

Secondary Water Feasibility Analyses:

September 7, 2016



Project Summary

- Zions has been selected to provide a feasibility study for three primary water scenarios for the delivery of irrigation water to select areas of the City
- The analysis focuses on the comparison of costs between the use of culinary water provided by JWCD with the cost of constructing and operating new large and small-scale secondary water facilities
- The comparison includes the costs of operations and maintenance, construction of capital project, purchase of additional water supplies, cost of bonding, etc.
- Comparison has been made based upon the overall cost to the City (macro) and the overall cost per AF of water for each scenario
- The purpose of this presentation is to receive comment, discuss future rate structures, and determine the best scenario for the City

Scenarios

Scenario 1: Expanded Secondary Water System

- Secondary Water to purple piped areas plus other areas west of 5600 West
- Reduction of 7,759 AF per year from JWCD at buildout

Scenario 2: Limited Secondary Water System

- Secondary water only to areas with installed purple pipes
- Reductions of 1,650 AF from JWCD in five years

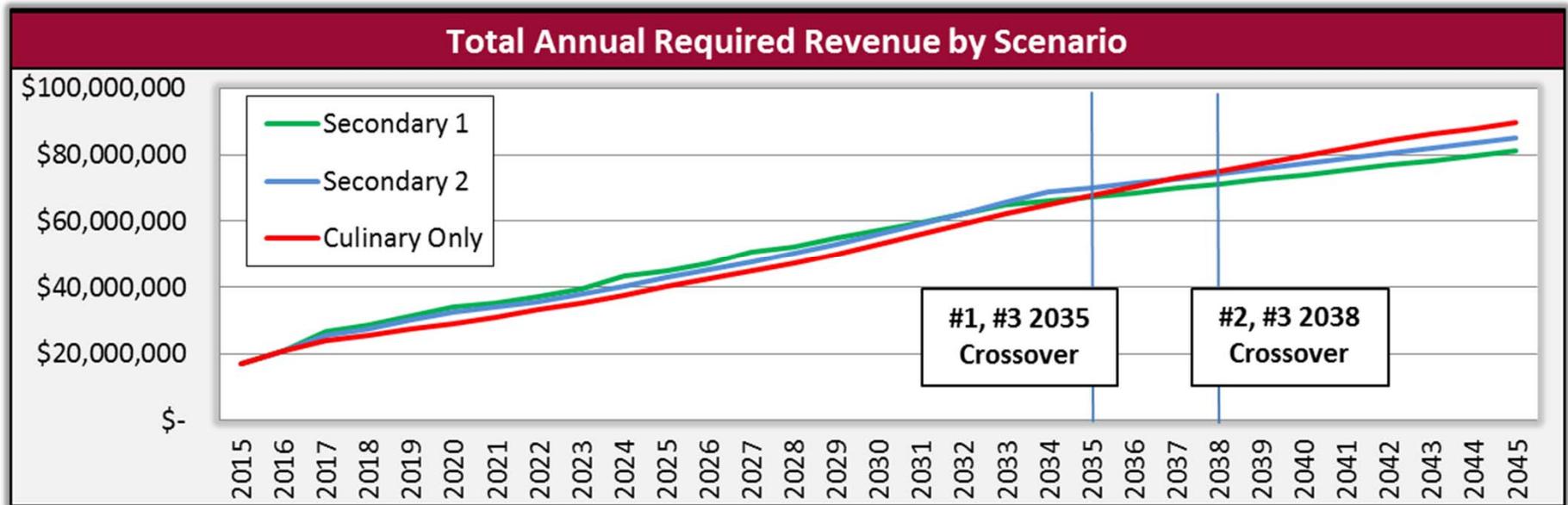
Scenario 3: Culinary Water Only System

- Culinary water would be used to serve irrigation needs throughout the City
- No secondary water considered for areas with purple pipe or expanded areas

Summary of Scenarios

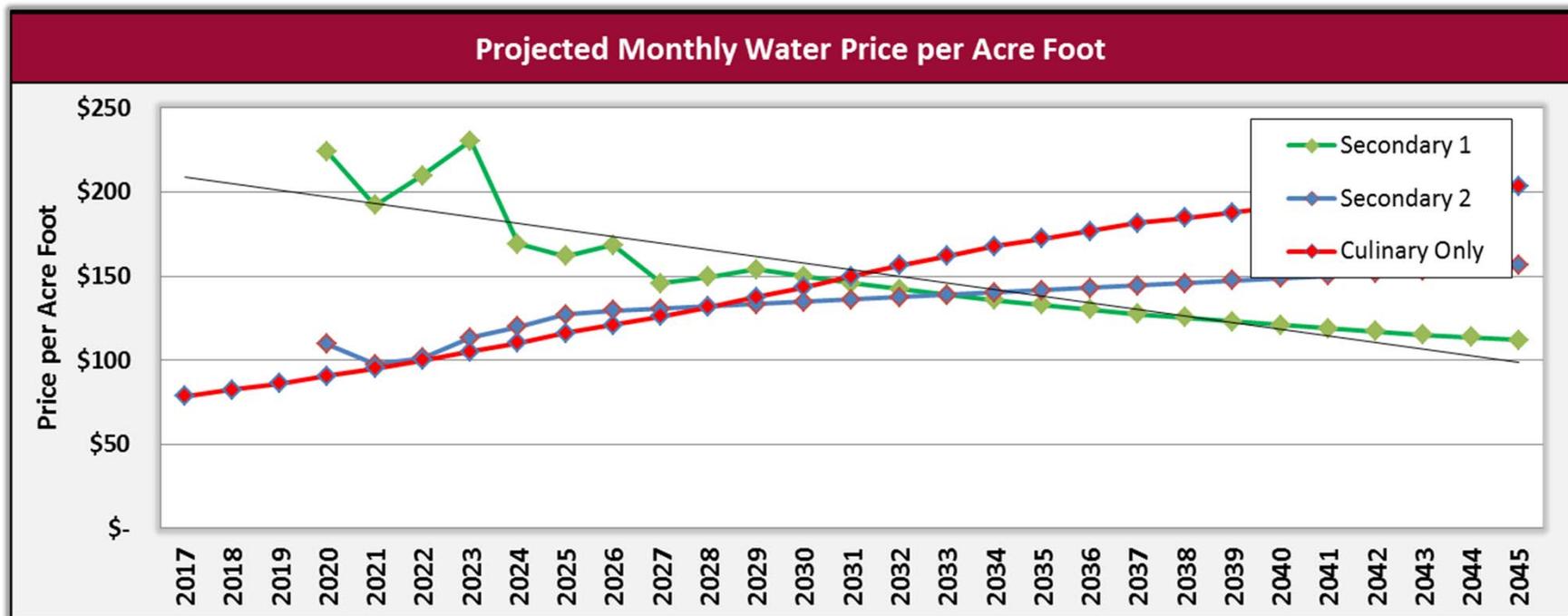
	Secondary Water Scenario 1: Expanded Secondary Water System	Secondary Water Scenario 2: Limited Secondary Water System	Culinary Water Scenario 3: No Secondary Water
Water Sources	SVWRF reuse water plus Welby Canal water mixed to be no more than 50% canal water; JVVCD and City wells for culinary.	Entirely SVWRF reuse water; JVVCD and City wells for culinary.	Culinary only water from JVVCD and City Wells
Secondary Water Areas	Expanded areas west of 5600 West in addition to subdivisions with Purple Pipe west of 4800 West	Subdivisions with Purple Pipe west of 4800 West	No secondary water areas
O&M	Culinary water O&M to be reduced to 87% in line with the reduction in culinary water from secondary	The CW O&M is not reduced given the limited amount of culinary water reduced. Should match Scenario 3.	Full culinary water scenario with no secondary water O&M
Culinary Water Demands	Culinary water purchased from JVVCD will be reduced to account for the increased secondary water demand	Culinary water purchased from JVVCD will be reduced slightly as the secondary water demand is small and will likely not affect the City's needs.	Culinary water is used throughout the entire system and will not be reduced
Capital Projects	Culinary capital projects are reduced slightly to consider that some culinary water projects will not be needed	Culinary capital projects are not reduced as the small amount of secondary demand will not change the culinary projects.	Culinary projects are to be completed as found in the HAL Drinking Water Master Plan

Macro Summary – Cost to City



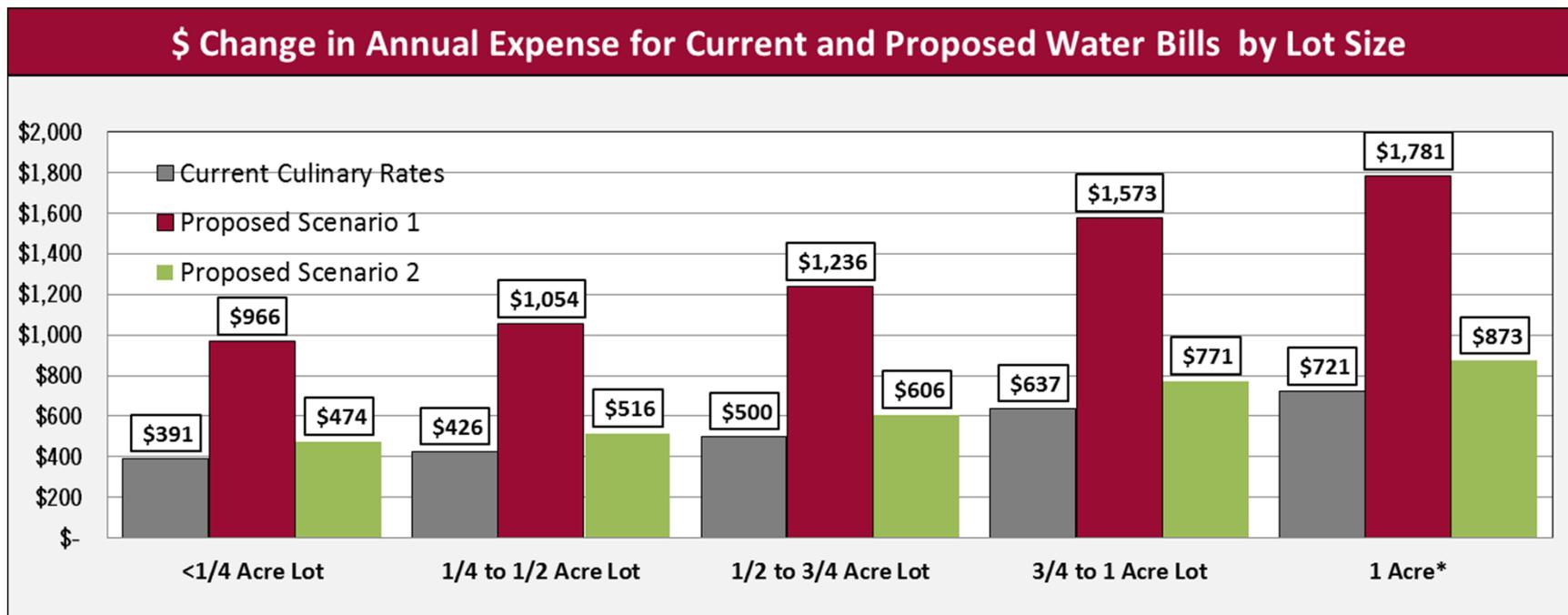
Crossover points indicate when Scenarios 1 and 2 become less expensive from an overall macro cost perspective than Scenario 3: Culinary Only

Rate Summary – Cost per AF



The cost per AF does not include any subsidies that might help to smooth the costs of secondary water as the initial costs are high and the number of users is low.

DRAFT 2020 Annual Expense per Lot Size



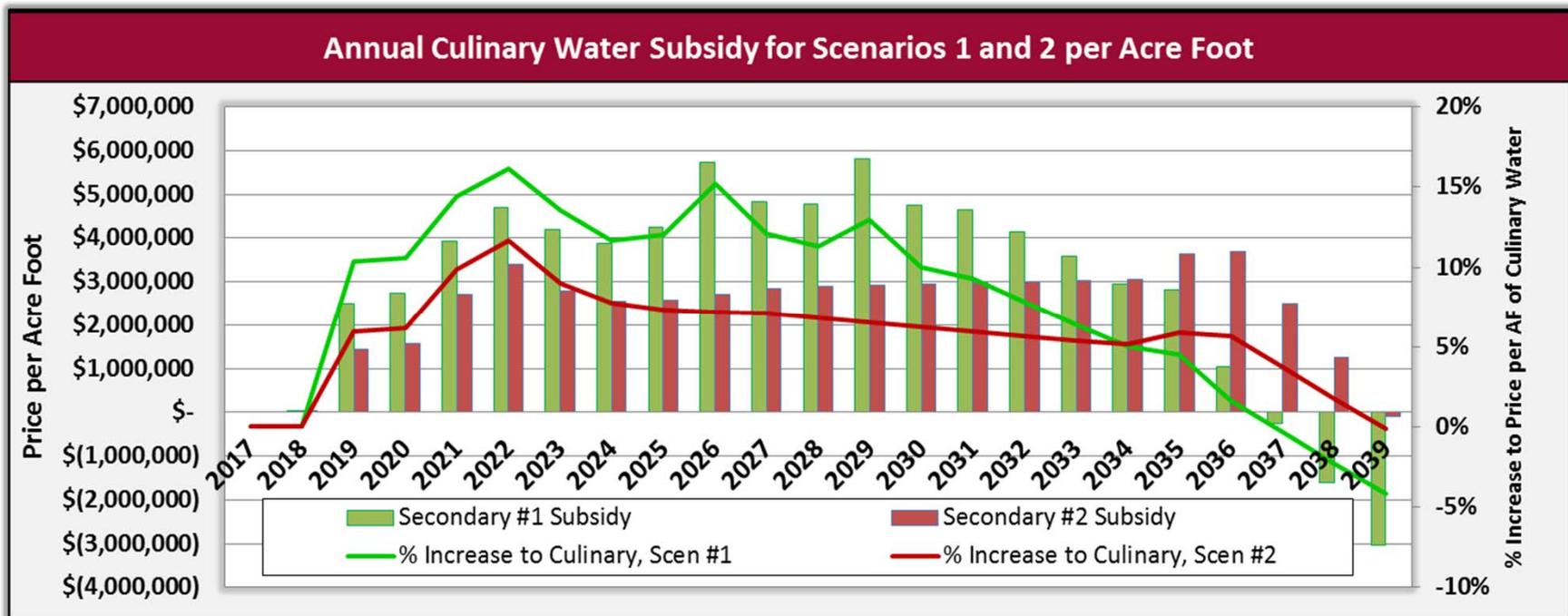
Annual Anticipated Rate Increases

	PERCENT CHANGE TO ANNUAL RATES														
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Scenario 1															
Culinary	15%	5%	5%	5%	5%	5%	5%	4%	4%	4%	3%	3%	3%	3%	3%
Secondary	4%	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%	0%	0%
Scenario 2															
Culinary	15%	5%	5%	5%	5%	5%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Secondary	6%	6%	6%	6%	6%	5%	5%	2%	2%	0%	0%	0%	0%	0%	0%
Scenario 3															
Culinary	15%	5%	5%	5%	5%	5%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Secondary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Rate Setting Parameters

- Prepared and reviewed coverage tables with input and data from City staff
- Important considerations such as changes in staffing and funding capital projects
- Rates should maintain at least 1.25X coverage for outstanding bonds
- Rates should maintain at least 180 days operations expense on hand in cash with a max of about 360 days; should strive to achieve roughly 275 days
- The City should strive to maintain a strong financial position that would allow for minimum coverage ratios even if debt is not issued just in case the need to bond does arise

Amount of Culinary Water Subsidy



Findings

- Currently Scenario 1 and Scenario 2 have respective crossover points in 2035 and 2038
- Both scenarios require a period of time for bonds to pay down and for savings in culinary water costs to be achieved.
- Scenario 1 and 2 will require subsidies until the crossover periods
 - Scenario 1 will require approximately \$71M in subsidies through 2035
 - Scenario 2 will require approximately \$54M in subsidies through 2038
- Subsidies will have to be made up by user rates which will be based on reduced connections, high initial costs, and no subsidy.
- This results in secondary rates that are higher than culinary only rates.
 - Scenario 1 subsidies can be as much as 15% higher than culinary rates
 - Scenario 2 subsidies can be as much as 12% higher than culinary rates

General Policies for Discussion

- Is this a short-term or long-term savings to be achieved?
- Should there be a subsidy between the culinary and secondary to implement a secondary water system that will save money in 19 and 22 years?
- Which year should we compare the rates? Initial 2018 rates or once they've normalized or based on some previously discussed subsidy?
- If rates should be adjusted, by how much should they be adjusted?
- Need policy on these items to proceed with final rate structure