



WATER FORWARD
INTEGRATED WATER RESOURCE PLAN

Public Workshop #5
March 21, 2018



Workshop Goals

- Review plan drivers
- Understand evaluation processes
- Present recommendations and benefits
- Present adaptive management concept and next steps

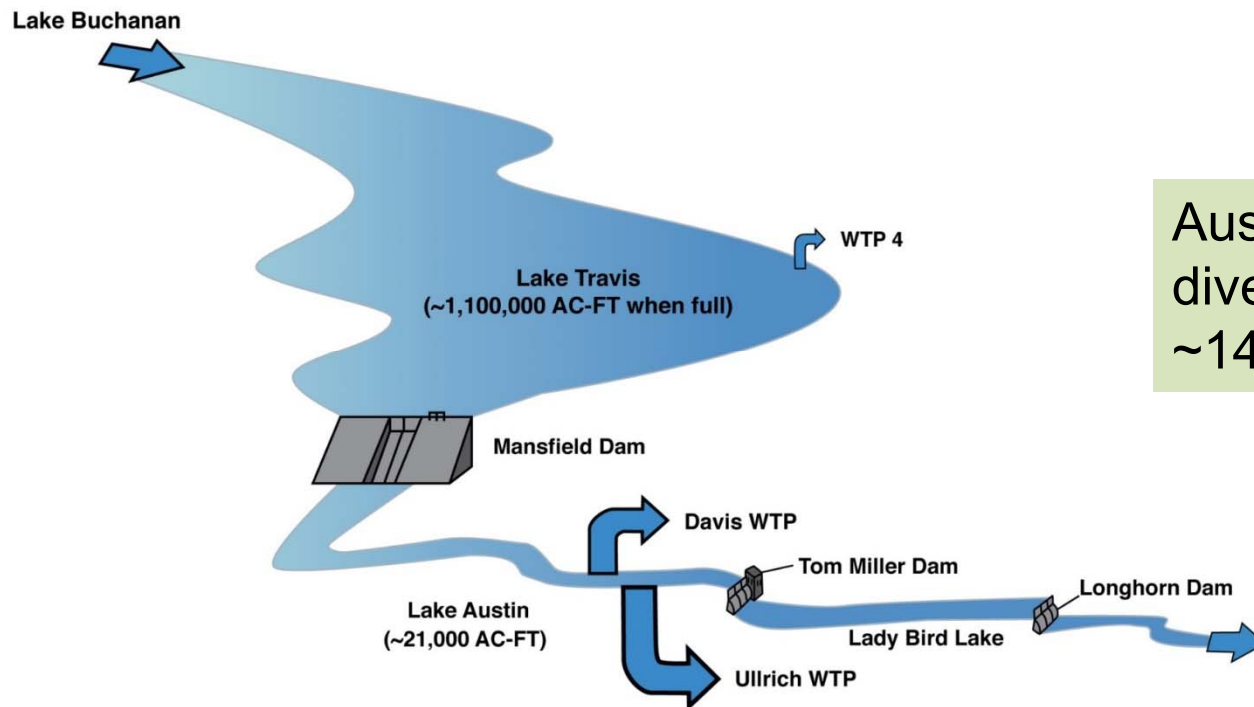
Water Forward

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
- Council-appointed Task Force meets monthly
- Interdepartmental coordination and coordination with the community
- Plan projected to be completed in 2018 with updates on a five year cycle

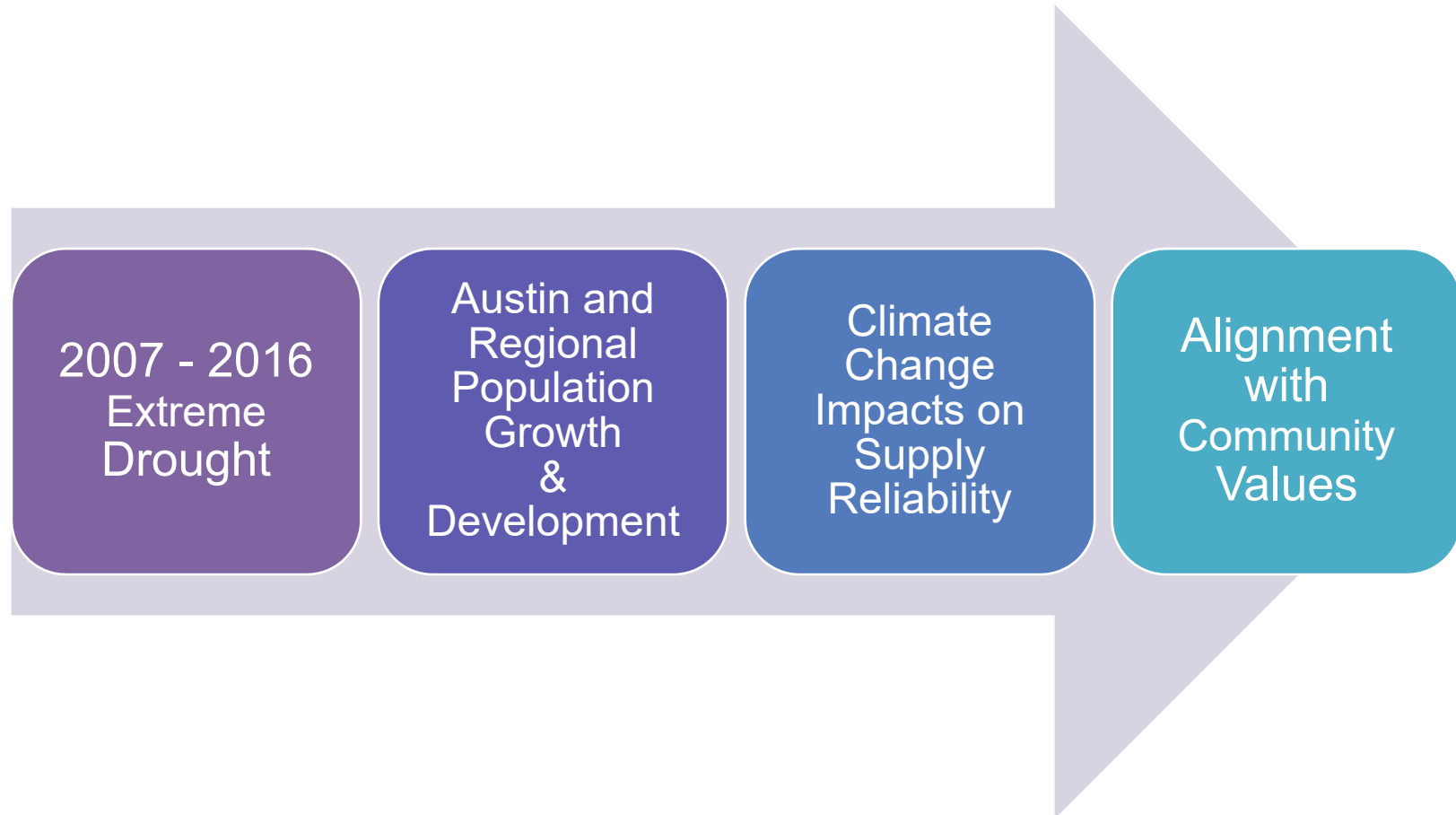
Austin’s Water Supply

- 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

Drivers for Austin’s IWRP



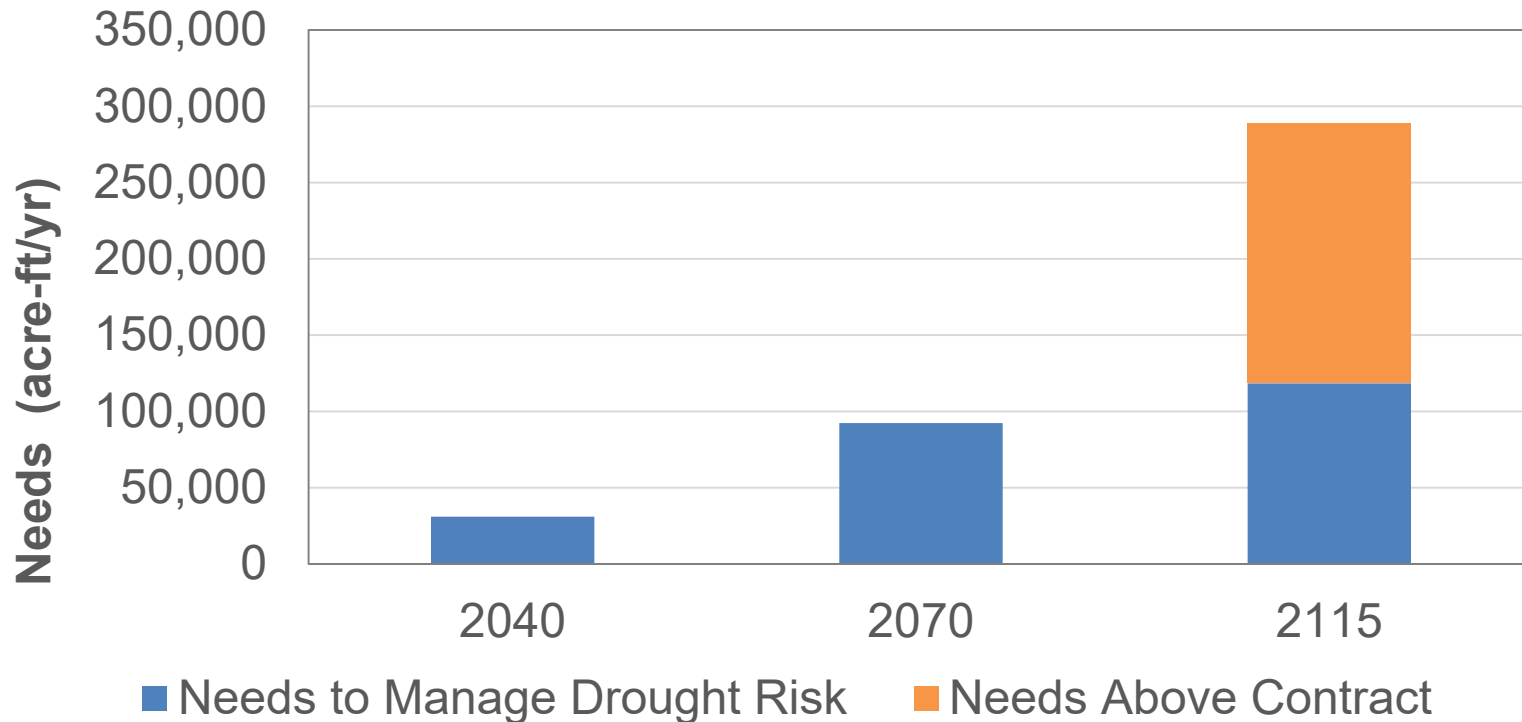
Development of Austin’s IWRP was a key recommendation from
2014 City Task Force on Water Resources

Planning For Change and Uncertainties

<p>(A) Period of Record Hydrology 1940 - 2016 77 Years</p>	<p>(B) Period of Record Hydrology 1940 - 2016 Climate Change-Adjusted 77 Years</p>
<p>(C) Extended Period of Record Hydrology 10,000 Years</p>	<p>(D) Extended Period of Record Hydrology Climate Change-Adjusted 10,000 Years</p>

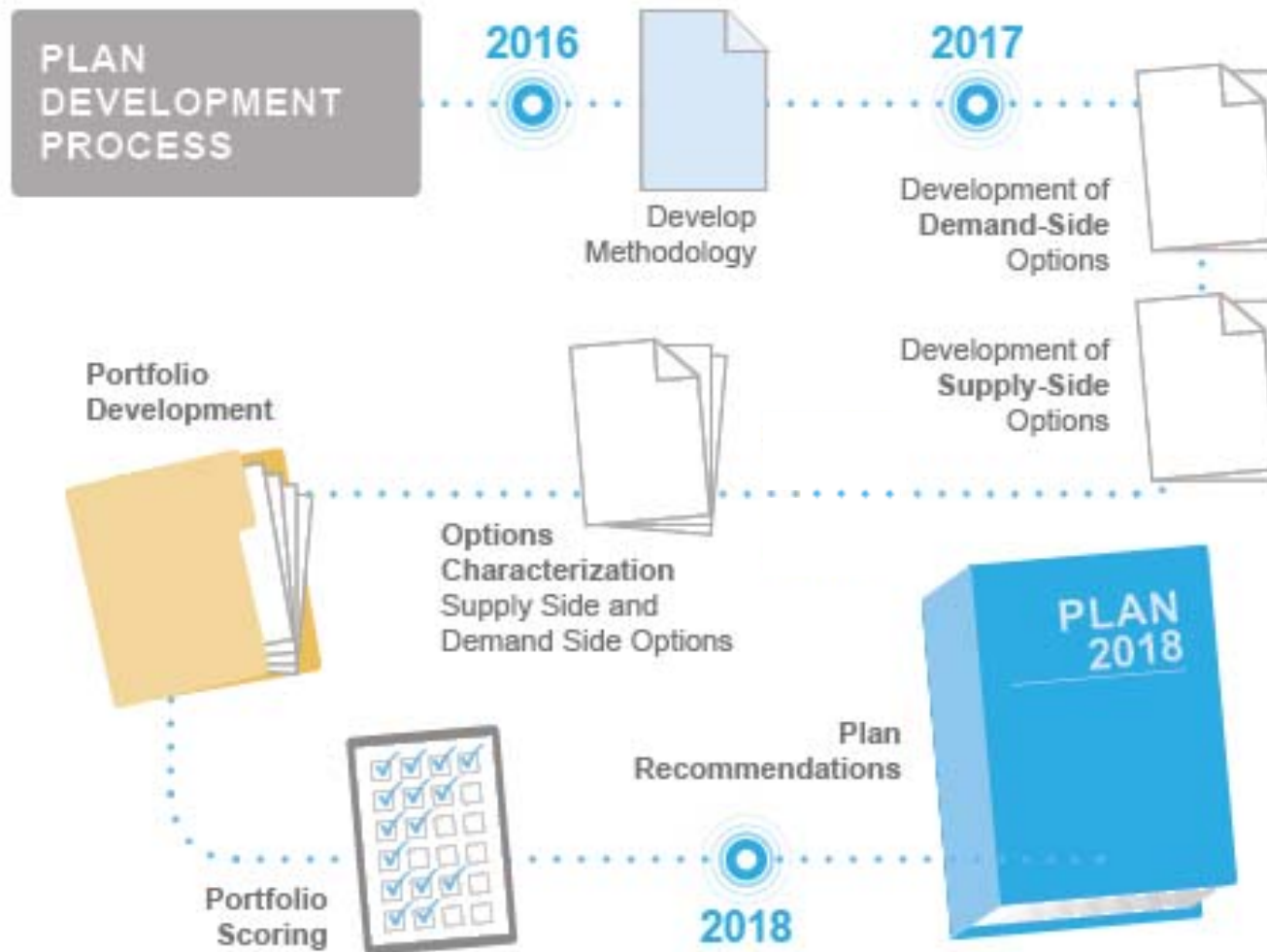
Identified Needs for Portfolio Development

Hydrologic scenario – period of record, climate change conditions



To the extent that “Needs Above Contract” are met by demand management, demand management would need to ramp up as early as the 2020 planning horizon

IWRP Development Process



We will be gathering public input throughout the plan process



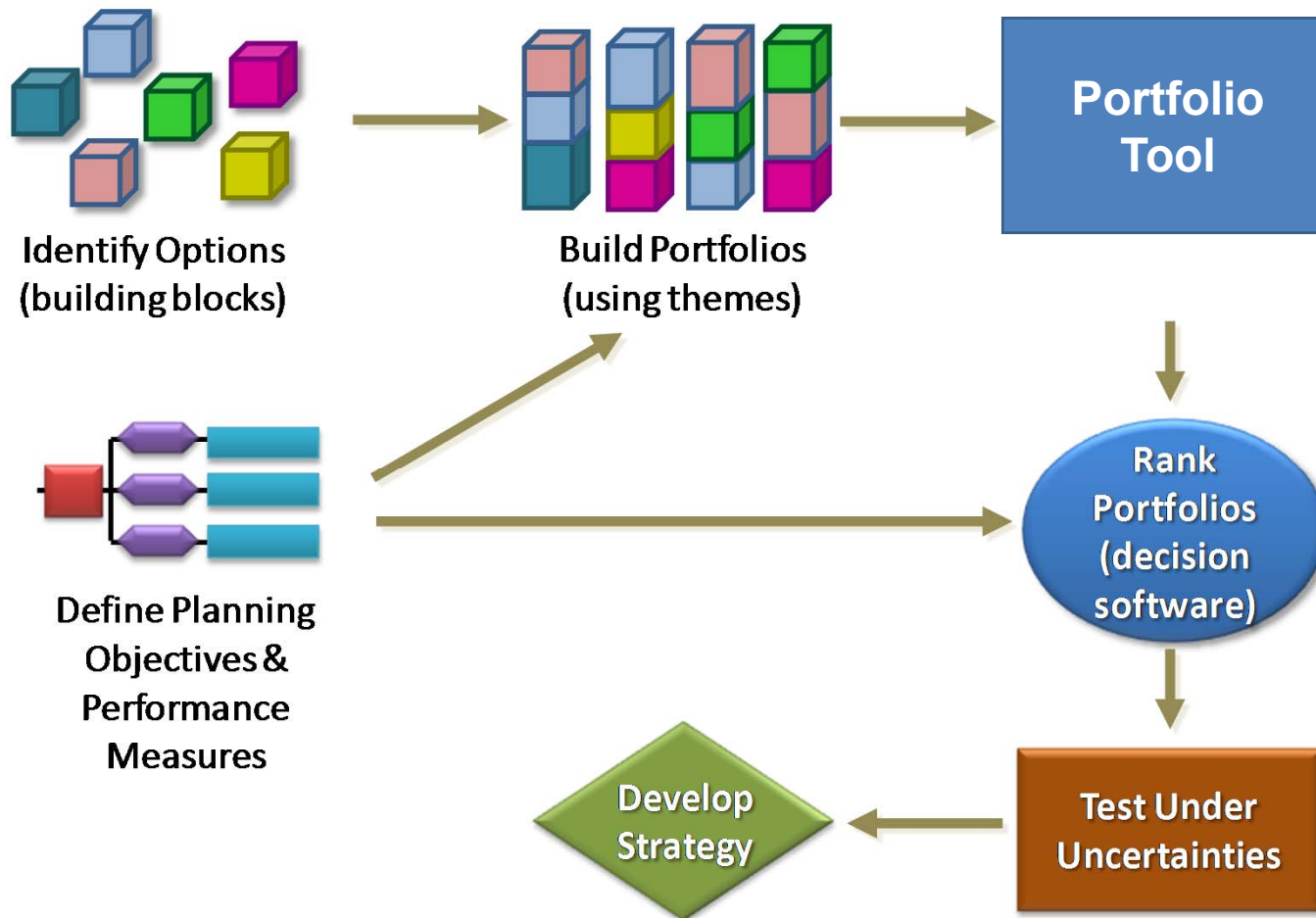
Public Workshops

- **Workshop #1 – Sept 6, 2016**
 - Overview of IWRP and Objectives
- **Workshop #2 – Feb 8, 2017**
 - Future Water Supply Needs and Strategies to Meet Them
- **Workshop #3 – Apr 4, 2017**
 - Water Supply Options
- **Workshop #4 – Aug 16, 2017**
 - Portfolio Themes
- **Workshop #5 – Mar 21, 2018**
 - Draft Plan Recommendations

What We’ve Heard

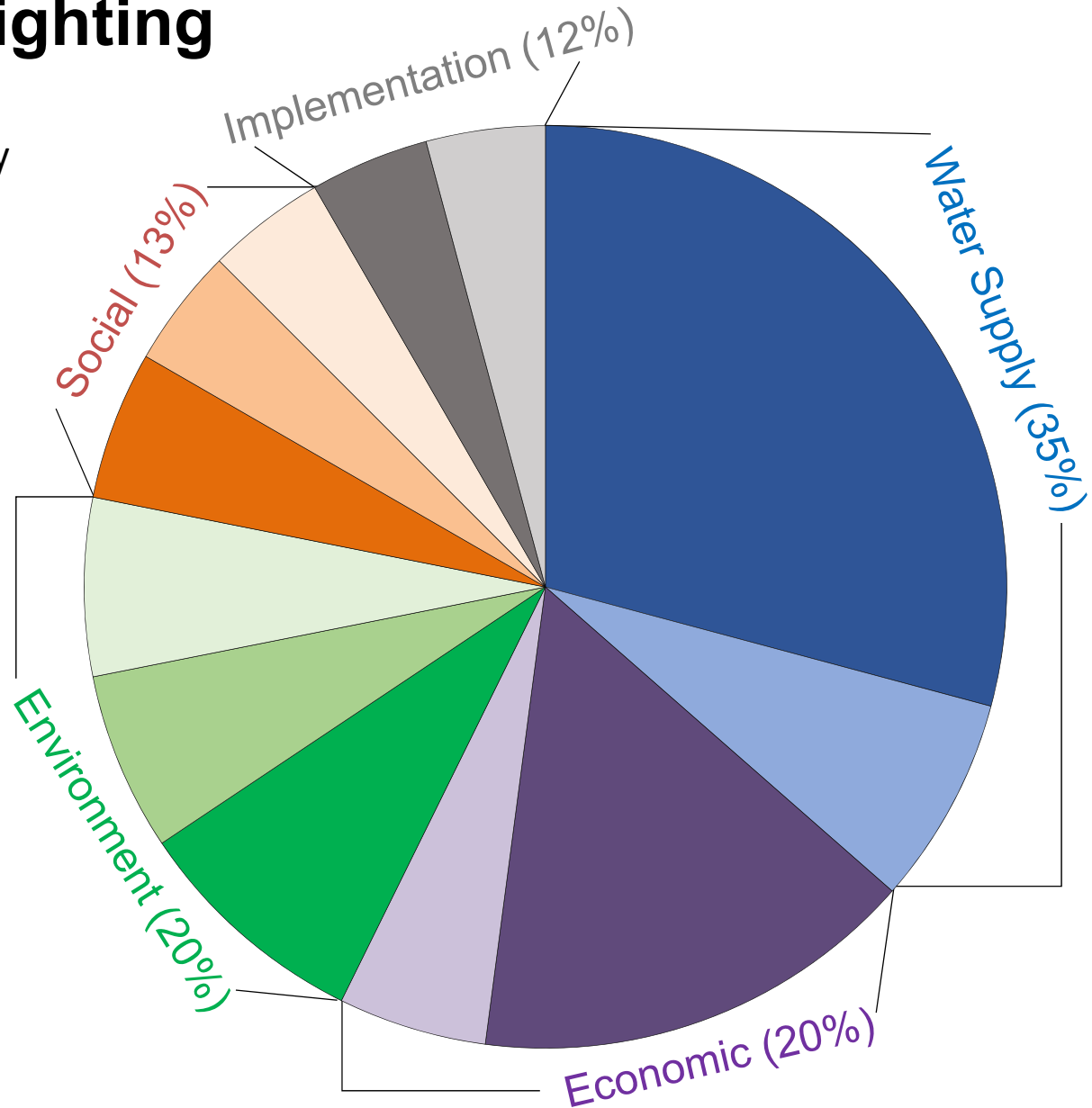


Portfolio Evaluation Process

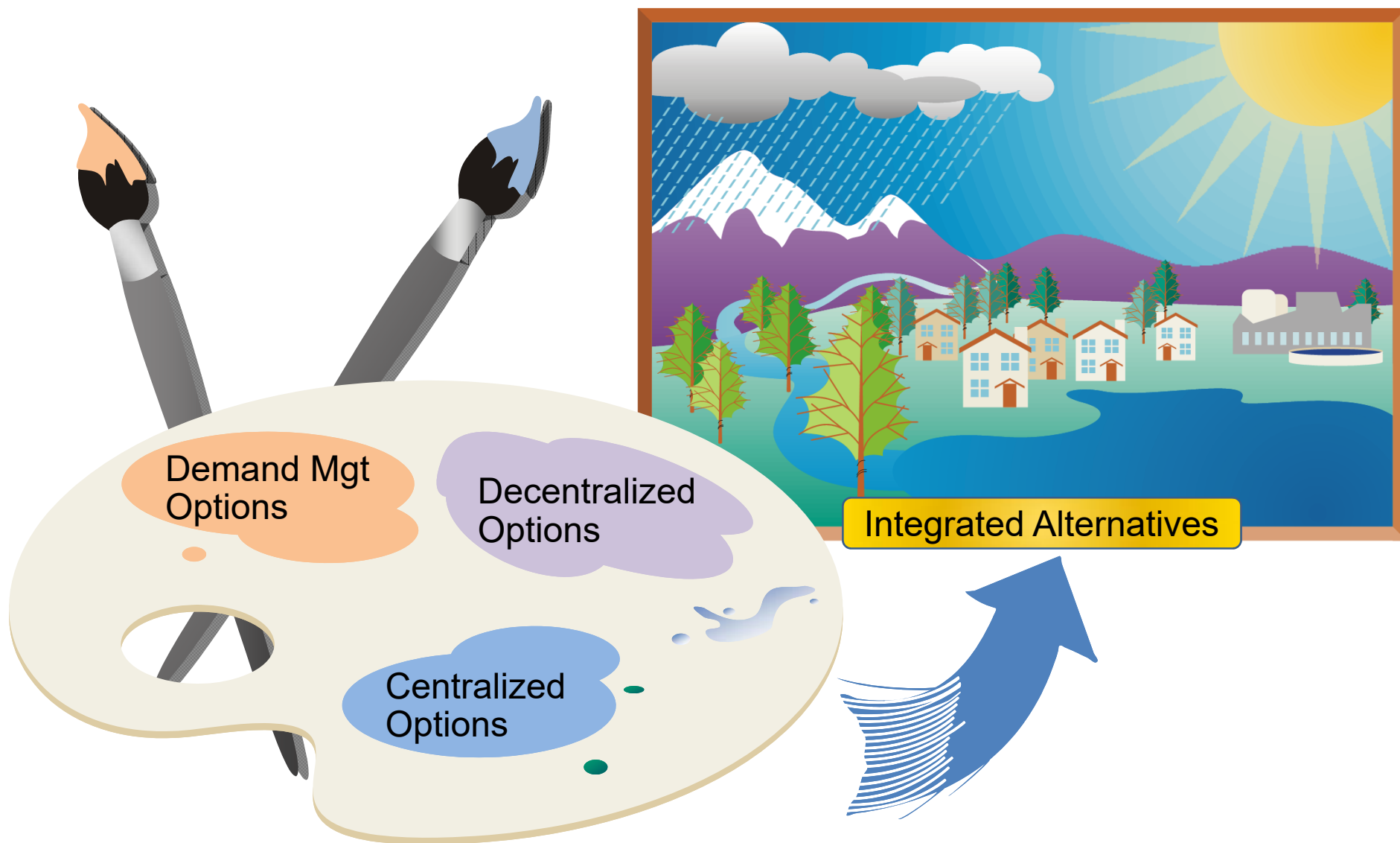


Objectives Weighting

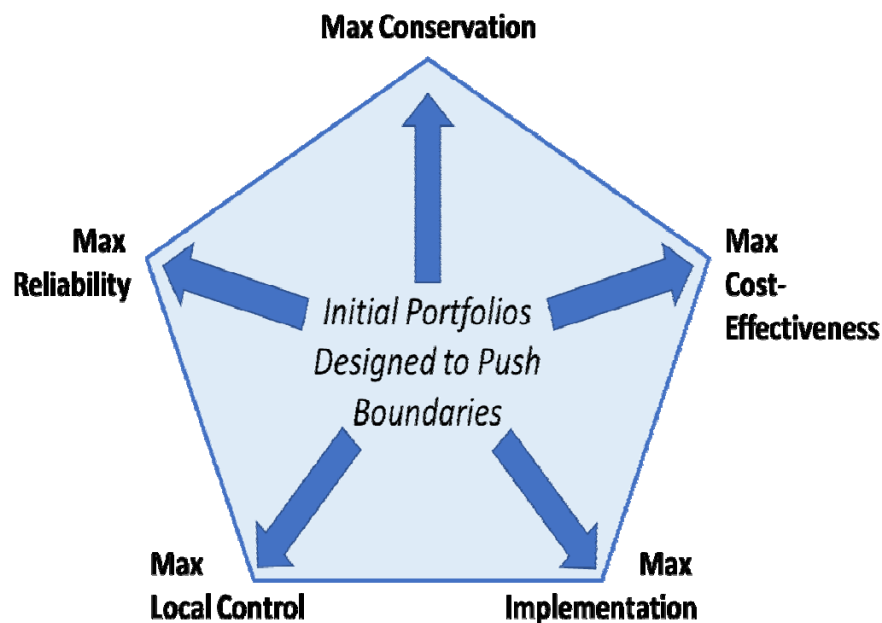
- Minimize Supply Vulnerability
- Supply Reliability
- Cost Effectiveness
- External Funding Potential
- Ecosystem Impacts
- Net Energy Use
- Water Use Efficiency
- Multi-benefit Solutions
- Local Economy Benefits
- Social Justice
- Minimize Risk
- Maximize Local Control



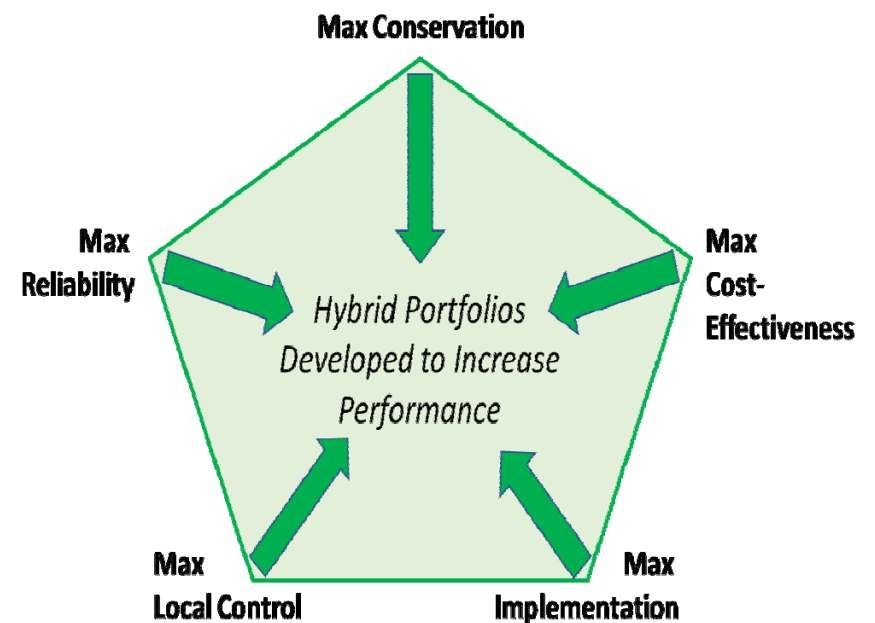
Created Integrated Portfolios



Process for Building Portfolios



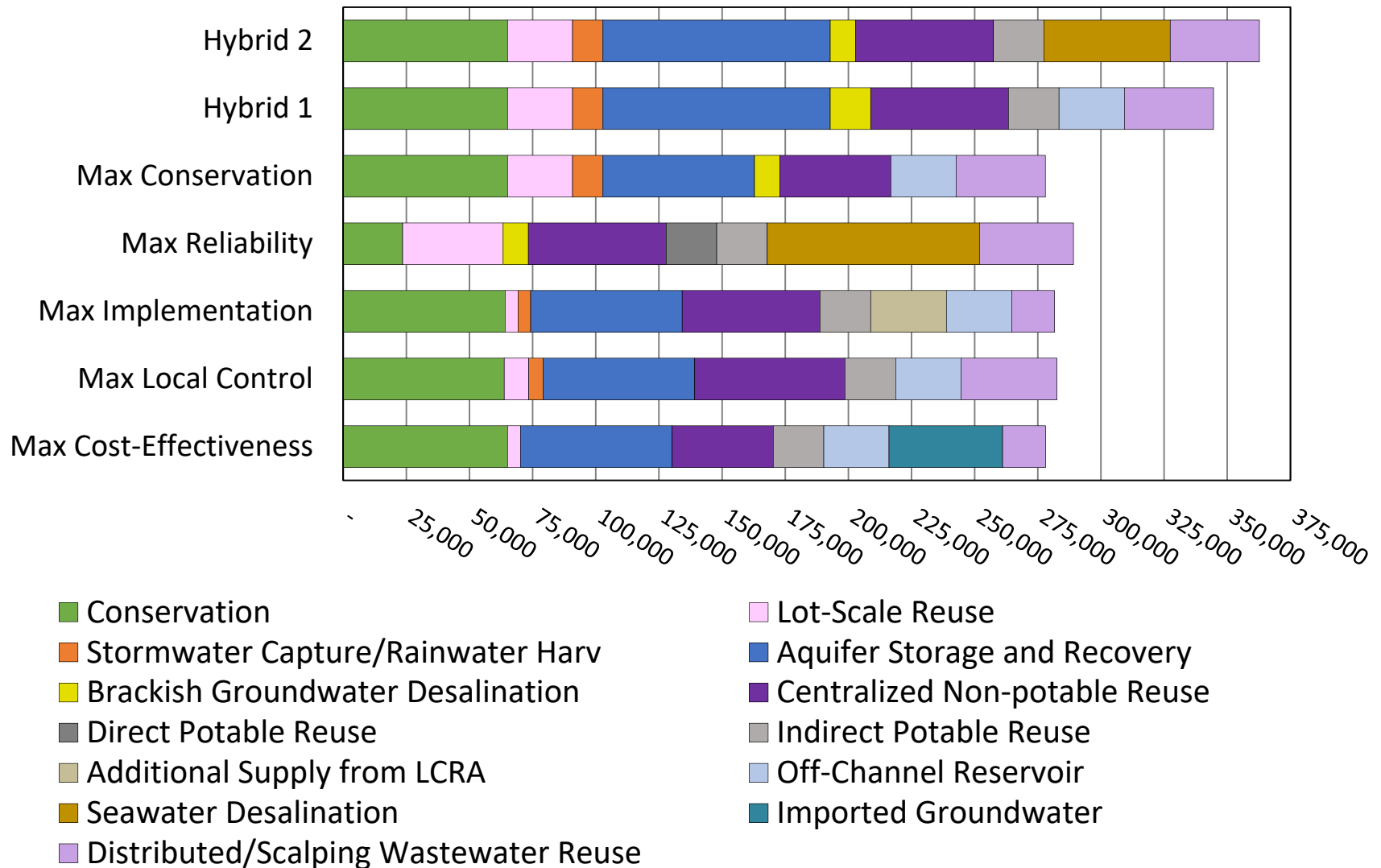
Initial Portfolios



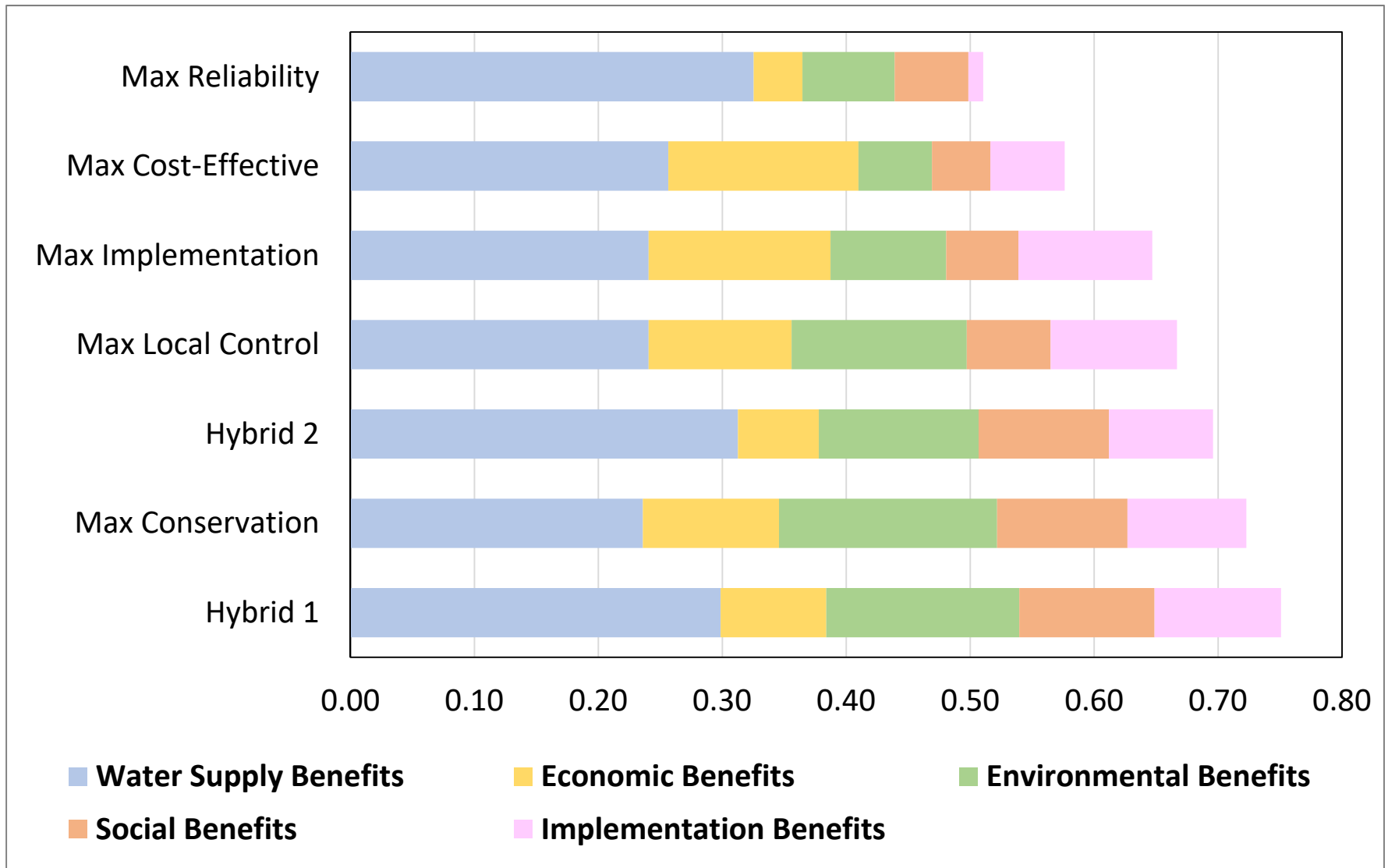
Hybrid Portfolios

Summary of Portfolios for 2115

(supply capacity in AFY)



Portfolio Scoring





Q&A on Process

Draft Plan Recommendation Strategies (from Hybrid 1)

Demand Management Options

Advanced Metering Infrastructure (AMI)

Water Loss Control - Utility-Side

Commercial, Industrial, Institutional (CII)
Ordinances

Water Use Benchmarking and Budgeting

Landscape Transformation Incentives &
Ordinance

Alternative Water Incentives & Ordinances
Lot Scale Rainwater and Stormwater Harvesting, AC
Condensate, Greywater, and Blackwater Reuse

Water Supply Options

Aquifer Storage and Recovery

Brackish Groundwater Desalination

Direct Non-Potable Reuse
(Centralized Purple Pipe System)

Indirect Potable Reuse

New Off-Channel Reservoir
w/ Lake Evaporation Suppression

Community Scale Stormwater Harvesting

Distributed Wastewater Reuse & Sewer Mining

Decentralized Options

Options above are addition to City’s current core water resources: Colorado River firm water supply, water reuse program (purple pipe system), water conservation program, and drought contingency plan

Water Conservation Strategies



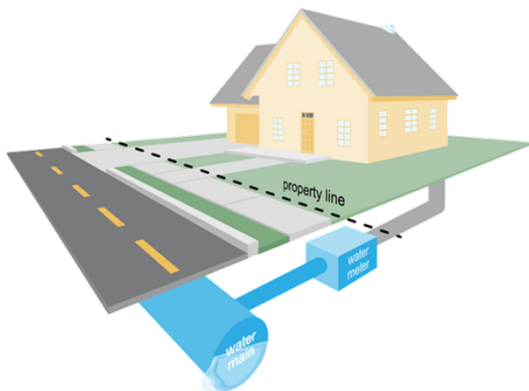
Advanced Metering Infrastructure

Year	2040	2115
Yield (AF/yr)	3,882	9,371



Water Use Benchmarking and Budgeting

Year	2040	2115
Yield (AF/yr)	5,953	25,228



Water Loss Control – Utility-Side

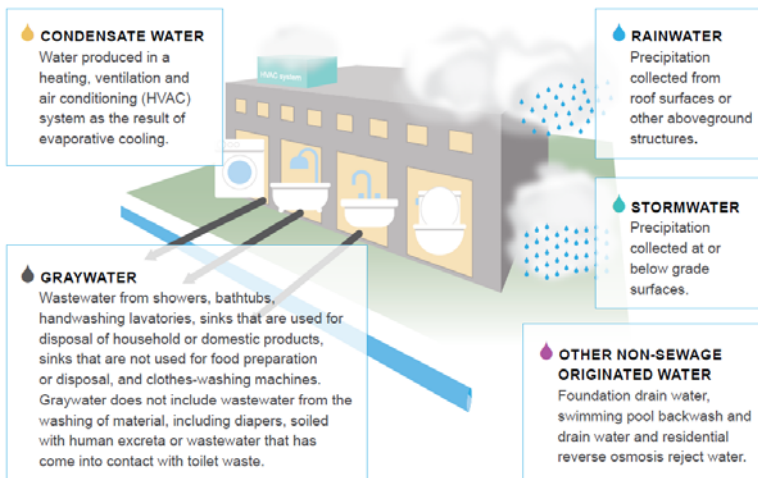
Year	2040	2115
Yield (AF/yr)	9,326	13,064

Water Conservation Strategies



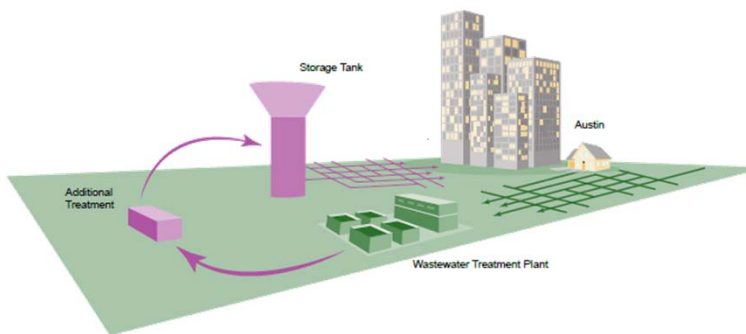
Landscape Incentives and Ordinances and Irrigation Efficiency Incentives

Year	2040	2115
Yield (AF/yr)	3,564	16,373



Alternative Water Incentives and Ordinances

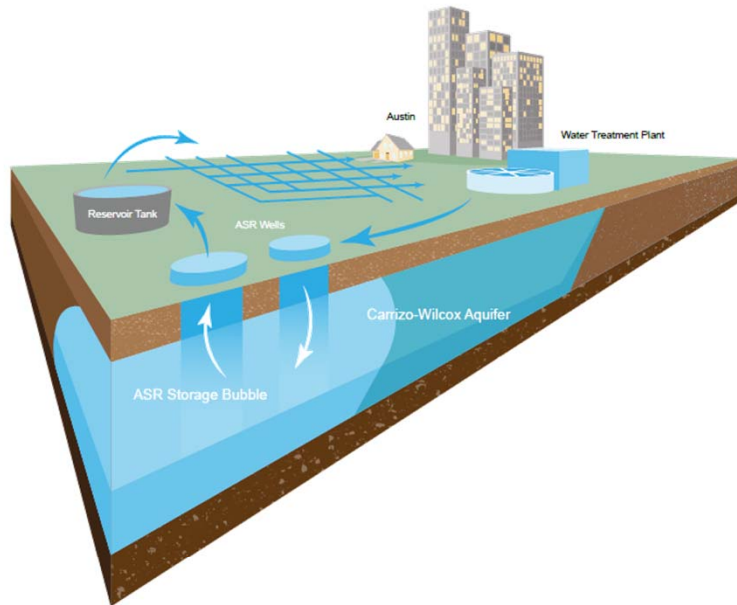
Year	2040	2115
Yield (AF/yr)	5,486	32,572



Centralized and Decentralized Reclaimed

Year	2040	2115
Yield (AF/yr)	16,154	89,933

Water Supply Strategies

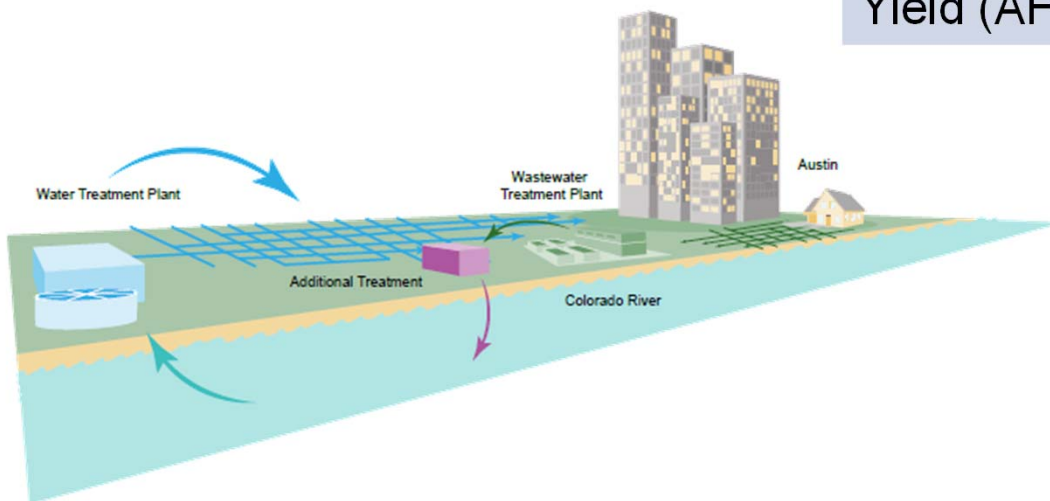


Aquifer Storage and Recovery

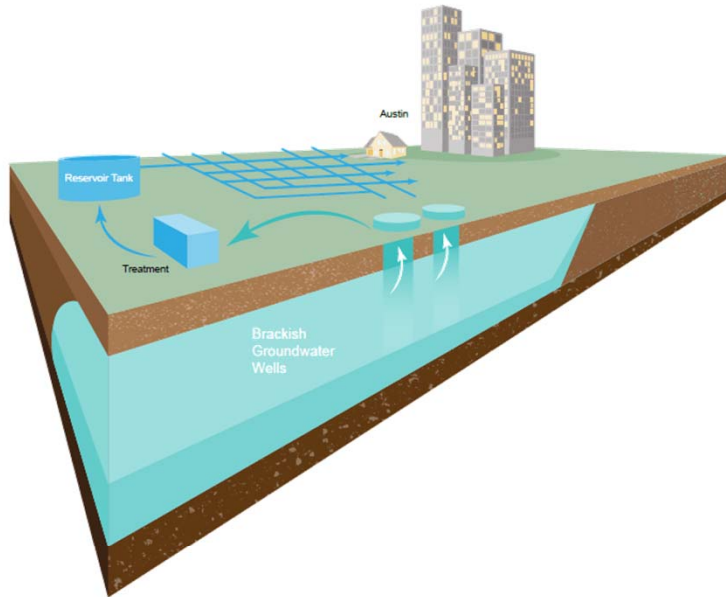
Year	2040	2115
Yield (AF/yr)	60,000	90,000

Indirect Potable Reuse

Year	2040	2115
Yield (AF/yr)	11,000	20,000



Water Supply Strategies

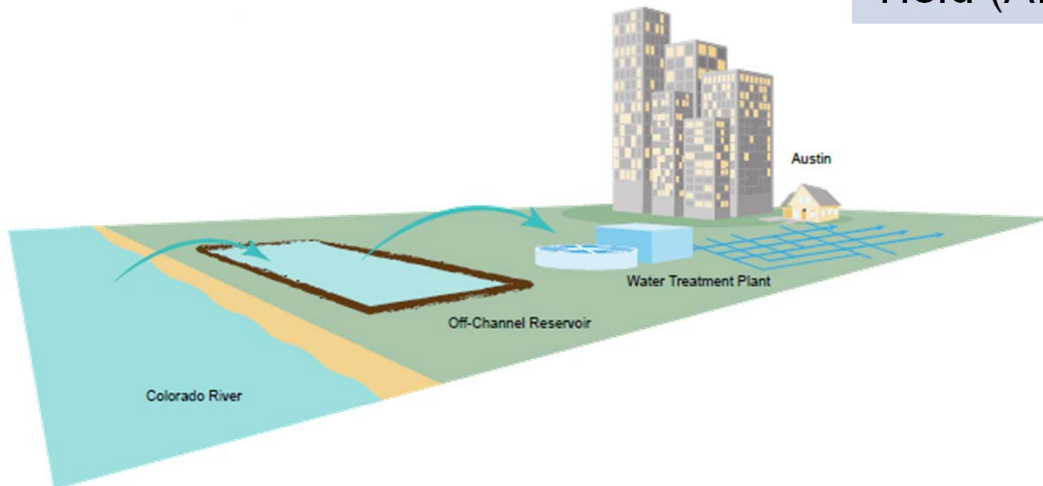


Brackish Groundwater Desalination

Year	2040	2115
Yield (AF/yr)	N/A	16,000

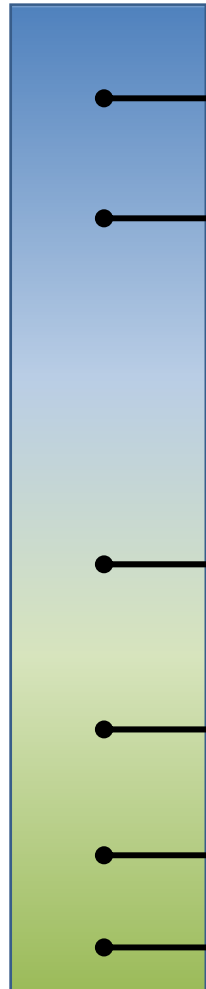
New Off Channel Reservoir

Year	2040	2115
Yield (AF/yr)	N/A	25,000



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

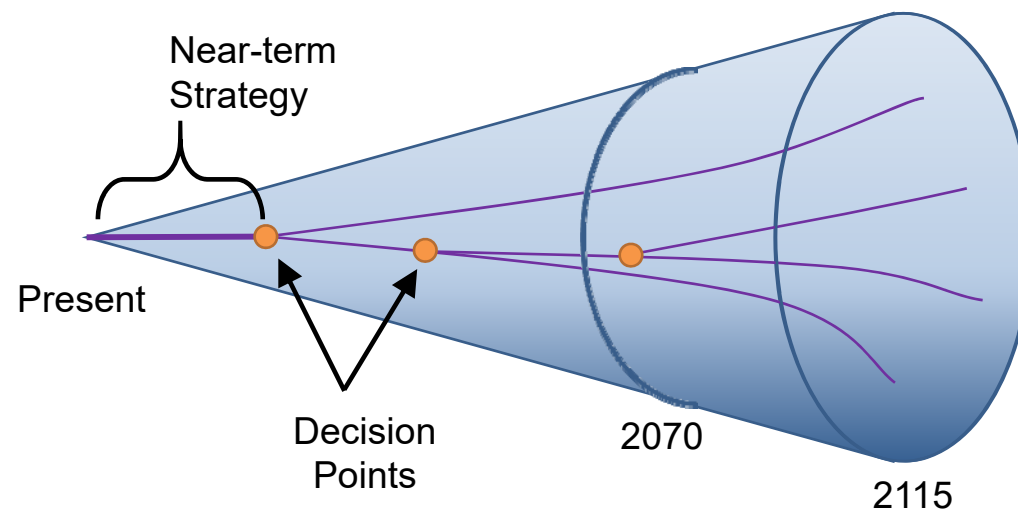
\$100/AF

Plan Benefits

- Meeting future demands & population growth
- Stretching our current supplies
- Supply diversification and resilience
- Strengthening drought resilience and planning for climate change
- Maximizing local water sources
- Planning for climate change and uncertainties through adaptive management

Adaptive Management and Next Steps

- We’re implementing an adaptive management approach
- Focus is on incremental changes we can make to get closer to our desired future
- The plan is anticipated to be updated on a five year cycle
- Future updates to the plan will allow us to build on the work we do today



Q&A on Recommendations, Benefits, and Adaptive Management



Water Forward – Austin's Integrated Water Resource Plan

March 21, 2018

Open House

Thank You

Follow Water Forward and find more information at 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.

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