

Reuse Alternatives Breakout Session

1. .Agricultural Reuse
 - a. There are agricultural demands near the VWRF
 - b. Existing water supply for growers is inexpensive. Being cost competitive with recycled water will be a challenge
 - c. Crop specific tolerances for TDS and chlorides need to be met. However, additional discussion of growers using lower water quality (chlorides > 100 mg/L) was mentioned. Challenge will be to identify water quality currently being used by growers since these data are not publically available.
 - d. Desalting is likely, and brine treatment/disposal will be challenging.
2. Urban Reuse
 - a. City will continue to expand their system as opportunities arise. Suggestion to target areas in vicinity of existing system and with greatest demands.
 - b. There are many small users (a large user is 0.1 mgd) scattered throughout the city. Therefore, expansion would require extensive network for a low demands.
 - c. Suggestion to overlay Ag and urban demands. Challenge with providing both Ag and urban reuse is the difference in quality required.
 - d. General understanding that urban reuse alone will not lead to a significant reduction in discharge volume.
3. Scalping Plant – west side
 - a. Supply and demand (combination of agricultural and urban demand) are of similar magnitude.
 - b. Plans to collect data from the collection system to assess TDS and chloride concentrations in wastewater. Need to determine if desalting would be required to provide agricultural reuse.
 - c. Comment that growers in area would need to be incentivized to use recycled water. They are not subject to extraction fees, and therefore cost to growers is limited to operational costs associated with pumping.
 - d. Suggestion that flow in the Ventura River could be increased by reduced agricultural withdrawals.
 - e. Suggestion to review the General Plan for future development in region.
4. Scalping - east side
 - a. There is a golf course and several other urban users that would provide urban reuse demand.
 - b. Feasibility of serving agricultural users is likely going to be limited by TDS and chloride concentrations
 - c. Plans to collect samples from the wastewater collection system to determine TDS and chloride concentrations
 - d. If desalting would be required to serve agricultural demands, then this may not be the most desirable use of the treated wastewater at this location.

- e. Other options include treatment (including desalting) and groundwater recharge (IPR) or treatment (including desalting) and routing to distribution system (DPR). Both of these alternatives would require brine treatment and disposal.
 - f. Suggestion to review the recent injection well study for Malibu.
5. Direct Potable Reuse
- a. Existing groundwater sources have elevated levels of hardness. As a result consumers use water softeners, which contribute to the concentrations of TDS and chlorides in the VWRf effluent
 - b. Potential for desalting the VWRf effluent and blending the treated water (lower in TDS, chloride and hardness) with current sources may potentially result in improved potable water quality for customers.
 - c. Issues include location of advanced treatment (desalting), where to inject back into potable system, brine treatment/disposal, and lack of regulatory framework.
 - d. East side as a possible scalping plant (with desalting) and tie-in to potable system.
6. Other comments
- a. Cost/benefit analysis needs to be conducted.
 - b. Need to evaluate combinations of reuse alternatives as well as reuse combined with recharge and wetlands (i.e. integrated scenarios).
 - c. Match demands and supplies and then determine best approach.
 - d. Cost evaluation for DPR should include the offset provided by the cost of treatment by residential water softeners.
 - e. Brine treatment/disposal needs to be evaluated.
 - f. A brine wetlands is a possible treatment option.
 - g. Consider broader scale evaluation of benefits.
 - h. Include sea level rise in this analysis.

Wetlands Alternatives Breakout Session

1. Treatment Wetlands on TNC properties
- a. TNC is not interested in owning a treatment wetlands and therefore the City would have to takeover ownership.
 - b. TNCs restoration objectives include allowing the areas to flood. Issues/concerns with siting a treatment wetlands in a 100 yr flood zone and the risk to losing this investment to flood damage.
 - c. TNC restoration plans include a passive approach to allow growth of riparian vegetation, as opposed to treatment wetland vegetation. A treatment wetlands is not aligned with TNC objectives.
 - d. Suggestion to consider a configuration similar to the Prado wetlands that are designed to flood regularly. A challenge would be to waive discharge permit limits for this type of wetland/operation.

- e. In general, there are NPDES permitting issues with a treatment wetlands, as there is not a clear method/approach to permitting the discharge from a treatment wetlands.
2. Treatment Wetlands on Upland Agricultural Parcels
 - a. Prime agricultural land
 - b. Acquisition would be expensive
 - c. Overall a less favorable alternative
 3. Perched Recharge west of 101
 - a. Would be a challenge to site given 100 year floodplain and existing development
 - b. Issues with quality because this are would recharge to groundwater.
 - c. General agreement that this alternative could be put aside.
 4. Perched Recharge East of 101
 - a. Suggestion that a discharge to the river from a treatment wetlands could provide streamflow benefit to fish.
 - b. Siting a wetlands in this area will be challenging.
 5. Brine Wetlands
 - a. Permitting will be a challenge.
 - b. Issues to address include the quality of the brine, blending options, and water quality effects in the Estuary.
 6. Other comments
 - a. Suggestion to consider wider benefits of all alternatives.

Groundwater Recharge Alternatives Breakout Session

1. Recharge to Mound Basin
 - a. Location and depth of injection wells will need to be assessed.
 - b. There are not may existing potable wells in the basin that would need influence potential injection sites.
 - c. Cost of injection wells will be a challenge.
 - d. CDPH regulations are not finalized.
2. Groundwater Recharge into Oxnard Forebay
 - a. Challenges of siting a recharge facility – land availability and cost.
 - b. Cost and energy use may be issues.
 - c. CDPH regulations are not finalized
 - d. Potential benefits of recharge and limiting salt water intrusion in region
 - e. Discussion of relocating discharge to an upstream location in the Oxnard Forebay. Consider as a separate alternative.

3. Recharge at UWCD Facilities
 - a. Potential fro groundwater mounding during dry season needs to be addressed.
 - b. Opportunities to use existing facilities
 - c. Opportunities for cost sharing
 - d. Capacity of UWCD facilities and timing of VWRF flows not an issue.
 - e. Will require monitoring to meet regulations
 - f. Nearby potable wells may be an issue with regulatory compliance.
4. Recharge at UWCD – With Blending Water
 - a. Potential fro groundwater mounding during dry season needs to be addressed.
 - b. Opportunities to use existing facilities
 - c. Opportunities for cost sharing
 - d. Capacity of UWCD facilities and timing of VWRF flows not an issue.
 - e. Will require monitoring to meet regulations
 - f. Nearby potable wells may be an issue with regulatory compliance.
5. Oxnard WWTP
 - a. Infrastructure will be a challenge
 - b. Cost sharing opportunities
 - c. Fewer permitting issues with tying into existing system
 - d. Cost may be a challenge.
 - e. No water supply benefits for Ventura.