



September 26, 2008

South Central Texas Regional Water Planning Group (Region L)  
c/o Sam Vaughn  
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Re: Comments on Draft Technical Studies for 2011 Regional Water Plan

Mr. Vaughn and Region L members:

The Lone Star Chapter of the Sierra Club and National Wildlife Federation appreciate the opportunity to provide written comments on the Region L Draft (August 2008) Technical Studies for the 2011 Regional Water Plan: *Study 1, Lower Guadalupe Water Supply Project for GBRA Needs* and *Study 2, Brackish Groundwater Supply Evaluation*. Our comments are organized by study, and begin with general comments followed by page-specific comments. Your consideration of this input will be appreciated.

**Study 1: Lower Guadalupe Water Supply Project for GBRA Needs**

Generally, we appreciate the incremental manner in which the planning group and the consultants chose to evaluate this strategy and its various potential forms. The step-wise evaluation approach through the three scenarios was clearly conceived to provide planning group members with information about the pros and cons of differing interpretations of HB 3776 and its applicability. Unfortunately, on balance, this draft Technical Study has a rather myopic focus on water supply and does very little to explain the differing effects on San Antonio Bay of the various scenarios. Thus, we feel that the efforts to evaluate this potential water supply project, to date, do not provide sufficient information for the SCTRWPG to meet the statutory requirement that “strategies shall be selected so that cost effective water management strategies which are consistent with long-term protection of the state’s water resources, agricultural resources, and natural resources are adopted. 31 TAC § 357.7 (a)(9).

With regard to water supply, we feel that the manner in which the evaluations were executed in this study is overly prescribed in a way that makes the scenarios (2 and 3) with environmental flow conditions almost “pre-destined to fail” due to considerations of unit cost, water availability, or both. In Scenario 1, a portion of the underlying fairly senior water right is evaluated with no environmental flow criteria and a simple pro-rata share of the maximum diversion rate (187 cfs). With this seniority and no environmental flow constraints the water right has a high reliability. When the Consensus Environmental Criteria are applied to the underlying water right for scenarios 2 and 3, there is, not surprisingly, a reduction of readily available supply from the Guadalupe River. These reductions lead to the addition of costly ( and controversial ) groundwater supply features to Scenario 2 to boost yield, or in the case of Scenario 3 an infeasible project due to low yield based on just the river source.

However, this should not be the end of the evaluations for these Scenarios which offer the benefit of increased protection of the environmental health of San Antonio Bay. In fact, in previous water plan evaluations, Region L and its consultant entertained modifications of assumed infrastructure and management of the underlying water right(s) to compensate for such reductions in readily available river water supply. In evaluations of several potential water management strategies, where environmental criteria and/or loss of seniority were envisioned to impact yield from an underlying “unimpeded” right, the oft-examined modification was to increase the diversion rate (not the maximum annual diversion) and increase storage. Such modification results in increased water supply yield, by allowing a project to concentrate diversions at times when flows are high and store these for later use. In this manner the project is able to accommodate the environmental or priority constraints imposed, but in many cases still divert significant volumes of water.

This evaluation method was central to at least three strategies (C-17B , SCTN-11, and SCTN-20) of the 2001 Region L Plan where diversion rates of up to 800 cfs were coupled with large off-channel reservoirs. It also appears to be at least a portion of the evaluation of the Lower Guadalupe Project (SCTN 16) in the 2006 Plan, in which a “combined diversion rate of up to 400 cfs” was used, potentially applied to the underlying senior right at times. Clearly, these infrastructure changes would add to project cost, but at this point it is not clear that these would necessarily increase the unit cost of Scenario 2, because of increased yield. Furthermore, Scenario 3, which will not be burdened with the cost of well field construction of Scenario 2, may be found to be viable, whereas, with the current evaluation it is an utter failure with no viable supply.

Thus we feel that further evaluation of this water management strategy is necessary. At this juncture, the manner in which this water supply option was evaluated potentially shortchanges the possibility of finding a strategy capable of striking a balance between supply, cost, and environmental protection of San Antonio Bay.

As evidenced by the passage of Senate Bill 3 in the last Texas legislative session, maintaining and providing sufficient freshwater inflows to our bays and estuaries has become a priority for the state’s water resources planning and management efforts. The importance of this issue would certainly be hard to discern from this Technical Study. This document is essentially focused just on the incremental water supply issues; there is no illumination or discussion of the differences in environmental flow performance among the scenarios.

The very brief characterization of flow effects on the Guadalupe estuary (page 20) is much too abrupt and we feel it does not address the need to “show consistency with long term protection of...natural resources.” In fact we believe that even the very limited characterization on page 20 is in error. Only Scenario 1 would provide “freshwater inflows to the Guadalupe Estuary ...essentially the same as the ‘full water rights use’ baseline.” That “baseline” as adopted by the SCTRWPG, has the underlying water right evaluated in this study included with no environmental flow criteria. Thus, Scenarios 2 or 3 of the current evaluation, due to the inclusion of a significant environmental flow criteria, will provide more freshwater inflow to the estuary.

We find the lack of illumination regarding the inflow effects on the Guadalupe estuary rather surprising. The SCTRWPG, in a special section of previous regional plan (Section 7.1.3 *Supplemental Evaluations of Potential Long-Term Changes in Freshwater Inflows to the Guadalupe Estuary*), has already shown a commendable willingness to more fully divulge the environmental effects of its plan. In that section of the previous plan, even the adopted “baseline” has some effects on the estuary during drought as compared to current conditions. While it is true that the effects of Scenario 1 would be no worse than the “baseline”, the SCTRWPG should not simply imply by omission that they are unaware of the potential effects of that scenario. And just as important, to be credible there simply must be a portrayal and some discussion of the

positive effects, relative to the “baseline”, of the other scenarios on freshwater inflows to the estuary.

We offer the following page specific comments:

**Page 5. 1<sup>st</sup> Paragraph**

Several water suppliers outside of the Guadalupe Basin (SAWS, City of Boerne, Fair Oaks Ranch, and Bulverde) are identified on page 26 as Water User Groups (WUGS) that plan to utilize water from this project. It is not immediately clear, therefore, why this version of the LGWSP is not subject to Section 11.085 inter-basin transfer provisions.

**Page 5. 2<sup>nd</sup> Paragraph**

The discussion of GBRA water rights in the lower basin would benefit from a discussion of all water rights in the basin and the inclusion of a more recent historical period.

**Page 6. Figure 2-1**

This figure is confusing in reference to the text. It is unclear why the y-axis shows 135,000 ac-ft/yr run of river availability, as there is no discussion of this amount in the text. From this graph, it also appears that 75,000 ac-ft/yr is available all of the time. Finally, it is not clear why the period of record ends in 1989, especially given the discussion of the historical period on the previous page.

**Page 7, first line**

The total “footprint” (including the ring dikes) of a 19,000-acre off-channel storage facility would be greater than 950 acres. This should be a consideration in the calculation of land acquisition costs.

**Page 7, 3<sup>rd</sup> paragraph**

This paragraph is over 3 years old. It would be beneficial to provide an update on the studies mentioned.

**Page 8, 1<sup>st</sup> and 2<sup>nd</sup> line**

The discussion would greatly benefit from a similar type of analysis presented, or included, in Study 2: Brackish Groundwater Supply Evaluation

**Page 8 Table 2.1**

The table would greatly benefit from a brief discussion of Consensus Criteria and various zones presented in the table.

**Page 20, last paragraph**

We find the last sentence misleading to the reader. Given the findings presented in the additional analysis performed by National Wildlife Federation for the SCTWPG’s last

Regional Plan (Section 7.1.3 *Supplemental Evaluations of Potential Long-Term Changes in Freshwater Inflows to the Guadalupe Estuary*), it important to note what impact full water rights use has on the Estuary.

**Page 21, 3<sup>rd</sup> paragraph**

The inclusion in the calculation of unit cost of 22,000 ac-ft/yr of raw water to Lake Dunlap introduces bias into the evaluation of cost-effective water management strategies. There is no demand for this water within the 50 year planning horizon, and there is no guarantee that there ever will be such a demand. Including this amount in the unit cost calculation artificially lowers unit cost and provides a misleading comparison against other supply strategies.

**Page 22, first line**

Brine is not the only by-product of a brackish groundwater desalination project. There should some discussion of what potential contaminants are found in the source-water as well as what pre-treatment, cleaning, and anti-scaling by-products will be utilized at the facility. Finally, we suggest that this paragraph be moved to the Environmental Issues section.

**Page 23, Table 4-1**

- 1) Land acquisition is shown to be 1,817 acres, yet the text notes 2,700 acres necessary for right-of-way and 950 acres for off-channel storage.
- 2) We applaud the use of a more realistic energy cost (0.09 \$/kW-hr) though note that energy cost have increased more than 10% over the last 2 years.
- 3) The unit cost for this project is artificially low (see comments page 21). Although this artificial cost is inferred in the table, such inference will most likely not be included in other tables that list unit costs for individual projects.

**Page 24, Table 4-2**

The same comments presented for Table 4-1 apply here as well.

**Page 26, 2<sup>nd</sup> Paragraph**

Boerne is misspelled.

**Page 33, Section 6.3**

As this is a discussion of direct and indirect economic impacts in the source area, there should be some discussion of what economic impact the project might have on the multi- million-dollar economy related to commercial and recreational fishing and tourism in San Antonio and Aransas Bay.

### **Study 2. Brackish Groundwater Supply Evaluation**

To facilitate interpretation, our comments on this study are presented by project. General comments will be made about the project, followed by page-specific comments. As noted in the previous section, because there is little or no discussion of the brackish groundwater supply for the Lower Guadalupe Water Supply Project, one would expect to find such a discussion in this evaluation. We are not clear why the SAWS-Local Wilcox project discusses the disposal of backwash and the other projects do not have such a discussion.

### **SOUTHERN CALHOUN COUNTY**

As noted in the page specific comments, we are uncertain about the need for such a large well field. The peak demands for this project seem to be greatly overestimated, which because of 'losses' associated with the desalination process, exacerbate the water demands and the size of the well field. There is also some confusion resulting from numeric inconsistencies in the study.

We offer the following page specific comments:

#### **ES-1, last paragraph**

A peak daily water use that is 250% greater than the average daily water use seems excessive, and illustrates the importance of including conservation and drought management as water supply strategies to meet water needs and reduce peak demands. It is not clear from the study how many people are to be supplied by this project, but 11.8 MGD and a per-capita use of 500 gpcd equates to nearly 24,000 people, greater than the current population of Calhoun County. As it is likely that this residential development will include vacation homes, these water demands seems even more excessive.

#### **ES-2, 2<sup>nd</sup> paragraph**

0.46 MGD appears to be a misprint; based on information elsewhere in the study, we assume this value to be 3.46 MGD. It is not immediately clear if this amount refers to concentrate disposal. As previously mentioned, brine is not the only by-product of a brackish groundwater desalination project. There should some discussion of what potential contaminants are found in the source-water as well as what pre-treatment, cleaning, and anti-scaling by-products will be utilized at the facility. Page 4 of this study notes some wells in the area producing water with concentrations of arsenic, iron, and manganese in excess of EPA limits.

The discussion on page 3 of the study notes the split as 70/30; the discussion of the various splits is somewhat confusing.

**ES-2, 4<sup>th</sup> paragraph**

The need to account for raw water loss in a brackish desalination facility is understandable. However, over-accounting for peak water needs (see ES-1 comment) overestimates for the need to construct a well field of this magnitude.

**Page 5, 3<sup>rd</sup> full paragraph**

We appreciate the discussion of proper outfall siting and suggest that oyster reefs be added to the list of areas of particular concerns, especially given the potential of other contaminants, such as arsenic, in the waste stream. There is discussion of a diffuser system, but such a system is not included in the cost estimates in Tables 2-2, 2-3, 2-4.

**WOODSBORO-COPANO BAY**

It is unclear why this project is being considered. There should be some discussion of problems associated with the existing City of Woodsboro water supply and what proposed developments are being considered on Copano Bay. It is our understanding that the regional water planning process is to focus on identified water needs, not speculative ones.

Many of the same comments we raised regarding the Southern Calhoun County project apply here as well: overestimation of peak demands; consideration of other by-products found in the concentrate of the desalination process; and inclusion of a diffuser systems in the cost analysis.

We offer the following page specific comments:

**Page ES-5, 2<sup>nd</sup> full paragraph and page 23, 3<sup>rd</sup> paragraph**

The term ‘expected normal TDS concentrations’ should be better defined.

**Page 24, 2<sup>nd</sup> paragraph**

Page 18 of the report mentions the potential presence of arsenic, hydrogen sulfide, and radiological contaminants, as well as iron and manganese. Page 24 only mentions iron and manganese. Are these other contaminants assumed to not be present?

**SAWS-LOCAL WILCOX**

The presentation of the two cost estimates is helpful. As this project is contentious, it would be helpful to further discuss, in the text, some of the implementation issues presented at the end of the study. It is disappointing to see water projects designed to continue to facilitate growth over the Edwards Aquifer recharge and contributing zone.

We offer the following page specific comments:

**Page 28, Figure 4-1**

The figure is a bit confusing, as it appears that the ASR Project is included in this project.

**Page 29, top of page**

We understand that there is disagreement regarding geographic extent that of this aquitard.

**Page 29, 2<sup>nd</sup> full paragraph**

Some information regarding the saturated thickness of the aquifer would be helpful to understand the impact of such drawdown on the aquifer. Some discussion should also be presented regarding the extent of the cone of depression.

**Page 35, 1<sup>st</sup> full paragraph**

Pipelines, costs, and map location are presented for the backwash disposal facility, yet there is no discussion of the possible disposal alternatives.

**Page 37, 1<sup>st</sup> paragraph**

It is not understood why Region L does not itemize the cost of backwash disposal. Is this cost covered elsewhere?

**Page 39**

“Securing water rights to the Wilcox Aquifer” is a bit confusing, as the state does not have a water rights permitting system.

**EDWARDS BRACKISH DESAL**

The information and discussion presented in this analysis is very helpful and forthright. In some places, however, it is difficult to grasp the connection between these various pieces of information; we have attempted to note the areas of confusion.

We offer the following page specific comments:

**Page ES-11, 1<sup>st</sup> full paragraph**

It is not clear from the text and from figure ES-4 if the concentrate will be injected into wells different than those used in the Local Wilcox Project.

**Page 40, last paragraph**

A reference for Groschen and Buszka would be helpful as the location description provided is somewhat confusing.

**Page 42, 1<sup>st</sup> full paragraph**

The significance of the Luling Fault Zone on figure 5-2 is not clear. As a general comment, while we do not disagree with the information presented on this page, we find the line of reasoning difficult to follow. A cross-sectional diagram might be helpful to the discussion.

**Page 50, 1<sup>st</sup> paragraph**

There is reference to disposal of backwash here but nowhere else in the strategy discussion.

Again we appreciate the opportunity to offer this input to the South Central Texas Water Planning Group and look forward to continued dialogue on this important work. Please feel free to contact us with any questions.

Sincerely,

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