Minutes of the August 14, 2008 Meeting of the Coastal Bend Regional Water Planning Group for the Senate Bill 1 Regional Water Planning Program for Region “N”

The meeting of the Coastal Bend Regional Water Planning Group (RWPG) was held at the Johnny Calderon County Building, 710 Main Street, Robstown, Texas 78380.

Agenda Item I – Call to Order: Ms. Carola Serrato called the meeting to order at 1:30 pm.

Agenda Item II – Roll Call: A visual attendance was noted. Voting members of the Coastal Bend RWPG in attendance included:

- Mr. Scotty Bledsoe
- Mr. Chuck Burns
- Ms. Teresa Carrillo
- Mr. Billy Dick
- Ms. Carola Serrato
- Mr. Bernard Paulson
- Mr. Dr. Pancho Hubert
- Mr. Pearson Knolle
- Mr. Charles Ring
- Mr. Lavoyger Durham
- Mr. Tom Reding
- Mr. Robert Kunkel
- Ms. Rocky Freund
- Mr. Gary Eddins
- Ms. Kimberly Stockseth
- Mr. Bill Stockton

Mr. Gary Eddins, Ms. Kimberly Stockseth, and Mr. Bill Stockton had excused absences.

A quorum was determined to be present.

Ms. Rocky Freund represented the Nueces River Authority (NRA).

Additional non-voting members in attendance included:

- Mr. Tomas Dominguez, NRCS
- Mr. Matt Nelson, TWDB

Guests included:

- Mr. Brian Bresler, Freese & Nichols
- Mr. Max Castaneda, City of Corpus Christi
- Mr. Garrett Engelking
- Mr. Johnny French
- Mr. Andy Garza, TSSWCB
- Mr. John Gordon, USGS
- Ms. Marcia Hackett, USACOE
- Mr. Lou Hilzinger, City of Corpus Christi
- Mr. Don Roach, SPMWD
- Mr. Don Rodman
- Ms. Kristi Shaw, HDR
- Mr. Jace Tunnell, CBBEP
- Mr. John Wolthope, Freese & Nichols

Agenda Item III – Approval of Minutes: Ms. Serrato asked for approval of the minutes of the May 22, 2008 meeting of the Coastal Bend RWPG for the Senate Bill 1 Regional Water Planning Program for Region N. There was a motion by Mr. Dick to approve the minutes as presented. It was seconded by Mr. Reding. There was no discussion and the minutes were approved by a unanimous voice vote.

Agenda Item IV – Authorize Nueces River Authority to Publish Solicitation of Nominations of Persons to Represent Agriculture and Public Interests on the Coastal Bend RWPG: Ms. Serrato explained that Ms. Kimberly Stockseth had informed Ms. Freund that she was interested in remaining on the RWPG. Mr. Burns said that he also wanted to remain on the group. No action was taken.

Agenda Item V – Authorize Nueces River Authority, on behalf of the Coastal Bend RWPG, to Submit Reply to the Texas Water Conservation Advisory Council: Ms. Serrato explained that the information request had been sent to all the other RWPGs. Some of the information is easily obtained and some is not. Mr. Bledsoe asked if the group was going to provide the easily obtained information. Ms. Freund explained that some of the information was available directly from the Regional Water Plans. The other information would be time consuming to gather and that the request was received after the scope of work had been developed. Ms. Shaw provided the results of the water conservation survey to attach to the letter which may help the council with the information they are requesting.
Ms. Serrato explained that the group may need to consider this request for a future scope of work. Mr. Bledsoe expressed concern that there are too many groups working on similar projects. He believes that the Conservation Advisory Council will need to fund their own research. Mr. Nelson explained that the council receives staff support from TWDB, but not any funding. He added that TWDB has not yet directed any of the RWPGs to provide the information. Ms. Shaw explained that the water conservation survey provided qualitative but not quantitative information.

Mr. Paulson made a motion to authorize NRA to send the reply letter. It was seconded by Mr. Reding. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item VI – Authorize Nueces River Authority, on behalf of the Coastal Bend RWPG, to Submit Letters to the Bee and McMullen Groundwater Conservation Districts Regarding Their Draft District Management Plans:** Mr. Bledsoe explained that he received copies of the approved plans from Mr. Lonnie Stewart and had signed the receipt acknowledgment. Nothing else is required from the group. Mr. Bledsoe stated that groundwater districts are required to provide copies of the management plans to the RWPGs. He suggested that NRA be authorized to send letters to any groundwater conservation district acknowledging receipt of, not approval of, their management plans if requested.

Mr. Burns stated that the plans are provided to the RWPGs as required by TWDB. It gives the RWPGs the opportunity to determine whether or not conflicts exist. Ms. Serrato asked who was responsible for checking for conflicts. Mr. Burns commented that the TWDB is the entity that approves the groundwater management plans, so they would be the ones responsible. Ms. Shaw and Mr. Burns said that it may be too early to compare the groundwater management and regional water plans because the desired future conditions, and thus the managed available groundwater numbers, are not yet available.

Ms. Serrato explained that the legislature allows for RWPGs to review groundwater management plans and report any possible conflicts to TWDB. Mr. Nelson added that after the districts supply the desired future conditions, TWDB will provide the managed available groundwater numbers to the districts and RWPGs which will be required to be used by the two.

Mr. Ring asked how the plans can be approved is the desired future conditions have not yet been established. Mr. Bledsoe explained that the desired future conditions is a new requirement for groundwater districts and their management plans. Mr. Nelson explained that the 2011 plan is being developed during a transitional period but that all the regions will have the information for the 2016 plans.

Ms. Shaw asked if TWDB was going to differentiate between fresh and brackish groundwater because the treatment costs are different. Mr. Engelking said that the models consider waters with less than 10,000 mg/l of total dissolved solids (TDS) as useable water. Mr. Bledsoe added that the TDS levels do not have an impact on drawdown levels, but it does have an impact of the cost of that water.

Ms. Serrato suggested that monies should be made available to compare the groundwater management plans and regional water plans in order to ensure that there are no conflicts.

Mr. Kunkel made a motion to approve sending letters to groundwater management districts acknowledging receipt of their plans. It was seconded by Mr. Burns. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item VII – Consider Appointing Liaison to South Central RWPG – Region L:** Ms. Serrato explained that Mr. Bledsoe has been serving as the liaison. Mr. Engelking is a member of the Region L RWPG and offered to be the liaison to this group. Mr. Burns made a motion to appoint Mr. Engelking as the
liaison to Region L. It was seconded by Ms. Carrillo. There was no further discussion and the motion passed by a unanimous voice vote.

Agenda Item VIII – Study 1: Update on Evaluation of Additional Water Supplies for Potential Delivery through the Mary Rhodes Pipeline: Ms. Shaw explained that the groundwater project being considered by the City of Corpus Christi (City) and San Patricio Municipal Water District has been put on hold. However, since the evaluation is nearly complete and because this water management strategy may still be a viable strategy in the future, the information will remain in the plan.

The study concludes that if the groundwater contribution is maintained at or below 20% of the total supply, no additional pre-treatment will be needed.

Multiple blended water quality combinations and the expected changes in treatment costs were evaluated based on water supplies from Lake Texana, Gulf Coast groundwater, and the Garwood water. Model runs were also performed that simulated system operations using the three supplies. The interruptible water supply from Lake Texana was included.

The specific water quality concerns when blending water include TDS, chlorides, bromides, total organic carbon (TOC), and corrosion chemistry (pH and alkalinity). Historically, the City has been treating blended water of 50% from the Nueces River and 50% from Lake Texana. Ms. Serrato asked how the take-or-pay option for the Lake Texana water was incorporated into the models. Ms. Shaw explained that the model uses the Lake Texana water first, then adds other supplies as needed, thus maximizing the Lake Texana water.

Mr. Nelson asked how the drought of record is handled. Ms. Shaw explained that it is built into the model. Additional supplies are brought in as needed, such as when the interruptible water is unavailable.

Treatment costs increase with higher TOCs and turbidity. Keeping the groundwater contribution at or below 20% will not raise the costs associated with treating for TDS and chlorides. Ms. Shaw reviewed a series of slides that compared the chlorides and treatment costs based on various blending scenarios of Nueces River water, Lake Texana water, Garwood water delivered through Lake Texana, Garwood water delivered around Lake Texana, and the groundwater supplies.

The study concludes that blending Garwood water in Lake Texana decreases the chloride level in the raw water supplies but that it increases the treatment costs due to the higher turbidity of Lake Texana water.

Ms. Serrato asked that TDS and chloride levels be indicated on these types of graphs in the future.

Ms. Shaw reviewed model runs for system optimization analyses that were performed to simulate an annual demand of 175,000 acre feet per year (AF/yr) (amount equal to the 2010 demands) with full utilization of the permitted Lake Texana supplies and various combinations of groundwater and Garwood water. Lake Texana water is used first, then additional supplies via the Mary Rhodes Pipeline, and the remainder is made up from the Choke Canyon Reservoir / Lake Corpus Christi (CCR/LCC) system.

Increasing water supply deliveries through the pipeline increases freshwater inflow into the Nueces estuary by 15% as compared to current conditions.

Ms. Serrato asked if the Agreed Order was taken into account. Ms. Shaw explained that it was and that it was assumed that the targets are met each month.

Pumping costs increase with additional pipeline supplies. The current pumps can pump 77,000 AF/yr. A fourth pump at all three pump stations would be needed to deliver the full amount of Garwood supplies and
all the permitted Lake Texana supplies. Ms. Serrato asked if future energy costs were factored into the estimate. Ms. Shaw replied that the model uses historical costs, and it may be more appropriate to estimate future costs as a percentage increase of the current costs. Mr. Ring asked if the pumping costs associated with bringing the groundwater to the surface were included. Ms. Shaw explained that these costs were only for the pipeline.

Mr. Paulson asked about the cost per AF for the groundwater and off-channel reservoir (OCR) supplies. Ms. Shaw replied that the 2006 Plan’s groundwater estimate was $700/AF, including treatment costs but not additional pumping costs for the pipeline. The OCR estimate was $500 - $600/AF. Mr. Paulson asked if the addition of the Garwood water would increase the pumping costs since the pipeline was designed to incorporate that water. Ms. Shaw explained that the pumping costs would increase because the addition of the Garwood water would exceed the current 77,000 AF/yr pumping capacity.

Ms. Serrato asked if the costs of the individual water management strategies could be compared based on incremental amounts from each strategy. Ms. Shaw suggested that the best way to do that would be to use a fixed demand as a benchmark. She explained the costs presented today were only those costs related to the pipeline. The completed 2011 Plan will include full costs, including capital costs and annual cost of operation, providing a unit cost for each strategy.

Agenda Item IX – Study 2: Update on Site-Selection Considerations and Optimization of System Operations for Off-Channel Reservoir: Ms. Shaw explained that objectives of this strategy include enhancing the CCR/LCC system yield, capturing spills from LCC while maintaining the bay and estuary inflows, and to a lesser extent, reducing flood events downstream of LCC. The scope of the study is to determine the optimum size, delivery rate, location, and minimize the environmental impacts.

The 2006 Plan had narrowed the optimum size to a range of 200,000 AF to 300,000 AF with a delivery rate ranging from 750 cubic feet per second (cfs) to 1,250 cfs. TWDB conducted a reservoir site protection study in July 2008 which resulted in an OCR with a capacity of 250,000 AF, delivery rate of 1,000 cfs and additional firm yield of about 40,000 AF. These numbers correspond to pumping water from LCC to the OCR when LCC was at 93’ mean sea level (msl) and pumping water from the OCR to LCC when LCC was at 80’ msl.

HDR’s study also included a desktop analysis of the environmental issues including endangered and threatened species, vegetation and wildlife habitats, water quality and aquatic habitats, and cultural resources. A full field reconnaissance and site specific environmental assessments will be required prior to implementation and permitting.

The study looked at six reservoir sizes, ranging from to 200,000 AF to 300,000 AF in 20,000 AF increments, and four delivery rates for each, ranging from 750 cfs to 1500 cfs in 250 cfs increments. The study also assumed that water would be delivered from the OCR when LCC was at or below 75’ msl. With the two highest delivery rates, the firm yield increases significantly for the reservoirs sizes >260,000 AF. Total project and annual costs increase with increasing size for all delivery rates. The study used the 2002 costs that were used in the 2006 Plan. Currently, it is presumed that the 2011 Plan will use 2nd quarter 2007 dollars for the cost estimates. Although the actual costs will be different, the relative trends are expected to remain the same.

The unit costs of the raw water were calculated by dividing the annual costs by the yield. This analysis suggests the optimum size to be 280,000 AF with a 1500 cfs delivery rate for a unit cost of $450/AF/yr. Mr. Nelson asked if even higher delivery rates would increase the yield. Ms. Shaw replied that the increase rate has to be balanced with the additional energy costs and operational procedures. A comparison of the
incremental unit costs by reservoir size shows on overall decrease through the 280,000 AF size with a substantial increase for 300,000 AF. This is because the yield increase between these two sizes is minimal. Ms. Shaw explained that the current operating procedures release water from CCR to LCC when LCC reaches 74’ msl, so the OCR would be utilized first, and there would be less evaporative losses. If the trigger level was 83’ msl, there would be less that a 10% difference in the yield but increased recreational benefits at LCC.

For the 280,000 AF OCR, the optimal site would be at an elevation of 281.1’ msl, inundate 5,627 acres, and have an average depth of 50’.

The environmental analysis showed 16 state and 5 federally listed endangered and threatened species in Live Oak County, but no sightings within five miles of the project area. The vegetation is primarily shrub and brush rangeland which may support endangered and threatened species habitat. The review found no open water features, on-channel impoundments, upland ponds, or archeological sites within the project area. The pipeline alignments are possibly located in the 100 year floodplain.

Ms. Shaw compared analyses of how often the OCR would be full or empty based on the different trigger levels. It would be full more often at the 75’ msl trigger as opposed to 83’ msl. There is minimal difference between the two triggers for system storage or bays and estuaries inflows.

Ms. Shaw summarized the results of the study and explained the estimated raw water costs associated with two scenarios. With a delivery rate of 1,250 cfs and a trigger level of 75’ msl, the firm yield of the OCR is 46,677 AF/yr at a cost of $427/AF ($1.31/1000 gallons). With a delivery rate of 1,500 cfs and a trigger level of 75’ msl, the firm yield of the OCR is 48,296 AF/yr at a cost of $443/AF ($1.36/1000 gallons). With treatment, the costs should stay below $2.00/1000 gallons in 2002 dollars.

Ms. Carrillo asked about the cost of moving water into and out of the OCR. Ms. Shaw explained that those costs were included in the analysis.

Ms. Shaw stated that additional work and studies should include the evaluation of the impacts on water quality, field investigations, site specific analysis, and the ongoing United States Army Corps of Engineers (USACOE) Nueces Feasibility Study.

Ms. Shaw added that the draft reports are being prepared and will be provided to the planning group prior to the November meeting. Two newsletters will also be developed. The draft reports will have to be approved by the group and are due to TWDB by December 31, 2008. The final reports are due by April 30, 2009.

Mr. Ring asked how long it will take to fill the OCR. Ms. Shaw explained that it is estimated to take 2 – 3 years to fill assuming average rainfall.

Mr. French asked if the costs included the cost of environmental mitigation. Ms. Shaw replied that they did and that for the 2006 Plan, energy costs were estimated using $0.06/kilowatt hours (kwh). The 2011 Plan will use an estimate of $0.09/kwh.

Ms. Serrato asked if the OCR would be located just north of the outcrop of the Goliad Sands/Evangeline Aquifer. Ms. Shaw replied that it is. Ms. Serrato also asked is there would be much channel loss in the creek from the OCR to LCC. Ms. Shaw said that those calculations were not included. Mr. Bledsoe added that there could also be recharge to the aquifer from the OCR itself. Ms. Shaw replied that these issues need to be considered during the design of the reservoir.

Mr. French suggested using the flow in the creek to run a hydro-electric generator since the elevation of the OCR is significantly above the elevation of LCC.
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Agenda Item X – Update on the US Army Corps of Engineer’s Nueces Basin Feasibility Study:
Ms. Hackett showed a map of the study area. A reconnaissance study was initiated in 2002 in response to SB1. The purpose was to identify water resource problems, needs and opportunities; and identify federal interest and potential non-federal sponsors. The report was certified in December 2002.

Federal interests include navigation, flood damage reduction, and multi-purpose projects that can also include water supply, water quality, and recreation.

The Federal government funded 100% of the reconnaissance study. The feasibility study is being funded 50% by the Federal government and 50% by the non-federal sponsors. The Federal government will fund 65% of design work and up to 65% of construction costs. The non-federal sponsors are NRA, the City of Corpus Christi, San Antonio Water Systems, San Antonio River Authority, and Guadalupe-Blanco River Authority.

Ms. Hackett explained that in 2004, the USACOE’s authority was updated to include projects related to ecosystem restoration, water supply, and other allied purposes.

The feasibility study is divided into three phases. Phase I is complete and addressed the identification of issues and opportunities. Phase II is currently underway and addresses existing conditions surveys, alternatives formulation, feasibility scoping meetings, and will result in a watershed report with an integrated programmatic environmental impact statement (EIS). Phase III will address detailed evaluation of alternatives and tiered feasibility documents.

Ms. Serrato asked if the EIS and other documents would have to be approved by TCEQ and TWDB. Ms. Hackett replied that TCEQ would have to approve them.

Ms. Hackett explained that the study area is complex and diverse, ranging from the hill county of the upper basin to the coastal plans and the Nueces Delta. Numerous resource agencies have participated in the process.

The goal of the study is to achieve a balance of projects and/or operating plans which result in an environmentally sustainable holistic watershed management plan.

Issues that have been identified include reduction of freshwater inflows to Nueces Bay and Estuary, loss of sediment and nutrient loads to the estuary, reduction of Edwards Aquifer spring flows and its effects on several endangered species, reduction of instream flows, reduction of riparian habitat, conversion of coastal prairie habitats to brush, potential shortage of water supply to meet both ecosystem and future human needs, water quality concerns at CCR, and flooding along the Nueces River.

The major important ecosystems are the Nueces Delta and Estuary and the hill country streams and their associated springs.

Study opportunities include recharge potential; increased freshwater stream and inflows to delta, estuary, and bay ecosystems; improved water quality; more efficient use of existing water supply; increased water yield; reduced flood damages; and improved habitat conditions.

A number of studies and activities are occurring with respect to the existing conditions surveys. Hydrology and hydraulic work includes baseline data and model reviews, updates, and development; data gaps are being addressed with the installation of additional flow gauges; collection of evapotranspiration data; gain/loss studies; sediment sampling; topographic and bathymetry of the delta; instream flow and trends analyses; and water quality parameters.
Ecological work includes land use and vegetation classification mapping. Ecological models are being developed with links to surface water and groundwater models.

USGS, HDR, University of Texas (UT) Bureau of Economic Geology, UT Center for Research in Water Resources, UT Marine Science Institute, and the Texas A&M University – Corpus Christi Harte Research Institute have been contracted to work on these issues.

Mr. Paulson suggested that the R&M reservoir site be revisited for flood control below LCC.

Agenda Item XI – RWPG/TWDB Administrative and Other Issues: Ms. Freund asked if the November meeting needed to be moved up to meet contract execution deadlines. Mr. Nelson said that the group could approve signing the contract at the November meeting.

There was a brief discussion about possibly moving the meeting date to the third Thursday of the month, but it was decided to keep the meetings on the second Thursday.

Agenda Item XII – General Public Comment: No public comment.

Agenda Item XIII – Confirm Next Meeting Date: The next meeting is scheduled for November 13, 2008 at 1:30 pm at the Johnny Calderon County Building in Robstown.

Agenda Item XIV – Adjourn: Mr. Bledsoe made a motion to adjourn the meeting. It was seconded by Mr. Durham. Ms. Serrato adjourned the meeting at 4:00 pm.

Minutes prepared by: Ms. Rocky Freund.

Minutes Submitted by:  
Mr. Bernard Paulson  
Secretary, Coastal Bend RWPG