

Scenario and Portfolio Development Worksheets

WSAC March Meeting: These are draft scenarios designed for exercise purposes only – they are not intended to be final scenarios.

Summary of Portfolio designed for Draft Scenario #1: Planning for Extended Drought

Climate variability suggests that the next big drought that Santa Cruz experiences may not look like the worst drought on record (the 1976–1977 drought) or the second-worst drought on record (the 1987–1992 drought). In this scenario, Santa Cruz prepares for a plausible extended drought event that looks like both the 1976–1977 and 1987–1992 droughts occurring back to back.

Summary information

What is the Planning objective?	<i>Sufficient and reliable supply.</i>	What is the demand-supply gap you choose to address? FYI, 15% shortage is 300 mg. Answer in both mg and % for clarity. <i>Multi-year gap presented by the scenario with no more than 15% peak season shortage in no more than 15% of years per criteria.</i>
How much of the Planning objective does your Portfolio produce?	<i>100% if Implementability challenges overcome.</i>	What is the remaining demand-supply gap if all your actions are implemented? <i>Portfolio 1, none; Portfolio 2 3% or 34 mg in year 2. Portfolio 3 shortages 4 years of 8 year drought, ranging from 7% to 27%. See Spreadsheet for detail.</i> Answer in both mg and % for clarity.

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List of selected Portfolio measures <i>See Spreadsheet.</i>	Changes in peak-season gap	Primary criteria based considerations for this choice	Primary criteria based concerns about this choice	Notes, questions, and primary guidance for Technical Team
Example: Action A	15 mg	Inexpensive and focuses on demand management	May have significant environmental impacts	Need to know more about mitigation of environmental concerns
Demand management actions <i>CA-03; CA-04; CA-01; CA-02; WCA-24</i>	<i>See Spreadsheet; The same Demand Mngmnt Actions are in all three portfolios</i>	<i>Sustainability; Implementability; Supply Reliability</i>	<i>Behavior Based Variability</i>	<i>CA-03 production is stated in 2030, what is ramp? What is real cap on yield? CA-04 What are real costs/benefit analysis? CA-01 What is the program and what can we get from it economically? CA-02 To be funded by community no developers; is this a funding mechanism or is there additional yield savings to CA-03? WCA-24 Concept: Start managing demand reduction first year Newell doesn't spill. Question: How much water can we save for future years doing this?</i>

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Infrastructure and system management actions				
Actions related to new storage and supply: Portfolio 1 - CA-10; P2-CA-13; P-3-CA-16	<i>See Spreadsheet</i>	<i>Sustainability; Implementability; Supply Reliability; Env. Profile; Energy</i>	<i>CA-10 and CA-13 Political Feasibility. CA-10 Energy concern with transport and multiple treatment; Technical Feasibility (storage capacity and ability to recover from storage)</i>	<i>All reuse CA's have political acceptance issues. Is there a difference in level of political acceptance with different reuse CA's? All aquifer storage CA's have questions regarding capacity of aquifer to accept storage and return stored water to supply. Is there a legal rights question re: North Coast exchange? Can there be regional benefit to CA-10? CA-16 has limited yield in dry years dovetails to HCP result is less effective in extended drought. We assume 0 productivity in dry years. Is this accurate?</i>
Actions related to new supply sources				

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Other considerations:

- What changes would you make to the criteria? *We needed more detailed information about yield and adaptive flexibility for many of the CA's which are rainfall dependent and have dry year limitations. Cost was completely ignored due to lack of information in current rendition of CA's.*
- What criteria did you aim to satisfy? *Having prioritized Supply Reliability, we found 5. Implementability was a trip wire for what one could or could not do. We then considered sustainability, energy (including aspirational goal of GHG neutral) and environmental profile. If we were able to solve for those, most of the others fell in line.*
- Which were the easy Actions to select? Why? *Demand Management Actions because of universal acceptance. After that we tended to be yield driven due to magnitude and duration of supply gap.*
- Which were the difficult Actions to select? Why? How did you reach agreement on these? *The extreme nature of the scenario made it easier to select.*
- Your Aha! Moments. What did you learn that you hadn't expected? *Emerging Local Energy Aggregation (Community Choice Aggregations) is changing the game for energy intensive actions. This reminds us that we develop more effective and efficient technology to meet our needs as we define them.*