**SAWS Twin Oaks ASR, Edwards Aquifer Recovery Implementation Program**
**Executive Summary**

The SAWS Twin Oaks ASR (SAWS ASR) is an underground storage reservoir in the Carrizo sand aquifer in Southern Bexar County. As a SAWS Water Management Project it is designed to store Edward's water when demand is less than available supply. The stored water is returned to San Antonio for use in critical period when demand is high.

The capacity and capabilities of the SAWS ASR are such that it can be used to meet SAWS ratepayer expectations and, if operated as described in this paper, to play a significant role as one of the Phase I, Bottom Up activities proposed for the Edwards Aquifer Habitat Conservation Plan to protect the Endangered Species at Comal and San Marcos Springs (the Regional portion).

Modeling indicates that the ASR must replace approximately 126,000 acre-feet of SAWS pumping during a decadal drought similar to the Drought of Record (DOR).

The 126,000 acre-feet can be accomplished if the ASR begins with 80,000 acre-feet of dedicated water in storage to be topped off through a pattern of storage, averaging 20 million gallons per day of water until the DOR is identified.

The DOR will be recognized when the 10-year running recharge equals 500,000 acre-feet per year and is on a declining trend. At that point topping off will occur at an accelerated rate in a pattern determined by the aquifer management modeling conducted by HDR Engineering on behalf of the EARIP.

The water to fill the ASR will be provided by 50,000 acre-feet of leases. One-third of the water will be leased with implementation of the HCP and two-third of the rights will be held in reserve through options. One-third of the options to be activated when the 10-year recharge average reaches 572,000 acre-feet per year and the second one-third to be activated when the recharge average reaches 450,000 acre-feet.

The leased water is at least as important for its impact on modeled pumping by being temporarily retired during DOR-like conditions, as it is for topping off or refilling the ASR.

Trigger levels for implementation of the Regional portion of the ASR will by 630 feet msl at J-17 and 75 cfs at Comal Springs. When triggered, the ASR and other SAWS water projects utilizing shared infrastructure will be replacing up to 60 MGD of SAWS Edwards pumping during a repeat of DOR-like conditions.

The capacity of the ASR and the implementation scheme also means that the ASR can be used to help protect spring flow during droughts less severe than the DOR.

The management of the ASR to protect spring flow necessarily involves some judgment and flexibility. SAWS will make the day to day decisions necessary to fulfill the ASR commitment. A 10 person Advisory Group representing the EARIP and SAWS will provide advice.

The cost of implementation of the SAWS ASR activity will be $12.55 million per year. The costs include depreciation over 52 years that is attributable to EARIP activities, O&M for pre-

and during DOR years, and the water leases. Depreciation charges total $3.22 million per year; M&O charges are $3.08 per year; and water leases costs are $6.25 million per year. The O&M and water lease charges include an amount that accumulates to cover the extra costs during a DOR.