

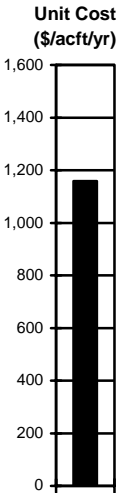
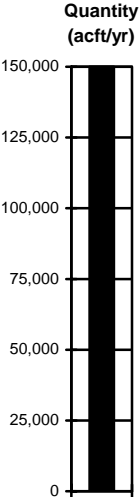
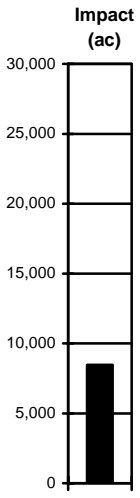
## 2006 South Central Texas Regional Water Plan Water Management Strategy Summary Sheet

	<p><b>Name:</b> Lower Guadalupe Water Supply Project – In-basin Use with Shared Facilities (LSWP)</p> <p><b>Description:</b> This water management strategy examines the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the Lower Guadalupe Water Supply Project (LGWSP) and the LCRA-SAWS Water Project (LSWP). Assuming integrated concurrent or phased development of these two projects is feasible, shared facilities could include a 114-inch 70-mile segment of the transmission pipeline from Goliad County to a terminal storage site in southeastern Bexar County, 2 transmission pump stations, and a new or expanded water treatment plant at the Twin Oaks property in south Bexar County.</p> <p><b>Decade Needed:</b> 2010 – 2020</p>												
	<p><b>Cost, Quantity of Water, and Land Impacted</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Unit Cost of Water:</b></td> <td style="width: 20%; text-align: right;"><b>\$911</b></td> <td style="width: 20%; text-align: right;"><b>\$/acft/yr</b></td> <td style="width: 30%;"><b>Treated Water Delivered</b></td> </tr> <tr> <td><b>Quantity of Water:</b></td> <td style="text-align: right;"><b>104,471</b></td> <td style="text-align: right;"><b>acft/yr</b></td> <td><b>Reliability = Firm</b></td> </tr> <tr> <td><b>Land Impacted:</b></td> <td style="text-align: right;"><b>4,123</b></td> <td style="text-align: right;"><b>acres</b></td> <td></td> </tr> </table>	<b>Unit Cost of Water:</b>	<b>\$911</b>	<b>\$/acft/yr</b>	<b>Treated Water Delivered</b>	<b>Quantity of Water:</b>	<b>104,471</b>	<b>acft/yr</b>	<b>Reliability = Firm</b>	<b>Land Impacted:</b>	<b>4,123</b>	<b>acres</b>	
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	<p style="text-align: center;"><b>Additional Considerations per Regional Water Planning Guidelines</b></p> <p><b>Environmental Factors:</b> 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 &amp; Stream Segment per TPWD.</p> <p><b>Impacts on Water Resources:</b> 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><b>Impacts on Agricultural &amp; Natural Resources:</b> Minimal, if any.</p> <p><b>Other Relevant Factors per SCTRWPG:</b> 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 and surrounding counties. Simultaneous implementation of LGWSP and LSWP could have significant impact on water rates and bonded indebtedness. Projects currently planned for implementation at different times.</p> <p><b>Comparison of Strategies to Meet Needs:</b> Moderate unit cost. No conflicts with other recommended water management strategies.</p> <p><b>Interbasin Transfer Issues:</b> TWDB and/or Legislative clarification of the interbasin transfer status of this project is necessary.</p> <p><b>Third-Party Impacts of Voluntary Transfers:</b> None Anticipated.</p> <p><b>Regional Efficiency:</b> Based on pro-ration of costs by quantity of water delivered, shared transmission and treatment facilities provides economy of scale resulting in potential reductions in project cost of \$122,123,000 and in unit cost of \$122/acft/yr (11.8%) for the LGWSP.</p> <p><b>Water Quality Considerations:</b> 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>												

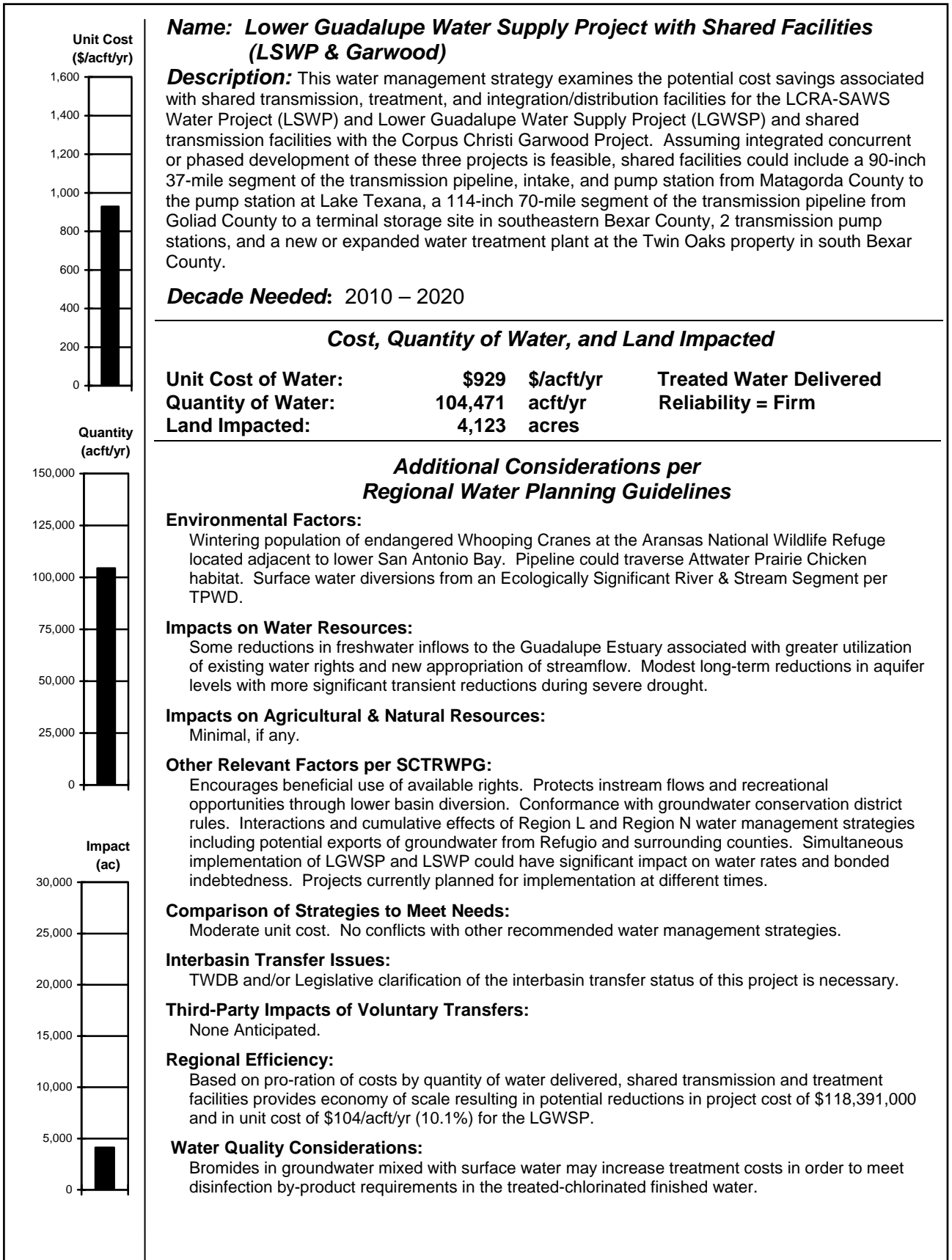
## 2006 South Central Texas Regional Water Plan Water Management Strategy Summary Sheet

<p style="text-align: center;">Unit Cost (\$/acft/yr)</p>	<p><b>Name:</b> LCRA-SAWS Water Project (LSWP) with Shared Facilities (LGWSP)</p> <p><b>Description:</b> This water management strategy examines the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the LCRA-SAWS Water Project (LSWP) and the Lower Guadalupe Water Supply Project (LGWSP). Assuming integrated concurrent or phased development of these two projects is feasible, shared facilities could include a 114-inch 70-mile segment of the transmission pipeline from Goliad County to a terminal storage site in southeastern Bexar County, 2 transmission pump stations, and a new or expanded water treatment plant at the Twin Oaks property in south Bexar County.</p> <p><b>Decade Needed:</b> 2010 – 2020</p>									
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<p><b>Additional Considerations per Regional Water Planning Guidelines</b></p>										
<p><b>Environmental Factors:</b> 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, &amp; Ocelot. Pipeline could come in close proximity to a Bald Eagle rookery in Jackson County.</p> <p><b>Impacts on Water Resources:</b> 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 &amp; SAWS.</p> <p><b>Impacts on Agricultural &amp; Natural Resources:</b> 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.</p> <p><b>Other Relevant Factors per SCTRWP:</b> 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. Simultaneous implementation of LSWP and LGWSP could have significant impact on water rates and bonded indebtedness. Projects currently planned for implementation at different times.</p> <p><b>Comparison of Strategies to Meet Needs:</b> Moderate to high unit cost. No conflicts with other recommended water management strategies.</p> <p><b>Interbasin Transfer Issues:</b> 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.</p> <p><b>Third-Party Impacts of Voluntary Transfers:</b> Potential benefits to Lower Colorado River Basin irrigation interests in Region K.</p> <p><b>Regional Efficiency:</b> Based on pro-ration of costs by quantity of water delivered, shared transmission and treatment facilities provides economy of scale resulting in potential reductions in project cost of \$90,472,000 and in unit cost of \$59/acft/yr (5.0%) for the LSWP.</p> <p><b>Water Quality Considerations:</b> None of significant concern.</p>										
<p style="text-align: center;">Quantity (acft/yr)</p>										
<p style="text-align: center;">Impact (ac)</p>										

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

	<p><b>Name:</b> LCRA-SAWS Water Project (LSWP) with Shared Facilities (Garwood)</p> <p><b>Description:</b> This water management strategy examines the potential cost savings associated with shared transmission facilities for the LCRA-SAWS Water Project (LSWP) with the City of Corpus Christi's Garwood Project. Assuming integrated concurrent or phased development of these two projects is feasible, shared facilities could include a 90-inch 37-mile segment of the transmission pipeline from Matagorda County to the pump station at Lake Texana, an intake, and pump station.</p> <p><b>Decade Needed:</b> 2010 – 2020</p>									
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## 2006 South Central Texas Regional Water Plan Water Management Strategy Summary Sheet



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

<p style="text-align: center;"><b>Unit Cost (\$/acft/yr)</b></p>	<p><b>Name:</b> LCRA-SAWS Water Project (LSWP) with Shared Facilities (LGWSP &amp; Garwood)</p> <p><b>Description:</b> This water management strategy examines the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the LCRA-SAWS Water Project (LSWP) and Lower Guadalupe Water Supply Project (LGWSP) and shared transmission facilities with the Corpus Christi Garwood Project. Assuming integrated concurrent or phased development of these three projects is feasible, shared facilities could include a 90-inch 37-mile segment of the transmission pipeline, intake, and pump station from Matagorda County to the pump station at Lake Texana, a 114-inch 70-mile segment of the transmission pipeline from Goliad County to a terminal storage site in southeastern Bexar County, 2 transmission pump stations, and a new or expanded water treatment plant at the Twin Oaks property in south Bexar County.</p> <p><b>Decade Needed:</b> 2010 – 2020</p>									
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## **4C.10 LCRA/SAWS Water Project with Shared Transmission Facilities**

### **4C.10.1 Description of Water Management Strategy**

This water management strategy examines the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the LCRA-SAWS Water Project (LSWP) with two other stand alone water management strategies – the Lower Guadalupe Water Supply Project (LGWSP) of the South Central Texas Regional Water Plan and the City of Corpus Christi’s Garwood Project in the Region N Water Plan. The combining of facilities was analyzed three ways:

1. Shared facilities between LSWP and LGWSP Project (A);
2. Shared facilities between LSWP and City of Corpus Christi’s Garwood Project (B); and
3. Shared facilities among LSWP, LGWSP, and City of Corpus Christi’s Garwood Project (C).

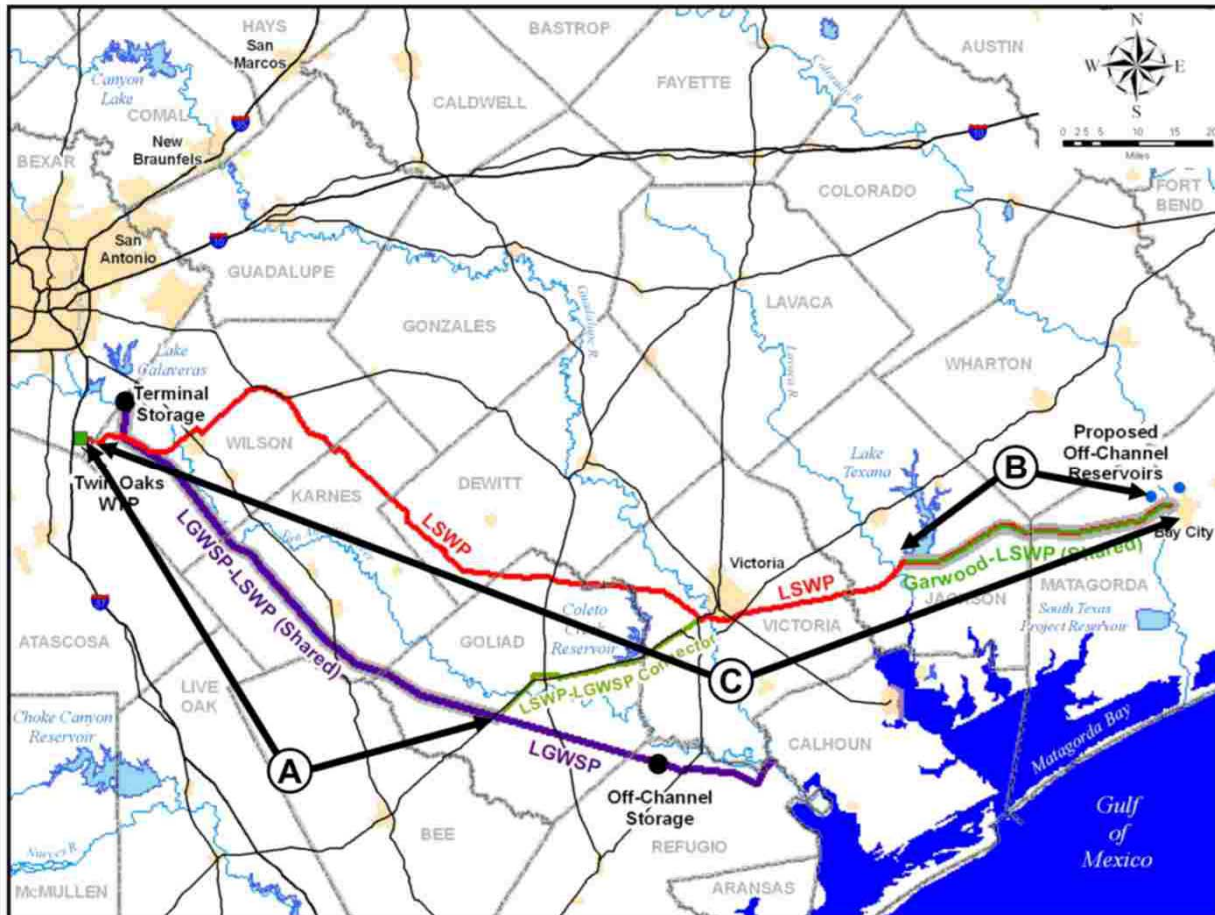
The potential shared facilities are located in Figure 4C.10-1 in the LSWP. For specific information regarding the individual stand alone projects, see Section 4C.9 for the LCRA-SAWS Water Project (LSWP) and Section 4C.7 for the Lower Guadalupe Water Supply Project (LGWSP) of the South Central Texas Regional Water Plan and Section 4C.14 of the Region N Water Plan for the Corpus Christi Garwood Water Project. Facilities for the LSWP are based on the 2004 Project Viability Assessment.<sup>1</sup>

#### **4C.10.1.1 Shared Facilities Between LCRA-SAWS Water Project (LSWP) & Lower Guadalupe Water Supply Project (LGWSP) (A)**

This water management strategy presents estimates of the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the LCRA-SAWS Water Project (LSWP) and the Lower Guadalupe Water Supply Project (LGWSP). The shared facilities of the LSWP and LGWSP include a 114-inch 70-mile segment of the transmission pipeline from Goliad County to a terminal storage site in southeastern Bexar County, 2 transmission pump stations, a new or expanded water treatment plant at the Twin Oaks water treatment plant site in south Bexar County, and integration/distribution [Figure 4C.10-1 (A)]. The sharing of facilities between these two strategies assumes integrated concurrent or phased development of these two projects.

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<sup>1</sup> CH2MHill, “Project Viability Assessment,” Lower Colorado River Authority, November 2004



**Figure 4C.10-1. Potential Shared Transmission Facilities**

**4C.10.1.2 Shared Facilities Between LCRA-SAWS Water Project (LSWP) & City of Corpus Christi’s Garwood Project (B)**

This water management strategy presents estimates of the potential cost savings associated with shared transmission facilities for the LCRA-SAWS Water Project (LSWP) with the City of Corpus Christi’s Garwood Project. The shared facilities of the LSWP and the City of Corpus Christi’s Garwood Project include a 90-inch 37-mile segment of the transmission pipeline from Matagorda County to the pump station at Lake Texana, an intake, and pump station [Figure 4C.10-1 (B)]. The sharing of facilities between these two strategies assumes integrated concurrent or phased development of these two projects.

#### **4C.10.1.3 Shared Facilities Among LCRA-SAWS Water Project (LSWP), Lower Guadalupe Water Supply Project (LGWSP), & City of Corpus Christi's Garwood Project (C)**

This water management strategy examines the potential cost savings associated with shared transmission, treatment, and integration/distribution facilities for the LCRA-SAWS Water Project (LSWP) and Lower Guadalupe Water Supply Project (LGWSP) and shared transmission facilities with the Corpus Christi Garwood Project [Figure 4C.10-1 (C)]. The shared facilities of the LSWP, LGWSP, and City of Corpus Christi's Garwood Project could include a 90-inch 37-mile segment of the transmission pipeline, intake, and pump station from Matagorda County to the pump station at Lake Texana, a 114-inch 70-mile segment of the transmission pipeline from Goliad County to a terminal storage site in southeastern Bexar County, 2 transmission pump stations, and a new or expanded water treatment plant at the Twin Oaks property in south Bexar County. The sharing of facilities between these three strategies assumes integrated concurrent or phased development of these three projects.

#### **4C.10.2 Environmental Issues**

The environmental impact of combining facilities of these projects would likely be less compared the overall environmental impact of the stand alone strategies (report sections 4C.7 and 4C.14 referenced above for the environmental issues associated with the stand alone strategies).

#### **4C.10.3 Engineering and Costing**

##### **4C.10.3.1 Shared Facilities Between LCRA-SAWS Water Project (LSWP) & Lower Guadalupe Water Supply Project (LGWSP) (A)**

Tables 4C.10-1 and 4C.10-2 contain cost estimates for the LSWP and LGWSP, respectively, if shared facilities between the two projects are implemented. The potential cost savings by sharing facilities of the LSWP and LGWSP could total \$212,595,000 in project cost: \$122,123,000 in savings to the LGWSP and \$90,472,000 in savings to the LSWP (Table 4C.10-6). The resulting unit cost savings to the LGWSP and LSWP are \$122/acft and \$59/acft, respectively (Table 4C.10-6).

#### **4C.10.3.2 Shared Facilities Between LCRA-SAWS Water Project (LSWP) & City of Corpus Christi's Garwood Project (B)**

Table 4C.10-3 contains cost estimates for the LSWP if shared facilities between the LSWP and the City of Corpus Christi's Garwood Project are implemented.

The potential cost savings by sharing facilities of the LSWP and LGWSP could total \$100,768,000 in project cost to the LSWP (Table 4C.10-6). The resulting unit cost savings to the LSWP are \$28/acft (Table 4C.10-6).

**Shared Facilities Among LCRA-SAWS Water Project (LSWP), Lower Guadalupe Water Supply Project (LGWSP), & City of Corpus Christi's Garwood Project (C):** Tables 4C.10-4 and 4C.10-5 contain cost estimates for the LGWSP and LSWP, respectively, if shared facilities among the three projects are implemented. The potential cost savings by sharing facilities of the LSWP and LGWSP could total \$187,849,000 in project cost: \$118,391,000 in savings to the LGWSP and \$69,458,000 in savings to the LSWP (Table 4C.10-6). The resulting unit cost savings to the LGWSP and LSWP are \$104/acft and \$36/acft, respectively (Table 4C.10-6).

#### **4C.10.4 Implementation Issues**

Implementation of sharing facilities between any of these three strategies is contingent upon the concurrent integration or phased development of projects involved.

**Table 4C.10-1.  
Cost Estimate Summary for  
Lower Guadalupe Water Supply Project with  
Inter-Regional Cooperation – LSWP & LGWSP  
(Second Quarter 2002 Prices)**

<i>Item</i>	<b>Region L Estimated Costs (2nd Quarter 2002 Prices)</b>
<b>Capital Costs</b>	
2 Off-Channel Reservoirs (25,000 acft, 1,487 acres each) and Terminal Storage	\$82,534,000
Intake and Pump Station (98 MGD)	\$37,173,000
Transmission Pipeline (78 in dia., 40 miles; shared 114 in dia., 79 miles)	\$235,855,000
Shared Transmission Pump Station(s)	\$12,311,000
Well Fields	\$40,397,000
Shared Water Treatment Plant (98 MGD)	\$68,402,000
Shared Distribution	\$85,307,000
<b>Total Capital Cost</b>	<b>\$561,979,000</b>
Engineering, Legal Costs and Contingencies	\$184,900,000
Environmental & Archaeology Studies and Mitigation	\$5,976,000
Study Period Costs	\$8,771,000
Land Acquisition and Surveying (4,123 acres)	\$42,438,000
Interest During Construction (4 years)	<u>\$128,748,000</u>
<b>Total Project Cost</b>	<b>\$932,812,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 30 years)	\$57,807,000
Reservoir Debt Service (6 percent, 40 years)	\$9,112,000
Operation and Maintenance	
Intake, Pipeline, Pump Station, Wells	\$5,080,000
Dam and Reservoir	\$1,238,000
Water Treatment Plant	\$7,514,000
Pumping Energy Costs (169,100,000 kW-hr @ 0.06 \$/kW-hr)	\$10,146,000
Purchase of Water (70,000 acft/yr @ 60.72 \$/acft)	<u>\$4,250,000</u>
<b>Total Annual Cost</b>	<b>\$95,147,000</b>
<b>Available Project Yield (acft/yr)</b>	104,471
<b>Annual Cost of Water (\$ per acft)</b>	\$911
<b>Annual Cost of Water (\$ per 1,000 gallons)</b>	\$2.79

**Table 4C.10-2.  
Cost Estimate Summary for  
LCRA-SAWS Water Project with  
Inter-Regional Cooperation – LSWP & LGWSP  
(Second Quarter 2002 Prices)**

<i>Item</i>	<b>Region L Estimated Costs (2nd Quarter 2002 Prices)</b>
Colorado River Diversion Works	\$96,210,000
2 Off-Channel Reservoirs (75,000 acft, 3,750 acres each) and Terminal Storage	\$130,917,000
Primary Intake and Shared Transmission Pump Stations (141 MGD)	\$59,858,000
Transmission Pipeline (90 in dia., 113 miles; shared 114 in, 79 miles)	\$407,481,000
Well Field (43 Wells, 2000 GPM)	\$19,408,000
Shared Water Treatment Plant (141 MGD)	\$98,212,000
Shared Distribution	\$122,484,000
Agriculture Conservation	<u>\$70,632,000</u>
<b>Total Capital Cost</b>	<b>\$1,005,202,000</b>
Engineering, Legal Costs and Contingencies	\$331,447,000
Environmental & Archaeology Studies and Mitigation	\$12,742,000
Study Period Costs <sup>1</sup>	\$27,872,000
Land Acquisition and Surveying (7,873 acres)	\$14,117,000
Interest During Construction (4 years)	<u>\$222,621,000</u>
<b>Total Project Cost</b>	<b>\$1,614,001,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 30 years)	\$101,654,000
Reservoir Debt Service (6 percent, 40 years)	\$14,273,000
Operation and Maintenance	
Intake, Pipeline, Pump Station, Wells	\$8,643,000
Dam and Reservoir	\$1,964,000
Water Treatment Plant	\$10,789,000
Pumping Energy Costs (242,567,000 kW-hr @ 0.06 \$/kW-hr)	\$14,554,000
Purchase of Water (150,000 acft/yr @ 115.5 \$/acft)	<u>\$17,325,000</u>
<b>Total Annual Cost</b>	<b>\$169,202,000</b>
<b>Available Project Yield (acft/yr)</b>	150,000
<b>Annual Cost of Water (\$ per acft)</b>	\$1,128
<b>Annual Cost of Water (\$ per 1,000 gallons)</b>	\$3.46
<sup>1</sup> LSWP Study Period Costs in the PVA	

**Table 4C.10-3.  
Cost Estimate Summary for  
LCRA-SAWS Water Project with  
Inter-Regional Cooperation – LSWP & Garwood  
(Second Quarter 2002 Prices)**

<i>Item</i>	<b>Region L Estimated Costs (2nd Quarter 2002 Prices)</b>
<b>Capital Costs</b>	
Colorado River Diversion Works	\$96,210,000
2 Off-Channel Reservoirs (75,000 acft, 3,750 acres each) and Terminal Storage	\$130,917,000
Shared Primary Intake and Transmission Pump Stations (141 MGD)	\$51,519,000
Transmission Pipeline (Shared 96 in dia., 37 miles; 90 in, 141 miles)	\$395,066,000
Well Field (43 Wells, 2000 GPM)	\$19,408,000
Water Treatment Plant (141 MGD)	\$110,513,000
Distribution	\$126,956,000
Agriculture Conservation	<u>\$70,632,000</u>
<b>Total Capital Cost</b>	<b>\$1,001,221,000</b>
Engineering, Legal Costs and Contingencies	\$330,674,000
Environmental & Archaeology Studies and Mitigation	\$10,859,000
Study Period Costs <sup>1</sup>	\$27,872,000
Land Acquisition and Surveying (8,468 acres)	\$15,722,000
Interest During Construction (4 years)	<u>\$217,357,000</u>
<b>Total Project Cost</b>	<b>\$1,603,705,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 30 years)	\$100,444,000
Reservoir Debt Service (6 percent, 40 years)	\$14,695,000
Operation and Maintenance	
Intake, Pipeline, Pump Station	\$8,888,000
Dam and Reservoir	\$1,964,000
Water Treatment Plant	\$11,273,000
Pumping Energy Costs (321,667,000 kW-hr @ 0.06 \$/kW-hr)	\$19,300,000
Purchase of Water (150,000 acft/yr @ 115.5 \$/acft)	<u>\$17,325,000</u>
<b>Total Annual Cost</b>	<b>\$173,889,000</b>
<b>Available Project Yield (acft/yr)</b>	150,000
<b>Annual Cost of Water (\$ per acft)</b>	\$1,159
<b>Annual Cost of Water (\$ per 1,000 gallons)</b>	\$3.56
<sup>1</sup> LSWP Study Period Costs in the PVA	

**Table 4C.10-4.  
Cost Estimate Summary for  
Lower Guadalupe Water Supply Project with  
Inter-Regional Cooperation – LSWP, LGWSP, & Garwood  
(Second Quarter 2002 Prices)**

<i>Item</i>	<b>Region L Estimated Costs (2nd Quarter 2002 Prices)</b>
<b>Capital Costs</b>	
2 Off-Channel Reservoirs (25,000 acft, 1,487 acres each) and Terminal Storage	\$82,534,000
Intake and Pump Station (98 MGD)	\$42,939,000
Transmission Pipeline (78 in dia 37 miles; shared 114 in dia 70 miles)	\$235,608,000
Transmission Pump Stations	\$1,596,000
Well Fields	\$40,397,000
Shared Water Treatment Plant (98 MGD)	\$68,402,000
Distribution	\$90,821,000
<b>Total Capital Cost</b>	<b>\$562,297,000</b>
Engineering, Legal Costs and Contingencies	\$187,690,000
Environmental & Archaeology Studies and Mitigation	\$5,575,000
Study Period Costs	\$8,771,000
Land Acquisition and Surveying (4,123 acres)	\$41,898,000
Interest During Construction (4 years)	<u>\$130,313,000</u>
<b>Total Project Cost</b>	<b>\$936,544,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 30 years)	\$58,632,000
Reservoir Debt Service (6 percent, 40 years)	\$9,112,000
Operation and Maintenance	
Intake, Pipeline, Pump Station	\$5,400,000
Dam and Reservoir	\$1,238,000
Water Treatment Plant	\$7,514,000
Pumping Energy Costs (181,800,000 kW-hr @ 0.06 \$/kW-hr)	\$10,908,000
Purchase of Water (70,000 acft/yr @ 60.72 \$/acft)	<u>\$4,250,000</u>
<b>Total Annual Cost</b>	<b>\$97,054,000</b>
Available Project Yield (acft/yr)	104,471
Annual Cost of Water (\$ per acft)	\$929
Annual Cost of Water (\$ per 1,000 gallons)	\$2.85

**Table 4C.10-5.  
Cost Estimate Summary for  
LCRA-SAWS Water Project with  
Inter-Regional Cooperation – LSWP, LGWSP, & Garwood  
(Second Quarter 2002 Prices)**

<i>Item</i>	<i>Region L Estimated Costs (2nd Quarter 2002 Prices)</i>
<b>Capital Costs</b>	
Colorado River Diversion Works	\$96,210,000
2 Off-Channel Reservoirs (75,000 acft, 3,750 acres each) and Terminal Storage	\$130,917,000
Primary Intake and Shared Transmission Pump Stations (124 MGD)	\$63,629,000
Transmission Pipeline (Shared 96 in dia., 37 miles 90 in dia., 76 miles; shared 114 in, 79 miles)	\$410,318,000
Well Field (43 Wells, 2000 GPM)	\$19,408,000
Shared Water Treatment Plant (141 MGD)	\$98,212,000
Shared Distribution	\$130,402,000
Agriculture Conservation	<u>\$70,632,000</u>
<b>Total Capital Cost</b>	<b>\$1,019,728,000</b>
Engineering, Legal Costs and Contingencies	\$336,389,000
Environmental & Archaeology Studies and Mitigation	\$12,166,000
Study Period Costs <sup>1</sup>	\$27,872,000
Land Acquisition and Surveying (7,873 acres)	\$13,340,000
Interest During Construction (4 years)	<u>\$225,520,000</u>
<b>Total Project Cost</b>	<b>\$1,635,015,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 30 years)	\$103,180,000
Reservoir Debt Service (6 percent, 40 years)	\$14,273,000
Operation and Maintenance	
Intake, Pipeline, Pump Station, Wells	\$7,551,000
Dam and Reservoir	\$1,964,000
Water Treatment Plant	\$10,789,000
Pumping Energy Costs (291,700,000 kW-hr @ 0.06 \$/kW-hr)	\$17,502,000
Purchase of Water (150,000 acft/yr @ 115.5 \$/acft)	<u>\$17,325,000</u>
<b>Total Annual Cost</b>	<b>\$172,584,000</b>
<b>Available Project Yield (acft/yr)</b>	150,000
<b>Annual Cost of Water (\$ per acft)</b>	\$1,151
<b>Annual Cost of Water (\$ per 1,000 gallons)</b>	\$3.53
<sup>1</sup> LSWP Study Period Costs in the PVA	

**Table 4C.10-6.**  
**Cost Estimate Comparison for Shared Facilities**  
**Among LCRA-SAWS Water Project (LSWP), Lower Guadalupe Water Supply Project**  
**(LGWSP), & City of Corpus Christi's Garwood Project**

Project	Information Source	Costs	
		Total (Dollars)	Unit (\$/acft) (Dollars)
LGWSP Stand Alone	Table 4C.7-3	1,054,935,000	1,033
LGWSP Shared with LSWP	Table 4C.10-1	<u>932,812,000</u>	<u>911</u>
<b>Savings to LGSWP</b>		122,123,000	122
LSWP Stand Alone	Table 4C.9-2	1,704,473,000	1,187
LSWP Shared with LGSWP	Table 4C.10-2	<u>1,614,001,000</u>	<u>1,128</u>
<b>Savings to LSWP</b>		90,472,000	59
LSWP Stand Alone	Table 4C.9-2	1,704,473,000	1,187
LSWP Shared with Corpus Christi Garwood	Table 4C.10-3	<u>1,603,705,000</u>	<u>1,159</u>
<b>Savings to LSWP</b>		100,768,000	28
LGWSP Stand Alone	Table 4C.7-3	1,054,935,000	1,033
LGWSP Shared with LSWP & Corpus Christi Garwood	Table 4C.10-4	<u>936,544,000</u>	<u>929</u>
<b>Savings to LGSWP</b>		118,391,000	104
LSWP Stand Alone	Table 4C.9-2	1,704,473,000	1,187
LSWP Shared with LGSWP & Corpus Christi Garwood	Table 4C.10-5	<u>1,635,015,000</u>	<u>1,151</u>
<b>Savings to LSWP</b>		69,458,000	36
LGWSP is Lower Guadalupe Water Supply Project.			
LSWP is Lower Colorado River Authority-San Antonio Water System Water Project.			