

Defining the Baseline, Articulating Criteria, Scenario Analysis and More: Analyses to Support Informed Decision-Making



Bob Raucher and Karen Raucher
Stratus Consulting

WSAC Meeting
Santa Cruz, CA
September 24, 2014



Overview of Discussion

- Big Picture perspective of decision-making and decision support processes
- What is the baseline, and why is it important?
- What are the key questions to be addressed?
- Criteria, Scales, Ratings, Scenarios, and other bits – where technical analysis fits in
- What types of recommendations does the Committee envision providing?



What we Hope to Convey and Obtain

- General agreement that we have properly framed the problem and general approach
 - Or feedback to help us refine/recast
- Buy-in for the work plan components
 - And discussion of possible additions, refinements, etc.?
- Share information and stimulate discussion to help move informed deliberations forward



A Big Picture Perspective

1. Define the Problem
 - This is where the “Baseline” fits in
2. Identify Options for Addressing the Problem
 - Alts Fair, professional insight, and beyond
3. Evaluate the Options
 - Applying analyses to systematically address relevant questions and concerns
4. Recommend preferred option(s)/approach(es)
 - E.g., Portfolios and Adaptive Management



Defining the Problem: Establishing the Baseline

The baseline is combination of:

- The “status quo” mix of existing water infrastructure and management policies
- Carried forward in time through the planning horizon (e.g., to 2035)



More specifically...

The baseline is:

- The option (**alternative**) of maintaining the status quo (not making any substantive changes to utility)
- Evaluated against a relevant **scenario** of the future
(typically, a “traditional” future scenario)



What does the Baseline tell us?

- The baseline is used to assess how the system performs into the future, if no substantive changes are made



If the Water Department does not make any appreciable changes in demand management or supply enhancement, and manages its resources in the same manner as now....

- How will future supply align with future demands?
- How frequent and severe will future curtailments be?
- What will this mean for the quality of life and economic vitality of the community?
- What happens to the special status fisheries?
- Can we maintain suitable water quality?



Role of the Baseline in the Analysis

- Defines the nature and magnitude of the problem
 - E.g., Demand routinely exceeds supply by X million gallons
 - Helps identify what may be important (criteria)
- It serves as the benchmark against which other options are *compared*
 - How much are curtailments reduced if we do Y instead of the status quo?
 - How much will water bills increase if we do Y?



The Baseline is not necessarily Static

- Changes in some infrastructure and operations may occur, due to a variety of potential factors
- For example, declining water quality and elevated DBP formation may require changes to maintain regulatory compliance. E.g.,
 - More aeration and pumping of stored finished water (w/ cost, energy, and carbon impacts, etc.)
 - Possible addition of more advanced treatment processes (e.g., membranes, UV, ozonation)



Identifying Potential Solutions

Possible terminology

- Options
- Management Actions
- Alternatives



Useful Categories for Potential Solutions

- Demand Management
(conservation, water use efficiency)
- Resource Management and Operational
(modifying how existing resources are managed – e.g., Loch Lomond)
- New and/or enhanced Water Supplies
(water reuse, exchanges, desal, storage, new groundwater wells, and others)
- Small but Mighty
(possible collection of several small-scale initiatives or options with collective impact)



Evaluating the Possible Solutions

- Numerous analytic approaches available
 - MCDS
 - Triple Bottom Line / Benefit-Cost Analysis
 - Others, and *Combinations*
- Regardless of analytic approach applied to evaluate options...

Technically sound, transparent, and objective empirical analyses are essential to inform the process



MCDS Elements

- Problem Statement
- Criteria
- Scales (developed for each criteria)
- Ratings (scores assigned from scales)
- Weights
- Scores

Technical analyses are valuable for developing empirically-based scales and ratings



Crosswalk to Work Plan

- Work Plan items reflect links to key criteria, scales, scenarios, and key questions
- Work items intended to provide initial scoping
 - What do we know now?
 - What key questions/issues remain?
 - Ideas for what to examine in more depth (if anything).
- Timing: intent is for scoping in Recon, possible follow-on work in Real Deal



On-going Technical Work for Scenarios

Enhanced Traditional Scenario

- Integrating climate change and HCP (Tier 3/2) into “enhanced” traditional scenario
- Shawn Chartrand currently factoring CC projections into stream flow model
- Flow results will feed into *Confluence* model to indicate change in system performance
- Results should be available for October meeting.



- More information will be conveyed at the Wed meeting

