Austin WATER

WATER FORWARD
INTEGRATED WATER RESOURCE PLAN

Water and Wastewater Commission Update

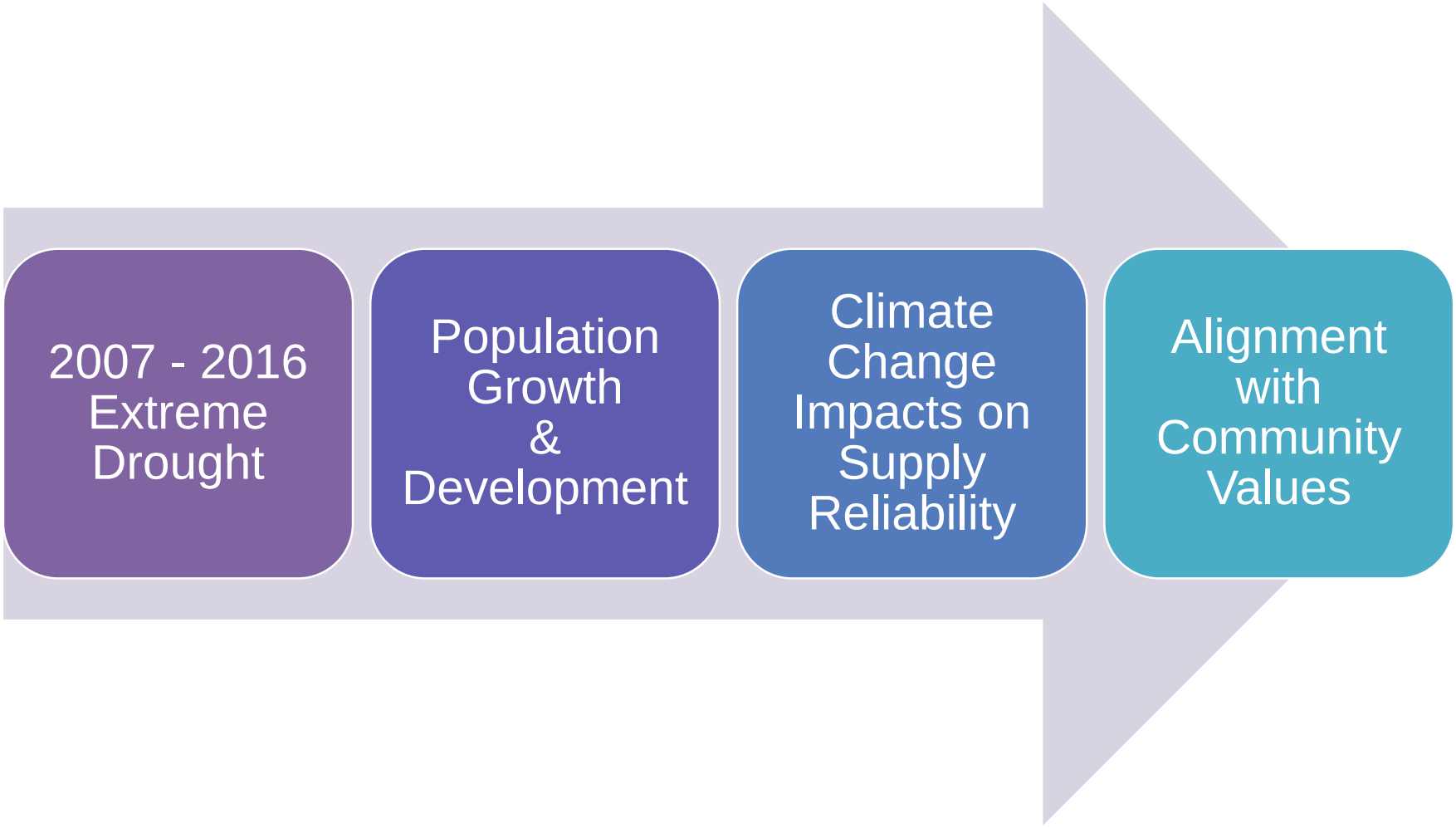
August 8, 2018

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



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

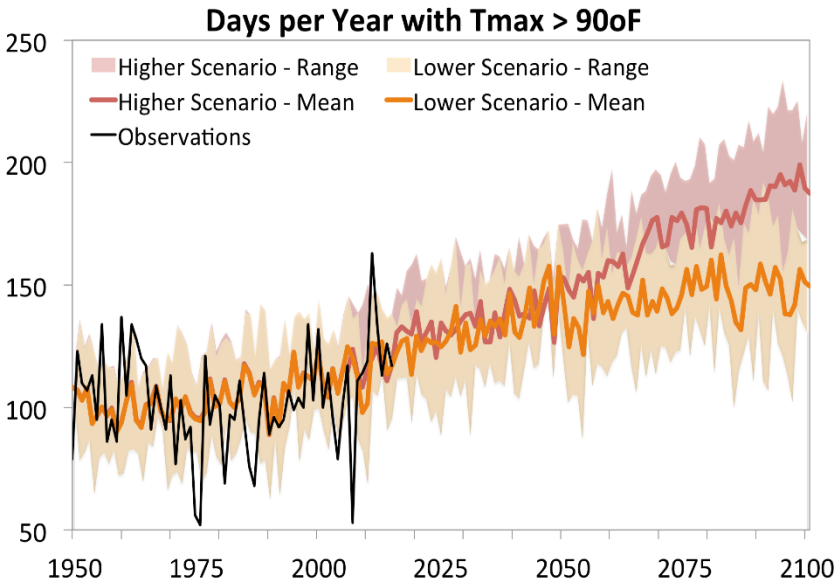
A Changing Climate in Austin

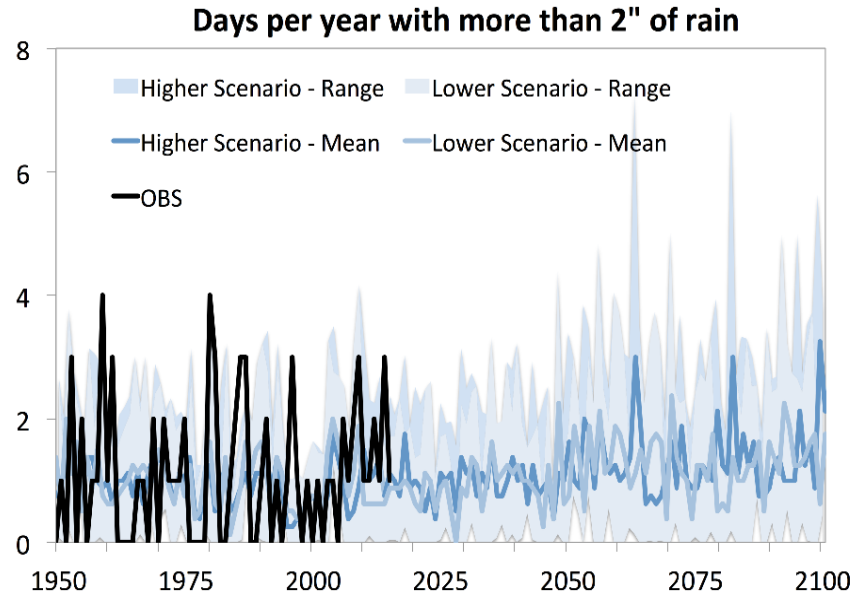
Higher temperatures

- Projected temperature increases
- Higher evaporation and increased drought intensity

Increases in heavy precipitation

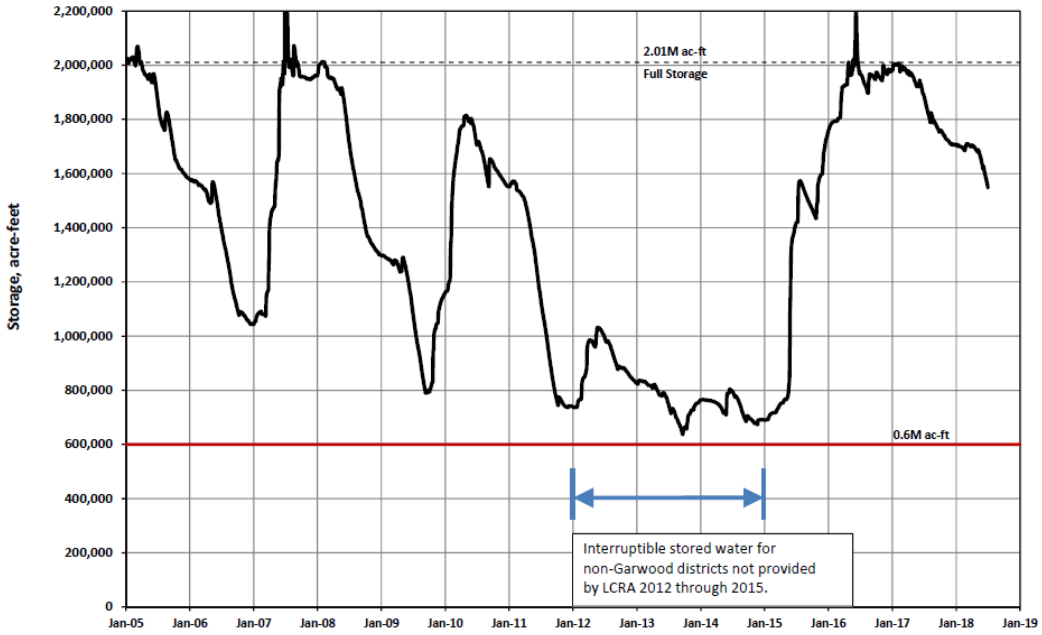
- Projected increases in magnitude and number of heavy rain events





Planning for drought

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

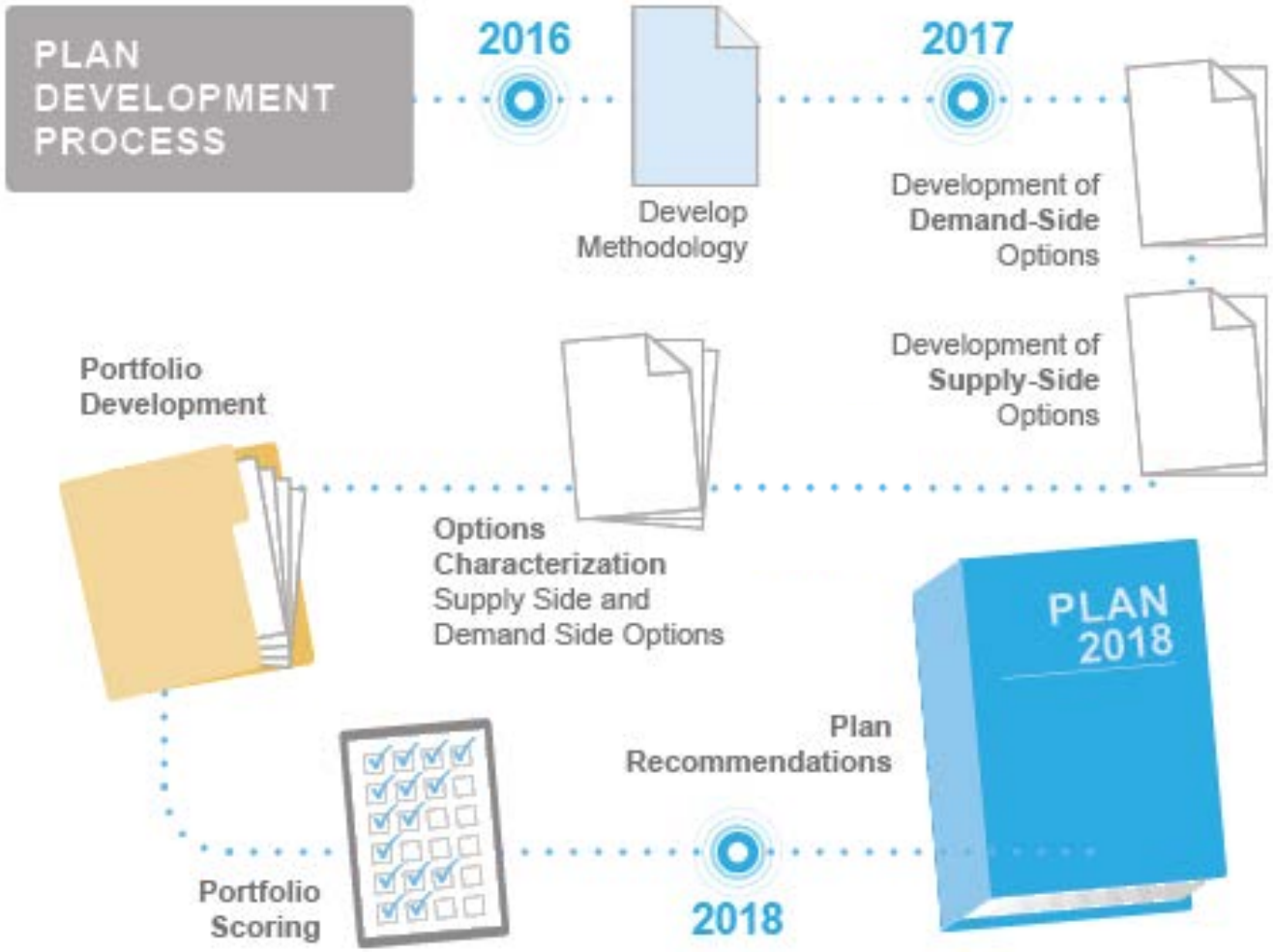


12 Lowest Annual Inflows on Record

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

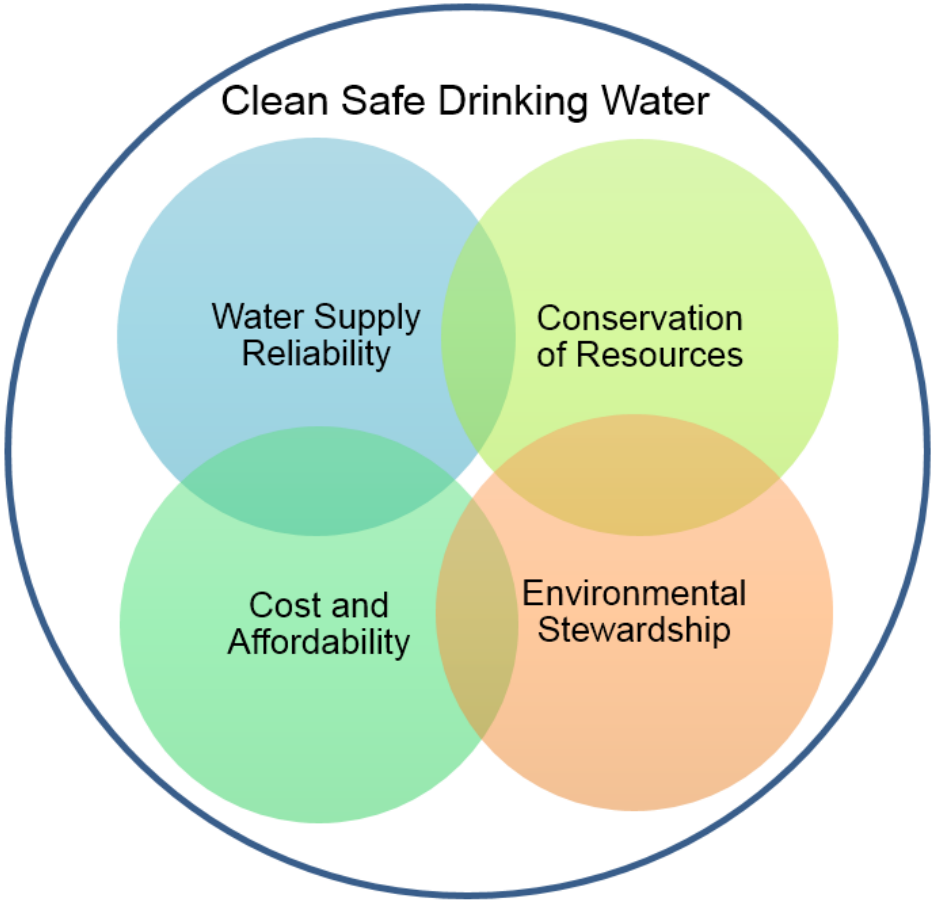
- Top 5 all-time lowest reservoir inflows have occurred since 2006
- 8 of the 12 lowest inflow years have all occurred since 2006

IWRP Development Process

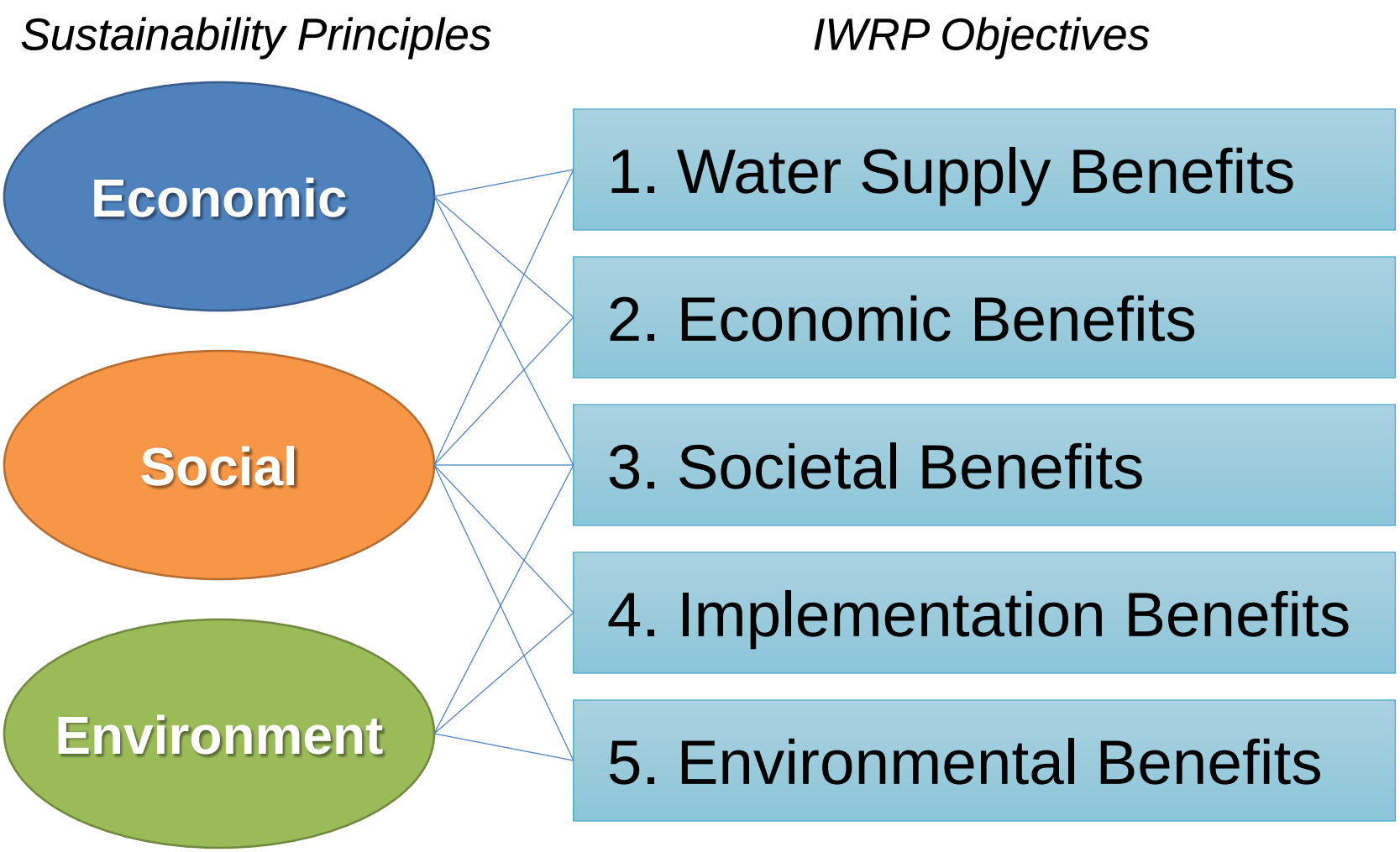


Public Input: What We've Heard

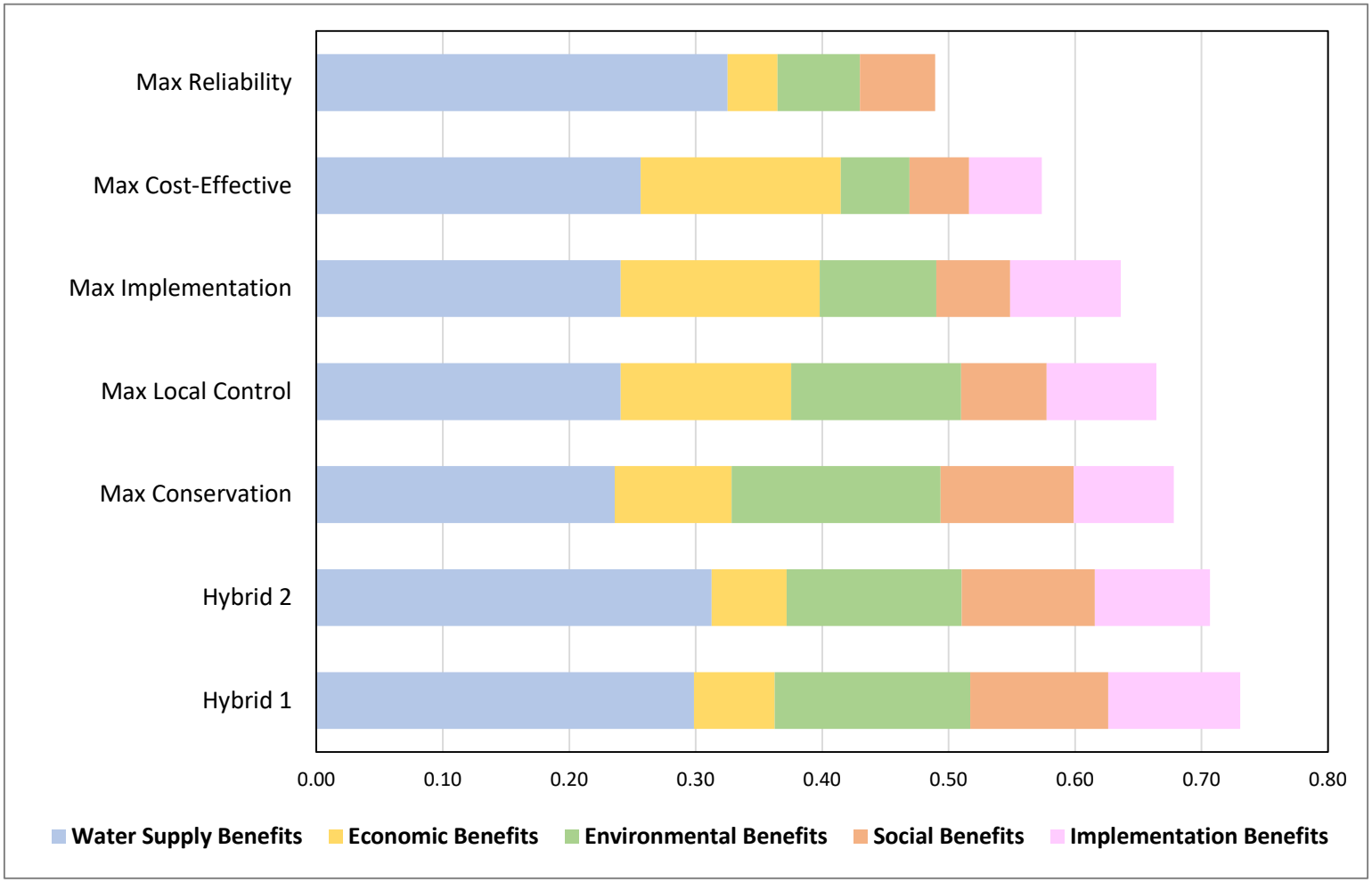
- Staff has presented at and attended over 80 community group meetings and events
- Austin Water has hosted five public workshops, two of which were paired with online webinars, across the City



Five IWRP Objectives Aligned with the Principles of Sustainability



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

Decentralized

Use on-site and neighborhood scale alternative water sources for non-potable end uses

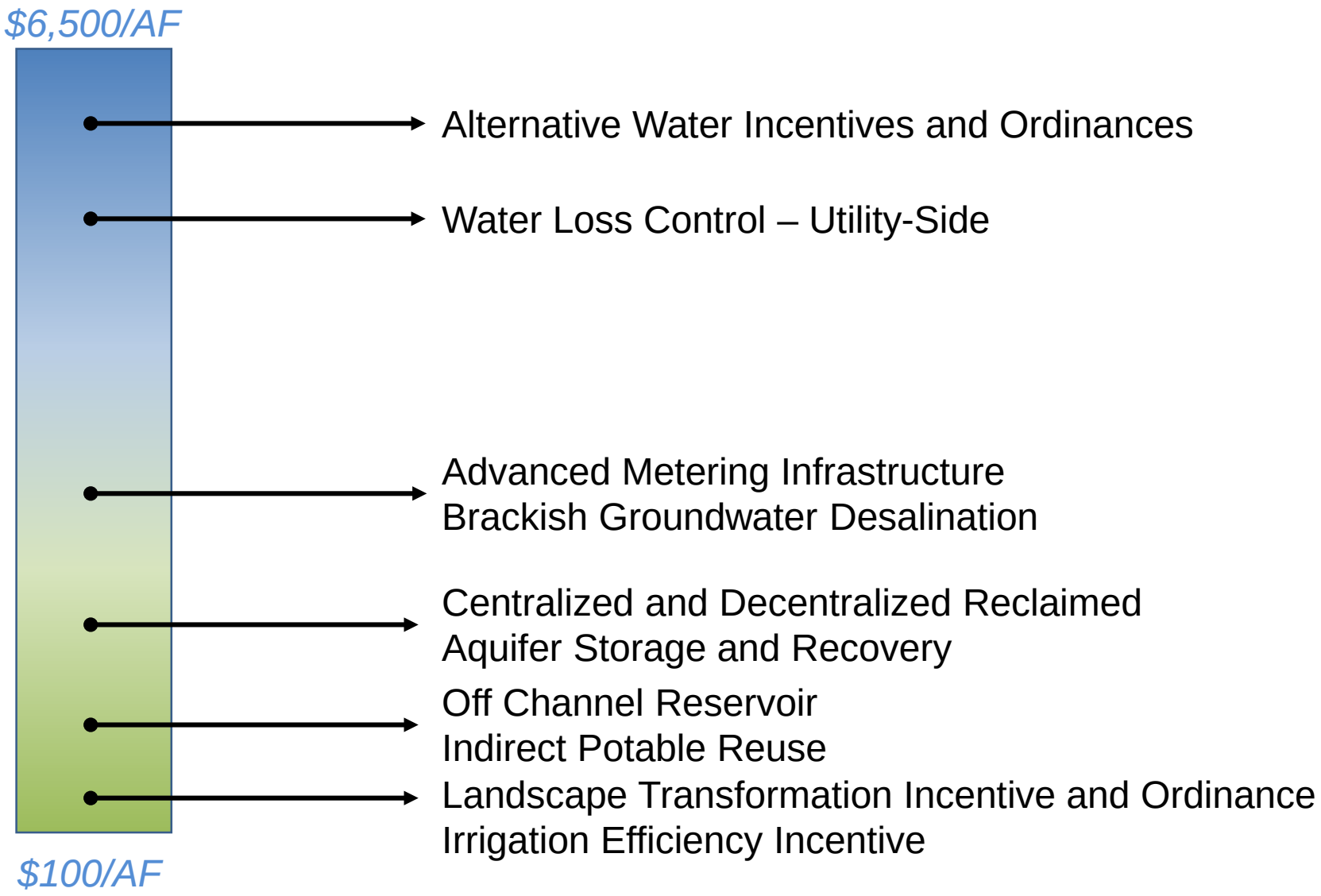
Rainwater, Stormwater, Wastewater, Graywater, and AC Condensate

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

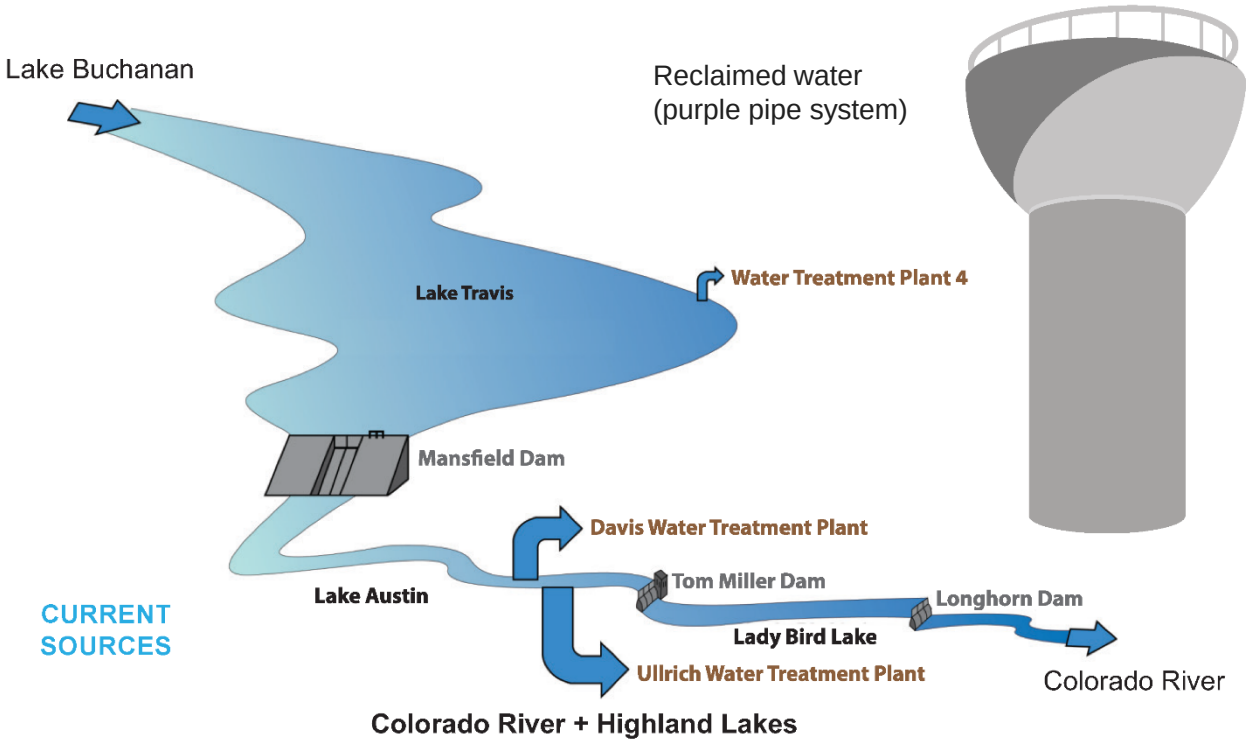
- Plan recommendations include
  - Development of a dual plumbing ordinance
  - Expansion of current centralized reclaimed water connection requirements
  - Continue to engage in regional partnerships
  - Implementation of best management practices
    - Continue to require or incentivize water efficient 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



Plan Benefits

Supply diversification and resilience



Reclaimed water
(purple pipe system)

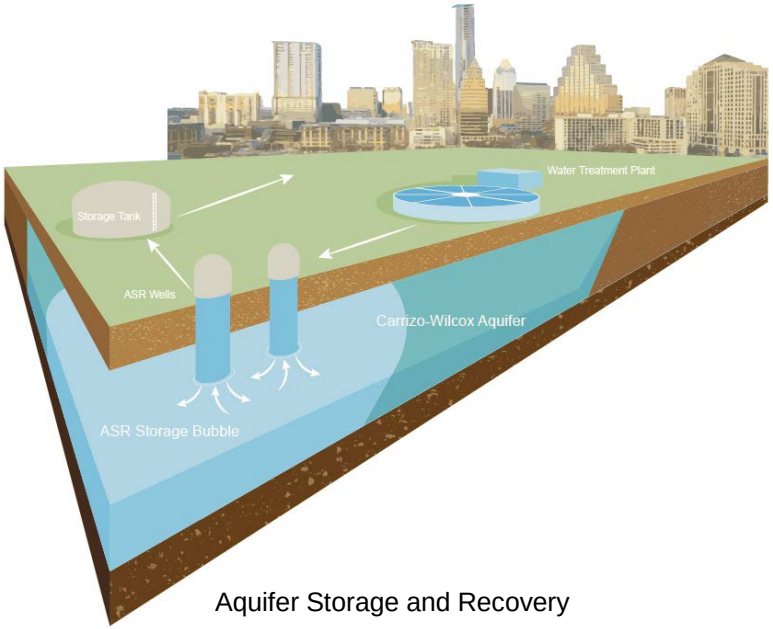
- Conservation
- Rainwater and Stormwater Harvesting
- Lot scale reuse – blackwater and graywater
- Distributed Wastewater Reuse
- Centralized Reclaimed Water System
- Aquifer Storage and Recovery
- Indirect potable reuse
  And Capture Local Lady Bird Lake Inflows
- Brackish Groundwater Desalination
- Off-channel Reservoir

POTENTIAL FUTURE SOURCES OF WATER

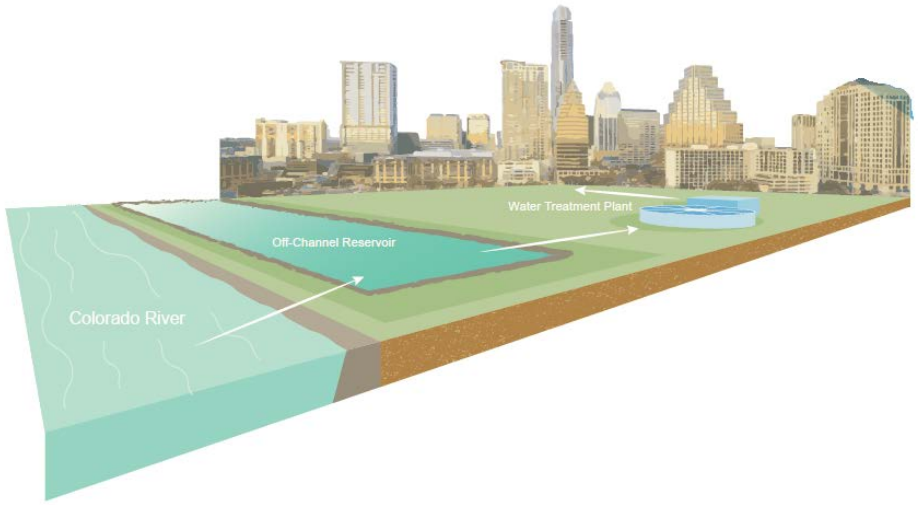
In the future, additional supply and demand management strategies will help to ensure a sustainable and resilient water future.

Plan Benefits

Strengthening drought resilience and planning for climate change



Aquifer Storage and Recovery

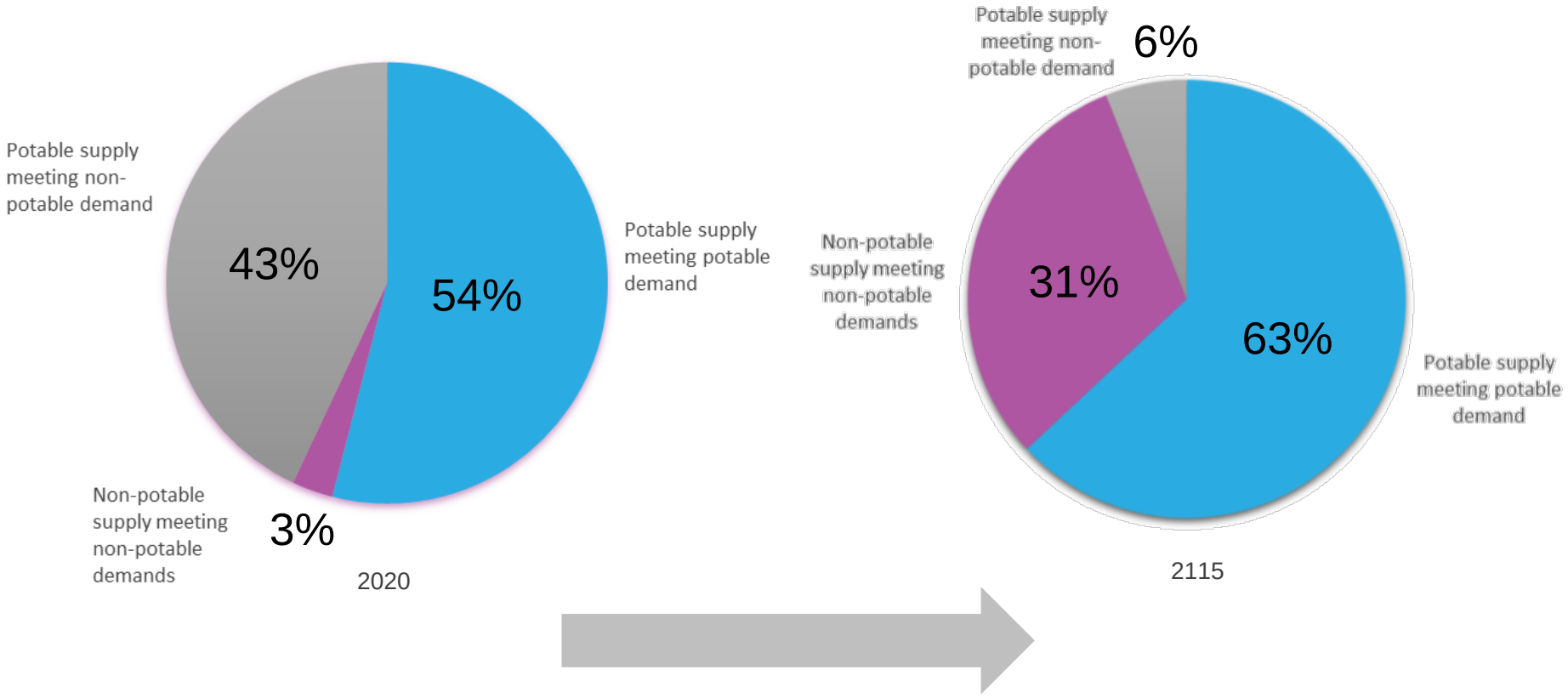


Off Channel Reservoir with Lake Evaporation Suppression

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

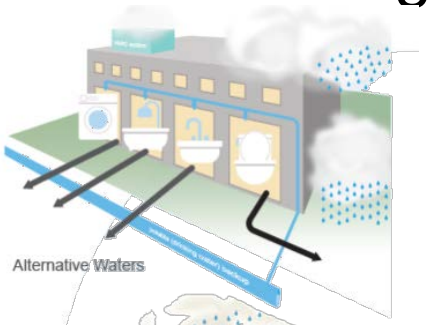
Landscape Transformation Incentives or Ordinances

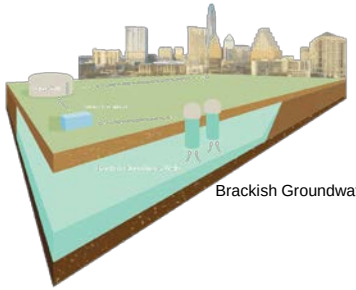
Water Use Benchmarking and Budgeting

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

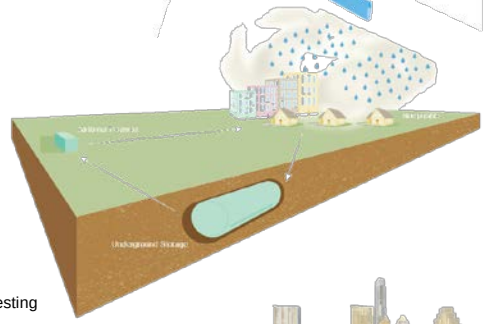
Plan Benefits

Maximizing local water sources

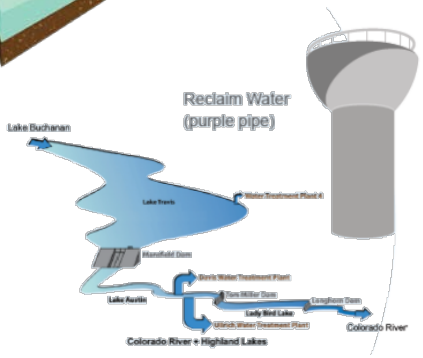


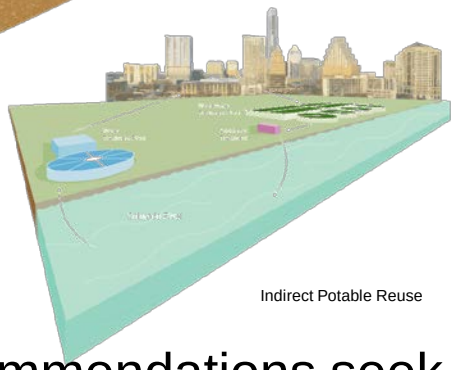


Brackish Groundwater Desalination

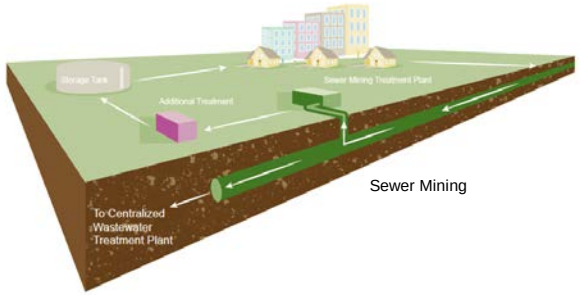


Community Stormwater Harvesting





Indirect Potable Reuse

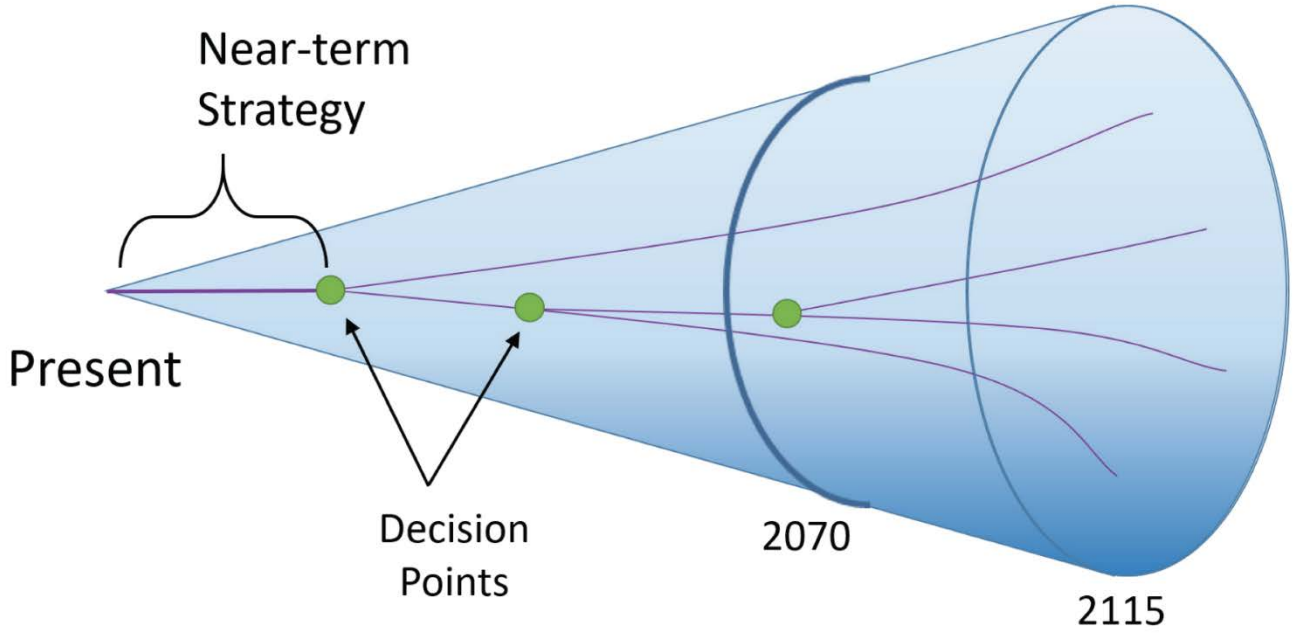


Sewer Mining

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

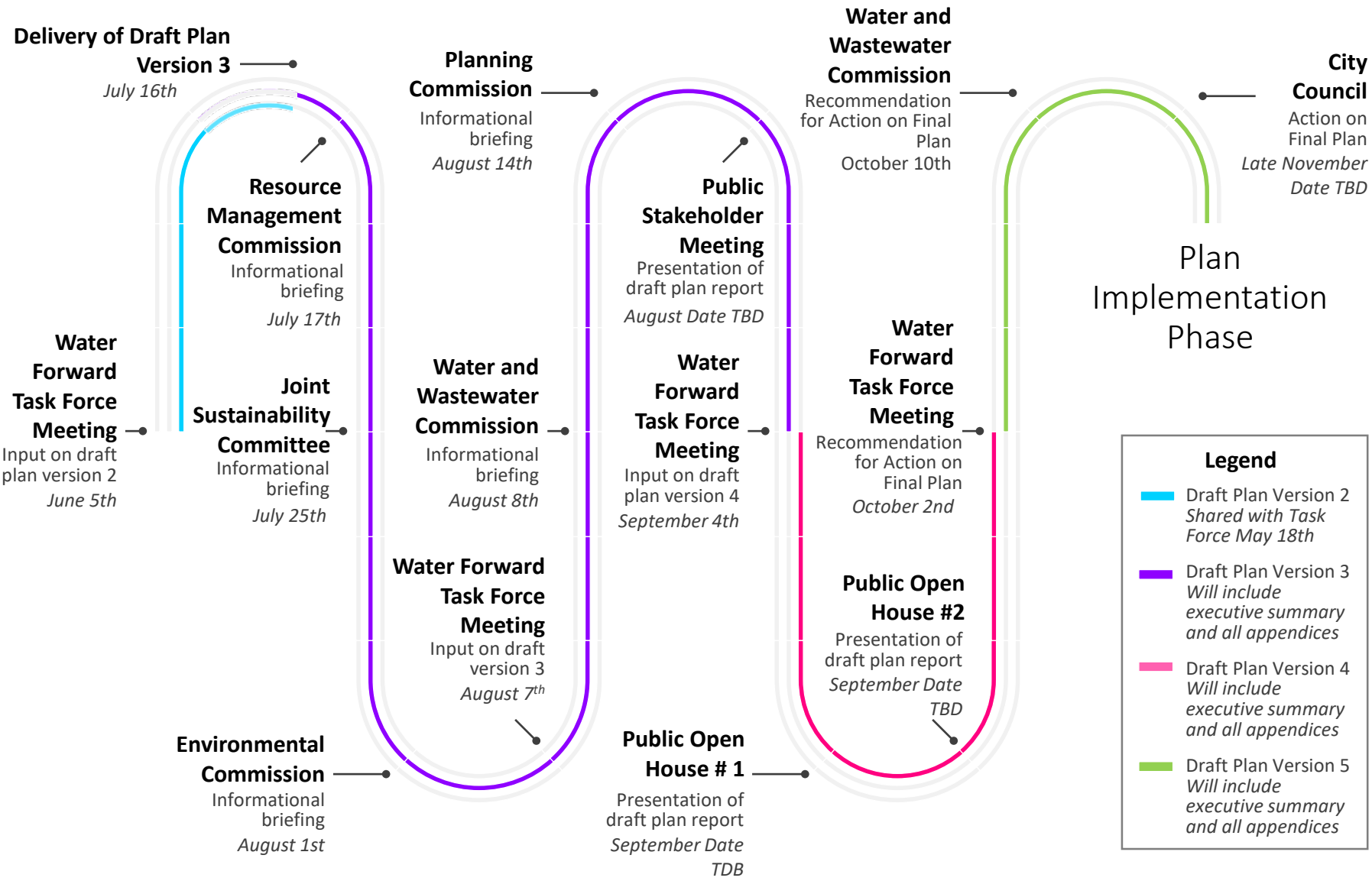
Plan Benefits

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