September 7, 2005

James Parks, Chair
Region C Water Planning Group
c/o North Texas Municipal Water District
P.O. Box 2408
Wylie, TX 75098

Re: Comments on Initially Prepared 2006 Regional Water Plan for Region C

Dear Mr. Parks and Planning Group Members:

The National Wildlife Federation, Lone Star Chapter of the Sierra Club, and Environmental Defense appreciate the opportunity to provide written comments on the Initially Prepared Regional Water Plan for Region C. We consider the development of comprehensive water plans to be a high priority for ensuring a healthy and prosperous future for Texas. We recognize and appreciate the contributions that you have made towards that goal. As you know, our organizations have provided, either individually or collectively, periodic input during the process of developing the plan. These written comments will build upon those previous comments in an effort to contribute to making the regional plan a better plan for all residents of Region C and for all Texans.

We do recognize that the draft Plan is subject to revision prior to adoption and is subject to continued revision in the future and provide these comments with such revisions in mind. Our organizations appreciate the amount of effort that has gone into developing the draft Plan for Region C. Your consideration of these comments will be appreciated.

I. BACKGROUND AND OVERVIEW

Our organizations support a comprehensive approach to water planning in which all implications of water use and development are considered. Senate Bills 1 and 2 (SB 1, SB 2), and the process they established, have the potential to produce a major, positive change in the way Texans approach water planning. In order to fully realize that potential, water plans must provide sufficient information to ensure that the likely impacts and costs of each potential water management strategy are described and considered. Only with that information 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). Complying with this charge is essential in order to develop true plans that are likely to be implemented as opposed to a list of potential, but expensive and damaging, projects that likely will lead to more controversy than water supply. Comprehensive regional water plans have the potential to provide clear and effective guidance for development of water supplies within the region.

This document includes two types of comments. We consider the extent to which the initially prepared plan complies with the requirements established by SB1 and SB 2 and by the Texas Water Development Board (TWDB) rules adopted to implement those statutes. Key aspects of the initially prepared plan, including its stated goal of planning for 20% above projected demand and its inadequate treatment of water efficiency measures, do not meet explicit regulatory requirements that are prerequisites for plan approval. In addition, our comments address important aspects of policy that might not be controlled by specific statutes or rules. We do recognize that the financial resources available to the planning group are limited, which may restrict the ability of the group to fully address some issues as much as you would like. These comments are provided 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 can be endorsed by all Texans.

A one-page summary of key comments follows this page. The next section of the letter summarizes key principles that inform our comments and how they relate to the initially prepared plan. The last section of the letter consists of specific comments keyed to different aspects of the initially prepared plan.

SUMMARY TABLE OF KEY COMMENTS

Area	Comment	Solution
Planning Basis	The IPP's planning basis of aiming to supply 20% more than projected 2060 demand (an excess of 810,000 acre-feet) results in including four environmentally-damaging and unnecessary reservoirs, at a cost of $4 billion.	To be consistent with planning requirements, the region should plan for projected demand, and drop the four proposed reservoirs. With the implementation of better water efficiency and drought management measures, the projected supply would still likely exceed the 2060 demand.
Maximizing Water Efficiency	The IPP: (1) fails to include adequate water efficiency measures for many water user groups with very high water use rates, especially municipalities; (2) does not include the reasonably practicable conservation measures that are legal prerequisites to proposed interbasin transfers; (3) appears to greatly over-estimate unit costs of water derived from water efficiency measures, with no supporting justification; and (4) does not comply with legal requirements for separately assessing the impacts of water efficiency and re-use strategies.	The plan should be revised to correct all these problems through improved treatment of water efficiency measures.
Drought Management	The IPP is based on fully meeting even non-essential water needs during the drought of record and, in doing so, fails to comply with applicable requirements for implementing drought management measures.	The plan should be revised to incorporate drought management strategies for entities required to prepare drought management plans.
Environmental Flows and Protection of Agricultural and Natural Resources	The IPP fails to include the require quantitative analyses of the environmental impacts of the proposed water management strategies, particularly as it relates to environmental flows, and fails to demonstrate consistency with long-term protection of agricultural and natural resources.	The revised plan should include such analyses.
Groundwater/ Spring flow	The IPP does not adequate characterize current aquifer or spring conditions or trends.	The plan should be revised to address these deficiencies.
Voluntary Water Transfers	The IPP fails to adequately consider and evaluate the use of existing supplies available for voluntary transfers, particularly via water banks, leases or other mechanisms, which could be used to meet reasonable water demand, including during drought periods, without new reservoirs.	The plan should be revised to include an analysis of the use of existing supplies via voluntary water transfers.

II. KEY PRINCIPLES

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. Consistent with TWDB's rules for water planning, we consider water conservation measures that improve efficiency to be separate and distinct from reuse projects. We do agree that reuse projects merit consideration. However, the implications of those projects are significantly different than for water efficiency measures and must be evaluated separately.

The Texas Water Code, as amended by SB1 and SB 2, along with the TWDB guidelines, establish stringent requirements for consideration and incorporation of water conservation and drought management. As you know, Section 16.053 (h)(7)(B), which was added after completion of the first round of regional planning, prohibits TWDB from approving any regional plan that doesn't include water conservation and drought management measures at least as stringent as those required pursuant to Sections 11.1271 and 11.1272 of the Water Code. In other words, the regional plan must incorporate at least the amount of water savings that are mandated by other law.[1]

In addition, the Board's guidelines require the consideration of more stringent conservation and drought management measures for all other water user groups with water needs. Consistent with the TWDB rules, our comments treat water conservation and drought management as separate issues from reuse. Section 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." Section 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).

We recognize that "reuse" is included in the Chapter 11 definition of water conservation that governs water rights permitting. We also acknowledge that the Water Conservation Implementation Task Force recommendations allow reuse to be included in the calculation of municipal per capita water use. Both water efficiency and reuse merit consideration, but they must be evaluated independently in determining what mix of approaches to include in a regional plan. Under the right circumstances, reuse is an appropriate water management option, but it does not increase the actual efficiency of water use. 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.

---

[1] 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.

We certainly acknowledge the progress made by Region C in incorporating water conservation into the initially prepared regional plan as compared to the 2001 version of the plan. However, much more progress is possible and needed. That is particularly true for the many water user groups in Region C for which new interbasin transfers are recommended. TWDB rules are clear in requiring that a regional plan must, for each WUG for which a new interbasin transfer is recommended, include "a conservation water management strategy, pursuant to § 11.085 (l), that will result in the highest practicable level of water conservation and efficiency achievable." See 31 TAC § 357.7 (a)(7)(A)(iii) (emphasis added). The water efficiency measures included in the initially prepared plan simply do not meet applicable requirements and certainly do not achieve the levels of water savings needed to support the authorization of an interbasin transfer of water.

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, Senate Bill 2 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. Because drought management measures are not included as water management strategies, the initially prepared plan does not comply with applicable requirements.

C. Plan To Ensure Environmental Flows

Although critically important, designing and selecting new water management strategies that minimize adverse impacts on environmental flows is only one aspect of planning to meet environmental flow needs. New rules applicable to this round of planning require a quantitative analysis of environmental impacts of water management strategies[2] in order to ensure a more careful consideration of those additional impacts. However, if existing water rights, when fully used, would cause serious disruption of environmental flows resulting in harm to natural resources, merely minimizing additional harm from new strategies would not produce a water plan that is consistent with long-term protection of natural resources or that would protect the economic activities that rely on those natural resources.

Accordingly, environmental flows should be recognized as a water demand and plans should seek to provide reasonable levels of environmental flows. Environmental flows provide critical economic and ecological services that must be maintained to ensure consistency with long-term protection of water resources and natural resources. We were unable to locate a quantitative analysis of environmental impacts of the proposed water management strategies and do not believe that the initially prepared plan demonstrates consistency with long-term protection of natural resources or agricultural resources.

[2] The rules 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).

D. Minimize New Reservoirs

Because of the associated adverse impacts, new reservoirs should be considered only after existing sources of water, including water efficiency and reuse, are utilized to the maximum extent reasonable. When new reservoirs are considered, adverse impacts to regional economies and natural resources around the reservoir site must be minimized. Regardless of whether the proposed reservoir is located inside or outside the boundaries of the region, reservoir development must be shown to be consistent with long-term protection of the state's water, agricultural, and natural resources. Because alternative sources, including existing reservoirs, that would be less damaging and less costly are available, none of the proposed new reservoirs included in the initially prepared plan have been justified or could be justified. They should be dropped from the plan.

E. Manage Groundwater Sustainably

Wherever possible, groundwater resources should be managed on a sustainable basis. Mining groundwater supplies will, in many instances, adversely affect surface water resources and constitute a tremendous disservice to future generations of Texans. Generally speaking, depleting groundwater sources will not be consistent with long-term protection of the state's water resources, natural resources, or agricultural resources. We commend the Region's stated long-term goal of balancing groundwater withdrawals with recharge.

F. Facilitate Short-Term Transfers

Senate Bill 1 directs consideration of voluntary and emergency transfers of water as a key mechanism for meeting water demands. Those approaches seem to have received little attention in the planning process to date. Water Code Section 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, Section 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.

In addition, emergency transfers are intended as a way to address serious water shortages for municipal purposes. They are a way to address short-term problems without the expense and natural resource damage associated with development of new water supplies. Water Code Section 16.053 (e)(5)(I), as added by SB 1, specifically directs that emergency transfers of water, pursuant to Section 11.139 of the Water Code, are to be considered, including by 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. Thus, the water planning process is intended as a mechanism to facilitate voluntary transfers, particularly as a means to address drought situations, by collecting specific information on rights that might be transferred on such a basis and by encouraging a dialogue between willing sellers and willing buyers on that approach. The issue is mentioned on page 4C.9 of the initially prepared plan but without any substantive discussion. We were not able to locate further discussion under other categories.

Existing supplies that would be available for transfer do not appear to have been adequately considered.

III. PAGE-SPECIFIC COMMENTS

For ease of tracking, we have attempted to identify our individual, page-specific comments by preceding each with a number enclosed in brackets.

E.S. EXECUTIVE SUMMARY

[1] Figure ES.4, on page ES.8, graphically illustrates the failure of the initially prepared plan seriously to embrace water efficiency measures. According to that figure, per capita use levels decline in the early years of the planning period, but then again begin to increase. The projected decrease in the early years is due primarily to proposed reuse projects. The return to a projected increase in per capita use illustrates the failure seriously to endorse water efficiency measures. It just is not reasonable to plan for long-term increases in per capita water use rates. On the state, regional, and local levels, we can, and must, do better than that.

ES.3 Identification and Selection of Water Management Strategies

[2] For purposes of the regional water planning process, water conservation and reuse are two separate issues. See, for example, 31 TAC § 357.7 (a)(7)(A) requiring evaluation of water conservation separately from the evaluation of reuse, which is mandated by 31 TAC § 357.7 (a)(7)(C). The initially prepared regional plan generally seeks to combine the two strategies. In some instances, it is possible from the context of the plan to separate out the discussion of the two concepts, but the distinction is not as clear as it needs to be. In various places, the plan lumps reuse and conservation as one approach. We certainly agree that both approaches are worthy of consideration. However, they have different implications and require distinct evaluations.

A simplified example illustrates the distinction between efficiency of use and reuse:

	City A	City B
Population	1,000	1,000
Diversion (gallons/day)	100,000	150,000
Per capita use (gpcd)	100	150
Reuse amount (gallons/day)	No reuse	50,000
Adjusted per capita	100 gpcd	100 gpcd
Actual pumped and treated water (gallons/day)	100,000	200,000

Even though the adjusted per capita usage rates are equal for the two hypothetical cities, the actually efficiency of use is much higher in City A. City A supports 1,000 people while diverting only 100,000 gallons per day, compared to 150,000 gallons for City B. Also the actual total pumped (and treated) water is 100,000 gpd for A and 200,000 gpd for City B. Thus, the pumping and treatment costs are much higher in City B. Because water is a limited resource of statewide importance, efficiency in use must be the primary goal if we are to support a growing population while also protecting our natural heritage. When water is reused it is still taken out of streams and rivers. It means less water will flow downstream to support existing water rights, fish and wildlife resources, and to protect water quality.

[3] Thus, the reuse proposed in Region C means 739,938 acre-feet per year[3] of additional water is diverted rather than flowing downstream. Depending on the use of that water, the ultimate reduction in flow may be considerably less because the water diverted for reuse will not be completely consumed. However, even if only 50% is consumed, a reduction of about 370,000 acre-feet per year in flows, particularly during drought periods, could have substantial impacts on Galveston Bay, instream uses, and downstream water rights when combined with diversions in Region H. Evaluating the significance of those changes requires careful analysis, which should include consideration of issues such as whether the water being reused initially was imported into the river basin. Although that analysis is required pursuant to 31 TAC § 357.7 (a)(8)(A)(ii), § 357.7 (a)(13), and other rules, it is not found in the initially prepared plan.

These comments are not intended as a blanket criticism of reuse projects. We believe reuse can play an important water supply role. However, the amount of reuse appropriate in any particular location can only be determined through careful evaluation of the implications of that reuse in the context of expected future stream and river flows. Although the planning process does not mandate the detailed level of review needed for permitting, it does require a meaningful, quantitative evaluation that we believe is lacking here.

Recommended Water Management Strategies

[4] Page ES.9 indicates that the region is planning to develop a supply of 4.05 million acre-feet per year by 2060, which is about 20% greater than projected demand. The Planning Group seeks to support that excess as "leaving a reasonable reserve to provide for difficulties developing strategies in a timely manner, droughts worse than the drought of record, and greater than expected growth." However, that approach flies in the face of the ongoing nature of the planning process, which involves successive plan revisions every five years. It also is directly inconsistent with TWDB's rules directing that the planning process be based on population and demand projections approved by TWDB. *See* 31 TAC § 357.5 (d).

[5] Rather than basing the plan on those projections, the initially prepared plan simply assumes 20% more water demand. This 20% excess alone amounts to about 810,000 acre-feet of water per year, or more than the combined supply to Region C from the four recommended major new reservoir projects: Marvin Nichols, Lower Bois d'Arc Creek, Fastrill, and Ralph Hall. Those four strategies have a combined cost well in excess of $4 billion.

The very reason that plans are updated every 5 years is to allow for adjustments on an incremental basis. If recommended projects aren't moving forward when a future plan is adopted, recommendation of different strategies may be appropriate at that time. Similarly, if population and demand projections have changed at that point, appropriate adjustments in recommendations should be made. Region C's decision to reject the basic premise of using an agreed-upon planning target undermines the value of the planning process. If all regions plan consistently, then no one region should end up using state money or permits to develop or implement a plan that calls for laying claim to an undue portion of the state's limited water resources. Nor does a possible future drought worse than the drought of record justify planning

[3] From Table 6.4 of the IPP on p. 6.18.

for such a large excess supply. In fact, SB 1 is quite specific in directing the use of the "drought of record" as the appropriate target for planning. *See* Tex. Water Code Ann. § 16.053 (e)(4).

[5A] The initially prepared plan relies heavily on major new reservoir projects. Particularly given the numerous alternatives that Region C has available, such as use of additional supply from existing surface water reservoirs and better water efficiency measures, heavy reliance on new reservoirs is a high risk approach. The proposed major new reservoirs will be highly controversial. Obtaining required permits will be expensive, complicated, and far from certain.

[6] The Planning Group chose not to consider drought management and emergency response as a way to meet drought demands. This decision was based, at least in part, on the premise that drought management measures should be relied upon in case of a drought worse than the drought of record: "[t]hey provide a backup plan in case a supplier experiences a drought worse than the drought of record or if a water management strategy is not fully implemented when it is needed." IP at p. 6.6. However, instead of relying on drought management measures as a mechanism to address the issue of such a drought, the initially prepared plan proposes extra new water supply projects. Thus, not only is planning for this excess supply inconsistent with TWDB rules and the very premise of the ongoing planning process, it is inconsistent with other assumptions embedded in the remainder of the initially prepared plan.

[7] Water is a limited resource in the state. It must be shared equitably. Using common assumptions for planning across all planning regions is one way to help achieve that equity. The approach stated in the initially prepared plan for planning for demand significantly in excess of projections is not equitable, would result in a huge waste of money, and does not meet regulatory requirements.

Chapter 1. Description of Region C

1.2 Water-Related Physical Features in Region C

[8] Figure 1.6 (p. 1.12) – Although we certainly agree that return flows have increased summer-time flows in the Trinity River downstream of the metroplex, these graphics are not particularly illustrative of those changes because the Trinity River at Rosser wouldn't be expected to behave like the smaller tributary streams in any case. First, the periods of record for the various gages vary dramatically. Particularly in the case of flows at Trinity River near Rosser, it likely would be much more illustrative to break the period of record into a time period representing conditions before major water project development and a period representing conditions after such project development. Such an approach likely would provide better information for understanding flow changes. Second, tributaries with small drainages would be expected to experience more severe low flow periods than the mainstem of the Trinity River which reflects the cumulative flow of a very large area. In addition, seasonal flows may be affected by loss of springflows in the area as a result of groundwater pumping. Because the tributary gages generally have fairly recent periods of record, they may not be a good reflection of natural flow patterns because naturally occurring springflows may already have ceased prior to, or early in, the period of record. As discussed further below, providing a good baseline for consideration of environmental flow changes is essential for evaluating impacts of individual water management strategies and for assessing the consistency of the plan with long-term protection of the state's natural resources.

1.4 Current Sources of Water Supply

[9] Figure 1.10 (page 1.23) The comparison, shown in Figure 1.10, of per capita municipal use for entire regions lends itself much more to an "apples to apples" comparison across the state than the other inter-regional comparisons of Figures 1.11 and 1.12. This is because the basic function being supported in the municipal use category is the same across all regions and from one city to another. We do acknowledge that minor adjustments, for factors such as numbers of offices, hotels, etc., may be appropriate to fine-tune such comparisons.

[10] Regardless, it is also critical to evaluate municipal per capita use on an individual water user group basis. If half of the WUGs in a region are achieving excellent water efficiency and half are being highly inefficient, a lot of water still is being wasted. Inefficient water use should be addressed and eliminated on an individual water user group basis.

[11] Figures 1.11 and 1.12 (pp. 1.24, 1.25) – These figures provide various analyses about "per capita" water use among different regions. The apparent message is that, by contrast to municipal water use, Region C water use is comparatively low when compared to other regions. Figure 1.11 excludes agricultural water use. Excluding agricultural water use does indicate lower in-region use in Region C, but people in Region C rely on food and other agricultural products grown in other regions. Similarly, with respect to Figure 1.12, which considers total use per capita, various regions rely primarily on agricultural and manufacturing products produced in other regions. It certainly does not seem appropriate to expect each region to be fully self-sufficient in producing all of the products used within the region or to be critical of high total per-capita water use in a region if the water is used to produce food or products for people in many regions. Accordingly, these broad comparisons really are not very meaningful and the rationale for their inclusion is highly questionable. Certainly, regardless of the type of use, each region and each user should be held accountable for using water efficiently. However, these comparisons do not provide useful insight into whether that is happening.

1.5 Water Providers in Region C

[12] Pages 1.37-1.44 (Tables 1.15 – 1.19). The wholesale water sales detailed in Tables 1.16 and 1.19 do not seem to match the figures shown in Table 1.15.

1.6 Pre-Existing Plans for Water Supply Development

[13] Page 1.56 – The initially prepared plan indicates that proposed rules would require five-year updates to water conservation plans. Such five-year updates are required by the Texas Commission on Environmental Quality (TCEQ) rules currently in effect that govern the content of required water conservation plans.

[14] Page 1.56 – In the second bullet point near the bottom of the page, the text does not seem to be consistent with the Water Conservation Implementation Task Force report with regard to reuse and per capita computations.

[15] Page 1.56 – The text references the requirement for many water user groups to develop quantified five-year and 10-year water conservation goals. It is unfortunate that those numerical goals were not established until May of this year. As a result, we certainly understand that the planning group was not able to fully incorporate those goals into its water conservation planning.

We do urge the planning group to provide for the review of as many of those revised plans as possible, particularly for the larger water user groups, to ensure that the adopted regional plan includes at least the level of water conservation, and drought management, called for in those updated water conservation plans.

1.7 Agricultural and Natural Resources in Region C

[16] It is disappointing to see no obvious effort to build on the information included in the 2001 Region C Plan. Other than updating a table, this text appears to be a duplicate of that provided in 2001. Given the revisions to the governing statutes and TWDB rules to place increased emphasis on consideration of natural resources in the planning process, this lack of attention is troubling. TWDB may not approve a regional plan unless it is able to make an affirmative finding that the regional plan is consistent with long-term protection of the state's natural resources. See Texas Water Code Section 16.053 (h)(7)(C). The initially prepared plan simply does not provide the information necessary to support such a finding. The necessary information is lacking even for natural resources located within the boundaries of the region and it is even more insufficient for resources located outside the region but affected by the proposed strategies in the initially prepared plan. This deficiency is particularly glaring with respect to the various proposed reservoir projects, which have the potential for large-scale adverse impacts.

[17] Page 1.59 – We do acknowledge the inclusion of limited information about springs in the region. However, it is disappointing that no additional information has been provided about those springs beyond what was included in the 2001 Region C Water Plan. At a minimum, the IPP should indicate the aquifer from which these springs issue as well as some information about trends in the levels of those aquifers.

[18] Page 1.59 - As you know, TWDB rules 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 fish and wildlife resources. Particularly for the five "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.

[19] Page 1.59 - Some discussion also would be appropriate for the springs that feed North Fish Creek and South Fish Creek. Although not actually proposed for designation as a unique stream segment, Fish Creek was identified as one of the streams potentially meriting such designation, in part because of its spring-fed nature. *See* Appendix W to Initially Prepared Plan.

[20] Page 1.59 – The wetlands information provided has only very limited utility. There is no discussion of significant wetland complexes. Information should be provided about significant wetlands associated with seeps or springs and with rivers or streams because those are the wetlands with the greatest potential to be affected by water management decisions. Such information would provide a baseline against which to assess proposed water management strategies that would be located within the boundaries of the Region. Again, it constitutes information needed to assess the implications of the plan for consistency with long-term

protection of natural resources and to provide a meaningful quantitative evaluation of potentially feasible water management strategies.

[21] Page 1.61 – The information on endangered or threatened species also has limited utility. Again, it would be much more useful if it were to highlight species occurring in habitats dependent on seeps and springs or rivers and streams. Those are the habitats and the species most likely to be affected by water management decisions. Mussel species also should be included and discussed. This group of species has suffered significant declines and, because it is sensitive to changes to stream and river systems, it is a good indicator of system alterations. General information about mussel species and areas of occurrence can be found in "Freshwater Mussels of Texas" by Howells, Neck, and Murray. Regardless of whether individual species are listed as threatened or endangered, mussels serve as good indicators of river system health. This constitutes information needed to assess long-term impacts on natural resources and to perform a meaningful quantitative evaluation of potentially feasible water management strategies.

1.9 Summary of Threats and Constraints to Water Supply in Region C

[22] Page 1.76 – In the section on Groundwater Drawdown the information is so general that it is of little practical value. For instance there is a cited overdraft of Trinity and Nacatoch aquifers in "some counties." The counties should be identified and information should be provided regarding if, and how, these lowered aquifer levels affect springflows or other surface flows. Also, additional information should be provided regarding the likely future condition of the aquifer in those areas.

1.9 Water-Related Threats to Agricultural and Natural Resources in Region C

Changes to Natural Flow Conditions

[23] Page 1.78 –The last sentence in this section suggests a significant oversimplification of the complexities of natural flow systems. The science of flow protection has moved far beyond the simple assumption that an increase in low flows is all that is needed to improve a natural system. For example, periodic higher flows may be needed to maintain the characteristics of the stream or river channel. As summarized by the Science Advisory Committee to the Study Commission on Water for Environmental Flows: "The principal goal of providing environmental flows is to assure that sufficient quantities of water, reflecting seasonal and yearly fluctuations, as well as the frequency, timing, and volume of high-flow events, are made available to adequately protect the state's aquatic resources." Science Advisory Committee Report on Water for Environmental Flows (Oct. 26, 2004) at p. 1-7 (emphasis added).

Reservoir construction may dramatically alter the flow cycle. Altering a system from one of natural variability to one characterized by relatively constant flows, particularly during key seasons, can have significant adverse impacts on natural habitats and the species dependent on those habitats. Information about the actual flows likely to have been present under natural conditions is critical for understanding the significance of alteration of those conditions. Unfortunately, that information is sorely lacking. That last sentence also fails to acknowledge the pending, and recommended, reuse projects that have the potential for major alterations of return flow contributions to the river systems of the Region.

[24] Page 1.78 – In the section on **Changes in Natural Flow Conditions,** the information again is extremely general making it of little use. With the TCEQ's Water availability model for the Trinity River, it would be quite feasible to portray "naturalized flows" in a quantitative manner similar to the graphs presented in Section 1.2 (Figure 1.6; p. 1.12). The cited "dramatic" flow changes in the Trinity could be more effectively portrayed by comparing naturalized and historic flows (on Fig 1.6).

In order to evaluate the consistency of the plan with long-term protection of natural resources, the plan must use some type of ecologically-based criterion as a baseline against which to assess changes. A calculation that just reflects changes in flow statistics provides a useful starting place. However, in order to understand how those changes would be expected to affect natural resources an additional step is required that compares the changed flow regime to some biologically-sound baseline or to some established environmental flow regime.

Page 1.79 Inundation Due to Reservoir Development

[25] This discussion is woefully lacking in substance. No information is provided about agricultural uses within the potential footprints of the listed reservoirs. There is a similar lack of information about natural resources found within those footprints. Information also is lacking about potential off-site impacts such as flow reductions downstream, potentially affecting natural resources and flows available for domestic and livestock use, and impacts on agricultural land-use from mitigation requirements. Although it certainly is true that the precise impacts can't be calculated at this point, reasonable estimates are possible and needed. This information is needed to comply with the requirement for a quantitative evaluation of environmental factors, 31 TAC §357.7 (a)(8)(A)(ii), and of impacts on agricultural resources, 31 TAC §357.7 (a)(8)(A)(iii).

4B. Water Conservation and Reuse of Treated Wastewater Effluent in Region C

[26] Page 4B.1 – The citation to the Water Code definition of "water conservation" as including reuse is not particularly helpful. We agree that the definition in Chapter 11 of the Water Code does include reuse. However, for purposes of water planning, the required evaluation of water conservation refers to water efficiency measures. Reuse is to be separately considered as a water supply strategy. Independent evaluations of the two strategies are required. See, for example, 31 TAC § 357.7 (a)(7)(A) requiring evaluation of water conservation. Evaluation of reuse is separately required pursuant to 31 TAC § 357.7 (a)(7)(C).

[27] Page 4B.2 – Table 4B.1, which indicates low levels of existing conservation programs in many categories, reveals great potential for water conservation savings within the Region. The Table could be made much more informative if it were expanded to include information about ranges of potential savings and costs for the various methods listed.

[28] Page 4B.3 and Table 4B.2 (p. 4B.4) – The text indicates that rainwater harvesting and condensate reuse strategies were rejected based on an expectation of limited public participation and relatively high cost. No justification for this opinion is given. Many other Texas cities are implementing rainwater harvesting measures in various fashions. Given its early elimination, no cost data are given for rainwater harvesting, but the cited GDS report gives a cost for implementing such a program in Region C of $541 per acre-foot. That cost would seem to make it an attractive option, particularly for rural settings with limited water needs.

[29] Page 4B.12 and Table 4B.5 itemize "opinions of probable cost" for various conservation water management strategies. The methods for arriving at the costs are not given and the costs themselves are dramatically higher than those provided in cited references on water conservation. For instance, Table 4B.5 places low-flow toilet replacement programs in the "less cost-effective" category with a cost of $1742 per ac-ft saved ($5.36 per 1000 gallons). The cited GDS report gives a cost for implementing a low-flow toilet replacement program in Region C, of $403 per ac-ft. Clothes washer rebates in the GDS report are reported at $801 for Region C instead of the $1388 given in the initially prepared plan. The method and information sources that underlie these "opinions" of high cost require further explanation.

[30] Table 4B.5 - Based on the text on page 4B.9, the IPP's entry here labeled "Residential customer water audit" appears to be essentially equivalent to a measure called "municipal irrigation system audit – high user" described on page 7 in the cited GDS report. This was identified in the GDS report as a measure with the highest potential for saving water in Region C at an attractive cost of $459 per ac-ft. The cost for this measure in the initially prepared plan, however, is listed as $2038 per ac-ft. Again, the methods for arriving at the cost are not given and the cost themselves are in considerable disagreement with cited references on water conservation. The bases for the use of the higher costs must be provided.

[31] Page 4B.14-15 – The "basic package" of water conservation, which is recommended for all municipal water user groups, appears to have little substance. Of the five measures listed, only one, "public and school education," does not appear primarily to be merely an accounting of savings that will result from compliance with existing laws or will result from unavoidable increased costs for water supply. Thus, describing this as a water conservation package "recommended" for all municipal water user groups appears to be largely characterizing activities mandated by existing law as water conservation "recommendations." Those savings certainly are required to be calculated and acknowledged. However, they should not be characterized as being part of the region's proactive water conservation "recommendations."

[32] Page 4B.14-15 –Savings resulting from low flow plumbing fixture requirements should be calculated separately and listed separately from any water conservation "recommendations." Absent an active retrofit program, it is not an activity to be undertaken by a water supplier. Instead, it simply is a process of accounting for already mandated actions. Such automatic savings must be accounted for in order to have an accurate projection of unmet water needs. In various places in the initially prepared plan specific totals are given for plumbing fixture code requirements and they are listed as being separate from the basic package of water conservation. As a result, the current text creates significant confusion about whether there is some other aspect of plumbing fixtures replacement that is appropriately included in the "recommended" basic package for water conservation.

[33] Page 4B.7 - Water use reduction due to increasing water prices does not appear to be a reflection of an attempt to save water through controlling water rates. As described on page 4B.7, it is simply a reflection of "increases in real water prices over time." As used in the initially prepared plan, it is separate from a "water conservation pricing structure." Again, it does not seem to reflect any overt effort by any water supplier to save water. We support the effort to

account for such measures but believe it would be appropriate to categorize the projected reduction under "automatic savings" or some similar heading that is more descriptive of the nature of the activity.

[34] Page 4B.7- Water system audit, leak detection and repair, and pressure control similarly appears to be largely a reflection of compliance with new legislation. House Bill 3338, passed in 2003, requires all retail public utilities to perform water audits. That requirement is codified in Section 16.0121 of the Texas Water Code and explained in a TWDB publication entitled "Water Loss Manual."

[35] Page 4B.7 - "Federal residential clothes washer standards" refers to accounting for savings that will result from compliance with federal law mandating efficiency improvements in clothes washers. Again, it does not reflect any activity by a water supplier to save water and would be more accurately characterized as "automatic savings." The point is that no overt action on the part of a water supplier is needed in order to realize the projected savings.

[36] Pages 4B.3 – 4B.13 - In terms of actual activities by WUGs that are not already mandated by other laws, the "municipal basic package" in essence seems to involve only "public and school education" and the "leak detection and repair" components that may not automatically be encompassed in water audits. Although all of the measures included in the "basic package" should be accounted for, the initially prepared plan should appropriately characterize most of them as accounting exercises reflecting compliance with existing legal requirements rather than as some additional conservation actions being "recommended" as part of the planning process.

[37] Pages 4B.3 – 4B.13 - We certainly support educational activities and leak repair as important water conservation measures that should be included. However, there are additional fundamental steps that also should be included in the "municipal basic package." For example, prohibition of water waste is only included in the "municipal expanded package." At minimum, that fundamental step of prohibiting water waste should be added to the basic package recommended for all water users. House Bill 1152 enacted in 2003 granted many entities additional enforcement authority to prohibit "excessive or wasteful uses of potable water." That provision is now codified in Section 67.011 of the Water Code. Given the extremely low percentage of Region C water suppliers with current waste prohibitions (only 18% of water user groups and 22% of wholesale providers[4]) an across-the-board recommendation certainly appears to be in order.

[38] Page 4B.15 - Upon examination, it appears that the "expanded package," recommended for 107 municipal water user groups, may not involve a "package" at all. It is described, on page 4B.15, as including only "one or more" of the listed strategies rather than an actual package. As a result, there does not seem to be any clear listing of what measures are actually being recommended for a given user. Appendix V does not include any breakout of the component(s) actually being included for individual WUGs. For the vast majority of WUGs, the projected conservation savings from the expanded package are quite minimal, suggesting that few measures are actually included. The overall descriptions of the water management strategies

[4] From Table 4B.1 (p. 4B.2) of the initially prepared plan.

being recommended for wholesale water providers, Section 4E, also fail to include any specific information about the components of the "expanded package" that are employed. The Water Conservation Implementation Task Force report and the GDS report provide information on many additional water efficiency measures that should be considered. Those additional measures should be included.

[39] Page 4B.1 & Table 4B.5 - It is not clear if water conservation inducing pricing is included in this package. It appears in the list included in Table 4B.5, but is not included in the description provided on page 4B.15.

[40] Table 4B.5 - Finally, because reuse is included in the package and because of the variation from one user to another, it appears that the "expanded package" of water conservation for any particular water user group could potentially not include a single measure designed to improve actual efficiency in the use of water. That simply is not acceptable and does not comply with applicable requirements.

[41] Section 4B.1 and all of Section 4C – In section 4C of the IPP "Methodology for Evaluation and Selection of Water Management Strategies" the potential yield of each individual strategy is prominently displayed (see, for example, Table 4C.1 and 4C.2). The potential for water savings through improved water efficiency is huge. That potential must be displayed in a similar fashion because water efficiency measures are reasonable water management strategies that are required to be evaluated and, in many instances, included.

[42] Region C, to its credit, is proposing a not insubstantial conservation savings of approximately 290,000 ac-ft/yr by 2060. However, there is potential for much more water efficiency savings. The Table "IPP Comment 1," reproduced below, illustrates the potential savings if just the top ten WUGs were to implement water efficiency measures to reduce demand to a low but quite achievable target level of 140 gpcd.

Table IPP Comment 1 – Calculation of additional savings through municipal water efficiency measures for the ten most populous Water User Groups at the 2060 time frame.

Water User Group (WUG) name	Population	Region C IPP water use rate with efficiency measures* (gpcd)	target demand per person (gpcd)	revised Total Demand of WUG (ac-ft/yr)	additional savings (ac-ft/yr)
DALLAS	2,058,767	233	140	322,856	214,375
FORT WORTH	1,848,759	183	140	289,923	88,492
ARLINGTON	515,000	157	140	80,762	9,996
DENTON	498,488	156	140	78,173	8,790
MCKINNEY	400,000	209	140	62,728	30,898
GRAND PRAIRIE	393,743	127	140		
PLANO	305,000	229	140	47,830	30,307
GARLAND	300,000	136	140		
FRISCO	300,000	250	140	47,046	36,876
IRVING	283,521	196	140	44,462	17,903
			totals	973,780	437,637

* for derivation of these water use rates, see Table "IPP Comment 3" below.

[43] In fact, if all Region C municipal water user groups were to achieve a 140 gpcd level through water efficiency measures by 2060, it would represent savings of almost 1,000,000 acre-feet per year. [5] That is more than 650,000 acre-feet of additional savings per year from municipal water efficiency measures than is proposed in the initially prepared Region C plan.

[44] 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. This reduction was achieved through water efficiency measures without accounting for reuse.

[45] In fact, in its initially prepared plan, Region L has established water efficiency goals as follows:

> "For municipal water user groups (WUGs) with water use of 140 gpcd and greater, reduction of per capita water use by 1 percent per year until the level of 140 gpcd is reached, after which, the rate of reduction of per capita water use is one-fourth percent (0.25) per year for the remainder of the planning period; and
>
> For municipal WUGs having year 2000 water use of less than 140 gpcd, reduction of per capita water use by one-fourth percent per year."

These excerpts are from Initially Prepared 2006 South Central Texas Regional Water Plan (SCTR Plan) at p. 6-1.

[46] Section 4B.1 - It does not appear that lawn irrigation savings are included as uniquely identifiable recommended measures for Region C. A key feature of the Region L water use reductions, particularly in later years, is significant savings from lawn irrigation. The estimate cost per acre-foot of savings in Region L is $400. The estimated cost per acre-foot of savings through lawn irrigation audits in the GDS report prepared by the Texas Water Development Board specifically for use in regional planning is $ 459 for Region C for single family users with high usage rates. By contrast, the estimated cost per acre-foot given in the initially prepared plan is about $3850.[6] We do acknowledge that the measures in the GDS report may not exactly match those considered in the initially prepared plan. However, they are similar enough that the bases for these very high estimates and the dramatic departure from the estimates provided in the GDS report require explanation. Accordingly, the initially prepared plan does not provide adequate justification for failing to include these strategies.

[47] Page 4B.4. The initially prepared plan indicates that conservation strategies for industrial uses were deemed infeasible "due to a lack of necessary data." Section 11.1271 of the Water

[5] NWF has calculated potential Region C savings of 969,076 acre-feet per year at 140 gpcd. The initially prepared plan indicates a water conservation saving of 296,345 acre-feet per year. Accordingly, the 140 gpcd level would result in potential additional savings of about 672,731 acre-feet.

[6] Based on a conversion to dollars per acre-foot from the dollars per $1000 gallons figure in Table 4B.5.

Code requires water conservation measures for industrial use served by surface water permits in excess of 1,000 acre-feet/year. In turn, SB 2 and TWDB rules require that water conservation be included as a water management strategy for those entities to which Section 11.1271 applies. Because the initially prepared plan indicates that no water conservation is included for industrial water users, the initially prepared plan fails to comply with applicable requirements. Water conservation plans on file with TCEQ and TWDB provide basic information and data for consideration of water conservation for industrial water users. In addition, information about water conservation strategies for industrial users is provided in the report of the Water Conservation Implementation Task Force.

Water Conservation Applicable to Interbasin Transfers

[48] This issue is briefly mentioned in two places in the initially prepared plan, on page 4B.13 and in Table 6.9 on pages 6.34-.35. However, neither of those sections includes any substantive discussion of the purported justification for a determination that the recommended levels of water conservation "will result in the highest practicable level of water conservation and efficiency achievable." As is clear from the express language, this criterion focuses very specifically on water efficiency. There simply is no basis for supporting the contention that the water conservation recommendations in the Region C plan will result in the highest practicable levels of water efficiency achievable.

[49] Indeed, the experience of San Antonio belies the contention that higher levels of water efficiency are not achievable and practicable. Absent compelling evidence to the contrary, a municipal usage rate of no higher than 140 gpcd should be used for evaluating achievable water efficiency (i.e., usage rates not considering reuse). Table 4B.2 (on p. 4B.4) lists municipal water conservation strategies that were determined to be potentially feasible. At minimum, water conservation measures recommended for any water user group that is slated to receive water from a new interbasin transfer must include all of those strategies and the demand for water from the transfer must reflect the savings from those measures.

[50] In addition, industrial water conservation strategies must be included for any users expected to obtain water through an interbasin transfer. For water obtained pursuant to interbasin transfers, strategies listed in Table 4B.3 (p. 4B.5) are feasible because the water supplier providing the water for industrial use would legally be required to implement the programs.

[51] The very brief discussion on page 4B.13 regarding "highest practicable level of water conservation and efficiency achievable" indicates that "evaluation of competing water supply strategies" was a factor in considering the water efficiency levels considered achievable and practicable. That simply is not permissible. Even if it were to be less expensive to import surface water from another basin than to use existing (and new) supplies efficiently, that strategy is not legally available. The standard for water efficiency must be met in order for an interbasin transfer to be authorized. Water efficiency measures are not rendered not practicable or not achievable even if additional water could be obtained and used inefficiently at lower cost. A regional water plan that purports to rely heavily on interbasin transfers but fails seriously to address the requirement for achieving the requisite levels of water efficiency represents a legal house of cards. It does not meet the applicable requirements in the TWDB rules and it recommends reliance on strategies that cannot be authorized because of the failure to meet

explicit permitting requirements. Unfortunately, the initially prepared Region C plan suffers from just such a deficiency.

[52] Because a large amount of water to be obtained through the recommended water management strategies would come from new interbasin transfers, this is a very significant issue for Region C. The requirement of demonstrating compliance with the highest practicable level of water conservation and efficiency achievable is a prerequisite for permitting a new interbasin transfer. It also is a prerequisite for developing an adequate water plan when the plan includes proposed interbasin transfers. The underlying concept is that surface water should not be taken from one part of the state and moved to another unless the receiving area has demonstrated that it is using its water resources as efficiently as can reasonably be expected. Thus, in order for the regional water plan to reflect the realities of permitting, entities contemplating relying on interbasin transfers must plan now to achieve the requisite level of water efficiency. Unless that is done, new interbasin transfers of surface water are not available as water management strategies.

[53] Many major WUGs that are slated to receive water pursuant to new interbasin transfers have projected water use rates, even after implementation of recommended water efficiency measures, that are far in excess of water use levels that are both practicable and achievable. Examples include: Dallas (2060 projected rate of 233 gpcd); Fort Worth (2060 projected rate of 183 gpcd); Arlington (2060 projected rate of 157 gpcd); Denton (2060 projected rate of 156 gpcd); McKinney (2060 projected rate of 209 gpcd); Plano (2060 projected rate of 229 gpcd); Frisco (2060 projected rate of 250 gpcd); and Irving (2060 projected rate of 196 gpcd). (see calculations on comment [77]). Because those WUGs are not eligible to receive water pursuant to an interbasin transfer, the plan is legally deficient and unworkable.

4B.3 Drought Management Measures

[54] Page 4B.17 – As required by 357.7 (a)(7)(B) of TWDB's rules, drought management is a water management strategy that must be evaluated. That provision, along with Section 16.053 (h)(7)(B) of the Water Code, also requires that drought management be **included** as a water management strategy for each entity required to prepare a drought management plan pursuant to Section 11.1272 of the Water Code. The planning group may decide not to include drought management strategies beyond those measures specifically required by Section 11.1272, provided it adequately documents the basis for that decision. However, the planning group must include at least the Section 11.1272 level of drought management as a water management strategy. SB2 made inclusion of drought management measures at least at the level required by Section 11.1272 a mandatory prerequisite for approval by TWDB of a regional water plan. See Tex. Water Code Ann. § 16.053 (h)(7)(B). The initially prepared plan does not comply with that requirement. For each entity required to prepare a drought contingency plan pursuant to Section 11.1272, the water plan must include a water management strategy reflecting the drought period savings from that drought plan.

[55] Page 4B.17 - Rather than including such a strategy, the initially prepared plan states that drought management is reserved for responding to "a drought worse than the drought of record" or responding to a situation where "a water management strategy is not fully implemented when it is needed." However, TCEQ's rules implementing Section 11.1272 make clear that drought

management provisions are appropriately applied during a drought of record, not just during a more severe drought. Section 288.20 (a)(1)(E)(i), which applies for municipal uses, specifically directs that a drought contingency plan must provide for implementation in response to a "reduction in available water supply up to a repeat of a drought of record." Thus, a drought management plan must apply at least during a repeat of the drought of record and may not be reserved only for more serious droughts. Similarly, rules applying to wholesale water suppliers require drought contingency plans to include response stages "in response to water supply conditions during a repeat of the drought-of-record." 30 TAC § 288.22 (a)(4). Drought management is a water management strategy that must be included at least for those entities governed by Section 11.1272.

[56] 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 S.B. 1, using the drought of record as the measuring point against which to plan for water supplies provides protection for human water uses. However, considering 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.

[57] 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.

[58] 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.

[59] 4B.19 – Footnote "a" to Table 4B.7 is confusing because it appears to refer only to savings from plumbing fixture rules. However, the total for estimated savings of "241,923 acre-feet per year" actually seems to include both the estimated savings from compliance with the plumbing fixtures code and from increased efficiency in new steam electric power plants, as shown in Table 6.5 (p. 6.19).

4D. Evaluation of Major Water Management Strategies

[60] Page 4D.3 – Figure 4D.1. This map appears to show the proposed Lower Bois d'Arc Creek Reservoir as overlying federal land. However, that seems inconsistent with the discussion of the project on page 4D.17. The apparent inconsistency should be addressed. A similar apparent

inconsistency exists for the proposed Lake Ralph Hall as shown in Figure 4D.1 versus the discussion on page 4D.22.

[61] Page 4D.4-4D.8 – Table 4D.2 and Figure 4D.2 do not include a unit cost comparison for water conservation and drought management savings. Senate Bill 2 and TWDB rules require the full evaluation of those measures as water management strategies. We recognize that at this general level, without the particular water user group specified, it would be necessary to provide an average cost for such measures. However, cost figures for other water management strategies that have multiple participants apparently are based on average or weighted average costs (not explicitly stated). Accordingly, cost comparisons for these strategies should be included in the tables.

[62] In our Table "IPP Comment 2" below we have calculated the weighted cost for conservation savings for the fifteen water user groups with highest volumes of proposed savings at the 2010 time frame. Appendix U of the IPP details the anticipated cost of water efficiency programs by water user groups and by decade. The calculated $177 per ac-ft should constitute a very representative cost because the savings of these fifteen entities accounts for 70% of the proposed savings from water efficiency measures at the 2010 time frame. Upon inspection of Appendix U, these are also the highest anticipated unit costs over the 55-year planning horizon and would provide a rather conservative cost comparison to other water management strategies.

Table IPP Comment 2 – Calculation of weighted average cost of water efficiency programs for the fifteen WUGs with the highest projected water saving at the 2010 time frame (as tabulated in Appendix U of the IPP).

		IPP data		calculation of weighted cost	
	water user group	proposed conservation savings by 2010 (ac-ft)	estimated cost ($/ac-ft)	savings fraction of total	weighted cost contribution
1	Allen	708	$195	0.0238	$4.65
2	Arlington	2,252	$181	0.0758	$13.72
3	Carrollton	729	$235	0.0245	$5.77
4	Dallas	10,128	$130	0.3409	$44.31
5	Denton	847	$230	0.0285	$6.56
6	Ft. Worth	4,193	$151	0.1411	$21.31
7	Frisco	2,009	$231	0.0676	$15.62
8	Garland	1,251	$223	0.0421	$9.39
9	Grand Prairie	900	$251	0.0303	$7.60
10	Irving	1,452	$183	0.0489	$8.94
11	Lewisville	601	$259	0.0202	$5.24
12	McKinney	931	$370	0.0313	$11.59
13	Mesquite	869	$242	0.0292	$7.08
14	Plano	1,979	$149	0.0666	$9.92
15	Richardson	863	$177	0.0290	$5.14
	sums	29,712		1.000	
			weighted cost ($/ac/ft)		**$177**
			($/1000 gal)		**$0.54**

The cost of conservation and drought management savings must be included to allow an accurate comparison with other water management strategies and to comply with the requirements of SB 2 and TWDB rules. Thus Table 4D.2 and Figure 4D.2 also should be revised to include information for all strategies.

[63] Page 4D.4-4D.8 – Table 4D.2 and Figure 4D.2. These tables and figures should also be revised in another important fashion. Information about costs for treated water is needed to allow for "apples to apples" comparisons with strategies, such as conservation, drought management, and desalination, which automatically make treated water available. Also, groundwater typically requires much less treatment than surface water so comparing raw water cost, as the initially prepared plan does, not provide an informed basis for decision making. TWDB rules specifically require a quantitative reporting of the "cost of water delivered **and treated** for the end user's requirements." 31 TAC § 357.7(a)(8)(A)(i).

[64] Figure 4D.2 - We recognize that the "comments" column of Figure 4D.2 includes an acknowledgement of strategies that deliver treated water. However, that reference is easily missed and, because it does not provide information on the appropriate cost adjustment to be made, still does not provide sufficient information to allow for an informed comparison. Furthermore, water efficiency measures also avoid distribution costs because less water must be delivered, so additional cost adjustments should be noted to allow for an accurate comparison to other strategies.

4E.1. Recommended Strategies for Regional Wholesale Water Providers

[65] Figure 4E.1 – This figure should be updated to include the cost for water efficiency measures. In comment [62] above, we suggest a manner of calculating such costs.

[66] Tables 4E.2, 4E.8. These tables summarize unit cost, by major provider, for all water management strategies except water efficiency measures. In order to have a complete comparison of water management strategies as required by Senate Bill 2 and TWDB rules we believe this is necessary information to be included in the Tables. We recognize that it would be necessary to provide an average cost for such measures, such as in the case of providers like DWU and NTMWD who provide water to a number of entities. However, a weighted average cost, as used elsewhere in the IPP for other water management strategies with multiple recipients would be a reasonable approach. Individual water user group costs are given in Appendix U and in our comment [62] we suggest a weighted average manner of calculation.

[67] Tables 4E.2, 4E.8, 4E.11 - Senate Bill 2 and TWDB rules require information be provided to fairly compare water management strategies. In order to arrive at "apples-to-apples" comparisons among strategies, these Tables should be revised to include information on costs for providing <u>treated</u> water for all strategies for meeting demands for potable water. This is essential since water efficiency measures result in making treated water available, groundwater sources usually require less costly treatment than surface water, and because desalination results in treated water. In order to have accurate comparisons, costs for delivering treated water must be provided for all water user groups that require treated water. Other Regional Plans (e.g. Region

L) provide information on annualized debt service on capital expenditures and other recurring annual cost (operations, maintenance, etc.) to arrive at a final cost of delivering treated water.

[68] Tables 4E.2, 4E.5, 4E.8, 4E.11, and 4E.12 (pages 4E.8, 4E.14, 4E.22, 4E.26, and 4E.34) - Tables 4E.2, 4E.5, 4E.8, and 4E.12 do not give unit costs for water efficiency measures, while Table 4E.11 (for Fort Worth) does. There is a second Table 4E.11 (for Trinity River Authority) that does not address cost issues. Cost information for conservation measures is required in order to allow for consistent comparisons between strategies.

[69] Page 4E.7, Table 4E.1 ((Recommended Water Management Strategies for Dallas Water Utilities). When considered separately from reuse in accordance with TWDB rules, the percent of 2060 supply from water conservation measures or efficiency improvements actually is 8.2% as compared to 17.1% from reuse. That level of conservation simply does not come close to constituting the "highest practicable level of water conservation and efficiency achievable." Because about 224,200 acre-feet of new interbasin transfers are recommended for DWU, that higher level of conservation and water efficiency becomes the applicable standard that DWU must meet in order to obtain supplies through such transfers. As an illustration of the extent of savings achievable, over approximately a 20 year period, San Antonio reduced its per capita water use about 37 percent, with almost all of those savings coming through improved water efficiency measures. The projected 2060 per capita municipal water use level of 233 gpcd for Dallas, see comment [77] below, also can be compared with the water use level of about 132 gpcd for San Antonio as a further illustration of the potential for increased water efficiency.

[70] The recommended 2060 supplies for DWU exceed projected 2060 demands by more than 131,000 acre-feet. The projected excess for 2050 is even greater. The recommended Fastrill Reservoir is projected to supply 112,100 acre-feet beginning in 2050. Obviously, that strategy is not justified because it is not needed to meet projected demands. As discussed above, if circumstances change down the line regarding other proposed strategies there will be ample time to consider whether additional strategies, such as Fastrill Reservoir or other more favorable strategies (which have more favorable cost and environmental impact considerations), should be considered. However, it should be removed from the current plan. When the additional required water conservation measures and drought management measures are included, the excess supply will be even greater.

[71] Page 4E.13 – Table 4E.4 (Recommended Water Management Strategies for Tarrant Regional Water District). When considered separately from reuse in accordance with TWDB rules, the percent of 2060 supply from water conservation measures or efficiency improvements actually is 7.1% as compared to 17.3% from reuse. Given the water usage rates for various customers, that level of conservation simply does not come close to constituting the "highest practicable level of water conservation and efficiency achievable." Because about 430,000 acre-feet of new interbasin transfers are recommended for TRWD, that higher level of conservation and water efficiency becomes the applicable standard. See Comment [69] above.

[72] The recommended 2060 supplies for TRWD exceed projected 2060 demands by almost 120,000 acre-feet. With additional water conservation measures and with inclusion of drought management measures, as required, the excess would be even greater. Accordingly, one or more

of the proposed water management strategies is not justified. In addition, the per-unit cost estimates for some strategies are not accurate because the strategy would produce more supply than there is demand, as a result the actual effective cost would be much higher than that presented in the initially prepared plan. Because of uncertainties about future population growth and about water use patterns, it would not be appropriate simply to assume that demand will continue to increase in the future beyond the 2060 projections. The proposed Marvin Nichols Reservoir serves as a prime example of the need to adjust the per unit cost projections because the proposed supply greatly exceeds projected demand. In addition, the per-unit cost for that project is rendered even more invalid because the project share projected for North Texas Municipal Water District also is unneeded, making the excess of supply over demand even greater. In addition, use of "safe yield" figures for currently available supplies provides a built-in cushion against future demands.

[73] Figure 4E.4 (page 4E.14) - Part of the legend for this Figure did not print.

[74] The recommended 2060 supplies for North Texas Municipal Water District exceed projected 2060 demands by almost 220,000 acre-feet. With additional water conservation measures and with inclusion of drought management measures as water management strategies, as required, the excess of supply would be even greater. Accordingly, some of the recommended water management strategies are unjustified.

[75] In particular, the proposed Marvin Nichols Reservoir should be dropped from the plan because of the high level of controversy and economic and ecological damage it would cause. Reliance on this project just does not make sense: it is extremely controversial, the proposed water efficiency measures do not come close to meeting the applicable statutory prerequisite for authorization of the project, the project is not even needed to meet projected demands and would produce only excess supply, and the per unit cost is inaccurate because it is calculated based on the incorrect assumption that the entire yield from the project would be used on a regular basis.

[76] Sections 4B, 4C or 6 - It is disappointing that neither Sections 4B, 4C nor 6 of the IPP give the expected water consumption rates (in gpcd) of individual WUGs after all the proposed water efficiency measures are implemented. We also were unable to find this information in any appendix. This is a very basic measure of a city's or region's water use. As acknowledged by the Texas Legislature and the Water Conservation Implementation Task Force, it is an important measure of water use efficiency. Given the inclusion in the initially prepared plan of Figures 1.10 – 1.12, it also appears that the planning group considers per capita water use an important criterion to consider. The gpcd rates can be calculated without unreasonable difficulty by finding the proposed savings per WUG from Appendix V and combining these with the final values for demand and population given elsewhere in the IPP.

[77] A sample calculation of gpcd rates for municipal water use is illustrated in the following Table "IPP Comment 3" for the ten largest WUGs at the 2060 time frame:

Table IPP Comment 3 – Calculation of net municipal water use rates for the ten most populous Water User Groups at the 2060 time frame.

	Region C IPP proposed water use and water efficiency data, Year 2060				
Water User Group (WUG) name	Population	Demand of WUG (ac-ft/yr)	basic demand per person[1] (gpcd)	proposed water efficiency savings (ac-ft/yr)	proposed water use rate with efficiency measures (gpcd)
DALLAS	2,058,767	590,366	**256**	53,135	**233**
FORT WORTH	1,848,759	418,317	**202**	39,902	**183**
ARLINGTON	515,000	100,376	**174**	9,618	**157**
DENTON	498,488	98,275	**176**	11,312	**156**
MCKINNEY	400,000	108,430	**242**	14,804	**209**
GRAND PRAIRIE	393,743	62,188	**141**	6,238	**127**
PLANO	305,000	85,069	**249**	6,932	**229**
GARLAND	300,000	52,087	**155**	6,351	**136**
FRISCO	300,000	99,133	**295**	15,211	**250**
IRVING	283,521	68,916	**217**	6,551	**196**

note: 1 – includes plumbing code savings

As we discussed in comment [11] above, we believe that individual water user group values in gpcd for water use rates are particularly important because they indicate potential for additional water savings. We urge the planning group to include this information in the final plan so that the potential for additional savings through water efficiency measures are identified. This information also is needed for a meaningful assessment of the likelihood that water user groups are achieving, or planning to achieve, the levels of water efficiency necessary to support approval of a new interbasin transfer.

[78] Sections 4B, 6, and Appendix V – The initially prepared plan does not include any explanation of how the anticipated water savings due to water efficiency measures itemized for each WUG were derived. As a result, it is difficult to understand or to comment fully on the appropriateness of the calculations and assumptions. The savings are quite variable as a percentage of demand or on a per capita basis as illustrated in our Table "IPP Comment 4" below. The derivation of these water savings should be explained in the final plan.

Table IPP Comment 4 – Illustration of variability in proposed savings through municipal water efficiency measures for the ten most populous Water User Groups at the 2060 time frame.

	Region C IPP proposed water use and water efficiency data, Year 2060					
Water User Group (WUG) name	Population	total demand of WUG (ac-ft/yr)	proposed water efficiency savings (ac-ft/yr)	proposed water use rate with efficiency measures (gpcd)	proposed savings as % reduction in demand (ac-ft/yr)	proposed savings - reduction in demand per 1000 persons (ac-ft/yr)
DALLAS	2,058,767	590,366	53,135	233	9.0%	25.8
FORT WORTH	1,848,759	418,317	39,902	183	9.5%	21.6
ARLINGTON	515,000	100,376	9,618	157	9.6%	18.7
DENTON	498,488	98,275	11,312	156	11.5%	22.7
MCKINNEY	400,000	108,430	14,804	209	13.7%	37.0
GRAND PRAIRIE	393,743	62,188	6,238	127	10.0%	15.8
PLANO	305,000	85,069	6,932	229	8.1%	22.7
GARLAND	300,000	52,087	6,351	136	12.2%	21.2
FRISCO	300,000	99,133	15,211	250	15.3%	50.7
IRVING	283,521	68,916	6,551	196	9.5%	23.1

These results raise important questions about the bases for the projected improvements in water efficiency. Many of these water user groups still demonstrate a very high per capita water usage rate even at 2060. In addition, the improvements are quite variable across the various WUGs. For example, McKinney is projected to achieve savings of 37 gpcd through water efficiency measures but Dallas only 25.8 gpcd. The plan should provide a clear explanation of how these varying levels of water efficiency water management strategies were chosen and evaluated. That information appears to be lacking in the initially prepared plan.

Chapter 5. Impacts of Recommended Water Management Strategies

[79] Page 5.1 – Water conservation is missing from the list of recommended water management strategies evaluated. It certainly is true that water conservation measures generally will not have significant adverse impacts. However, it is important that the plan note the absence of such impacts. As acknowledged elsewhere in the Initially Prepared Plan and in TWDB rules, water conservation is a water management strategy. Providing a comparable discussion of impacts for water conservation is necessary for illustrating the advantages of more aggressive water conservation measures and for ensuring a more balanced comparison of available strategies. It also is expressly required by Section 357.7 (a)(8)(E) of the TWDB rules. One of the basic tenets of regional water planning is that all potentially feasible water management strategies are evaluated "so that the cost effective water management strategies which are environmentally sensitive are considered and adopted unless the regional water planning group demonstrates that adoption of such strategies is not appropriate." 31 TAC § 357.5 (e)(4). Information about the

environmental sensitivity of water conservation measures is necessary to ensure compliance with that basic requirement.

[80] Page 5.3 – In evaluating impacts on water quality it appears that impacts from reduced flows downstream of a proposed reservoir or downstream of a proposed diversion point have been ignored. When flow in a river or stream is reduced but pollutant inputs are not reduced, water quality would be expected to suffer. The initially prepared plan fails to address that important issue. The one exception to this oversight appears to be discussion of direct reuse. That discussion indicates that direct reuse may improve downstream water quality through reductions of effluent discharges. As a general proposition, that may well be true. However, the water-quality impact resulting from the loss of flow and the accompanying reduction in ability to assimilate pollution inputs downstream also merits consideration. At any rate, this type of analysis also is needed for other water management strategies that have the potential for significant impacts on surface flows.

[81] Page 5.3 - Dissolved oxygen should be included in the water quality parameters evaluated. It is an important indicator of impacts to aquatic life and, as such, an important determinant of the effect of water management strategies on the state's natural resources. It also is a parameter for which many measurements are available.

Chapter 6. Water Conservation and Drought Management Recommendations

[82] Chapter 6 includes useful information and analysis about water conservation practices in Region C. We appreciate the efforts of the planning group and consultants in compiling and providing this information. In particular, it helps to illustrate the potential for large-scale savings through improved water efficiency measures. The Chapter 6 discussion creates unfortunate confusion by combining, at times, the discussion of reuse with the discussion of water efficiency measures.

[83] Pages 6.27-6.28 – The text incorrectly indicates that water users receiving water through contracts with entities required to develop water conservation plans pursuant to Section 11.1271 are not required to develop water conservation plans absent state funding. Section 288.5 (1)(G) of TCEQ's rules, 30 TAC § 288.5 (1)(G), requires water supply contracts for wholesale sales of water to include a requirement for each customer to develop a water conservation plan. Thus, the reach of the Section 11.1271 requirement for water conservation implementation is much broader than the initially prepared plan acknowledges. Because the Initially Prepared Plan does not reflect the savings expected through such water conservation plans, the Initially Prepared Plan does not comply with SB2 or TWDB rules. Table 6.8 helps to illustrate this deficiency. That Table purports to list the water users required to develop water conservation plans.

[84] Table 6.8 - Unfortunately, Table 6.8 is very incomplete. For example, the list fails to include the City of Dallas or the Trinity River Authority. Both of those entities hold substantial surface water rights and are required to prepare water conservation plans. The list also fails to list numerous entities that receive surface water pursuant to wholesale contracts and that are required to develop water conservation plans pursuant to Section 288.5 (1)(G) of TCEQ's rules. The Table and overall plan should be revised to include the savings expected through implementation

of water conservation requirements for all of the covered entities. The anticipated savings must be calculated and reflected in the allocation for conservation and subtracted from the needs to be met pursuant to other water management strategy categories.

[85] We appreciate the efforts represented in the Model Water Conservation Plans, included as Appendices M, N and O. They provide information that should be helpful for entities developing water conservation plans. We do believe the model plans should more prominently feature (including noting them as measures that are recommended in the plan) the water conservation measures that are recommended in the initially prepared regional plan, along with any additional measures included in the final plan.

[86] In addition, we urge the planning group to include recommended actions to be taken during each of the drought stages of the Drought Contingency Plan portions of the Model Water Conservation Plans. As drafted, the Plans only list measures that could be initiated. We believe that a drought contingency plan, in order to comply with TCEQ requirements, must establish measures that automatically are initiated when the various drought triggers are reached. Although it may be appropriate to list additional measures that could be used, basic measures that automatically would become applicable should be listed.

[87] We urge the planning group to consider adding a quantitative goal based on amount of water used per unit of production to the Model Manufacturing Water Conservation Plan. As currently drafted, the plan sets out the quantitative goal in total acre-feet of water used. Given the likely variations in production amounts, it seems more useful to develop a numerical goal based on the amount of water used for each unit of production.

Chapter 7. Description of How the Regional Water Plan is Consistent with Long-Term Protection of the State's Water Resources, Agricultural Resources, and Natural Resources.

[88] One of the key changes that SB2 made to the water planning process was to create a specific statutory criterion mandating that a regional water plan may not be approved by TWDB unless it is shown to be consistent with long-term protection of the state's water resources, agricultural resources, and natural resources. The initially prepared plan devotes just over five pages to the discussion of that consistency. Although we certainly acknowledge that quality of discussion is more important than quantity, both are lacking here.

7.2 Consistency with Protection of Water Resources

[89] Of the three consistency subparts, this is by far the most substantive. It does contain very useful information. However, the discussion of reuse projects suffers from the lack of consideration here, or elsewhere in the initially prepared plan, of the impacts of proposed reuse projects on stream and river flows. Those streams and rivers are part of the water resources of the state. Although we acknowledge that highly detailed evaluations are not feasible at this stage, it would be possible to evaluate the overall impact of recommended reuse projects on downstream flows. Indeed, that type of evaluation is required as part of any meaningful consideration of whether the proposed projects are consistent with long-term protection of the state's streams and rivers. If the reuse projects could drastically reduce flows during some time periods, that should be acknowledged and evaluated. Information on the extent of such flow

changes is needed in order to have an effective evaluation of impacts on natural resources that are dependent on those flows and on water quality.

7.3 Consistency with Protection of Agricultural Resources

[90] The most glaring insufficiency with this discussion is that it appears to be limited to consideration of agricultural resources within Region C. Unfortunately, the information provided is so skeletal that it isn't clear what area is being discussed. At any rate, the requirement is for consideration of long-term consistency with protection of the state's agricultural resources. To the extent that the Region C plan would have significant potential implications for agricultural resources anywhere in the state, those implications must be acknowledged and considered. By contrast, the discussion of consistency with protection of water resources appears to recognize the obligation to consider state-wide implications of the regional plan.

[91] The proposed reservoirs that would be located outside of Region C also would affect agricultural resources, both through inundation of lands involved in some form of agriculture and through potential downstream impacts. Similarly, proposed interbasin transfers also could affect agricultural activities outside of the region. Those impacts must be acknowledged and considered in a meaningful way. Reasonably specific information about agricultural land use within the area of proposed reservoirs should be provided and evaluated. Although we understand that precise figures would not be available, reasonable estimates of the impacts are required.

7.4 Consistency with Protection of Natural Resources

[92] This section also is unduly limited in scope. The discussion again is limited only to resources within Region C. Significant impacts on the state's natural resources, wherever located, must be acknowledged and evaluated. Also, although it certainly is true that natural resources **include** "threatened or endangered species; local, state, and federal parks and public land; and energy/mineral reserves," they are not limited to only those categories. Broader consideration of impacts to fish and wildlife resources must be acknowledged and considered.

[93] For example, discussion is needed about impacts to important wetland habitats, such as bottomland hardwood forests, regardless of whether they are publicly owned. A glaring example is the failure anywhere in the plan to acknowledge the conflict between the proposed Fastrill Reservoir and the Neches River National Wildlife Refuge, the creation of which is currently under consideration.

[94] We were unable to locate any quantitative evaluation, in this section, or elsewhere in the plan, 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." That quantitative evaluation is explicitly required by 31 TAC § 357.7 (a)(8)(A)(ii) and is needed to ensure that the implications of various potential water management strategies have been meaningfully considered. The information is needed in order to demonstrate compliance with the requirement for a showing of consistency with long-term protection of the state's natural resources. We previously submitted a short document entitled "Environmental Flows and Natural Resource Protection in Regional Water Planning" that sets out some

suggestions for reasonable methods for evaluating environmental flow impacts. We urge you to revisit that document.

[95] In considering consistency with long-term protection of natural resources, evaluation of changes in stream flows as a result of increased water use are essential along with a reasonable assessment of the biological implications of such changes. Similarly, a comparable evaluation is needed of changes in flows at springs that support significant natural resources.

Chapter 8. Unique Stream Segments, Unique Reservoir Sites, and Legislative Recommendations

[96] Page 8.3 – It is disappointing to see that the Planning Group has again declined to recommend any stream segments for designation as unique stream segments. The Texas Legislature acted definitively in expressly limiting the legal effect of such designations: "This designation solely means that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in a specific river or stream segment designated by the legislature under this subsection." Tex. Water Code Ann. § 16.053 (f). It is difficult to imagine how that language could be made more clear.

[97] Page 8.10 - On one level it is understandable why the planning group would be reluctant to recommend any formal designations that might adversely affect private property rights. However, the planning group does not seem consistent in its consideration of the private property concerns inherent in recommending unique reservoir site designations. Affixing such a formal designation on privately-owned property could significantly affect the marketability of the property.

[98] One reason for care in unique reservoir site designations is illustrated by the discussion on page 8.10 about new studies indicating a preferred, upstream location for the proposed Marvin Nichols Reservoir. How does one determine exactly what area is covered by a designation? If the Marvin Nichols Reservoir site had been previously designated as a unique reservoir site, would areas included in the previous footprint but not the newly proposed footprint still be covered by the designation? Would the upstream areas not previously within the proposed site now be included? The information included in the discussion of the proposed designations does not describe the areas proposed for designation with anything close to the specificity that would allow a landowner to know if his or her property is proposed for designation.

[99] Page 8.7 – The proposed designation of the Muenster reservoir site as a unique reservoir site is especially inappropriate. It does not appear that any useful purpose would be accomplished. The necessary land for reservoir construction has been acquired and construction is nearing completion. Creating such a designation now would seem to be a waste of effort that would just create confusion about the implications of the designation. Designating a site after the project land already has been acquired would necessarily raise questions about whether the vague designation description affected additional properties not already acquired. Again, this is a significant problem because the actual area proposed for designation is not specifically described.

[100] Page 8.8 – The proposed designation of the Lake Ralph Hall site as a unique reservoir site has not been adequately described or justified. The discussion fails to provide sufficient information for meaningful consideration of the merits or implications of the designation. The area proposed for designation is not described with any reasonable specificity, beyond that it is in "southeast Fannin County, north of Ladonia." The plan simply states, without any explanation, that the "location, geologic, hydrologic, topographic, water availability, water quality, and current development characteristics" make the site unique. At least some information about the aspects within those categories that make the site unique is needed in order to justify the designation and to allow for meaningful comment on the proposal. The rationales given in support of the proposed designations are so general as to be almost meaningless. The text appears simply to repeat the laundry list of features found in TWDB rules that could justify the proposed designation, but fails to provide any information to support the contention that the site is unique in any of the listed respects such that designation actually is justified.

[101] Page 8.8 – The discussion of the proposed designation of the Lower Bois d'Arc Creek provides more information about the potential impacts of the potential reservoir than is provided in the discussion of the others proposed for such designation. Again, however, rather than providing specific information indicating why the reservoir site should be considered unique, the document merely recites the list of the types of characteristics that purportedly qualify the site for listing. In addition, a specific description of the area proposed for designation is lacking.

[102] Page 8.10 – The discussion of the proposed designation of Marvin Nichols as a unique reservoir site is lacking in substance. The rationales given in support of the proposed designations are so general as to be almost meaningless. The text appears simply to repeat the laundry list of features found in TWDB rules that could justify the proposed designation, but fails to provide any information to support the contention that the site is unique in any of the listed respects such that designation actually is justified. In addition, as noted above, the plan fails to identify any actual need for the water from the Marvin Nichols Reservoir so there is no expected beneficiary of the potential water supply.

[103] Page 8.11-8.12 – The proposed unique reservoir designation for Lake Fastrill has not been justified. The rationales given in support of the proposed designation are so general as to be almost meaningless. The text appears simply to repeat the laundry list of features found in TWDB rules that could justify the proposed designation, but fails to provide any information to support the contention that the site is unique in any of the listed respects such that designation actually is justified. The discussion does not even acknowledge the conflict with the possible creation of the Neches River National Wildlife Refuge, which is currently being evaluated. In addition, as discussed above, no need has been demonstrated for the water from the recommended reservoir so there is no expected beneficiary of the potential water supply.

Section 8.4 Policy and Legislative Recommendations

[104] Page 8.13-8.14. Alternative Strategies. We believe the use of alternative strategies generally is problematic. A "plan" can quickly become merely a "list" if alternative strategies are included and treated comparably to recommended strategies. The purpose of the planning exercise, as we understand it, is to compare options and develop a set of recommended

approaches. Because the planning process is an ongoing exercise, there are always opportunities to update and revise the plan to reflect changing conditions.

[105] Page 8.14. Allow Waivers of Plan Amendments for Entities with Small Strategies. It is difficult to comment on this recommendation in the abstract, particularly without a definition of "small." We do support recognition of a dichotomy between minor and major amendments. Minor amendments, which should be defined as including only amendments with no potential for significant impacts, should be allowed with a reduced level of notice and comment. However, we do believe that some type of formal amendment process, although simplified, is needed even for small changes to avoid uncertainty about the content of the most recent officially approved regional water plan.

[106] Page 8.14. Coordination between TWDB and TCEQ Regarding Use of the WAMs for Planning. It is far from clear why the state's water availability models are not appropriate for use in water planning. It hardly seems appropriate to use one set of models for developing plans and then another set for determining if those plans can be implemented. That only seems likely to make the plans less useful. Regarding flexibility in use of models, in the absence of any specifics about that flexibility, it is difficult to comment. We do agree that there are some aspects of planning that could appropriately be based on WAM runs other than Run 3.

[107] Page 8.17-8.18. Policies Limiting the Use of Treated Wastewater. This recommendation for legislative action seems premature. TCEQ is still in the process of developing a policy on wastewater reuse. These recommendations also appear to ignore the key role that wastewater discharges play in providing environmental flows. The vast majority of existing water rights were issued without any consideration or protection for environmental flows. As a result, newer water rights necessarily are faced with more stringent conditions to protect environmental flows. One way that existing water rights can equitably contribute to protection of environmental flows is through providing a reasonable level of return flows. A reasonable regulatory approach is needed to ensure that appropriate levels of return flows are returned to streams.

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: Virginia Towles, Region C liaison, TWDB
Bill Mullican, TWDB
Cindy Loeffler, TPWD
Tom Gooch, Freese & Nichols