

## Update on the Technical Workplan

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The technical workplan remains as discussed and described in the October 24 WSAC meeting and associated written materials circulated then and previously, and as summarized below. At the November 21 WSAC meeting, we will review this workplan and provide an update of works in progress.

The workplan from this point forward is primarily directed at addressing key technical issues associated with the “Real Deal” phase of the WSAC process. It also builds on several work elements that have been developed through the “Recon” phase.

At this time, specific timelines and some areas of focus are not yet finalized. This is because there are several key elements of the WSAC process that are in flux – namely the overall schedule and the form and level of specificity of the final recommendations WSAC anticipates developing for City Council at the conclusion of the Real Deal. However, it is highly likely that there are some alternatives that the committee will want to know more about no matter what and it would make sense to establish workplans and begin to develop technical data as soon as possible. These may include Ranney Collector use at Felton Diversion, feasibility of Purisima for groundwater recharge projects, updating the water transfer study. In order to make the most productive and efficient use of the technical consultant team and the available contract resources, we want to properly deploy and focus our efforts to best meet the anticipated WSAC product.

Past documents and discussions of the work plan have focused on topical areas (e.g., estimating future demand, examining the hydro-geologic conditions of regional aquifer systems with regard to the potential feasibility of storage and retrieval). Below, we offer a slightly different perspective on how the anticipated pieces of technical work fit together.

### 1. Defining the Problem

How large of a water supply shortfall is Santa Cruz facing, from now through future decades (e.g., to mid-century or beyond)? To address this question, the following work plan elements are in process or anticipated:

- Estimating water demands – via both the traditional demand projection approach used by the City’s Water Department (with price elasticity included in one variation), as well as development of a more sophisticated and useful econometric demand forecasting model.
- Forecasting supply yields -- from the City’s existing water supply resources and infrastructure, taking into consideration the uncertain but likely considerable impacts of climate change, fish flow requirements associated with the terms of a future Habitat Conservation Plan (HCP) agreement, and possibly other factors. This includes considerable technical work including streamflow hydrologic modeling and system yield modeling, coupled with scenarios that embody a range of plausible climate change projections and HCP requirements.

- Developing estimates of the “gap” between supply and demand – combining the two sets of above efforts to convey the ranges and frequencies of different potential gaps between projected supply and demand. Given the vast uncertainties (e.g., regarding the frequency and severity of future droughts), this entails developing a range of gap-related scenarios.

## **2. Identifying Possible Solution Options (Alternatives)**

The Alts convention has provided a venue through which a large number of possible solutions have been suggested by a wide range of engaged citizens as well as water sector professionals. The technical team has recently initiated an expedited review of these “Alts” and an initial group of a dozen Alts have been selected for preliminary technical evaluation to support the application of the MCDS model for Recon. We anticipate that additional Alts may emerge as the Committee’s work proceeds, and as we collectively sort through and refine the suite of Alts already submitted for consideration.

The Alts to be considered may be categorized according to those that are designed to decrease demand (conservation, water use efficiencies), increase supplies (e.g., tapping winter flows, implementing water recycling, desal), add storage to address intra- and inter-annual variability in demands and yields (e.g., converting quarries to surface reservoirs, or using local groundwater formations for aquifer storage), and a variety of other approaches. Numerous permutations and combinations are possible.

## **3. Evaluating the Possible Solution Options (Developing a Portfolio)**

This is the core of what the technical team anticipates addressing through the Real Deal. For the Alts of potential interest, we need to understand and communicate the costs, yields, reliability, technical feasibility, environmental impacts, water rights implications, societal/community impacts (including quality of life and regional economic vitality), and so forth. This will entail a range of technical analyses drawing on the specific areas of expertise distributed through the technical team that we are assembling.

The various technical analyses may be used within a number of possible analytic frameworks in order to facilitate WSAC evaluation of the Alts. This may include MCDS and/or TBL and/or other analytic approaches to help WSAC sort through the options.

## **4. Selecting a Portfolio of Preferred Options**

The extent to which WSAC engages in specific portfolio recommendations – as contrasted to more general conclusions and recommendations – is not yet fully resolved by the Committee. We will assist in this stage in the manner that corresponds to WSAC’s intended type of recommendation package for City Council.

## **5. Implementing, Monitoring, and Evaluating (and Refining) the Preferred Portfolio**

This step extends beyond the anticipated role and duration of the technical team’s involvement, although some strategies and issues may be offered in the context of the Committee’s overall recommendations (e.g., examining the role of and strategies for effective “adaptive management” as the City moves forward).