

2006 South Central Texas Regional Water Plan Water Management Strategy Summary Sheet

	<p>Name: <i>Brackish Groundwater Desalination – Gulf Coast Aquifer</i></p> <p>Description: Facilities include all facilities for LGWSP – In-basin Use with 91.5-mile 84-inch transmission pipeline from the off-channel storage to a terminal storage site in southern Bexar County (TS-6). Additional facilities include a brackish well field with production capacity of 11,291 acft/yr (8 wells at 1,000 gpm, including 1 back-up well), brackish groundwater desalination plant with finished water capacity of 4,516 acft/yr, and 16-mile 12-inch desalination concentrate pipeline discharging to Hynes Bay. Groundwater use for strategy is variable with average desalted brackish water contribution of 4,814 acft/yr. Strategy has been sized for delivery on a uniform basis. It is assumed that the LGWSP is not an interbasin transfer in this analysis.</p> <p>Decade Needed: 2010 – 2020</p>												
	<p>Cost, Quantity of Water, and Land Impacted</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Unit Cost of Water:</td> <td style="width: 16.5%; text-align: center;">\$1,012</td> <td style="width: 16.5%; text-align: center;">\$/acft/yr</td> <td style="width: 33.5%;">Treated Water Delivered</td> </tr> <tr> <td>Quantity of Water:</td> <td style="text-align: center;">114,647</td> <td style="text-align: center;">acft/yr</td> <td>Reliability = Firm</td> </tr> <tr> <td>Land Impacted:</td> <td style="text-align: center;">4,717</td> <td style="text-align: center;">acres</td> <td></td> </tr> </table>	Unit Cost of Water:	\$1,012	\$/acft/yr	Treated Water Delivered	Quantity of Water:	114,647	acft/yr	Reliability = Firm	Land Impacted:	4,717	acres	
Unit Cost of Water:	\$1,012	\$/acft/yr	Treated Water Delivered										
Quantity of Water:	114,647	acft/yr	Reliability = Firm										
Land Impacted:	4,717	acres											
	<p>Additional Considerations per Regional Water Planning Guidelines</p> <p>Environmental Factors: Wintering population of endangered Whooping Cranes at the Aransas National Wildlife Refuge located adjacent to lower San Antonio Bay. Pipeline could traverse Attwater Prairie Chicken habitat. Surface water diversions from an Ecologically Significant River & Stream Segment per TPWD. Desalination concentrate with total dissolved solids of 6,000 mg/l discharged to Hynes Bay may impact ambient salinity of Bay that varies in the range of 3,000 to 26,000 mg/l.</p> <p>Impacts on Water Resources: Some reductions in freshwater inflows to the Guadalupe Estuary associated with greater utilization of existing water rights and new appropriation of streamflow. Modest long-term reductions in aquifer levels with more significant transient reductions during severe drought.</p> <p>Impacts on Agricultural & Natural Resources: Minimal, if any.</p> <p>Other Relevant Factors per SCTRWP: Encourages beneficial use of available rights. Protects instream flows and recreational opportunities through lower basin diversion. Conformance with groundwater conservation district rules. Interactions and cumulative effects of Region L and Region N water management strategies including potential exports of groundwater from Refugio County.</p> <p>Comparison of Strategies to Meet Needs: No conflicts with other recommended water management strategies. Unit cost of delivered water decreased with additional yield from desalted groundwater. Unit cost of brackish groundwater component is \$796/acft/yr. Decrease in overall unit cost would be greater if additional groundwater did not require desalination.</p> <p>Interbasin Transfer Issues: TWDB and/or Legislative clarification of the interbasin transfer status of this project is necessary.</p> <p>Third-Party Impacts of Voluntary Transfers: None Anticipated.</p> <p>Regional Efficiency: Shared pipeline alignment with other recommended water management strategies. Potential for shared water treatment and balancing storage facilities in Bexar County.</p> <p>Water Quality Considerations: Average total dissolved solids (TDS) for brackish groundwater well field assumed to be 1,200 mg/l. After desalination of half the brackish groundwater, water quality of the blended groundwater from brackish well field is similar to quality of other Gulf Coast aquifer groundwater (TDS of 800 mg/l). Bromides in groundwater mixed with surface water may increase treatment costs in order to meet disinfection by-product requirements in the treated-chlorinated finished water.</p>												