Minutes of the January 14, 2010 Meeting of the Coastal Bend Regional Water Planning Group (Region N) for the Senate Bill 1 Regional Water Planning Program

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

**Agenda Item I – Call to Order:** Ms. Carola Serrato called the meeting to order at 1:35 pm.

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

- Mr. Tom Ballou
- Mr. Scotty Bledsoe
- Ms. Teresa Carrillo
- Mr. Lavoyger Durham
- Mr. Gary Eddins
- Dr. Pancho Hubert
- Mr. Pearson Knolle
- Mr. Robert Kunkel
- Mr. Tom Reding
- Mr. Mark Scott
- Ms. Carola Serrato
- Mr. Bill Stockton
- Mr. Art Smith served as a proxy for Mr. Billy Dick.

Mr. Chuck Burns, Mr. Robert Kunkel, Mr. Bernard Paulson, 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. George Aguilar, TDA
- Mr. Matt Nelson, TWDB
- Ms. Virginia Sabia, TWDB
- Dr. Jim Tolan, TPWD

Guests included:

- Mr. Brian Bresler, Freese & Nichols
- Ms. Melanie Gavlik, Naismith Engineering, Inc.
- Mr. Gus Gonzalez, City of Corpus Christi
- Mr. Jaime Ingold, USGS
- Mr. Lindsey Koenig, NRA
- Mr. Norman Kuenstler, City of Corpus Christi

Mr. Nelson introduced Ms. Sabia. She is now the TWDB project manager for Region N, and has previous experience working with Regions C and D during the second round of planning. Mr. Nelson explained that he has new duties and will no longer be attending the meetings.

**Agenda Item III – Approval of Minutes:** Ms. Serrato asked for approval of the minutes of the December 10, 2009 meeting of the Coastal Bend RWPG for the Senate Bill 1 Regional Water Planning Program. There was a motion by Mr. Ballou to approve the minutes as presented. It was seconded by Mr. Ring. There was no discussion and the minutes were approved by a unanimous voice vote.

**Agenda Item IV – Elect Officers for Calendar Year 2010:** Ms. Freund explained that the bylaws required that officers be selected at the first meeting of the calendar year. The current slate of officers includes Ms. Serrato, Mr. Bledsoe, Mr. Paulson, Mr. Knolle, and Mr. Reding. All of the officers except Mr. Knolle have agreed to serve for another year if the group so desires. Dr. Hubert has been nominated to fill Mr. Knolle’s position. Ms. Freund asked if there were any other nominations from the floor. There were none. Mr. Scott made a motion to elect Ms. Serrato, Mr. Bledsoe, Mr. Paulson, Mr. Reding, and Dr. Hubert
as officers for 2010. It was seconded by Mr. Durham. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item V – Consider Authorizing Nueces River Authority to Disseminate Requests for Local Funding for Calendar Year 2010 Local Administrative Activities:** Ms. Freund explained that since there is no new population census the allocation requests for 2010 are the same as for 2009. She stated that NRA received all allocations requested for 2009. Ms. Serrato pointed out that the City of Corpus Christi’s share is $44,309.51 and the remaining $15,690.49 is paid by the other entities. Ms. Carrillo made a motion to authorize NRA to disseminate the requests for the local funding. It was seconded by Mr. Durham. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item VI – Discuss and Consider Approval of Legislative and Regional Policy Recommendations to TWDB (Section 8) to be Included in the 2011 Plan:** Ms. Freund explained that two parts of Section 8 were revised to address comments received at the last meeting concerning unique reservoir sites and future water needs for gas production in the Eagleford shale. All other revisions were approved at the December meeting. Ms. Serrato read the changes to Section 8.3 and the additional recommendation under the Groundwater Management in Section 8.1. Mr. Nelson commented that TWDB is studying the groundwater use for all mining activities and that the information will be available for the next plan. Mr. Bledsoe asked that “Eagle Ford” be corrected to “Eagleford.”

Ms. Carrillo asked to go on record that she does not agree with the recommendation urging the Texas Legislature to repeal the “Junior Rights” provision.

Mr. Knolle made a motion to approve the revisions. It was seconded by Mr. Durham. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item VII – Discuss and Consider Approval of Responses to Comments on the 2011 Plan:** Ms. Serrato explained that the comments were discussed at the December meeting. She suggested that the term “fracing” be replaced with “hydraulic fracturing.” Mr. Durham made a motion to approve the responses to the comments. It was seconded by Dr. Hubert. There was no further discussion and the motion passed by a unanimous voice vote.

**Agenda Item VIII – Discuss and Consider Approval of Assigning Water Management Strategies for Needs Identified in the 2011 Plan:** Ms. Shaw explained that the detailed draft water supply plan for Nueces and San Patricio Counties manufacturing has been completed and that copies were available.

Ms. Shaw explained that well capacity was taken into account with respect to available groundwater supplies. She said that most of the recommended water management strategies (WMS) in the 2011 Plan are the same as those recommended in the 2006 Plan. The wholesale water providers were consulted to ensure that their current plans for water supplies were included in the 2011 Plan. Entities with maximum shortages in 2060 indicate growth, while those with maximum shortages earlier indicate a declining water demand.

Municipal users with maximum shortages less than 200 AF include Kleberg County-Other, Live Oak County-Other, and Lake City in San Patricio County. The recommended water management strategy (WMS) is to drill additional wells in the Gulf Coast Aquifer.

Municipal users with maximum shortages greater than 200 AF and the WMSs to meet those needs:
- Aransas County-Other – increase supplies/expand service from San Patricio Municipal Water District (SPMWD),
- Jim Wells County-Other – drill additional wells in the Gulf Coast Aquifer (groundwater supplies),
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- River Acres Water Supply Corporation (WSC) – increase contracted amount from Nueces County Water Control and Improvement District (WCID) #3 (voluntary redistribution), and,
- Nueces County-Other – increase supplies from the City of Corpus Christi.

Ms. Serrato asked for an explanation of county-other. Ms. Shaw and Mr. Nelson explained that this category captured smaller, rural communities with populations less than 500.

Manufacturing users with shortages, other than wholesale water providers, and the WMSs to meet those needs:
- Aransas County – drill additional wells in the Gulf Coast Aquifer (groundwater supplies) and
- Live Oak County – voluntary redistribution from the City of Three Rivers.

Mining users with shortages, other than wholesale water providers, include Duval and Live Oak Counties. The recommended WMS is mining water conservation. Mining needs for these counties are not fully met. Ms. Shaw added that this includes taking no action as recommended in the 2006 Plan based on the TWDB’s cost of analysis of the socio-economic impact of not meeting those needs. Mr. Nelson stated that the results of the socio-economic impact of not meeting needs for the 2011 Plan should be available within a month.

Ms. Serrato asked if the mining needs were specific to uranium mining. Ms. Shaw replied that it was an aggregate of all mining needs within a county and included taking the drawdown constraints into consideration.

Mr. Koenig asked about the re-injection of water associated with in situ uranium mining. Ms. Shaw replied that the numbers represented total water consumption and that re-use water is not reflected in those numbers.

Agricultural users with shortages include Bee, Live Oak, and San Patricio Counties. The recommended WMSs are irrigation water conservation and to drill additional wells in the Gulf Coast Aquifer. Ms. Shaw explained that these shortages are different than those in the 2006 Plan due to the revised irrigation demand projections for Bee and San Patricio Counties that were approved by TWDB. TWDB requires that irrigation water conservation be a WMS for agriculture, but this strategy applies primarily to Live Oak County since Bee and San Patricio Counties have already implemented advanced irrigation conservation best management practices.

For the wholesale water providers, the City of Corpus Christi and SPMWD, municipal demands were met first and any shortages were assigned to other users. Therefore, Nueces County has shortages for manufacturing, steam-electric, and mining; San Patricio County has a shortage for manufacturing. The 2011 Plan includes water treatment plant constraints whereas the 2006 Plan did not. The recommended WMSs address both treated water and raw water shortages and include manufacturing water conservation, mining water conservation, O. N. Stevens Water Treatment Plant improvements, reclaimed wastewater supplies, Garwood Pipeline, off-channel reservoir, Gulf Coast Aquifer supplies, and Stage II of Lake Texana. Alternate WMSs include the Choke Canyon Reservoir/Lake Corpus Christi pipeline, brackish groundwater desalination, and seawater desalination. Some of these strategies have the potential for State or Federal funding.

Brooks, Kenedy, and McMullen Counties did not have any projected shortages.

Ms. Serrato asked to delay approving the WMSs to meet shortages until the group has had a chance to review the complete text that will be included in the 2011 Plan. Ms. Shaw replied that that would not be a problem. The presentation today included the “meat and bones,” but the full text does include more detail. Ms Shaw asked that she be informed of suggested changes to the recommended strategies as soon as possible given that
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March 1, 2010 is the deadline for the Initially Prepared Plan (IPP). The group approved by consensus to delay the vote.

Ms. Serrato asked if the municipal shortages related to per capita use consumption were being addressed by conservation – a required WMS. Ms. Shaw replied that the per capita use for the county-other categories are all below 265 gpd. Mr. Nelson stated that increased population can increase per capita use. Ms. Shaw replied that the 2011 Plan will include decadal per capita use data for each municipal entity in Region N.

Mr. Durham asked how the desired future conditions (DFC) being developed by the groundwater management areas fit in. Mr. Bledsoe replied that since the DFCs are not finalized, they will not be reflected in the 2011 Plan. They will be required to be used in the 2016 Plan. For the 2011 Plan, the previously agreed upon drawdown constraints for the 2006 Plan will be used. Ms. Shaw added that the WMSs with respect to groundwater supplies will most likely be significantly different in the 2016 Plan due to DFCs and new managed available groundwater information.

Agenda Item IX – TWDB Methodology for the Water Loss Audit: Mr. Reed explained that this topic was covered at the December meeting but that there had been questions on how the water loss percentages were calculated. HDR recalculated the number using a different methodology supplied by TWDB.

Mr. Reed explained that in December 2004 the TWDB adopted rules requiring retail public utilities to perform a water loss audit. The results of the audits were compiled and summarized in a report. The information is to be used in the 2011 Plan.

Based on the TWDB approach, the updated results for Region N are: 31 retail public utilities reported water loss information; 13 of those utilities reported total water loss less than 10%, 6 of which were less that 5% and 4 utilities report zero or negative water loss; and 18 utilities reported losses greater that 10%.

Mr. Reed showed charts with the results of both methodologies. The results presented at the last meeting were calculated by dividing total water loss by total water production. The TWDB methodology divided the total water loss plus a balancing error by water delivered. The balancing error is unaccounted-for water reported by the utilities. It represents best estimates from the utilities on leaks, theft, etc. Some utilities reported more water delivered than was produced. Ms. Shaw explained that there is not a single methodology for estimating water loss. Mr. Nelson added that the TWDB methodology used is not the only way to calculate the percent water loss. Mr. Reed added that this was the first time for many of the smaller utilities to conduct a water audit and the process was unfamiliar to them. Future audits should provide better information.

Mr. Reed said that the confidence level of the results using the TWDB method is no better than with the previous method. Therefore the recommended language for the Plan remains the same. It will describe the process, summarize the results, not show the tables listing the individual utilities, and state that the data are not reliable enough to be included in the 2011 Plan.

Mr. Gonzalez asked if it were possible that in the future if WIF funding will be attached to these numbers. Mr. Nelson replied that he was not aware of any plans yet. Mr. Gonzalez added that he believes that these numbers will be a performance measure for future funding.

Ms. Serrato commented that the audit forms need better information such as accuracy of the meters, how to calculate the amount due to leaks and theft, and better guidance on how to fill out the surveys.

Mr. Reed added that AWWA has a Water Loss Control manual which is a good resource for utilities.
Ms. Carrillo asked if there were any financial incentives for correcting water loss and for water conservation. Mr. Nelson replied that he was not aware of any. Conservation has been tracked long enough so that it does factor into ranking of projects. WIF is based on conservation. There is currently not enough confidence in the water loss numbers to use them for ranking. Ms. Serrato added that the utilities with the worst numbers need the most help.

**Agenda Item X – Study 2: Update on Evaluation of Strategies for Management of Water Supply and Operation of Lake Corpus Christi to Improve Water Quality in Calallen Pool:** Ms. Shaw explained that during the first phase of this planning cycle that the water supply model was updated with water quality information for Choke Canyon Reservoir and Lake Corpus Christi. Data from 1934 to the present were input and water quality estimated based on inflow conditions, evaporation, and channel losses.

A summary of the water quality data and preliminary groundwater inflow analysis was presented to the group in August 2009. The study included wells around Lake Corpus Christi, including those with water quality information, to try and estimate the water quality of the aquifer surrounding the lake and downstream in the river. The lower Nueces River data generally shows improved water quality with higher flow events. But there were significant data limitations. Most of the data were collected quarterly and it was difficult to analyze for trends and seasonal differences.

Two new real-time USGS water quality stations, funded by the City of Corpus Christi, have been installed. One is at Bluntzer and the other is at the O. N. Stevens Water Treatment Plant intake. Monitoring and data collection began in Fall 2008. These data will be very useful in evaluating how water quality changes with respect to flow.

The study also indicates that more groundwater inflow is occurring downstream of Lake Corpus Christi than in the past. After Lake Corpus Christi was enlarged in the late 1950s, it took 20 -30 years for the water levels in the surrounding wells to equilibrate with the levels of the lake.

A mass water balance for Lake Corpus Christi was evaluated to try and better understand the groundwater inflow and seepage characteristics, i.e., the surface – water groundwater interaction, and water quality.

Mr. Koenig asked about the distance below the lake that was being studied. Ms. Shaw replied that the Calallen Pool, where the water supply intakes are located, is about 40 miles downstream and that there is generally an increase in chlorides from the La Fruta Bridge near Mathis and the Calallen Pool. The study is also looking at the sources of those chlorides.

The inflow components for the water balance calculations include the Nueces River inflow, intervening runoff, precipitation, seepage in (gain), and seepage out (lowering of the lake levels). The outflow components include releases (includes pass throughs), diversions directly from the lake for water supply, evaporation, seepage in (rising of the lake levels), and seepage out (loss).

Annual averages for inflow and outflow were calculated for 1959 – 2008. The largest contributors to inflow are the Nueces River and intervening runoff. Seepage is the only unknown. The seepage in was calculated to be 7,000 AF/yr and the seepage out to be 128,200 AF/yr. Therefore, more water is moving into the aquifer from Lake Corpus Christi than the aquifer is returning to the lake.

Ms. Serrato asked how the wells around the lake were influenced by the lake levels. Ms. Shaw replied that wells up to ten miles from the lake were evaluated. Some wells showed a strong correlation, other did not, depending on the local aquifer characteristics and geology.
Mr. Koenig commented that the soils near Pernitas Point contain geologic chimneys that provide access for a lot of water to flow back to the aquifer. Ms. Shaw pointed out that the annual average for the diversions is significantly less than current diversions.

Seepage in, or gains from the aquifer, occurs about 10% of the time at an average of 80 cfs / 58,000 AF/yr. Seepage out, or loss to the aquifer, occurs about 90% of the time at an average of 160 cfs / 116,000 AF/yr. For lower stages of the lake, 78’ – 89’ msl, about 80% of the time the loss to the aquifer is less than 100 cfs. For higher stages greater than 89’, 20% of the time the losses are greater than 170 cfs. USGS had similar results for a study over the 1958 – 1965 time period.

Wells around the lake show varying chloride concentrations which are not necessarily related to the distance from the lake. One theory suggests that the water in the aquifer is flowing towards the coast, and higher chloride concentration waters are re-entering the river downstream of the lake.

Another factor that may be influencing water quality in Lake Corpus Christi is the operation of the lake. Wesley Seale Dam has three sluice gates that draw water from various elevations. Two of these gates are currently operational, one from 86’ to 92’ msl and the other near the bottom from 54’ to 62’ msl. Therefore, stratification within the lake could impact the water quality of the releases.

Surface water data, collected for the Clean Rivers Program (CRP) for the Texas Commission on Environmental Quality, shows higher water quality/lower chlorides (40% less) in Lake Corpus Christi than at the gauge just downstream of the lake over the same time period. Both data sets had lower chlorides with increasing water levels in the lake. For 2009, the conductivity at the Bluntzer gauge increases as the water level in Lake Corpus Christi falls. This evidence supports stratification in the lake.

Recommendations include analyzing the water quality information (temperature and conductivity) at various depths. This profile information is collected quarterly during CRP sampling. Monthly monitoring for a few months would be beneficial.

HDR has all the information to complete the mass water balance for Lake Corpus Christi for 1959 – 2008. The channel loss study conducted in 2008 analyzed the water balance from 1959 – 1989. The period from 1989 – 2008 will be looked at to see if there are different loss characteristics than in the earlier years, which could affect the safe yield of the system.

A recommended future study is to look at the mass balance for Calallen Pool. A previous study by USGS in 1970 looked at two low flow events, one in summer and one in winter. The chloride concentrations differed significantly between the two. It was lower in summer, which was attributed to the difference in vegetation. Test wells that were drilled in Hazel Bazemore Park for a study for the 2001 Plan could be retested.

Ms. Shaw said that the report will be included in the 2011 IPP and that the results of a stratification study could be included in the final version if the group thought that information would be useful. Mr. Bledsoe asked if the study was being done to help develop a strategy for operation of the lake. Ms. Shaw replied that it was primarily done to look at how to provide water of better quality to the lower Nueces River.

Agenda Item XI – RWPG/TWDB Administrative and Other Issues: Mr. Nelson commented that the IPP will be considered for approval and submittal to TWDB at the next meeting. The Public Hearing date should then be determined since there is a 30-day public notice period and a 60-day public comment period after the hearing. The submittal of the final Plan is due by September 1, 2010.

Ms. Freund asked if additional sections of the Plan will also need to be approved at the next meeting prior to approving the IPP. Ms. Shaw replied that there would be, and that the sections will be sent to Ms. Freund as
they are completed. Ms. Freund will then post them on the website and send out an email notice that they are ready for review.

**Agenda Item XII – General Public Comment:** Ms. Serrato asked for public comment. There was none.

**Agenda Item XIII – Confirm Next Meeting Date:** The next meeting is scheduled for February 11, 2010 at 1:30 pm at the Johnny Calderon County Building in Robstown, TX.

**Agenda Item XIV – Adjourn:** Mr. Durham made a motion to adjourn the meeting. It was seconded by Mr. Ring. Ms. Serrato adjourned the meeting at 3:20 pm.

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Minutes prepared by: Ms. Rocky Freund.

**Minutes Submitted by:**

Mr. Bernard Paulson  
Secretary, Coastal Bend RWPG  
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