



One Water Strategies

Managing Demand to Increase Sustainability and Resiliency



New Braunfels Utilities

- *Municipal Utility*
- *Water, Wastewater, Electric*
- *Fast growth corridor*
- *Growth's Impact: Infrastructure, Facilities, Employees, Expectations*

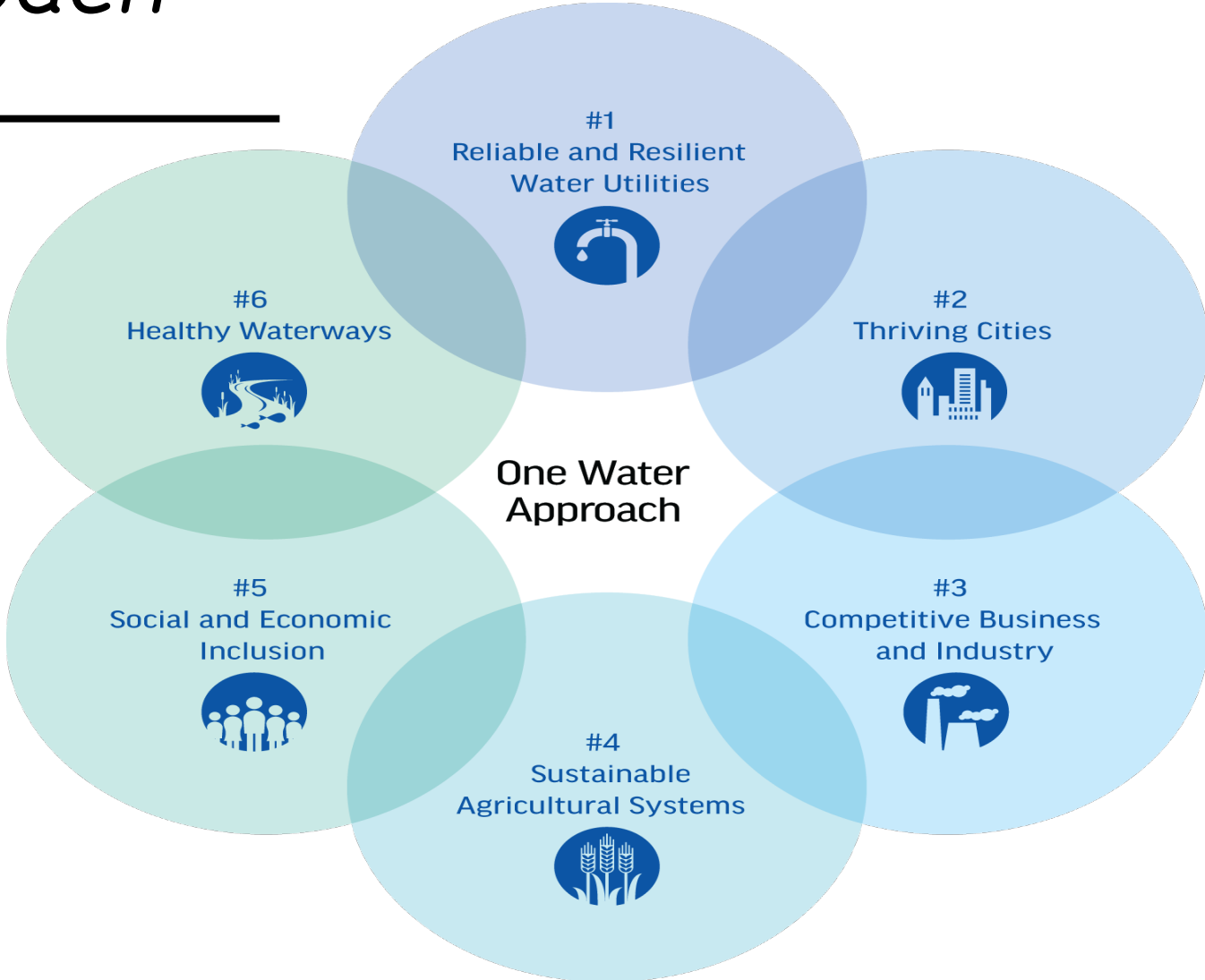
Water Resource Plan



Your Water
is what matters.

2018 WATER RESOURCES PLAN.
Aligned with the New Braunfels
Utilities (NBU) vision, mission,
and core values, this strategic
water supply plan addresses
NBU's future water needs.

One Water Approach



Hallmarks of One Water

A mindset that all water has value

Focus on achieving multiple benefits

Systems Approach

Watershed-scale thinking and action

Right-sized solutions

Partnerships for progress

Inclusion and engagement for all

One Water Strategies for NBU

- *Reviewing systems and operations for opportunities.*
- *Sustainability and resilience are key management principles.*
- *Partner with leaders in the field for best practices and implementation*



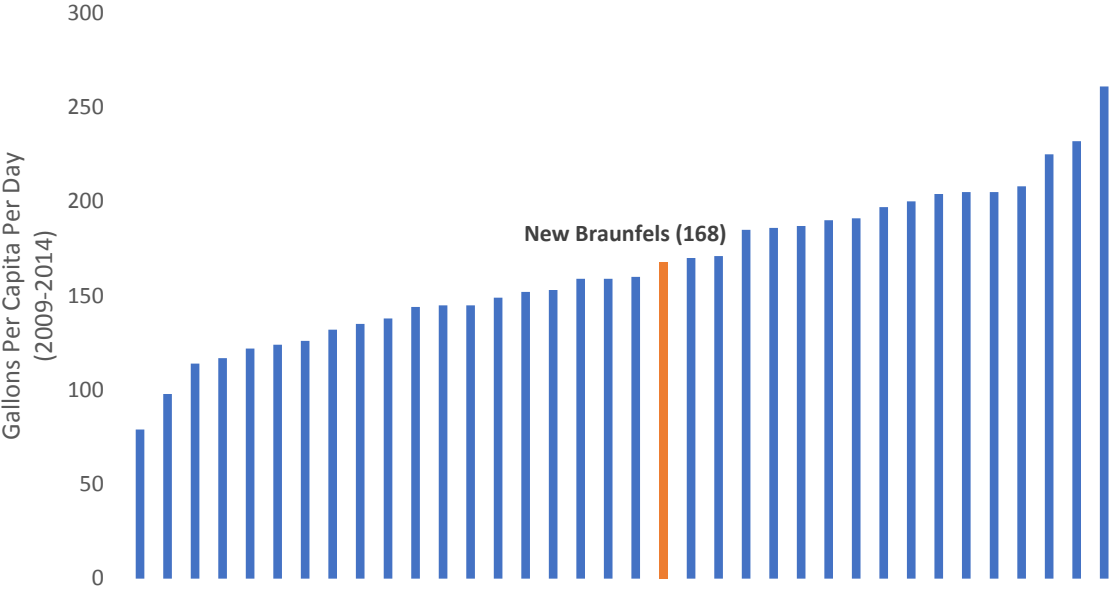
Project partners

Deep dive into the Water Resource plan was conducted by a project team at Boston University's Institute for Sustainable Energy, as part of a broad initiative on One Water opportunities in Texas funded by the Cynthia and George Mitchell Foundation

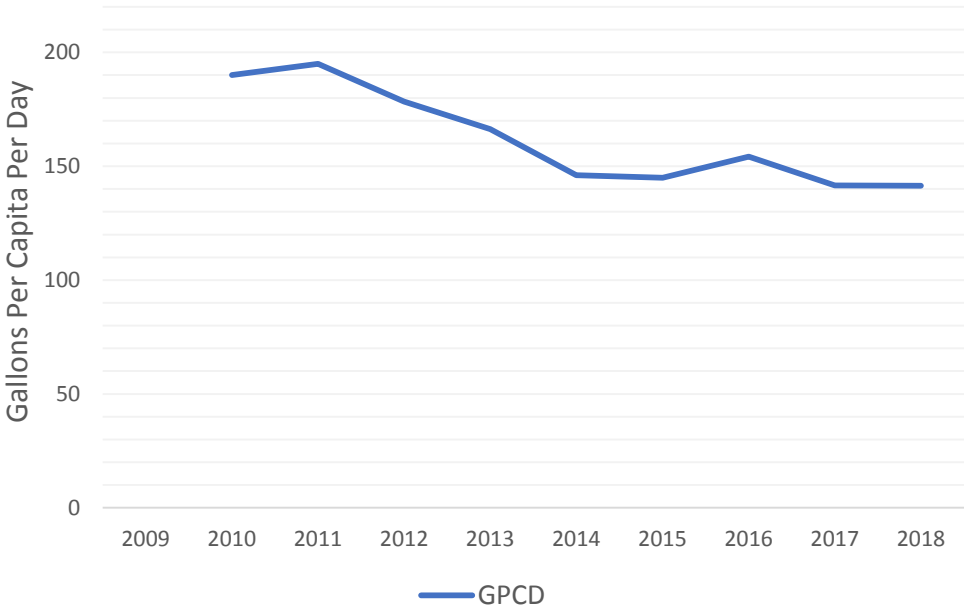


NBU's GPCD

Texas Cities GPCD

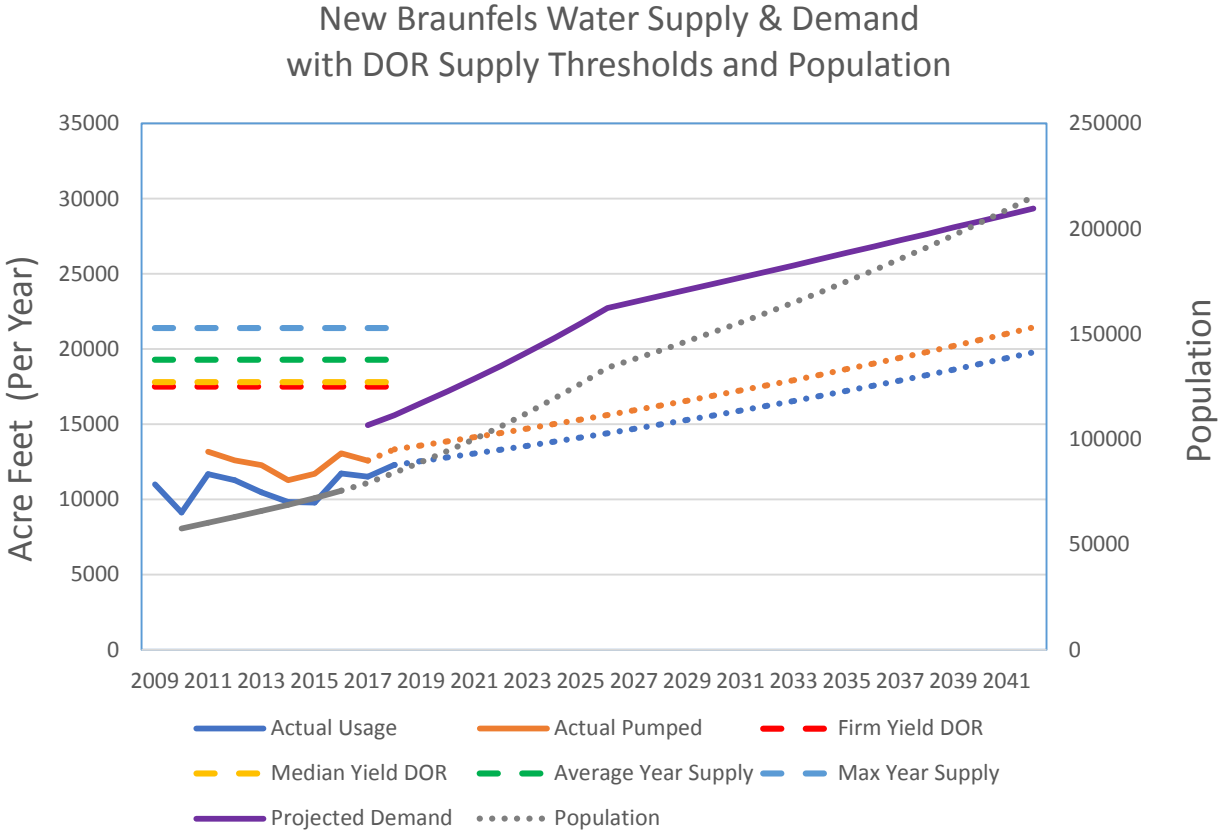


New Braunfels GPCD from 2010 - 2018



Future demand projection

- *Recent water demand growth has been approximately 4% per annum even as the population increases at 6% per annum.*
- *Modifying the demand projections accordingly indicate that NBU has adequate supplies for over a decade.*

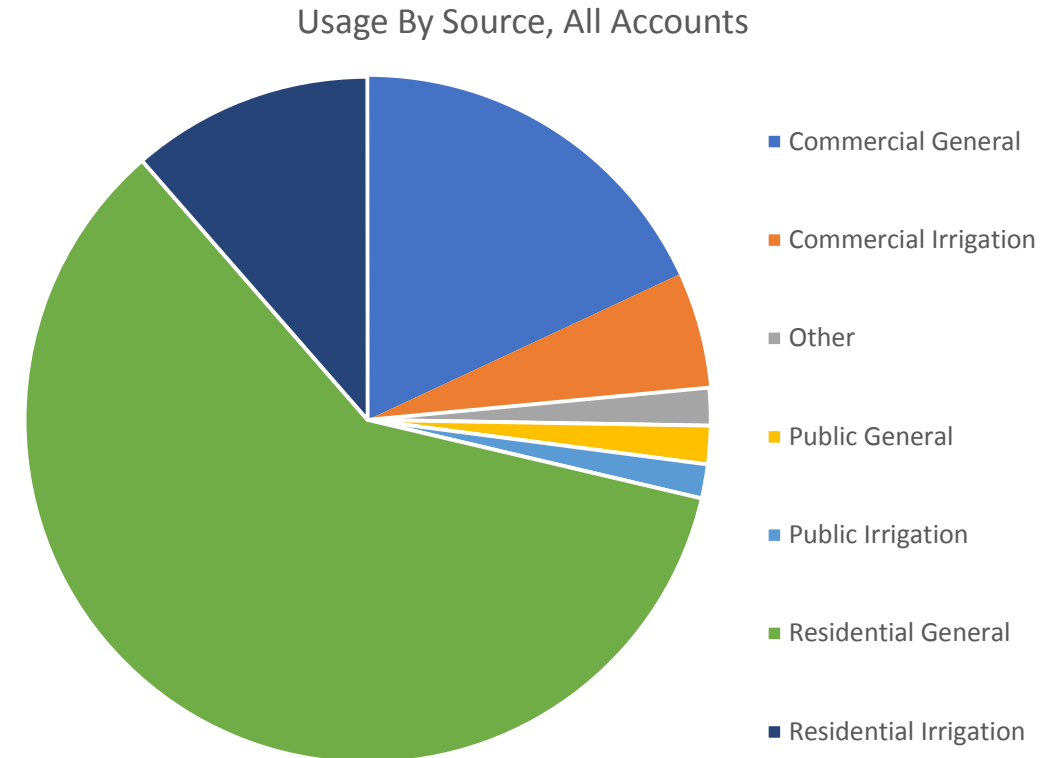


Demand management opportunities

- *Often One Water discussions focus on the supply side, yet demand management and water conservation also play a role*
- *Consideration of residential versus non-residential demand*
 - *Informs modified demand projections*
- *Consideration of distribution of demand across accounts*
 - *Ordinance modifications*
 - *Outreach to high-consumption users*
 - *Reviewing Rebates*

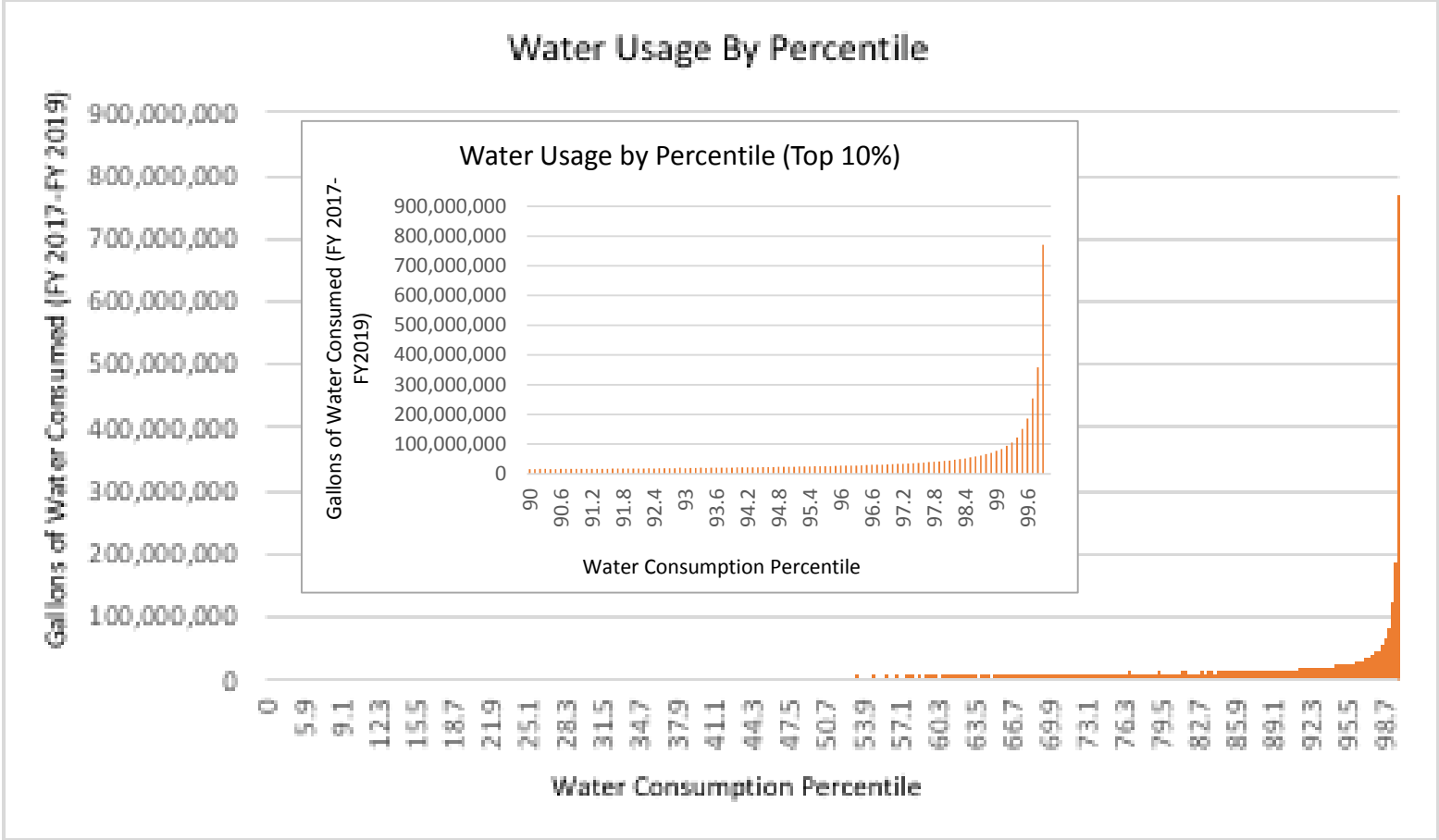
Residential versus non-residential consumption

- *Although non-residential accounts are very small in number, they are significant in overall consumption*
- *Therefore the assumption that water demand would increase in proportion with the population increase is not necessarily valid*



Distribution of consumption by account

- *The top 0.1% of accounts constitute 10% of total water demand and the top 1% of accounts constitute 27% of total water demand*



Outreach to high consumers

- *Identify high-percentile accounts*
- *Determine the end-uses of water*
- *Identify one-time change options*
- *Create and implement an action plan*

Ordinances

- *Review and assess how fines are assessed by volume.*
- *Determine cap for scaled fines by customer type.*
- *Create fine structures created by customer groups.*

Current Internal Adjustments

- *State of the Art Leak Detection program*
- *Wastewater management systems review*
- *Meter Replacement Program*

Future Internal Adjustments

- *Neutral Output Discharge Elimination System*
- *E-Pulse*
- *WaterSmart Customer Service Portal*





Headwaters at the Comal





LAKE | FLATO



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AT THE COMAL

Phase I focus on:

- **Restoration:**
 - Remove asphalt
 - Debris removal
 - Invasive species removal
 - biodiversity planting and seeding
 - Creation of habitat pools and ripples

- **Storm Water Mitigation:**
 - Check dams
 - Creating Berms & Bioswales
 - Bank Stabilization



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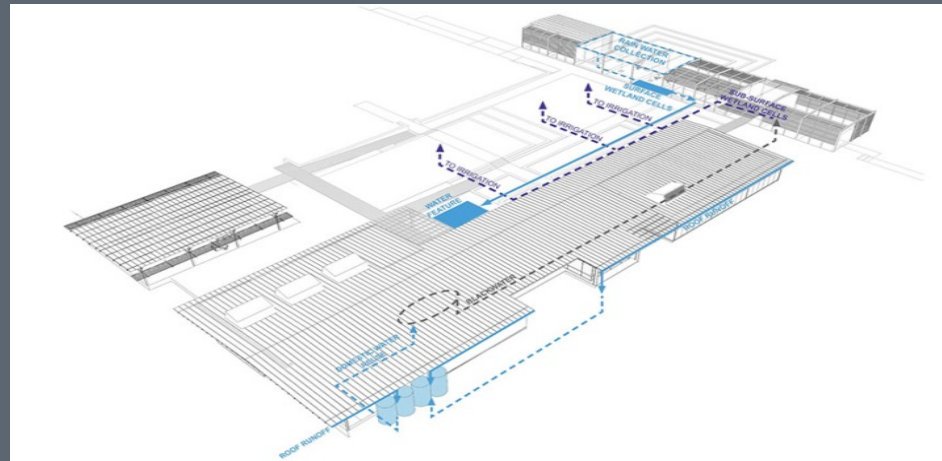
Phase II Buildings

- Comal Springs Environmental Education Center
- Event & Meeting Space
- Demonstration gardens
- Smart building applications



Phase II additional features

- Rainwater harvesting
- Black water reuse system
- Permeable walkways and parking areas
- Smart building applications
- Low impact development – reuse of materials





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