



ADVANCING
ONE WATER
IN TEXAS

FEBRUARY 2018

PRESENTED BY



THE CYNTHIA & GEORGE
MITCHELL
FOUNDATION

SUSTAINABILITY PROGRAMS

Innovative sustainable solutions for environmental problems



CLEAN
ENERGY



SHALE
SUSTAINABILITY



SUSTAINABILITY
EDUCATION



WATER



LAND
CONSERVATION



WATER PROGRAM

Ensuring ample, healthy waters to support diverse ecosystems



Texas Living Waters Project

Texas population to increase

70%

between 2020 and 2070

THE SOLUTION



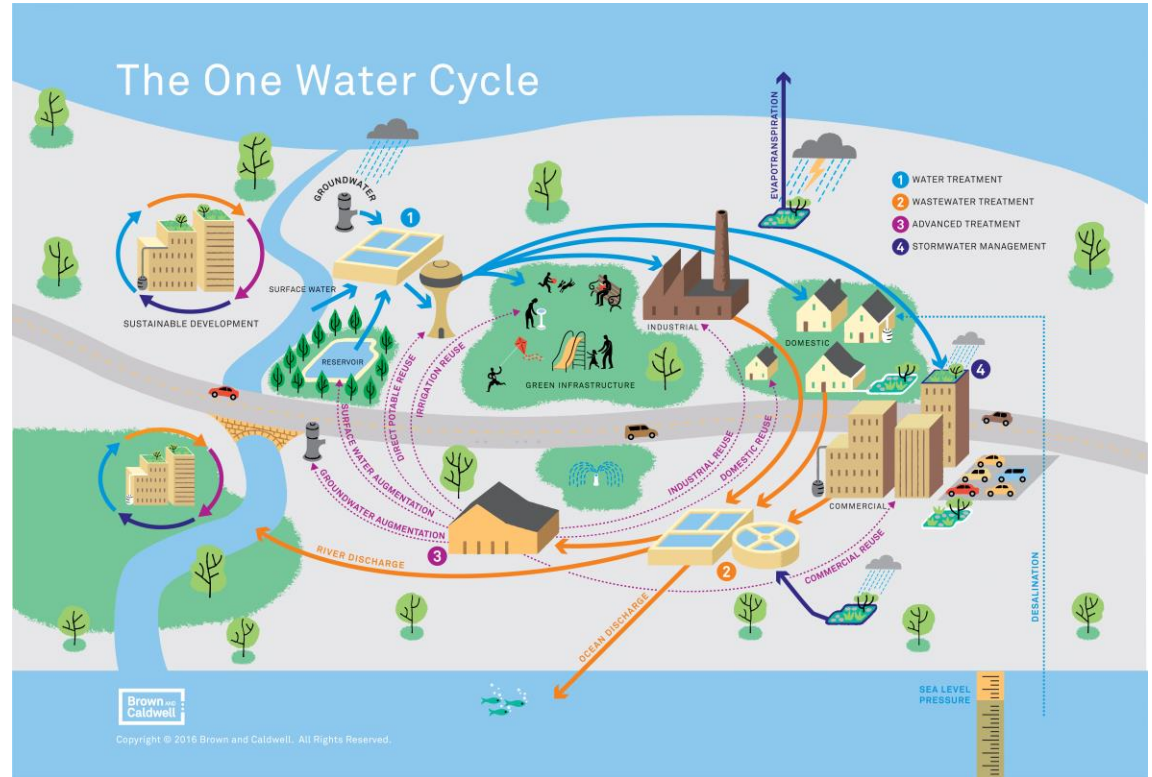
Managing water as a **single resource** and adopting proven technology, tools and policies that **promote the natural water cycle.**

WHAT IS ONE WATER?



One Water promotes the management of **all water**—e.g., drinking water, wastewater, stormwater, greywater—as a **single resource**.

A resource that must be managed holistically, viably, and sustainably.



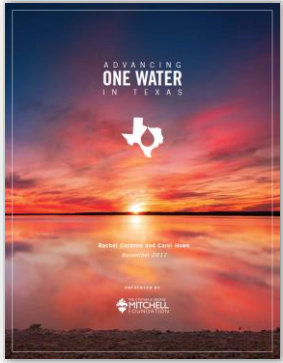
BECAUSE OF YOU...



**TEXAS CITIES
ARE USING 21%
LESS WATER**
THAN WE WERE IN 2000!

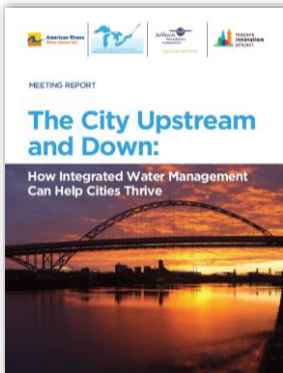
*Texas has an epic story to tell about water conservation
Texas Living Waters Project blog, Nov 2017*

KEY RESOURCES



Advancing One Water in Texas
Cynthia & George Mitchell Foundation (2018)

Blueprint for One Water
Water Research Foundation (2017)



The City Upstream and Down: How Integrated Water Management Can Help Cities Thrive
American Rivers (2016)



01

Describe One Water

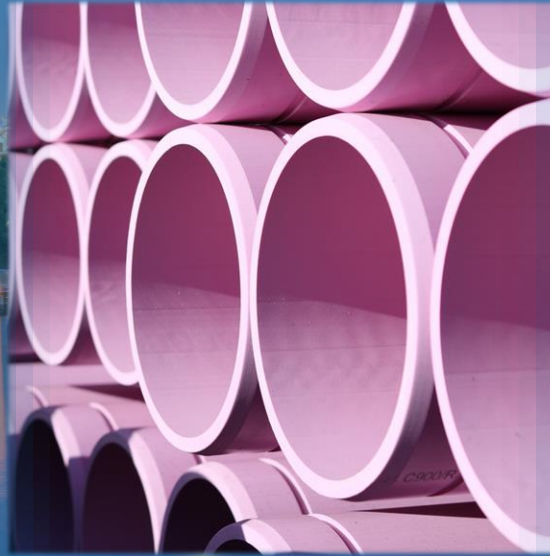
02

Explain why it's right for Texas

03

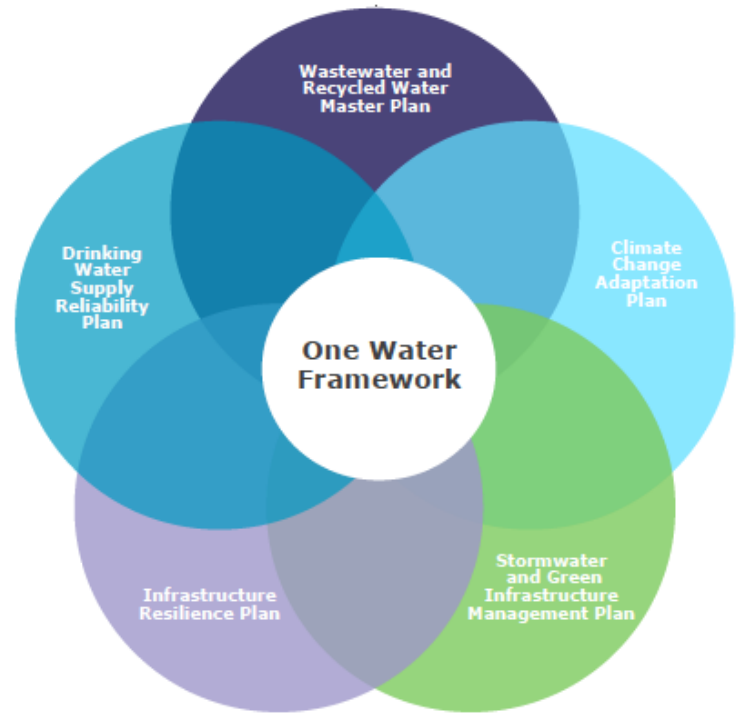
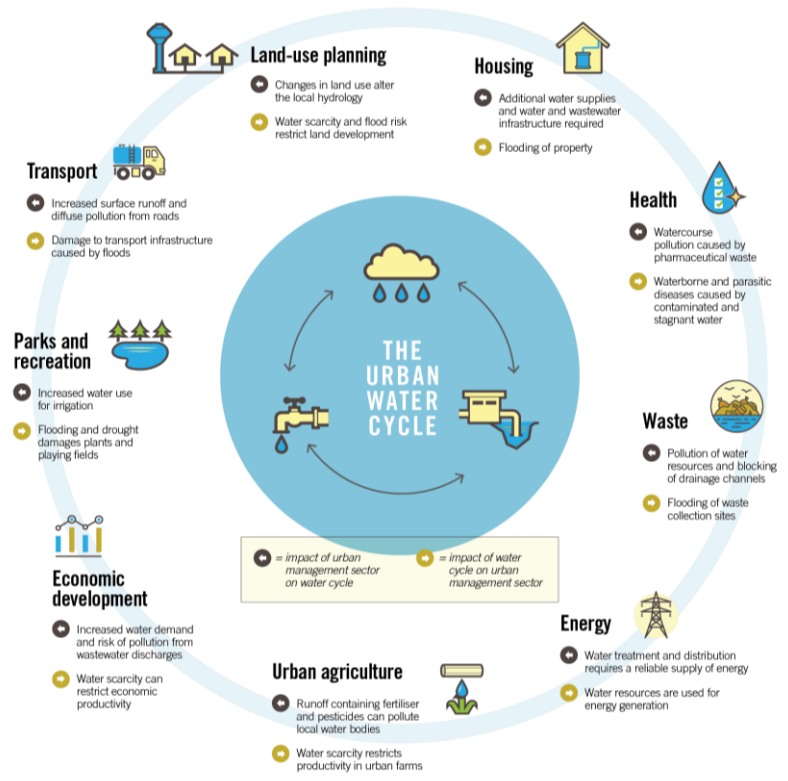
Outline challenges

WHAT IS ONE WATER?





WHAT IS ONE WATER?



Water Research Foundation (2017)

Source: SWITCH, 2011.
2/5/2018

WHAT IS ONE WATER?



URBAN WATER MANAGEMENT ASPECT	CONVENTIONAL APPROACH	ONE WATER APPROACH
Overall Approach	Integration by accident	Integration by design
Collaboration with stakeholders	Public relations – public are approached to approve pre-approved solution	Engagement – agencies and public search together for solutions
Infrastructure choice	Concrete, metal or plastic	+ green including soils and natural systems
Stormwater management	Convey away as rapidly as possible	Harvest as resource or retain to support aquifers, waterways & biodiversity
Human waste management	Collect, treat and dispose	Use as resource for nutrients or energy
Water demand management	Meet demand through investment in new supply sources & infrastructure	Portfolio - reduce demand, harvest rainwater and recycle wastewater
Technological solution choices	Standard engineering solutions to individual water cycle components	Diverse solutions (tech & ecological) Coordinated water, urban design and other service solutions

WHAT IS ONE WATER?



COMMON TRAIT	DESCRIPTION
<i>Collaboration</i>	...with a wide variety of stakeholders and engagement with the community
<i>Economics and finance</i>	...that recognize the true cost of water, prices it accordingly, and are attractive for public and private investors
<i>Green infrastructure</i>	...that works with and mimics nature
<i>Closed-loop systems</i>	...that enhance nutrient and energy recovery and encourage water sensitive behaviors
<i>Built environment</i>	...with multifunctional infrastructure that supplements the natural environment
<i>Enabling conditions</i>	...that foster innovative institutional and management arrangements
<i>Flexible and adaptive</i>	...to allow for innovation and strengthen resilience to climate change and other forces

Source: Howe & Mukheibir, 2015.



WHERE IS ONE WATER?

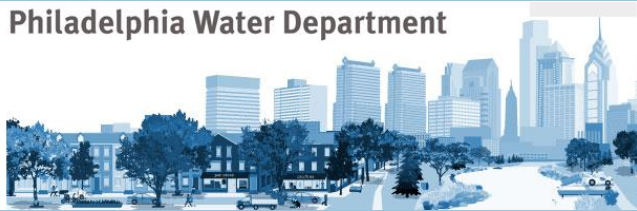


Water Research Foundation (2017)

WHERE IS ONE WATER?



Philadelphia Water Department



Philadelphia, PA

Driver

EPA mandate

Goal

Reduce stormwater runoff by 85%

Plan

25 year plan transforming landscape, reduce impact of extreme heat & beautify neighborhoods

Community Benefit

Estimated \$4.8 billion in avoided grey infrastructure costs



WHERE IS ONE WATER?



San Francisco, CA

Driver

Supply constraints, extreme drought

Goal

Optimize use of finite water & energy resources to balance community & ecosystem needs, for a more resilient and reliable future

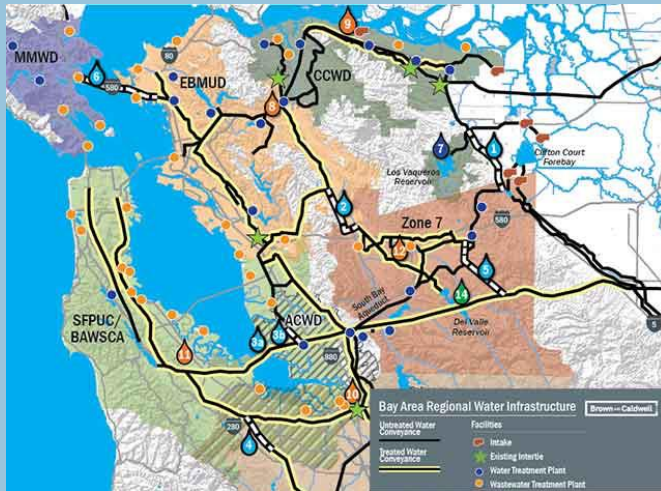
Plan

Includes streamlined inter-agency permitting process & nonpotable program to ensure multiple benefits

Community Benefit

More resilient water supply, better utilizing local wastewater resources, and creating more sustainable infrastructure for the city

WHERE IS ONE WATER?



Bay Area regional partnership, CA

Driver

Supply constraints, extreme drought

Goal

Regional evaluation of and plan for water supply, conveyance, treatment and storage

Plan

BARR MOA between 8 agencies with guiding principles for addressing water supply reliability in regional way

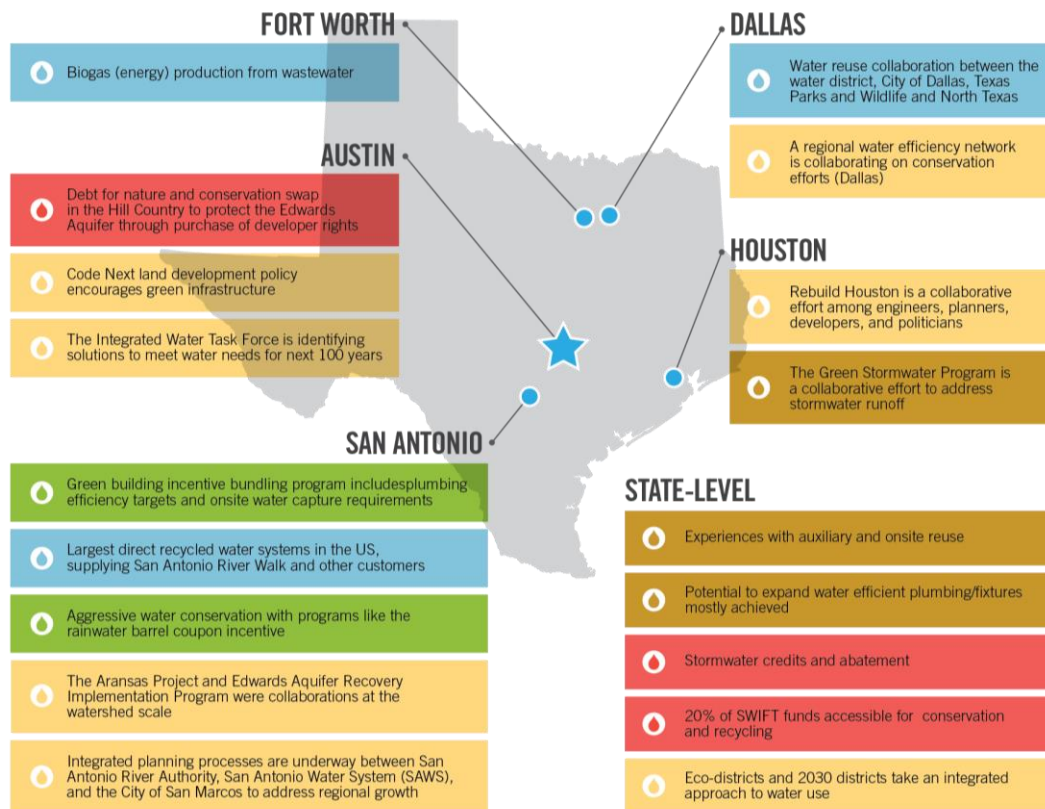
Community Benefit

Enhanced water supply reliability, bolstering emergency preparedness, climate resiliency, leveraging of infrastructure investments, facilitates the transfer of water supplies during critical periods of drought/natural disasters

ONE WATER IN TEXAS



COMMON TRAIT
<i>Collaboration</i>
<i>Economics and finance</i>
<i>Green infrastructure</i>
<i>Closed-loop systems</i>
<i>Built environment</i>
<i>Enabling conditions</i>
<i>Flexible and adaptive</i>



WHY ONE WATER



Triple-bottom-line Benefits

- Increased property values
- Improved human health and wellbeing
- Reduction in heat stress mortality
- Reduced energy usage and related savings
- Affordability of utility services
- Reduced disruption from construction and maintenance
- Increased recreational opportunities
- Air quality improvements
- Enhancement of water quality and aquatic system health

American Rivers (2016)

Top reasons

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

Water Research Foundation (2017)

CHALLENGES | *by Institutional Lens*



Professional
culture &
societal
values

Policy &
planning

Economics
& finance

Legal &
regulatory

CHALLENGES

by
Institutional Lens



Professional
culture &
societal
values

- Siloed & inflexible
- Uninspiring
- Lag time

CHALLENGES | *by Institutional Lens*



- Unpredictable
- Uncoordinated

Policy & planning



CHALLENGES

by
Institutional Lens



Economics
& finance

- Restrictive
- Lacking “triple-bottom-line” benefit analysis

CHALLENGES | *by Institutional Lens*

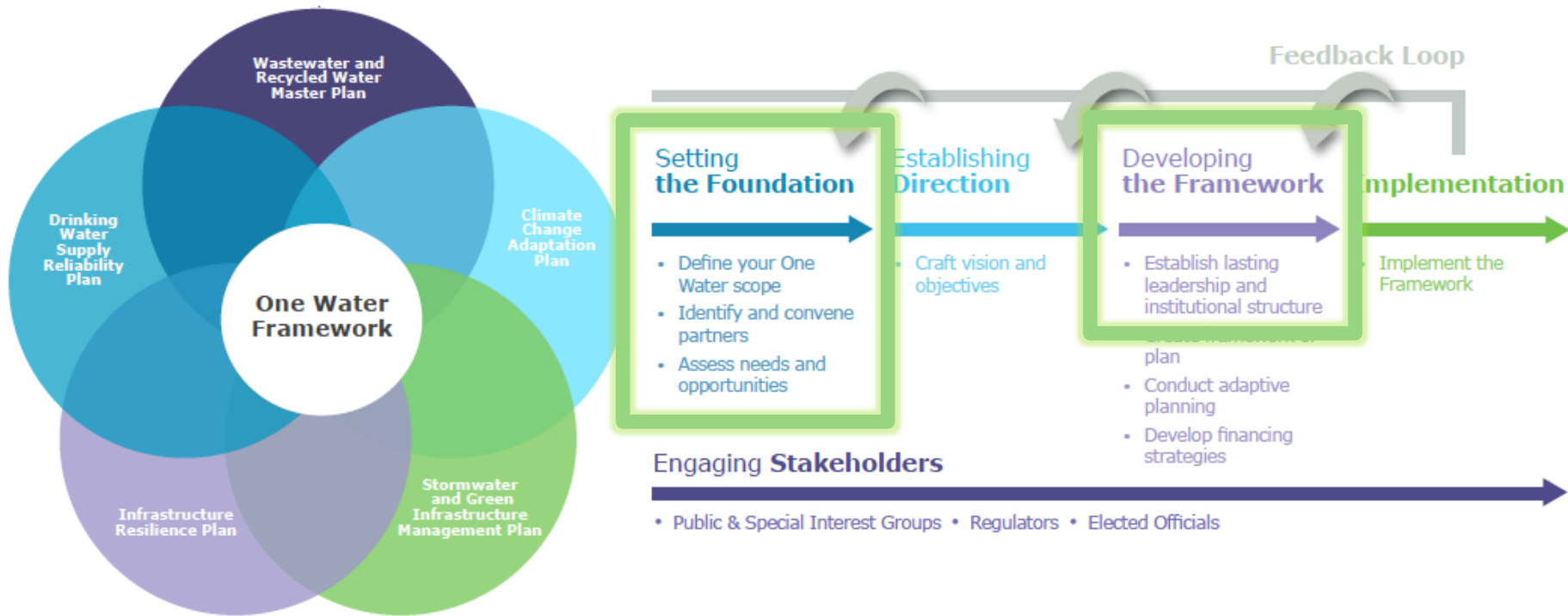


- Overlapping
- Inconsistent

Legal &
regulatory

CHALLENGES

Community implementation



Water Research Foundation (2017)

RECOMMENDATIONS | *State-scale*



Advance
policy at
multiple
levels

Build across
silos, or
break them
down

Mainstream
pilots &
demos

RECOMMENDATIONS | *State-scale*



Advance
policy at
multiple
levels

- Build into regional planning/ SWP
- Build alliances with key associations
- Increase public and private investment



RECOMMENDATIONS | *State-scale*



- Develop networks
- Increase knowledge exchange
- Develop system-wide tools

Build across silos, or break them down



RECOMMENDATIONS | *State-scale*

The background of the slide is a photograph of a waterfall cascading over rocks. The image is overlaid with several semi-transparent blue rectangular boxes. The waterfall is on the left side, and the background transitions from a clear blue sky to a darker blue at the top right.

Mainstream
pilots &
demos

- Design pilots with business case
- Ensure marketing/comms
- Connect with business and developer community

BE A ONE WATER CHAMPION



Learn
more

- Report release!
- TLWP webinar series, *April 2018*
- Additional resources & blog series via report website

Get
plugged in

- US Water Alliance / *One Water Summit*
- WaterNow Alliance



THANK YOU!



THE CYNTHIA & GEORGE
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