

Section 7: Evaluation Criteria for Water Supply Alternatives

In order to evaluate the priority of the viable alternatives, a numerical matrix method is presented in this section. Selection criteria are established and each criterion is weighted based on its relative importance. For each selection criterion, an alternative is ranked on a scale of one to five, with five being the most desirable and one the least. The weighting factors and ranking scores are multiplied for each alternative and summed to determine its overall score. Alternatives with higher overall scores are considered more attractive. This section describes the criteria, ranking process and factors that influence the evaluation.

7.1 Water Supply Capabilities

This criterion evaluates how well the alternative would be able to meet the projected increase in potable water demands for CCSD. As discussed in Section 2.4, the total demand required from the potential water supply alternatives (assuming 1.66 people per dwelling unit and the 50 percent quality of life increase) is approximately 602 to 944 AF during the dry season, when used in conjunction with the existing groundwater wells at San Simeon Creek and Santa Rosa Creek. This criterion is broken down into intervals as follows:

- < 600 AFY (Insufficient to meet any of the projected demands)
- 600 - 750 AFY (Sufficient to meet demands of Scenario 4)
- 750 - 850 AFY (Sufficient to meet demands of Scenario 3)
- 850 – 1,000 AFY (Sufficient to meet demands of Scenario 2)
- > 1,000 AFY (Sufficient to meet demands of Scenario 1)

These intervals are based on the water supply requirements to meet the four projected water demand scenarios described in Section 2 for 1.66 people per dwelling unit and the 50 percent quality of life increase. Alternatives that provide water in excess of projected demands will result in a higher ranking.

7.2 Water Quality

This criterion is based on water quality data for the source water provided by the alternative. Because this category is qualitative the ranking scale is also qualitative. It refers to the amount of treatment necessary to meet CCSD's water quality objectives. The ranking scale is as follows:

1. Very Poor (Requires extensive treatment, e.g., membrane filtration)
2. Poor (Requires moderate treatment, e.g., iron/manganese removal)
3. Fair (Requires some treatment, e.g., hardness removal)
4. Good (Requires minimal treatment, e.g., disinfection)
5. Excellent (Requires no treatment)

7.3 Reliability

Reliability is "how much one can count on a certain amount of water being delivered to a specific place at a specific time" according to the Department of Water Resources and depends on the

availability of water from the source, availability of the means of conveyance and level and pattern of water demand at the place of delivery. A reliable source would have the ability to provide sufficient water during a dry period or drought, as well as during a conveyance disruption. As discussed in Section 2, sufficient reliability would meet the reliability criteria of at least 95 percent. The ranking is broken down into the following intervals:

1. No Reliability
2. Little Reliability
3. Less than Sufficient Reliability
4. Sufficient Reliability
5. More than Sufficient Reliability

7.4 Required Agreements/Institutional Issues

This criterion considers all agreements, right-of-way issues, regulatory issues or land acquisitions that are required in order to implement the alternative. It is ranked based on the anticipated difficulty in obtaining the agreements:

1. Very Difficult to Obtain
2. Difficult to Obtain
3. Obtainable
4. Relatively Easy to Obtain
5. None Required

7.5 Environmental Issues

This criterion considers all environmental issues such as air quality, habitat loss, endangered species, aesthetics, and noise. For alternatives for which CEQA documentation has been prepared, the alternative was ranked based on the information contained in those documents. For alternatives that do not have existing CEQA documentation, the alternative was ranked based on the anticipated environmental impacts for the area and the concerns associated with similar alternatives. Significant impacts include effects such as habitat and vegetation loss and non-significant impacts include effects such as visual and noise impacts. It is ranked based on the following scale:

1. Significant Impacts, Further Review Required
2. Significant, but Short-Term Impacts
3. Less Than Significant Impacts, After Mitigation
4. No Significant Impacts
5. No Impacts

7.6 Permitting/CEQA

This criterion considers the anticipated difficulty in resolving permitting issues and preparing the required documentation to meet CEQA demands. The ranking scale is similar to that for required agreements/ institutional issues.

7.7 Cost

This criterion is based on the required infrastructure that would need to be built or modified to implement the alternative, including pump stations, pipelines, wells, and equipment. Cost estimates from previous reports were updated using the Engineering News Record (ENR) construction cost index of 6605 based on July 2002 cost estimate. These cost estimates are for planning level purposes only. Capital cost estimates were annualized using a 4 percent interest rate for 30 years. Because the amount of water required per year will vary, a total present worth cost would not accurately predict future cost. Accordingly, operation and maintenance (O&M) costs were split into fixed and variable costs. Fixed costs refer to annual cost that are independent of production and may include labor and regular maintenance costs. The labor cost included differences in hourly wages dependent upon operator certification requirements, which reflects the difficulty in use of the infrastructure. Variable costs are dependent on operation and thus will vary based on production. Variable costs include power costs and chemical costs. The overall cost ranking consists of fixed annual costs (annualized capital cost plus the fixed O&M cost) and variable O&M costs. An average fixed cost and an average variable cost was determined for the alternatives evaluated. Each alternative was compared to this average and ranked based on the following scale:

Annual Fixed Cost (\$/Yr)	Variable Cost (\$/AF)
Above Average	Above Average
Above Average	Below Average
Average	Average
Below Average	Above Average
Below Average	Below Average

The overall cost ranking is based on costs without the likelihood of funding included.

7.8 Funding

The likelihood that grant funding or low interest loans may be available is ranked separately as follows:

1. No grant funding available
2. 25 percent reduction in capital cost
3. 50 percent reduction in capital cost or low interest loan available
4. 75 percent reduction in capital cost
5. Fully funded