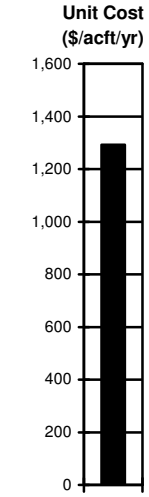
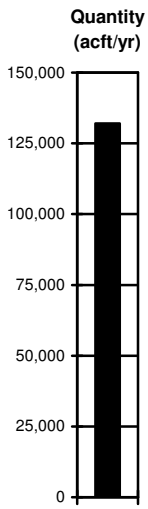
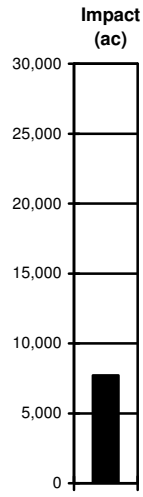
2006 South Central Texas Regional Water Plan
Water Management Strategy Summary Sheet







Name: **LCRA-SAWS Water Project (LSWP)**

Description: This management strategy is based on a Definitive Agreement between SAWS and LCRA, signed in 2002, for the purchase of up to 150,000 acft/yr of surface water from the Lower Colorado River Basin. Because there may be delivery of up to 18,000 acft/yr of water to Hays County from the Colorado River near Bastrop, the amount of water delivered from Bay City to Bexar County is assumed to be 132,000 acft/yr. Facilities include 6 intakes, pump stations, and off-channel reservoirs in Matagorda County; a primary intake and pump station; an 84-inch 178-mile transmission pipeline to the Twin Oaks WTP with 4 booster stations; a water treatment plant (expansion or new) at the Twin Oaks property in Southern Bexar County; and distribution system improvements for integration of the additional supply.

***Decade Needed*:** 2010 – 2020

Cost, Quantity of Water, and Land Impacted

Unit Cost of Water:	**$1,293**	**$/acft/yr**	**Treated Water Delivered**
Quantity of Water:	**132,000**	**acft/yr**	**Reliability = Firm**
Land Impacted:	**7,717**	**acres**	

Additional Considerations per Regional Water Planning Guidelines

Environmental Factors:
Potential concerns with endangered species, habitat, cultural resources, and TPWD Ecologically Unique Stream Segments. Endangered species include the Attwater's Prairie Chicken, Eskimo Curlew, Jaguarundi, & Ocelot. Pipeline could come in close proximity to a Bald Eagle rookery in Jackson County.

Impacts on Water Resources:
Reductions in freshwater inflows to Matagorda Bay associated with greater utilization of existing water rights. Potential effects of these reductions are being studied by LCRA & SAWS.

Impacts on Agricultural & Natural Resources:
There are potential increases in reliable water supply for irrigation and improved irrigation efficiency in Region K. Off-channel reservoirs will inundate approximately 6,750 acres in Matagorda County.

Other Relevant Factors per SCTRWPG:
Encourages beneficial use of available rights. Protects instream flows and recreational opportunities through lower basin diversion. Equitable cost sharing for development of water supplies in Region K and Region L.

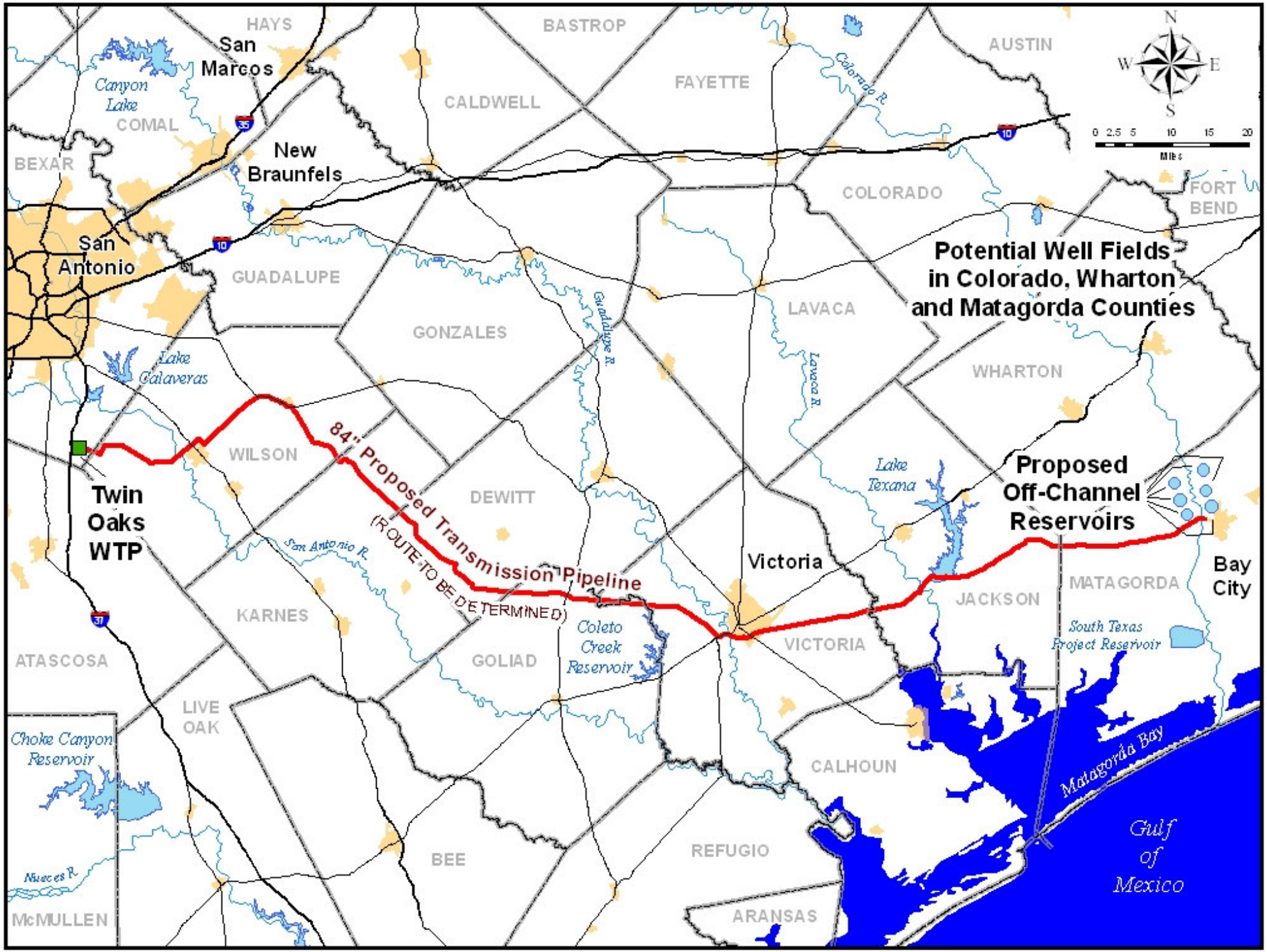
Comparison of Strategies to Meet Needs:
Moderate to high unit cost. No conflicts with other recommended water management strategies.

Interbasin Transfer Issues:
An amendment to the existing LCRA permits for the interbasin transfer of this water would be required. Environmental flow constraints limiting diversions under the existing water rights may be added during the amendment process.

Third-Party Impacts of Voluntary Transfers:
Potential benefits to Lower Colorado River Basin irrigation interests in Region K.

Regional Efficiency:
Shared pipeline alignment with other recommended water management strategies. Potential for shared water treatment and balancing storage facilities in Bexar County.

Water Quality Considerations:
None of significant concern.


HAYS
San Marcos
BASTROP
AUSTIN
Canyon Lake
COMAL
CALDWELL
FAYETTE
Colorado R.
New Braunfels
BEXAR
COLORADO
FORT BEND
San Antonio
Potential Well Fields in Colorado, Wharton and Matagorda Counties
GUADALUPE
GONZALES
LAVACA
Guadalupe R.
Lavaca R.
Lake Calaveras
WHARTON
84" Proposed Transmission Pipeline
(ROUTE TO BE DETERMINED)
WILSON
Lake Texana
Proposed Off-Channel Reservoirs
Twin Oaks WTP
DEWITT
San Antonio R.
Victoria
Bay City
MATAGORDA
JACKSON
KARNES
Coleto Creek Reservoir
South Texas Project Reservoir
VICTORIA
ATASCOSA
GOLIAD
LIVE OAK
Choke Canyon Reservoir
CALHOUN
Matagorda Bay
Gulf of Mexico
BEE
REFUGIO
Nueces R.
McMULLEN
ARANSAS
N
W
E
S
0 2.5 5 10 15 20
Miles

3.6 LCRA-SAWS Water Project (LSWP)

Cost Estimate Summary for LCRA-SAWS Water Project (LSWP)

Item	Region L Estimated Costs (2nd Quarter 2002 Prices)	Project Viability Assessment (PVA)[8] Estimated Costs (2004 Prices)
Capital Costs		
Colorado River Diversion Works	$96,210,000	$89,324,000
6 Off-Channel Reservoirs (Conservation Pool 22,500 acft, 1,125 acres each)	$178,250,000	$41,771,000*
Primary Intake and Transmission Pump Stations (124 MGD)[1]	$63,338,000	$57,430,000
Transmission Pipeline (84 in dia., 178 miles)	$380,219,000	$415,983,000[2]
Well Field (43 Wells, 2000 GPM)	$19,408,000	$20,081,000
Water Treatment Plant (124 MGD)[1]	$97,300,000	$148,680,000
Distribution	$126,956,000	$138,797,000[3]
Agriculture Conservation	$70,632,000	$70,632,000
Total Capital Cost	**$1,032,313,000**	**$982,698,000**
Engineering, Legal Costs and Contingencies (E, A, L, F, B, & C[4])	$342,298,000	$239,876,000
Environmental & Archaeology Studies and Mitigation	$11,107,000	$8,850,000
Study Period Costs[5]	$41,600,000	$41,600,000
Land Acquisition and Surveying (7,717 acres)	$15,305,000	$10,710,000
Interest During Construction (4 years)	$183,312,000	$138,132,000[6]
Total Project Cost	**$1,620,871,000**	**$1,421,866,000**
Annual Costs		
Debt Service (6 percent, 30 years)	$96,423,000	$103,298,565
Reservoir Debt Service (6 percent, 40 years)	$19,515,000	Included Above
Operation and Maintenance		
Intake, Pipeline, Pump Station, Wells	$9,113,000	$5,501,000
Dam and Reservoir	$2,674,000	$626,565*
Water Treatment Plant	$10,068,000	$17,842,000
Pumping Energy Costs (293,954,943 kW-hr)[7]	$17,637,000	$20,577,000
Purchase of Water (132,000 acft/yr @ $115.50/acft)	$15,246,000	$15,246,000[3]
Total Annual Cost	**$170,676,000**	**$163,091,000**
Available Project Yield (acft/yr)	132,000	132,000
Annual Cost of Water ($ per acft)	$1,293	$1,236
Annual Cost of Water ($ per 1,000 gallons)	$3.97	$3.79

*Cost appear to be extremely low for 6 off-channel reservoirs.
[1]Regional Planning costs procedure plans for a 5% downtime; the PVA estimates do not account for downtime.
[2]PVA pipeline cost estimate is for an 82-inch transmission pipeline.
[3]Cost estimate not provided in PVA – Region L cost used with CCI adjustments, where appropriate.
[4]E, A, L, F, B, & C = Engineering, Administration, Legal, Financing, Bonding, & Contingencies
[5]LSWP Study Period Costs in the PVA
[6]Value interpolated from cost estimates for 100,000 acft/yr and 150,000 acft/yr delivery from Matagorda County to Twin Oaks WTP
[7]$0.06/kW-hr for Regional Planning & $0.07/kW-hr for the PVA
[8]CH2MHILL, "LSWP Project Viability Assessment", November 2004.