

# BOARD OF DIRECTORS MEETING

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April 18, 2023



## PLEDGE OF ALLEGIANCE

I pledge allegiance to the flag of the United States of America, and to the republic for which it stands, one nation under God, indivisible, with liberty and justice for all.



## PLEDGE OF ALLEGIANCE TO THE TEXAS FLAG

Honor the Texas flag; I pledge allegiance to thee, Texas, one state under God, one and indivisible.



# 2

## Public Comment



# 3

Consider Approval of the Minutes from the Meeting Held on March 21, 2023





# 4

Presentation by Iris Bruton,  
Executive Director of Trinity Collaborative, Inc.





# Mayfest

TRINITY PARK

MAY 4-7, 2023





**MAYFEST IS  
CASHLESS!**







Free Admission Thursday!



# Social Media



***You are Mayfest!***



New for 2023



# Sky Elements Drone Show





# Dinosaurs





# The Nerveless Nocks Original Daredevil Circus





# Wildlife On The Move





# Laser Spectacles, Inc.







## Tram Service

**Trams R Us**





## Mayfest 2023 By the Numbers

- 75 Bands and Performance Groups
- 95 Art & Gift Market Vendors
- 20+ Carnival Rides & Games
- 28 Festival Food Vendors
- 20+ Free Children's Activities and Shows
- 6 Amazing Attractions

# HAPPY MAYFEST!



Thank you  
for your continued  
support and  
partnership!



# 5

Consider Approval of Letter of Support for Trinity Metro in Support of Streetcar Study to Connect Downtown Fort Worth with Panther Island and the Fort Worth Stockyards

Dan Buhman, *General Manager*

# 6

## Consider Approval of First Amendment to TIF 9 Project Cost Funding Agreement with the City of Fort Worth

*Sandy Newby, Chief Financial Officer*



# 7

## Consider Approval of Contract with Carollo Engineers for Services for Integrated Water Supply Plan Update

Rachel Ickert, *Chief Water Resources Officer*

# Integrated Water Supply Plan Update

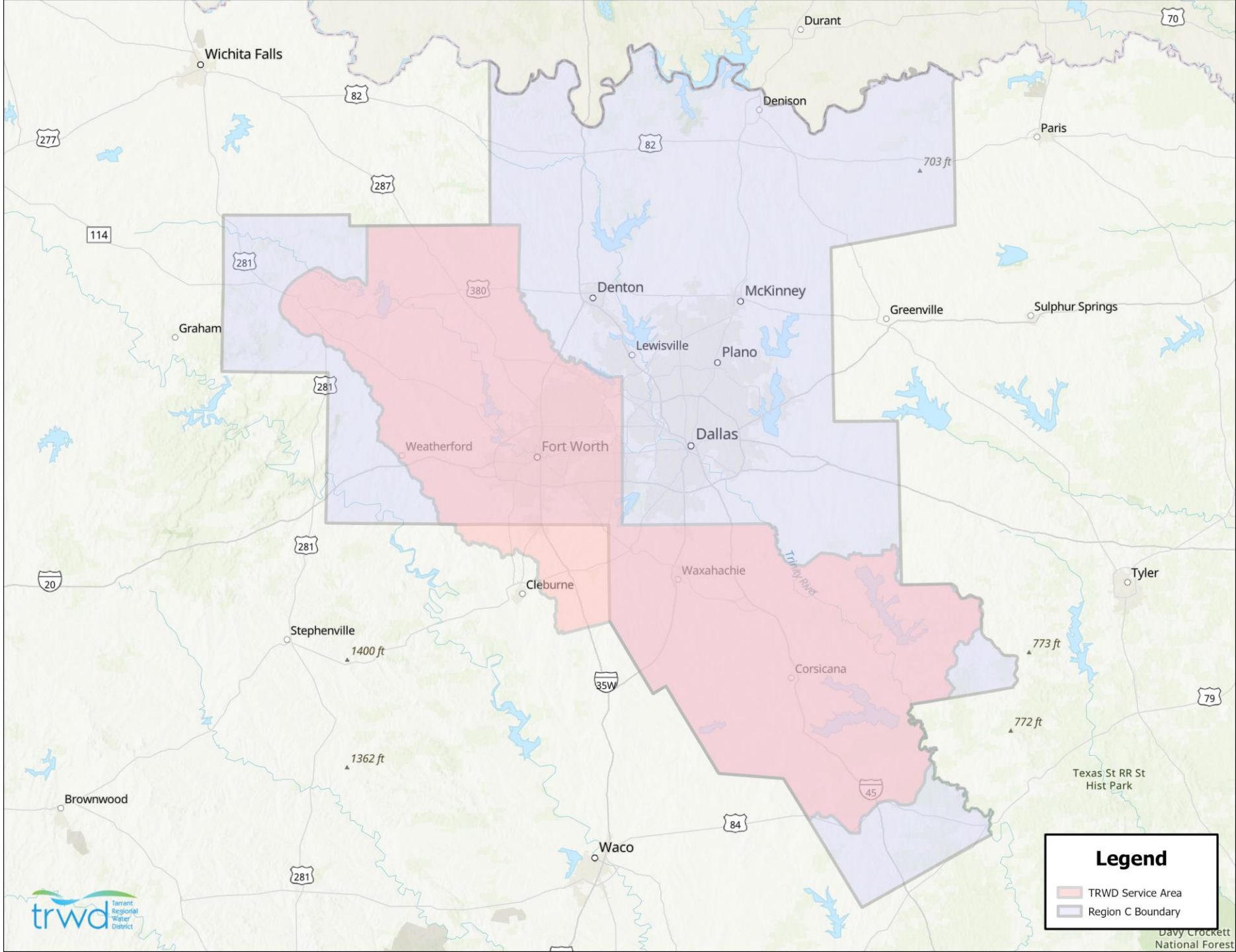


## TARRANT REGIONAL WATER DISTRICT INTEGRATED WATER SUPPLY PLAN



IN COOPERATION WITH: **CDM Smith** **FI**





**Legend**

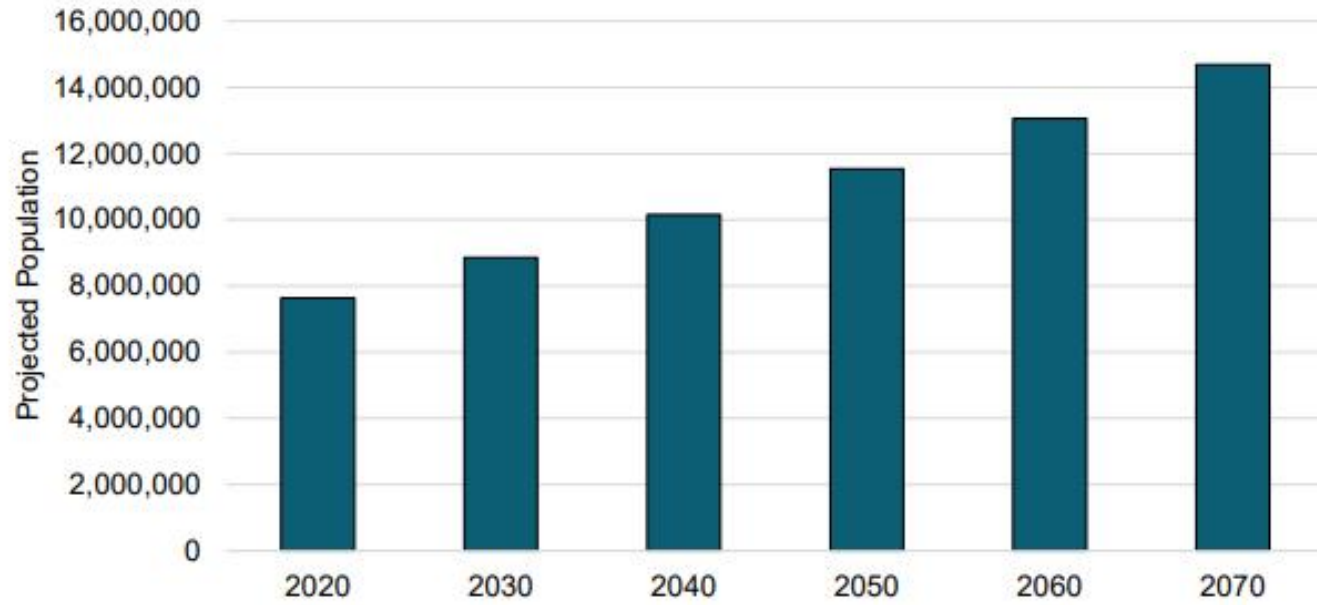
- TRWD Service Area
- Region C Boundary



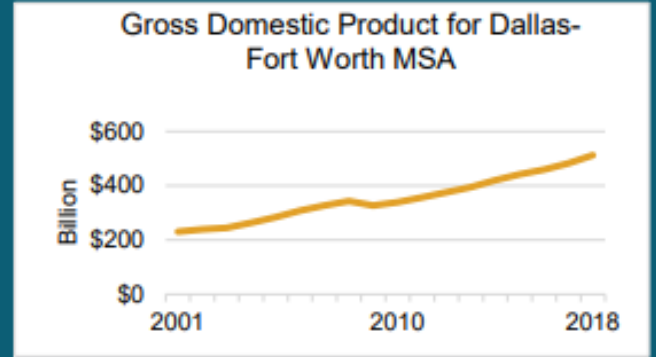
Davy Crockett National Forest



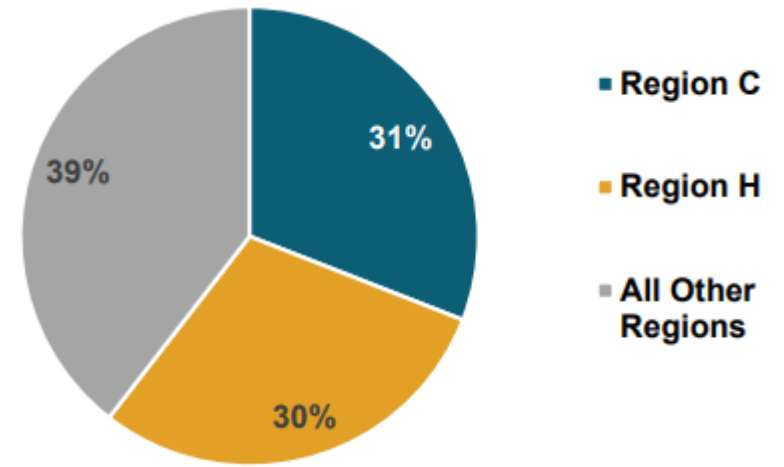
**Figure 2.3 Adopted Population Projections for Region C**



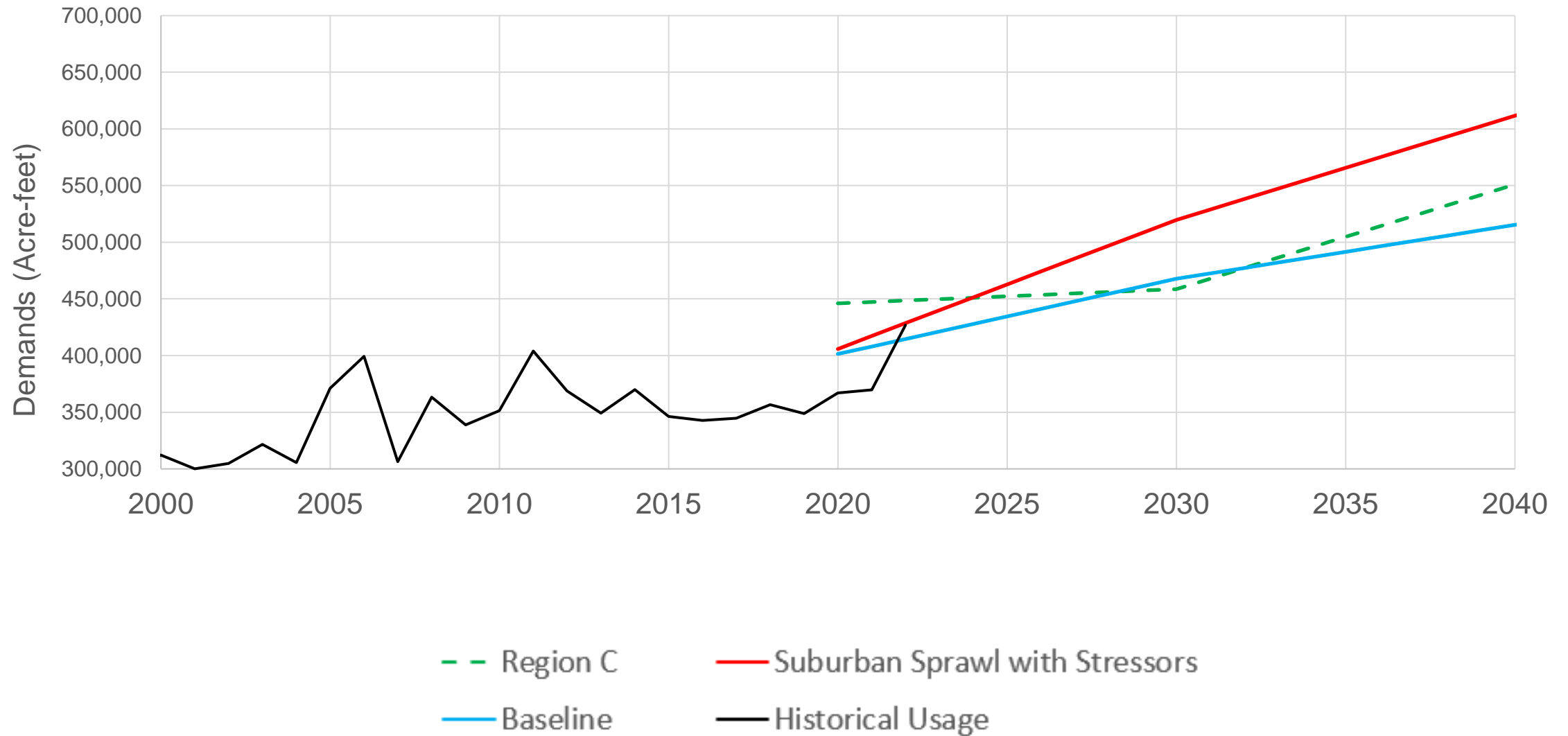
**Region C accounts for nearly 1/3 of Texas' economy, making it the single largest economic engine in the State.**



**Region C's population is increasing by more than 300 people per day**



# TRWD Total Usage and Projected Dry Year Demands



From Executive Summary of 2014 Integrated Water Supply Plan

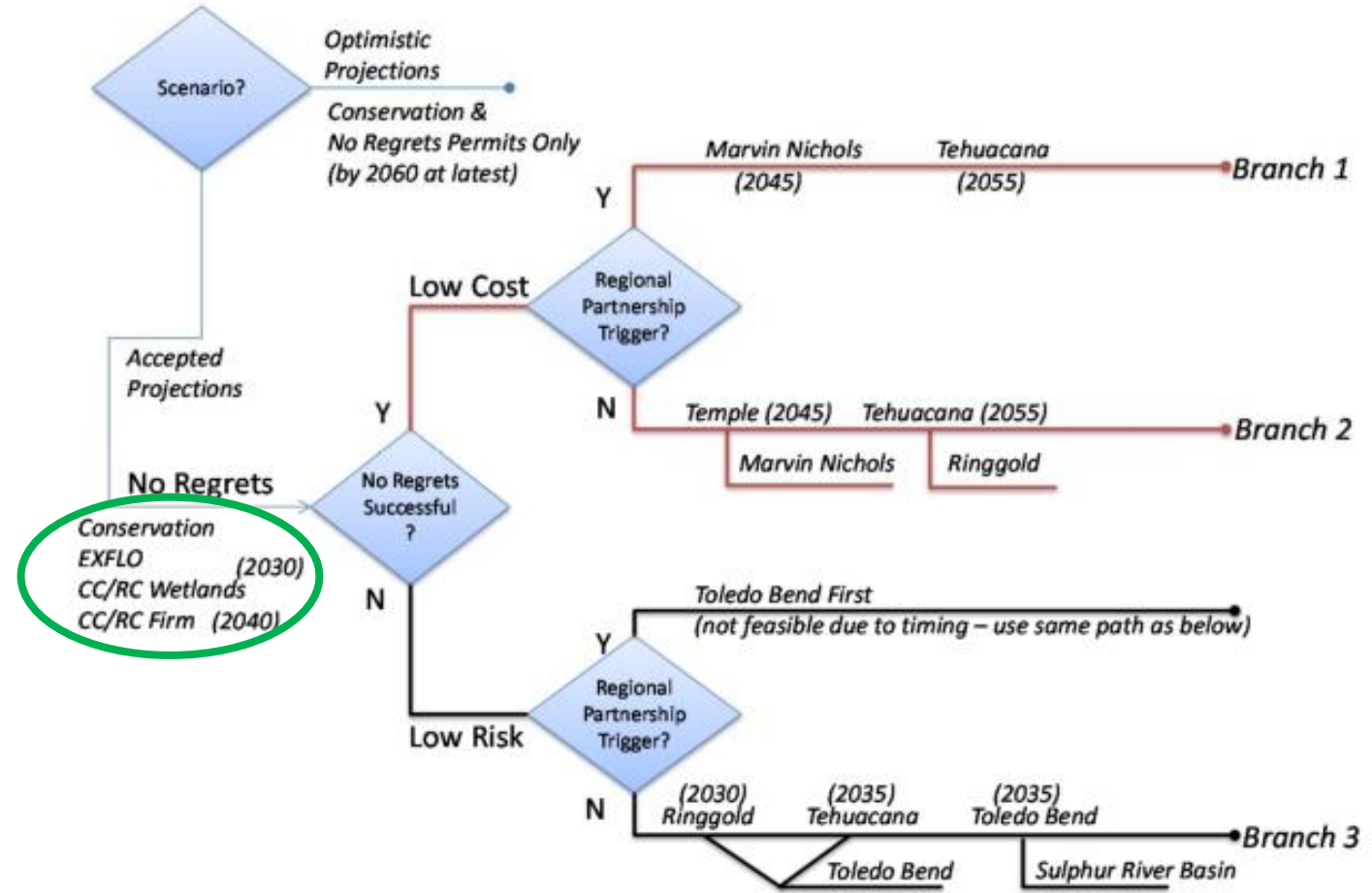
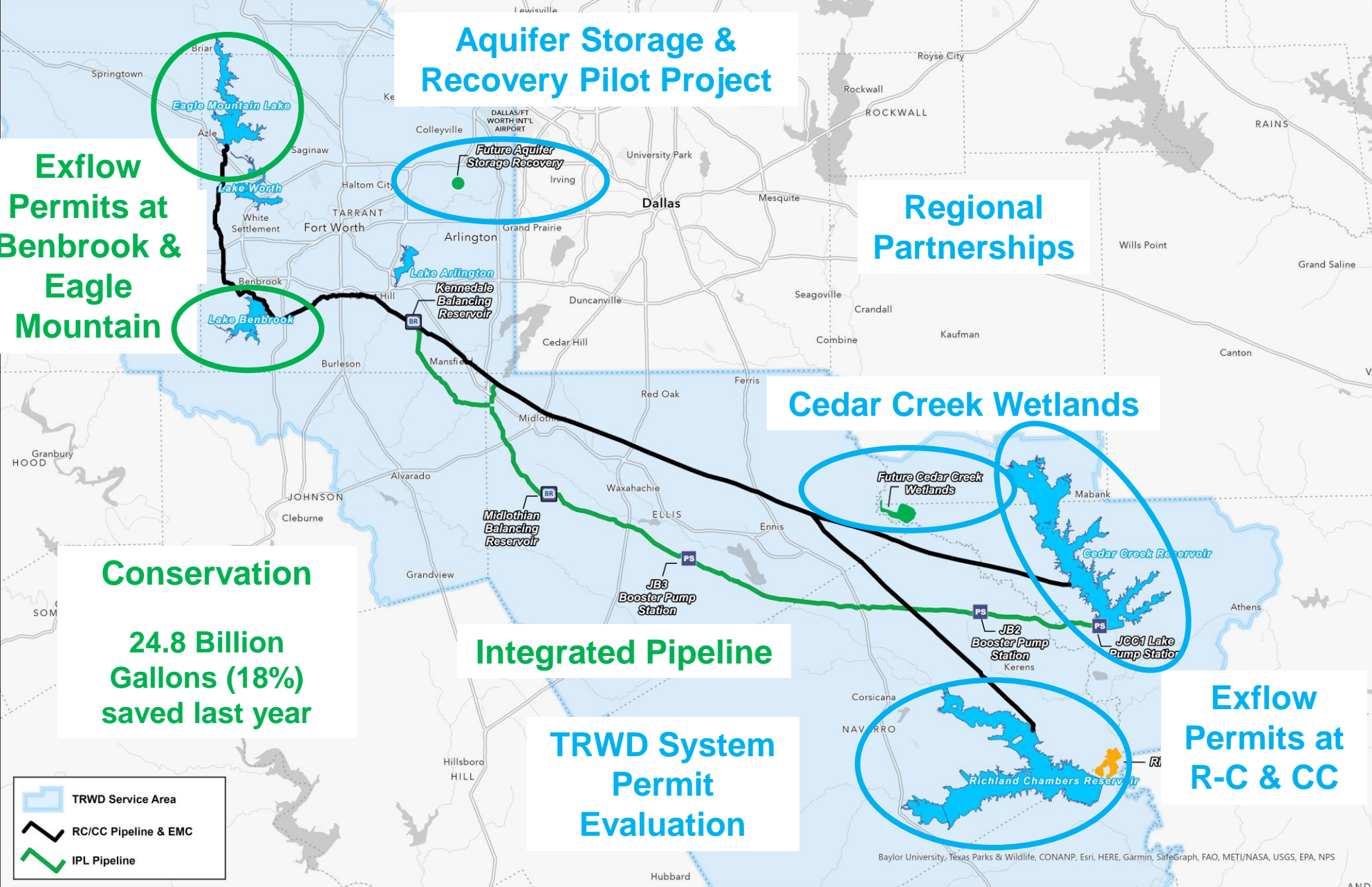
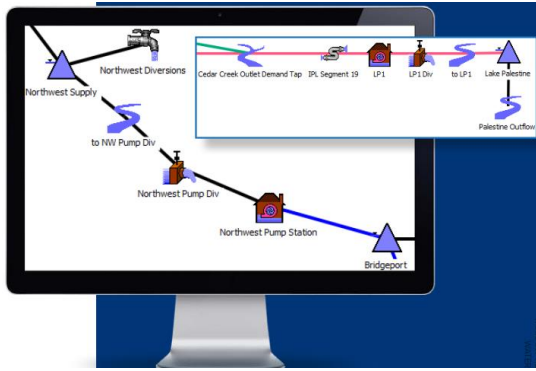


Figure ES.5 - Recommended TRWD Water Supply Plan

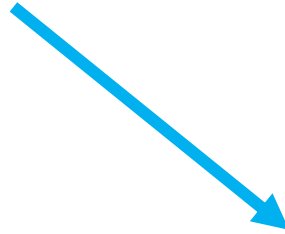


Since the 2014 Plan...





# RiverWare Model



|   |               |                    |       |
|---|---------------|--------------------|-------|
| <b>Project Name:</b>                            |               |                    |       |
| <b>WUGWWP:</b>                                  |               |                    |       |
| <b>Cost Estimator:</b>                          |               |                    |       |
| <b>Date for Estimation:</b>                     |               |                    |       |
| <b>Checked By:</b>                              |               |                    |       |
| <b>ENR Construction Cost Index Time Period:</b> | February 2018 | <b>CCI Factor:</b> | 10889 |
| <b>Producer Price Index Time Period:</b>        | February 2018 | <b>PPI Factor:</b> | 194.5 |
| <b>Available Project Yield</b>                  | 4,000         | <b>act/yr</b>      |       |

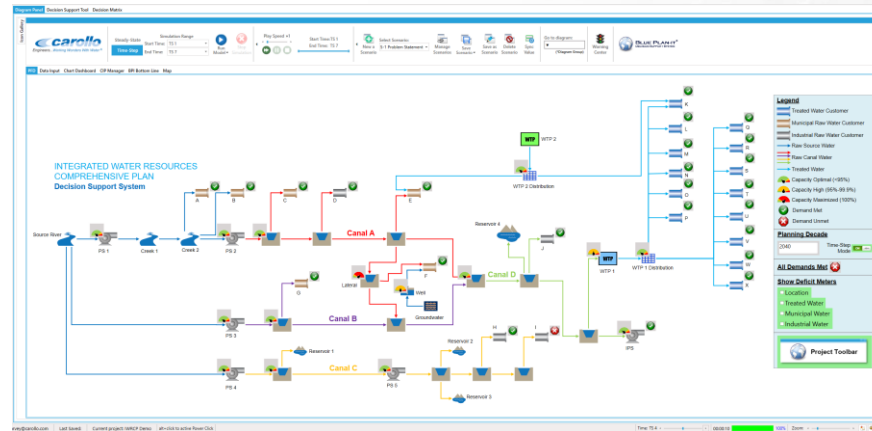
  

|  |                         |
|--|-------------------------|
| <b>Conservation or Drought Management WMS?</b> | No                      |
| <b>Simplified or Advanced Hydraulics?</b>      | Simplified and Advanced |
| <b>Number of Pipelines</b>                     | 3                       |
| <b>Does the project include a wellfield?</b>   | No                      |

|   |       |                           |
|---|-------|---------------------------|
| <b>Interest During Construction</b>                                   | 3.00% |                           |
| <b>Rate of Return on Investments</b>                                  | 0.50% |                           |
| <b>Construction Period</b>  | 1.0   | <b>years</b>              |
| <b>Engineering, Legal, &amp; Contingencies (Pipes)</b>                | 30%   |                           |
| <b>Engineering, Legal, &amp; Contingencies (All Other Facilities)</b> | 35%   |                           |
| <b>Debt Service (Non-Reservoirs) Period</b>                           | 20    | <b>years</b>              |
| <b>Debt Service (Reservoirs) Period</b>                               | 40    | <b>years</b>              |
| <b>Annual Interest Rate (Non-Reservoirs)</b>                          | 3.50% |                           |
| <b>Annual Interest Rate (Reservoirs)</b>                              | 3.50% |                           |
| <b>Operations &amp; Maintenance (Pipelines)</b>                       | 1.00% | <b>% of Capital Costs</b> |
| <b>Operations &amp; Maintenance (Pump Stations)</b>                   | 2.50% | <b>% of Capital Costs</b> |
| <b>Operations &amp; Maintenance (Dams)</b>                            | 1.50% | <b>% of Capital Costs</b> |

# Costing Model



# Decision Support Tool

# Example Portfolio

Strategies

Cost Estimates and Phasing

Diagram Panel | Decision Support Tool | Decision Matrix

Steady-State

Simulation Range

Start Time: TS 1

End Time: TS 7

Run Model

Stop Simulation

Play Speed x1

Start Time: TS 1

End Time: TS 7

New a Scenario

Select Scenario: S-6C Portfolio 3

Manage Scenarios

Save Scenario

Save as Scenario

Delete Scenario

Sync Value

Go to diagram:

(\*Diagram Group)

Warning Center

PFD | Data Input | Chart Dashboard | CIP Manager | BPI Bottom Line | Map

| Strategy                 | Project   | Icon | Status | Activation Year | Capital Cost (\$M) | O&M Unit Cost (\$M/yr) |
|--------------------------|---|------|--------|-----------------|--------------------|------------------------|
|                          | Water Imports                                     |      | OFF    | 2040            | 50                 | 2.5                    |
| Conveyance and Treatment | Expand Raw and Treatment Water Conveyance         |      | ON     | 2050            | 19.6               | 0.98                   |
|                          | West Water Treatment Plant                        |      | ON     | 2060            | 30                 | 1.5                    |
| Groundwater              | Other Regional Treatment Opportunities            |      | OFF    | 2080            | 25                 | 1.25                   |
|                          | Maximize Allowable Groundwater Product            |      | OFF    | 2050            | 10                 | 0.5                    |
|                          | Brackish Groundwater                              |      | OFF    | 2070            | 60                 | 3                      |
|                          | Aquifer Storage and Recovery                      |      | ON     | 2040            | 25                 | 1.25                   |
| Storage                  | Groundwater Imports                               |      | OFF    | 2070            | 40                 | 2                      |
|                          | Canal Storage                                     |      | OFF    | 2080            | 20                 | 1                      |
|                          | Cooperative Storage Projects                      |      | OFF    | 2080            | 10                 | 0.5                    |
| Surface Water            | Storage Expansion                                 |      | OFF    | 2080            | 10                 | 0.5                    |
|                          | Flexible Water Diversion                          |      | OFF    | 2080            | 20                 | 1                      |
|                          | Interruptible Supplies                            |      | OFF    | 2080            | 20                 | 1                      |
|                          | Seawater Desalination                             |      | OFF    | 2070            | 40                 | 2                      |
| System                   | Operational Efficiency and Interconnectivity      |      | OFF    | 2080            | 4                  | 0.2                    |
|                          | System of Operation of Water Rights and Contracts |      | OFF    | 2080            | 5                  | 0.25                   |
|                          | Demand Reduction and Water Efficiency             |      | OFF    | 2080            | 6                  | 0.3                    |
| Wastewater               | Customer Reuse                                    |      | OFF    | 2080            | 15                 | 0.75                   |
|                          | Purchased Reclaimed Sources                       |      | OFF    | 2080            | 20                 | 1                      |

### Demand and Supply Summary

### Capital Improvement Plan Summary

### Total Portfolio Cost Summary

Interest Rate:  %

Inflation Rate:  %

Duration:  yr

### Accumulated Cost Summary

Capital:  \$M

O&M:  \$M

Life Cycle:  \$M



# Integrated Water Supply Plan Update

# 8

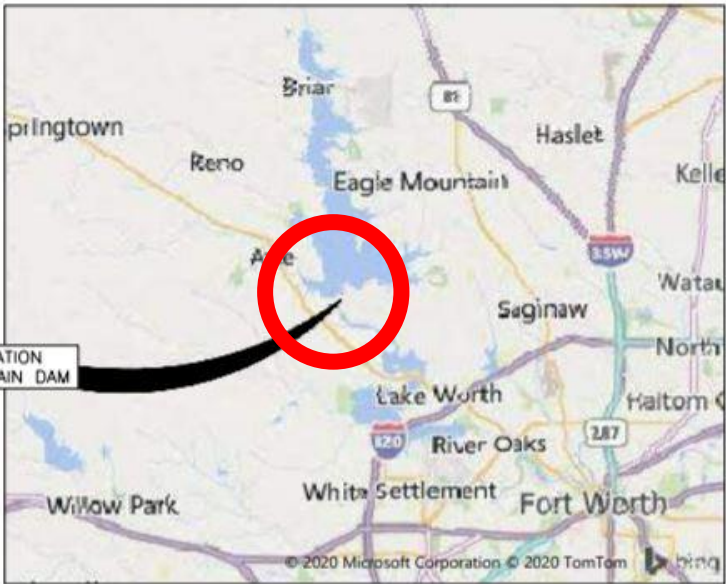
Consider Approval of Task Order with Freese and Nichols, Inc for Engineering Services for Eagle Mountain Dam - Original Spillway Evaluation

Jason Gehrig, *Infrastructure Engineering Director*

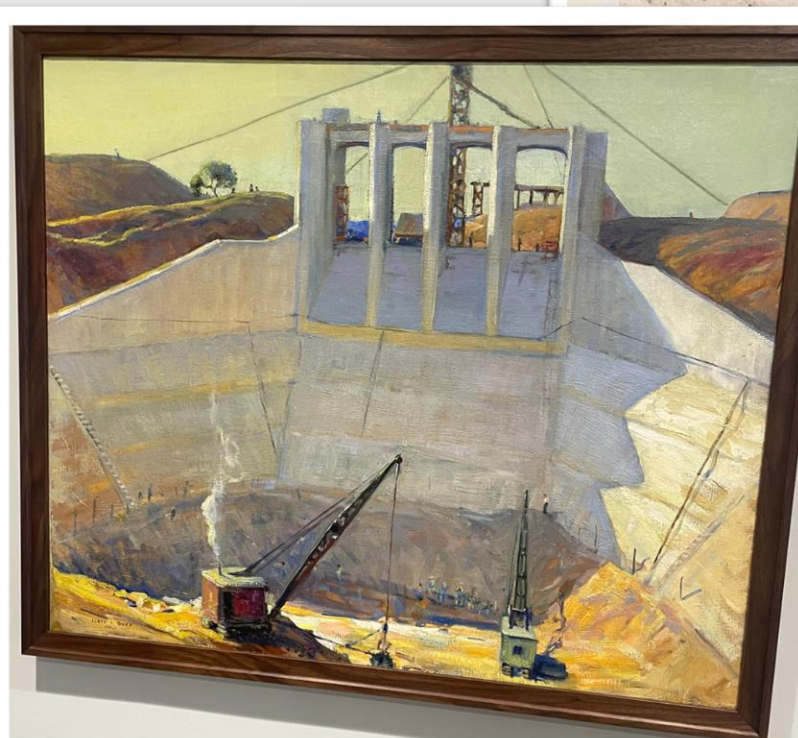
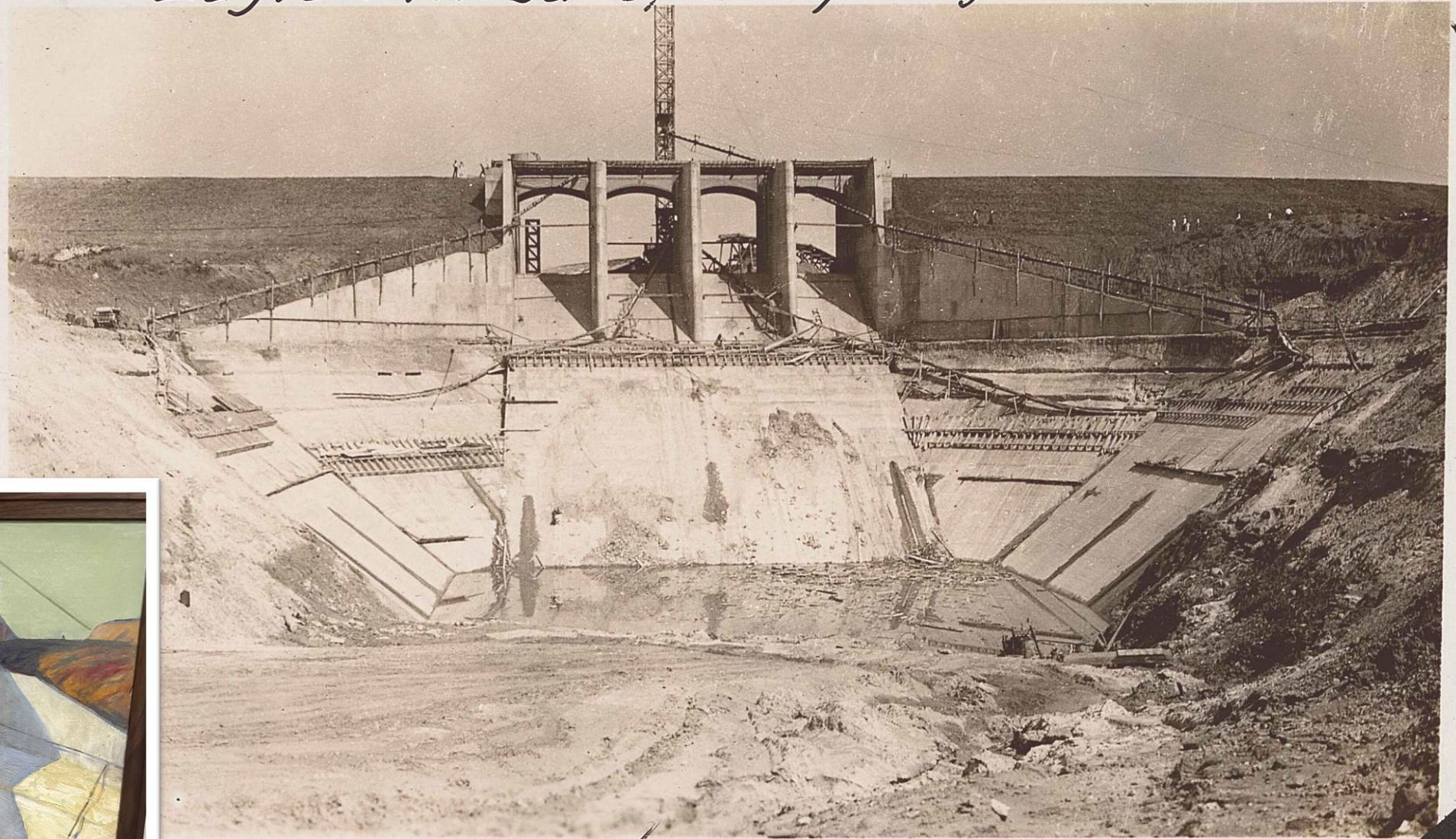


Original  
Service  
Spillway  
(early 1930s)

Side  
Channel  
Spillway  
(1960s)



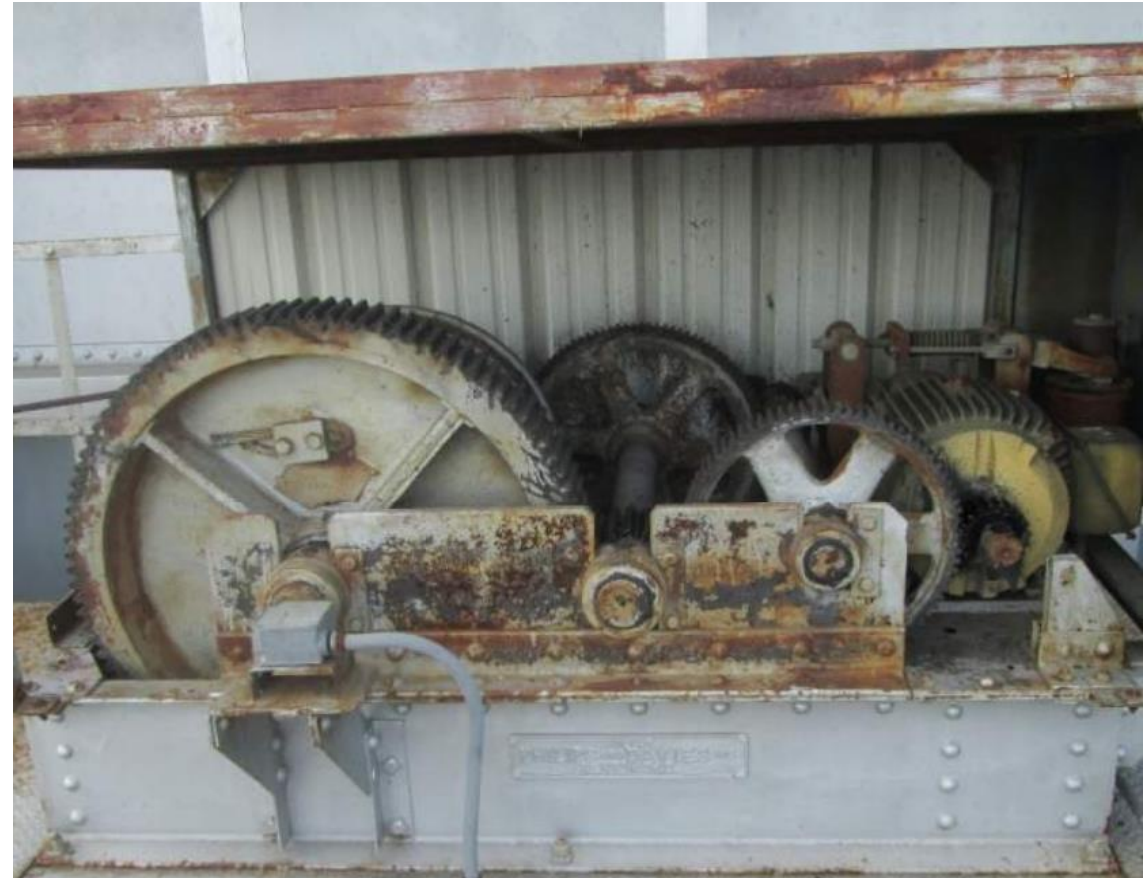
*Eagle Mt. Dam Spillway Aug. 20-1931*





## Service Spillway Evaluation

- Vertical slide gates and spillway superstructure (left)
- Gates hoist equipment (below)





## Service Spillway Evaluation

Downstream face of a vertical slide gate (left)

Hoist cables for the vertical slide gates (below)





## Service Spillway Evaluation

Eagle Mountain service spillway in operation in 1990. Gates 1 through 3 (from the left) are open during flood operations. No gate exists in the fourth bay.

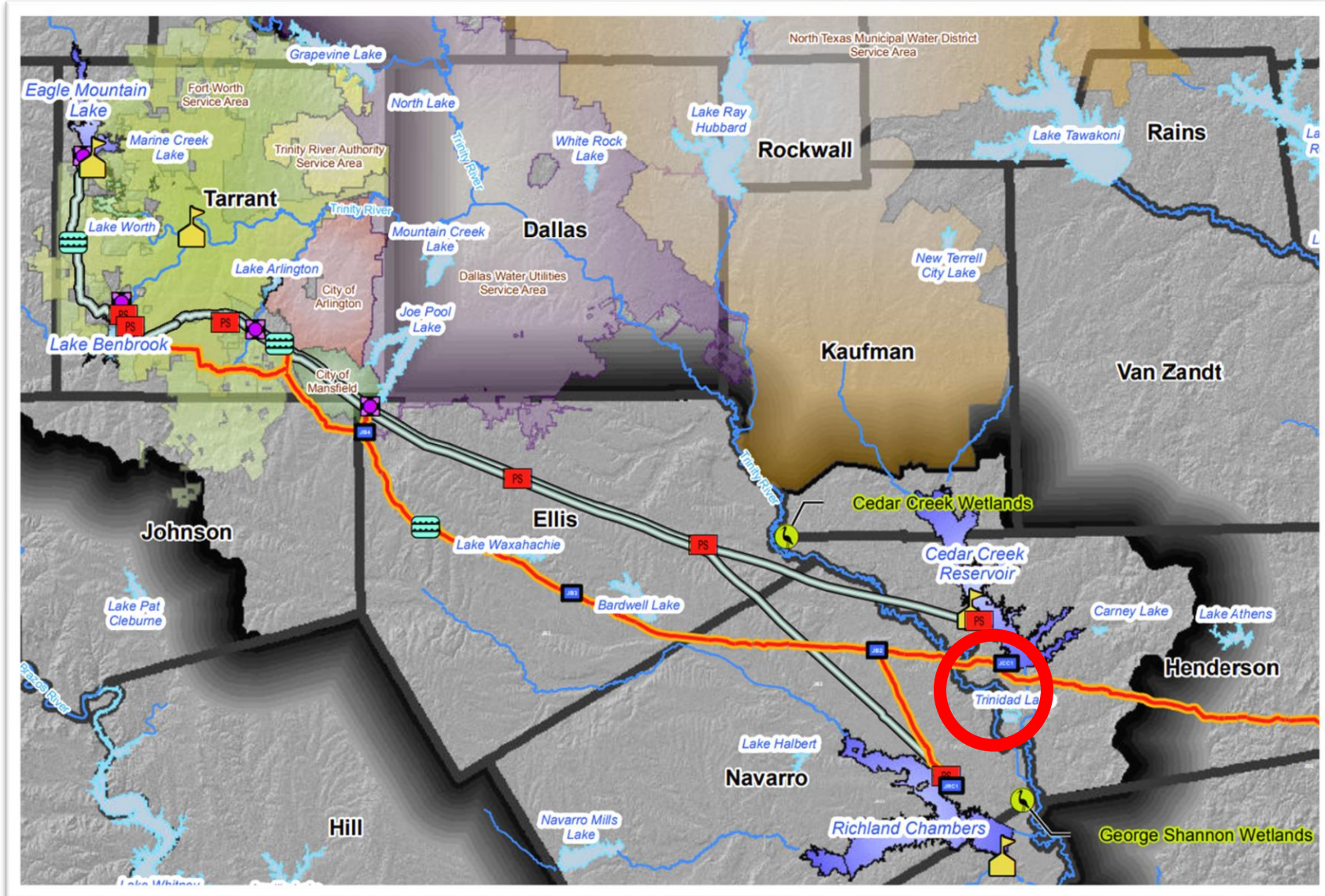
# 9

Consider Approval of Contract with Univar Solutions USA Inc. to Furnish and Deliver Salt to Joint Cedar Creek Lake Pump Station

Jason Gehrig, *Infrastructure Engineering Director*

# Chemicals Purchase – Salt

## Salt for Joint Cedar Creek Lake PS



# Chemicals Purchase – Salt

Salt for generating sodium hypochlorite (bleach) for the new Cedar Creek Lake PS (JCC1), used for biofilm control

Salt storage tanks



Salt  
(brine solution)  
used to  
generate sodium  
hypochlorite  
(bleach)

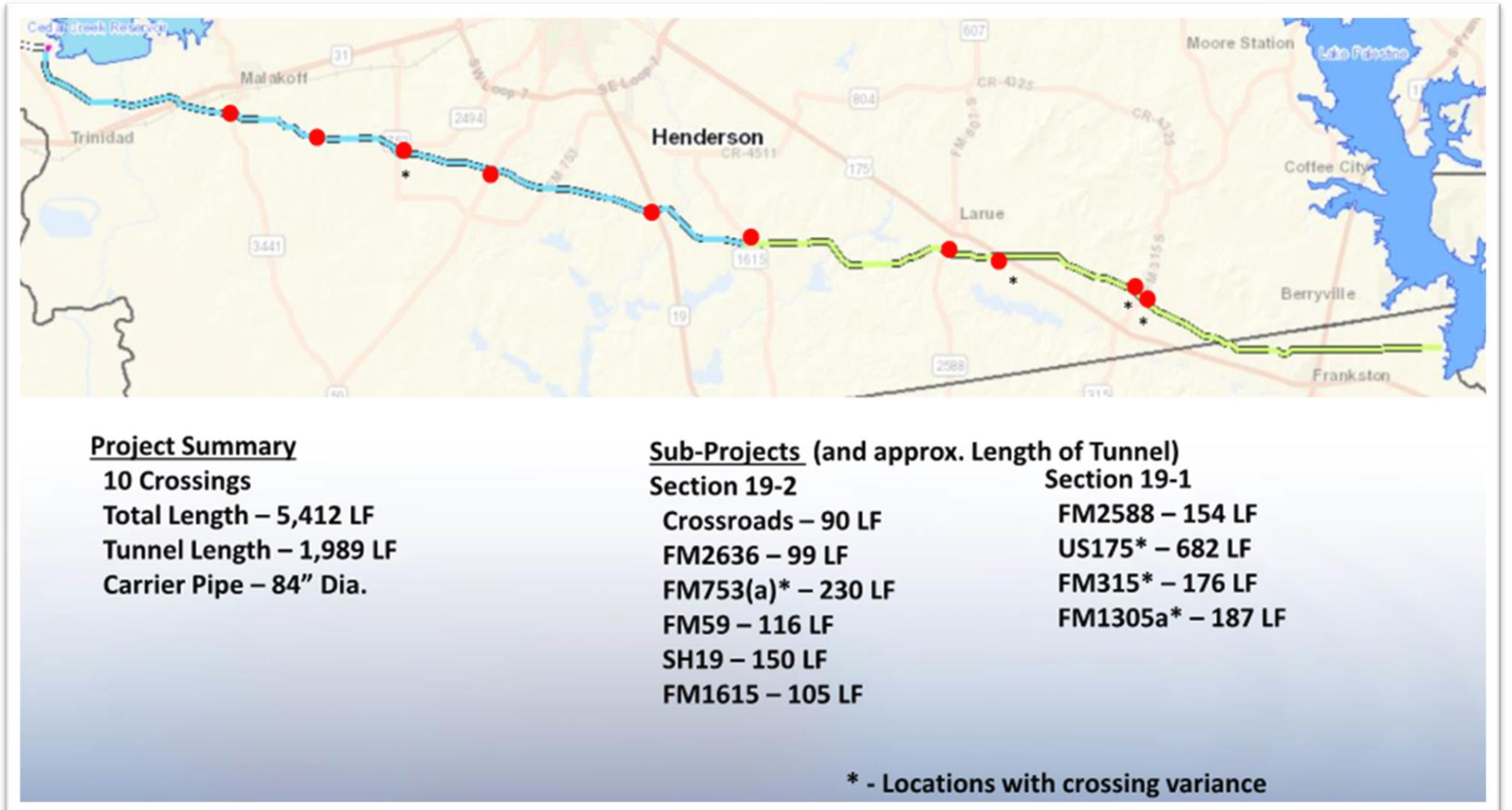


# 10

## Consider Approval of Change Order with IPL Partners for Section 19 TxDOT Tunnels of Integrated Pipeline Project

Ed Weaver, *IPL Program Manager*

# Phase 3 IPL Section 19 TXDOT Tunnel Crossings



# IPL Section 19 TXDOT Tunnel Crossings

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# 11

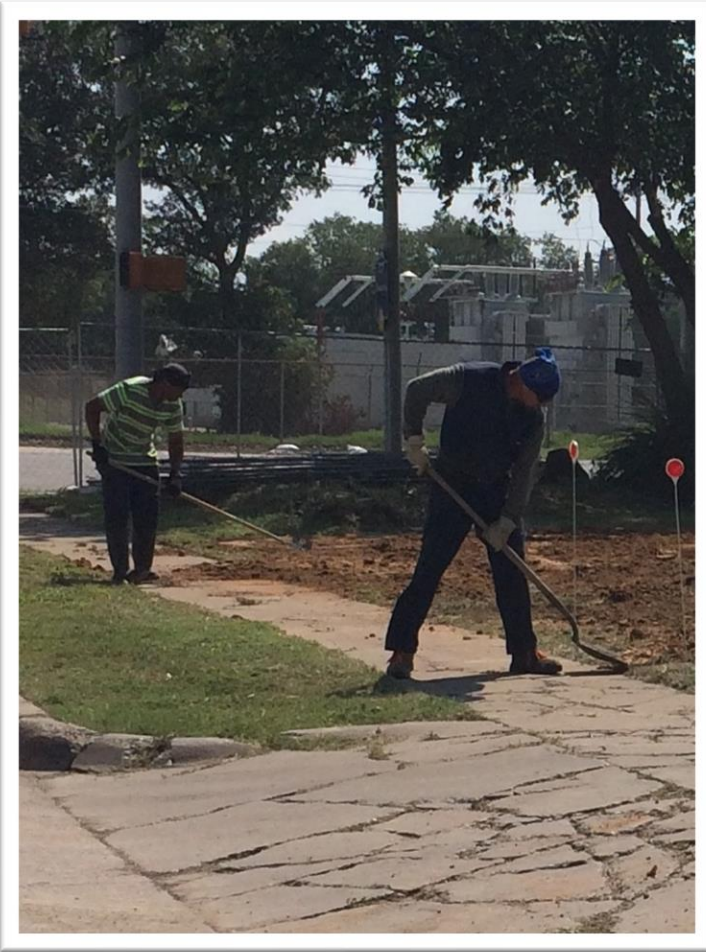
## Consider Approval of Contract with Presbyterian Night Shelter/UpSpire Program for Contract Labor Services

Darrell Beason, *Chief Operations Officer*

# Contract Labor

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WATER SUPPLY · FLOOD PROTECTION · RECREATION



# 12

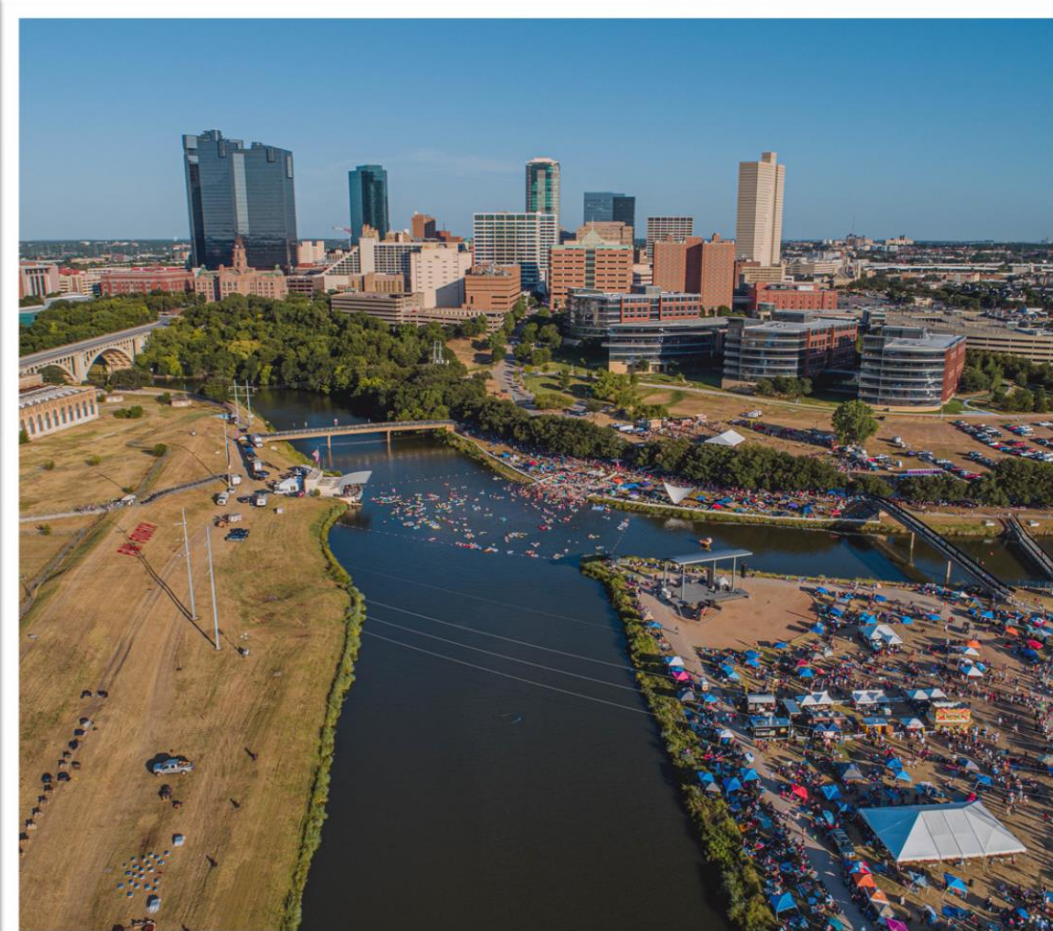
## Consider Approval of Contract with CES Power for Providing Power for Fort Worth's Fourth

Darrell Beason, *Chief Operations Officer*

# Fort Worth Fourth Power

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WATER SUPPLY · FLOOD PROTECTION · RECREATION



# 13

## Consider Approval of Contract Renewal with Magic in the Sky for Pyrotechnic Productions for Fort Worth's Fourth

Darrell Beason, *Chief Operations Officer*



# Fort Worth Fourth Fireworks

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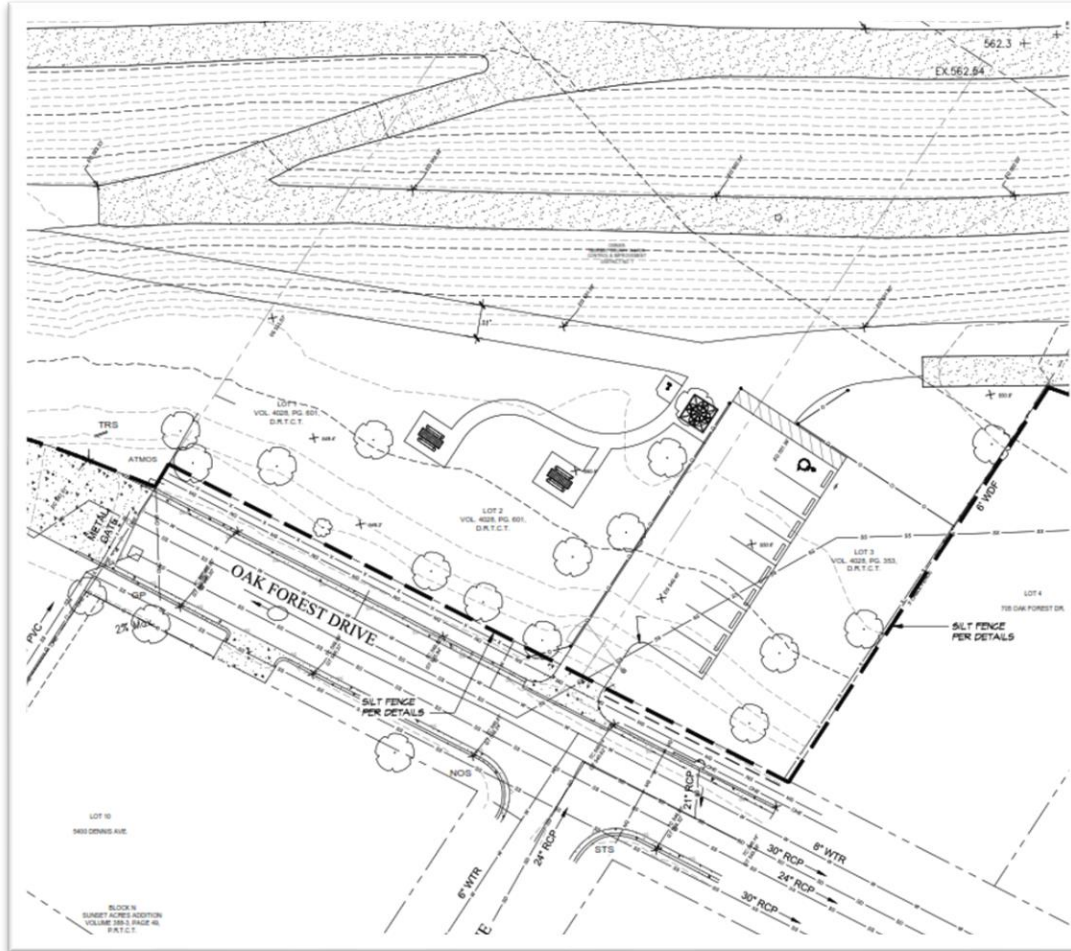


# 14

## Consider Approval of Acceptance of Philanthropic Contribution for Oak Forest Trailhead

Darrell Beason, *Chief Operations Officer*

# Donation for Oak Forest Trailhead



# Staff Update

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## Recognition of Service

*Dan Buhman, General Manager*

*Darrell Beason, Chief Operations Officer*

# Staff Update

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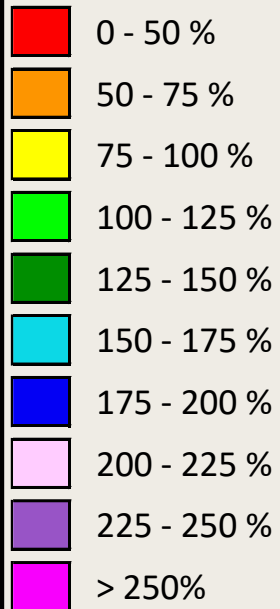
## Water Resources Update

*Rachel Ickert, Chief Water Resources Officer*

# Percent of Normal Rainfall

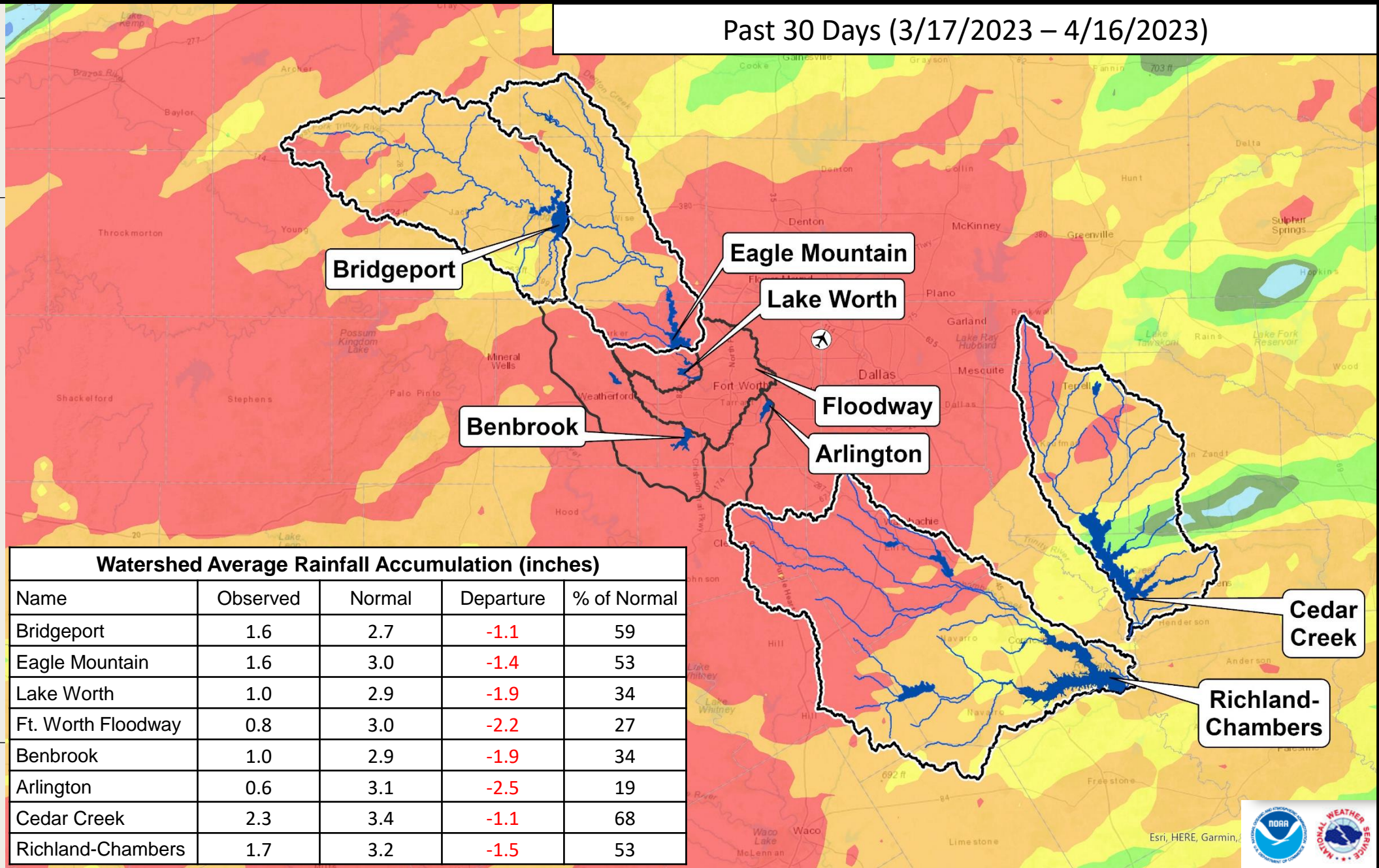


## LEGEND



Precipitation totals are obtained from NOAA's NWS. The totals displayed are estimated by the WGRFC. The data is processed and displayed using ESRI ArcGIS.

Past 30 Days (3/17/2023 – 4/16/2023)



**Watershed Average Rainfall Accumulation (inches)**

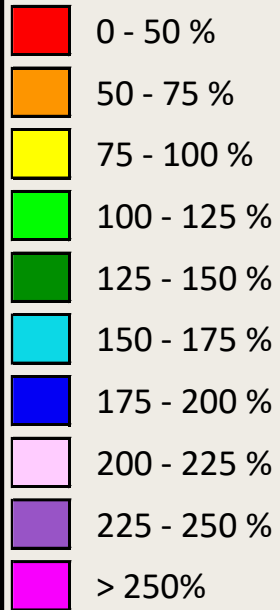
| Name               | Observed | Normal | Departure | % of Normal |
|--------------------|----------|--------|-----------|-------------|
| Bridgeport         | 1.6      | 2.7    | -1.1      | 59          |
| Eagle Mountain     | 1.6      | 3.0    | -1.4      | 53          |
| Lake Worth         | 1.0      | 2.9    | -1.9      | 34          |
| Ft. Worth Floodway | 0.8      | 3.0    | -2.2      | 27          |
| Benbrook           | 1.0      | 2.9    | -1.9      | 34          |
| Arlington          | 0.6      | 3.1    | -2.5      | 19          |
| Cedar Creek        | 2.3      | 3.4    | -1.1      | 68          |
| Richland-Chambers  | 1.7      | 3.2    | -1.5      | 53          |



# Percent of Normal Rainfall

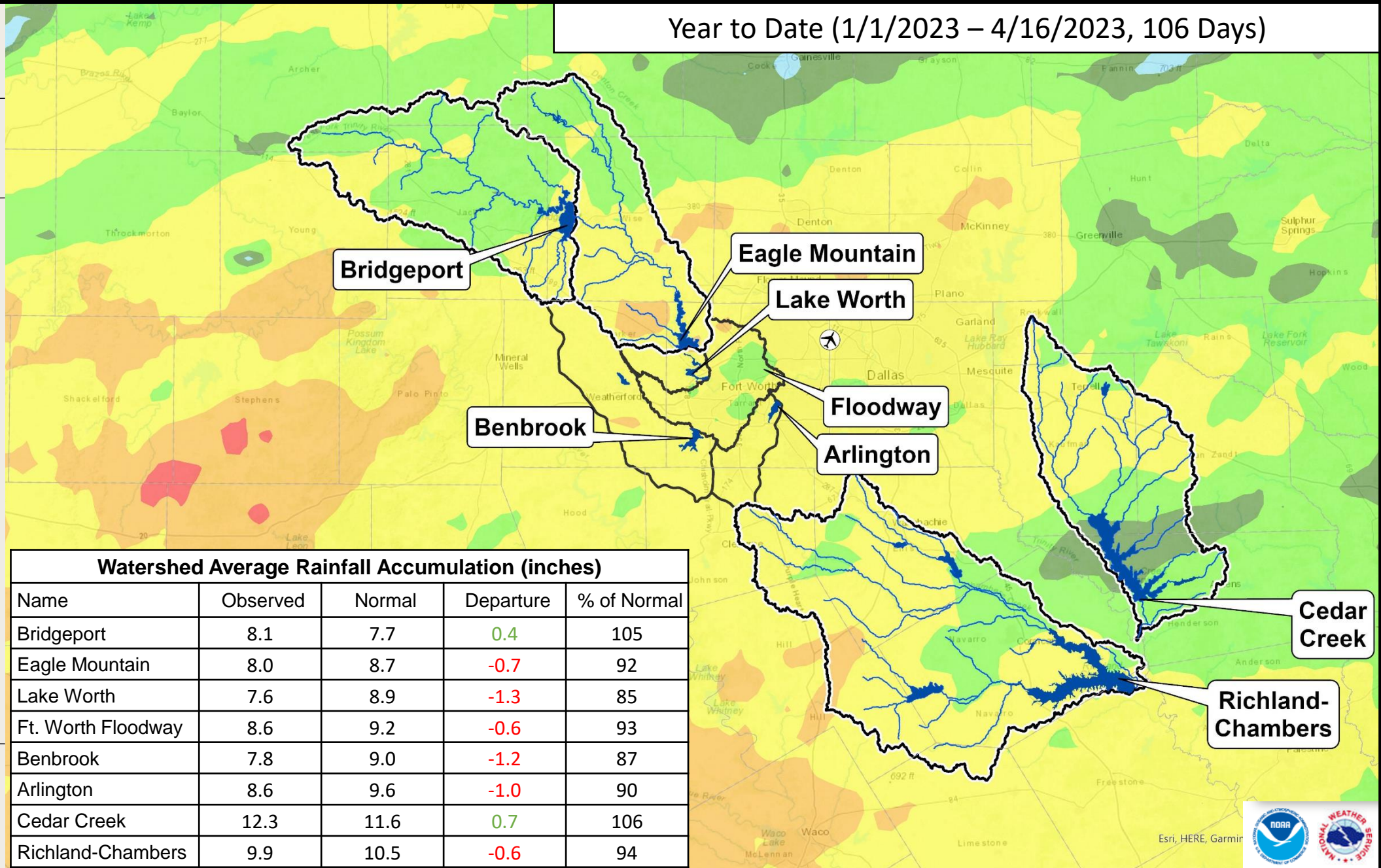


## LEGEND



Precipitation totals are obtained from NOAA's NWS. The totals displayed are estimated by the WGRFC. The data is processed and displayed using ESRI ArcGIS.

Year to Date (1/1/2023 – 4/16/2023, 106 Days)

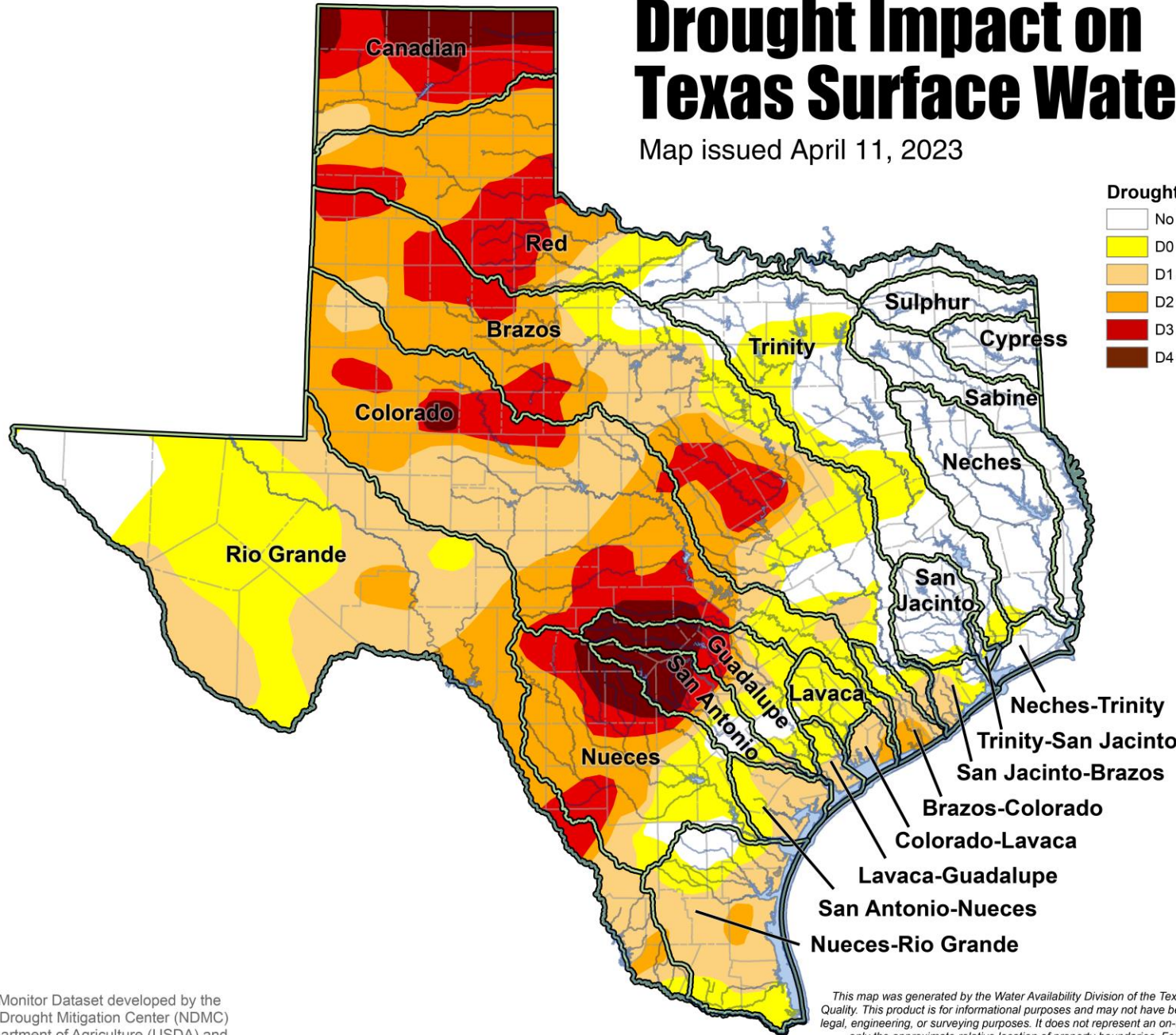


| Watershed Average Rainfall Accumulation (inches) |          |        |           |             |
|--|----------|--------|-----------|-------------|
| Name   | Observed | Normal | Departure | % of Normal |
| Bridgeport                                       | 8.1      | 7.7    | 0.4       | 105         |
| Eagle Mountain                                   | 8.0      | 8.7    | -0.7      | 92          |
| Lake Worth                                       | 7.6      | 8.9    | -1.3      | 85          |
| Ft. Worth Floodway                               | 8.6      | 9.2    | -0.6      | 93          |
| Benbrook   | 7.8      | 9.0    | -1.2      | 87          |
| Arlington  | 8.6      | 9.6    | -1.0      | 90          |
| Cedar Creek                                      | 12.3     | 11.6   | 0.7       | 106         |
| Richland-Chambers                                | 9.9      | 10.5   | -0.6      | 94          |



# Drought Impact on Texas Surface Water

Map issued April 11, 2023



### Drought Severity Index

- No Drought
- D0 - Abnormally Dry
- D1 - Drought - Moderate
- D2 - Drought - Severe
- D3 - Drought - Extreme
- D4 - Drought - Exceptional

**April 11, 2023**

(Released Thursday, Apr. 13, 2023)

Valid 8 a.m. EDT

### Drought Conditions (Percent Area)

|  | None  | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4    |
|--|-------|-------|-------|-------|-------|-------|
| <b>Current</b>                                     | 22.13 | 77.87 | 58.63 | 37.64 | 16.24 | 4.07  |
| <b>Last Week</b><br><i>04-04-2023</i>              | 19.10 | 80.90 | 66.89 | 45.25 | 18.98 | 4.19  |
| <b>3 Months Ago</b><br><i>01-10-2023</i>           | 26.83 | 73.17 | 51.66 | 27.31 | 7.70  | 1.80  |
| <b>Start of Calendar Year</b><br><i>01-03-2023</i> | 28.84 | 71.16 | 49.90 | 26.60 | 7.41  | 1.60  |
| <b>Start of Water Year</b><br><i>09-27-2022</i>    | 14.96 | 85.04 | 61.36 | 31.61 | 8.82  | 1.06  |
| <b>One Year Ago</b><br><i>04-12-2022</i>           | 2.87  | 97.13 | 87.66 | 74.12 | 49.11 | 14.20 |

### Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

David Simeral  
Western Regional Climate Center



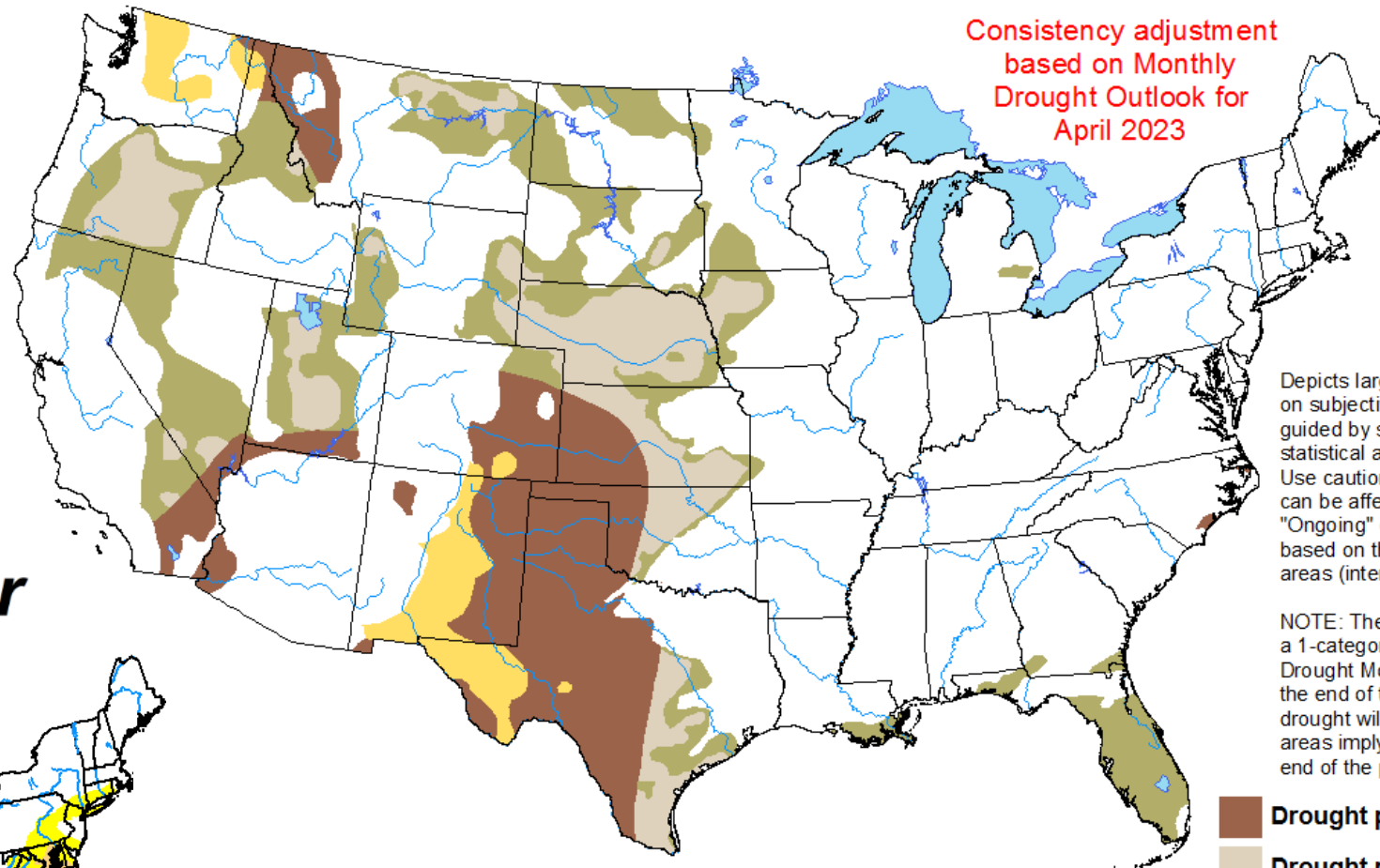


# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period





Valid for April 1 - June 30, 2023  
Released March 31, 2023

Consistency adjustment  
based on Monthly  
Drought Outlook for  
April 2023

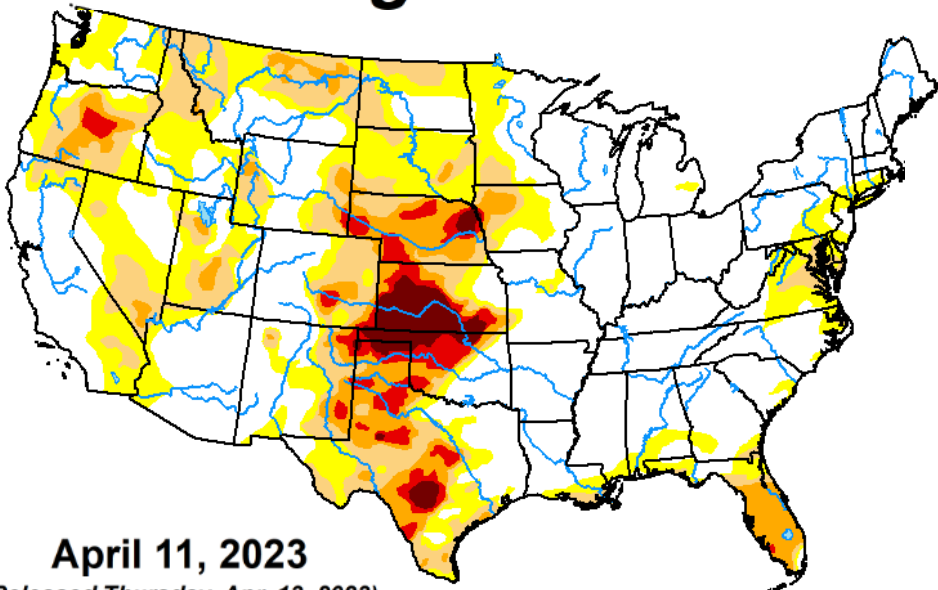


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

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

## U.S. Drought Monitor



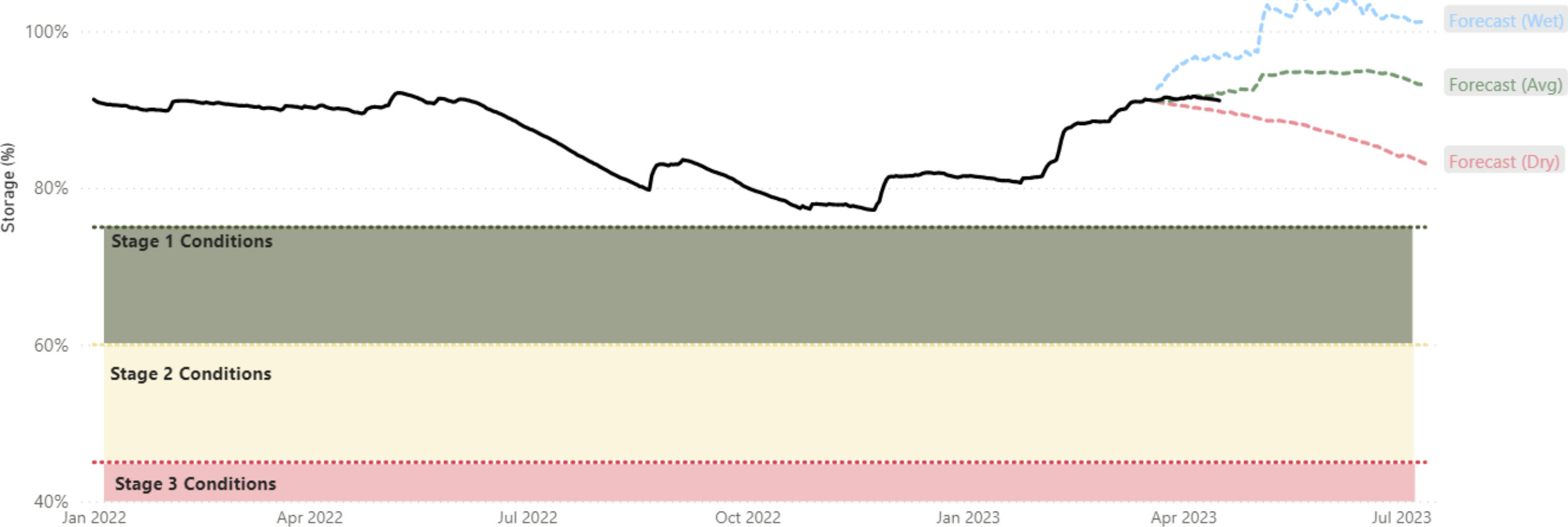
April 11, 2023

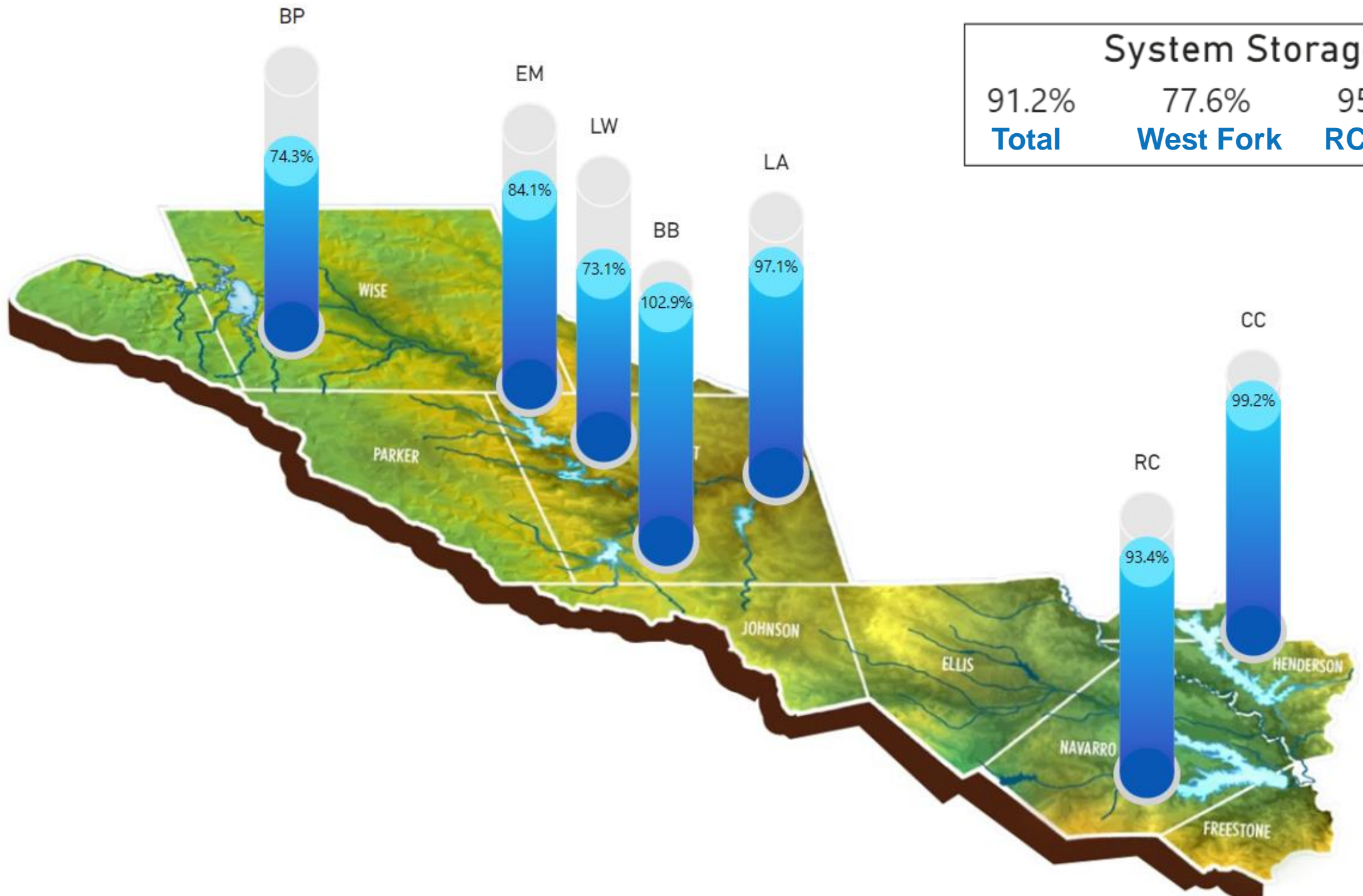
(Released Thursday, Apr. 13, 2023)



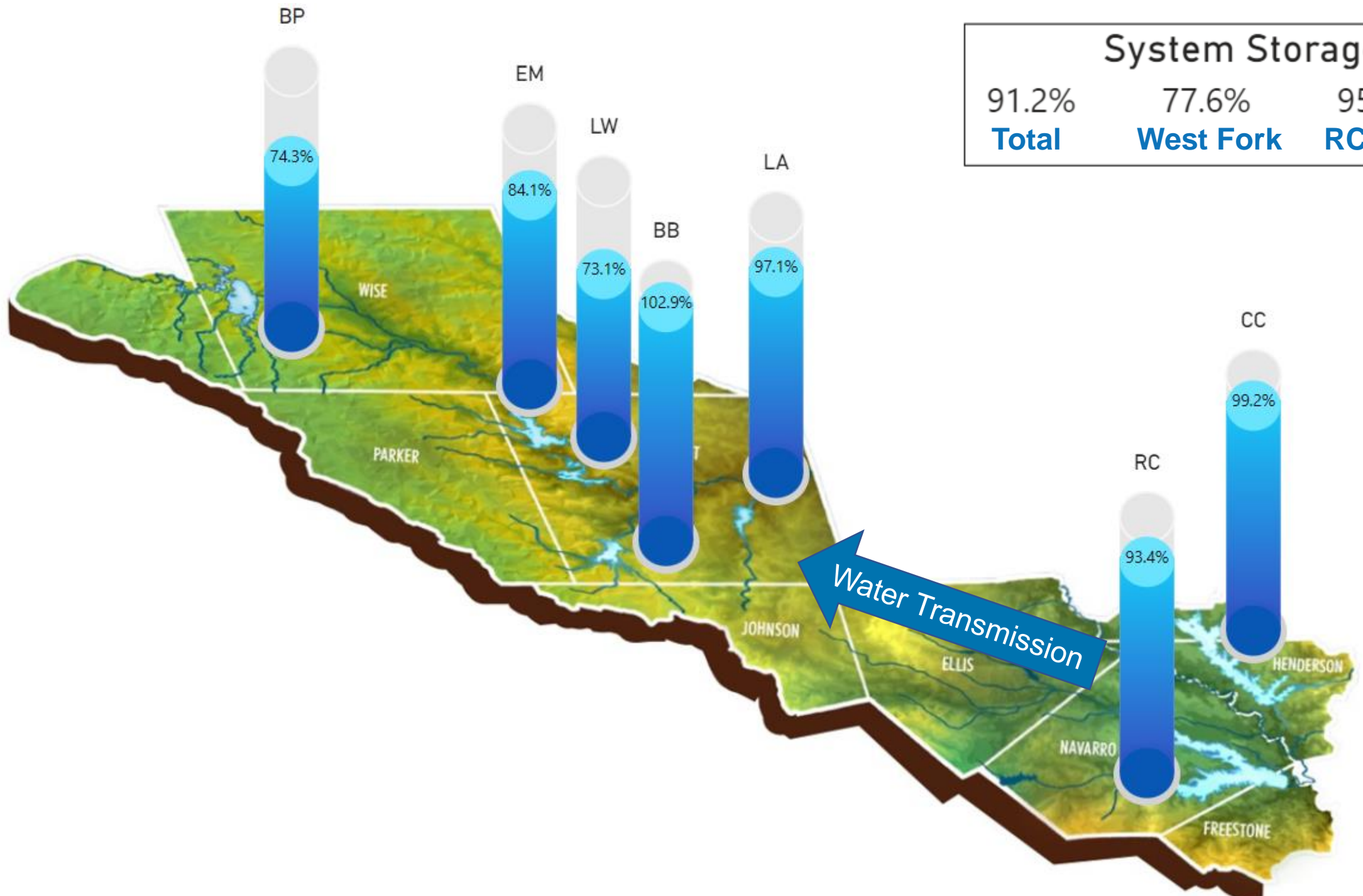
<http://go.usa.gov/3eZ73>

# Historic and Projected Total Water Supply Storage



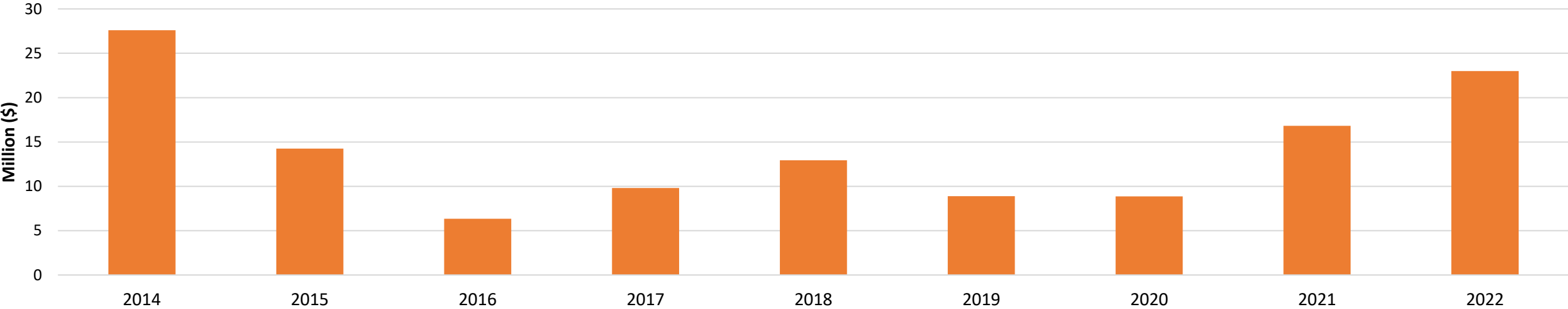


| System Storage |                  |                    |
|----------------|------------------|--------------------|
| 91.2%          | 77.6%            | 95.5%              |
| <b>Total</b>   | <b>West Fork</b> | <b>RC &amp; CC</b> |

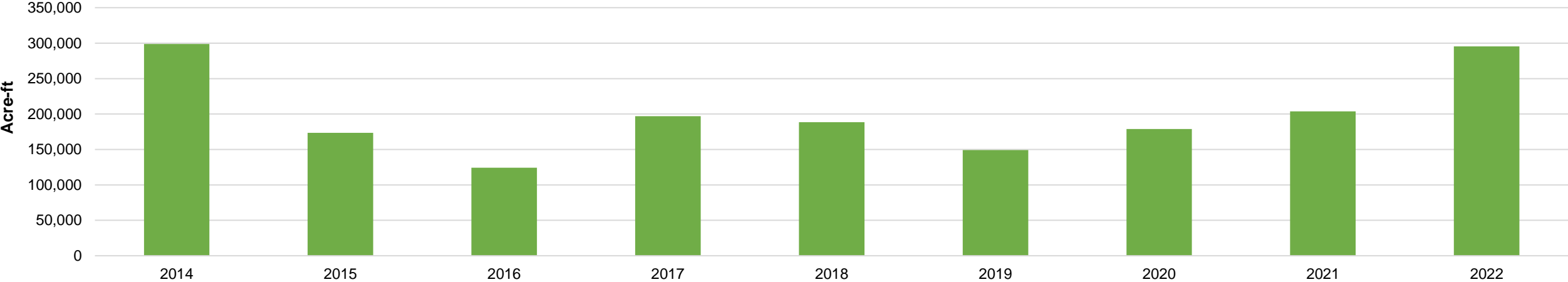


| System Storage |                  |                    |
|----------------|------------------|--------------------|
| 91.2%          | 77.6%            | 95.5%              |
| <b>Total</b>   | <b>West Fork</b> | <b>RC &amp; CC</b> |

# Annual Electricity Cost 2014 – 2022



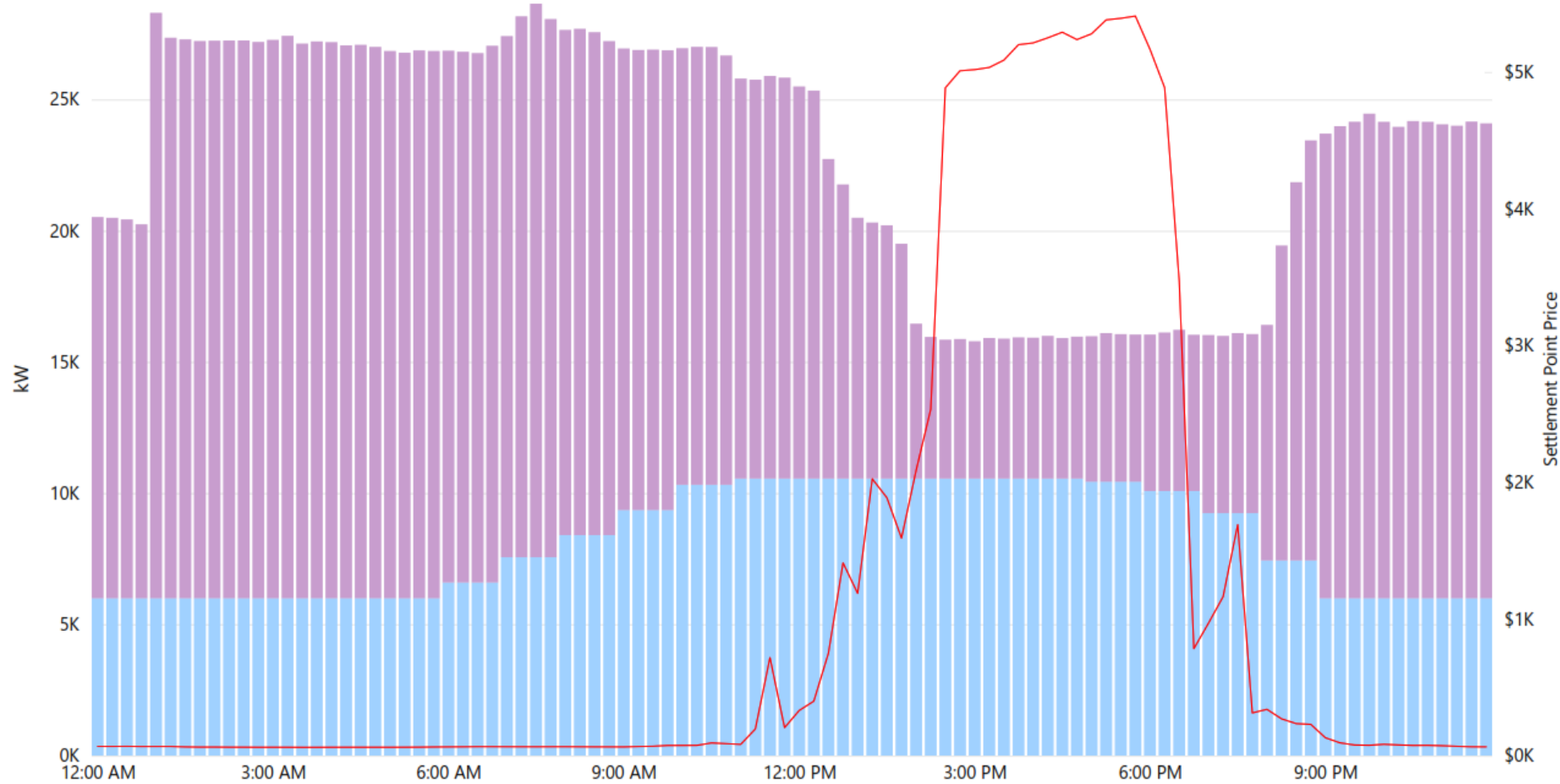
# Volume Pumped from Richland-Chambers & Cedar Creek



# Major Price Spike Response – July 13, 2022

## Daily Avg Purchased and Exposed Load

● Forward Purchase KW ● Real Time KW ● Settlement Point Price

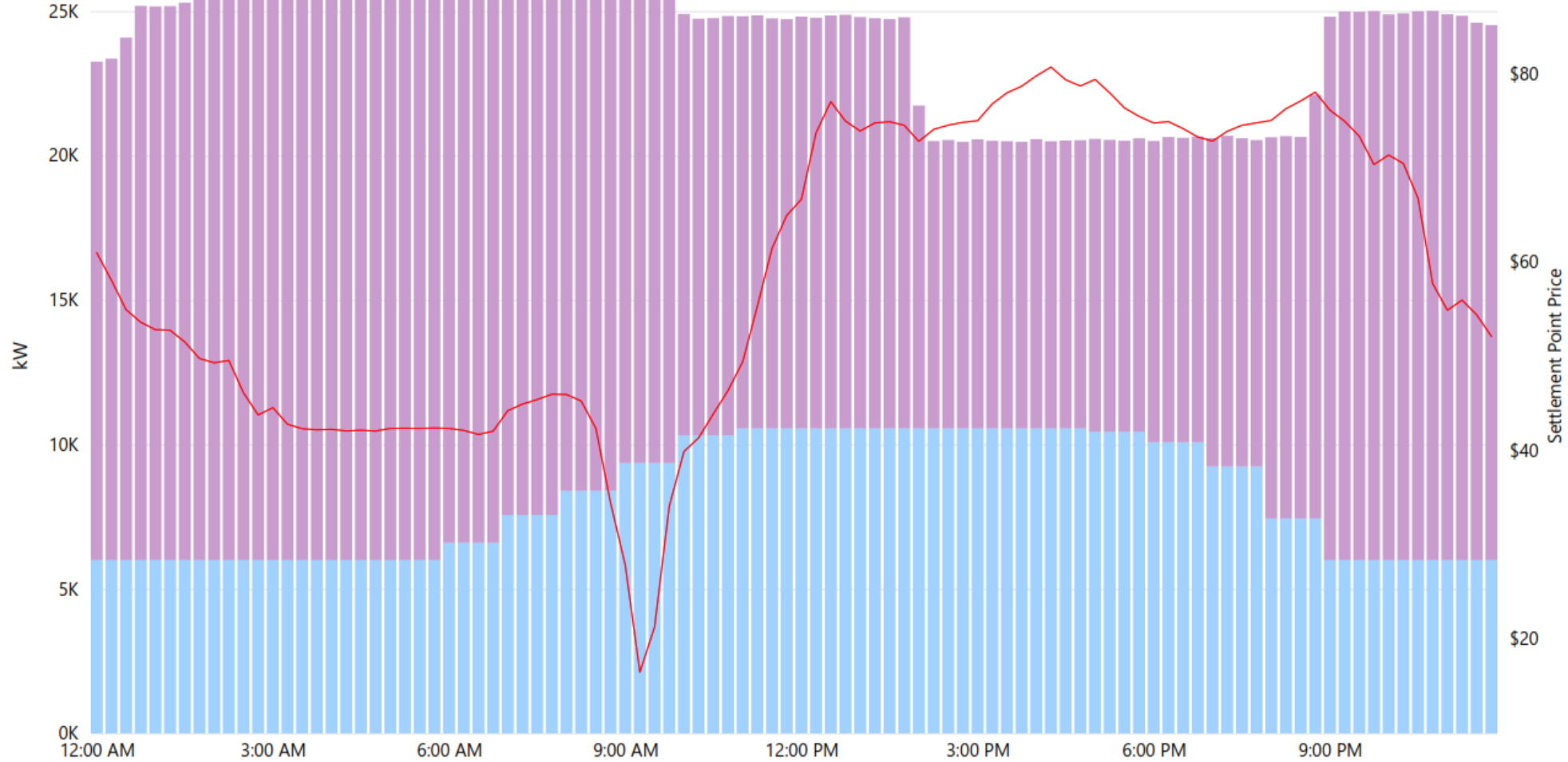


**\$197,000  
Afternoon Savings**

# 4CP Response – July 23, 2022

## Daily Avg Purchased and Exposed Load

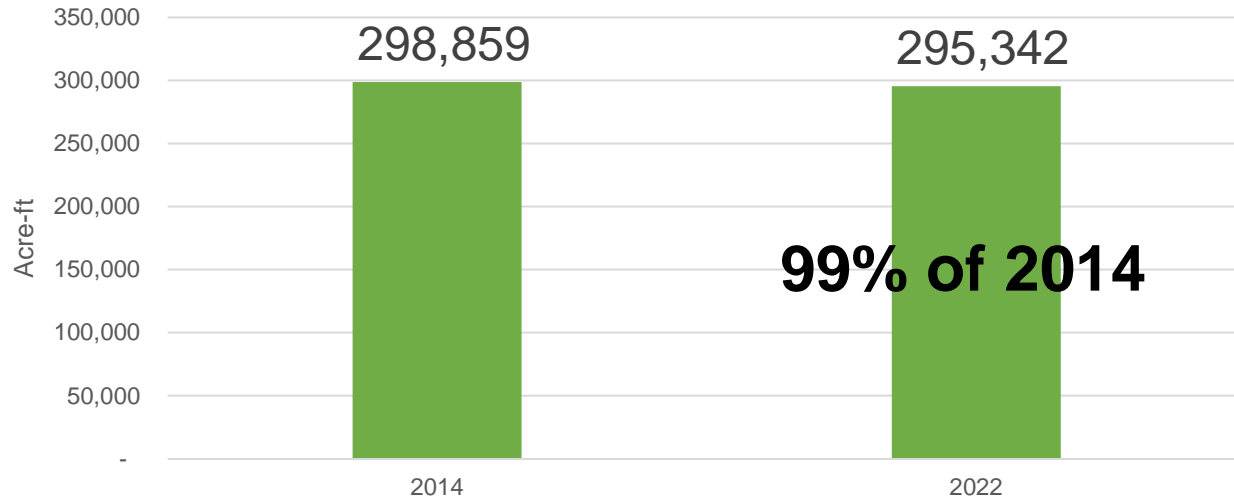
● Forward Purchase KW ● Real Time KW ● Settlement Point Price



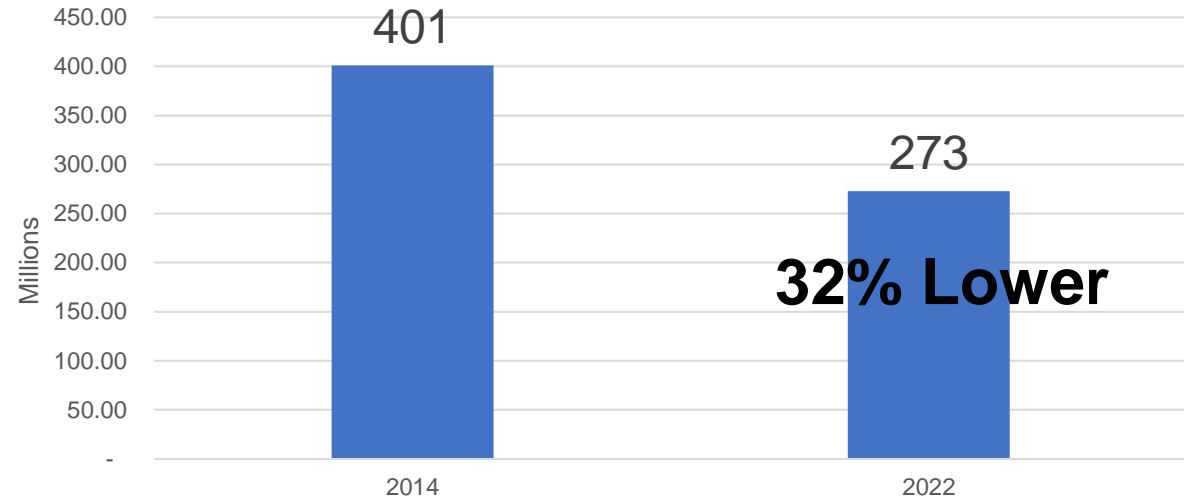
**\$726,000**  
**Annual Savings**

# Richland-Chambers & Cedar Creek Pumping and Electricity

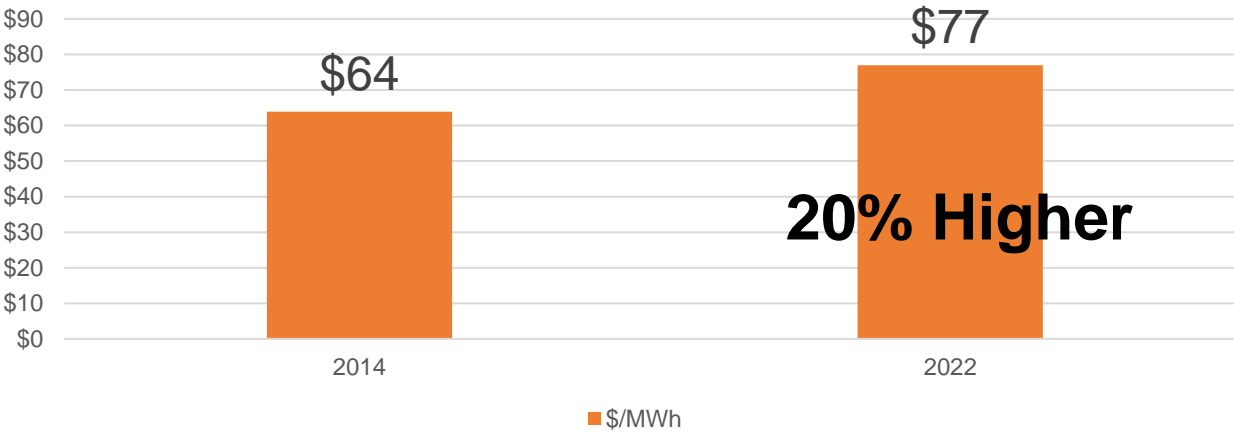
Volume Pumped from RC & CC



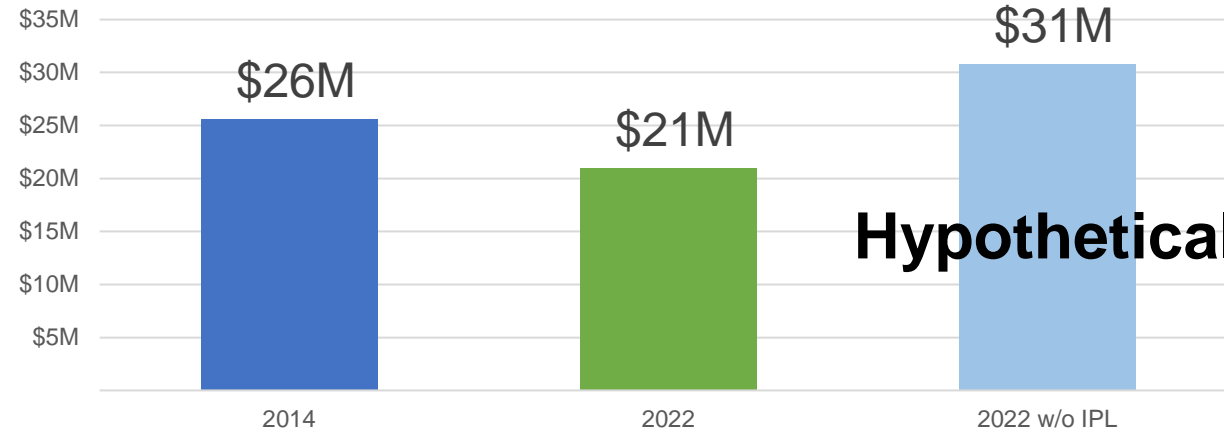
Total Energy (million kWh) from RC & CC Pumping



\$/MWh

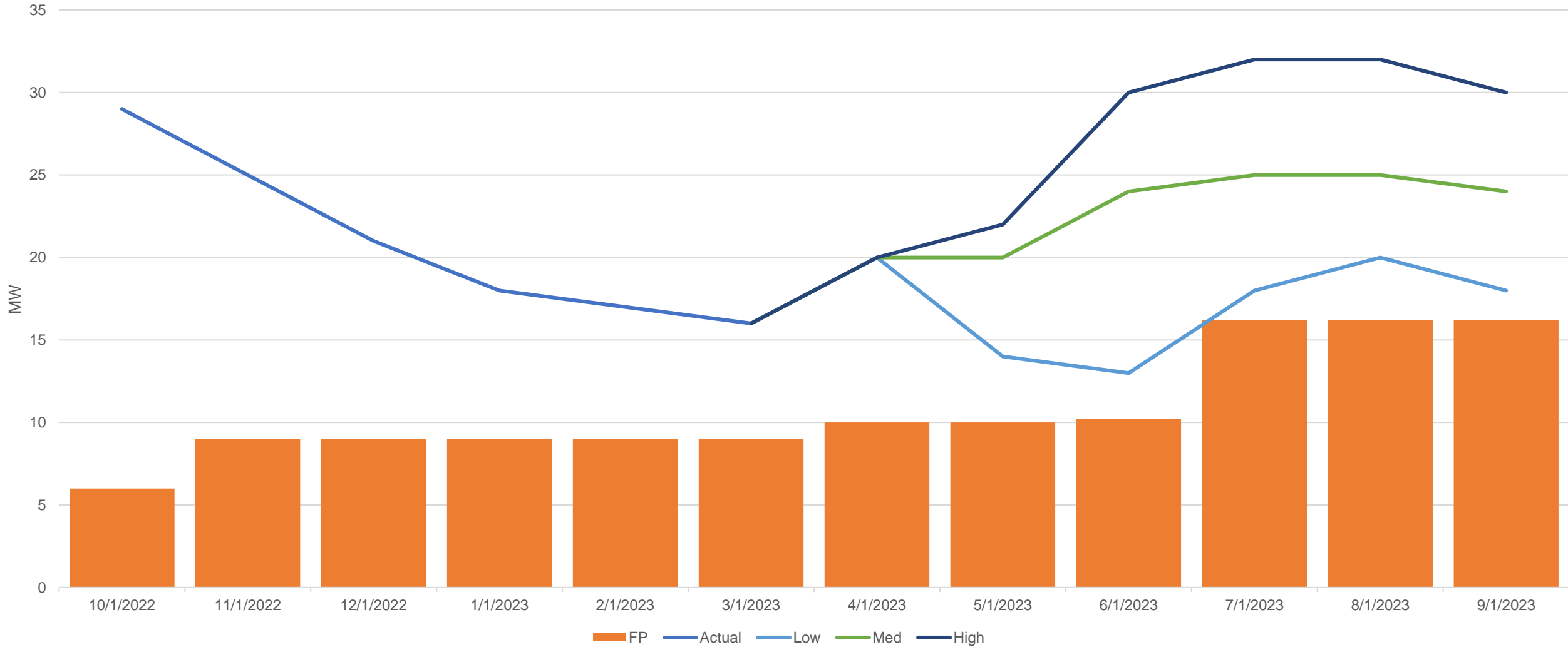


RC & CC Pumping Cost

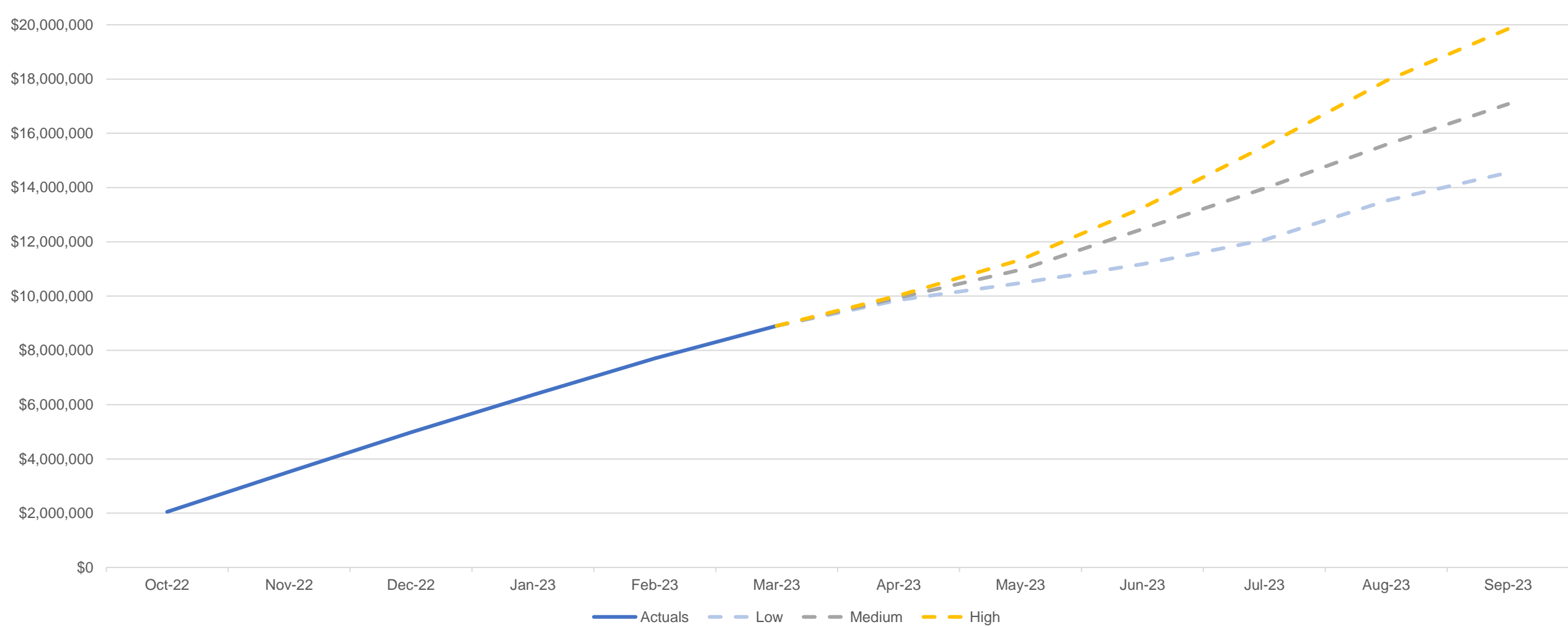




# FY 2023 Forward Purchase and Forecast Load



# FY 2023 Actuals and Forecast





# 16

## Executive Session

# 17

## Consider Approval of Authorization to Acquire Real Property by Purchase for the Cedar Creek Wetland Project

Steve Christian, *Real Property Director*

# 18

Consider Approval of Sale of Encroachment Below Elevation 325' Mean Sea Level at Cedar Creek Lake, being 120 square feet of land, more or less, situated in the R.R Jones Survey, Abstract Number 404, Henderson County, Texas

Steve Christian, *Real Property Director*



# 19

## Consider Approval of Assignment of Agreement to Exchange Real Property

Stephen Tatum, *General Counsel*



# 20

## Future Agenda Items



**21**

**Next Board Meeting  
May 16, 2023 at 9:00 AM**





22

Adjourn