COASTAL BEND

Water Report

Coastal Bend Regional Water Planning Group
Website: www.nueces-ra.org

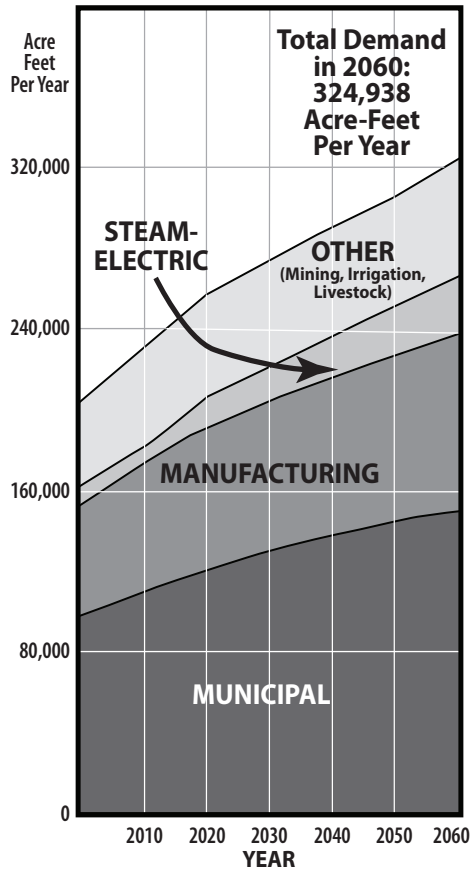
No. 11 • March 2010

Public hearing on 2011 Initially Prepared Regional Water Plan set for April 8th

The Coastal Bend Regional Water Planning Group (RWPG) will hold a public hearing to receive oral and written comments from the public on the 2011 Initially Prepared Regional Water Plan for the Coastal Bend region.

The hearing will be at 1:45 p.m. on April 8th at the Johnny Calderon County Building, 710 E. Main St., in Robstown.

Projected Water Demand For Coastal Bend Region



Demand projections were developed by the Texas Water Development Board

Written comments can be submitted to the RWPG until June 8th.

Mail comments to the Nueces River Authority, 1201 N. Shoreline, Corpus Christi, Tx 78401. Comments may also be sent by email to rfreund@nueces-ra.org.

All public comments received will be considered in preparing the final plan. The RWPG must adopt the final plan and submit it to the Texas Water Development Board (TWDB) by September 1st.

PLANNING PROCESS

Regional plans prepared by 16 regions across the state will ultimately become part of the comprehensive 2012 State Water Plan compiled by the TWDB.

In 1997 the Texas Legislature established an ongoing regional water planning program. The latest planning effort is the third five-year planning cycle in that program. Known as the Senate Bill 1 process, it provides a framework where local community members guide the development of regional plans to meet local needs now and in the future.

State financial assistance may be provided only to water supply projects that are consistent with the approved regional plan.

The Coastal Bend region is known as Region "N" and includes the following 11 counties: Aransas, Bee, Brooks, Duval, Jim Wells, Kenedy, Kleberg, Live Oak, McMullen, Nueces and San Patricio. The Coastal Bend plan was first adopted in 2001 and later updated in 2006. For the 2011 Coastal Bend Regional Water Plan, the TWDB did not issue new population or water demand projections due to lack of new Census data. The RWPG did request a water demand revision for irrigation in Bee and San Patricio Counties. Otherwise projections remain identical to the 2006 Plan.

The Regional Water Planning Group and its consultant team have spent much of the past two years reviewing the water needs of the region and refining water supply management strategies to address those needs in the decades ahead.

An Initially Prepared Plan has been prepared which outlines all identified water supply options and management strategies, the recommendations of the RWPG and other findings in a two volume report.

Coastal Bend RWPG Members

The 17 members of the Coastal Bend Water Planning Group were appointed to represent a wide range of stakeholder interests and act as a steering and decision-making body. They serve without pay and are appointed to represent specific interest categories as dictated in state law. Current members are:

Agriculture: Charles Ring, Chuck Burns
Counties: Lavoyger J. Durham, Bill Stockton
Electric Generating Utilities: Gary Eddins
Environmental: Teresa Carrillo
Industry: Tom Ballou, Robert Kunkel
Municipalities: Billy Dick, Mark Scott
Other: Bernard Paulson
Public: Kimberly Stockseth
River Authorities: Thomas Reding Jr.
Small Business: Dr. Pancho Hubert, Pearson Knolle
Water Districts: Scott Bledsoe III
Water Utilities: Carola Serrato

Elements of the 2011 Initially Prepared Plan

The Coastal Bend planning area has four regional wholesale water providers: City of Corpus Christi, San Patricio Municipal Water District, South Texas Water Authority, and Nueces County Water Control & Improvement District #3 at Robstown.

Major water demand areas consist of municipal water systems and a string of industrial users concentrated around the Corpus Christi and La Quinta Ship Channels. Data shows that industries in the Coastal Bend area are very efficient in their use of water compared to other areas.

The region depends mostly on regional surface water supplies from the Choke Canyon/Lake Corpus Christi and Lake Texana (CCR/LCC/Lake Texana) system. Water quality is generally good although there are some concerns in the Calallen Reservoir Pool where the bulk of the region's water supply intakes are located.

Some communities and rural areas are dependent on groundwater from the Carrizo-Wilcox Aquifer and Gulf Coast Aquifers which can yield moderate to large amounts of both fresh and slightly saline water on a sustainable basis.

Population in the region is concentrated in Corpus Christi, Kingsville, Alice, Beeville, Robstown, Portland, Ingleside, Aransas Pass and Rockport, all of which have access to the regional surface water supply system.

Population and Water Demand

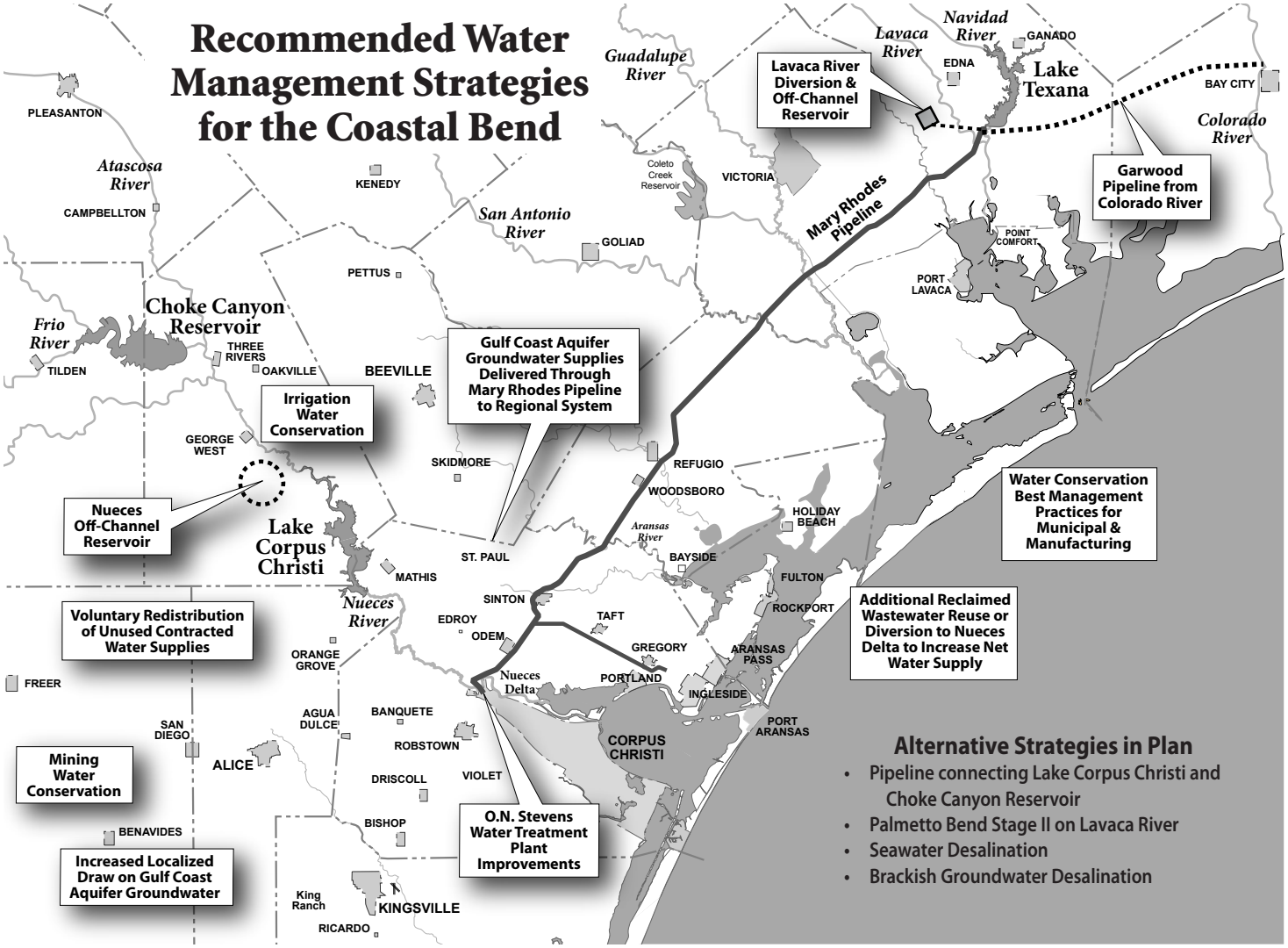
Water demand projections are divided by type of use including municipal for cities and special water districts, and county wide for manufacturing, steam-electric, mining, irrigation and livestock uses.

Total water demand is projected to increase from 205,936 acre feet per year (acft/yr) in Year 2000 to 324,938 acft/yr in 2060, a 57.8% increase. All categories are projected to increase including a 51% increase in municipal water demand over the 50-year planning horizon. Average per capita water use was 165 gallons in 2000 and is projected to decrease to 152 gallons per capita per day by 2060. That would result in a 12,000 acft/yr reduction in water demand, equal to about a quarter of the region's contracted water supplies from Lake Texana.

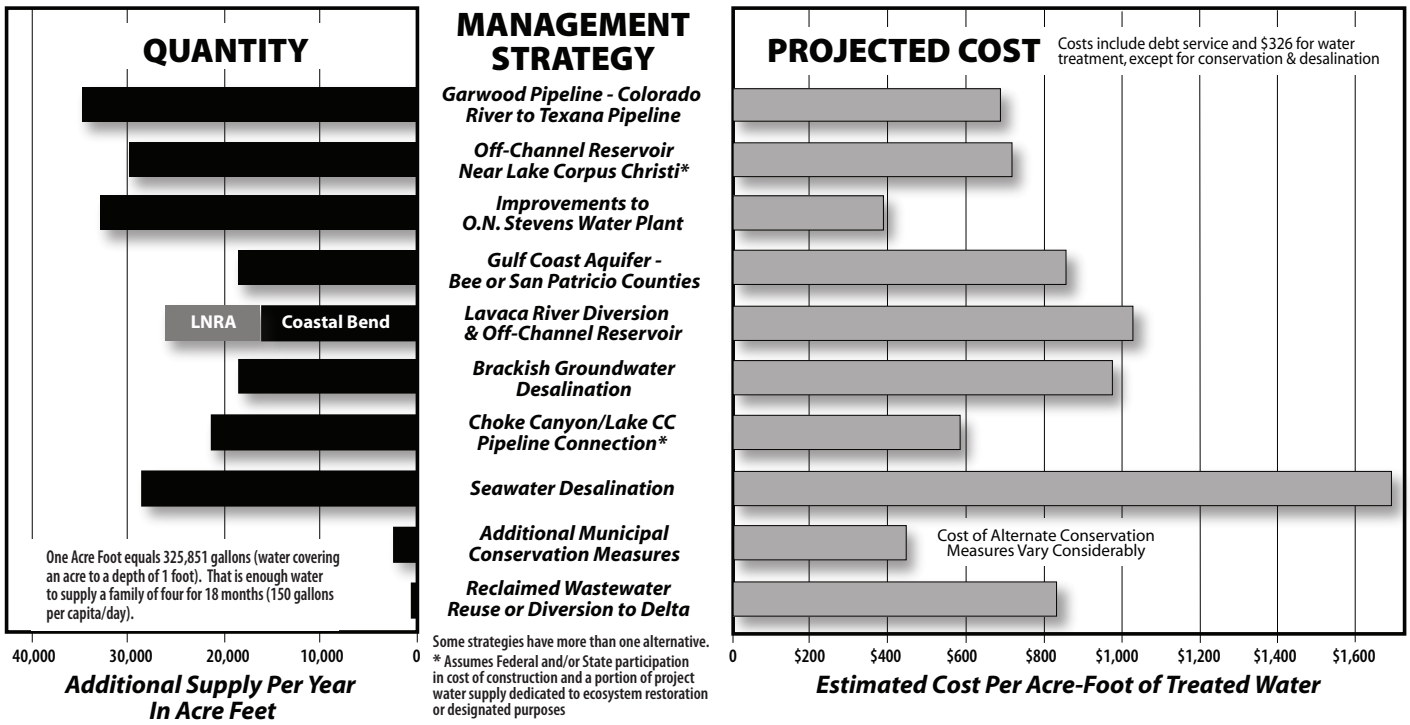
Water Supply

Today the safe yield from the CCR/LCC/Lake Texana system is calculated at 205,000 acft/yr of available raw water. Safe yield is based on keeping 75,000 acft in system storage during the critical month of the drought of record. The RWPG adopted use of safe yield supply for the 2011 Plan, which provides approximately 22,000 acft/yr less than "firm yield" in 2010.

Local Groundwater Management Areas 15 and 16 are currently in the process of identifying desired future conditions (DFCs) for their underlying aquifer systems and working with the TWDB to determine managed available groundwater associated



Updated Estimates of Additional Water Yield and Unit Cost in 2060



with the DFCs (i.e. groundwater supply availability). DFCs are to be submitted to the TWDB by September 1st. Approved groundwater models will then be used to simulate DFCs to determine aquifer availability, the results of which will be considered in future planning cycles. Based on drawdown criteria adopted by the Coastal Bend RWPG as used in the 2006 Plan. The groundwater aquifers in the region have a combined reliable yield of about 105,000 acft/yr and projected use over the 50 year planning period of about 64,000 acft/yr.

Water Quality

Studies show a significant increase in dissolved minerals concentrations below Wesley Seale Dam in the Nueces River. Potential sources include saltwater intrusion, groundwater seepage and upstream sources of contamination. This lower quality leads to an increase in industrial water demand due to accelerated buildup of minerals in industrial cooling facilities. Additionally, high levels of chlorides and bromides sometimes exceed drinking water standards. Groundwater supplies in the region are generally of good water quality but some areas have slightly brackish groundwater.

Water Supply Strategies

Numerous water management strategies were identified by the RWPG as potentially available to meet future water supply shortages.

Recommended strategies emphasize water conservation; maximize use of water resources; engage the efficiency of conjunctive use of surface and groundwater; and limit depletion of storage in aquifers. Some require additional study to confirm how much water they would yield during a severe drought. The Initially Prepared Plan includes details on recommended, alternative, and potentially feasible strategies. It also provides a comparison of updated unit costs and quantities of water provided for selected strategies evaluated.

The recommended strategies could produce new supplies in excess of the projected additional regional need of 75,700 acft/yr in Year 2060. Almost all of the recommended strategies were also in the 2001 and 2006 Coastal Bend plans. New strategies include potential Lavaca River diversion and off-channel reservoir project and improvements to the O.N. Stevens Water Treatment Plant. The recommended strategies include:

Colorado River Pipeline

In 1998 the Coastal Bend region purchased 35,000 acft/yr of senior water rights in the Colorado River from the Garwood Irrigation Company. Delivering this water will require construction of a pipeline from the Colorado River near Bay City to a connection with the Mary Rhodes Pipeline at Palmetto Bend Dam, a distance of about 40 miles. The City of Corpus Christi has an engineering team working on design, alignment and environmental review for the project but there is no schedule for right-of-way acquisition or construction.

The Mary Rhodes Pipeline was originally oversized to accommodate up to 112,000 acft/yr and is currently capable of pumping contracted supplies up to 53,800 acft/yr from Lake Texana. After the Garwood water is added there will be about 23,000 acft/yr reserve capacity remaining in the pipeline.

Lavaca River Diversion

Previous water plans included a possible future Palmetto Bend Stage II, a reservoir on the Lavaca River. As an alternative, the Lavaca-Navidad River Authority (LNRA) is investigating a Lavaca River Diversion project that involves building a

REVIEW THE REGIONAL PLAN

The entire 1,448-page 2011 Coastal Bend Initially Prepared Plan is available for downloading and review at the Nueces River Authority website:

www.nueces-ra.org

Copies are available for review at the County Clerk offices of each of the 11 counties and at the following libraries:

- Corpus Christi Central Library
- Alice Public Library
- Kleberg Public Library, Kingsville
- Sinton Public Library
- Aransas County Public Library, Rockport
- Bee County Library, Beeville
- Ed Rachal Library, Falfurrias
- San Diego Public Library
- Live Oak County Library, George West

large off-channel reservoir approximately 10 miles west of Lake Texana. It would allow LNRA to divert high flows from the river to the new reservoir where it could then be pumped as needed to end users. It would require substantial pump stations and pipelines. A 3,000-acre reservoir storing 75,000 acft would have an optimum yield of approximately 26,242 acft/yr. There is a need for 10,000 acft/yr by an existing LNRA industrial customer, leaving 16,242 acft for possible contract to others.

O.N. Stevens Plant Improvements

The O.N. Stevens Water Treatment Plant provides treated water to Corpus Christi and wholesale customers. Production at Stevens is limited to 159 MGD or less by a hydraulic bottleneck at the front end of the plant. Modifications would allow it to produce treated water supplies up to 200 MGD and would result in operational cost savings. Improvements would include changes to the intake pumps at the Nueces River and major modification of the plant's solids handling facilities. These changes could improve finished water quality. Under certain assumptions these improvements are estimated to provide access to additional treated water supplies of about 17,000 acft/yr from the surface water supply system plus reclaim 16,000 acft/yr from the solids handling process.

Nueces River Off-Channel Reservoir

Developing an off-channel reservoir south of George West near Lake Corpus Christi could increase Nueces Basin reservoir system yield. Water would be pumped from Lake Corpus Christi into the reservoir during high flow conditions then would flow back to the lake during dry seasons. The Texas Legislature has designated the Nueces off-channel reservoir as one of 19 unique reservoir sites in the state and it is one of the top ranked sites for protection and acquisition. It would have an average water depth of 50 feet and a surface area of 5,600 acres.

Gulf Coast Aquifer Well Fields

Studies have been conducted on the possibility of installing well fields in the area north of Sinton and west of the Mary Rhodes Pipeline. The pipeline could be used to deliver the groundwater which would blend with water already being transported from Lake Texana.

Other Strategies

Water conservation strategies are among the most cost effective water management strategies evaluated and are divided into four groups – municipal, irrigation, manufacturing and mining. The RWPG recommends that conservation strategies continue to be pursued in each of these categories.

A substantial amount of treated municipal wastewater is already being reused in the Coastal Bend for golf course irrigation and manufacturing purposes. Additional reuse is proposed as a way of replacing potable water use. Diversion of wastewater to the Nueces Delta also presents an opportunity to get credit for inflows and may allow recovery of additional reservoir system yield.

The Initially Prepared 2011 Plan also provides information on other potential water supply options that may become suitable in the future. These include a pipeline from Choke Canyon to Lake Corpus Christi to enhance system yield, brackish groundwater desalination and seawater desalination for potential use to address future regional water supply issues.

Notice of Public Hearing on Draft Region "N" Water Plan

1:45 p.m. • Thursday • April 8, 2010 • Johnny Calderon County Building • 710 E. Main, Robstown

COASTAL BEND
Water Report

The *Coastal Bend Water Report* is published by the Coastal Bend Regional Water Planning Group which is reviewing and revising the current regional plan that will be included in the next comprehensive state water plan. A revised statewide plan will be issued by the Texas Water Development Board in 2012.

Prepared by The Kadman Company

COASTAL BEND REGIONAL WATER PLANNING GROUP
c/o Nueces River Authority • Coastal Bend Division
Phone: 361-653-2110
1201 N. Shoreline Drive
Corpus Christi, Texas 78401