This summary document is intended to guide the development of the alternatives and operational scenarios that will be simulated to evaluate the feasibility of water banking in the Paso Robles Groundwater Basin, and the model results that will be prepared and presented in the hydrogeologic results section of the Paso Robles Groundwater Basin Water Banking Feasibility Study Final Report.

ALTERNATIVES

The Alternatives represent the three different locations were water banking feasibility projects will be evaluated using the existing groundwater model. These alternatives are described in the Draft Description of Water Banking Alternatives TM. The alternatives include:

- Alternative 1 – Shell Creek/Camatta Creek and Lower San Juan Creek Recharge Areas
- Alternative 2 – Creston Recharge Area
- Alternative 3 – Salinas River/Hwy 46 Recharge Area

OPERATIONAL SCENARIOS

Three operation scenarios represent different operating conditions which span a range of recharge and recovery opportunities. The purpose of these scenarios is to test the response of the groundwater basin to recharging and recovering large quantities of water during the simulation period. A potential water supply availability distribution for the Recharge Scenario and the Water Banking Scenario are provided in the figure below.

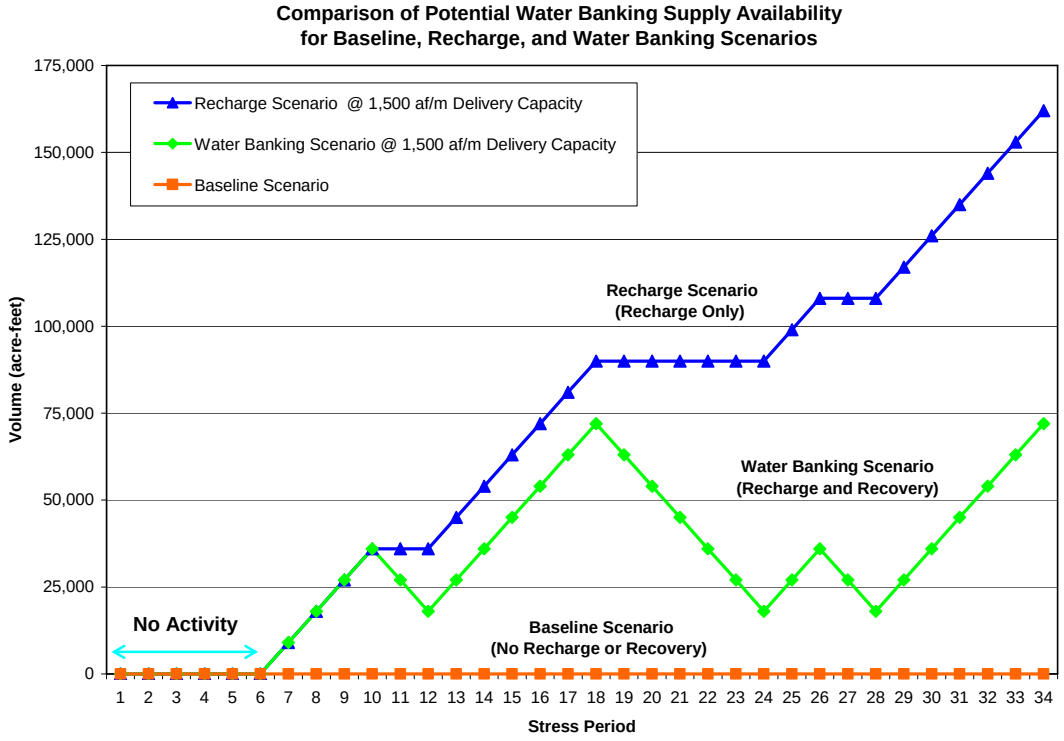
- **Baseline Condition –** The Baseline Condition will be used to evaluate the effects of the Recharge Scenario and the Water Banking Scenario (described below) on the groundwater basin. The Baseline Conditions for this analysis is the Buildout Scenario (Scenario 2 from the Phase II Groundwater Basin Study). The Buildout Scenario was developed to simulate the effects of urban growth build-out and maximum reasonable agricultural demand on groundwater elevations throughout the Paso Robles Groundwater Basin and to identify areas of special concern within the Basin.

  The Buildout Scenario represent an increase in groundwater pumping of about 33,900 af/y compared to the Perennial Yield Estimate (Scenario 1 from the Phase II Groundwater Basin Study). While water demands have increased above the Perennial Yield Estimate, they have not reached the Buildout Scenario at this time. Using the Buildout Scenario as the Baseline Condition will allow for greater groundwater recharge/water banking because of the increase in annual groundwater pumping required to meet a higher level demand.

- **Recharge Scenario** – The purpose of the Recharge Scenario is to evaluate the effect of a recharge program on the Baseline Condition. This scenario includes

only recharge operations; the groundwater pumping is the same as in the Baseline Condition to meet municipal, agricultural and rural water demands.

- **Water Banking Scenario**– The purpose of the Water Banking Scenario is to evaluate the effect of a recharge and recovery program (for export) on the Baseline Condition and the Recharge Scenario. This scenario includes the same recharge operations as the Recharge Scenario. The recovery operations include the local demand (as in the Recharge Scenario) and an additional recovery component to represent pumping of banked water to meet an urban demand pattern. The disposition of the water recovered from the basin has not been associated with any individual water user. The recovered water could be used to meet dry year water needs of other SWP contractors.



As shown on the figure above, no recharge or recovery occurs during the first six stress periods (3 years) of the simulation. This allows the recovery periods (stress periods 11-12, 19-24, and 27-28) of the Water Banking Scenario to recover a greater percentage of the banked water than would have occurred if four additional years of recharge had occurred.

MODEL RUNS

The seven model runs are required to evaluate the feasibility of the three locations and three operational scenarios are listed below:

- Baseline Condition – Buildout Scenario (Completed as part of initial model development and described in the Phase II groundwater modeling report.)
- 1A – Recharge Operations at Shell/Camatta Creek and Lower San Juan River Recharge Area
- 1B – Water Banking Operations at Shell/Camatta Creek and Lower San Juan River Recharge Area
- 2A – Recharge Operations at Creston Recharge Area
- 2B – Water Banking Operations at Creston Recharge Area
- 3A – Recharge Operations at Salinas River/Highway 46 Recharge Area
- 3B – Water Banking Operations at Salinas River/ Highway 46 Recharge Area

MODEL RESULTS

The following model results will be used to evaluate the feasibility of the groundwater recharge and water banking scenarios:

- **Change in groundwater storage** – This figure is a hydrograph that will show the change in groundwater storage for both the Recharge Scenario and Water Banking Scenario compared to the Build-Out Condition. The purpose of this figure is to show the change in groundwater storage over the simulation period.

- **Difference in groundwater level maps** – These figures will show the difference in groundwater levels compared to the Buildout Condition. Two sets of water level difference maps will be prepared for each scenario to represent the:

    - Difference in groundwater levels following the largest groundwater recovery period (following stress period 24)
    - Difference in groundwater levels at the end of the simulation period (following stress period 34).

    These maps will reflect the geographic distribution of the recharged/banked water for each alternative. It will address the question of where the recharged water is going.

- **Change in streamflow** – This may be presented as a change in flow volume at selected locations.

MODELING ASSUMPTIONS

The following assumptions will be used to guide the development of the model runs:

- **General Project Operations**
    - Annual project operations and impacts are divided into two 6-month stress periods that represent the growing season (April to September) and non-growing season (October to March). Model input and output is averaged over these 6-month stress periods.

  - The Recharge/Recovery determination for individual stress periods is based upon review of SWP water supply availability for the simulation period and is intended to provide the opportunity to test the impact of recharge and recovery operations.
  - Project capacity is 1,500 acre-feet per month for both recharge and recovery operations.
  - Each stress period is identified as either:
    - No activity
    - Recharge Operations (recharge 1,500 af/month)
    - Recovery Operations (recovery 1,500 af/month)

- **Recharge Operations**
  - Direct recharge is available during the growing season and non-growing season stress periods.
  - In-lieu recharge may occur during the growing season stress periods in the model cells with agricultural land use as identified in the existing Buildout Condition Model (Baseline Condition for this study). It should be noted that the land use in the Baseline Condition is not the same as the 2006 land use survey.
  - There will be some redundancy of recharge capacity between in-lieu and direct recharge because the project requires 100 % direct recharge capacity to allow for recharge in the non-growing season stress periods.
  - Direct recharge will take place in the model cells near the main Project Pipeline, within the previously defined recharge areas that are not currently cultivated based upon the 2006 land use survey.
  - The actual model cells where recharge (direct or in-lieu) will take place will be distributed among the recharge areas to increase the recharge potential.
  - The actual acreage of direct recharge basins needed is dependent upon the local conditions (soils, infiltration rates, near surface aquifer characteristics).
  - Direct recharge operations will recharge the uppermost aquifer layer in the model cell.
  - In-lieu recharge operations will reduce pumping from the model layers that were pumping was previously simulated.

- **Recovery Operations**
  - Project recovery wells will be distributed among the recharge area to minimize impacts to existing wells and other project wells by following the well siting criteria listed below.
    - The distance between project recovery wells will be no less than 2,500 feet.
    - Project recovery wells will be no closer than 2,500 feet to existing cultivated areas.
    - Project recovery wells will not be closer than 2,500 feet to existing municipal supply wells.

- The number of project recovery wells needed to meet the 1,500 af/month recovery goal is expected to vary between alternatives due to variations in local aquifer conditions.