

Memorandum

To: The Water Supply Advisory Committee (WSAC)
From: Bob Raucher, Stratus Consulting Inc.
Date: 15 July 2105
Subject: Technical Team Progress Update

In this memorandum, we provide an update of the Technical Team's activities for Phase 2 of WSAC activities, reflecting efforts in the latter half of June and the first half of July.

Brown and Caldwell -- Engineering and Planning Assessments of Alternatives

Brown and Caldwell (BC), along with several other team members, have been focusing on technical and other issues related to the various water supply enhancement options, including Aquifer Storage and Recovery (ASR), in-lieu recharge, and various forms of water recycling and desal options. For these options, BC has continued to develop and refine planning-level estimates of infrastructure needs and preliminary estimates of costs, production supply, energy use, and other engineering-related aspects of potential water supply enhancements. BC's activities are reflected in the Portfolio-related materials provided in late June for the MCDS exercise, and in the "building block" technical papers being developed for the July packet.

BC has also been involved in addressing questions posed by Committee members and engaged members of the public. Bill Faisst has been preparing for upcoming one-on-one discussions with some members of the highly engaged public who have specific water supply enhancement ideas (e.g., the second pipe to Loch Lomond) for which cost and other technical matters need to be productively discussed.

Pueblo Water Resources, Inc. – Groundwater Issues (ASR, IPR, North Coast Groundwater)

Pueblo Water Resources, Inc. (PWR) has completed a preliminary evaluation of existing information on the basic components of ASR and IPR, and also of potential groundwater supply issues related to the North Coast. In the past month, they have responded to periodic questions posed by the technical team and SCWD. They are likely to be engaged in coming weeks for helping to define performance metrics that might be applicable to defining key triggers for assessing ASR feasibility if ASR is considered as part of an adaptive pathways approach.

Maddaus Water Management, Inc. – Demand Management/Conservation

Maddaus Water Management Inc. (MWM) has not been directly engaged in WSAC-related activities over the past month. MWM previously assisted Stratus with its updated evaluation of

the revised Program C Recommended, using their Decision Support System Least Cost Planning Model (DSS Model).

MWM have also been providing responses and updated DSS runs in response for several requests from Stratus related to providing more transparency, netting out measure-specific administrative costs, ensuring consistent approaches to estimating present values, and other issues. A technical memorandum developed in June by Stratus may be circulated as part of the July packet, explicitly describing and illustrating key steps in the DSS approach to provide a much more transparent assessment of how the model evaluates demand management options for Santa Cruz.

Habitat Conservation Plan (HCP) and Climate Change-related Activities – Balance Hydrologics, and Gary Fiske, and Stratus Consulting

Because climate change and HCP-related scenarios have been developed for, used by, and accepted by WSAC over the past months, no new work has been developed in these areas. The climate change, extended drought, and HCP-related impacts continue to be applied in a suite of *Confluence* model runs to examine the impact of various alternatives and Portfolios on projected shortages

David Mitchell, M-Cubed – Demand Projections

Mr. Mitchell has completed development of an econometric demand forecast for Santa Cruz. He will present his findings at the July WSAC meeting. His results are highly consistent with the mid-range projections from the interim demand forecast which he has previously presented.

Stratus Consulting and Gary Fiske - Evaluations of Key Consolidated Alternatives

A suite of follow-up analyses has been conducted over the past month by Gary Fiske and Stratus Consulting, using the *Confluence* model to provide a more in-depth assessment of several key types of CAs and related Portfolios. The latest analyses are focused on the “building blocks” that will be used for the upcoming WSAC portfolio evaluation, and for evaluating other possible water supply options or changes in infrastructure (e.g., second pipe) and operating procedures (e.g., Loch Lomond drawdown).

Stratus Consulting

In addition to all the items noted above, Stratus Consulting has been engaged in a broad array of technical issues. A partial list of the additional technical activities includes:

- Portfolio interpretation and analysis, to support the MCDS exercises held after the June WSAC meetings.
- Completing detailed investigation of the methods and findings of the MWM demand management alternatives, to ensure internal consistency and to provide needed transparency in how DSS results are generated. A memorandum has been developed for WSAC, describing our findings and providing a set-by-step replication of the analysis and findings from DSS for an example conservation measure.
- Developing “building block” technical papers that provide technical information for each of the major water supply enhancement options that WSAC has been considering within its various portfolio exercises. The building blocks include:
 - In-lieu recharge using winter flows,
 - ASR using winter flows,
 - Direct Potable reuse (DPR),
 - Indirect Potable Reuse (IPR), including variations of IPR water being applied to Loch Lomond reservoir augmentation, and seawater intrusion barrier wells in near shore locations in Soquel.
 - Desal, based on buying into the Deepwater Desal facility planned in Monterey, and
 - Local (SCWD2) desal.

The technical papers for each of the 8 building blocks include information related defining to infrastructure needs, cost estimates, energy use, timelines, supply production, yields, and institutional issues. These will be made available as part of the July packet.

- Reviewing and managing all subcontractor work efforts

In addition, Stratus Consulting continues to actively engage in WSAC planning and meeting-support activities, as well as project administration and contract management.