

# Technical Work Plan: Status Report and Update (Agenda Item 20)



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# Overview of Discussion

- Firming up the Technical Workplan, moving forward
- Quick overview of work products under development
- Q&A and discussion



# Technical Work Plan – Moving Forward

- Focused work plan to be provided and discussed at Nov. meeting
  - Overall framework; clear roadmap
  - Expected timelines
  - Anticipated types of outputs



# Key Areas of Focus in Work Plan

- Demand
- Supply
- Supply-Demand Gap
- Evaluating the Alts



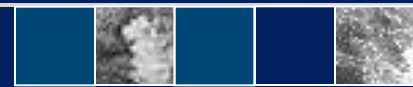
# 1. Demand (2015 -2035, using ranges)

- Existing methodology, plus:
  - Price elasticity (w/ and w/out)
  - LTWCMP Option C
  - Peak season reductions (10% to 50%)
- Econometric demand modeling



## 2. Supply

- Current System with HCP fish flows
- Climate change
  - Bounding assumptions (average changes)
  - Aim to reflect variability (droughts)
- Drought tolerance (cost of curtailment)
- Reliability metrics
  - May include impacts of possible changes in operational regimes



### 3. Supply-Demand Gap

- Graphical display of range of possible gaps, over time (e.g., 2015 – 2060)
  - Reveal impacts of fish flows, climate change, etc.
  - Indicate size of portfolio needs, over time
- Desired outcome: “Problem Statement” for WSAC to bring to City Council (by February)



## 4. Characterize the Alts

- Summary evaluation, by categories
  - Conservation, demand management
  - Storage
  - New water, etc.
  - Operational modifications
- Basic information on costs, yields, energy requirements, etc.





# Questions?



# Contractual/Administrative Progress

- Signed contract agreements with several key subconsultants
  - Brown and Caldwell the key recent addition
  - Draft agreements in negotiation with others
- Task Orders in place or under review and discussion



# 1. Conservation, Demand Management, Improved Forecast

- Assessing Impact of Current Drought
  - Memo in packet on green and hospitality sector roundtables
  - Survey drafted for possible Chamber of Commerce circulation
  - Interview with UC Santa Cruz
  - Planned interviews with schools (e.g., athletic fields)



# 1. Conservation, Demand Management, Improved Forecast (cont.)

- Econometric Demand Forecasting
  - Scoping in progress (David Mitchell)
  - Insights gleaned from other major utilities (shared insights on why prior forecasts were overstated)
- Water Use Intensities
  - Memo in packet



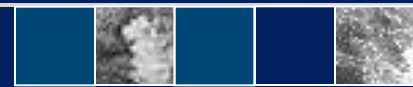
# 1. Conservation, Demand Management, Improved Forecast (cont.)

- Potential for Additional Conservation
  - How much more can be saved? At what total cost? Borne by whom?
  - Focus on shaving peak season demands
  - Discussions with Maddaus, and Rosenblum



## 2. Climate change

- Impacts on Surface Flows and Yields
  - Downscaled GCM results compiled and applied in hydrologic streamflow model
  - Streamflow changes input to *Confluence* model
  - Very complex suite of issues to address
  - Continuing to sort through technical approach with Chartrand and Fiske



### 3. Energy Requirements & Carbon Footprint

- How much net energy and GHG emissions accrue across key Alts?
  - Brown and Caldwell to investigate, in conjunction with John Rosenblum
  - Near-term focus on small suite of Alts for November run of MCDS model



## 8. Lifecycle Costing and Technical Performance

For relevant Alts: What do they really cost? What do they yield? How reliable are they?

- Initial implementation costs (capital, land, permitting, etc.)
- Operation and maintenance costs
- Periodic replacement costs
- Yields across seasons, weather, years, etc.
- Energy requirements





## 4. Fishery Flow Requirements and Impacts on Yields

- To be integrated into HCP streamflow model and *Confluence* efforts (as described for climate change)
  - Jeff Hagar providing insight and review for Chartrand and Fiske efforts



## 5. Water Storage (inter-annual and inter-seasonal)

- On-stream storage (Loch, and elsewhere?)
  - What if we manage Loch Lomond differently? How might this align future supply and demand? How does this change risks?
  - How many years of drought to be applied for planning drawdown strategies?
- Ranney collectors:
  - How viable and productive for Santa Cruz settings?



## 5. Water Storage (cont.)

- Groundwater – ASR and related practices
  - Can water be placed, stored and retrieved from any of the regional aquifer systems?
  - Pueblo Water Resources will scope issues
- HydroMetrics clear of Conflict of Interest issues with Soquel Creek Water District for shared Aptos and related basins



## 6. Groundwater Supplies and Management

- Viability of North Coast wells
  - Is this a feasible option? What are the potential yields and water quality?
  - Pueblo Water Resources to scope



## 7. Water Recycling

- How much reclaimed water is available?
  - Potential yield may be 4 to 5 MGD
- Potable Reuse:
  - What are the options (IPR, DPR)? How do they compare to other alts? What are the public health implications and perceptions?
- Nonpotable Reuse (NPR):
  - What are the possible demands and costs?



## 9. Enrichment Series

- Several good topics suggested and requested
- Where, when and how do we provide this series?



# Questions?



# 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)





# What we Hope to Convey and Obtain

- Sharing information
  - Administrative/contractual
  - Technical/substantive
- General agreement we are on the right path
  - And feedback to help us refine/recast
- Stimulate discussion to help move informed deliberations forward













