



**WATER FORWARD**  
INTEGRATED WATER RESOURCE PLAN

# Environmental Commission Update

August 1, 2018



# **Water Forward**

## **Integrated Water Resource Plan (IWRP)**

- Austin Water is leading interdepartmental effort in developing a 100 year water plan that reflects our community's values
- Council-appointed Task Force meets monthly
- Community outreach throughout the plan development process
- Plan to be completed in 2018 with updates on a five year cycle
- Goal: Ensure a diversified, sustainable, and resilient water future, with strong emphasis on water conservation

# Drivers for Austin's IWRP

2007 - 2016  
Extreme  
Drought

Population  
Growth  
&  
Development

Climate  
Change  
Impacts on  
Supply  
Reliability

Alignment  
with  
Community  
Values

# Austin's Water Supply

- Colorado River and Highland Lakes
- Combination of state-granted water rights & long-term firm contract with Lower Colorado River Authority (325,000 acre-feet per year)
- Austin's municipal river diversions for 2017 were ~149k AF





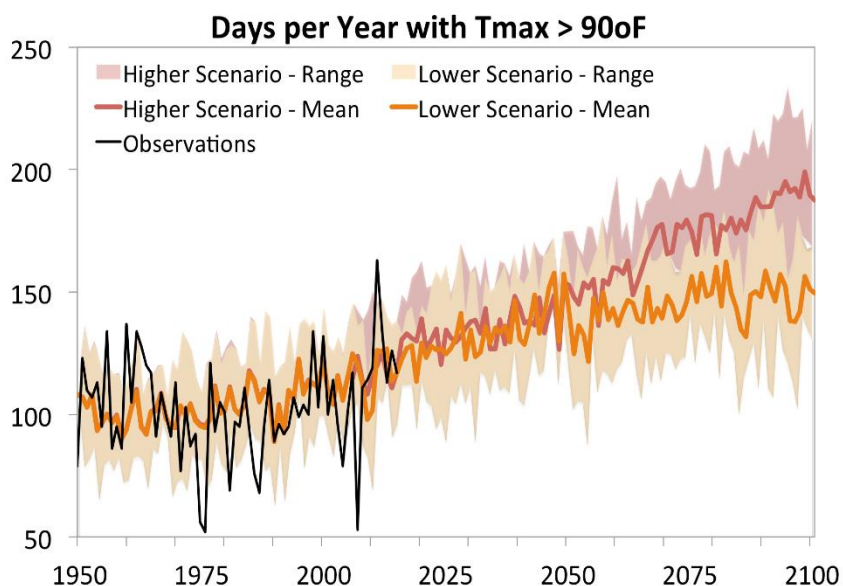
# Guiding Principles for Plan Development

- Recognizing that Colorado River water is Austin's core supply, continue a strong partnership between the City and LCRA to assure its reliability
- Continue Austin's focus on water conservation and water use efficiency
- Strengthen long-term sustainability, reliability, and diversity of Austin's water supply through maximizing local water resources
- Avoid severe water shortages during times of drought
- Focus on projects that are technically, socially, and economically feasible
- Continue to protect Austin's natural environment, including source and receiving water quality
- Ensure Austin's water supply continues to meet/exceed all federal, state and local public health regulations
- Align with Imagine Austin's "Sustainably Manage Our Water Resources Priority Program"
- Maintain coordination and communication with regional partners
- Engage the public and stakeholders throughout the plan development process

# A Changing Climate in Austin

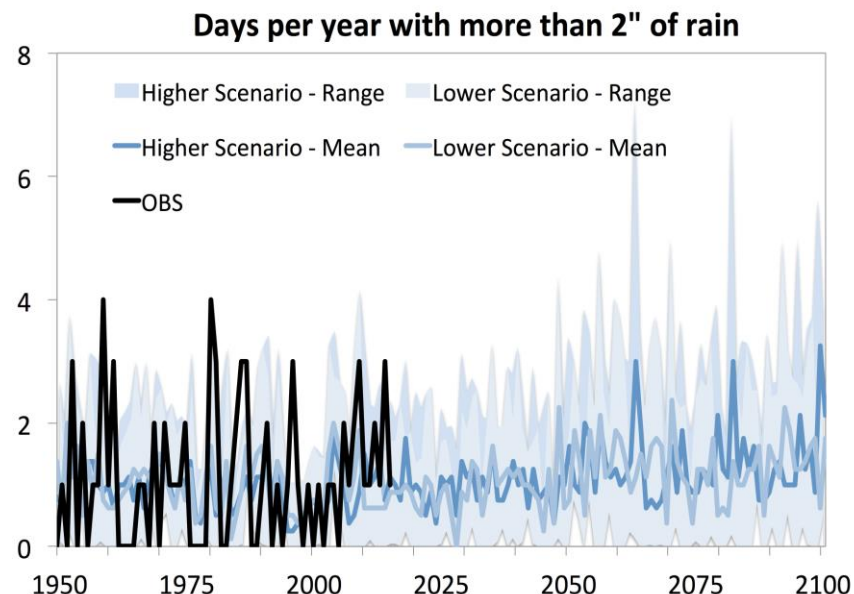
## Higher temperatures

- Projected temperature increases
- Higher evaporation and increased drought intensity



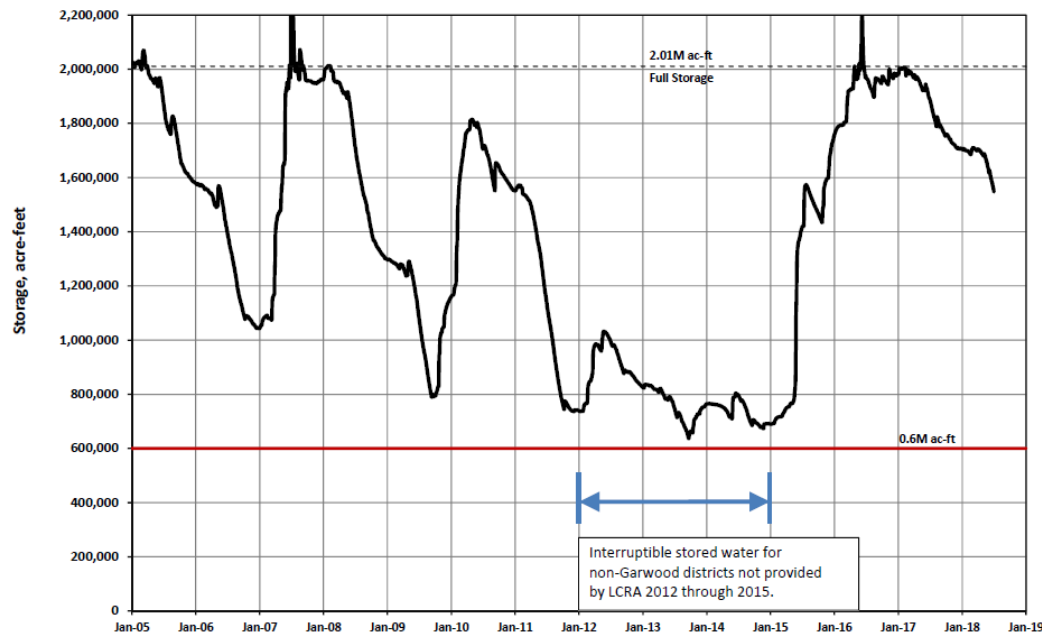
## Increases in heavy precipitation

- Projected increases in magnitude and number of heavy rain events



# Planning for drought

**Combined Storage of Lakes Buchanan and Travis**  
January 1, 2005 though July 1, 2018

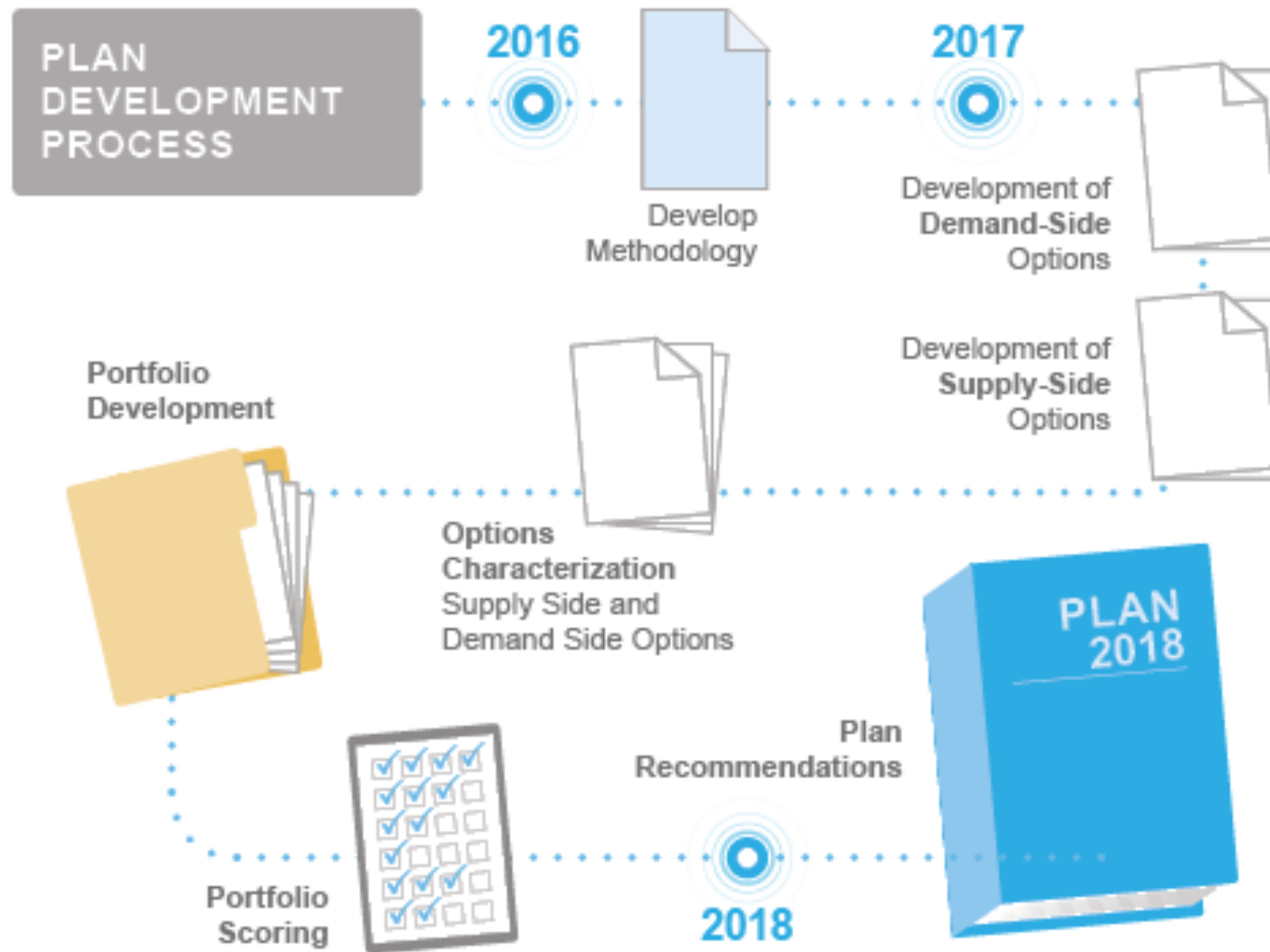


**12 Lowest Annual Inflows on Record**

Rank	Year	Annual Total in Acre-Feet
1	2011	127,802
2	2014	207,642
3	2013	215,138
4	2008	284,462
5	2006	285,229
6	1963	392,589
7	2012	393,163
8	2017	429,959
9	1983	433,312
10	1999	448,162
11	2009	499,732
12	1950	501,926

- Top 5 all-time lowest reservoir inflows have occurred since 2006
- 8 of the 12 lowest inflow years have all occurred since 2006

# IWRP Development Process





# Public Input: What We've Heard

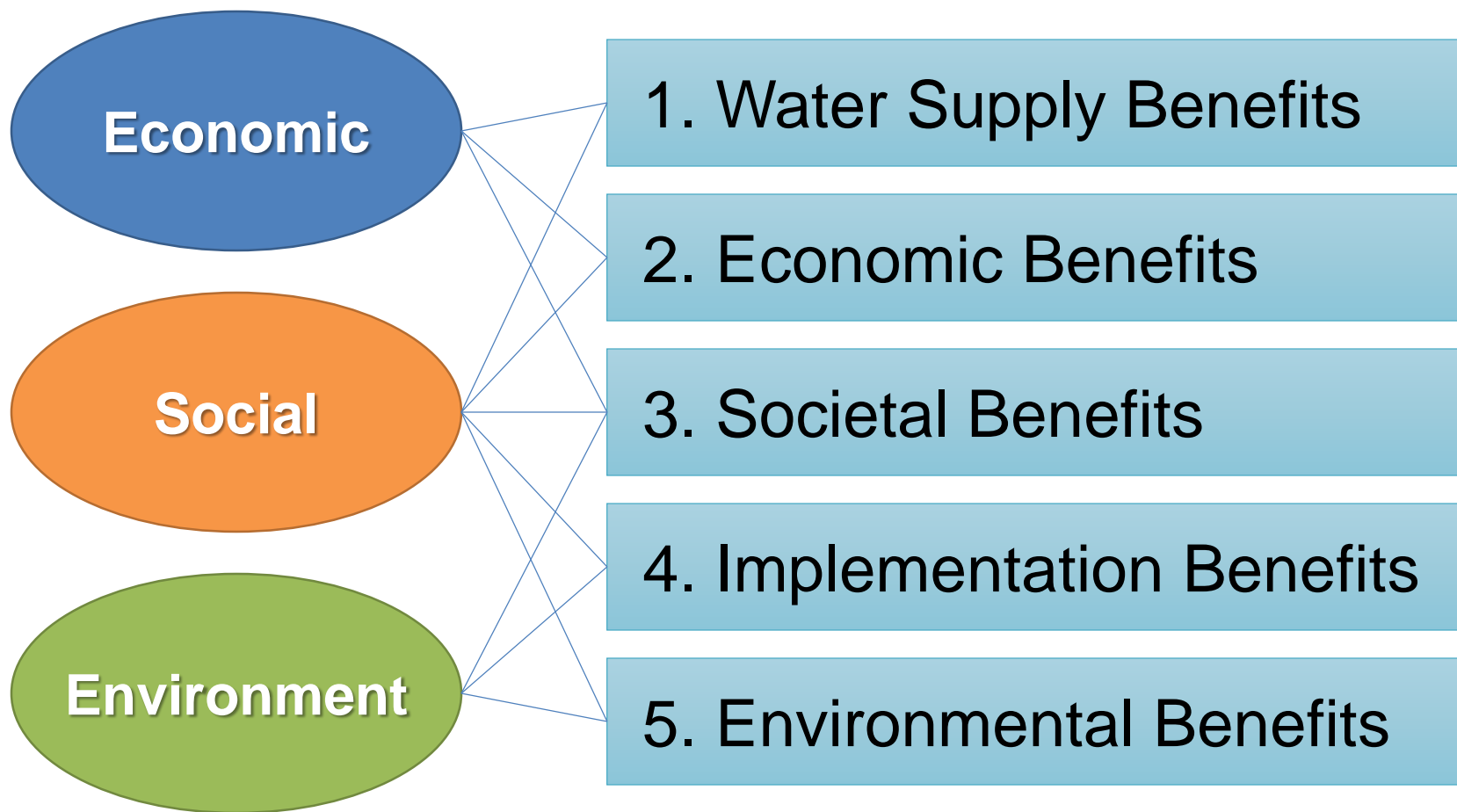
- Staff has presented at and attended over 80 community group meetings and events
- Austin Water has hosted five public workshops, two of which were paired with online webinars, across the City



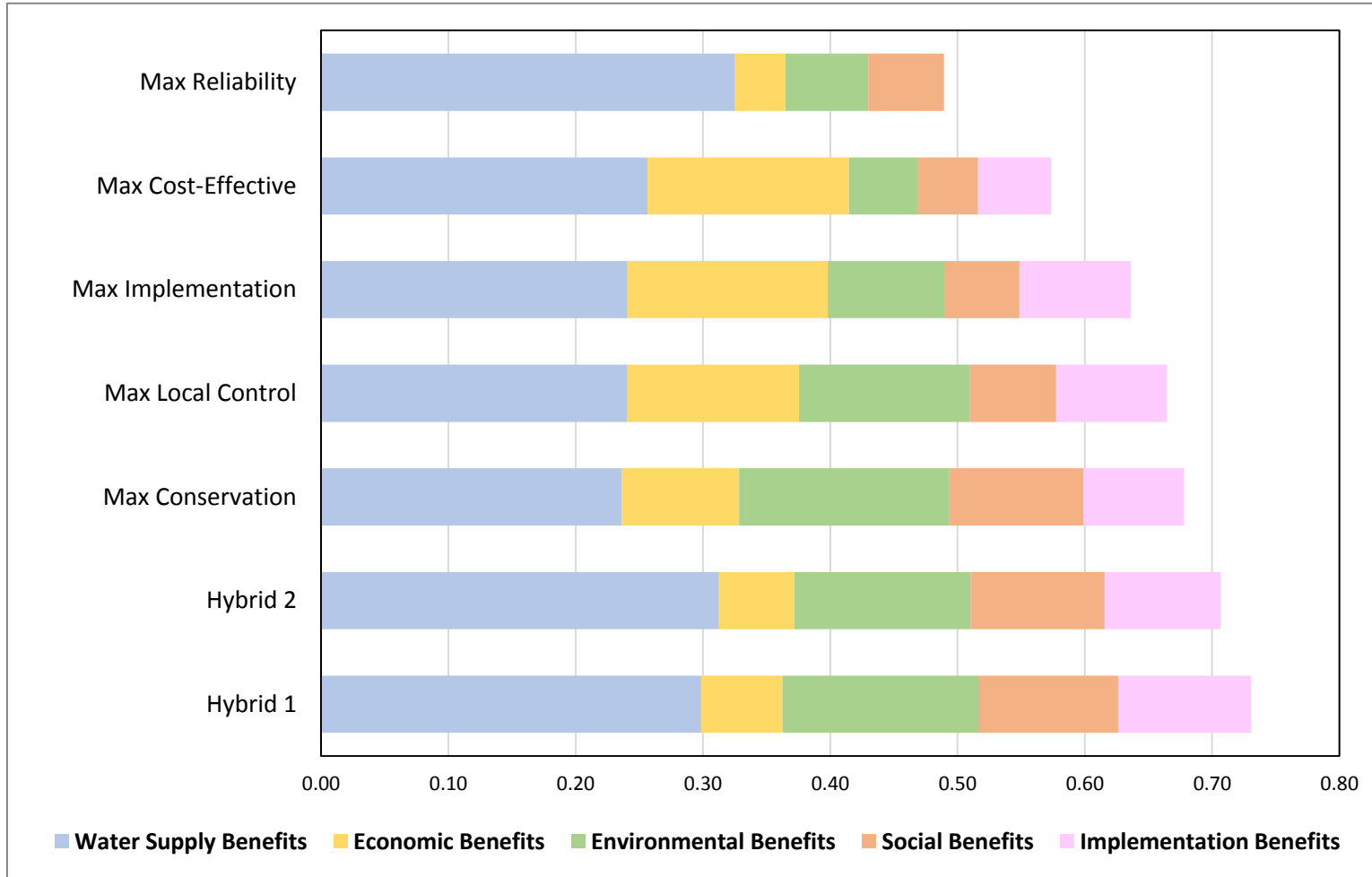
# Five IWRP Objectives Aligned with the Principles of Sustainability

## *Sustainability Principles*

## *IWRP Objectives*



# Portfolio Scoring



# Draft Plan Recommendations

## Strategies from Hybrid 1

### Demand Management

Implement Advanced Metering Infrastructure (AMI)

Enhance distribution system water loss control

Provide customer water use benchmarking information and implement water budgets

Transform to regionally appropriate landscapes

Expand irrigation efficiency incentives

### Water Supply

Store water for drought via Aquifer Storage and Recovery and a new Off Channel Reservoir

Bring on additional supplies via Brackish Groundwater Desalination

Expand the Centralized Reclaimed Water System

Use Indirect Potable Reuse as a deep drought strategy

Capture local inflows to Lady Bird Lake

Use on-site and neighborhood scale alternative water sources for non-potable end uses  
Rainwater, Stormwater, Wastewater, Graywater, and AC Condensate

### Decentralized



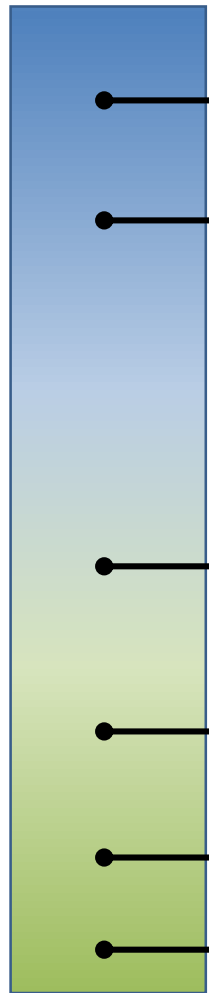
# Draft Plan Recommendations Continued

- Water Forward recommendations are in addition to City's current core water resources:
  - Colorado River firm water supply
  - Centralized Reclaimed Water System
  - Water conservation program
  - Drought contingency plan
- Plan recommendations include
  - Development of a dual plumbing ordinance
  - Expansion of current centralized reclaimed water connection requirements
  - Continue to engage in regional partnerships
  - Implementation of best management practices
    - Continue to require or incentivize water efficient fixtures
    - Lake Austin Operations during drought
  - Implementation components
    - Water rates and fees to promote water use efficiency while maintaining affordability
    - Customer education enhancement and conservation promotion



# Relative Unit Cost Comparison

\$6,500/AF



Alternative Water Incentives and Ordinances

Water Loss Control – Utility-Side

Advanced Metering Infrastructure  
Brackish Groundwater Desalination

Centralized and Decentralized Reclaimed  
Aquifer Storage and Recovery

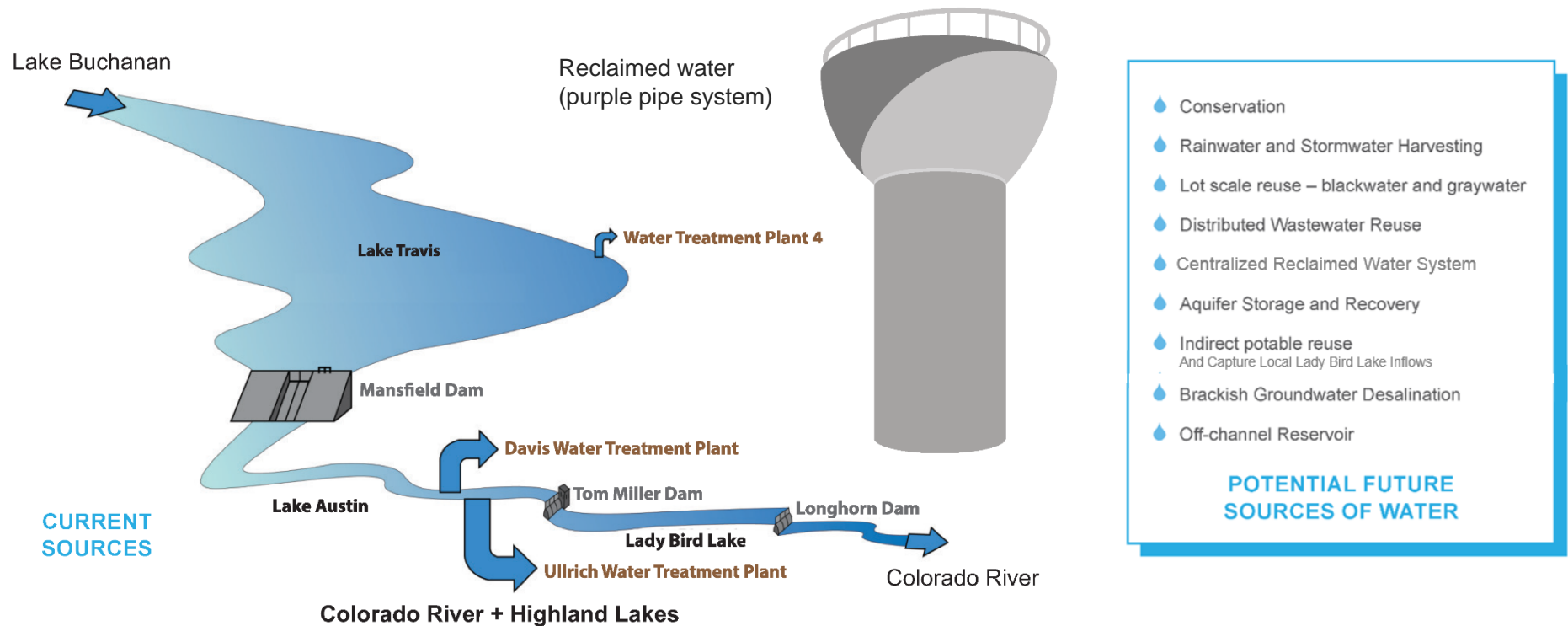
Off Channel Reservoir  
Indirect Potable Reuse

Landscape Transformation Incentive and Ordinance  
Irrigation Efficiency Incentive

\$100/AF

# Plan Benefits

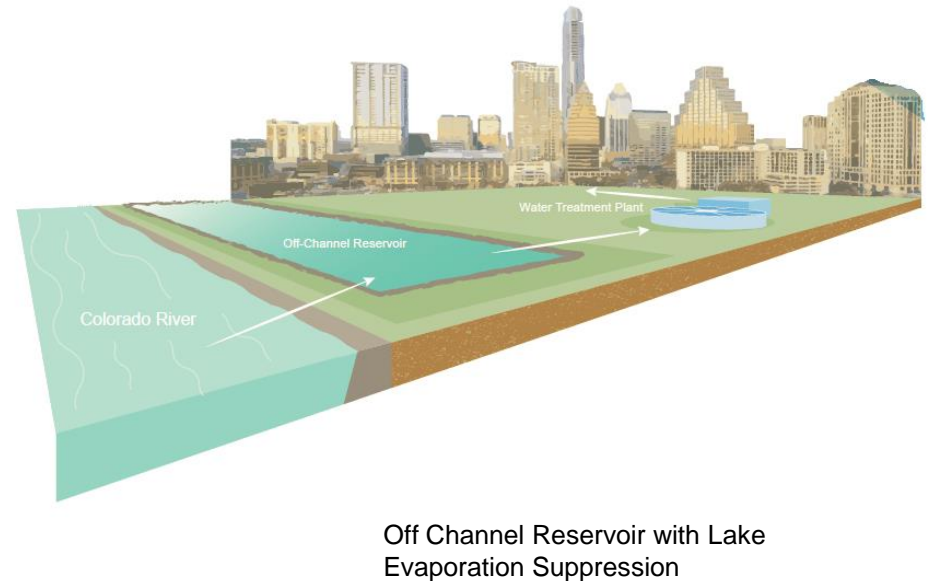
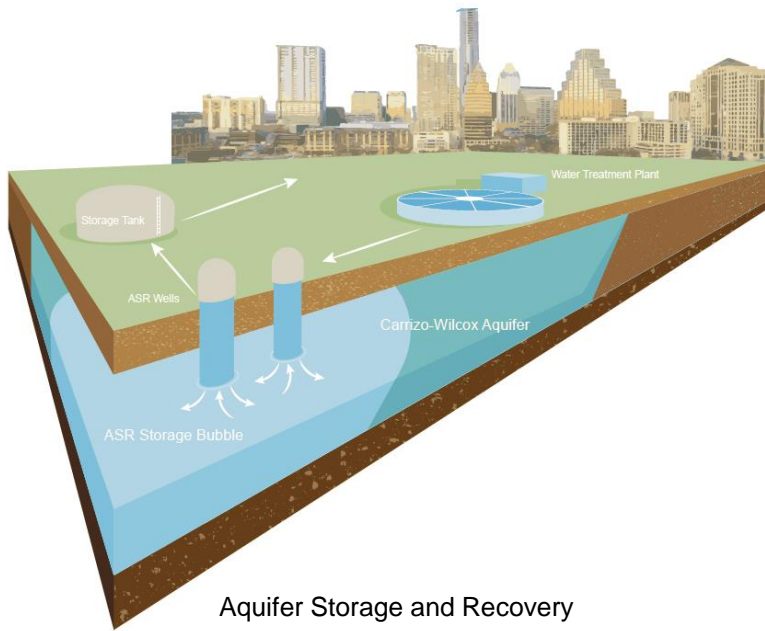
## Supply diversification and resilience



In the future, additional supply and demand management strategies will help to ensure a sustainable and resilient water future.

# Plan Benefits

Strengthening drought resilience and planning for climate change

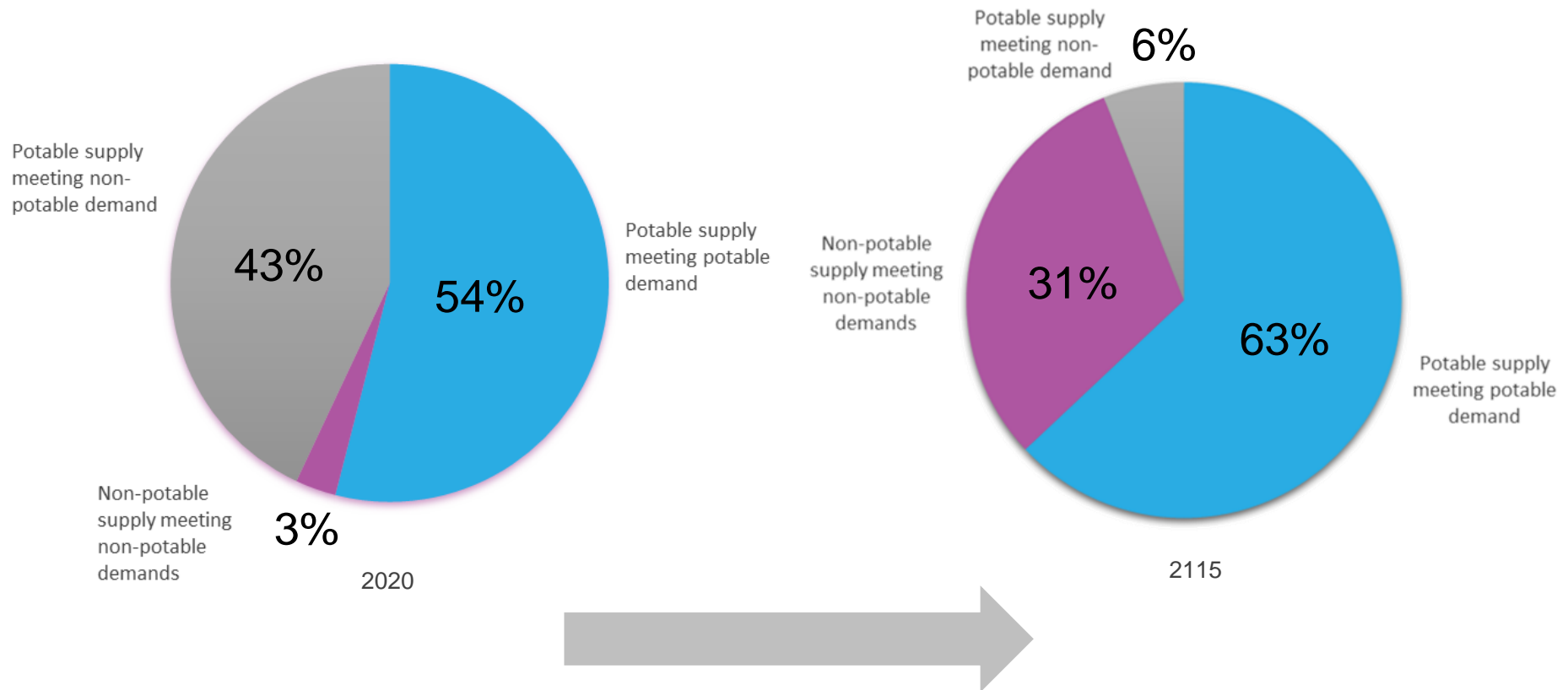


Storage options increase our ability to store water during wet periods. This stored water can be drawn back out for use during droughts.



# Plan Benefits

## Meeting Future Demands & Population Growth



Over time this plan enables us to increasingly meet non-potable demands with non-potable supplies rather than potable supplies.

# Plan Benefits

## Stretching Our Current Supplies



Advanced Metering  
Infrastructure



Landscape Transformation  
Incentives or Ordinances

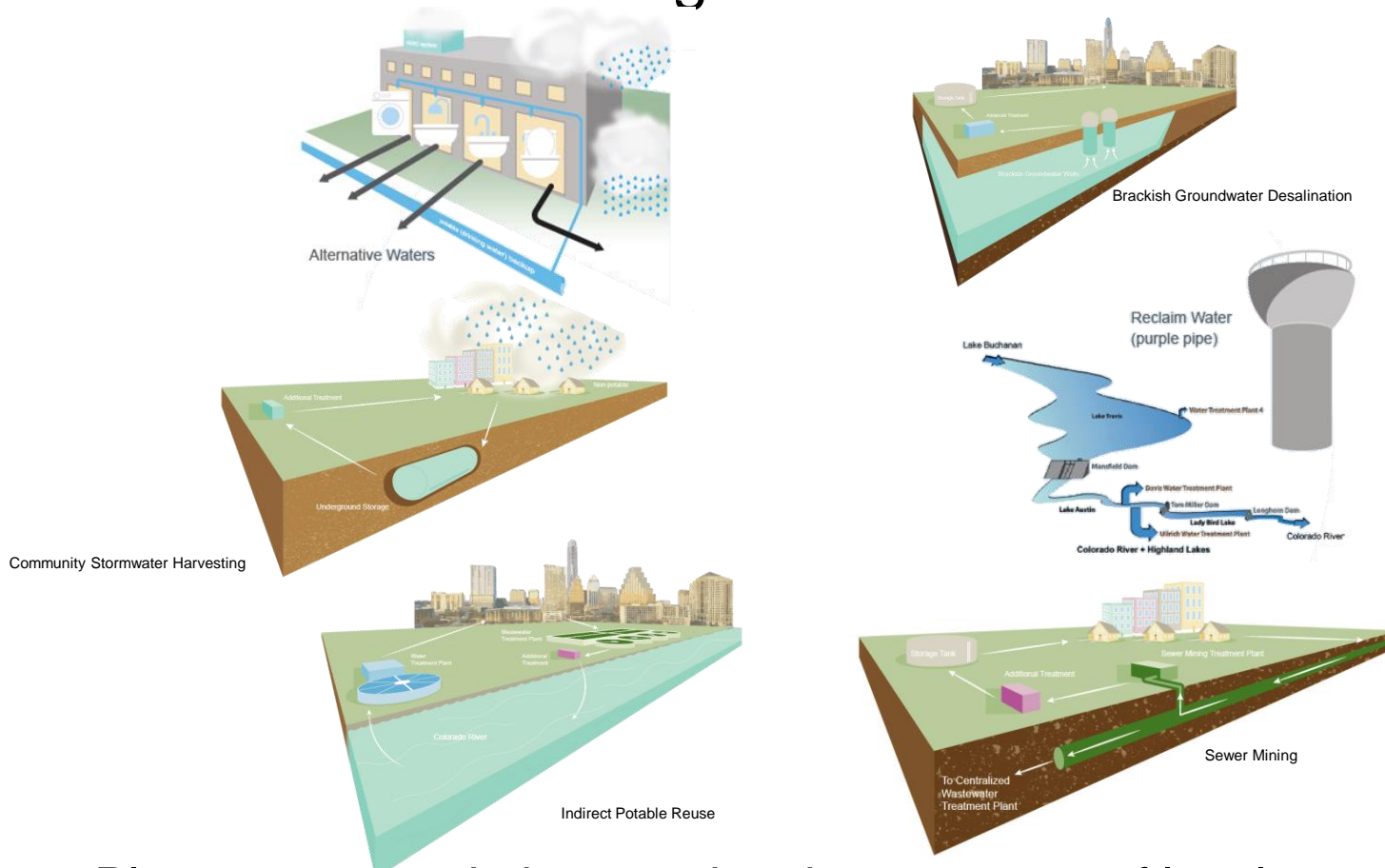


Water Use Benchmarking  
and Budgeting

Making our community more water efficient through demand management or conservation enhancements to stretch our current supplies.

# Plan Benefits

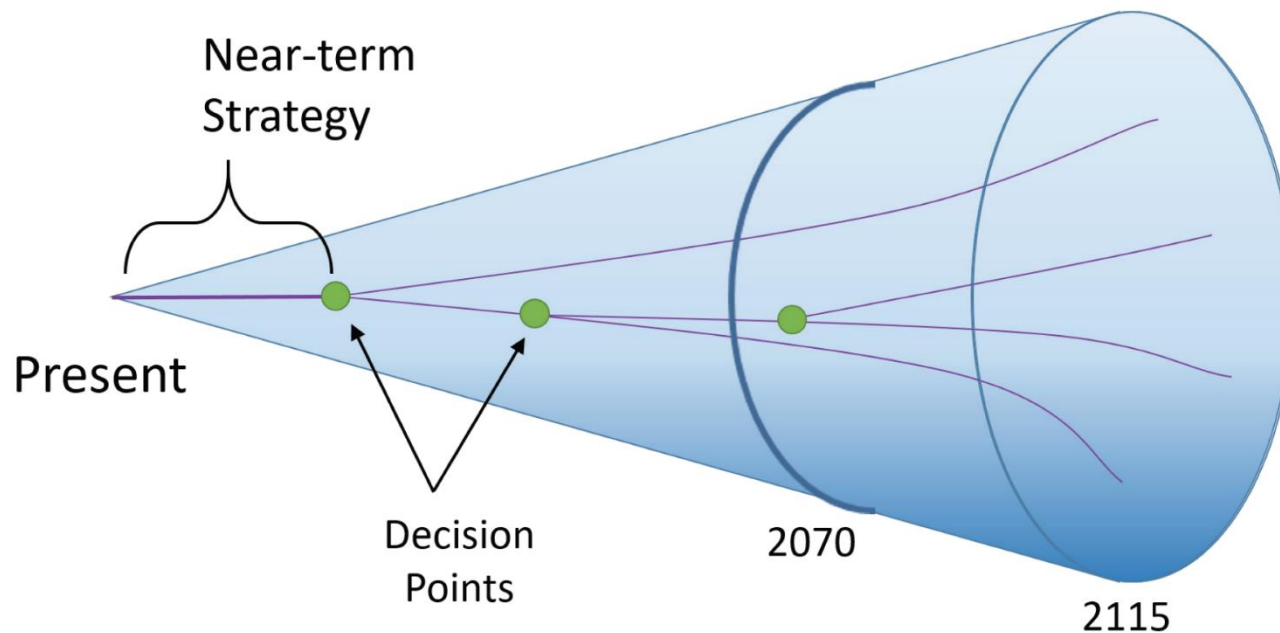
## Maximizing local water sources



Plan recommendations seek to increase use of local water sources including rainwater, stormwater, greywater and blackwater.

# Plan Benefits

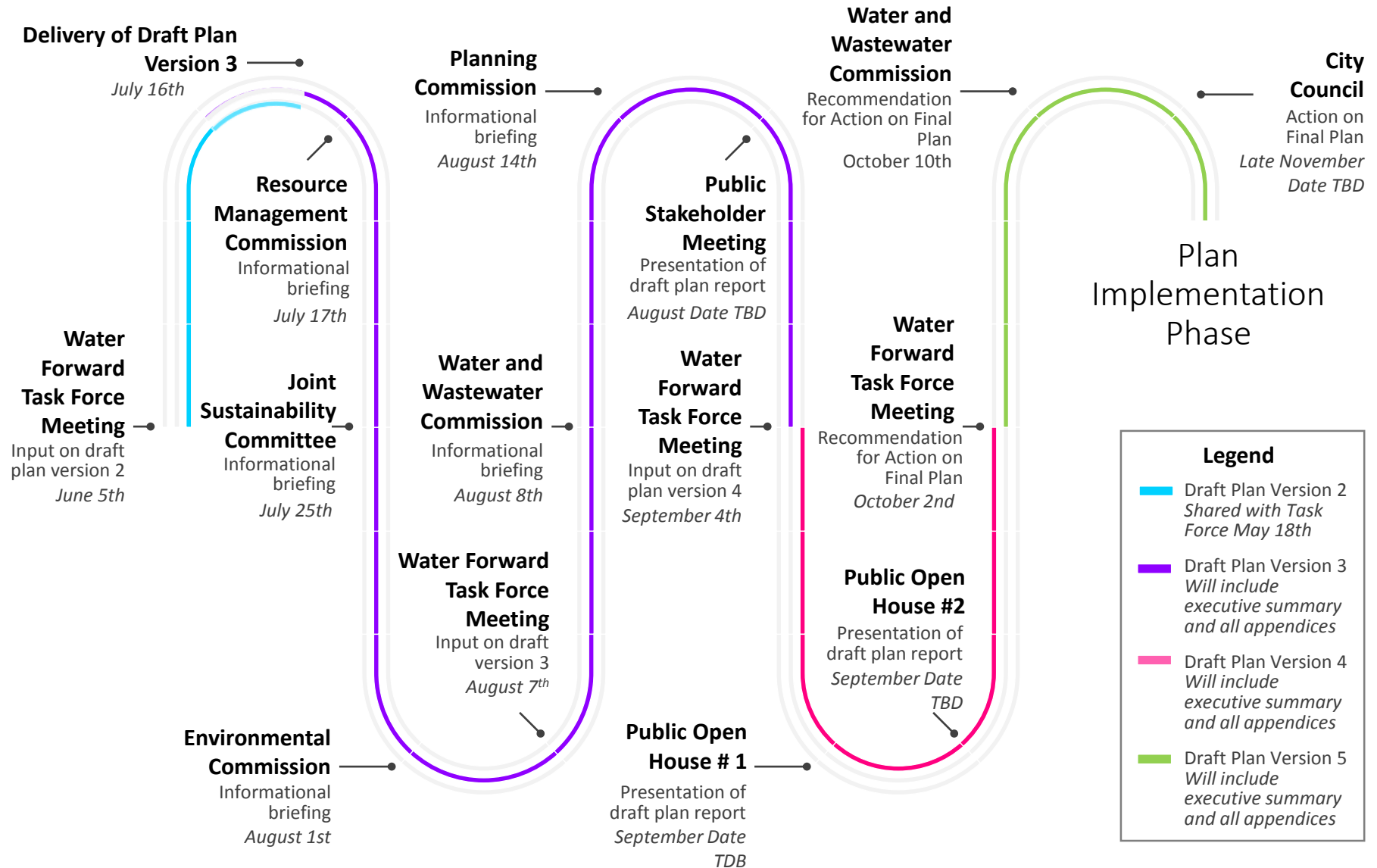
## Planning for Climate Change and Uncertainties Through Adaptive Management



An adaptive management approach enables us to respond to new information and changes as they arise.



# Schedule – Subject to Change



# Next Steps

- Post plan adoption, AW will begin implementation, monitoring, and potential adaptation of strategies
- Near term activities will include:
  - Development of codes and ordinances
    - Dual Plumbing
    - Alternative Water Use
  - Development of incentive programs
    - Landscape Transformation
    - Irrigation Efficiency
  - Aquifer Storage and Recovery Pilot
  - Indirect Potable Reuse planning





# Next Steps



New City of Austin Planning and Development Center  
to include onsite blackwater reuse pilot facility

# Thank You

[austintexas.gov/waterforward](http://austintexas.gov/waterforward)

## WATER FORWARD



Austin is one of the fastest growing cities in the country. With a rapidly growing city and a changing climate, Austin Water is working with other city departments, a Council-appointed citizen Task Force, and the community to develop a water plan for the next century.

The goal of the Water Forward plan is to ensure a diversified, sustainable, and resilient water future, with strong emphasis on water conservation. This plan will consider a range of strategies such as water conservation, water reuse, aquifer storage and recovery (ASR), and others.

## TOP CONTENT

- [Water Restrictions](#)
- [Water Conservation](#)
- [Reclaimed Water Program](#)
- [Residential Customer Service](#)
- [Contact Information](#)

## CONTACT INFO

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