

Water Conservation Strategic Plan

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Planning Process Overview

Impetus for the plan

- 2016 Program “reframing” with Water Resources & Sustainability – develop a plan
 - Transform Flagstaff into a Water Wise Leader
 - Develop innovative water efficiency plan to inform staff and community
- 2017 Council goal – national leader in conservation across all sectors
- 2017 budgetary increase: additional staff, programming, plan
- Quantify water conservation as a water supply



Planning Process Overview



Plan outcomes

- Goal setting for Water Conservation Program
- Assess conservation actions for water savings and costs
- Revise conservation program work plan to maximize economic and community benefits
- Align program actions with Alliance for Water Efficiency leaderboard requirements
- Context for future rate study



PROMOTING AN EFFICIENT & SUSTAINABLE WATER FUTURE

IMPACT RESOURCES NEWS EVENTS

LEADERBOARD



[Austin Water Utility \(TX\)](#)

[Irvine Ranch Water District \(CA\)](#)

[City of Santa Cruz \(CA\)](#)

[Valencia Water Company \(CA\)](#)



[Cobb County Water System \(GA\)](#)

[Elsinore Valley Municipal Water District \(CA\)](#)

[City of Sacramento \(CA\)](#)



[City of Bend \(OR\)](#)

[City of Guelph \(Ontario, Canada\)](#)



Planning Process Overview

Modeling Flagstaff's water conservation

- City's first numerical quantification of conservation program
- Input examples
 - Past water consumption and production
 - Historic weather data
 - Economic trends
- Output examples
 - Water saving projections and cost benefit analyses for various conservation actions
 - Projected water demand



Stakeholder engagement

- Participants:
 - Local nonprofits (Sierra Club, Terra BIRDS, Master Gardeners)
 - Neighborhood associations (Southside, La Plaza Vieja)
 - Commercial interests (Warner's, FLRTA)
 - General public
- Engagement opportunities
 - Flagstaff Festival of Science
 - Advisory Committee
 - Stakeholder group
 - Surveys



Stakeholder engagement

• Outcomes & Insights

- Narrow down large list of potential conservation actions (measures)
- Provide insight on customization of conservation actions for specific application in Flagstaff
- Provide feedback on Optimized Conservation Program
- Provide general feedback on desire for conservation in Flagstaff





Current Conservation Program

- Public outreach/education
- Watering code enforcement
- Low water landscape
- Rainwater containers
- Commercial rebates
- Residential consultations
- Efficient fixture giveaways
- Efficient toilet rebate

Personnel: 2 full time, 3 part time

Cost benefit score to the City: 1.67

Total Program FY20 On-Going Budget: \$373k



Proposed Optimized Conservation Program



- Public outreach/education
- Watering code enforcement
- Low water landscape
- Rainwater containers
- Commercial rebates
- Residential consultations
- Efficient fixture giveaways
- Efficient toilet rebate



Proposed Optimized Conservation Program

- Public outreach/education
- Watering code enforcement
- Low water landscape
- Smart metering
- Outdoor water budgeting
- Landscape rainwater code
- Commercial rebates
- Residential consultations
- Efficient fixture giveaways
- Revised toilet rebate
- School retrofits
- Showerhead faucet code

Personnel: 2 full time & 4 part time (or 3 full time)

Additional budget: \$45k

Cost benefit score to the City: 1.83



New initiative examples

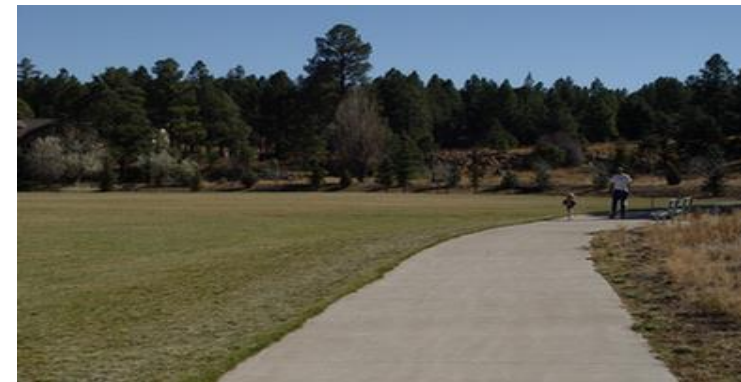
• School retrofits

- Partner on one K-12 and one higher education institution annually
- Projects may include fixture retrofits, cooling tower efficiencies, landscape retrofits, etc
- K-12 schools: \$10,000 annually with no financial match required
- Higher ed: \$10,000 annually with matching funds required



• Outdoor water budgeting

- Work with up to 5 large irrigated lawns annually (examples: COF parks, athletic fields, HOAs)
- Create water budget based on Flagstaff evaporation, transpiration, and precipitation trends
- Meet regularly to assist customer in meeting budget



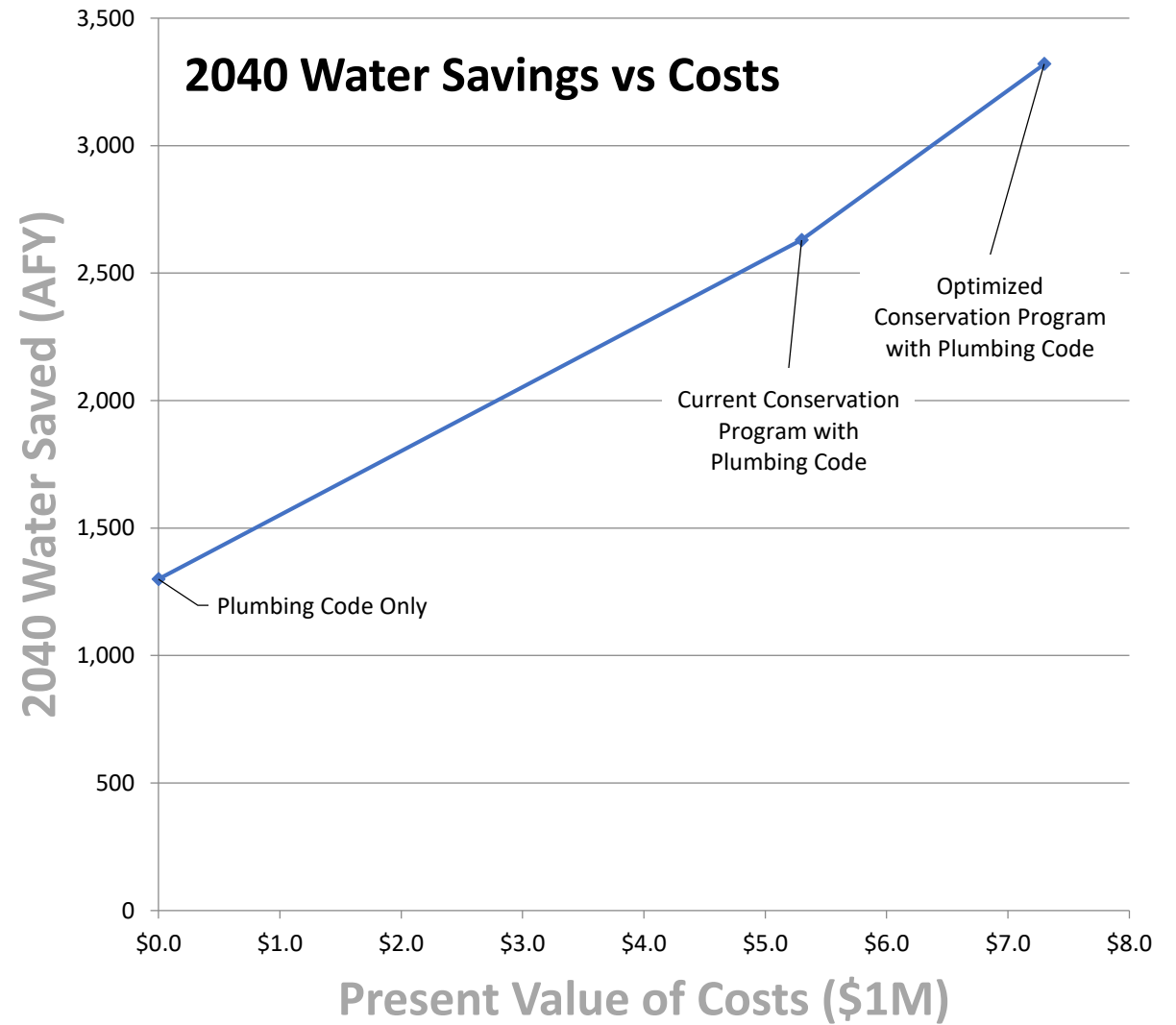
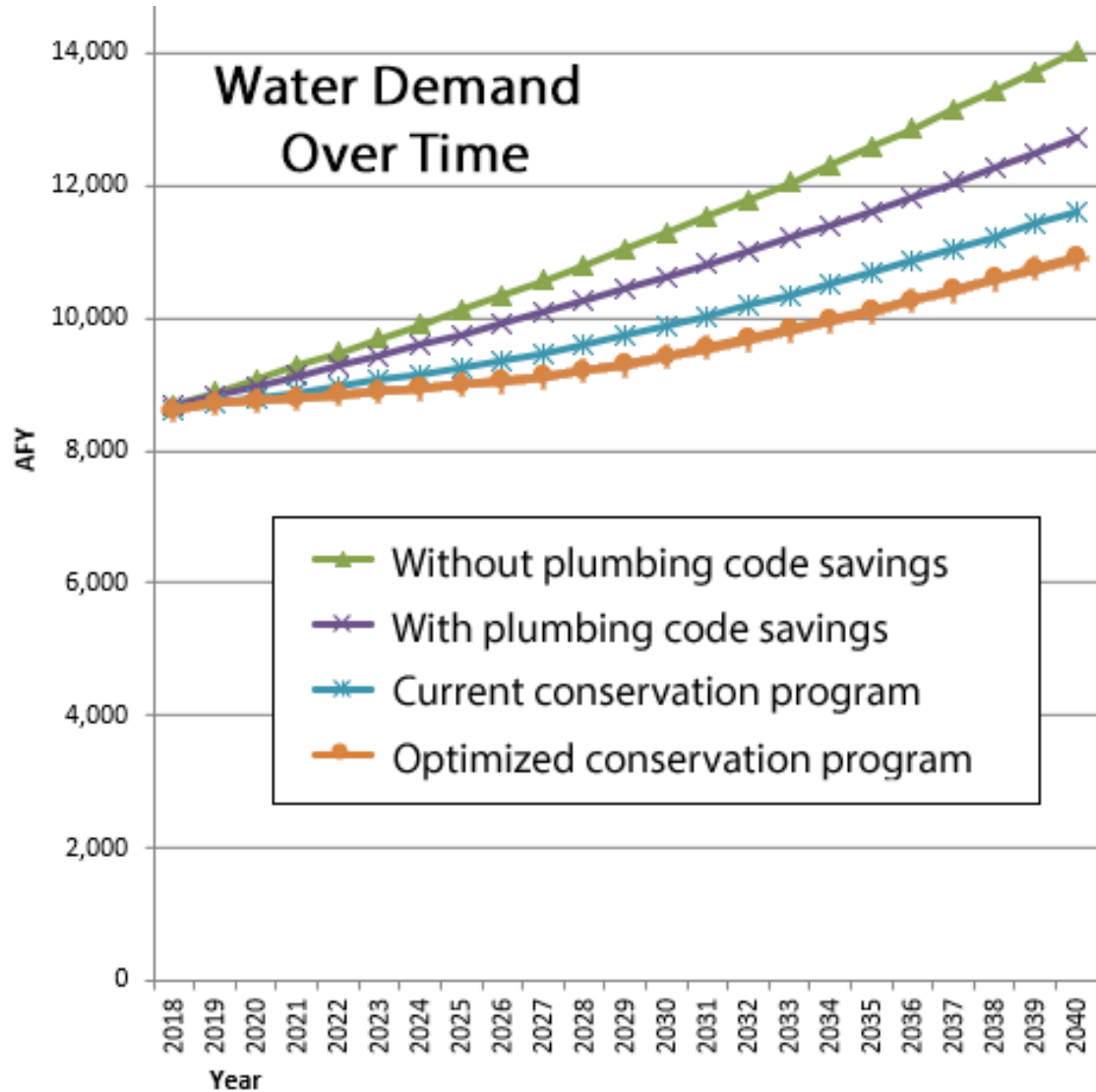


Impacts across organization

- **Water Loss Control Program**
 - Requires collaboration across organization to track and report certain data
- **Smart Meters**
 - Requires collaboration with Customer Service to address challenges with data collection and utilization for new meters
- **New and revised codes**
 - Landscape code will require participation from COF and community stakeholders
 - Plumbing code amendments – EPA WaterSense certification for showerheads, faucets, and toilets
 - Will require assistance from Community Development to write and enforce new and revised codes



Demand & Savings vs Costs





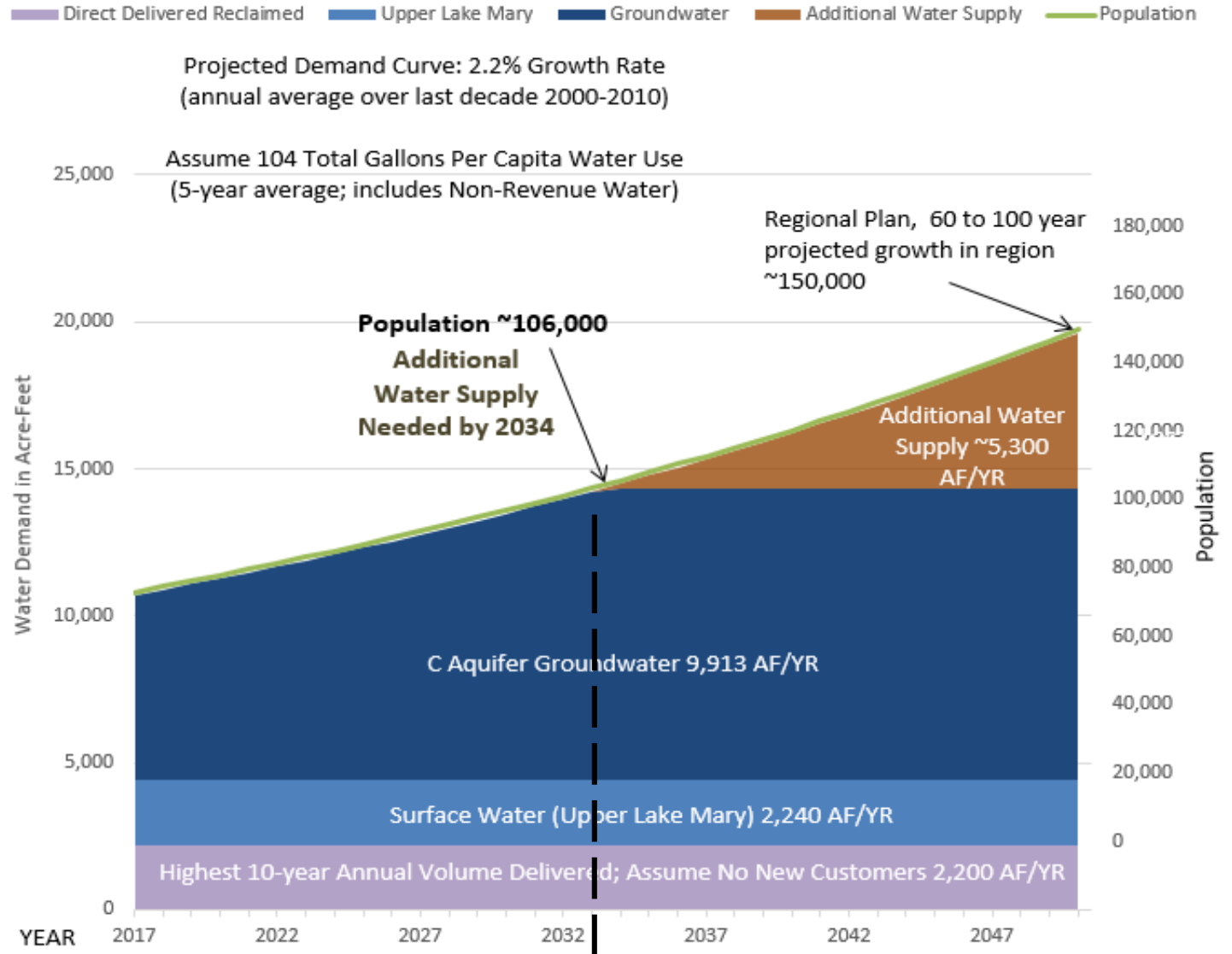
Proposed Optimized Conservation Program

- Potential water savings of an additional 690 acre-feet over existing program over the next ~20 years.
 - Estimated decrease of ~20 Total GPCD, mostly outdoors
- Estimated delay in need for new supply
 - Plumbing code delays new water supply from ~2033 to 2037
 - Current program delays new water supply by 5-years from ~2037 to 2042
 - Optimized program delays new water supply by 6 additional years to ~2048
- Significant deferred financial investment from reduced water production/new supply costs over the next ~30 years
 - Approximately \$160 million in deferred costs
 - \$448 per acre foot avoided costs



Water Resources Master Plan

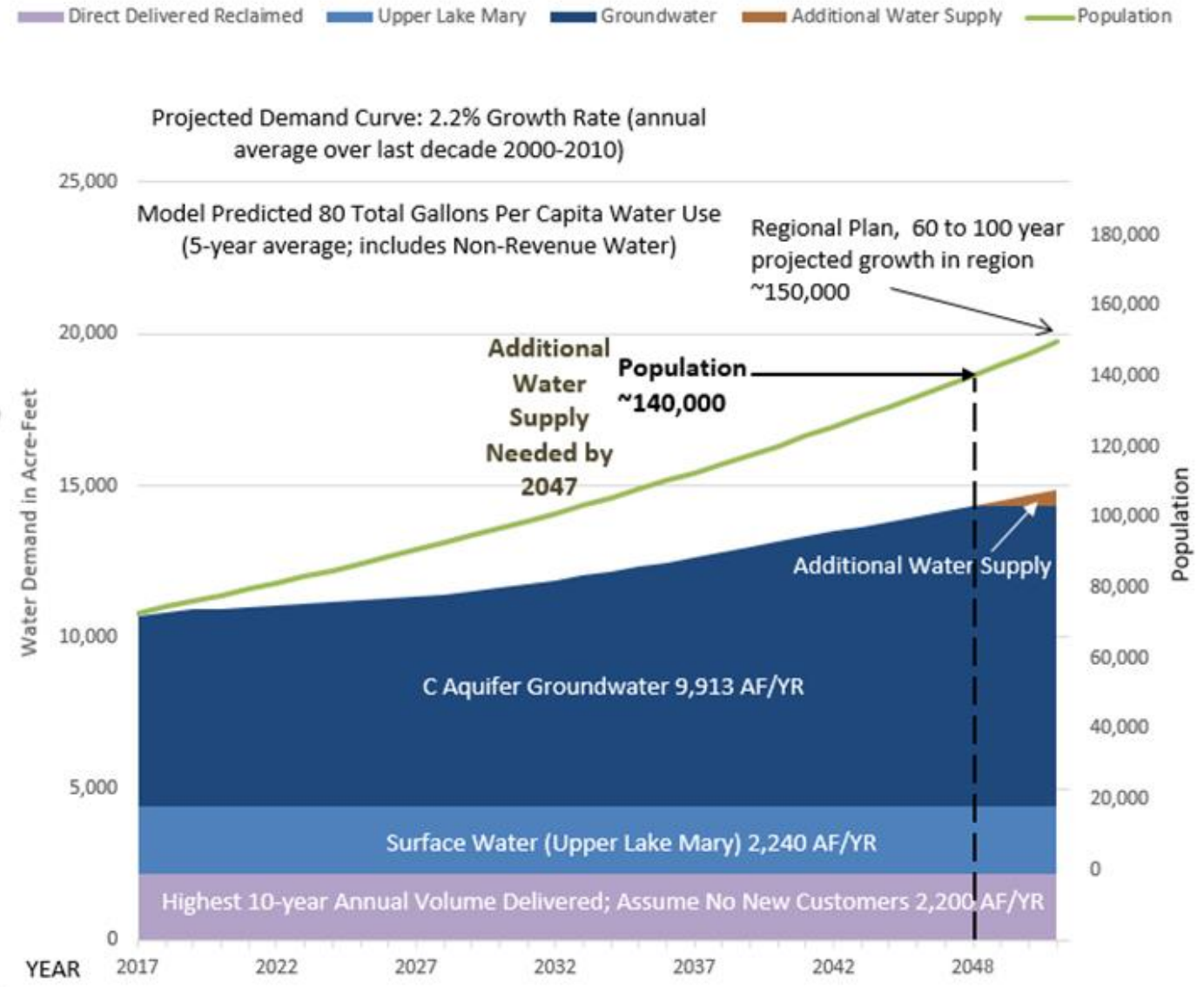
Water supply needs & avoided costs





Water Resources Master Plan

Impact of proposed Conservation Program on water supply needs & avoided costs





Staff Recommendation

- Council to provide guidance and direction on the Proposed Optimized Conservation Program
 - Higher level AWE Leaderboard eligible
 - Limited additional investment for improved return on investment
- Next steps:
 - Staff will include Council's direction and come back in early 2020 for consideration and approval of the Final Plan
 - Staff to create Implementation Plan
 - FY21 budget process to seek an additional \$45,000 funding



Discussion



Council input and questions
Thank you!

