



**WATER FORWARD**  
INTEGRATED WATER RESOURCE PLAN

**Public Workshop #4**  
August 16, 2017



# Agenda

- Welcome
- Where We Are in the Process
- What We Have Heard to Date
- Options Characterization
- Q & A
- Portfolio Development Process and Themes
- Q & A
- Facilitated Discussion on Themes

# Water Forward

## Integrated Water Resource Plan (IWRP)

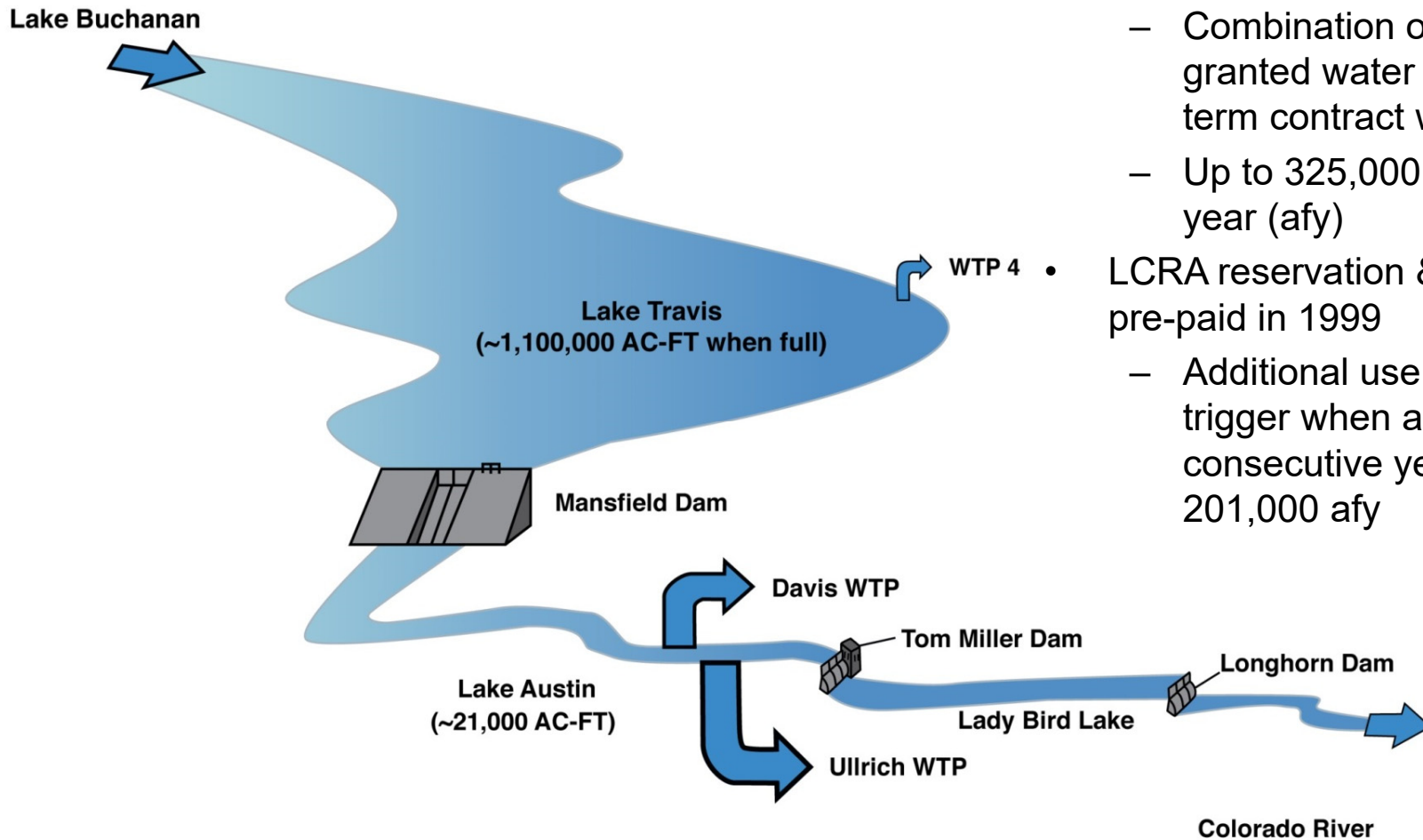
- Austin Water is leading the development of a 100 year water plan that reflects our community's values
- Goal: Ensure a diversified, sustainable, and resilient water future, with strong emphasis on water conservation
- We are seeking your input on the plan
  - Focus today is to provide feedback on emerging themes

# **Water Forward**

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

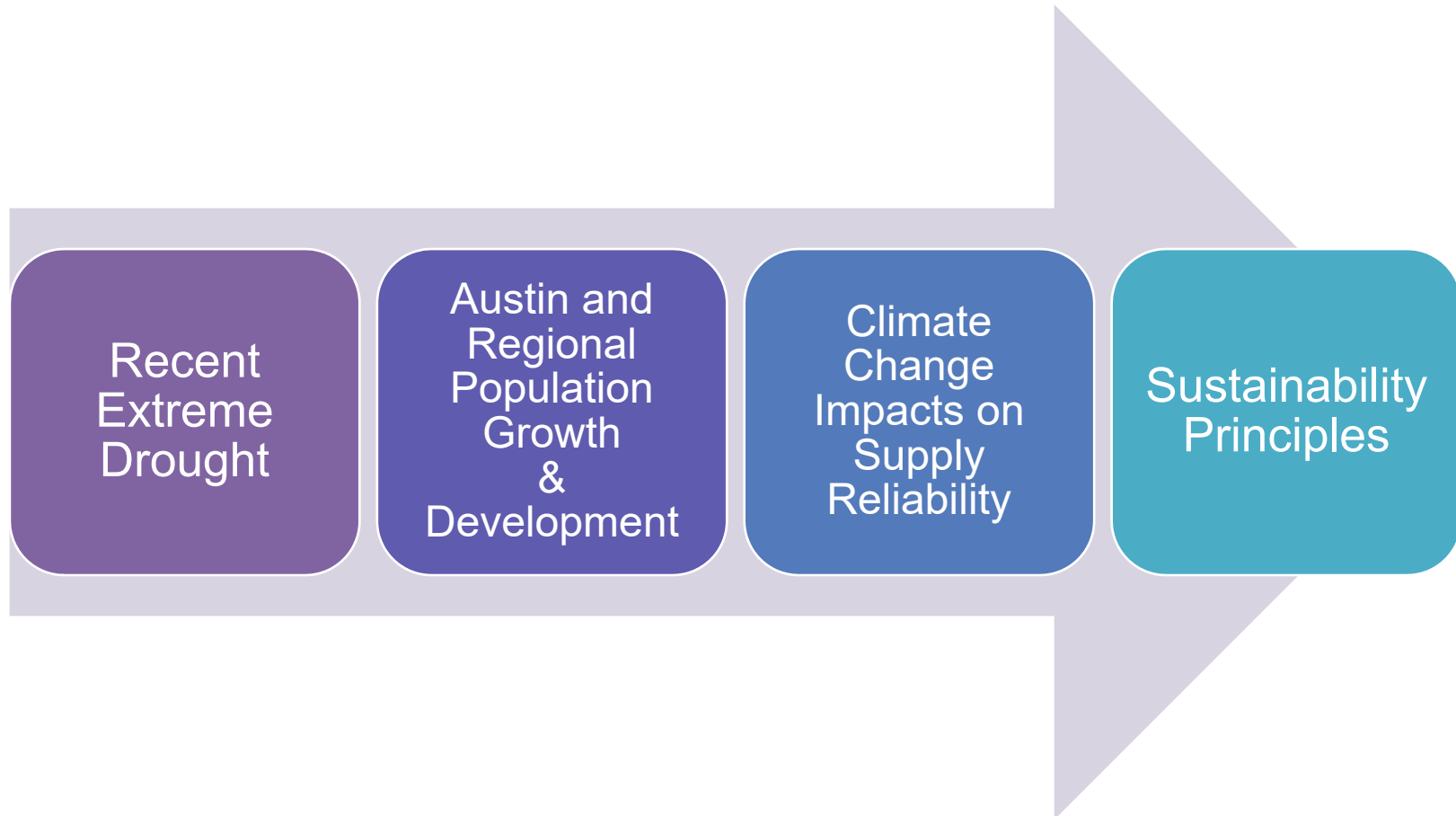
- Incorporates planning for drought and climate change
- Council-appointed Task Force meets monthly
- Interdepartmental coordination and coordination with the community to make sure plan is implementable
- Plan projected to be completed in 2018 with planned updates on a five year cycle

# Austin Water Supply



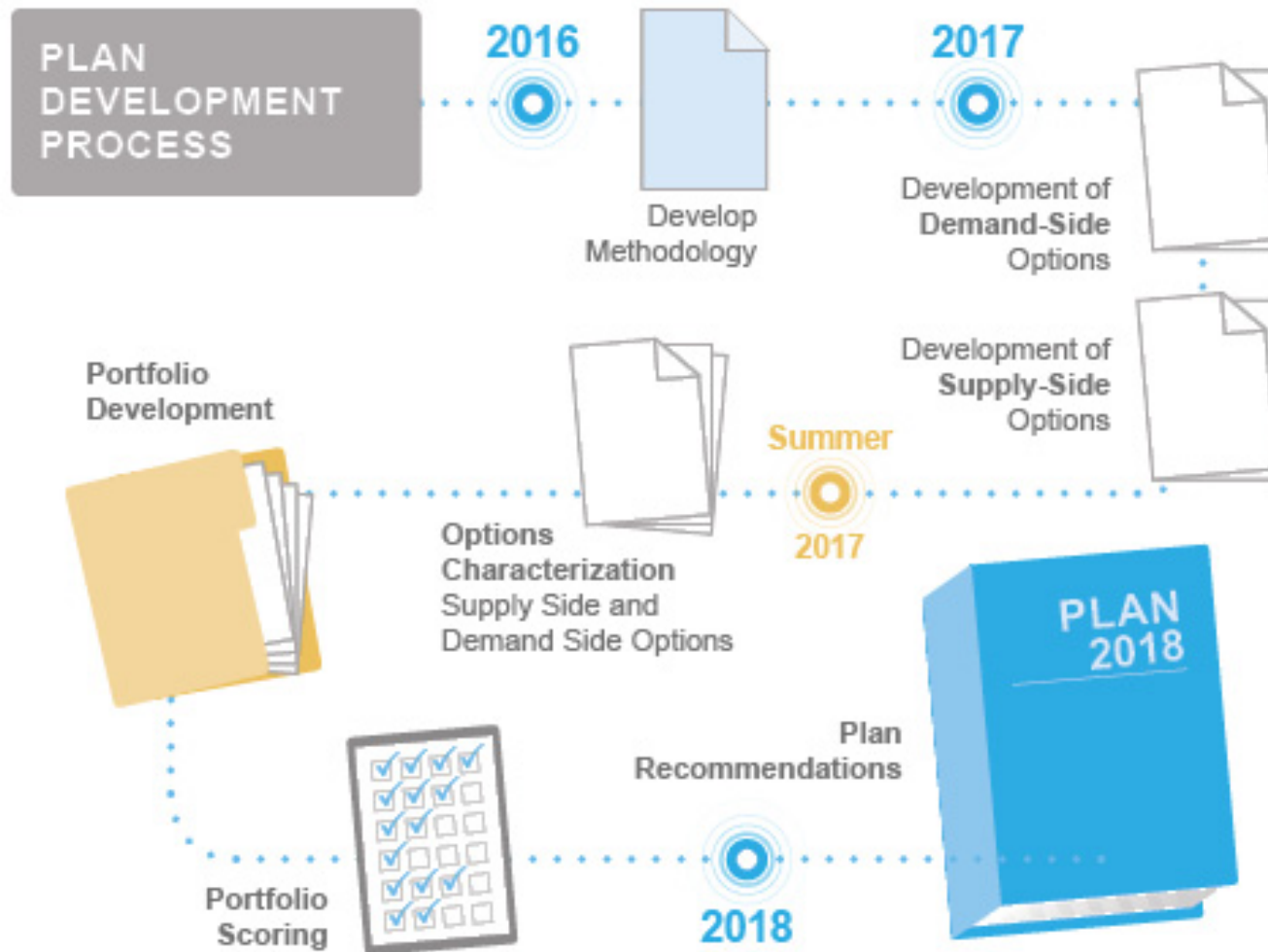
- Colorado River:
  - Combination of State-granted water rights & long-term contract with LCRA
  - Up to 325,000 acre-feet per year (afy)
- LCRA reservation & use fees pre-paid in 1999
  - Additional use payments trigger when average for 2 consecutive years exceeds 201,000 afy

# Drivers for Austin’s IWRP



Development of Austin’s IWRP was a key recommendation from  
2014 City Task Force on Water Resources

# IWRP Development Process



We will be gathering public input throughout the plan process

# Key Process Steps Completed

- Developed 100 year baseline demand projection
- Conducted climate change analysis
- Completed preliminary needs analysis
- Identified ten conservation options moving forward
- Identified twelve supply options moving forward





# Public Workshops

- **Workshop #1 – September 6**
  - Overview of IWRP and Objectives
- **Workshop #2 – February 8:**
  - Future Water Supply Needs and Strategies to Meet Them
- **Workshop #3 – April 4:**
  - Water Supply Options
- **Workshop #4 – August 16:**
  - Portfolio Themes
- **Workshop #5 – Early 2018:**
  - Draft Plan Recommendations

# Emerging Themes



## Summer Series Feedback Overview

### Water Supply Reliability

- Important to plan for droughts worse than what we’ve seen
- Prioritize basic indoor needs and outdoor needs to maintain tree canopies and water efficient landscapes (high value needs)
- Implement a mix of larger and smaller scale strategies

### Cost and Affordability

- Water should be affordable across all socio-economic groups to meet basic indoor needs
- Discourage high outdoor or inefficient water use
- Stretch current supplies – the cheapest water is the water we have now
- Make judicious incremental investments

### Conservation of Resources

- Use strategies like reuse and storage at larger and smaller scales
- Continue education and outreach for all potential strategies
- Encourage landscapes that can thrive in today’s climate and in potentially drier future conditions

### Environmental Stewardship

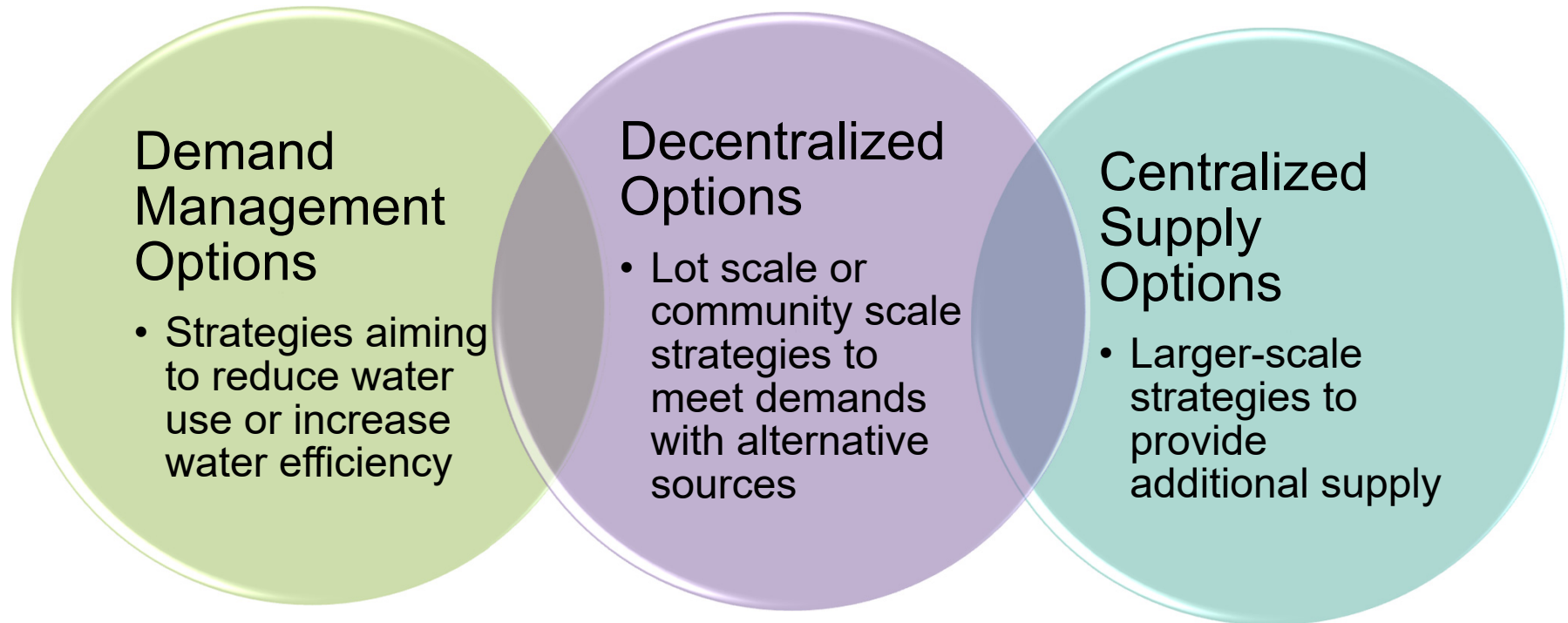
- Implement strategies that can help to mitigate stormwater quality or quantity issues
- Consider environmental impacts of strategies
- Evaluate potential impacts to the Colorado River

## **How Public Input will be Incorporated**

- Understanding of values and perspectives of what is important will be incorporated into:
  - the development and evaluation of portfolios
  - plan recommendations and the path forward
- Gauge overall understanding of plan to improve communication/outreach efforts



# Options Characterization Process



(eg: Landscape Transformation, Water Loss Control Utility side)

(eg: Graywater, Rainwater Harvesting)

(eg: Aquifer Storage and Recovery, Off-Channel Reservoir)

## Demand Management Options

Option Name	Yield Bin (1-3)	Cost Indicator	Climate Resiliency Indicator
Development-focused Water Use Benchmarking and Budgeting		\$	High
Landscape Transformation Ordinance		\$	Medium
Water Loss Control Utility Side		\$\$\$	High
Advanced Metering Infrastructure		\$\$\$	High
Landscape Transformation Incentives		\$	Medium
Commercial/Industrial / Institutional Ordinances for Cooling Towers and Steam Boilers		\$	Medium
Irrigation Efficiency Incentives		\$	Medium

Yield Bins	
	0-10,000 AF/yr
	10,000-35,000 AF/yr
	>35,000 AF/yr

Cost Bins	
\$	0-\$499 /AF/yr
\$\$	\$500-\$2,000 /AF/yr
\$\$\$	\$2,000-\$4,000 /AF/yr
\$\$\$\$	>\$4,000 /AF/yr

## Decentralized Options

Option Name	Yield Bin (1-3)	Cost Indicator	Climate Resiliency Indicator
Alternative Water Ordinance	*	*	*
Alternative Water Incentives	*	*	*
- AC Condensate Reuse	1	\$\$\$	Medium
- Rainwater Harvesting (lot-scale)	2	\$\$\$	Medium
- Stormwater Harvesting (lot-scale)	2	\$\$\$\$	Medium
- Graywater Harvesting (lot-scale)	3	\$\$\$\$	High
- Wastewater Reuse (lot/building-scale)	3	\$\$\$\$	High
Stormwater Harvesting (community-scale)	2	\$\$\$	Medium
Rainwater Harvesting (community-scale)	1	\$\$\$\$	Medium
Sewer mining (wastewater skimming)	2	\$\$\$	High
Distributed wastewater systems	2	\$\$	High

Yield Bins	
1	0-10,000 AF/yr
2	10,000-35,000 AF/yr
3	>35,000 AF/yr

Cost Bins	
\$	0-\$499 /AF/yr
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\$\$\$	\$2,000-\$4,000 /AF/yr
\$\$\$\$	>\$4,000 /AF/yr

## Supply Options

Option Name	Yield Bin (1-3)	Cost Indicator	Climate Resiliency Indicator
Carrizo-Wilcox ASR		\$\$	High
Direct non-potable reuse		\$\$	High
Indirect Potable Reuse through Lady Bird Lake and Capture inflows		\$\$	High
Direct Potable Reuse		\$\$\$	High
Seawater Desalination		\$\$\$	High
Off-Channel Reservoir with Lake Evaporation Suppression		\$\$	Medium
Additional supply from Lower Colorado River Authority (LCRA)		\$	Medium
Brackish Groundwater Desalination		\$\$\$	Medium

Yield Bins	
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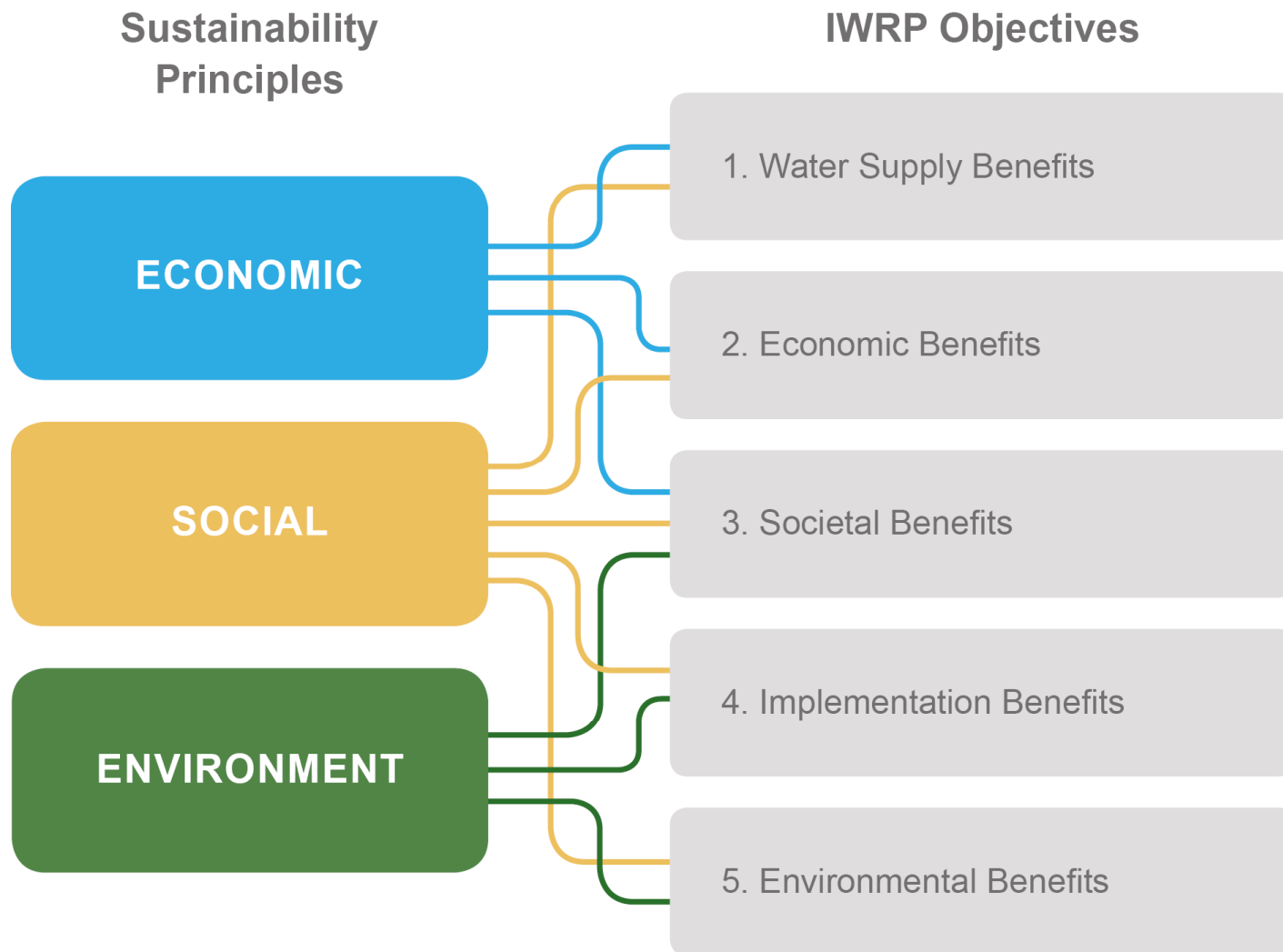


# Water Forward – Austin’s Integrated Water Resource Plan

August 16, 2017

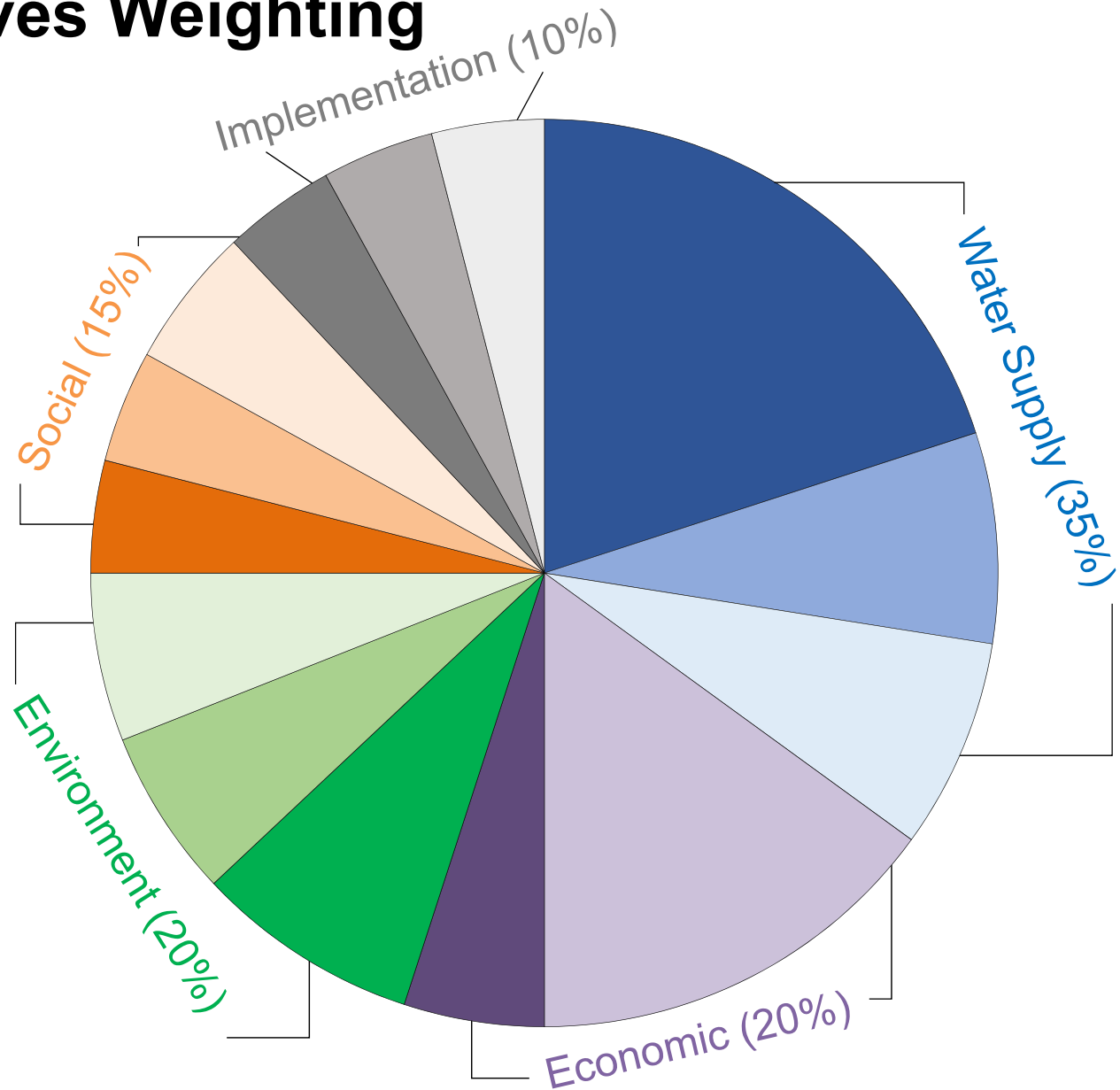
**Q&A**

# Five IWRP Objectives Aligned with the Principles of Sustainability



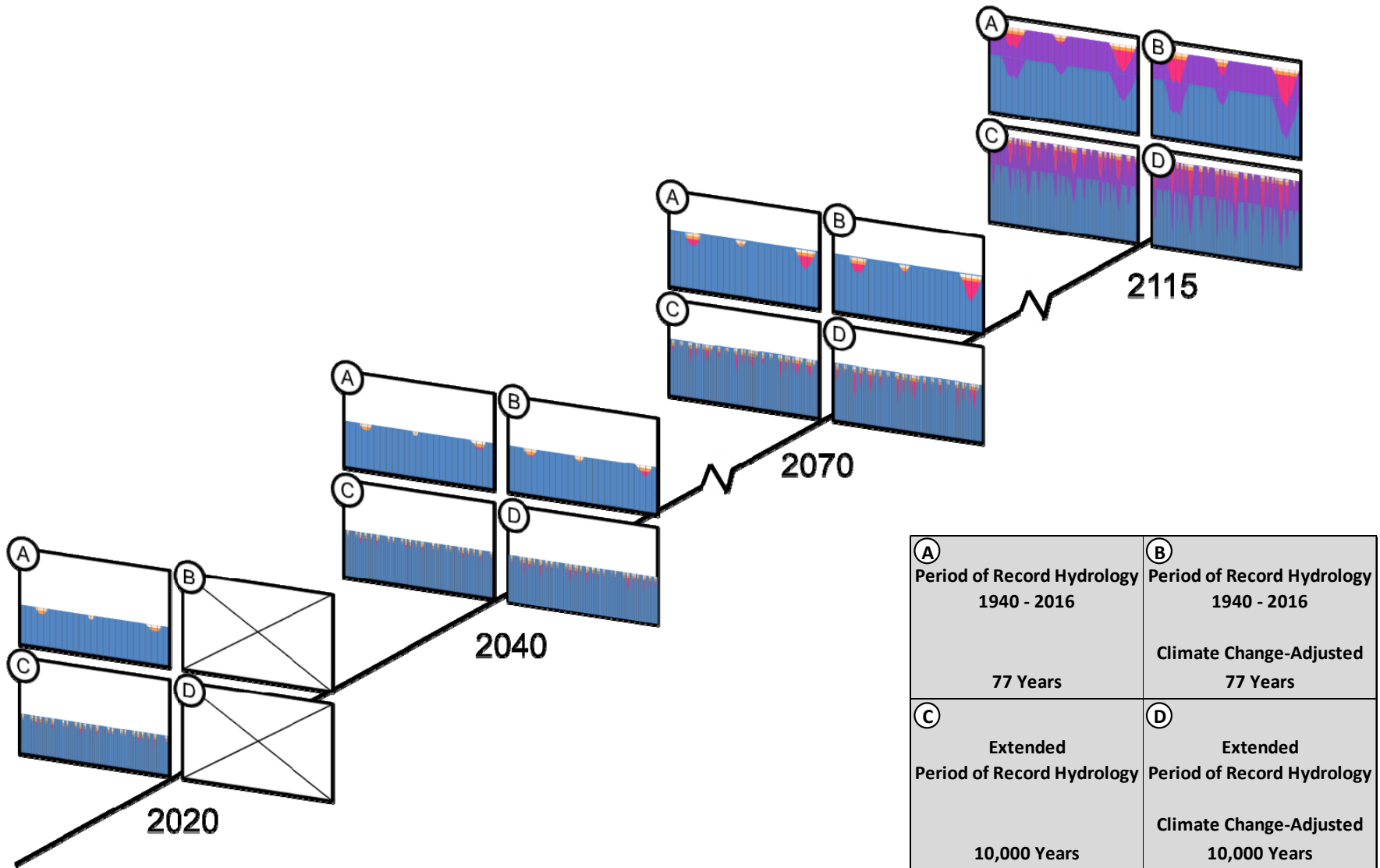
# Draft Objectives Weighting

- Supply Reliability
- Local Control of Supply
- Diversity of Supply
- Cost Effectiveness
- External Funding Potential
- Ecosystem Impacts
- Net Energy Use
- Water Use Efficiency
- Multi-benefit Solutions
- Local Economy Benefits
- Social Justice
- Implementation Challenges
- Scalability of Projects
- Technical Challenges



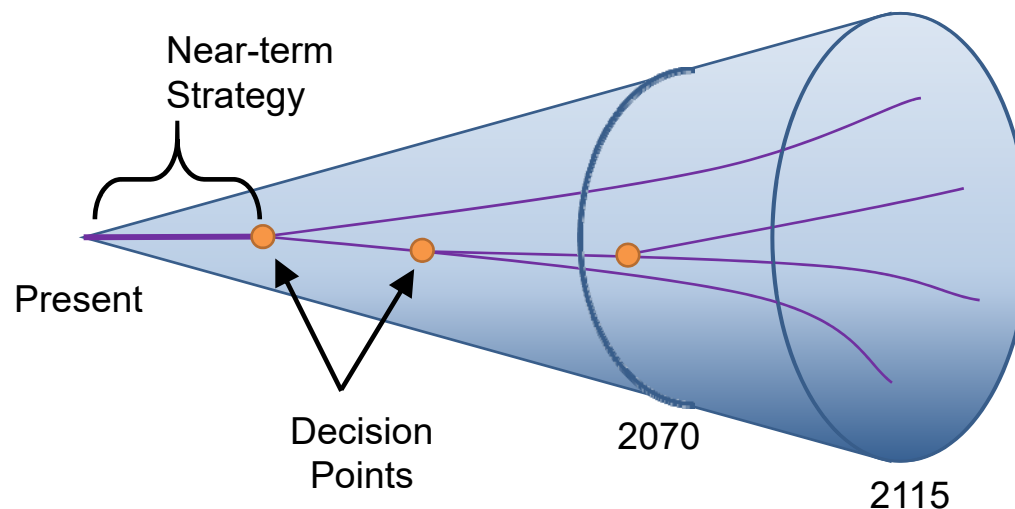
## Water Forward

### Planning For Change and Uncertainties

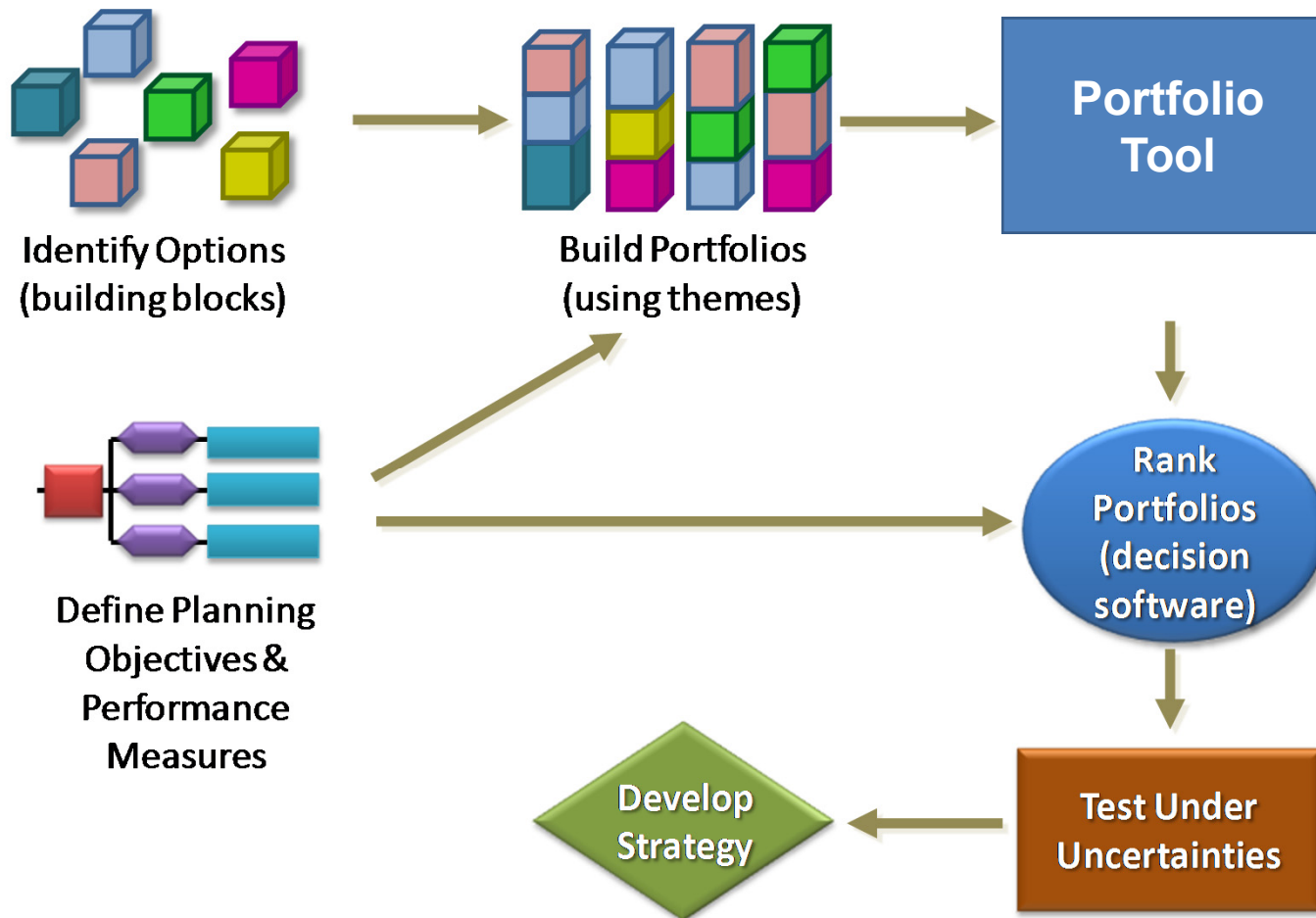


## Some Key Points About Austin’s Integrated Water Resource Plan

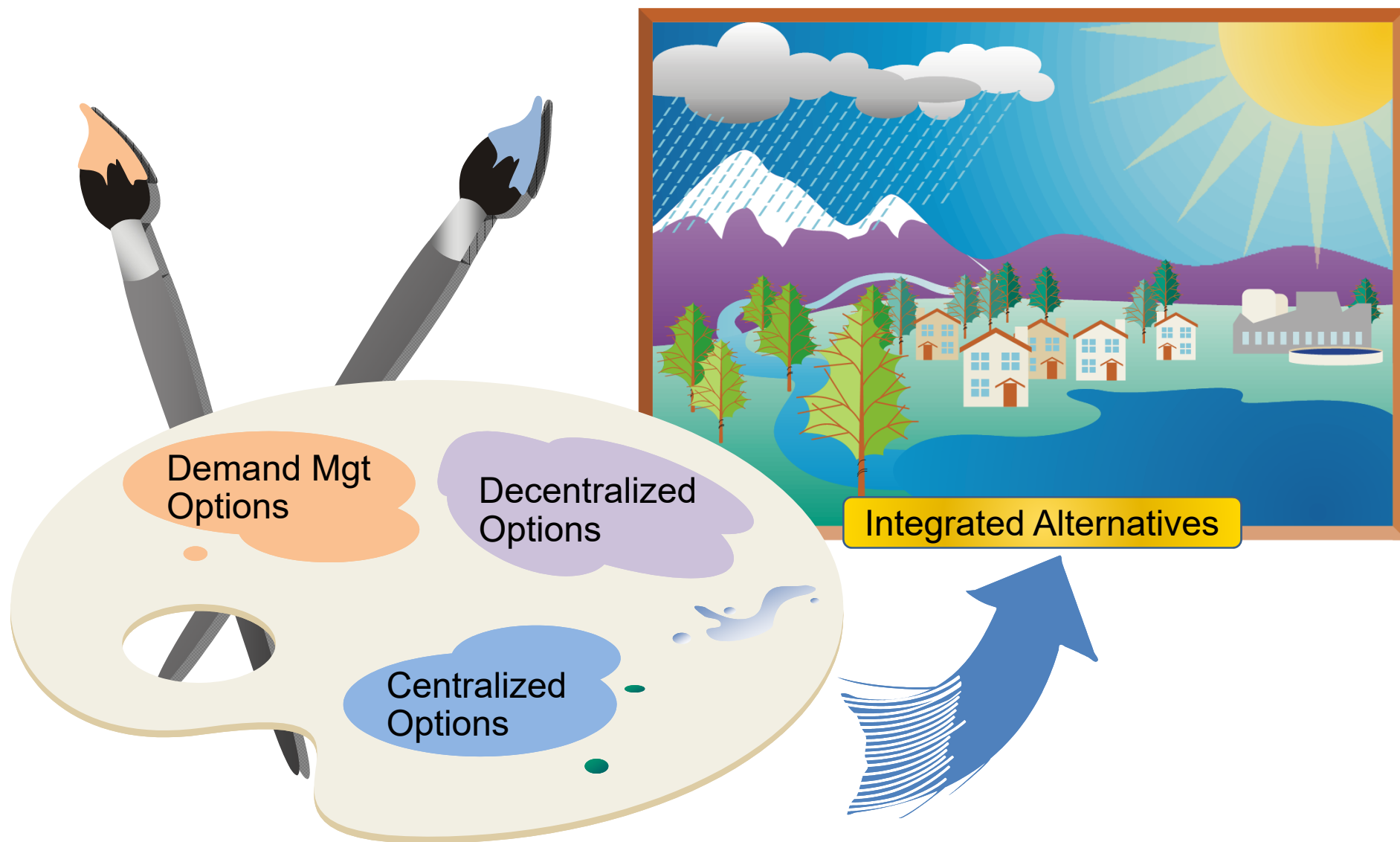
- We’re implementing an adaptive management approach
- This process is about incremental changes we can make to get closer to our desired future
- The plan is anticipated to be updated on a five year cycle to allow new data to inform planning assumptions
- Future updates to the plan will allow us to build on the work we do today and learn from our actions



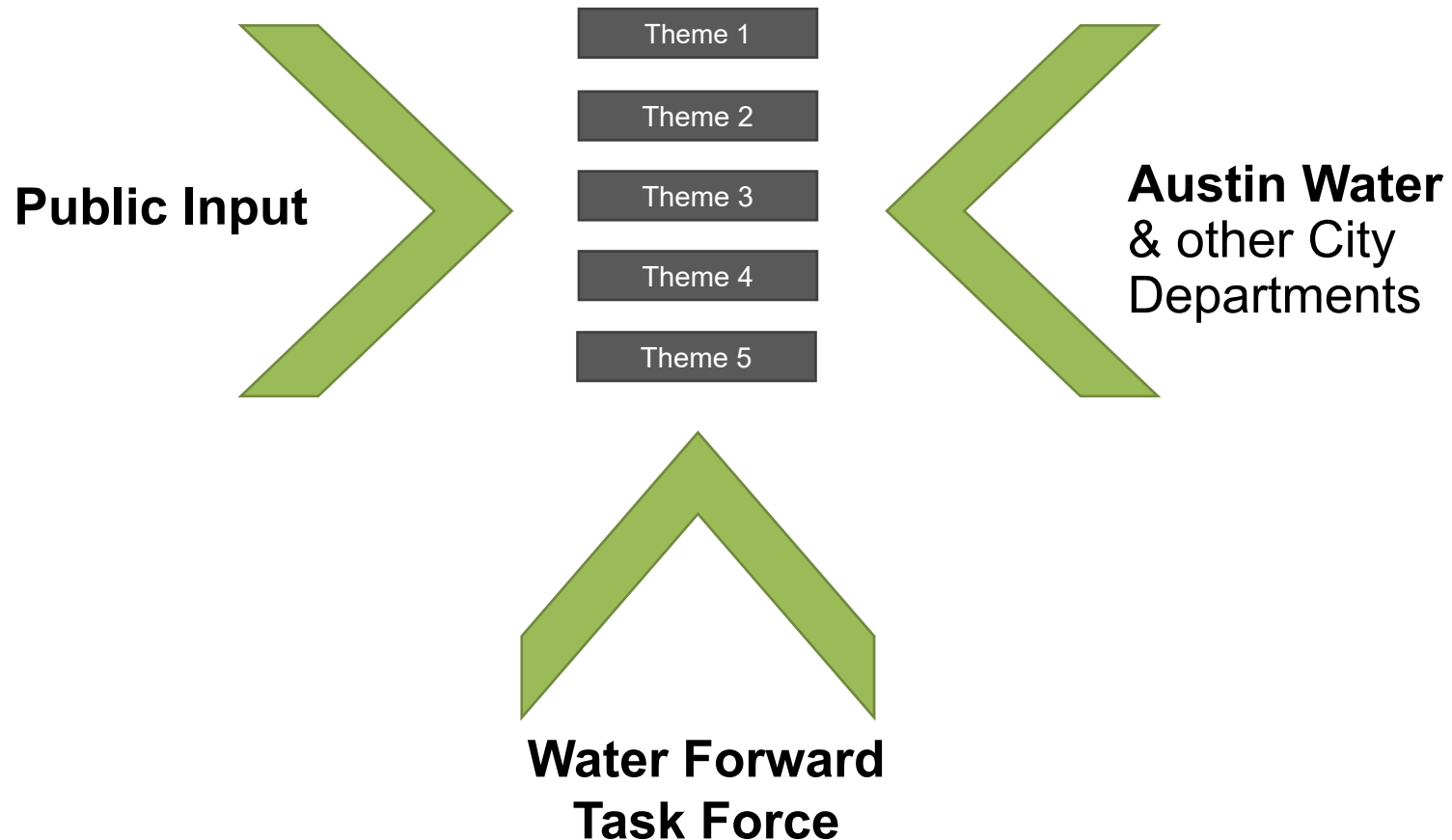
# Portfolio Evaluation Process



# Created Integrated Portfolios



# Portfolio Themes





# Example of Themes

## Themes tied to Objectives:

- Maximize Supply Reliability
- Maximize Affordability
- Maximize Water Use Efficiency
- Etc.

## Themes tied to Timing:

- Just in time (size and timing closely matches needs)
- Opportunity (if larger projects are eventually needed, consider implementing well ahead of need)

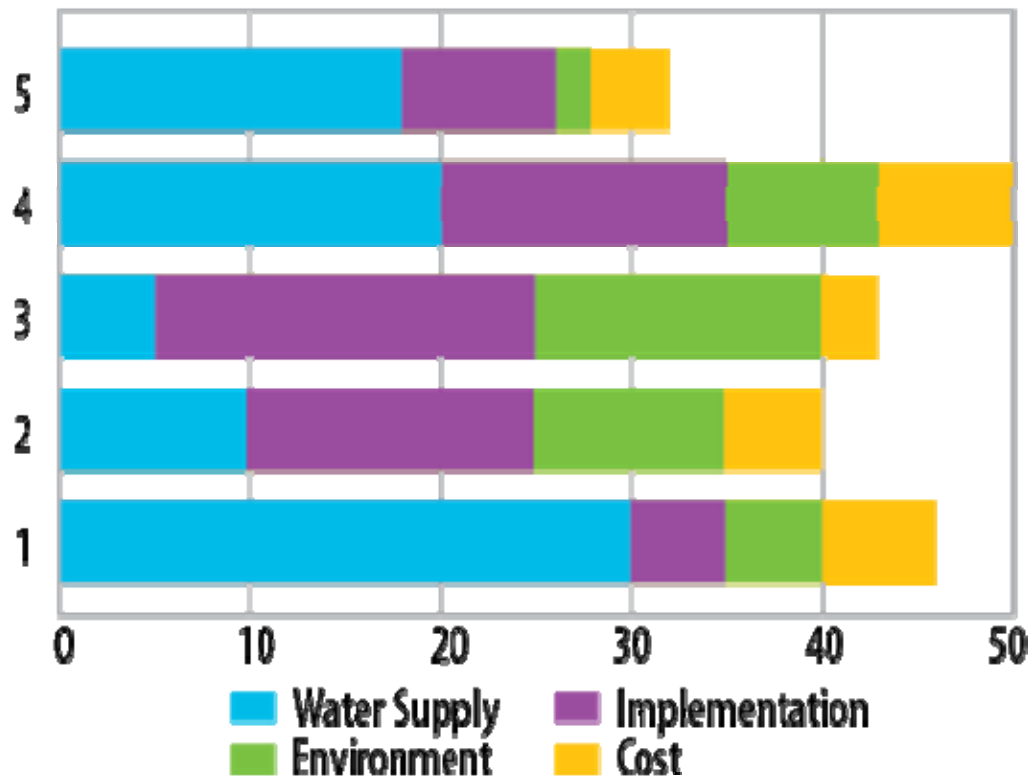
**Combination**

## **Assessing Portfolio Trade-offs**

- How much supply reliability do we want?
- How best to achieve reliability?
  - Diversity in supply?
  - Resiliency in supply?
- What level of risk are we willing to accept?
- What are we willing to pay for reliability?
- What environmental values do we want to incorporate?
- What social values do we want to incorporate?

# Portfolio Evaluation: Assessing Tradeoffs

**Ranking Portfolios**





# Water Forward – Austin’s Integrated Water Resource Plan

August 16, 2017

**Q&A**

# **Round Robin Facilitated Discussions on Themes**

# Thank You

Follow Water Forward and find more information at [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](#)
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- [Reclaimed Water Program](#)
- [Residential Customer Service](#)
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