

# Dallas Water Utilities: Conserving and Protecting Water Resources

Environment &  
Sustainability Committee

January 6, 2020

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**City of Dallas**

# Purpose

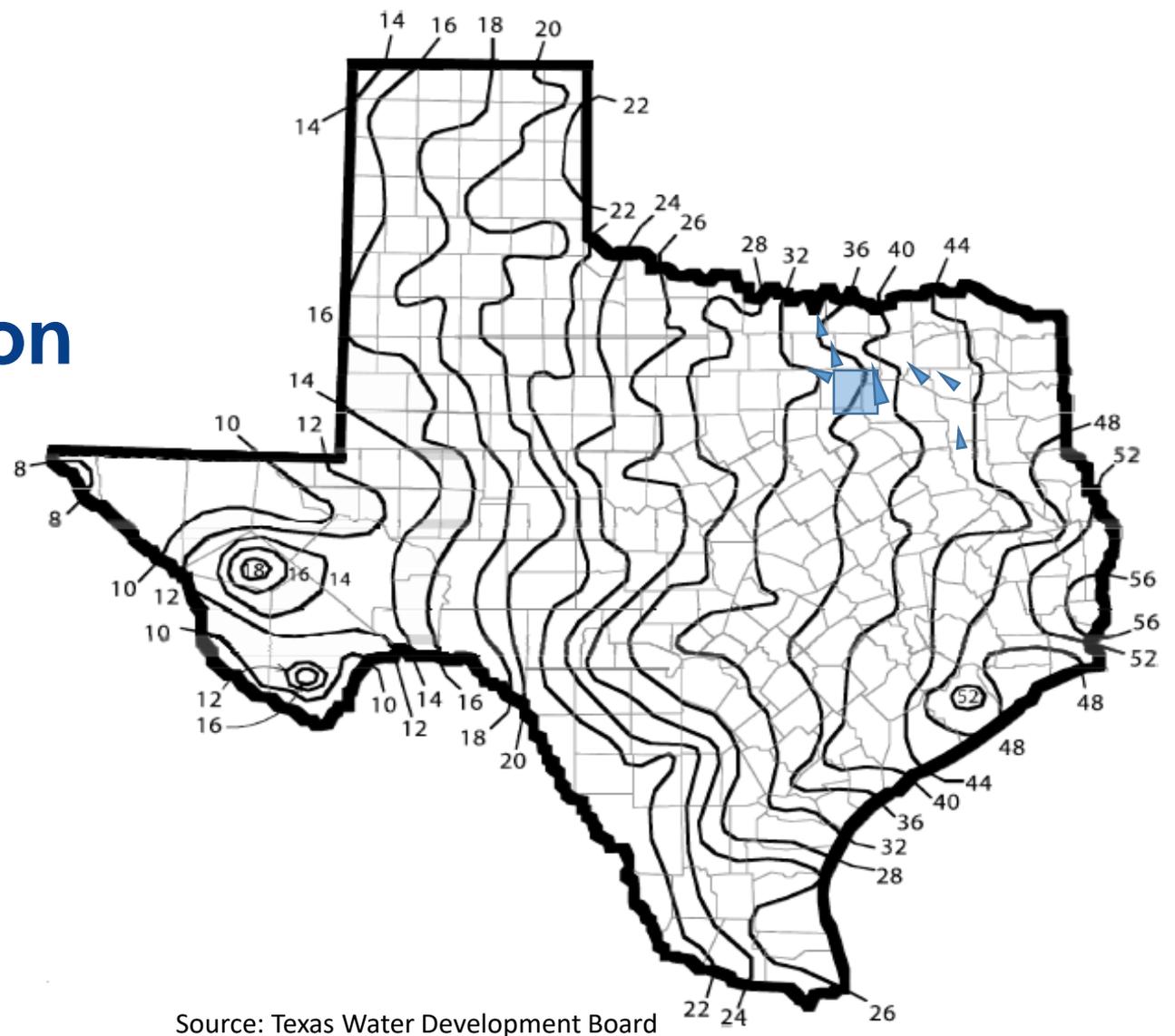
To provide an overview of how Dallas Water Utilities is protecting water resources by:

- Planning for the impacts of climate change
- Conserving current water resources
- Protecting neighborhoods from flooding



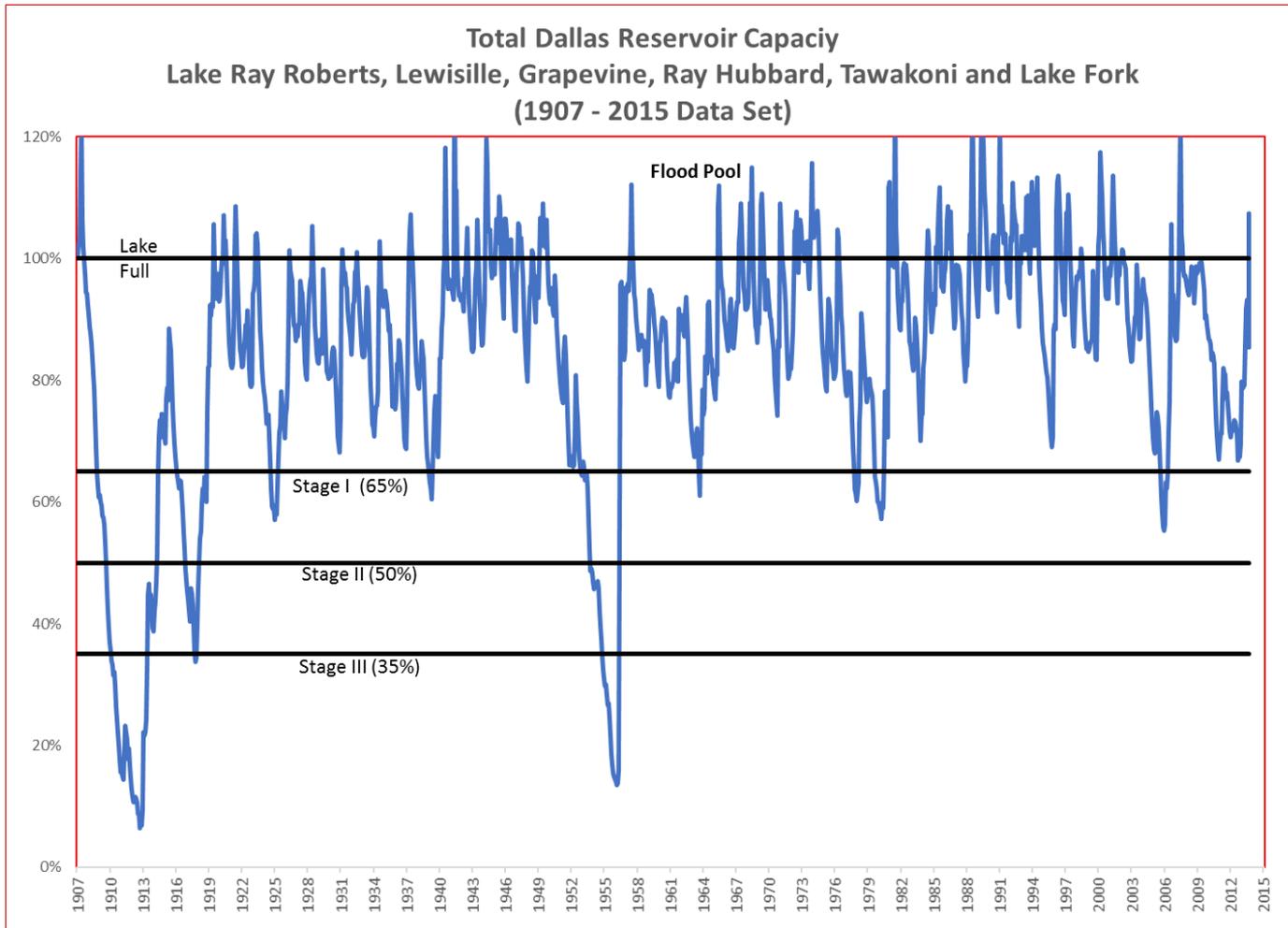


# Average Annual Precipitation



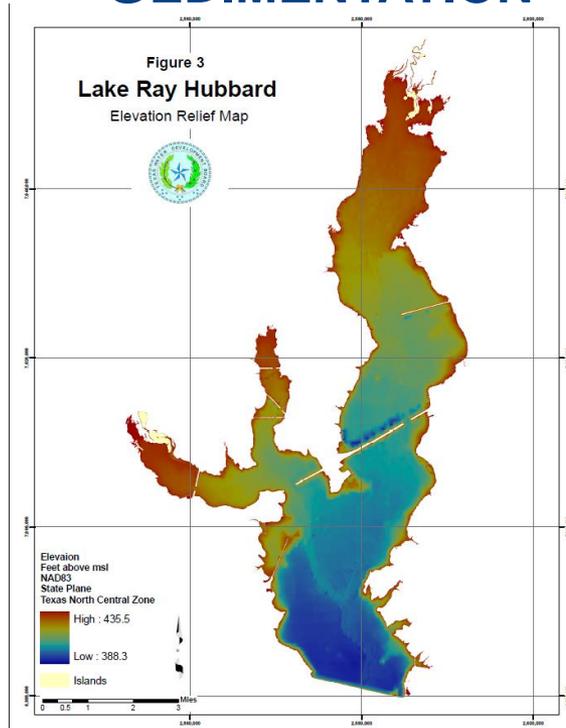
Source: Texas Water Development Board

# Historical Reservoir Capacity



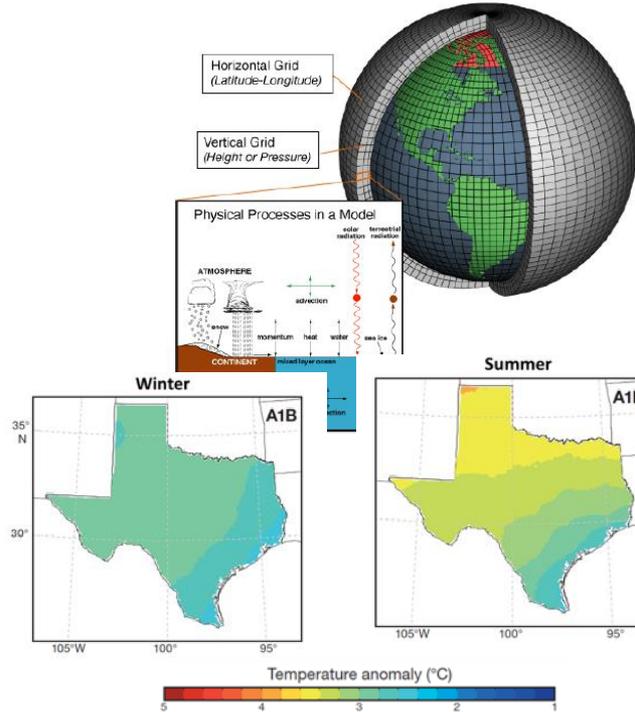
# 2014 Long Range Water Supply Plan Assumptions Regarding Existing Supplies

## SEDIMENTATION



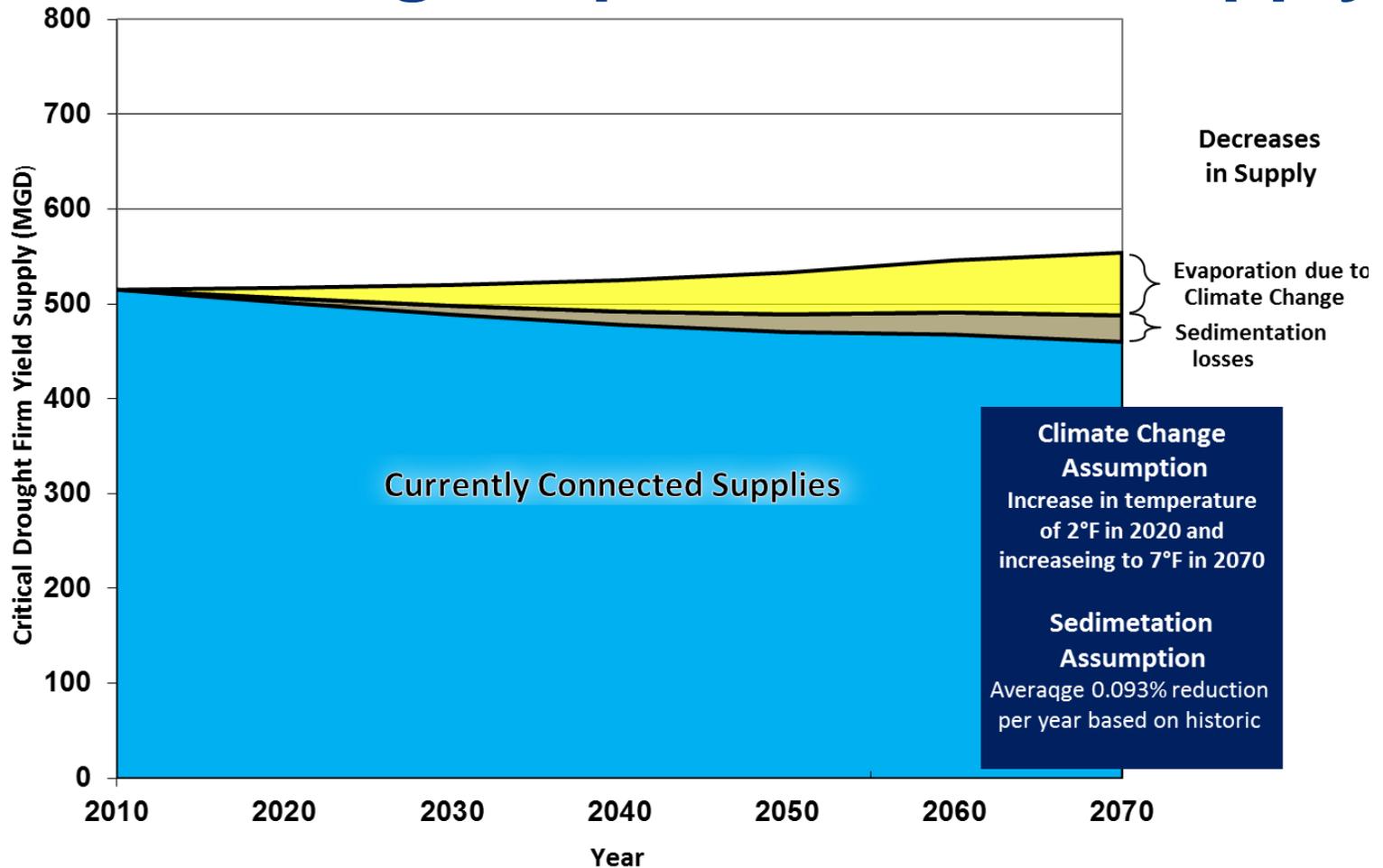
Decreased Storage Volume

## CLIMATE CHANGE

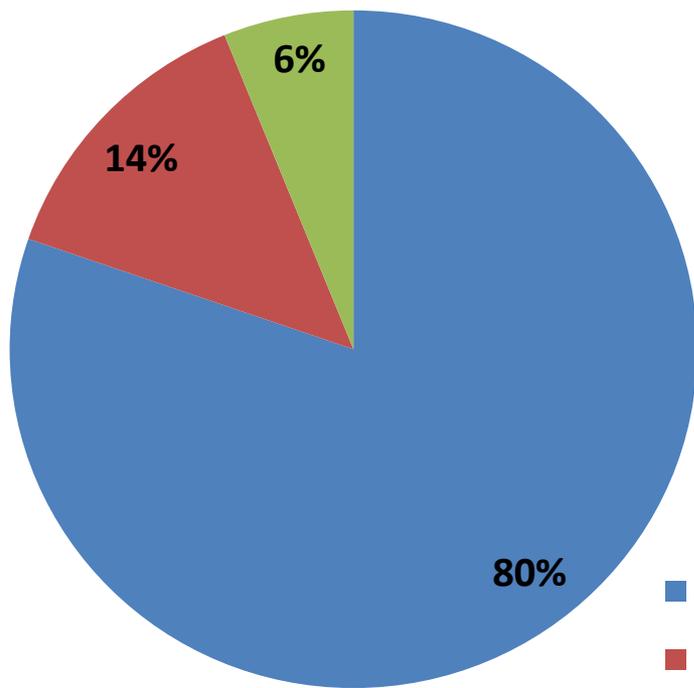


Increased Evaporation

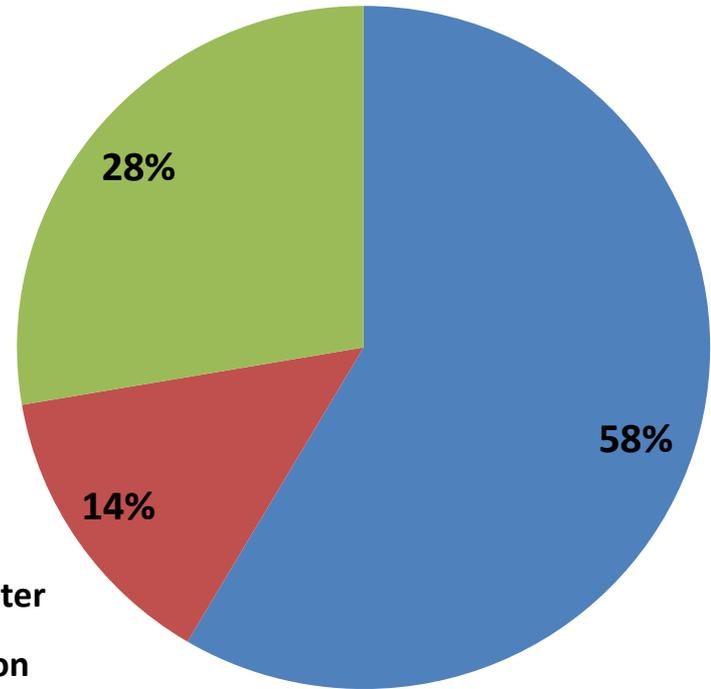
# Climate Change Impact on Water Supply



# Changing Water Portfolio



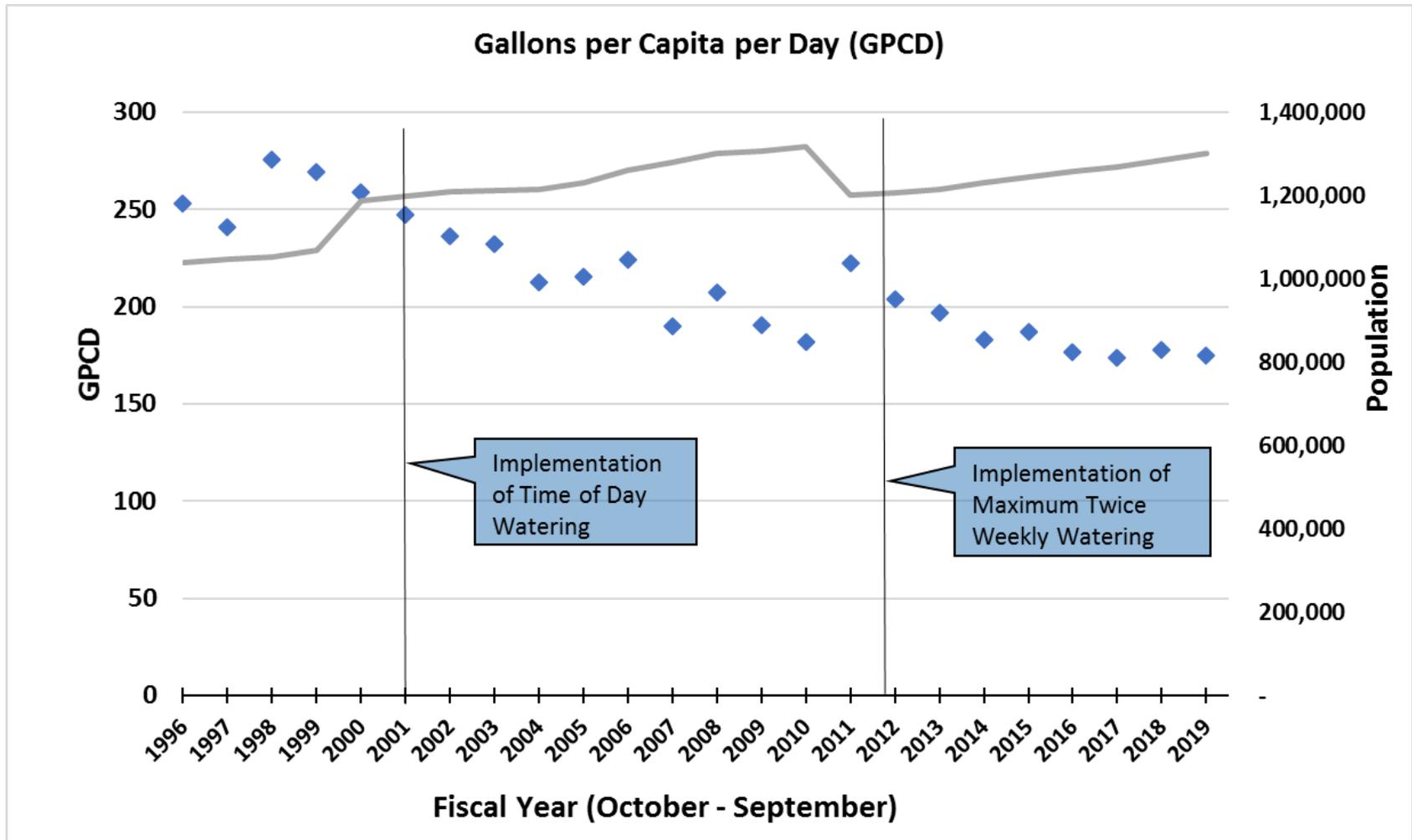
**2020**  
(536.1 Ac-Ft/Yr)



**2070**  
(835.0 Ac-Ft/Yr)

- Surface Water
- Conservation
- Reuse

# Impacts of Water Conservation Program

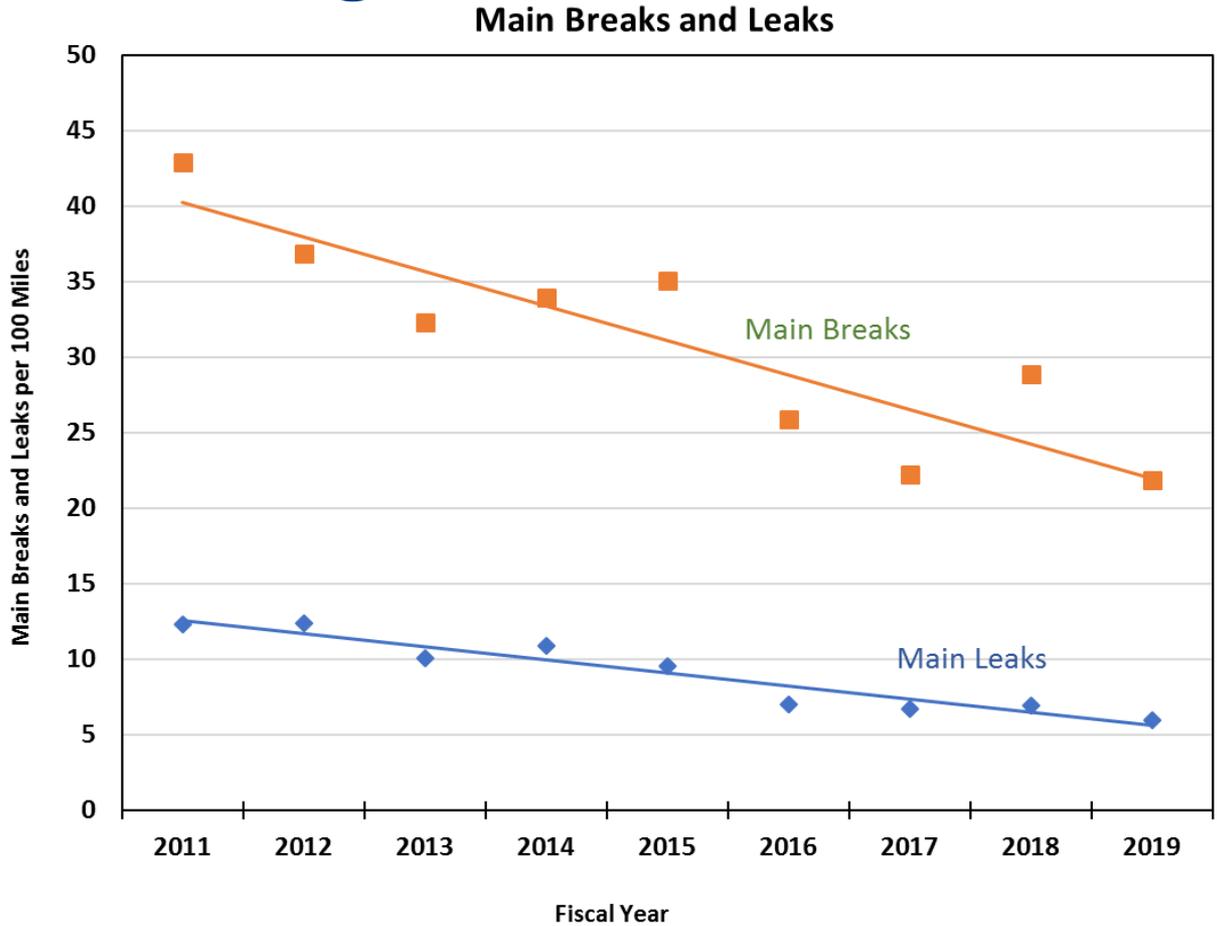


# Main Replacement and Leak Detection Programs

- Main Replacement Program
  - Annual replacement goal of 0.9%
  - Water pipelines identified and prioritized based on maintenance history
- Leak Detection Program
  - System surveyed every 2.5 years
  - Large and small diameter lines
  - Located an average 258 unknown leaks annually
  - Saved an estimated 3.9 BG

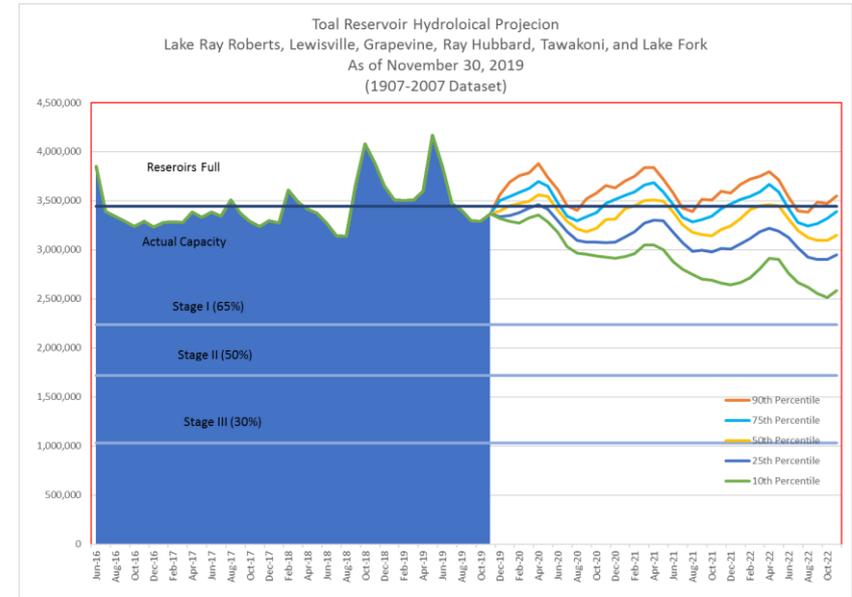


# Impacts of Main Replacement and Leak Detection Programs



# 2019 Drought Contingency Plan

- Adopted April 24, 2019
- Triggering Criteria
  - Weather conditions
  - Water supply availability
  - Water supply, treatment or distribution capacity
  - Natural or man-made contamination
- Three Stages
- Response Targets
  - Stage 1 – 5% reduction in GPCD
  - Stage 2 – 15% reduction in GPCD
  - Stage 3 – 20% reduction in GPCD

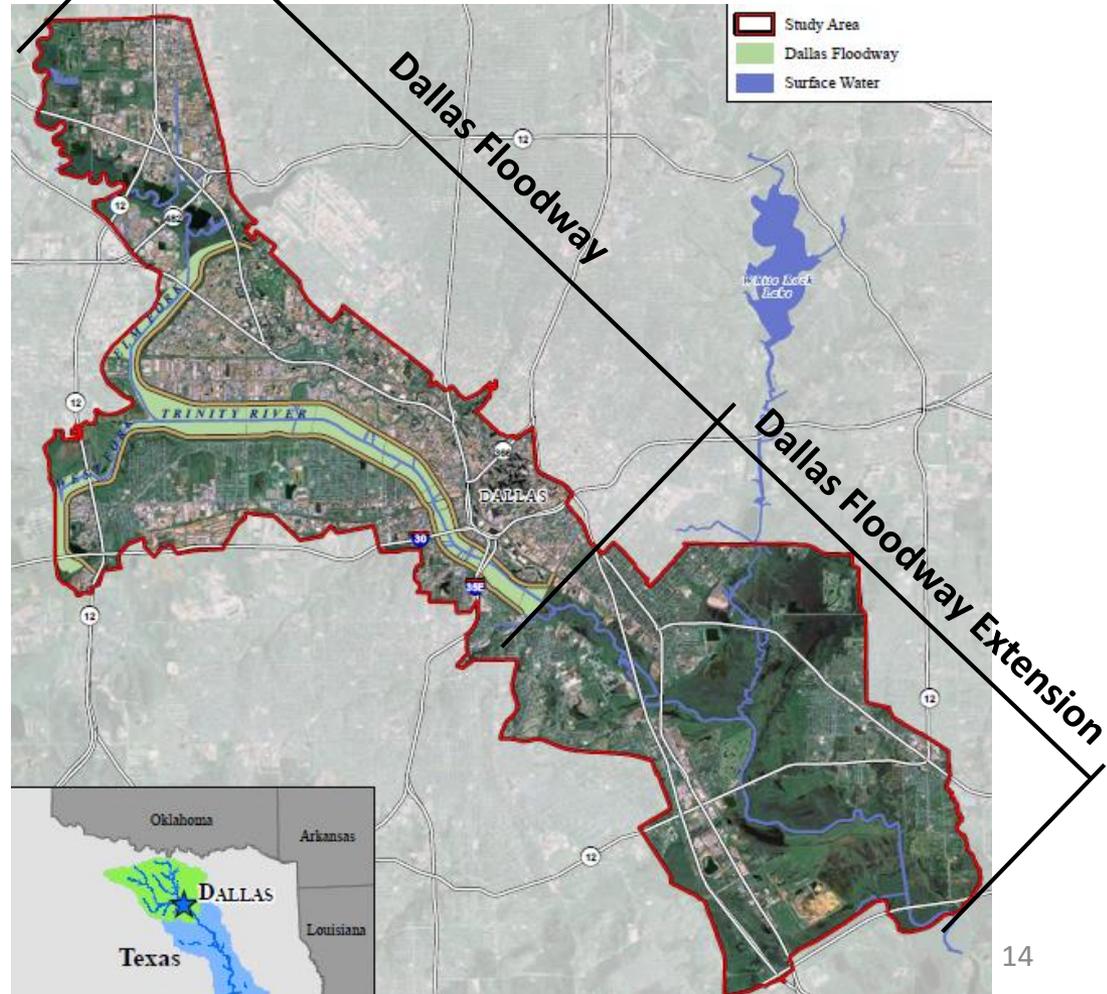


# Sanitary Sewer Overflow (SSO) Initiative

- Sanitary Sewer Overflow Initiative Agreement and Action Plan – September 13, 2007
  - Requires sewer main cleaning, preventive chemical root removal, inspection of manholes & lift stations, creek walking surveys and closed circuit televising to identify line defects
  - Replace deteriorated sewer mains and update Comprehensive Wastewater Collection System Assessment every 10 years
  - Grease abatement and public outreach program
- In spite of exceptionally heavy rainfalls in FY19, DWU SSOs were at national average
  - Compared to FY07, dry weather SSOs have decreased over 50%, and
  - Fats, oil and grease related SSOs have decreased over 80%
- Application to renew participation in TCEQ's SSO Initiative approved by City Council in November 2018

# Dallas Floodway and Floodway Extension

- Dallas Levee System protects:
  - Over 40,000 acres of development outside the levees
  - \$14 Billion in real and personal property
  - Over 400,000 people living in the protected levees
- All flood risk management projects included in the 2015 Record of decision were funded in the Bi-Partisan Budget Bill of 2018



# Mill Creek Tunnel





# City of Dallas' One Water: A Water Efficient Future



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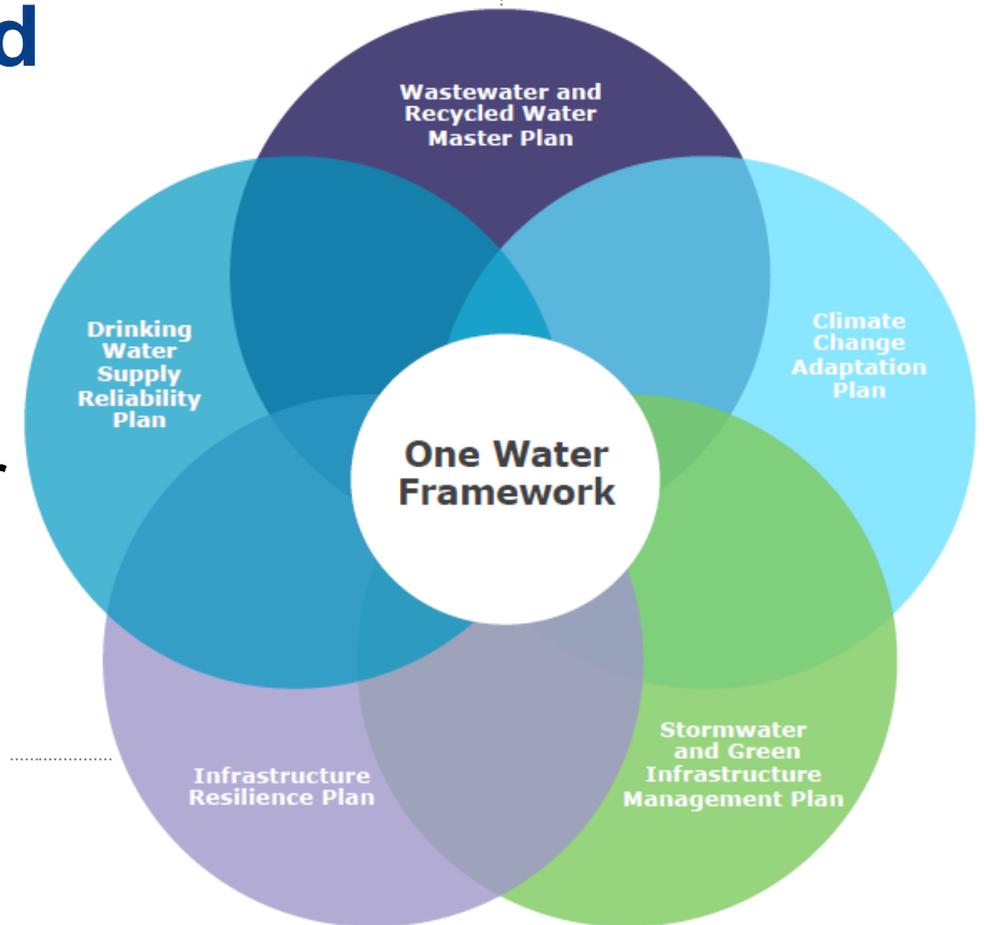
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# One Water Defined

- One Water is an integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs



# Fundamentals of One Water

## Environmental Stewardship



## Social Equity



## Economic Prosperity



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# Benefits of a One Water Approach

- Greater resilience and reliability;
- Opportunities to optimize regional infrastructure;
- Sustainable community development;
- New regulatory flexibility or opportunity;
- Economic growth opportunity; and
- Increased coordination among agencies/departments



# Next Steps for City of Dallas' One Water

- Comprehensive Stormwater System Assessment
- Water Production Master Plan
- Water Delivery Master Plan
- Review Capital Funding Options to improve the sustainability of the stormwater infrastructure
- Evaluate system efficiencies from similarity of functional work in Stormwater Operations and Wastewater Operations
- System efficiencies through work order and asset management system and Field Mobility project
- Customer enhancement through automated meter infrastructure



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