

Inter-Regional Work Group

Potential Water Management Strategies for Inter-Regional Cooperation

**Meeting of
November 9, 2001**

Participating Regions:

South Central Texas Region (L)

Rio Grande Region (M)

Coastal Bend Region (N)

Lavaca Region (P)

Lower Colorado Region (K)

Consultants:

HDR Engineering, Inc.

Moorhouse Associates

Open Forum

NRS Consulting Engineers

Turner, Collie & Braden

Gulf Coast Aquifer near Refugio

Source Location: Refugio (L), Goliad (L), and Bee (N) Counties

Potential Users: Corpus Christi (N), San Antonio (L), Local Municipal, Industrial, Steam-Electric, & Agricultural Interests (L & N)

Availability: 23,000 acft/yr (100 ft max. drawdown)
55,000 acft/yr (250 ft max. drawdown, Region N policy)

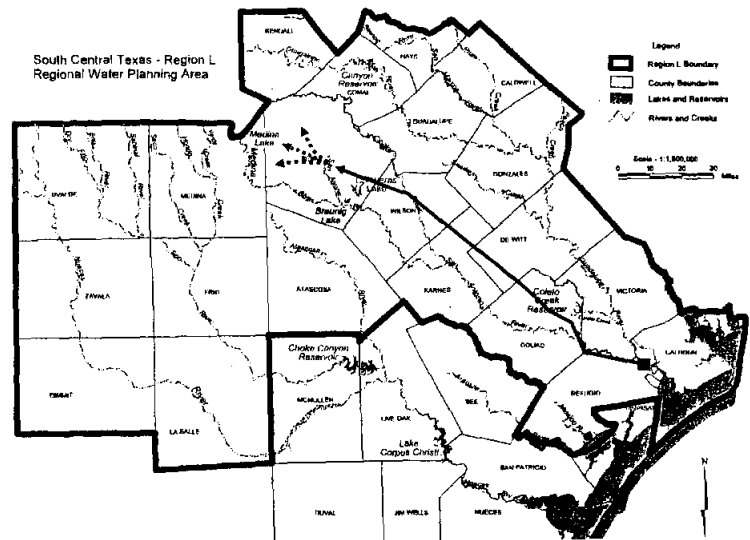
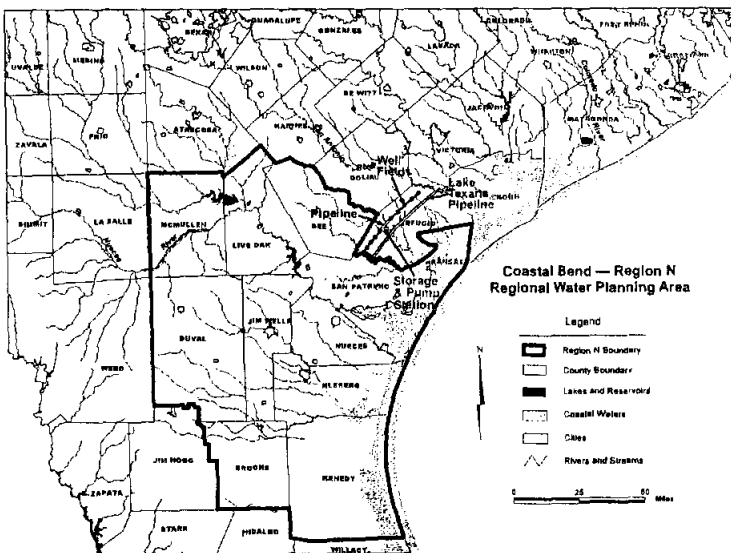
Planned Use: Corpus Christi (N) - Up to 28,000 acft/yr beyond 2030
Bexar County (L) - 14,200 acft/yr average & 41,400 acft/yr max. in 2010

Opportunities:

- 1) Substantially unutilized resource at present.
- 2) Maximize surface water supplies and minimize long-term groundwater pumpage through conjunctive use.
 - Proximity to Mary Rhodes Pipeline (which currently has surplus transmission capacity to Region N).
 - Proximity to planned off-channel and transmission storage facilities for Lower Guadalupe River Diversion strategy in Region L plan.
 - Proximity to local industrial interests.

Potential Concerns:

- 1) Water quality (chlorides) . . . suggests conjunctive use / blending.
- 2) Groundwater level declines & potential saltwater intrusion.
- 3) Local groundwater district rules and policies.



Lower Colorado River

Source Location: Matagorda County (K)

Potential Users: Corpus Christi (N), San Antonio (L), Agricultural Interests (K)

Availability: 35,000 acft/yr, Corpus Christi Garwood water right
Up to 330,000 acft/yr, SAWS / LCRA agreement

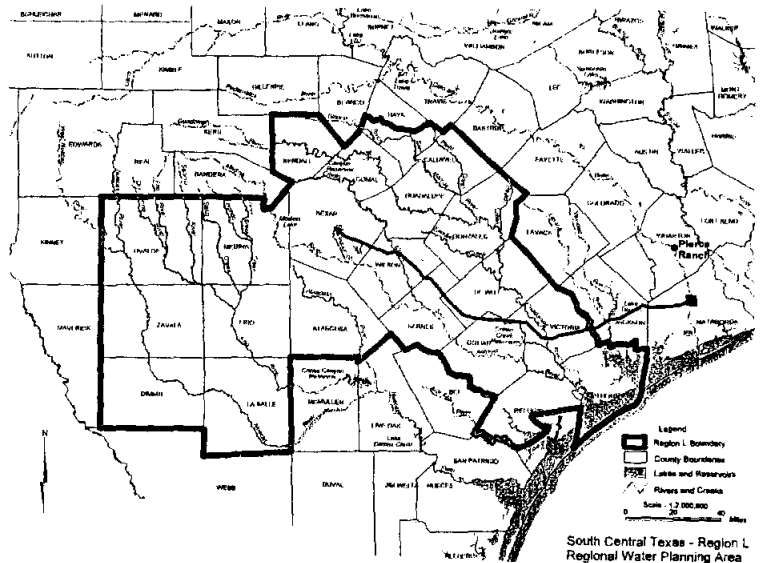
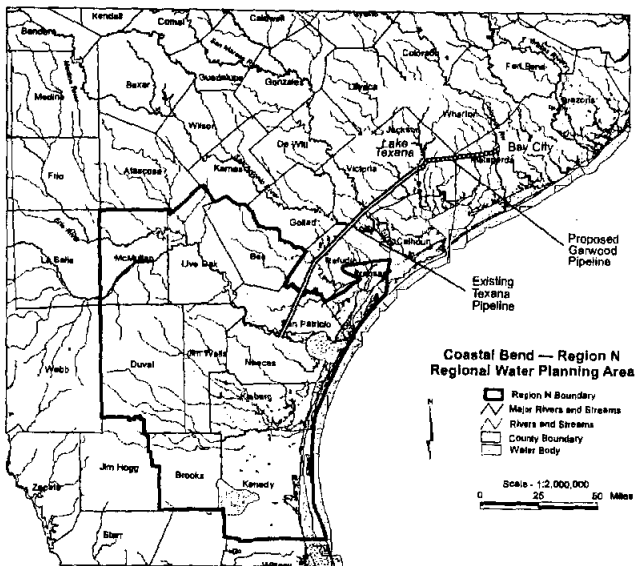
Planned Use: Corpus Christi (N) - Up to 35,000 acft/yr beyond 2030
Bexar County (L) – 66,000 acft/yr in 2020 and 132,000 acft/yr in 2030
Agricultural Interests (K) – Up to 180,000 acft/yr

Opportunities:

- 1) Shared transmission pipeline for Corpus Christi (N) and Bexar County (L) from Matagorda County (K) diversion point to origin of Mary Rhodes Pipeline at Lake Texana.
- 2) Interim use of surplus transmission capacity in Mary Rhodes Pipeline from Lake Texana to the Guadalupe River.
- 3) Helps meet irrigation needs and enhances lake levels in Region K.

Potential Concerns:

- 1) Timing of implementation of strategies to meet needs in Regions N & L.
 - Region N plan shows Corpus Christi use of this or other additional water supplies beyond 2030, however, uncertainty with regard to duration of current drought may accelerate development significantly. Corpus Christi City Council has recently authorized right-of-way evaluation and preliminary engineering for Garwood pipeline.
 - Region L plan shows Bexar County use of this water supply beginning in 2020.
- 2) Corpus Christi supply is permanent while Bexar County supply is term (50 year primary term with 30 year extension).



Desalination of Seawater

Source Location: Gulf of Mexico and Various Bays in Regions L, M, N, & P

Potential Users: San Antonio (L), Corpus Christi (N), Municipal Interests (M)

Availability: Essentially unlimited

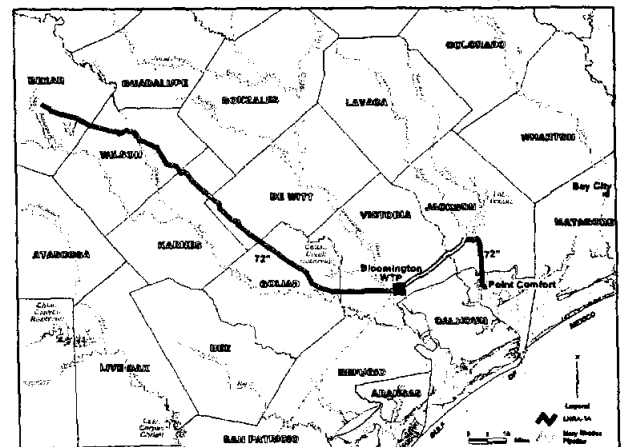
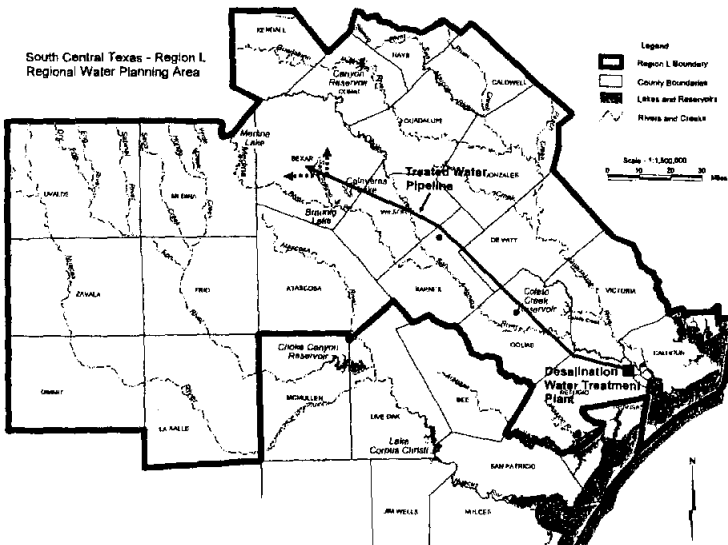
Planned Use: Bexar County (L) – 56,000 acft/yr in 2040 and 84,000 acft/yr in 2050
Corpus Christi (N) – As needed beyond 2030

Opportunities:

- 1) Increased water supply from proximate sources for coastal cities & industries.
- 2) Development of desalination facilities for coastal interests by inland interests in exchange for use of inland water sources controlled by coastal interests.
- 3) State (TWDB) interest in pilot projects for desalination of seawater.

Potential Concerns:

- 1) Expensive today, but technological trends indicate reduced equipment costs.
- 2) Treatment is energy intensive and trends in power costs are uncertain.
- 3) Brine disposal.



Palmetto Bend – Stage II

Source Location: Jackson County (P)

Potential Users: Corpus Christi (N), San Antonio (L)

Availability: 28,000 acft/yr (initial), 23,000 acft/yr (50 years of sediment accumulation)

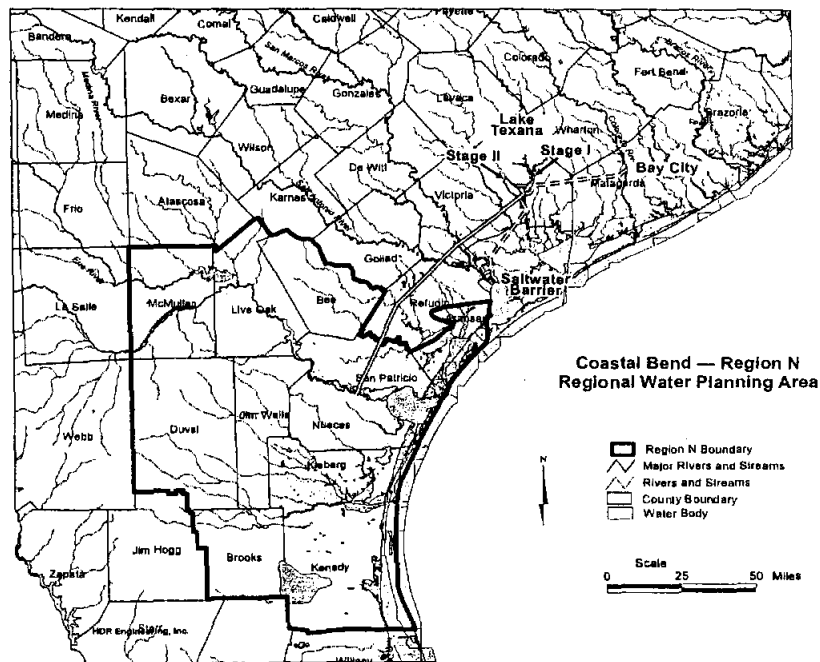
Planned Use: Corpus Christi (N) – Up to 28,000 acft/yr beyond 2030

Opportunities:

- 1) Permitted project.
- 2) Proximity to existing Mary Rhodes Pipeline (which currently has surplus transmission capacity to Region N).
- 3) Proximity to pipeline delivering Lower Colorado River water supply to Bexar County.
- 4) Unit cost for raw water at the reservoir (\$329/acft) is less than median (\$466/acft) for thirteen potential reservoirs considered by Region L.
- 5) Recommended as a Unique Reservoir Site by Region P.

Potential Concerns:

- 1) Terrestrial impacts (4,700 acres).



Cotulla Reservoir

Source Location: La Salle & Dimmit Counties (L)

Potential Users: Laredo (M), Agricultural Interests (L), San Antonio (L),
Corpus Christi (N)

Availability: 57,000 acft/yr (~10,000 acft/yr impact on CCR/LCC System)

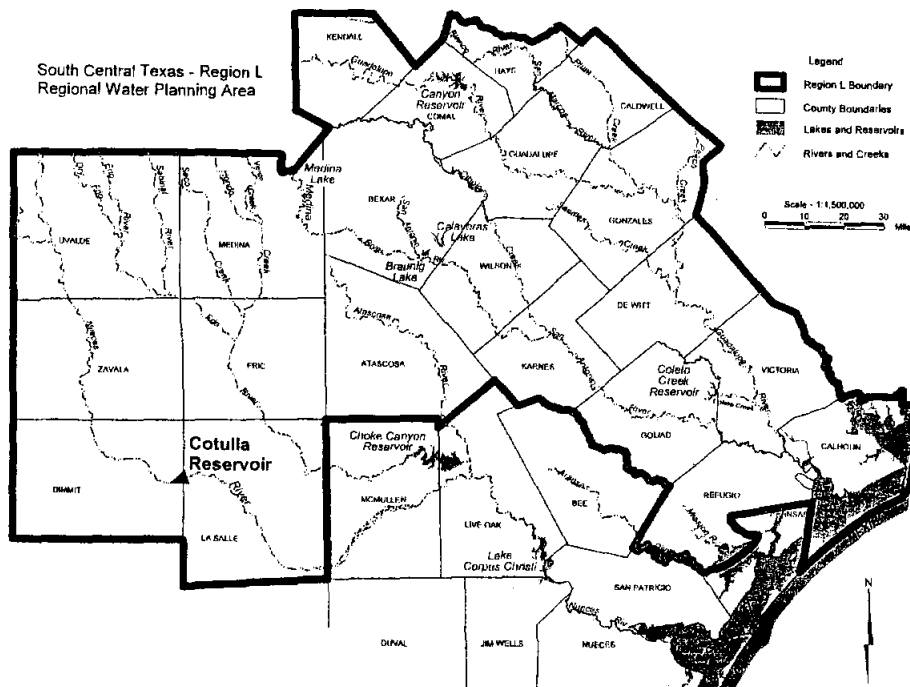
Planned Use: None in the current regional water plans

Opportunities:

- 1) Supplement or alternative to groundwater sources for Laredo (M) and/or Agricultural Interests in the Winter Garden area in Region L.
- 2) Supplemental water supply for San Antonio (L) and/or Corpus Christi (N).
- 3) Unit cost for raw water at the reservoir (\$299/acft) is less than median (\$466/acft) for thirteen potential reservoirs considered by Region L.

Potential Concerns:

- 1) Distance from potential municipal users.
- 2) Impacts on Choke Canyon Reservoir / Lake Corpus Christi System and Nueces Estuary.
- 3) Terrestrial impacts (31,000 acres).



Choke Canyon Reservoir

Source Location: Live Oak & McMullen Counties (N)

Existing User: Corpus Christi (N)

Potential Users: Corpus Christi (N), San Antonio (L)

Availability: Unknown - Important component of present Corpus Christi water supply.

Planned Use: Part of Corpus Christi (N) water supply system

Opportunities:

- 1) Existing, under-utilized storage capacity.
- 2) Exchange Choke Canyon Reservoir (or use of storage capacity therein) for alternative water supplies to be provided to Corpus Christi (N) by San Antonio (L).
- 3) Seasonal or multi-year storage of water from San Antonio River relatively proximate to South Bexar County water treatment plant and ASR facilities.

Potential Concerns:

- 1) Important component of Corpus Christi water supply system.
- 2) Federal involvement & authorizing legislation.
- 3) Quality of water imported from San Antonio River.
- 4) Exchange or mitigation options for Corpus Christi.

