

Block 2 – ASR Using Winter Flows

Table 2.1 ASR capital improvement needs and costs (millions of 2015\$)

Capital improvement item	Hard capital cost	Soft capital cost*	Total capital cost
ASR			
a. Intertie pipeline (City to/from SqCWD)	13.2	4.1	17.3
b. Pump Station (SqCWD to Aquifer)	1.1	0.3	1.4
c. Intertie No. 1 Pipeline (City to Scotts Valley)	4.3	1.3	5.6
d. Pump Station (City to Scotts Valley) Intertie No. 1	1.1	0.3	1.4
e. Tait Street Diversion Improvements	10.3	3.2	13.5
f. Graham Hill WTP Improvements	47.3	14.7	62.0
g. ASR Wells in SVWD (6 wells)	10.8	3.3	14.1
h. ASR Wells in SqWD (6 wells)	10.8	3.3	14.1
i. Iron & Manganese Treatment (All)	7.0	2.2	9.2
j. Land Acquisition	1.8	0.6	2.4
Totals	107.7	33.3	141.0

Note:

- * Soft costs include engineering, site investigations, construction management, permitting, City contract administration and legal.
- a. Build a ~4.7-mile, 16-inch diameter pipeline to convey water from the Santa Cruz distribution system to the SqCWD distribution system.
- b. Construct a 1,800-GPM pump station to move treated water within the SqCWD distribution system into their new aquifer storage and recovery well field (2.5-MGD).
- c. Build a 1.5-mile, 16-inch diameter pipeline to connect the Santa Cruz distribution system to the SVWD distribution system (2.5-MGD).
- d. Construct a 1,800-GPM pump station to move water from Santa Cruz to SVWD through Intertie No. 1.
- e. Improve and expand Tait Street Diversion facility to add capacity for increased flow (to 14 MGD).
- f. Improve and expand the Graham Hill Water Treatment Plant to handle increased flow (to 14 MGD). GHWTP would require improvements to produce more winter flow consistently, especially because winter water is more challenging to treat.
- g. Construct six new 350-GPM aquifer storage and recovery wells to store some of the additional captured water in Scotts Valley and later withdraw it. Wells receive 2.5 mgd for 180 days per year.
- h. Construct six new 350-GPM aquifer storage and recovery wells to store some of the additional captured water in SqCWD Creek and later withdraw it. Wells receive 2.5 mgd for 180 days per year.
- i. Include iron and manganese treatment in all twelve ASR wells for parity with existing groundwater treatment needs. Necessity of treatment at these new wells will be verified during project development.
- j. Acquire land on which to locate the ASR well with adjacent treatment system – twelve separate well sites, 65'x15' footprint each.

Table 2.2 ASR Using SLR Winter Flows	
Estimates	ASR Using SLR winter flows
Annual O&M costs (\$M/yr)	\$3.7 M
Total Annualized Cost (\$M/Yr)	\$15 M
PV Costs (30 years) (\$M) ¹	\$341 M
Energy Use (MWH/MG) ²	5.9
NOTES:	
1. Discount rate = 2.5%; bond interest rate = 5.5%; interest on reserve = 3%, bond issuance cost = 3%.	
2. Existing SCWD water production requires 1.6 MWH/MG.	