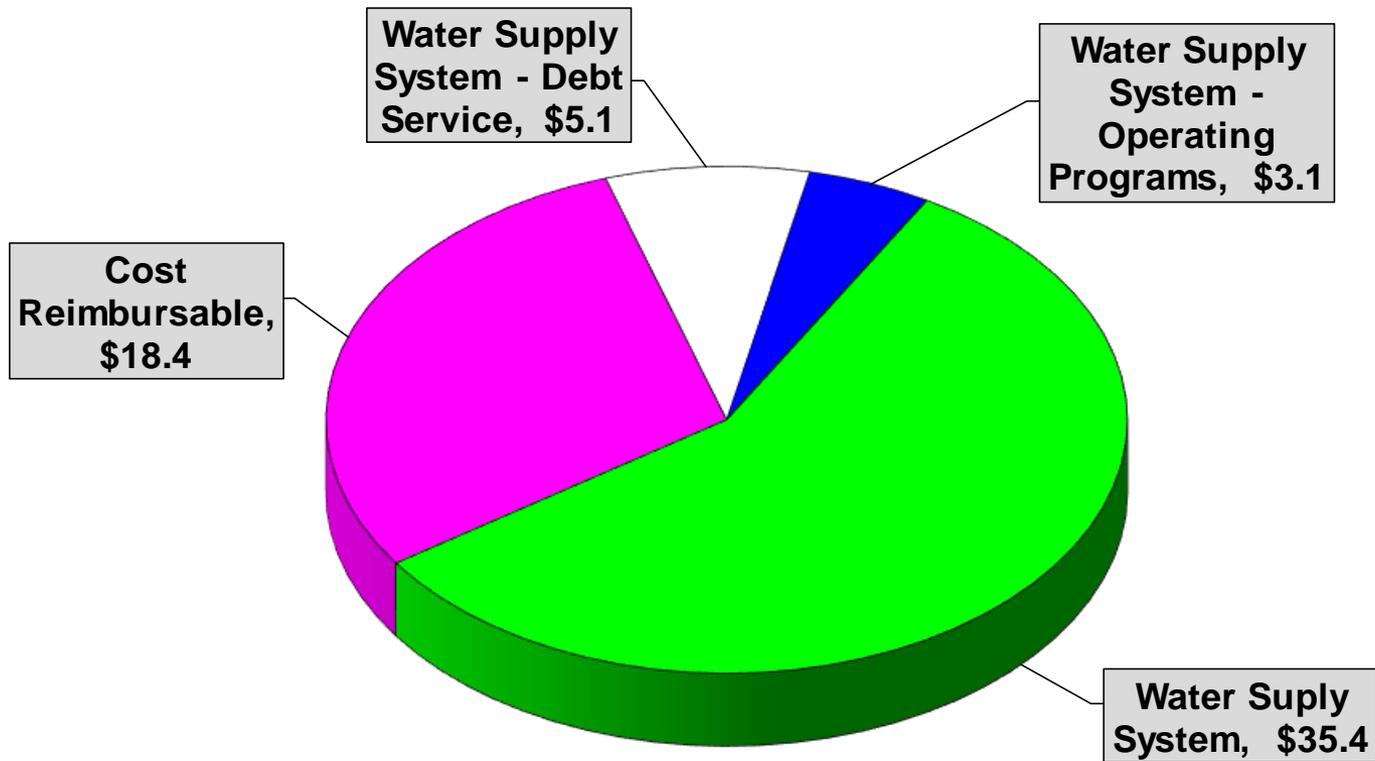


FY2018 Proposed Revenues \$62.7M



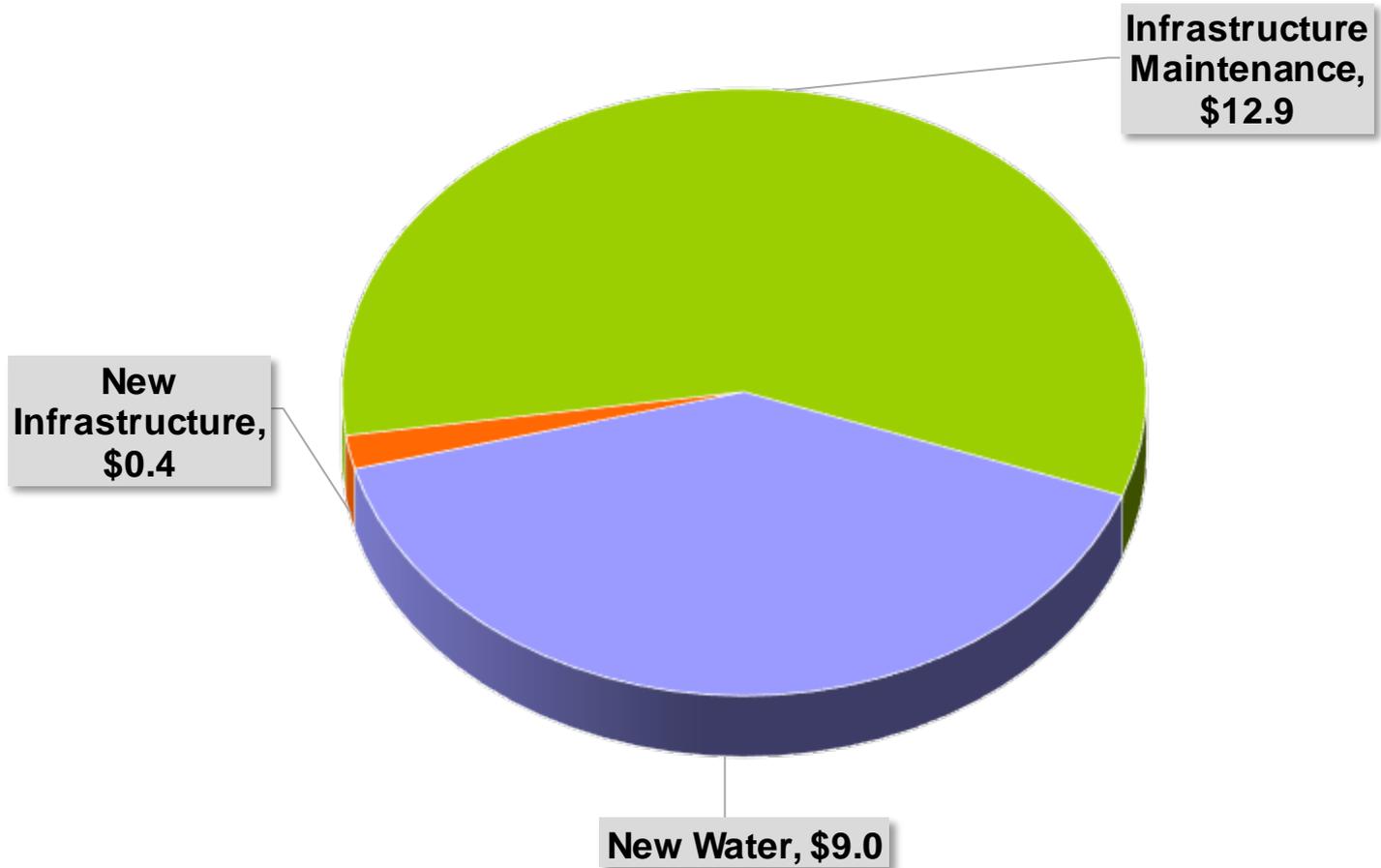


FY2018 Proposed Operating Expenses \$62.0M





FY2018 All Projects by Type \$22.3M





FY2018 Capital Improvement Projects

(in thousands)

<u>Project Name</u>	<u>Total Project Cost</u>	<u>FY2018 Projected Expenditures</u>	<u>Est. Completion Date</u>
Allens Creek Reservoir	\$ 92,422	\$ 5,749	2022+
Trinity Groundwater	22,860	3,255	2022+
DeCordova Bend Dam Improvements	8,783	2,782	2019
Morris Sheppard Dam Improvements	10,416	4,050	2019
Sterling Robertson Dam Improvements	27,471	4,415	2022+
Road Repairs at Dams	2,476	1,400	2021
Other	37,678	655	2022+
Total		\$ 22,306	



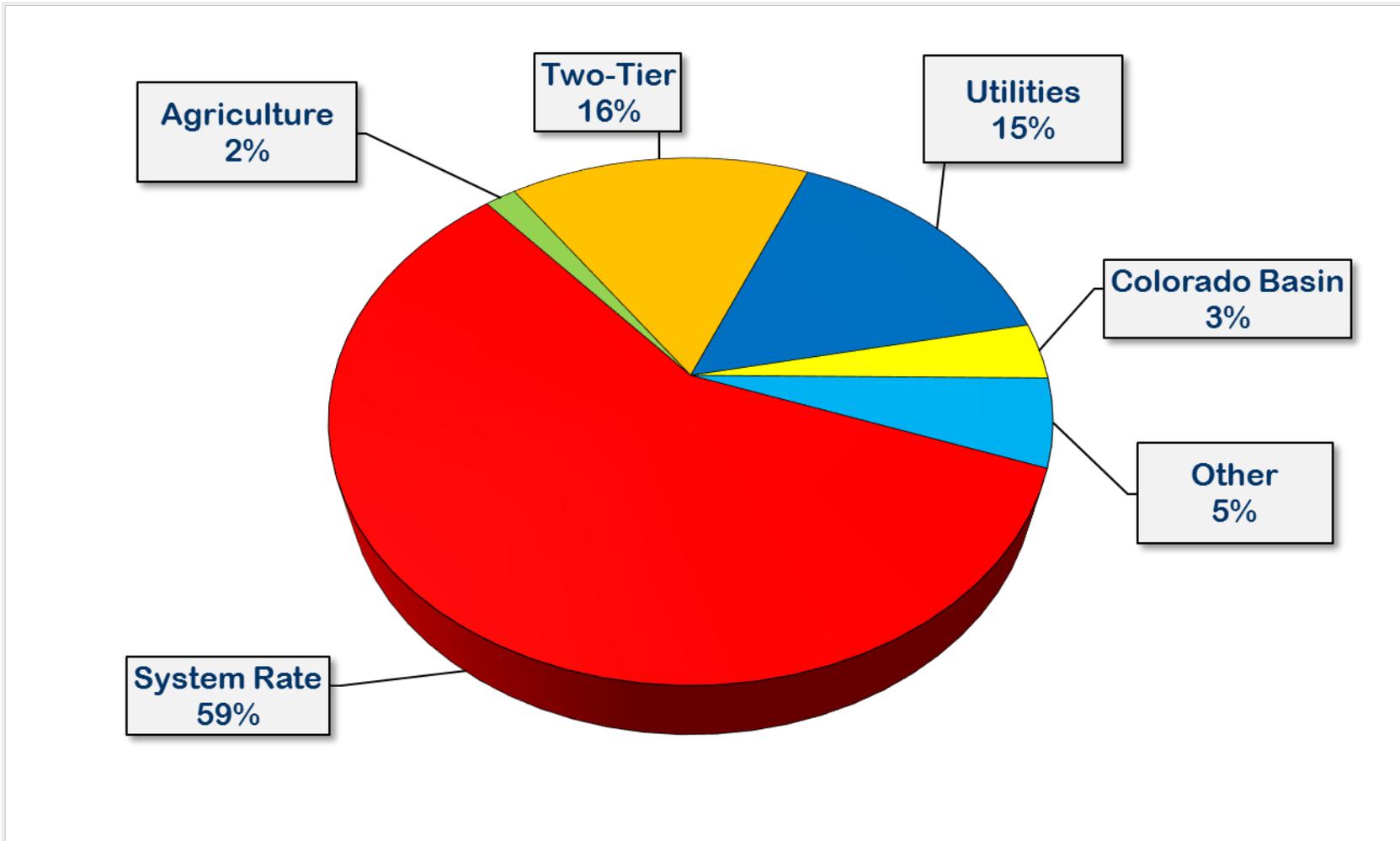
FY2018 Operating Programs

(in thousands)

<u>Project Name</u>	<u>FY2018 Projected Expenditures</u>
Corps of Engineers Pool Rise Feasibility	\$ 119
HB 1437 No Net Loss *	200
Duck Creek Aquatic Life Assessment *	14
Environmental Laboratory Assessment	200
IT Polycom Replacements	160
LB Floodplain Protection Study Phase 1 & 2 *	189
Lake Somerville Augmentation Study	80
PK Dam Fiber Optic Cable Replacement	65
PK Natural Resource Inventory Study	50
Williamson County Sludge Disposal Study *	173
PK Recreational Maintenance	145
Off Channel Reservoirs	250
Potential Future Water Management Strategies	500
Freshwater Mussel Rapid Risk Assessment	550
Enterprise Financial Software	400
	<hr/>
	\$ 3,095
Less Grant/Stakeholder Funding *	<hr/> (395)
Net BRA Expense	<hr/> <hr/> \$ 2,700



FY2018 Long Term Raw Water Sales 626,162 AF





System Rate Calculation

(in thousands)

	FY 2017 Budget	FY 2018 Proposed
Water Supply Expenses		
Water Supply O&M Expenditures	\$ 32,078	\$ 35,407
Water Supply Debt Service (subject to coverage)	2,537	2,538
Water Supply Debt Service (not subject to coverage)	2,591	2,595
Operating Program Expenditures	1,686	3,095
Total Expenditures	<u>38,892</u>	<u>43,635</u>
Less:		
Non-System Water Revenues	7,523	6,858
Other Water Supply Revenues	6,364	7,730
Total Non-System Revenues	<u>13,887</u>	<u>14,588</u>
Plus:		
Debt Coverage Requirement (1.3 ratio)	761	761
Rate Stabilization Fund	1,000	(2,800)
Total Coverage and Reserve	<u>1,761</u>	<u>(2,039)</u>
System Water Revenue Requirement	<u>\$ 26,766</u>	<u>\$ 27,008</u>
Total System Water Billing Units (acre feet)	371,422	364,572
System Rate (System Rate Revenue Requirement divided by the number of System Rate Units)	\$ 72.00	\$ 74.00



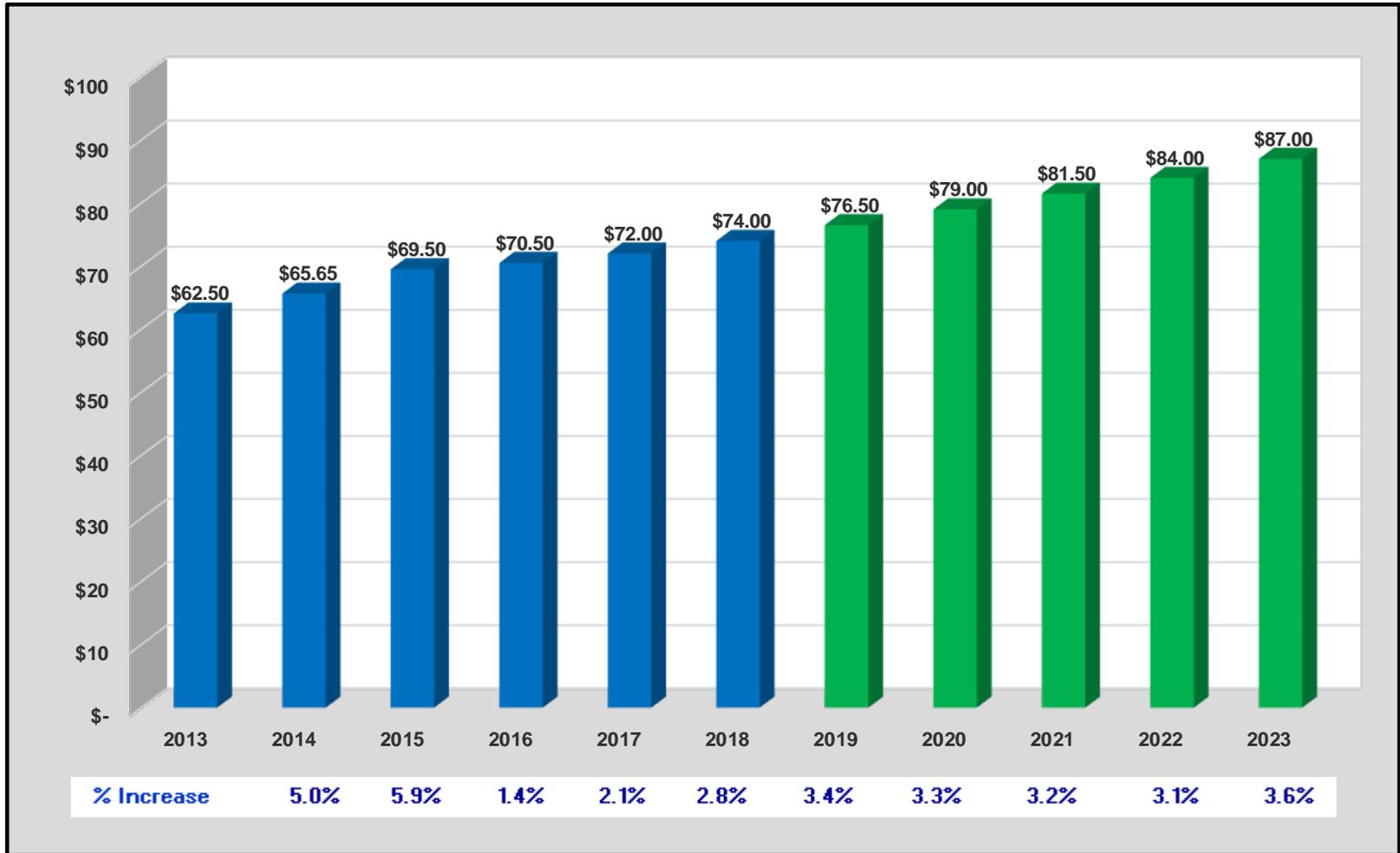
Long Term Billing Units & Average Price

	FY2017			FY2018		
	Units	Avg Price	%	Units	Avg Price	%
System Rate	371,422	\$72.00	58%	364,572	\$74.00	59%
Agricultural	10,285	\$50.40	2%	10,285	\$51.80	2%
Two-Tier	98,999	\$17.25	16%	98,999	\$17.37	16%
Other Fixed Price	33,778	\$18.96	5%	33,778	\$19.02	5%
Utilities	97,000	\$18.58	15%	97,000	\$18.84	15%
Colorado Basin	25,000	\$79.72	4%	21,528	\$77.95	3%
	<u>636,484</u>		<u>100%</u>	<u>626,162</u>		<u>100%</u>



System Rate History/Forecast

Brazos River Authority





Water Rates

<u>System Rate</u>	<u>System Water</u>	<u>Agricultural Water</u>
FY2018 Proposed	\$74.00/ac ft (22.7¢ /1,000 gals)	\$51.80/ac ft (15.9¢ /1,000 gals)
FY2017 Current	\$72.00/ac ft (22.1¢ /1,000 gals)	\$50.40/ac ft (15.5¢ /1,000 gals)

<u>Two-Tier</u>	<u>Option</u>	<u>Election</u>
FY2018 Proposed	\$13.52/ac ft (4.1¢ /1,000 gals)	\$27.04/ac ft (8.3¢ /1,000 gals)
FY2017 Current	\$13.43/ac ft (4.1¢ /1,000 gals)	\$26.86/ac ft (8.2¢ /1,000 gals)



Long-term Water Sales

- **System Operation Permit Approved and Drought Study Complete**
- **District Court challenge in process**
- **Will be evaluating new long-term sales in 2018**
 - Modeling analysis
 - BRA Water sale policy and procedures
 - State Water Plan
 - BRA long-term water request list
- **Potential to enter new contracts late 2018 – 2019**



Interruptible Water Sales

- **Updates to Interruptible Water Sale Procedure**
 - **Multi-year contracts discontinued**
 - **Priority to requests of 1,000 AF and less**
 - **Application deadline moved up to August 31**
 - **Will establish firm deadline for payment and executing contracts**
- **Board to consider 2018 Interruptible Water in October**



Questions and Answers



Brazos River Authority



**Brazos
River
Authority**