

There Really is a Better Way to Solve our Water Problem

By now it is no longer news that the proposed Marina Coast desalination plant, the largest and most expensive component of the project known as the Regional Project, or RP, is in deep trouble. This project is proposed to supply water to the Peninsula to replace water supplies that have been denied by court and state regulatory decisions. The project is drawing fire due to problems that range from corrupt decision making, to irresponsible governance, to legal issues about water rights and groundwater export, to skyrocketing water cost predictions and a possible junk bond rating that has been estimated by the Division of Ratepayers Advocates of the California Public Utilities Commission (CPUC) to cause the cost to be two to three times that of water from similar projects.

At each critical decision point, CPUC and local officials chanted the same mantra: “*what else can we do, the RP is our only choice?*”. Well, it isn’t the only choice, and it certainly isn’t the best choice. The Water Committee of the Carmel Valley Association has been urging the Monterey Peninsula Water Management District (MPWMD) to develop a contingency plan for the public to consider the event that the decision is made not to proceed with the RP. To assist in this effort, the committee has prepared two examples of projects that would take advantages of water sources that could be developed on the Peninsula.

These alternative projects require detailed technical analysis before being considered as hard and fast plans. The capacity figures used in this article are expressed as acre-feet (af), or acre-feet per year (afy). If commercial demands are not included, the average resident consumes about 70 gallons per day or a little over 25,500 gal/year or about 0.08 of acre-feet per year per person.

Local Water Sources

Aquifer Storage and Recovery (ASR) This system extracts water from the wells along the Carmel River during high winter flows and pipes it to the Seaside groundwater basin where it is injected by wells into the ground. This basin’s estimated capacity is 50,000 af of additional water. MPWMD has built and is operating the first phase of the ASR project. It figures that the current pumping and piping facilities with the addition of one new well in the Seaside basin could yield 3000 afy of added water; in contrast to the 1300 afy assumed by the RP. In principle, an expanded ASR system could produce much more than 3000 afy during the average year. Additional study regarding infrastructure additions and regulatory constraints is needed to determine how much more can be developed economically and reliably while protecting the riparian habitat of the river. For the purposes of our example plan, the ASR maximum potential is estimated to be 6000 afy.

Ground Water Recharge (GWR) This system takes treated wastewater and further treats it to a very high degree using a series of purification processes. The next to the last step is a membrane filtration process, similar to seawater

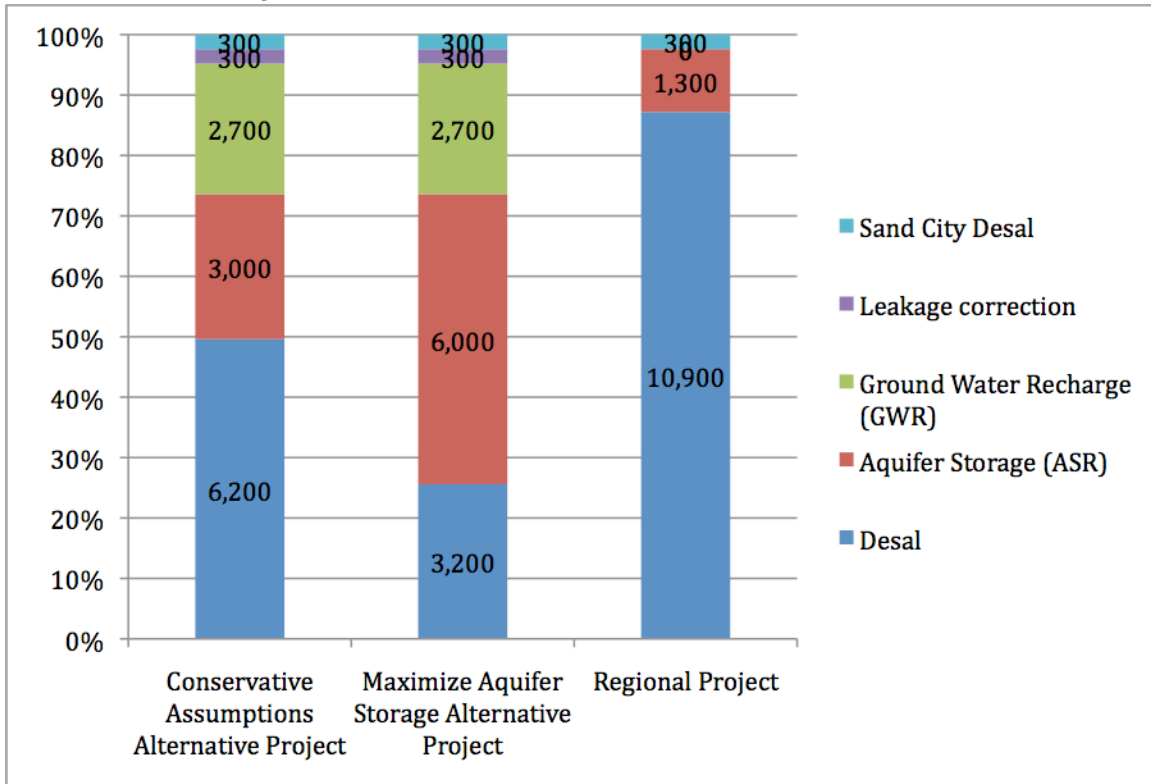
desalination, that effectively filters out all organic molecules, leaving clear, safe water. Because wastewater is 99.9% pure water, it takes about one quarter of the energy required to purify seawater, which is 96.5% pure water. After membrane treatment, the water is injected into the ground where it must remain for one year before it can be used as a municipal water supply. The final step is to add disinfectant to protect from disease organisms that could arise in the distribution system. Monterey Regional Water Pollution Control Agency has excellent experience with wastewater recycling and figures that they could produce 2700 afy of GWR water that would be fully compliant with the strict requirements of the state.

Desal After taking full advantage of the lower cost options, the water required to replace the now denied supplies would come from desalination of seawater. The facility should be located in the area between the Navel Post-Graduate School and the boundary of the Seaside/Salinas Valley groundwater basins. The source water should be drawn from wells constructed close to the coast at a depth where they will draw straight seawater. Slant wells should be considered that would reach out beyond the low tide line. The brine from the plant should either be discharged using a dedicated brine disposal outfall in an area where the bay currents would ensure quick dilution, or piped to the MRWPCA's wastewater treatment plant where it would be discharged into the plant outfall. Private interests at Moss Landing are developing a project called the Deepwater Desal. This project should be evaluated as an alternative.

Unaccounted for Losses (Leakage) These are mainly the losses due to leakage from distribution system piping. The EIR that was prepared at the expense of the Peninsula ratepayers on the RP figured that 300 afy could be gained an aggressive program of leakage correction. However, no requirement for loss reduction was included in the final project description. At the least, 300 afy should be included in the contingency plan.

Sand City Desal Sand City is served by CalAm and was within the original scope of the RP study. However, the city had the foresight to develop its own 300 afy plant, which is now operating.

The Alternative Projects



Conclusion: It is clear that options exist to meet the Peninsula’s water needs that would be far less expensive and avoid subjecting Peninsula citizens to the unresolved flaws and uncertain outcomes of the RP.

It must be noted that there are variables that need to be evaluated that are beyond the scope of these examples. For instance, the variability of annual river flow will mean that added physical capacity must be built into the ASR and Desal sources to enable ASR to capture more during the high flow years and to enable the Desal to produce more during the low flow years. These factors will increase the facility needs. On the other hand, long-term structural reductions in demand have already taken place as a result of changes in household and commercial changes in appliances and reduction in lawns. Further reductions in demand are inevitable as the water bills increase, as they must, even under the lower cost options cited in these examples. These changes will result in reductions of the Phase 1 demand that was calculated for the RP as 12,500 afy; but by just how much will take a detailed analysis.

While these concepts will take time and money to develop, the specter of having the RP collapse as a result of a successful court challenge or a change in the political winds as reality sets in, after spending tens of millions more and placing the Peninsula residents at great risk of fines and further reductions in water use by the regulators should be enough to have responsible community leaders look

for a better way. The bar chart below shows the comparison of the two example alternatives along with the Regional Project.