September 8, 2005

Gary Hanlon
DETCOG
210 Premier Drive
Jasper, TX 75951

Re: Comments on Initially Prepared 2006 Regional Water Plan for the East Texas Region

Dear Mr. Hanlon and Planning Group Members:

The National Wildlife Federation, Lone Star Chapter of the Sierra Club, and Environmental Defense appreciate this opportunity to provide written comments on the Initially Prepared Regional Water Plan for the East Texas Region (Region I). We consider the development of comprehensive water plans to be a high priority for ensuring a healthy and prosperous future for Texas. Our organizations also appreciate the extensive efforts of the planning group to produce the initially prepared regional plan. As you know, our organizations - whether individually or collectively - have provided periodic input during the process of developing the plan. The written comments in this letter build upon those previous comments in an effort to contribute to a better plan for all residents of Region I and for all Texans.

I. BACKGROUND

Our organizations support a comprehensive approach to water planning that considers all implications of water use and development. The process that Senate Bills 1 and 2 (SB1, SB2) established has the potential to produce major, positive changes in the way Texans approach water planning. Fully realizing that potential depends on the information that water plans provide, which must be sufficient to evaluate the likely costs and impacts that may result from each water management strategy. Only by providing sufficient information and evaluating it carefully can regional planning groups ensure compliance with the overarching 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). Only by complying with this requirement can regional water planning groups develop plans that actually contain workable water management strategies capable of implementation as opposed to a list of expensive and damaging proposals that will likely produce more controversy than water supply.

This letter comments on the Region I Plan in two different ways. First, we consider the extent to which the initially prepared plan complies with requirements in SB1 and SB 2, as well as the rules that the Texas Water Development Board (TWDB) adopted to implement those statutes. Second,

our comments also address important policy considerations that should inform the regional water plan that statutes or rules may not specifically address.

We recognize that the regional water planning group faces financial constraints that may restrict the group's ability to address some issues raised in these comments as much as you would like. We submit these comments in the spirit of an ongoing dialogue intended to make the planning process as effective as possible. We strongly support the state's water planning process and we want the regional water plans and the state plan to be comprehensive templates that all Texans can endorse. In the remainder of this letter, you will find a summary of key principles that inform our comments followed by specific comments that address different aspects of the draft water plan.

II. KEY PRINCIPLES AND GENERAL COMMENTS

A. MAXIMIZE WATER EFFICIENCY

We strongly believe that improved efficiency in the use of water must be pursued to the maximum extent reasonable. New provisions included in SB 2 and TWDB rules since the first round of planning mandate strengthened consideration of water efficiency. Potentially damaging and expensive new supply sources simply should not be considered unless, and until, all reasonable efforts to improve efficiency have been exhausted. In fact, that approach is now mandated.

The Texas Water Code, as amended by SB1 and 2, along with the TWDB guidelines, require regional water planning groups to consider water conservation and drought management and to incorporate both types of measures into their plans. After the first round of regional planning, the legislature added §16.053 (h)(7)(B) to prohibit TWDB from approving any regional plan that omits water conservation and drought management measures at least as stringent as those required pursuant to Tex. Water Code §§ 11.1271 and 11.1272. In other words, each regional plan must incorporate at least the amount of water savings that other law mandates. This is a common-sense requirement. We certainly should not be basing planning on an assumption of less water conservation than the law already requires. TWDB guidelines also recognize the water conservation requirements of Section 11.085 for interbasin transfers and require the inclusion of the "highest practicable levels of water conservation and efficiency achievable" for entities for which interbasin transfers are recommended as a water management strategy.

In addition, the Board's rules require the consideration of more stringent conservation and drought management measures for all water user groups with water needs. The rules provide that the planning group may choose not to include those more stringent measures if it adequately explains that decision. 31 TAC § 357.7(a)(7)(A)(ii)).Consistent with the TWDB rules, our comments treat water conservation and drought management as separate issues from reuse, which is discussed separately below. 31 TAC § 357.7 (a)(7)(A) of the TWDB rules sets out detailed requirements for evaluation of water management strategies consisting of "water conservation practices." 31 TAC § 357.7(a)(7)(B) addresses water management strategies that consist of drought management measures. The separate evaluation of water management strategies that rely on reuse is mandated by 31 TAC § 357.7 (a)(7)(C).

Water is a finite resource. In order to meet the water needs of a growing population while ensuring the long-term protection of the state's natural resources and agricultural resources, we must use water as efficiently as possible.

The initially prepared plan concludes that conservation is not currently widely accepted in the Region "and should not be relied upon in meeting future needs." IPP at. Pp. 6-1 and 6-2. As discussed further below, we don't believe that the initially prepared plan complies with applicable requirements for evaluating and including water conservation as a water management strategy.

Fortunately, much more progress on conservation in Region I is possible, particularly for water user groups (WUGs) located in urban areas. One example involves municipal gallons per capita per day levels in Region I. The Water Conservation Implementation Task Force, organized by the Texas Water Development Board (TWDB), has recommended 140 gallons per capita per day (gpcd) as the goal for municipal water use. Many regional water planning groups are adopting that goal. We know that these suggested municipal water use rates are not unreasonable for Texas. San Antonio provides a real world example of the potential of improved water efficiency. Through a concerted effort, San Antonio has reduced its municipal water use to about 132 gpcd from a use level of about 213 gpcd in a period of around 20 years. **By contrast, numerous cities in Region I have much higher levels of municipal water use:** Tyler currently uses 248 gpcd, Beaumont 201 gpcd, Lufkin 171 gpcd, and Nacogdoches 206 gpcd. Conservation in these urban areas that would achieve the 140 gpcd level by 2060 would result in annual savings of 41,363 acre-feet of water by 2060. *See* Attached Letter of April 7, 2005, from Norman Johns, Ph.D., to Region I members and accompanying calculations.

B. LIMIT NONESSENTIAL USE DURING DROUGHT

Drought management measures aimed at reducing demands during periods of unusually dry conditions are important components of good water management. As noted above, SB2 and TWDB rules mandate consideration and inclusion in regional plans of reasonable levels of drought management as water management strategies. It just makes sense to limit some nonessential uses of water during times of serious shortage instead of spending vast sums of money to develop new supply sources simply to meet those nonessential demands during rare drought periods. Drought management includes documentation of the water savings each supplier anticipates as a result of drought measures.

C. PLAN TO ENSURE ENVIRONMENTAL FLOWS

Designing and selecting new water management strategies that minimize adverse effects on environmental flows is critical to the future of our state's rivers, estuaries, and the massive economies that depend on them. New rules applicable to this round of planning require a *quantitative analysis* of environmental impacts of water management strategies to ensure a more careful consideration of those additional impacts. The rules specifically require that each potentially feasible water management strategy must be evaluated by including a quantitative reporting of "environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the

Gulf of Mexico." 31 TAC § 357.7 (a)(8)(A)(ii). However, designing and selecting such strategies represents just one aspect of the planning necessary to meet environmental flow needs.

If existing water rights, when fully used, would cause serious disruption of environmental flows resulting in harm to natural resources, then merely minimizing additional harm from new strategies would not produce a water plan that would be consistent with the long-term protection of natural resources or the economic activities that rely on them. Demonstrating such consistency is a prerequisite to approval of a regional water plan. As a result, regional water planning groups should recognize environmental flows as a water demand critical to the state's ecology and economy, and should devise water plans that protect reasonable environmental flow levels. For example, Region K, in its initially prepared plan, has recognized environmental water needs as a category of water demand.

During the last round of regional planning, the East Texas Region was among the leaders in acknowledging the importance of protecting freshwater inflows. The earlier plan specifically noted the importance of planning to ensure such flows but cited the unavailability, at that time, of information from state studies regarding freshwater inflow needs for Sabine Lake. The discussion in Section 5.5 of the Regional Water Plan East Texas Region (2001) expressly acknowledges the "flow demand to sustain the Sabine-Neches Estuary" as an issue of particular concern. Since that time, the results of state studies on inflow needs for Sabine Lake have become available. Unfortunately, we are unable to locate discussion of the importance of protecting those inflows in the current initially prepared plan. That is very disappointing and surprising. We are not aware of any circumstances that would have lessened the importance of the issue for the people and the economy of the region. We urge the planning group to revisit this issue and acknowledge the importance of planning to ensure adequate freshwater inflows to the Sabine-Neches Estuary.

D. MINIMIZE NEW RESERVOIRS

The planning group has listed Lake Columbia as a water management strategy and Rockland Reservoir as an alternative strategy. Also, the initially prepared plan includes general discussion of various reservoirs from the 1984 and 1997 State Water Plans. Region I is fortunate to have so many alternative sources of water to meet its demand without constructing new reservoirs. Because reservoir construction and maintenance can result in so many adverse effects – to local economies, riparian landowners, terrestrial wildlife habitat, terrestrial and aquatic species, river systems, and bays and estuaries, for example – planning groups should consider new reservoirs as water management strategies *only after* developing existing water sources to the maximum reasonable extent. If new reservoirs are absolutely necessary after the planning group considers alternative water sources, the entity constructing the reservoir must minimize adverse impacts on regional economies and natural resources around the reservoir site. Regardless of whether the proposed reservoir is located inside or outside the boundaries of the region, the rules require the planning group to demonstrate that the proposed reservoir development is consistent with long-term protection of the state's water, agricultural, and natural resources.

E. MANAGE GROUNDWATER SUSTAINABLY

Region I has acknowledged the challenges that groundwater in the region faces from overpumping, saltwater intrusion, and contamination. Nevertheless, Region I has recommended an approach to groundwater management that would continue groundwater mining over the next 50 years and the resulting exacerbation of these problems.

Wherever possible, entities within a region should manage groundwater resources on a "sustainable basis." We understand sustainable groundwater management to entail limiting pumping levels to balance with recharge. Discharge and recharge levels may be averaged over varying periods of time but the approach should ensure that springs, seeps, and shallow wells are not significantly affected. Although the initially prepared plan uses the term "aquifer sustainability," it actually plans for continued depletion of groundwater resources.

The level of groundwater pumping that a regional water plan reflects should be consistent with the sustainable management definition discussed above. Mining groundwater supplies will endanger the future viability of the aquifer as a source of potable water, and will often adversely affect surface water resources as well. Incorporating non-sustainable levels of pumping constitutes a tremendous disservice to future generations of Texans. In addition, unnecessary depletion of aquifers is not consistent with the long-term protection of the state's water resources, natural resources, or agricultural resources.

F. FACILITATE SHORT-TERM TRANSFERS

Senate Bill 1 directs regional water planners and entities that comprise each region to consider voluntary or emergency transfers of water to meet demand. Tex. Water Code §16.051 (d) directs that rules governing the development of the state water plan shall give specific consideration to "principles that result in the voluntary redistribution of water resources." Similarly, §16.053 (e)(5)(H) directs that regional water plans must include consideration of "voluntary transfers of water within the region using, but not limited to, regional water banks, sales, leases, options, subordination agreements, and financing arrangements…." Thus, there is a clear legislative directive that the regional planning process must include strong consideration of mechanisms for facilitating voluntary transfers of existing water rights within the region, particularly on a short-term basis, as a way to meet drought demands. Although the statute treats such transfers as a key mechanism for meeting water demand, most planning regions have devoted little attention to transfers to date in the planning process.

In addition, the Water Code identifies emergency transfers as a way to address serious short-term municipal water shortages without the expense and natural resource damage associated with developing new water supplies. Tex. Water Code §16.053 (e)(5)(I) specifically directs that regional plans must consider emergency transfers of water pursuant to §11.139. This includes providing information on the portion of each non-municipal water right that could be transferred without causing undue damage to the holder of the water right.

The water planning process should therefore serve as a mechanism to facilitate voluntary transfers, particularly in drought situations, by collecting specific information on rights that might be

transferred and by encouraging a dialogue between willing sellers and willing buyers. The initially prepared plan encourages the use of voluntary transfers and provides a table suggesting those water suppliers in the region who could potentially supply specific quantities of water to other entities in the region predicted to have shortfalls during the planning period. *See* pages 4B13-4B16. We commend Region I for providing this information on voluntary transfers and encourage continued research on potential voluntary transfers and negotiations to bring such transfers to fruition.

III. SECTION-SPECIFIC COMMENTS

A. GROUNDWATER

The Gulf Coast and Carrizo Wilcox Aquifers together provide the lion's share of groundwater in Region I. The initially prepared plan indicates approximately 159,800 acre feet per year total are available from the Carrizo-Wilcox Aquifer, and 172,000 acre feet total are available from the Gulf Coast Aquifer. *See* Table 3-13. Each of these aquifers currently suffers from the consequences of overpumping. The initially prepared plan acknowledges significant problems with salt-water intrusion, contamination from human sources, and over pumping resulting in the mining of groundwater.

Gulf Coast Aquifer. A 1990 Texas Water Development Board (TWDB) report found significant problems with saltwater contamination in Orange County, especially the municipalities of Orange and Vidor, associated with heavy pumping. *See* p. 1-19. Heavy municipal and industrial pumpage has resulted in significant declines in portions of the aquifer. Total dissolved solids levels exceed standards near the coast.

Carrizo-Wilcox Aquifer. Water levels have declined significantly in the Tyler and Lufkin-Nacogdoches areas. Some wells have been drawn down more than 200 feet; 46 test wells throughout the region suggest average drawdowns between the 1960s and the 1990s to be 51 feet and to range from minus 20 to 263 feet. *See* pp.1-16 through 1-17.

The initially prepared plan acknowledges that drawdowns cause household use and livestock watering in rural areas to become more difficult and expensive as individuals must drill deeper and deeper wells. The plan also recognizes that overpumping threatens estuarine wetlands: Approximately 19,900 acres of wetlands were lost from 1955 until 1992 because of submergence and erosion resulting from subsidence, which in turn resulted from the drawing down of ground water, oil, and natural gas. *See generally* p.1-57.

1. Section 3.2.2 Groundwater Availability

The initially prepared plan indicates that the planning group decided, as a policy decision, to accept significant levels of drawdown. In areas where an aquifer is confined (and apparently where a groundwater conservation district exists), the initially prepared plan indicates that 50 feet of water level decline over the planning period is acceptable. In areas where an aquifer is unconfined (and apparently where a groundwater conservation district exists), the plan concludes that 10% decrease in saturated thickness is acceptable over the planning period. Finally, for Smith County, the

initially prepared plan indicates that an 80-foot decline is acceptable, relying at least in part on the absence of a groundwater district.

Unfortunately, the initially prepared plan provides little explanation of the basis for decision in defining those levels as acceptable. Appendix B to Chapter 3 does explain that the drawdown level actually is an average figure, by county. Thus, water level declines in any particular area could be much greater, or less, than the average figure.

TWDB guidance directs the planning group to:

> Calculate the largest annual amount of water that can be pumped from a given aquifer without violating the most restrictive physical or regulatory or policy conditions limiting withdrawals, under drought-of-record conditions. Regulatory conditions refer specifically to any limitations on pumping withdrawals imposed by groundwater conservation districts through their rules and permitting programs.

Although there is some reference in the initially prepared plan to groundwater districts, there is no explanation of applicable rules or permit requirements that might establish the applicable regulatory conditions. Information about those regulatory constraints is needed to allow the reader to understand the rationale being used in the planning process. The planning group also fails to provide any explanation of, or rationale for, its policy decision not to choose a true sustainable level of groundwater management (i.e., one that matches discharge to recharge). Again, that information is needed to document how the plan is consistent with long-term protection of the state's water resources. As one example, the plan does not provide information about the current conditions, such as saturated thickness, that would allow an assessment of the long-term viability, just from a water-supply perspective, of the recommended levels of pumping.

It also appears that for at least a portion of the planning area there are physical conditions, related to subsidence and water quality impacts, which impose restrictions on groundwater pumping. The relationship of those conditions to recommended pumping levels also must be discussed with some reasonable specificity.

For example, the initially prepared plan acknowledges that saltwater intrusion has been a problem in the Gulf Coast Aquifer in Orange County. IPP at p. 1-57. However, the plan also recommends that groundwater usage in Orange County be expanded to meet demands from future growth "until such a time that a salt water intrusion or subsidence problem is encountered." IPP at p. 4C-33. Thus, the plan anticipates just such problems but fails to provide a quantitative assessment of environmental factors as required by Section 357.7 (a)(8)(A)(ii). Moreover, such an approach is inconsistent with long-term protection of the state's water resources, agricultural resources, or natural resources and, as a result, does not comply with Section 16.053 (h)(7)(C) of the Water Code.

2. Springs

In the section of the initially prepared plan dealing with springs, the plan indicates that none of the springs are considered important from a water supply perspective. However, the current rules also

require consideration of the role of springs in natural resource protection. *See* 31 TAC § 357.7 (a)(1)(D).

In order to assess whether the plan is consistent with long-term protection of natural resources, information is needed about the impact of the chosen groundwater production levels on springs and seeps and on surface flows generally. See 31 TAC § 357.7 (a)(8)(B) requiring discussion of "groundwater surface water interrelationships." The initially prepared plan notes that the Queen City Aquifer, in particular, "provides significant baseflow to creeks and rivers in the region." IPP at page 3-12. A reasonable quantitative evaluation of the effect of the groundwater management strategies on environmental factors, including environmental flows, is required. *See* 31 TAC § 357.7 (a)(8)(A)(ii). Similarly, an evaluation of the impacts of these strategies on agricultural resources is needed. *See* 31 TAC § 357.7 (a)(8)(A)(iii).

31 TAC § 357.7(a)(1)(D) requires the regional report to include "a description of all sources of groundwater and surface water including major springs that are important for water supply **or natural resource protection purposes**." The Region I report cites Springs of Texas by G. Brune to document that Region I contained 251 springs as of 1981. The report describes these springs as follows:

> Most of the springs discharge less than 10 gpm and are inconsequential for planning purposes. Based on discharge measurements collected mainly in the 1970s, app. 8 springs in the region discharge between 200 and 2,000 gpm. Records from Indian Springs, located about 5 miles (8 km) northwest of Jasper in Jasper County, indicate a discharge of over 7.7. million gallons per day on February 20, 1978. The Brune reference does not indicate that any of the springs are used for water supply. The Jasper County spring was used as source water for a local TPWD fish hatchery in the 1970s.

The report provides additional summary information on some of the more significant springs in the region as follows:

(1) Cherokee County: one "medium" spring at 12,500 gallons per minute; twelve "small" springs at 1,250 gallons per minute; one "seep" at 12.5 gallons per minute.

(2) Nacogdoches County: two "medium" springs at 12,500 gallons per minute; nine "small" springs at 1,250 gallons per minute; eight "very small" springs at 125 gallons per minute; two "seeps" at 12.5 gallons per minute.

(3) Rusk County: one "medium" spring at 12,500 gallons per minute; twelve "small" springs at 1,250 gallons per minute; six "very small" springs at 125 gallons per minute; zero "seeps" at 12.5 gallons per minute.

(4) Smith County: one "medium" spring at 12,500 gallons per minute; eleven "small" springs at 1,250 gallons per minute; zero "very small" springs at 125 gallons per minute; three "seeps" at 12.5 gallons per minute.

See Table 1.K, p. 1-50. The initially prepared plan presupposes that none of these springs is significant for planning purposes and notes that at least two springs in Nacogdoches and Smith

Counties have run dry due to "excessive groundwater pumping and sedimentation caused by surface erosion." Page 1-49. The plan contains no indication as to how the planning group concluded none of these springs was "major" as contemplated by the rule. It appears that this conclusion is based solely on the quantity of water each spring produces, relying on the part of the rule requiring the list to include major water supply sources.
However, the rule also states that the region's report must consider springs important for "natural resource protection purposes." Springs that are not significant from a human water supply perspective can be extremely important from a natural resource perspective. Similarly, the plan provides no indication as to what role these springs play in supporting stream or river ecosystems. Finally, the plan provides no indication as to which aquifer feeds the springs and how aquifer management decisions may affect the conditions of these springs.

We acknowledge the limited information that is provided about the springs in the region. However, the initially prepared plan falls short of satisfying the TWDB rules, which were revised since completion of the first round of planning to require consideration of springs important for natural resource protection. *See* 31 TAC § 357.7 (a)(1)(D). Unfortunately, the information included in the initially prepared plan is not adequate to allow any assessment of whether any of the listed springs is a significant feature in terms of protection of natural resources such as fish and wildlife resources. Particularly for the "medium" springs listed, inclusion of some additional information about the natural resource significance of those springs would be appropriate in complying with those revised rules. Discussion also is needed about those springs that are important in maintaining baseflow in surface streams in the region. This information is required in order to comply with the requirement to consider the impacts of water management strategies on "groundwater surface water interrelationships." *See* 31 TAC § 357.7 (a)(8)(B).

C. NEW RESERVOIR CONSTRUCTION
(Pages 1.57-1.58; 4.B-20 through 21; 5.7-5.8).

1. Lake Columbia.[1]
New reservoirs are one of the most potentially damaging water management strategies, in terms of impacts on natural resources and on agricultural resources. Accordingly, any recommended new reservoir must be carefully evaluated to ensure that it really is needed, that the potential impacts have been carefully considered, and that the costs are realistic. The plan must demonstrate that the strategy, when evaluated against alternative strategies, is both cost-effective and environmentally sensitive. 31 TAC § 357.5 (e)(4). Similarly, the plan must demonstrate that the strategy is consistent with long-term protection of the state's natural resources and agricultural resources. 31 TAC § 357.7 (a)(8)(A)(ii).

The recommendation for the construction of Lake Columbia is unjustified for many reasons. First, it is not needed. The region enjoys a large surplus of existing surface water supplies. Beyond that, a significant portion of the needs identified, in Table 4B.A, as being supplied by Lake Columbia are

[1] The initially prepared plan actually uses the name "Lake Colombia." Other references we have found, including the legislation formally renaming the former Lake Eastex project, refer to the project as "Lake Columbia" so we use that reference in these comments.

illusory. A review of the initially prepared plan demonstrates that over 20% of the listed "needs" are not actually projected to exist within the planning period. Second, as a result of this phantom "need," unit costs for water from Lake Columbia are grossly understated. Third, the environmental impacts of the proposed reservoir are great. Unfortunately, the initially prepared plan fails to provide any meaningful quantitative analysis of those impacts.

a. Lake Columbia Is Not Needed.

Upon reviewing the statistics available in the Region I Draft Plan, it becomes obvious that Region I has no need for new reservoirs in order to satisfy its water demands. The Draft Plan projects 1,261,320 acre-feet of annual demand by 2060, with a regional shortfall, or need, of 106,041 acre feet and a 174,200 acre-foot annual shortfall, or need, when assessed by individual water user group. Strikingly, the Draft Plan estimates that approximately 3,000,000 acre-feet per year of permitted, potable water supplies currently exist in Region I. *See* pp.3-1 through 3-2. From existing reservoirs, the available supply water rights that could be purchased from water rights holders or could be obtained from the state far exceed the shortfall that the Draft Plan predicts. (1,926,344 acre feet of permitted reservoir water by 2060; 308,995 acre feet of unpermitted reservoir water by 2060). *See* pp. 3-9 through 3-10.

Table 4B.A, on page 4B-20, lists the needs proposed to be supplied by Lake Columbia. The listed needs are shown as adding up to 50,149 acre-feet in 2060. Our calculation of the column total in the table is 58,700. The projected firm yield of Lake Columbia is 85,000 acre-feet. A review of information for the WUGs listed in Table 4B.A reveals that the projected total 2060 needs for all of those WUGs only equals 52,293 acre-feet. The total amount of projected needs for all of those WUGs that is actually recommended to be met from Lake Colombia is only 39,259 acre-feet in 2060. Table 4B.A is inaccurate and overstates projected needs to be met from the proposed Lake Columbia.

Water User Group	**Table 4B.A Listed Need 2060**	**Actual Need Projected 2060**	**Amount of Actual Need Recommended from Lake Columbia 2060**
New Summerfield	2,565	213	213[2]
Rusk	4,275	212	212[3]
Manufacturing (Angelina County)	8,551	4,504	4,504[4]
County Other (Nacogdoches County)	428	291	0[5]
City of Nacogdoches	8,551	5,881	0[6]
Steam Electric (Nacogdoches County)	13,358	13,358	13,358[7]
Steam Electric (Rusk County)	20,972	27,834	20,972[8]
Total	**58,700**	**52,293**	**39,259**

Each of these notes accompanying the above chart constitutes a separate comment on the initially prepared plan.

[2]*Other available strategies listed for New Summerfield would meet its needs at about one-fourth of the unit cost of water from Lake Columbia. In addition, the per unit cost for Lake Columbia water is inaccurate because it is based on the purchase of 2,565 acre-feet per year, which is over ten*

times the amount New Summerfield actually is projected to need. Furthermore, because most of the yield of Lake Columbia would not be needed within the planning horizon, the validity of the per unit costs even for this excessive amount of supply is highly questionable. Pages 4C-12 and 4C-13. This strategy does not comply with the requirement to choose cost-effective strategies that are consistent with protection of natural resources and agricultural resources. See 31 TAC §§ 357.5(e)(4), 357.7(a)(9).

[3]*Other available strategies listed for Rusk would meet its needs at about one-sixth of the unit cost of water from Lake Columbia. In addition, the per unit cost for Lake Columbia water is inaccurate because it is based on the purchase of 4,275 acre-feet per year, which is over twenty times the amount Rusk actually is projected to need. Furthermore, because most of the yield of Lake Columbia would not be needed within the planning horizon, the validity of the per unit costs even for this excessive amount of supply is highly questionable. Page 4C-13. This strategy does not comply with the requirement to choose cost-effective strategies that are consistent with protection of natural resources and agricultural resources. See 31 TAC §§ 357.5(e)(4), 357.7(a)(9).*

[4]*Another listed available strategy could meet these needs. That other strategy is shown to cost about twice as much per unit as getting water from Lake Columbia. However, because the Lake Columbia per-unit cost is based on purchasing twice the amount of the projected need, the comparable per-unit costs for meeting the actual projected need pursuant to either strategy might well be about equal. Furthermore, because most of the yield of Lake Columbia would not be needed within the planning horizon, the validity of the per-unit costs even as calculated assuming this excessive amount of demand is highly questionable. Pages 4C-9 through 4C-10.*

[5]*The initially prepared plan recommends that the projected County-Other water need be met through increased pumping from the Carrizo-Wilcox rather than through obtaining water from Lake Columbia. The per-unit cost is about half that of obtaining water from Lake Columbia and the Lake Columbia per-unit cost is based on the purchase of about 50% more water than is projected to be needed. Furthermore, because most of the yield of Lake Columbia would not be needed within the planning horizon, the validity of the per-unit costs even for this excessive amount of supply is highly questionable. Page 4C-27.*

[6]*The initially prepared plan recommends that the City of Nacogdoches meet its needs through a combination of other strategies. Page 4C-29 and 30.*

[7]*No alternative strategies are shown as having been evaluated for meeting the projected Steam Electric Power needs in Nacogdoches County. The failure to evaluate alternative supply strategies requires explanation. The planning group is required to evaluate all potentially feasible strategies. See 31 TAC §§ 357.7(a)(8). This appears to be a potential new facility. Because of siting flexibility for new electric power plants, the facility likely could be located near an alternative water supply source.*

In the Regional Water Plan East Texas Region (2001), the recommended supply strategy for a potential future steam electric power plant in Nacogdoches County is to obtain water from Sam

Rayburn Reservoir. The unit cost is listed as $0.09 per 1000 gallons for 7,505 acre-feet. See the 2001 Plan at pages 5-53 and 5-54. The projected cost in the current IPP for purchase of water from Lake Columbia is $1.25 per 1000 gallons for 13,358 acre-feet. Particularly given the potential for increased environmental impacts from a new reservoir and the higher cost, the regional group must explain why purchase of water from Sam Rayburn Reservoir is not a potentially feasible option to be evaluated and, indeed, why it is not a superior option.

[8]*A portion of the projected demand is shown as being met from increased production from the Carrizo-Wilcox Aquifer. However, no alternative sources from the remaining projected need, such as alternative surface water sources, are evaluated. Lake Cherokee, located near the projected facility, is not listed in Table 3.2 on page 3-7. It does appear in Table 1.D and on the map on page 3-6, where it is shown as lying on the boundary between Region I and Region D. We were unable to locate information in the initially prepared plan about water availability from Lake Cherokee.*

In the Regional Water Plan East Texas Region (2001), the recommended supply strategy is to obtain water from Toledo Bend Reservoir. The unit cost is listed as $0.10 per 1000 gallons. See the 2001 Plan at page 5-75. The projected cost in the current IPP for purchase of water from Lake Columbia is $0.97 per 1000 gallons. Particularly given the potential for increased environmental impacts from a new reservoir and the higher cost, the regional group must explain why purchase of water from Toledo Bend Reservoir is not a potentially feasible option to be evaluated and, indeed, why it is not a superior option.

The information about projected demand shown on pages 4C-58 and 4C-59 also overstates demand for water from Lake Columbia as compared to individual recommendations for WUGs. See our comments above regarding Table 4B.A.

b. The Per-Unit Costs for Lake Columbia Water Are Understated.

As explained above, the per-unit costs for water from Lake Columbia are based on amounts far in excess of projected demands. Because the purchasing entity would be paying the cost for water not being used, based on contractual commitments, the actual per unit costs to meet projected demand would be greatly in excess of the stated cost. The only entities for which that would not appear to be the case are the two steam electric plants. However, even for those facilities, the per-unit costs likely are inaccurate because there is so little demand for the water from Lake Columbia. In order to finance construction of the reservoir, unit costs likely would be much higher than the cost presented in the initially prepared plan.

The overall cost estimate for the proposed reservoir is so general that it does not provide a meaningful opportunity to comment. Total estimated costs are listed on page 4C-59 but no breakdown of those costs is provided. For example, for the reservoir itself costs are not broken down to show even major categories such as land acquisition costs, construction costs, or mitigation costs. Without that information it is not possible to assess whether the costs represent reasonable estimates.

Regarding mitigation costs for Lake Columbia, the percentage of high-quality habitat to be inundated is high: 3,500 acres of category-two bottomland hardwood forest. That is increasingly scarce habitat that supports a diverse range of species, including endangered and threatened species. Because Texas bottomland hardwood habitat is extremely difficult to replace, the cost of mitigating for the inundation of such habitat is extremely high. USFWS has estimated that the bottomland hardwood forest in the Lake Columbia footprint would require between 8,207 and 32,827 acres of in-kind mitigation, depending on the level of management dedicated to the new land. When one includes the 3,000 acres of priority 3 pine-hardwood forest and priority four grasslands, the total acreage needed for mitigation ranges from 14,373 to 57,489 acres, again depending on the management practices employed on the acreage used for mitigation. *See Texas Water and Wildlife: An Assessment of Direct Impacts to Wildlife Habitat from Future Water Development Projects*, pp.3-4, 20 (TPWD and USFWS, May 1990). The potential impact of the required mitigation measures on agricultural resources also should be considered.

The estimated cost for the ANRA treatment plant alone (over $13 million) raises serious questions about project viability. As noted above, only a few hundred acre-feet of yield from the proposed reservoir would go to municipal use. Even if the manufacturing use were to require treated water, which seems unlikely, there would be nowhere near sufficient demand to support the cost of the treatment plant.

c. The Initially Prepared Plan Lacks the Required Quantitative Evaluation of Lake Columbia.

For each potentially feasible water management strategy, Texas Water Development Board rules require the regional planning group to provide "a quantitative reporting of . . . environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico." *See* 31 TAC 357.7(a)(8)(A)(ii). Probably no water management strategy needs closer scrutiny under this rule than the proposed construction of a reservoir.

The initially prepared plan does include some general information about some aspects of the impacts of inundation on wildlife habitat from five reservoirs that were evaluated in past water plans. Some of that information is quantitative. See pages 1-58 through 1-62. There is some additional qualitative discussion of the proposed Lake Columbia on pages 4B-20 through 4B-21 and a highly generalized discussion of water quality impacts of reservoirs in general on pages 5-7 through 5-8. However, we found no quantitative evaluation of downstream effects on wildlife habitat as a result of alteration of flow patterns. Similarly, we found no quantitative consideration of environmental water needs, cultural resources, or effects on coastal inflows. Thus, the initially prepared plan does not comply with applicable requirements for this strategy.

In addition, the initially prepared plan fails to provide information adequate to demonstrate that the construction of Lake Colombia would be cost-effective (as noted above, the per-unit cost estimates are inaccurate because of projected demand is so much lower than the project yield) or that it would be consistent with long-term protection of the state's water resources, agricultural resources,

and natural resources. Those demonstrations are required pursuant to Section 357.7 (a)(9) of the Board's rules and Section 16.053 (h)(7)(C) of the Water Code.

2. Other Reservoirs

The Region I Draft Plan actually discusses five reservoirs from the 1984 state plan: (1) the Eastex Reservoir, or Lake Columbia; (2) the Rockland Reservoir; (3) the Weches Reservoir; (4) the Bon Weir Reservoir; and (5) the Tennessee Colony Reservoir. There is not even the suggestion of a need for any of those reservoirs other than Lake Columbia. Of these five, the planning group has recommended the construction of Lake Columbia.

Other than brief quantitative information about habitat types within the potential inundation footprint, no quantitative analysis is provided. The initially prepared plan does not come close to providing sufficient evaluation to support recommending any of those reservoirs as a water supply strategy, an alternative strategy, or as a unique reservoir site. The initially prepared plan does not suggest any such status for Weches Reservoir, Bon Weir Reservoir, and Tennessee Colony Reservoir. That is a significant improvement over the last version of the regional plan.

The planning group does discuss a request for consideration of a recommendation for the Rockland Reservoir site as a unique reservoir site, but the initially prepared plan includes no such recommendation. Indeed, the initially prepared plan fails to provide any of the information that would be required to support such a recommendation. In fact, because there is no need for the water from the potential reservoir and thus no identified beneficiaries, such a recommendation could not be justified. *See* 31 TAC § 357.9.

The Draft Plan acknowledges that Rockland Reservoir would impact a bottomland hardwood site known as the "Middle Neches River," which USFWS has identified as a priority one preservation area. Rockland would also impact three USFWS priority two preservation areas: (a) "Neches River South," (b) "Piney Creek," (c) "Russell Creek." **Priority one** is defined as "excellent quality bottomlands of high value to waterfowl," and priority two as "good quality bottomlands with moderate waterfowl benefits." *See* pp.1-60-16-1.

D. WATER CONSERVATION

At page 2-10, the initially prepared plan states that the per capita municipal demand was adjusted to account for "current plumbing, appliance, and other conservation technologies." Such an adjustment would be consistent with TWDB requirements and real-world conditions. However, we were unable to locate any information about the amount of those adjustments. That information should be included in the initially prepared plan. The amount of those adjustments is a relevant factor in assessing the potential for additional water conservation savings. Such information about per capita water use would be very helpful in assessing the potential for additional savings through water conservation and drought management measures.

TWDB rules require that the plan include an evaluation of water conservation strategies for the following categories of water users, where applicable: (1) industrial; (2) steam electric power; (3) mining; (4) residential/commercial use; and (5) agricultural uses. TDWB rules require Region I to

consider conservation as a water management strategy distinct from any other strategies. *See* 31 TAC § 357.7(a)(7)(A). In reviewing Table 1 in Chapter 4C, we were unable to locate information about evaluations of water conservation strategies. Comparable information is required to allow informed comparisons of available strategies. *See* 31 TAC §357.7(a)(8)(E).

For water user groups required, pursuant to Section 11.1271 of the Water Code, to have a water conservation plan, the regional plan must include at least the levels of water conservation resulting from those Section 11.1271 plans. As part of this strategy, the region is required to calculate the water savings that will result and include them as a water supply strategy.

The regional plan also must include consideration of water conservation more stringent than that required by Section 11.1271. However, provided the regional plan includes appropriate explanation and documentation, the regional planning group may decline to include water conservation measures beyond those required by Section 11.1271. *See* 31 TAC § 357.7(a)(7)(A)(ii). It appears that the initially prepared plan has omitted a specific explanation as to why additional conservation measures were rejected for the vast majority of user groups.

The experience of San Antonio in reaching a 132 gpcd level for municipal use belies the contention that higher levels of water efficiency are not achievable or practicable. Absent compelling evidence to the contrary, a municipal usage rate of no higher than 140 gpcd should be used for evaluating water efficiency (i.e., usage rates not considering reuse).

1. Manufacturing Uses and Conservation

The Draft Plan states that manufacturing demand will increase from 401,790 acre feet per year to 593,454 acre feet per year over the planning period. *See* p.2-17. This is, by far, the largest component of growth in water demands noted in the initially prepared plan. From Table 4.2, it appears that most of the demand can be meet with currently developed supply. However, a region-wide need of about 37,500 acre-feet is shown for 2060. As noted in a January 26, 2005 memorandum from Bill Mullican, TWDB, to Regional Planning Group Chairs and Consultants (Subject: Clarification – Regional Water Planning Contract Exhibit B), "[t]he non-municipal water demands that have been approved by TWDB's Board are not based on any assumptions of water conservation." Thus, these projections of manufacturing demand assume no efficiency improvements whatsoever.

The initially prepared plan includes confusing statements about water conservation that appear to be conflicting. On page 6-2, the initially prepared plan indicates that the planning group has determined that water conservation should not be relied upon in meeting future needs. That statement and the approach it reflects is directly inconsistent with SB 2 and TWDB rules. With respect to manufacturing water needs, water conservation, in the form of water efficiency measures, is a required water management strategy for those entities using surface water, either directly or indirectly through purchase, pursuant to a water right in excess of 1000 acre-feet. *See* 31 TAC § 357.7(a)(7)(A)(i). The initially prepared plan does not include the required water conservation strategies when listing individual water management strategies.

By contrast, at pages 4B-5 and 4B-6, the initially prepared plan projects a savings of about 2,446 acre-feet through water conservation for a subset of manufacturing activities in Angelina and Nacogdoches Counties. We understand that estimate to be limited to savings anticipated to result from industrial audit water practices for food and manufacturing industries applied only to water provided through municipal suppliers. We do acknowledge this limited recognition of water conservation potential for manufacturing. Unfortunately, as noted below, the failure of the initially prepared plan to reflect these savings in the calculations for the relevant WUGs appears to render the "savings" of no practical effect and to make the plan inconsistent with regulatory requirements.

In addition to those required conservation water management strategies, the plan must include consideration of additional water efficiency measures for each user group with a need. *See* 31 TAC § 357.7(a)(7)(A)(ii). Unlike for the levels of water conservation mandated by Section 357.7(a)(7)(A)(i), the regional planning group may justify not including these additional water efficiency measures. However, we are unable to locate specific explanations for the failure to include those measures. The initially prepared plan, indicates at page 6-2 that the group "feels that water conservation is not a widely recognized effective strategy in East Texas at the present time and should not be relied upon in meeting future needs." This is a 50-year water plan. How will conservation ever become recognized if it is not even recommended? Surely, it is appropriate for the planning group to recommend that water conservation should become an accepted strategy at least during the next decade or so. That statement does not constitute a meaningful explanation for failing to include additional water conservation strategies within the planning period.

With respect to manufacturing water conservation strategies, the initially prepared plan states, at page 4B-5, that application of each of the 14 best management practices listed in TWDB Report 362 to the food and manufacturing industries in Angelina and Nacogdoches counties is not practical at this time. It also indicates that one practice, the industrial water audit practice, is feasible. We strongly support the inclusion of the industrial audit for these WUGs. Although we understand that not all of the 14 best management practices may be appropriate, we do believe additional discussion is required to explain the determination that none of the other rejected practices is considered potentially feasible.

The initially prepared plan also appears to indicate that water needs for the timber/paper industries in Angelina County may not have been considered in the planning process. See page 4B-5. It is clear that water conservation was not considered for those demands. The rationale for that decision is not clear and should be further explained. Even if the entities "provide their own ground or surface water," that water still comes out of a finite shared resource and should be considered in the planning process.

The initially prepared plan also indicates, at page 4B-5, that there are readily available supplies of water to meet manufacturing needs in Newton, Orange, and Polk counties. However, it appears that these are not currently available supplies because water management strategies are listed to meet varying amounts of manufacturing needs in each of those counties. Accordingly, water conservation strategies must at least be evaluated.

Section 4.C.2 Angelina County – Manufacturing
The projected 2060 need of 5,404 acre-feet is recommended to be met with surface water. No water conservation strategy is listed as being recommended or even considered. That is inconsistent with 31 TAC § 357.7(a)(7)(A)(i) and (ii) and with Section 16.053 (h)(7)(B).

Section 4.C.9 Nacogdoches County – Manufacturing
The projected 2060 need of 1,626 acre-feet is recommended to be met through purchase of surface water. No water conservation strategy was included or considered. That is inconsistent with 31 TAC § 357.7(a)(7)(A)(i) and (ii) and with Section 16.053 (h)(7)(B).

Section 4.C.11 Orange County – Manufacturing
The projected 2060 need of 31,456 acre-feet is recommended to be met with surface water. No water conservation strategy was included or considered. That is inconsistent with 31 TAC § 357.7(a)(7)(A)(i) and (ii) and with Section 16.053 (h)(7)(B).

2. Municipal Uses and Conservation
The initially prepared plan indicates that conservation strategies were considered for municipal users that used more than 140 gallons per capita per day. However, the plan includes extremely limited water conservation recommendations. By 2060, the savings from municipal conservation alone would total **41,393** acre feet per year if use levels were reduced to 140 gallons per capita per day. *See* Attachment to these comments (Letter of April 7, 2005, to Region I Planning Group from Norman Johns, Ph.D.) The City of San Antonio already has reduced its per capita municipal use levels to below 140 gpcd through water efficiency measures. The costs for these water efficiency strategies generally are very reasonable. The GDS study, contracted for by the TWDB, provides useful information about conservation potential and costs.

The potential for water savings through increased efficiency in municipal water usage in Region I is very substantial. For example, the following cities have usage rates significantly above 140 gpcd:

- Beaumont averages 201 gallons per capita per day.
- Tyler – a fast-growing urban area in Region I (only part of the city is in the region) – averages 248 gallons per capita per day.
- Nacogdoches – one of the fastest-growing urban areas in Region I – has an average use of about 206 gallons per capita.
- Lufkin – one of the fastest-growing urban areas in Region I – currently has an average use of about 171 gallons per capita.

On page 4B-3, the discussion of conservation water pricing is confusing. The initially prepared plan indicates that it "will be most effective in areas where groundwater resources are becoming less available and requires high expenditures in capital projects to supply water." IPP at p. 4B-3. The rationale for that statement is less than obvious. It certainly is true that high water costs may result in water conservation independent of an intentional conservation pricing structure. However, a conservation pricing structure, depending on the price charged, can work in virtually any

situation. That discussion also indicates that conservation water pricing was considered only for areas meeting those two criteria and located in counties nearing the limits of groundwater availability. Effective water conservation is a strategy that can, and should, be applied to avoid having counties come close to exhausting groundwater supplies. The strategy is feasible in other locations and should be more fully evaluated.

On page 4B-4, the initially prepared plan discusses a cost for the "passive clothes washer strategy." Although we were unable to locate any actual description of that strategy in the appendices to Chapter 4C, we did locate summary sheets that appear to show zero cost for that strategy. Indeed, given that it is a "passive" strategy, a zero cost would be expected. Actually, it is difficult to understand this as a "strategy" at all. Rather, as indicated on page 4B-3, it appears to be an accounting of savings that will occur naturally as older, non-efficient washing machines are replaced. With new federal standards requiring that all new washing machines achieve improved efficiency levels, these savings will inevitably occur and should be accounted for across the region, rather than just in the four communities listed in the appendix to Chapter 4C. Accordingly, we do not understand the discussion regarding limiting the strategy to areas with a certain cost per unit of savings. The calculation of savings should be applied across the entire region.

E. DROUGHT MANAGEMENT
(Chapter 6: pp.6-1 through 6.16)

The initially prepared plan indicates that the regional group has begun compiling information on drought contingency plans for both surface and groundwater. Information is provided regarding drought trigger levels for several reservoirs and other municipal water supplies. The plan also acknowledges that trigger levels and corresponding restrictions on pumping for the region's aquifers generally have not been developed, stating only that monitor wells have been identified. *See* pp.6-5 through 6-16.

Although this is a useful start, more is required. 31 TAC §357.7 (a)(7)(B) of the Board's rules requires the plan to include evaluation of drought management as a water management strategy. That provision also requires that the plan include, for each water user group subject to Section 11.1272 of the Water Code, drought management as a water management strategy for each such WUG. That includes calculating the amount of water supply expected to be supplied pursuant to each such strategy. The initially prepared plan fails to do this and fails to comply with applicable requirements. Section 16.053 (h)(7)(B) of the Water Code expressly directs that the Board may approve a regional plan only if it includes at least the levels of water conservation and drought management required by Sections 11.1271 and 11.1272 of the Water Code.

In addition, drought management measures beyond the levels required by Section 11.1272 of the Water Code must be considered in the plan. However, provided it documents the basis for its decision, the regional planning group may decide not to include drought management as a water management strategy beyond those measures specifically required by Section 11.1272. We were unable to locate any such discussion or documentation of the rationale for not including additional drought management measures.

A repeat of a drought of record would be a serious event. Water would be in short supply for all users. Natural resources would suffer as well. During such conditions, it just makes sense to take steps to reduce nonessential uses of water. As directed by SB 1, using the drought of record as the measuring point against which to plan for water supplies provides protection for human water uses. *However, planning for drought periods but ignoring water savings possible through implementation of drought management measures results in huge costs, both economic and ecological, for developing new water supplies that only would be needed during those severe drought periods and only for nonessential uses* . Consideration of drought management measures, as required by SB 2 and TWDB rules, represents a recognition that it may make more sense to plan to curtail some non-essential uses during rare drought periods than to invest the huge sums necessary to ensure a water supply to meet those non-essential uses at those times. As an example, it will likely make much more sense to reduce activities such as lawn watering, car washing, and fountain filling during drought periods *rather than to build another reservoir just to ensure that those activities can continue unabated even during a period of serious rainfall shortage. Building that reservoir would impose major costs, both in terms of the price of developing the supply and in terms of agricultural and natural resources that might be lost.*

At minimum, in order to meet the explicit requirements of SB 2 and TWDB rules, the initially prepared plan must be revised to include drought management measures applicable during a repeat of the drought of record for all entities governed by Section 11.1272. In addition, we urge the planning group seriously to consider including water savings that could be achieved through additional drought management measures.

F. CHAPTER 6. APPENDICES

The excerpts from the Texas Commission on Environmental Quality rules, 30 TAC § 288, included in the appendices to Chapter 6 are outdated. Those rules were amended in 2004. The text of the current rules should be substituted.

G. CONSISTENCY WITH LONG-TERM PROTECTION

The Texas Water Code provides that the Texas Water Development Board may approve a regional water plan only if the plan has been shown to be consistent with long-term protection of the state's water resources, agricultural resources, and natural resources. Tex. Water Code Ann. § 16.053 (h)(7)(C).

1. Consistency with Protection of Water Resources

This provision applies especially strongly to management of groundwater resources. With only the rarest exception, mining of groundwater supplies will not be consistent with long-term protection of the state's water resources. That is even more true in areas where pumping those supplies at a rate higher than they are recharged is likely to result in contamination of the aquifer or in subsidence. Both of those conditions apply to proposed management strategies in portions of Region I. Because other strategies such as improved water efficiency, drought management, or existing alternate sources are reasonably available, we strongly urge the planning group not to plan for depleting groundwater supplies. Mining of aquifers that feed streams and rivers also is inconsistent with long-term protection of the state's water resources.

Pages 7-2 and 7-3 of the initially prepared plan include the planning group's rationale for why the plan should be considered consistent with long-term protection of water resources. The information included in the initially prepared plan is not adequate to support a determination by the Texas Water Development Board that the East Texas Regional Plan is consistent with long-term protection of the state's water resources. The beginnings of a move towards water conservation are noted. Given the failure of the plan to endorse more than a very small portion of those potential water efficiency savings, that simply is not enough. Even the construction of Lake Columbia is noted as supporting that determination. However, given the absence of need for the reservoir, we believe the recommendation of the reservoir cuts the other way.

Most troubling, however, are the statements about expanded use of groundwater: "Groundwater availability reported in the plan is based on the long-term sustainability of the aquifer. No strategies are recommended to use water above the sustainable level." As noted earlier in these comments, unfortunately, the planning group has chosen a definition of sustainable level that simply turns the term on its head. It plans for depletion of aquifers with average drawdowns of 50 to 80 feet over the planning period in some areas. The plan acknowledges that saltwater intrusion and subsidence are expected but calls for changing practices only after those problems have occurred and been detected.

2. Consistency with Protection of Agricultural Resources

The discussion, at pages 7-3 and 7-4, addresses only irrigated agriculture and notes that adequate supplies should be available for rice farming. However, agriculture is much more than just rice farming. Groundwater level declines have the potential for serious adverse effects on shallow wells relied upon to water livestock and for domestic use. Reservoir construction, especially unnecessary reservoir construction, has the potential to displace agricultural operations. Again, the information provided simply is not adequate to support a determination that the plan is consistent with long-term protection of agricultural resources.

3. Consistency with Protection of Natural Resources

This discussion, at pages 7-4 and 7-5, is lacking in substance. It fails even to acknowledge the issue of environmental flows. Adequate environmental flows are critical for sustaining healthy populations of fish and wildlife in and along rivers and streams and for maintaining healthy and productive bays and estuaries. Planning to meet environmental water needs is critical to protecting the natural heritage of Texas for future generations and to sustaining the economic benefits these fish and wildlife resources provide. Protection of environmental flows, including flows from springs, instream flows, and freshwater inflows, is one of the most important factors in protecting natural resources. The initially prepared plan lacks meaningful consideration or assessment of environmental flow protection. The information and tools are available to allow for such an assessment.

For assessment of instream flows, TPWD developed a method that can be used for assessing flow changes and considering the potential biological significance of those changes. Details of this methodology, titled *Using Water Availability Models to Assess Alterations in Instream Flows*, can be found at: www.tpwd.state.tx.us/landwater/water/habitats/rivers/fwresources/index.phtml

For assessment of freshwater inflows, the National Wildlife Federation developed a method described in a report titled *Bays in Peril*. Copies of the report have been provided previously. The report describes the results of an analysis done by NWF of the potential effects on freshwater inflows of just existing water rights. NWF used the state's water availability models to predict the amount of freshwater inflow that would result from full exercise of existing water rights and reuse of about 50% of return flows. NWF then compared those predicted inflows to ecologically-based targets derived from the results of the state's freshwater inflow studies. The planning group could use a similar approach. Instead of the future use scenario used in the NWF analysis, which was full use of existing water rights and 50% return flows, the planning group could substitute the water use scenarios predicted in the regional water plan. That would provide a prediction of inflows during the planning horizon and information to use in assessing how those inflows might affect natural resources in the Sabine-Neches Estuary.

NWF's analysis resulted in a danger ranking for the Sabine-Neches Estuary (Sabine Lake) as a result of a prediction of greatly diminished inflows, particularly during drought periods. An analysis of use levels projected in the regional plan is needed to assess impacts on natural resources dependent on freshwater inflows. Without it, information is lacking to demonstrate that the regional plan is consistent with long-term protection of natural resources.

In addition to the failure to address environmental flow issues, the discussion also lacks a careful look at the broader issue of impacts to fish and wildlife habitat. The text notes that those factors are considered in permitting determinations on new surface water projects. Although that is true, it does not take the place of a careful planning level assessment now. In addition, it is important to look at these issues comprehensively rather than just on a permit-by-permit basis and that type of comprehensive review is just what the planning process is designed to provide.

H. DESIGNATION OF UNIQUE STREAM SEGMENTS AND UNIQUE RESERVOIR SITES

We are disappointed that the planning group once again chose not to recommend the designation of unique stream segments. During the first round of regional planning there were strong statements of reluctance to designate segments because of fears that the designations might have far-ranging significance. In response, the Texas Legislature defined the impact of such designations very narrowly. In the initially prepared plan, the planning group decides not to recommend segments because the impact of designation is so narrow that designations are not needed except where a reservoir is currently contemplated. That narrow view seems inappropriate. A stream that is deserving of protection is deserving of protection even if no known current reservoir proposal exists.

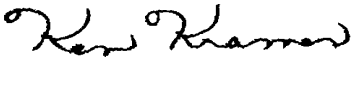
As noted above, we do not understand the initially prepared plan to recommend any unique reservoir site designations. If, however, as during the last round of planning, ambiguous language in the initially prepared plan is changed to language proposing a designation, we note that the Rockland Reservoir site does not qualify for such a designation. There is no need for the reservoir and, thus, no reasonably identified beneficiaries for the water. The project would result in large-

scale harm to natural resources and agricultural resources both within the reservoir footprint and downstream.

Thank you for your consideration of these comments and please feel free to contact us if you have any questions. We look forward to a continuing positive dialogue with the planning group during this and future planning cycles.

Sincerely,





Myron Hess	Mary Kelly	Ken Kramer
National Wildlife Federation	Environmental Defense	Sierra Club, Lone Star Chapter

cc: Bill Roberts, TWBD Liaison
Schaumberg & Polk, Consultants
Bill Mullican, TWDB
Cindy Loeffler, TPWD

Attachment 1 - Calculation of potential for municipal water savings in Region I with Water Conservation Implementation Task Force target water use of 140 gpcd.

	State Water Plan Data, Year 2060				Potential Savings, Year 2060 with 140 gpcd Target		
Water User Group Name	Popula-tion	Portion of region	Municipal Demand (ac-ft/yr)	Original GPCD	Municipal Demand (ac-ft/yr)	Revised GPCD	Savings (ac-ft/yr)
TYLER	116,102	7.8%	32,253	248	18,207	140	14,046
BEAUMONT	113,866	7.7%	25,636	201	17,856	140	7,780
LUFKIN	70,997	4.8%	13,599	171	11,134	140	2,465
PORT ARTHUR*	57,755	3.9%	8,993	139	8,993	139	0
SOUTHERN UTIL. CO.	57,586	3.9%	9,031	140	9,031	140	0
NACOGDOCHES	54,345	3.7%	12,540	206	8,522	140	4,018
JEFFERSON CO.-OTHER*	53,675	3.6%	4,449	74	4,449	74	0
NACOGDOCHES CO.-OTHER*	36,944	2.5%	3,849	93	3,849	93	0
RUSK CO.-OTHER*	36,271	2.4%	3,088	76	3,088	76	0
Rest of region†‡ (134 WUGs)	884,907	59.7%	120,184	121	107,100	108	13,084
REGION I TOTAL	**1,482,448**	**100.0%**	**233,622**		**192,229**		**41,393**

notes: *) year 2060 value below 140 gpcd is due to original State Water Plan year 2000 value less than 140 which we held constant into future; †) Year 2000 and year 2060 gpcd calculated with total demand and total population for these remaining entities; ‡) year 2060 value below 140 gpcd due to averaging.

Attachment 2 - Calculation of potential for municipal water savings in Region I with Water Conservation Implementation Task Force recommended 1% annual reduction in gpcd.

Water User Group Name	2000 State Water Plan GPCD	2010			2020			2030			2040			2050			2060		
		State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)
TYLER	261	258	236	2,173	255	213	4,297	252	193	6,364	249	175	8,368	248	158	10,816	248	143	13,681
BEAUMONT	216	212	195	2,124	209	177	4,124	206	160	5,896	203	144	7,462	201	140	7,780	201	140	7,780
LUFKIN	185	181	167	571	178	151	1,266	175	140	1,889	172	140	1,966	171	140	2,166	171	140	2,465
PORT ARTHUR	153	150	140	647	147	140	453	144	140	258	141	140	65	139	139	0	139	139	0
SOUTHERN UTIL. CO.	151	149	140	395	146	140	281	143	140	148	141	140	52	140	140	0	140	140	0
NACOGDOCHES	206	206	186	729	206	168	1,534	206	152	2,399	206	140	3,184	206	140	3,637	206	140	4,018
JEFFERSON CO.-OTHER	82	79	79	0	77	77	0	75	75	0	74	74	0	74	74	0	74	74	0
NACOGDOCHES CO.-OTHER	105	102	102	0	99	99	0	96	96	0	94	94	0	93	93	0	93	93	0
RUSK CO.-OTHER	90	85	85	0	82	82	0	80	80	0	77	77	0	76	76	0	76	76	0
Rest of region†‡ (134 WUGs)	140	135	130	3,951	131	121	7,701	128	115	10,384	124	111	11,373	122	109	11,929	121	108	12,693
REGION I TOTAL				**10,590**			**19,655**			**27,339**			**32,470**			**36,327**			**40,637**

Water User Group Name	2000 State Water Plan GPCD	2040			2050			2060		
		State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)	State Water Plan GPCD	NWF** GPCD	Savings (ac-ft/yr)
TYLER	261	249	175	8,368	248	158	10,816	248	143	13,681
BEAUMONT	216	203	144	7,462	201	140	7,780	201	140	7,780
LUFKIN	185	172	140	1,966	171	140	2,166	171	140	2,465
PORT ARTHUR	153	141	140	65	139	139	0	139	139	0
SOUTHERN UTIL. CO.	151	141	140	52	140	140	0	140	140	0
NACOGDOCHES	206	206	140	3,184	206	140	3,637	206	140	4,018
JEFFERSON CO.-OTHER	82	74	74	0	74	74	0	74	74	0
NACOGDOCHES CO.-OTHER	105	94	94	0	93	93	0	93	93	0
RUSK CO.-OTHER	90	77	77	0	76	76	0	76	76	0
Rest of region†‡ (134 WUGs)	140	124	111	11,373	122	109	11,929	121	108	12,693
REGION I TOTAL				**32,470**			**36,327**			**40,637**

notes: **) equals lesser of State Water Plan value for that year or 1% annual decline from State Water Plan year 2000 gpcd; †) Rest of Region gpcd calculated with total demand and total population for these remaining entities. Within this group, those with gpcd above 140 are reduced with 1% annual rate; ‡) values can fall below 140 gpcd due to averaging.