

Dallas Water Utilities: Conserving and Protecting Water Resources

**Environment &
Sustainability Committee**

January 6, 2020

**Terry S. Lowery,
Director
Dallas Water Utilities**



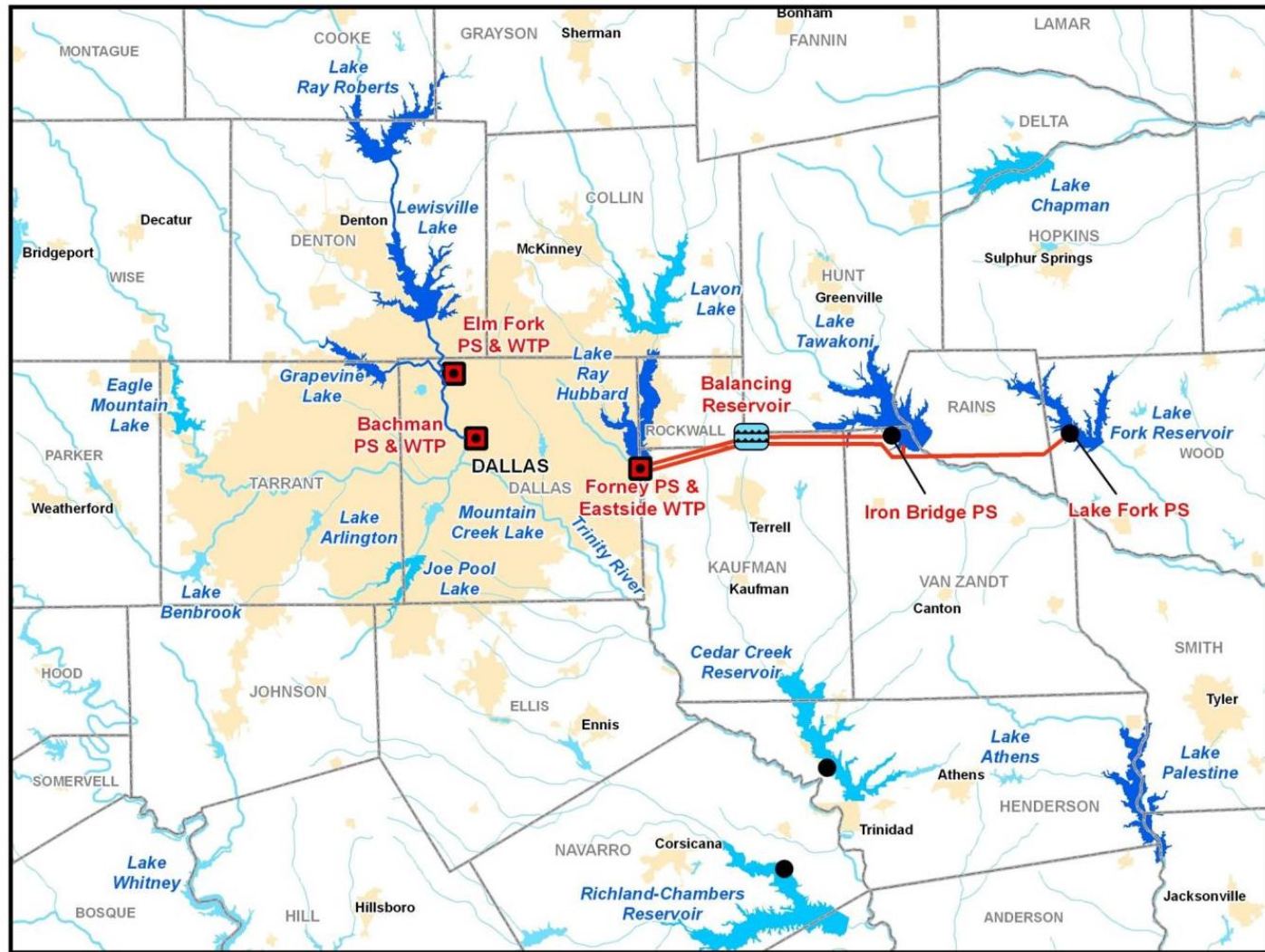
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Purpose

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

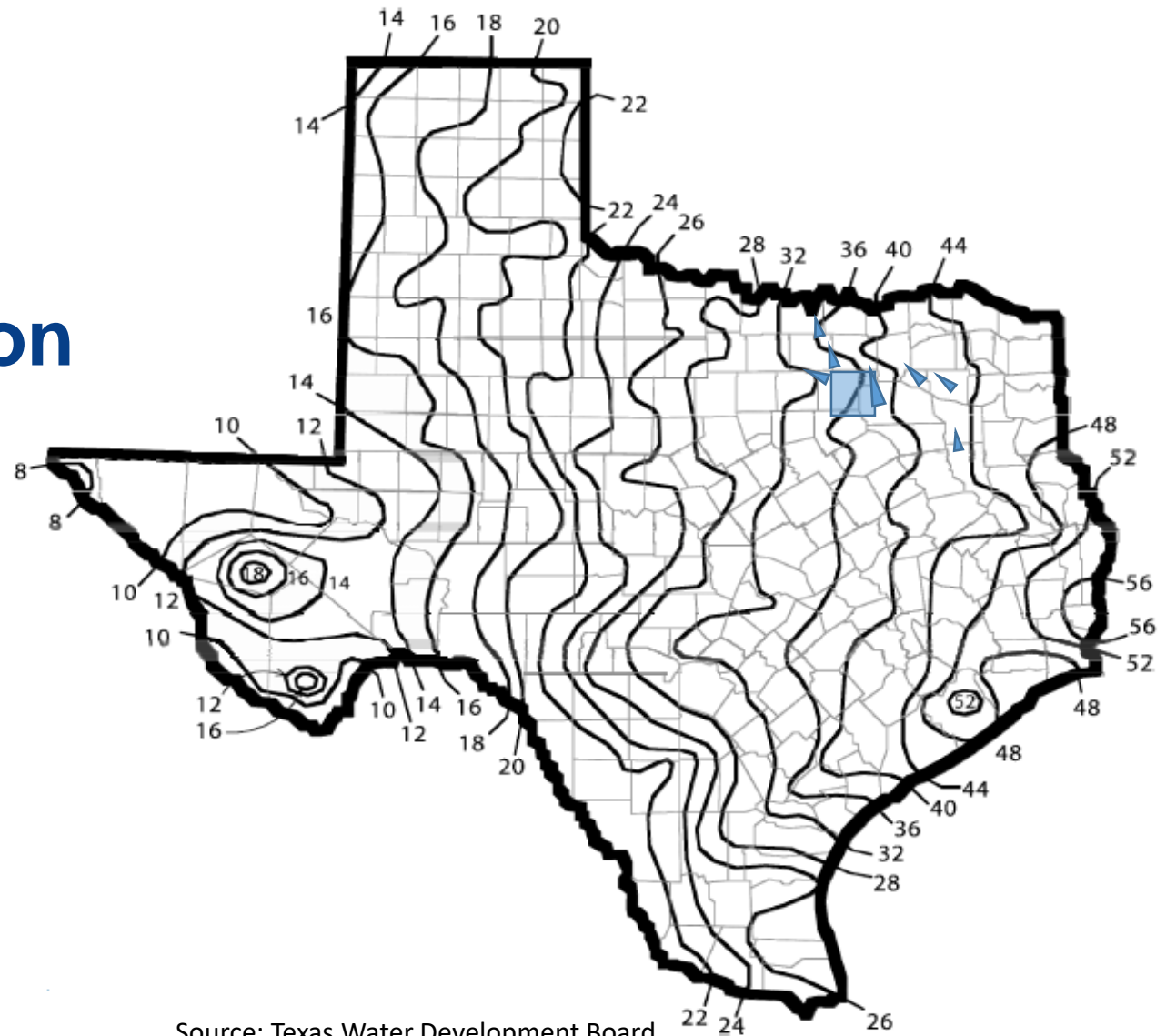
- Planning for the impacts of climate change
- Conserving current water resources
- Protecting neighborhoods from flooding

Dallas' Regional Water Supply System

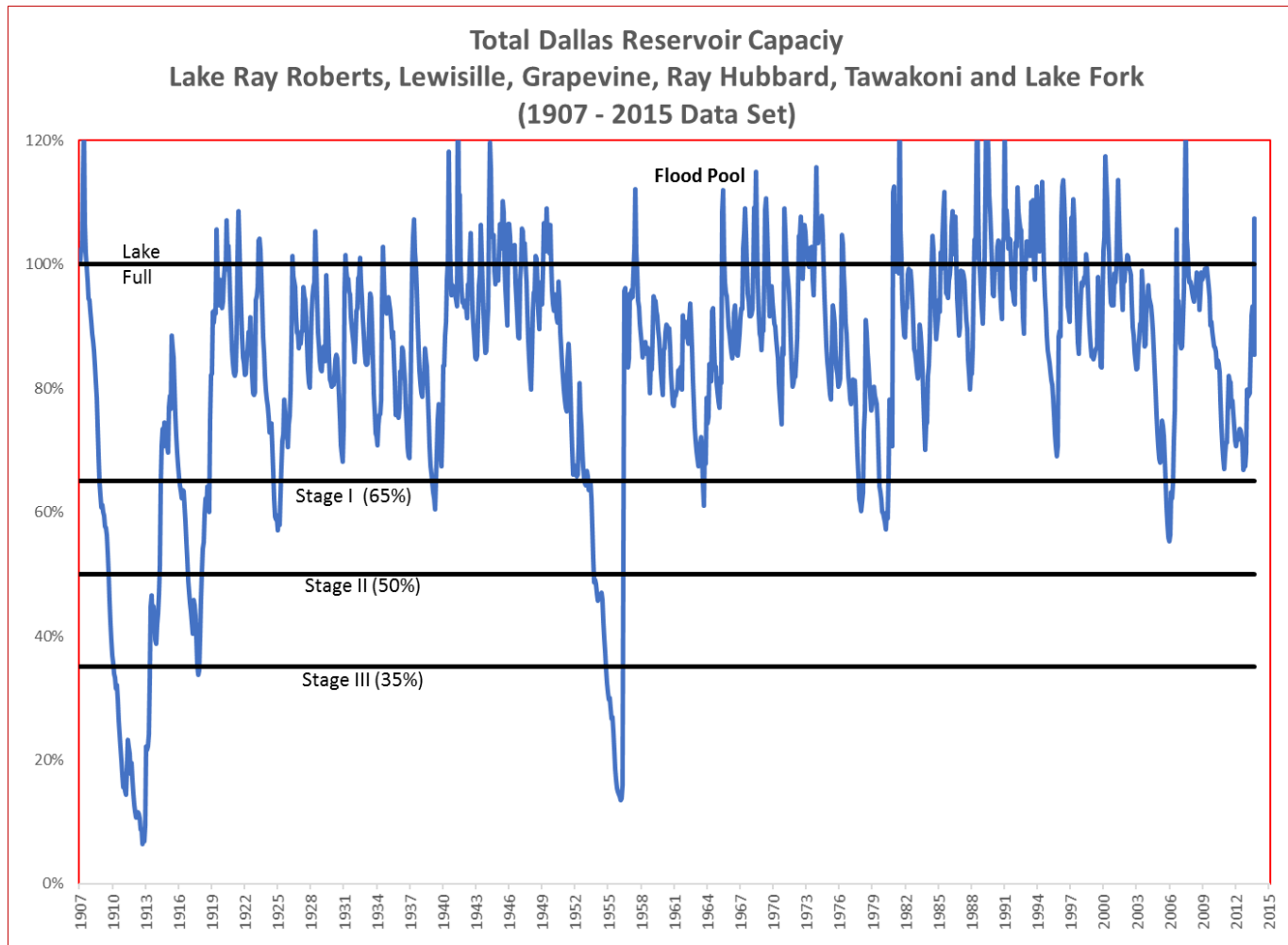


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Average Annual Precipitation

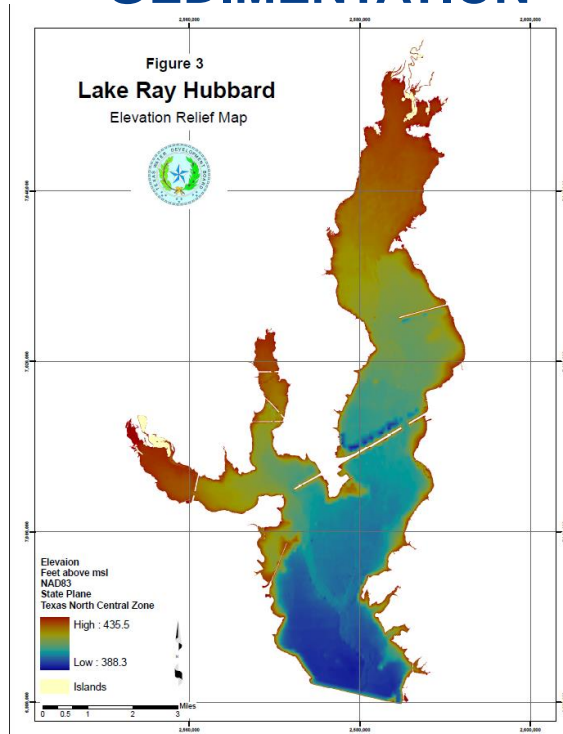


Historical Reservoir Capacity



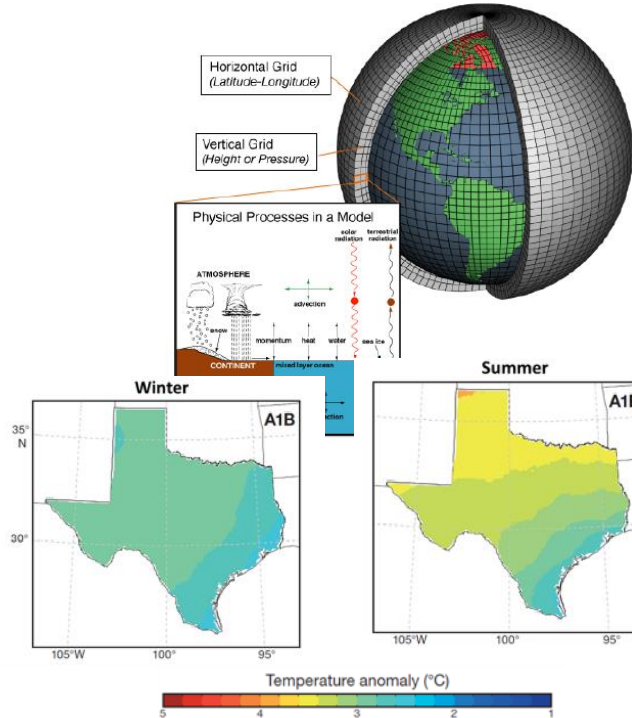
2014 Long Range Water Supply Plan Assumptions Regarding Existing Supplies

SEDIMENTATION



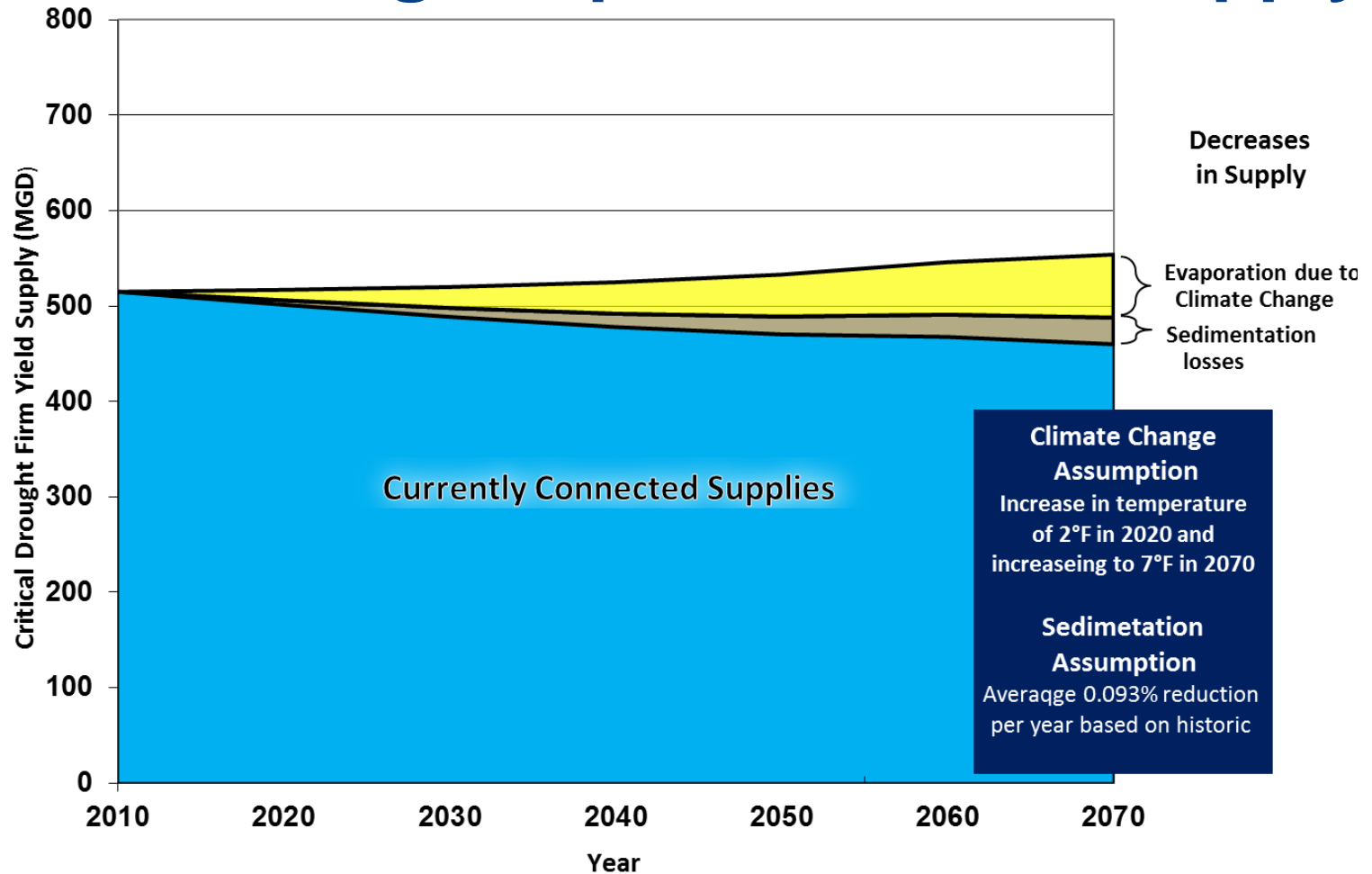
Decreased Storage Volume

CLIMATE CHANGE



Increased Evaporation

Climate Change Impact on Water Supply

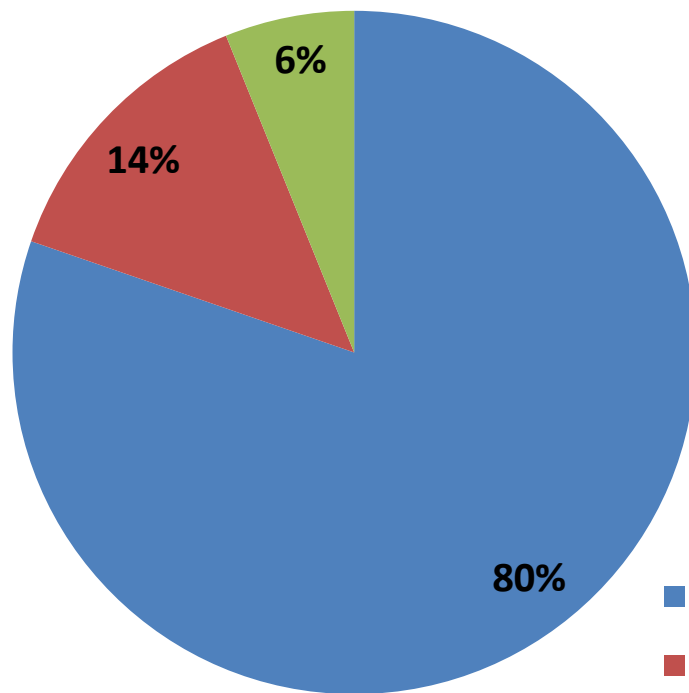


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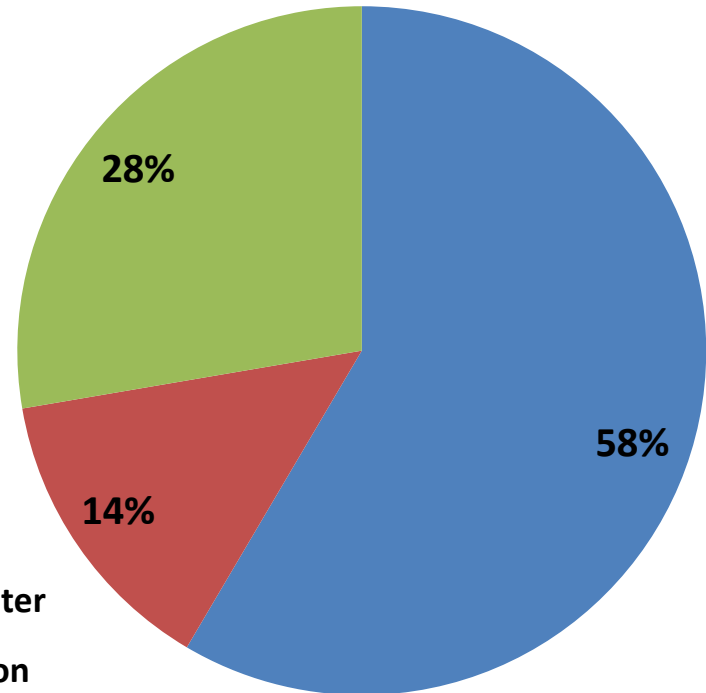


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Changing Water Portfolio



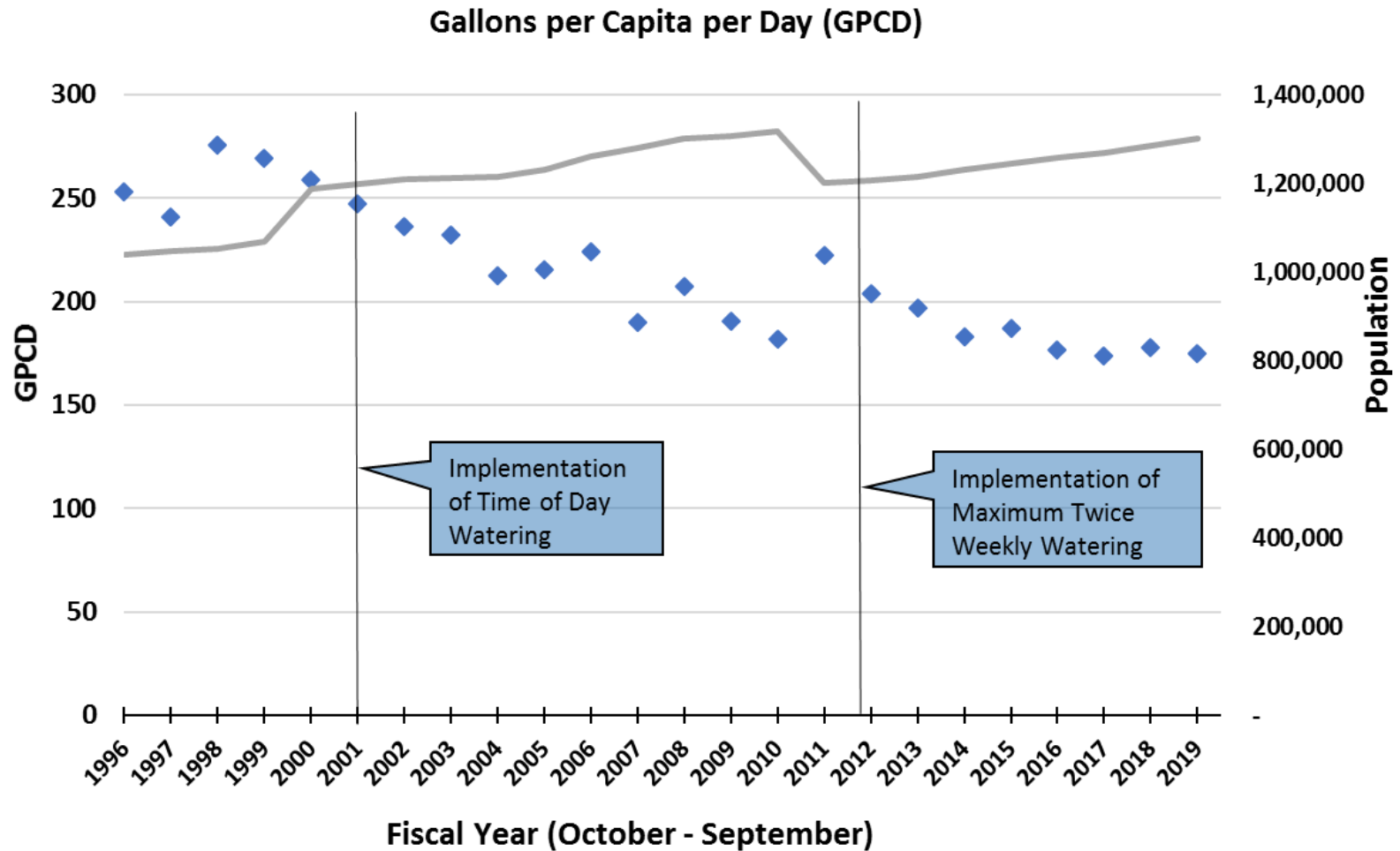
2020
(536.1 Ac-Ft/Yr)



2070
(835.0 Ac-Ft/Yr)

■ Surface Water
■ Conservation
■ Reuse

Impacts of Water Conservation Program



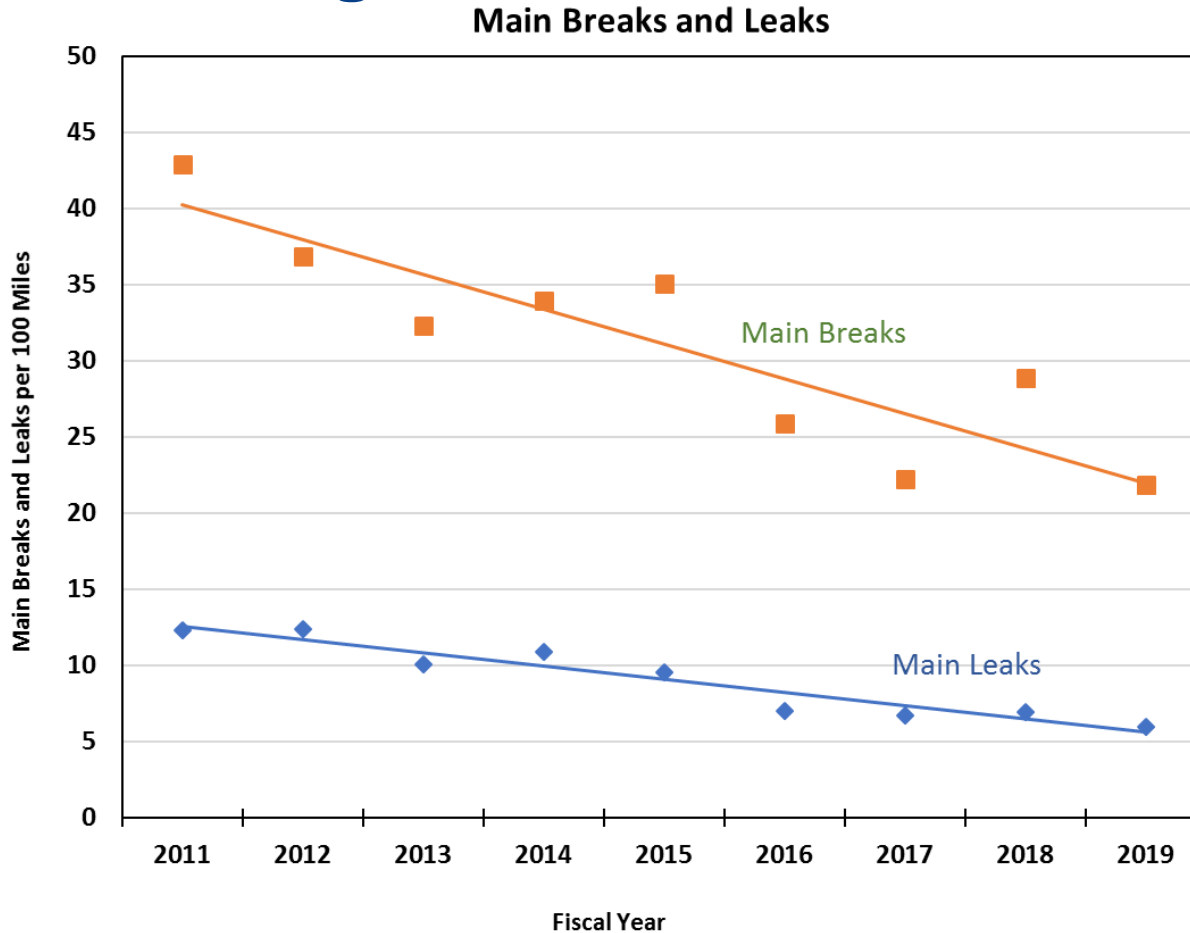
Main Replacement and Leak Detection Programs

- 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



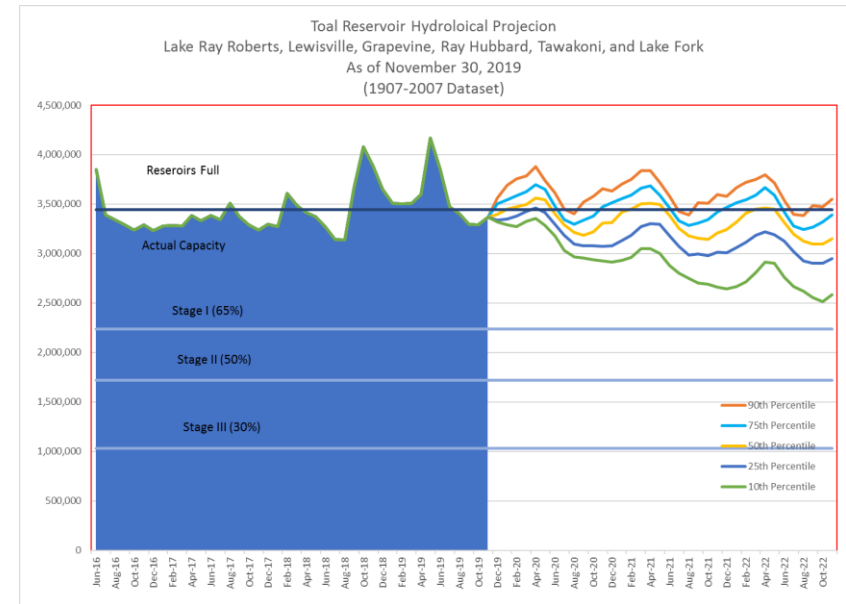
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Impacts of Main Replacement and Leak Detection Programs



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

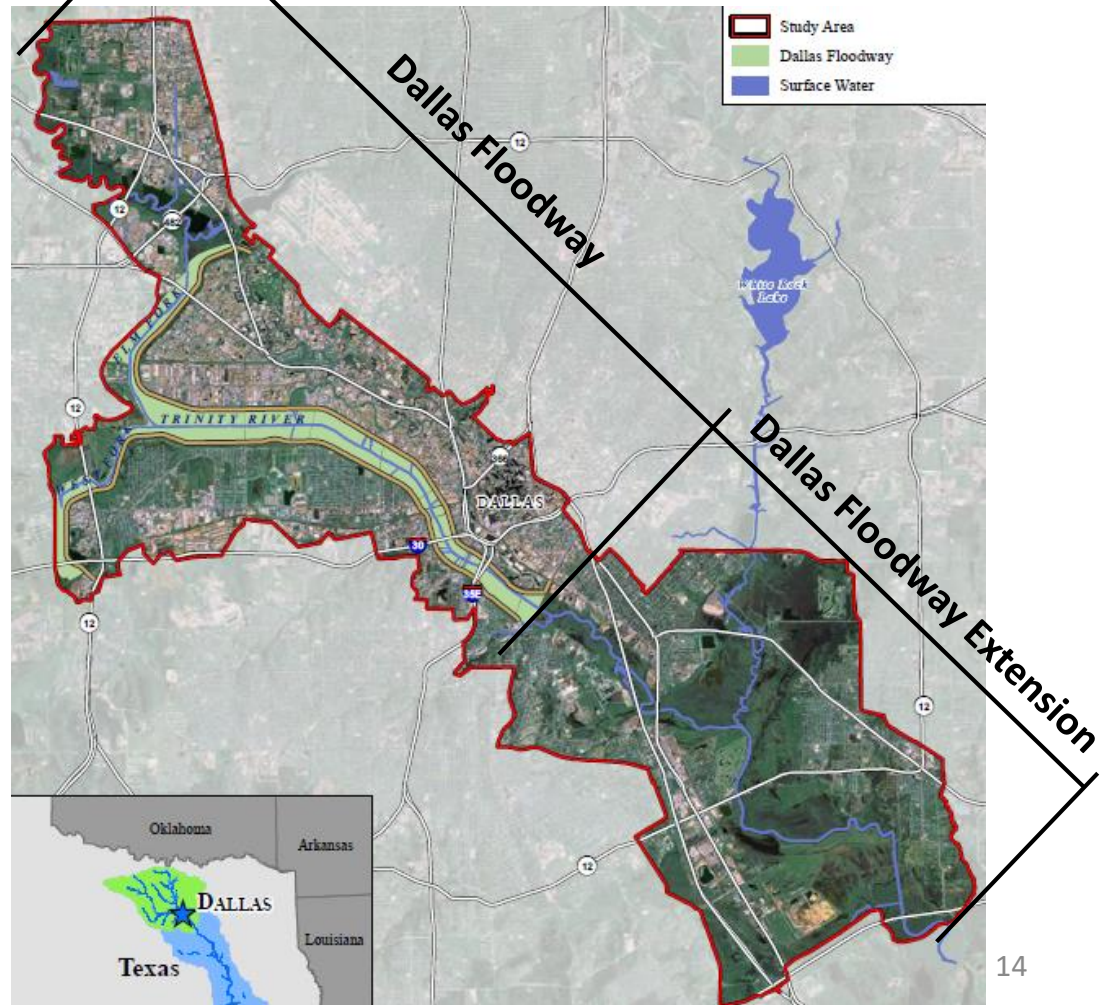


Sanitary Sewer Overflow (SSO) Initiative

- 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

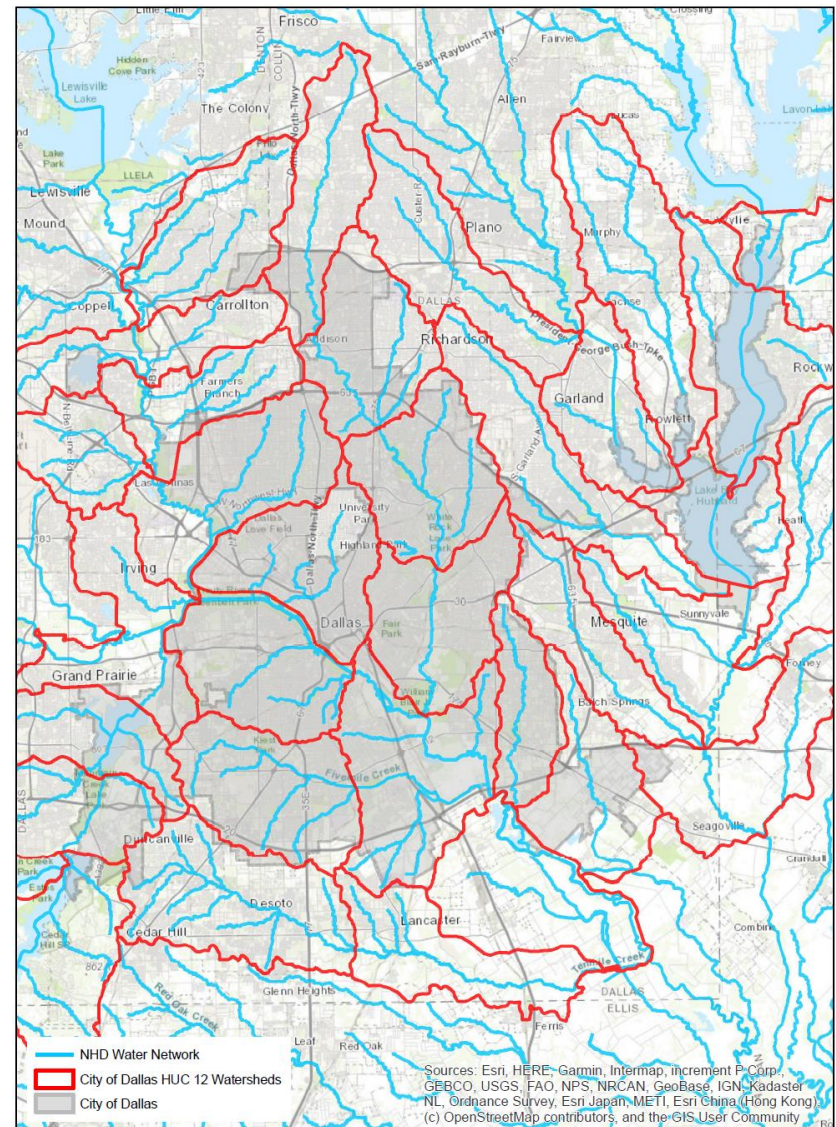


Mill Creek Tunnel



Neighborhood Drainage Program

- For FY20, an additional \$2.5M is being invested in the program
- Reduce neighborhood flooding and increase quality of life through:
 - Proactive maintenance of stormwater pipes, channels and creeks, and floodway management areas
 - Increased minor erosion repairs
 - Remove invasive species and replace them with natural, noninvasive species
 - Identify areas that need cleaning with closed-circuit television video to prevent flooding on local streets
- Goal is to provide efficient, effective and timely response to property owner calls



City of Dallas' One Water: A Water Efficient Future



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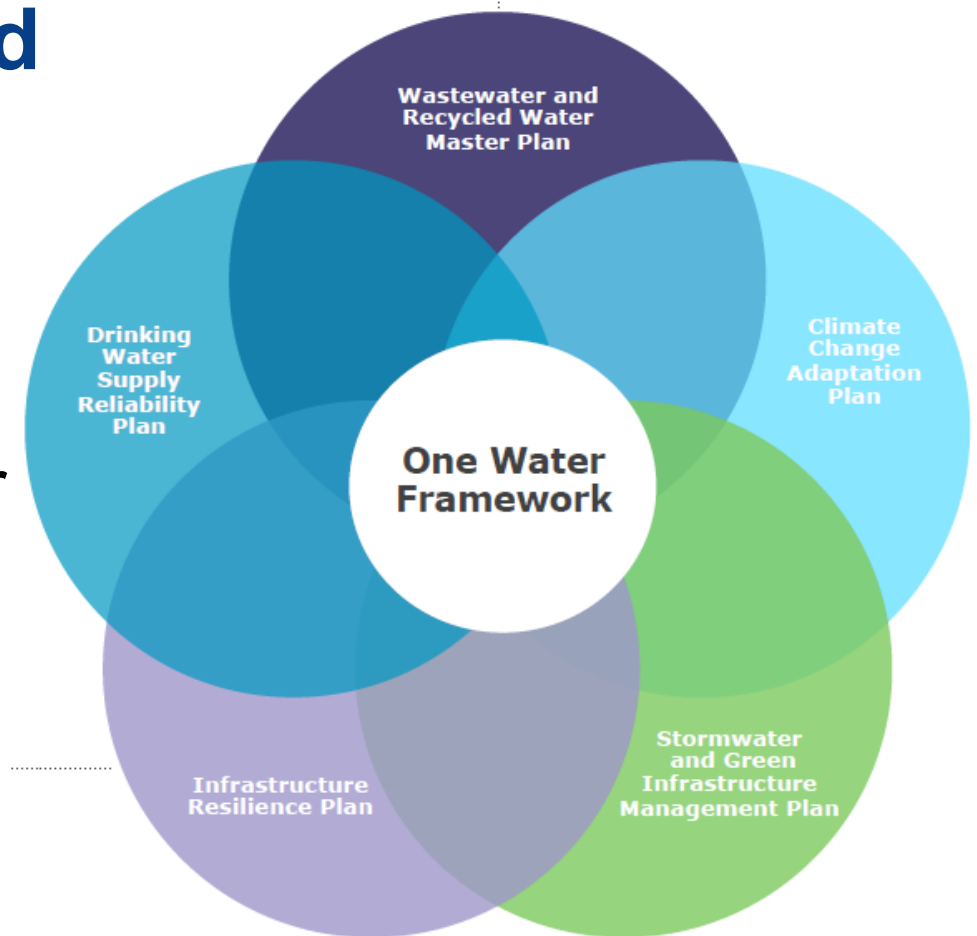
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One Water Defined

- 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

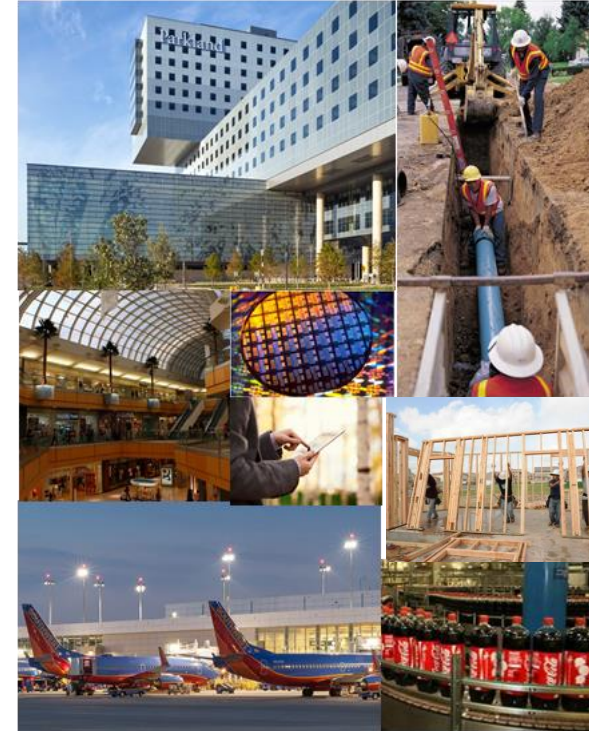
Environmental Stewardship



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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