September 16, 2005

Mr. Jim Adams, P.E.
General Manager
San Jacinto River Authority
P. O. Box 329
Conroe, TX 77305-0329

RE: Comments on the Initially Prepared 2006 Regional Water Plan for Region H

Dear Mr. Adams and Region H Water 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 H. 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 H 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 H. 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 the failure in most instances to provide quantitative analysis of the environmental impacts of specific recommended water management strategies, 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.

The next section of the letter summarizes 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.

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, establishes 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 does not 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.

In addition, the Board's guidelines require the consideration of more stringent conservation and drought management measures for all other water user groups (WUGs) 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 certainly acknowledge the progress made by Region H in incorporating water conservation into the initially prepared 2006 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 water user groups in Region H 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 conservation measures included in the initially prepared plan, although improved over the previous 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 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 recognize and applaud the RHWPG for its identification and incorporation of target environmental inflows for Galveston Bay into the draft Region H plan. We also acknowledge the efforts of the Region H planning consultants to provide a quantitative assessment of the overall impact of all Region H/Region C water management strategies on those target inflows. There are other environmental impacts than***

just those associated with target inflows, of course, including, as an example, the location of inflows within a bay system.

However, the inititially prepared Region H plan does not provide, with perhaps one exception, quantitative analyses of environmental impacts of the specific proposed water management strategies. Nor do we believe that the initially prepared plan demonstrates consistency with long-term protection of natural resources or agricultural resources. The plan recommends water management strategies that would result in the destruction of bottomland hardwoods, wetlands, and other important wildlife habitat and fails to consider the potential implications on oyster beds and productivity in the Galveston Bay system that would result from changes in location and volume of freshwater inflows into that system. Moreover the level of impact analysis done to determine consistency of the plan with protection of natural and agricultural resources is too limited to allow any consistency determination.

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. We recognize that the draft 2006 Region H plan eliminates two on-channel reservoirs, Little River and Bedias Reservoirs, that were recommended water management strategies in the 2001 plan, and we commend the RHWPG for taking that step. However, we note that both the on-channel Little River Reservoir and the Bedias Reservoir are listed in the draft 2006 plan as "alternative water management strategies" in case recommended strategies are not or cannot be pursued. Because other sources, including existing reservoirs, would be less damaging and less costly, we do not believe that the on-channel Little River and the Bedias Reservoirs should be included even as alternative water management strategies.

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 commitment to sustainable groundwater yield.***

F. Facilitate Short-Term Transfers

SB 1 directs consideration of voluntary and emergency transfers of water as a key mechanism for meeting water demands. 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 buyers on that approach.

We commend Region H for beginning to address this issue in the discussion of non-municipal water contract transfers in Appendix 4B8, something which most regional groups appear not to have done. We believe, however, that more extensive transfers should be contemplated than just the ones that are recommended in the draft Plan, and emergency transfer opportunities should be expressly examined.

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.

EXECUTIVE SUMMARY

E.5.3 – Socioeconomic Impact of Not Addressing Shortages

[#1] We disagree with the following assumption made by the Texas Water Development Board (TWDB) in calculating the potential impacts of not meeting projected water demands: "No technological advances or changes in human behavior occur (i.e., water use patterns remain as they are today)." This is an incredible assumption to be made for a planning process that stretches to the year 2060 – certainly there will be technological advances over the next 50+ years that will affect water use. Moreover, studies indicate that changes in water use patterns by humans occur, for example, after people experience water use reductions during drought and learn that they can get by with less water.

[#2] TWDB's socioeconomic impact analysis does not provide a balanced view. A complete socioeconomic analysis would look at the total "costs" of implementing water management strategies intended to provide water for certain water user groups – including the costs of lost bay and estuary productivity, the loss of wetlands habitat that may provide protection for coastal property in violent storms, the financing costs to taxpayers, etc. TWDB only looks at potential

loss of jobs and income if a drought occurs, but it does not compare that to the loss of jobs and economic value from pursuing certain strategies to address water "shortages."

CHAPTER 1 – DESCRIPTION OF THE REGION

1.7.1 – Water Management Strategies Recommended in the 2001 Regional Plan

[#3] As of September 2005 only a few of the nine additional water management strategies approved by the Region H Water Planning Group in 2004 as amendments to the 2001 Plan have been approved by the Texas Water Development Board. Thus most of these strategies are not part of the approved 2001 Plan and should not be identified as such.

[#4] In addition this draft Plan should state candidly that the nine additional water management strategies, if all approved by the Board and officially incorporated into the 2001 Plan, along with the previous water management strategies in the approved 2001 Plan, together would supply vastly more water for the region by 2050 than would be needed to meet the projected "unmet" water demands in the 2001 Plan.

1.7.2 – Unique Stream Segments Recommended in the 2001 Regional Plan

[#5] Under S.B. 1 the Texas Legislature is authorized to designate "unique stream segments" upon recommendation by a regional planning group. Language should be inserted into this section to clarify that it is the Legislature that makes this decision. Moreover, the language in this section regarding the six "unique stream segments" should be modified (in keeping with the section heading and the table heading) to reflect that six streams were "recommended for designation as Streams of Unique Ecological Value in Region H" rather than "designated as Streams of Unique Ecological Value in Region H." The Legislature has not yet made any such designations, and that fact should be noted in this section. A comment to this effect in made later in Chapter 1 (1.8) with regard to legislative recommendations from the 2002 State Water Plan, but making a similar comment here would make clear the status of these stream segments.

1.7.3 – Unique Reservoir Sites Recommended in the 2001 Regional Plan

[#6] Similar to the comment immediately above, language should be added to this section to clarify that it is the Legislature that decides whether or not to designate a location as a "unique reservoir site." Moreover, the language in this section should be modified to indicate that "The RHWPG has recommended for designation the site locations of each of these projects [Allens Creek, Bedias, and Little River] as unique sites" rather than "The RHWPG has decided to designate the site locations…as unique sites." As noted later in Chapter 1 (1.8) only Allens Creek has been designated by the Legislature as a "unique site," and that fact should be noted in this section as well.

1.7.4 – Regulatory and Administrative Recommendations from the 2001 Plan

[#7] We differ with the RHWPG on the advisability of some of the regulatory and administrative recommendations from the 2001 Plan; but since this section merely describes the recommendations that were made in the earlier plan, we do not offer any comments here on

those recommendations. Comments are provided later in this document regarding the regulatory and administrative recommendations made in this updated version of the plan.

CHAPTER 2 – PRESENTATION OF POPULATION AND WATER DEMANDS

2.1.2 – Background

[#8] The sentence "Currently, estimates of Texas population anticipate the water demand will nearly double, increasing from 21 million (current population) to 45 million people by the year 2060" is erroneous or at least poorly stated. The relationship between population growth and water demand is not a 1:1 ratio. The 2002 State Water Plan estimated that the population of the state would double from the year 2000 to the year 2050 but that the total projected demand for water in that period would only increase 18%.

2.3.1 – Regional Summary of Projections by Category

[#9] Irrigation Water Demand – The very large differences between the TWDB draft irrigation demand estimates and the irrigation water demand estimates proposed by Region H – representing as noted a 36.17 percent increase over the TWDB projections for the year 2060 – deserve much more explanation here (and/or a reference to where else in the 2006 Plan the explanation for the difference is provided). How is the general public to evaluate the rationale behind this large difference in volume without being provided the assumptions that go into the proposed demand figures? The "Agricultural Irrigation Water Demand Basis for Revision" acceptable to TWDB is laid out in 2.2.3.3, but there is no explanation here of whether and how the Region H revisions of the agricultural irrigation water demand meet those criteria.

[#10] Steam-Electric Power Generation Water Demand – Something appears to be amiss in one of these two sentences: "Region H adopted the TWDB default steam-electric power generation water demands projections. The default TWDB projections were also adopted by TWDB." Do the TWDB default projections adopted by Region H incorporate the impact of enacted and expected energy efficiency requirements, such as the federal energy efficiency standards for clothes washers that take effect in 2007 and will dramatically lower energy use by clothes washers over the next half-century?

[#11] Mining Water Demand – In Chapter 1 of this draft plan (on page 1-12) appears the following statement: "Mining water demands in Region H are associated primarily with oil and gas production." This section of Chapter 2 says that "The proposed mining water demand by decade for Region H [the TWDB default projections] is 49,473 AFY in the year 2000 and 69,457 AFY in 2060. When comparing the 2001 and 2006 RWP mining water demand estimates for the region, there is a 46 percent and 97 percent mining water demand increase in the 2006 RWP for the 2000 and 2050 decades, respectively." Does Region H believe that water demands associated primarily with oil and gas production are going to ***increase*** over the next 50 years?

CHAPTER 3 – ANALYSIS OF CURRENT WATER SUPPLIES

3.1 – Introduction

[#12] Although there is discussion in this chapter about how attempts to address land subsidence in some parts of the region are necessarily reducing the volume of groundwater pumped and thus necessitating more dependence on surface water supplies, there appears to be no discussion about any other physical relationship between surface water and groundwater. Is there no hydraulic connection between groundwater sources and surface water sources in any part of Region H that bears at least some discussion and consideration?

3.2.3 – Aquifer Conditions

[#13] Much (valuable) discussion is provided in this section regarding groundwater sources and the ability to pump "substantial quantities of good quality water to help satisfy the multiple water needs of the region," but there is no discussion about recharge to the aquifers, any potential contamination threats (and means of preventing contamination), and any possible impacts on volume of recharge by different activities.

3.3.5 – Legal and Regulatory Constraints

[#14] The subheading refers to them as legal and regulatory "constraints." The language in this section refers to them more appropriately as legal and regulatory "factors." These factors have many positive aspects for water management and should not be portrayed primarily as constraints on water development. Consider, for example, the statement on page 3-36 that "Current limitations on interbasin transfers will affect the development of future water resource management strategies." This statement is probably intended to reflect the perspective that the "junior water rights" provision in SB 1 reduces the prospect for any new interbasin transfers. By the same token, however, the requirement for new interbasin transfers that an applicant for such a transfer demonstrate "the highest practicable levels of water conservation and efficiency achievable" should help to spur water conservation and efficiency efforts that will allow a region to stretch existing water supplies further before having to seek new ones.

3.3.6 – Environmental Uses and Requirements

[#15] 3.3.6.1 – Bay and Estuary Inflows – We again acknowledge and commend Region H for incorporating into the 2001 Plan and the 2006 draft plan the recommendation of the Galveston Bay Freshwater Inflows Group (GBFIG) for target freshwater inflows into the Bay. Although the comprehensive environmental water needs for Galveston Bay are subject to refinement in the coming years, the GBFIG recommendation represents an important placeholder that highlights the importance of meeting these needs as well as the needs of other WUGs in the region.

3.3.8 – Recreational Uses

[#16] Although this section mentions a number of water-based or water-related recreational uses in Region H, much of this discussion focuses on reservoir-related recreational use and does not give a similar level of attention to certain other water-based or water-related recreational uses such as the bayous, creeks, river segments, marshes, and other areas in Region H that are suitable for and increasingly popular for canoeing and/or kayaking. These types of water-based recreational opportunities are heavily dependent upon maintenance of instream flows and thus serve as a reminder of the importance of environmental flows for economic as well as ecological

purposes. More information on this type of recreation, including examples of recreational areas dependent upon the maintenance of environmental flows and the natural environment should be provided in this section.

3.4 – Total Water Supply

[#17] 3.4.1 – Water Supplies Available by City and Category – Supply Allocation – We are confused by the following sentences: "However, as the increase in mining demand over the planning periods increased significantly, it was assumed that local supplies could only be used to meet remaining shortages after groundwater and surface water allocation only for the 2000 planning period. This year 2000 local supply quantity was then assumed to be available through the year 2060." What does the first sentence mean, especially in relationship to the second one?

CHAPTER 4 – IDENTIFICATION, EVALUATION AND SELECTION OF WATER MANAGEMENT STRATEGIES BASED ON NEEDS

4.2 – Potential Water Management Strategies

[#18] 4.2.3 – Need for Interbasin Transfers – We acknowledge the importance of existing interbasin transfers to meeting the water demands of the region. With regard to any future interbasin transfers of water in or into the region, as stated above, the Texas Water Code requires that any applicant for such a transfer will have to demonstrate that the entity has achieved "the highest practicable levels of water conservation and efficiency achievable." Meeting future water demands in the region through new interbasin transfers should not be assumed unless the regional plan also assumes (and the relevant entities actually achieve) "the highest practicable levels of water conservation and efficiency achievable."

[#19] 4.2.4 – Drought Management – This section acknowledges that "Regional Water Planning Guidelines require that drought management strategies be considered for each identified need" and that "If drought management is not selected as a strategy, the reason must be documented." ***The discussion in this session totally fails, however, to provide an adequate rationale for the decision not to select drought management as a water management strategy to meet any identified water "need."***

The draft Region H Plan states in this section that:

> "Under non-drought conditions, the region will have a surplus of water supply due to full or near-full yield of surface water rights and decreased demand for irrigation supply. The shortages identified in the plan are based on future demands (based on projected growth) exceeding the drought yield of existing supplies. The strategies recommended to meet these shortages also reflect estimated drought yields. Because Region H was able to address all projected shortages through conservation, allocation of existing supplies and ***development of new supplies*** [emphasis added], no unmet demands remain to be addressed through drought management strategies."

Region H planners have chosen development of new supplies over a drought management strategy that would reduce water demands to correspond with the drought yield of existing

supplies (when coupled with ongoing water conservation and efficiency efforts). Then the authors of the draft Plan – in a highly circular argument – attempt to use this *fait accompli* as the justification for this very action. In effect they are saying "We don't have to adopt drought management as a strategy because we have already decided not to adopt it as a strategy (!)."

[#20] At the very least the RHWPG could adopt drought management as a water management strategy and preclude the need for ***some*** of the strategies that entail development of new supplies, thereby avoiding their economic and ecological costs. In fact, the TWDB rules, and Section 16.053 (h)(7)(B) of the Water Code, **require** that the plan **include** as water management strategies at least the levels of drought management otherwise required by Section 11.1272 of the Water Code. *See* 31 TAC § 357.7 (a)(7)(B).

[#21] Region H planners acknowledge the existence of drought contingency plans by municipalities and water providers throughout the region but then proceed to downplay the significance of these plans and fail to incorporate them into the regional plan other than to outline them in an appendix. If Region H planners do not feel that current drought contingency plans are sufficient to address long-term droughts, then they should make recommendations on how to strengthen these plans to meet such situations rather than dismiss out-of-hand the possibility of drought management as a key water management strategy.

4.3 – Strategy Evaluation and Selection

[#22] We support the assumption made by the RHWPG "that every municipal WUG with a projected shortage would utilize conservation before seeking out or increasing a WWP contract."

[#23] 4.3.1 – Evaluation of Water Management Strategies – We appreciate the effort by the Region H planners to compare the potential water management strategies using a screening table and to rate the various strategies using evaluation criteria. We also appreciate the candid statement that "Certain strategies (i.e., the inter-basin transfer of supply from east Texas and all of the potential reservoir sites) were rated negatively due to the significant habitat and flows impacts these projects entail."

[#24] 4.3.3 – Alternative Water Management Strategies – We have serious concerns about the identification of alternative water management strategies in the Region H plan because we fear that these alternative strategies become a "backdoor" means of incorporating into the plan water management strategies that are perhaps more controversial than the recommended strategies. A regional water plan needs to make choices and set out a clear path that water use groups can follow in order to meet the region's water demands.

[#25] There is a process for amending a regional water plan between planning cycles, and those planning cycles themselves represent opportunities to revamp water management strategies on a periodic basis to reflect changing circumstances. Appropriate use of the amendment process and the planning updates represent a much preferable approach to replacing or augmenting recommended water strategies than simply enumerating "alternative" strategies without providing a full analysis of each of those strategies that would allow the public to make fully informed comment. Although we believe that alternative strategies legally may be substituted for recommended strategies only through a formal plan amendment, we believe the plan itself

should make clear that "alternative strategies" really are just potentially feasible strategies that should receive first consideration if additional supply is needed.

4.4 – Strategy Allocation

[#26] While we would probably differ with the characterization of the City of Houston's water conservation program as "aggressive," we appreciate and applaud the City of Houston for asking that its water conservation program be reflected in the Region H plan as a water management strategy even though it is not projected to experience a shortage within the planning period.

4.5 – Impacts of the 2001 State Water Plan on Galveston Bay Inflows

[#27] 4.5.5.4 – Summary of Results – Region C water management strategies should not be assumed as a given in modeling the likelihood of meeting freshwater inflow targets for Galveston Bay. The 2001 Region C plan included some strategies, especially the highly controversial proposed Marvin Nichols reservoir that would be located in the Sulphur River Basin, that are not likely to be implemented, thus making the estimates of the freshwater inflow impacts of "large amounts of imported water producing return flows in the upper Trinity Basin" highly unrealistic. In addition, it is worth noting that the current version of the initially prepared plan for Region C includes very large-scale wastewater reuse projects, which only further illustrates the tenuous nature of large-scale increases in return flows from the upper basin.

Appendix 4B1 – Water Management Strategies – Municipal Conservation

[#28] In the summer of 2003 the Sierra Club provided RHWPG with a paper discussing improvements in municipal water use efficiency anticipated to occur as a result of the implementation of new laws already enacted or other factors such as behavioral changes occurring over time as part of responses to drought. One of the specific examples offered by the Sierra Club at that time was **implementation of new federal energy efficiency standards for clothes washers – set to go into effect in 2007** – that are widely anticipated to have the residual impact of improving water use efficiency (one way to reduce the energy needed to heat water for certain wash cycles is to reduce the volume of water that needs to be heated, for example).

As new clothes washers are purchased over the coming decades to replace old, less water efficient ones, there will be a decline in per unit water use in this category. Region H should reflect this fact either in lower municipal demands for water over the 50-year planning period than would be the case in the absence of the clothes washer standards or in the adoption of the implementation of these standards as a water management strategy (or part of the municipal conservation strategy) that will result in quantifiable water use savings.

There was an indication two years ago that the RHWPG would seriously consider the latter approach, but **we see no evidence in the draft Region H plan that the implementation of the clothes washer standards has been factored into either municipal water demands for Region H or into the municipal water conservation strategy for the Region. The Region C draft plan, by contrast, factors into its municipal water conservation strategy the water use savings anticipated to result from compliance with the federal clothes washer standards. We urge the RHWPG to address this issue.** Otherwise the water use savings that are going to

occur as a natural consequence of implementing these standards are not going to be captured in the Region H plan.

[#29] We appreciate the recommendation by the RHWPG that all of the municipal conservation best management practices (BMPs) identified in the TWDB Report No. 32 (a report prepared by the state Water Conservation Implementation Task Force) be utilized within Region H for those WUGs with shortages to meet conservation goals.

[#30] However, **we believe that an estimate of the water savings from the implementation of all these BMPs rather than just those BMPs identified in the City of Houston's water conservation plan should be provided as part of the Region H plan.** Otherwise we do not have a complete picture of the potential for conservation to meet "unmet" water needs in the region. Conceivably, these additional savings from conservation might take care of projected shortages for additional WUGs and certainly would reduce the unmet needs of other WUGs.

[#31] It is instructive to note that the survey of Region H municipal WUGs as to whether they currently use and/or would consider in the future the 21 potential water conservation strategies indicates that only ***three*** of those strategies actually are ***used*** by a majority of the 60 out of 165 WUGs that responded. Furthermore, only ***five*** of the 21 potential strategies are either used and/or would be considered by a majority of those 60 WUGs. While it is impossible to know what the other 105 municipal WUGs are doing and/or considering doing regarding water conservation, it is not unreasonable to assume that many of the WUGs did not respond to the survey because they are not doing anything regarding water conservation. Therefore, the potential benefits of RHWPG pushing municipal water conservation as a major management strategy appear to be great.

[#32] Indeed what appears to be the projected overall savings from implementation of municipal water conservation measures recommended by RHWPG – 7 percent of total (municipal) water use by the year 2005 and sustained at an annual level of approximately 7 percent thereafter – is not a particularly aggressive goal (we acknowledge that the impacts of implementation of the plumbing fixtures standards are not reflected in this figure).

[#33] We believe that as part of an effort to achieve more than a 7 percent projected overall savings the Region H water planners should recommend that municipal WUGs adopt the municipal water conservation targets for retail public water utilities recommended by the state Water Conservation Task Force – the one percent reduction annually in per capita water use based on a five-year rolling average for those utilities with water use of more than 140 GPCD (gallons per capita per day). The Region L water planners have taken this approach, for example.

[#34] We are troubled by the lack of information in the Region H plan about per capita water use, which is a concept that the average person finds easier to understand and evaluate than acre-feet per year. It would be especially helpful in looking at the net effects of implementation of water conservation measures over the planning period – seeing how anticipated per capita water use changes for each WUG over a period of 50 years.

Appendix 4B2 – Potential Reservoir Sites

[#35] We realize that this appendix is simply a laundry list of all the potential reservoir sites in the Region. We note, however, that with a couple of exceptions, the potential reservoirs for which any environmental examination has been made indicate high or moderate to high environmental impacts – telegraphing that any focus of attention on new reservoirs as water management strategies is fraught with controversy and negative consequences.

Appendix 4B3 – Irrigation Conservation

[#36] Generally we find the discussion in this section to be valuable and a reasonable assessment of the potential for irrigation conservation. We would make three observations, however: First, although mention is made that irrigation conservation could free up water for other uses within certain areas, it does not appear to be translated into any specific water management strategy for meeting any other WUG's unmet water demands. We believe that this should be an actual recommended management strategy for certain WUGs with shortages.

[#37] Second, the potential for irrigation conservation might be enhanced if some of the water could be made available to other WUGs with shortages as a result of those WUGs being willing to pay for the implementation of the irrigation conservation practices that would free that water for other uses. In other words there may be more financial incentive opportunities than obtainable simply through the sale of conserved water – ones that would be a catalyst for taking action to implement irrigation conservation practices. While we are not necessarily advocating that all water saved through irrigation conservation be made available for other uses, that certainly would be preferable to some of the other more environmentally questionable water management strategies that might be pursued.

[#38] Third, although we understand the argument made regarding Fort Bend County irrigation use of groundwater – that any irrigation groundwater conserved there is not going to be available for other uses and thus the financial incentive for implementing conservation is not as great – we believe that it is always prudent to promote conservation. There may be funding sources, such as federal farm program monies, that could be obtained for achieving conservation of that water, which would be beneficial for the area aquifer even if the conserved water would not be made directly available for other uses.

Appendix 4B4 – Municipal Wastewater Reclamation for Manufacturing Use

[#39] While municipal wastewater reclamation for manufacturing use is an idea worthy of examination and has many potential benefits, we are concerned about the lack of quantitative analysis of the environment impacts of this strategy. Indeed this is a generic problem with the draft Region H plan – the failure to do quantitative analysis of the environmental impacts of individual water management strategies.

Appendix 4B5 – City of Houston/Trinity River Authority Contract Agreement

[#40] Other things being equal, the use of existing water supplies is certainly preferable to developing new ones, and the potential use of uncommitted water from Lake Livingston is

worthy of further examination. We are troubled, however, by some of the potential environmental impacts of the possible strategy, including the anticipated decrease in freshwater inflows into the upper Trinity Bay estuary. Redirection of flow in the Galveston Bay system (through the San Jacinto River) does not necessarily provide the same benefits as the flows into the Trinity Bay portion of the system. Again we note the absence of detailed quantitative analysis of the environmental impacts of this strategy.

[#41] We are also confused by language that seems to indicate on one hand that the Luce Bayou Transfer is critical to implementation of this strategy and on the other hand that there are workable alternative conveyance systems, including existing ones. Also, this discussion talks about a potential 200,000 AF/Y that might be made available through agreement between the City and TRA, but elsewhere in the draft Region H plan the figure of 150,000 AF/Y is used. We assume that the 200,000 was the initial figure for purposes of the technical memorandum and that the 150,000 is the subsequent recommendation, but clarification would be helpful.

Appendix 4B6 – Luce Bayou Transfer Project

[#42] There appear to be significant environmental impacts associated with the possible construction and operation of the Luce Bayou Transfer Project based on the narrative discussion of these impacts (in the absence of the required quantitative analysis of environmental impacts). At a minimum full consideration and examination should be made of the alternative of a pipeline from Lake Livingston to convey presently uncommitted water if the final decision is to pursue uncommitted water from the lake as a water management strategy – although there are environmental considerations associated with that diversion of water as well.

Appendix 4B7 – Houston to Gulf Coast Water Authority Transfer

[#43] We again raise concerns about changes in inflow patterns into the Galveston Bay system, although a full evaluation of the extent of those concerns is problematic due to the lack of a quantitative analysis of environmental impacts.

Appendix 4B8 – Non-Municipal Contract Transfers

[#44] We support the pursuit of non-municipal contract transfers as a water management strategy. As stated in the technical memorandum: "Contractual transfers make the most efficient use of existing water supplies by allocating available supplies to entities needing the water." We do acknowledge a potential environmental impact in terms of the diversion of some previously unused water supplies, such as the possible reduction in instream flows in the Brazos and San Bernard from possible transfers (especially since the mouth of the San Bernard is in danger of closing), and these need to be evaluated more closely – underscoring once again the need for quantitative analysis. This strategy, however, seems worthy of more examination.

Appendix 4B9 – Bedias Reservoir-SJRA Interbasin Transfer

[#45] We oppose the construction of the Bedias Reservoir due to the unacceptable environmental impacts associated with the project, and we commend the RHWPG for dropping the Bedias Reservoir as a recommended water management strategy. However, we oppose the

recommendation that it be designated as a unique reservoir site, and we also oppose its inclusion in the list of possible alternative water management strategies.

Appendix 4B10 – City of Houston Wastewater Reclamation for M/I Use

[#46] We certainly agree with the serious examination of water reuse as a legitimate water management strategy, but it is extremely important that all environmental impacts of water reuse, especially that of large water reuse projects, be thoroughly considered. "Environmental impacts, impacts to other water rights, and other issues or concerns will be addressed during the permitting process" fails to meet the requirement for quantitative analysis of environmental impacts as well as being a failure of the planning process to provide a meaningful overall examination of this water management strategy. This is a serious omission in the draft Region H plan, especially considering the volume of water contemplated in this recommended strategy.

Appendix 4B11 – NHCRWA Wastewater Reclamation (Indirect Wastewater Reuse)

[#47] This strategy is so preliminary that it is difficult to make any comment or reach any conclusion about it. However, we reiterate our concern about the statement that "Environmental impacts, impacts to other water rights, and other issues or concerns will be addressed during the permitting process." This does not constitute the quantitative analysis of environmental impacts required by the planning process.

Appendix 4B12 – New San Jacinto River Water Rights

[#48] Again there is no quantitative analysis of environmental impacts as required by the planning process. Among other issues, the impacts of changing locations of inflows into the Galveston Bay system must be considered.

Appendix 4B13 – Little River Reservoir

[#49] We again note our opposition to the construction (and unique reservoir site designation) of the on-channel Little River Reservoir. We acknowledge the fact the this on-channel reservoir is not a recommended water management strategy in the draft 2006 Region H water plan, but we object to its inclusion as a possible alternative water management strategy.

Appendix 4B14 – Industrial Conservation

[#50] The technical memorandum correctly states the difficulties in trying to project savings from industrial water conservation activities because of the diversity in industrial processes and water uses. We disagree, however, with the conclusion that because it may not be possible to predict these savings with pinpoint accuracy the 2006 Region H draft plan should not attempt to incorporate ***any*** projected water savings from industrial conservation over the next 50 years.

[#51] As the cost of water likely increases over the next half century and the technology of water efficiency improves, manufacturing companies and other industrial concerns will certainly seek to reduce their use of water in order to improve their bottom line – even to the point of seeing a movement toward closed-loop systems for water use. The RHWPG should at a

minimum adopt a generic, conservative figure for water savings from industrial conservation over the planning horizon – at least in the range of 10% or more over the 50-year period – and adjust that figure as experience dictates in subsequent planning rounds. To do otherwise will overestimate manufacturing water use in the coming decades and lead to the pursuit of other unnecessary water management strategies. The likely progress in industrial water conservation should also have a beneficial result in increasing prospects for more contractual transfers.

Appendix 4B16 – Brazos River Authority System Operations

[#52] Although we do not take a position at this time regarding the BRA system operations proposal as a water management strategy for Region H, we appreciate the effort to provide at least some quantitative analysis of environmental impacts of this strategy.

Appendix 4B17 – Expanded Use of Groundwater

[#53] We appreciate the fact that this water management strategy is discussed in the context of staying within the limits of sustainable groundwater yield.

Appendix 4B18 – Freeport Seawater Desalination

[#54] Continued examination of seawater desalination as a water management strategy for meeting the needs of coastal municipalities and industry is warranted. Care must be taken to have a thorough evaluation, however, of the energy and environmental issues, as well as other issues, related to such projects. The draft Region H plan is woefully lacking in discussing, much less providing a quantitative analysis of, the environmental impacts of the wastewater discharge associated with a project such as the Freeport Seawater Desalination Project.

Appendix 4B21 – TRA to SJRA Contract Via Lake Houston

[#55] We raise similar issues here to those raised in conjunction with the possible City of Houston/TRA Contract Agreement (Appendix 4B5).

Appendix 4B23 – Little River Off-Channel Reservoir

[#56] Although an off-channel reservoir is preferable to an on-channel reservoir from an environmental perspective, we do not support the Little River off-channel reservoir as a recommended water management strategy for the 2006 Region H draft plan. The minimal narrative comments about possible environmental impacts of the project and the lack of any quantitative analysis of those impacts make it impossible to evaluate the project at this time.

CHAPTER 5 – IMPACTS OF WATER MANAGEMENT STRATEGIES ON KEY PARAMETERS OF WATER QUALITY AND IMPACTS OF MOVING WATER FROM RURAL AND AGRICULTURAL AREAS

5.2 – Impacts of Water Management Strategies on Key Parameters of Water Quality

[#57] In general the discussion of the impacts of the recommended water management strategies on key parameters of water quality is informative although we disagree with some of the assertions made (for example, the contention that building the two recommended reservoirs would benefit water quality). The discussion is narrative and general in nature, however, and needs more clarity about the anticipated level of impacts on specific water quality parameters.

[#58] We recommend more specific attention, for example, to a consideration of the effects on dissolved oxygen from the implementation of some of the water management strategies since 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.

5.4 – Impacts of Moving Water from Rural and Agricultural Areas

[#59] The discussion in this section appears to downplay the significance in Region H of transfers of water from rural and agricultural areas, but we believe there is clearly an important shift of water from rural and agricultural areas to urban and suburban areas over the 50-year planning period and that this shift deserves more attention from the regional water planners. One item that is not discussed in this section is how any shift will affect wildlife resources in rural areas where hunting, fishing, and wildlife viewing are becoming increasingly important economic activities supporting rural landowners.

CHAPTER 6 – WATER CONSERVATION AND DROUGHT MANAGEMENT PLANS

[#60] This chapter is primarily an enumeration of the statutory and administrative rule requirements governing the preparation of water conservation and drought contingency plans in Texas (which are required of various water rights holders, water suppliers, and recipients of state funding for water projects) as well as a presentation of templates for water conservation plans and drought contingency plans.

[#61] The templates are of value and logically constructed. They do not, however, constitute the "model" water conservation plans and drought contingency plans that had been anticipated based on the Water Development Board's outline of sections of a regional water plan for this second round of planning. We appreciate the potential complexity of trying to provide even a model municipal water conservation plan for retail water suppliers that may vary widely in size of population served and other factors. However, the effort to promote and facilitate municipal water conservation, for example, would be enhanced by actual ***model*** conservation plans that would incorporate the most effective best management practices, reflect the lessons learned by municipal suppliers implementing conservation programs, and go beyond being an outline.

CHAPTER 7 – LONG-TERM PROTECTION OF THE STATE'S WATER RESOURCES, AGRICULTURAL RESOURCES, AND NATURAL RESOURCES

[#62] We commend the RHWPG for taking the position that groundwater should be used up to the "local sustainable yield, or …the more restrictive limit established under subsidence district regulations, to meet local demands," but that groundwater should not be exported from its county of origin." This approach lessens the potential impacts of groundwater use on water resources, agricultural resources, and natural resources.

7.1 – Water Resources within Region H

[#63] We are concerned that several water management strategies recommended in the draft Region H plan would have the effect of moving the inflow locations for a significant volume of the freshwater inflows into the Galveston Bay system – primarily a shift of environmental flows from the Trinity Basin to the San Jacinto Basin – which would have an impact on oyster beds, for example. A quantitative analysis of this type of change impacting the Bay is required by 31 TAC § 357.7(a)(8)(A)(ii) and (B).

7.2 – Agricultural Resources within Region H

[#64] The discussion of the impact of the draft Region H plan on agricultural resources is exceptionally brief. We believe that a more substantial examination of the impacts of the plan is required.

7.3 – Natural Resources within Region H [mis-numbered in the draft plan as 7.1]

[#65] 7.3.1 – Threatened and Endangered Species [mis-numbered as 7.1.1] – As noted in Chapter 4 in the discussion of the water management strategy known as the Luce Bayou Transfer, there is a serious impact of this project on bottomland hardwood and other natural ecosystems providing habitat for a diversity of wildlife. Even the off-channel Little River Reservoir project might inundate habitat for the Houston Toad and Interior Least Tern and require mitigation. Allens Creek Reservoir also has the potential to impact wetlands habitat. Given the dramatic demonstration recently of the significance of coastal wetlands, the potential impact of these projects on such wetlands and related habitats requires more extensive evaluation.

[#66] 7.3.3 – Impacts of Water Management Strategies on Unique Stream Segments [mis-numbered as 7.1.3] – More information should be provided about the concern that overuse of groundwater would impact springflows within Sam Houston National Forest.

[#67] 7.3.4 – Impacts of Water Management Strategies on Galveston Bay [mis-numbered as 7.1.4] – We again reiterate our concerns about relying on water management strategies (increased wastewater flows) from Region C to assure maintenance of inflows to Galveston Bay and about changes in inflow patterns resulting from the implementation of certain Region H water management strategies.

CHAPTER 8 – ECOLOGICALLY UNIQUE STREAM SEGMENTS, UNIQUE RESERVOIR SITES, AND LEGISLATIVE RECOMMENDATIONS

8.1 – Unique Stream Segments

[#68] We support the recommendation that the following six stream segments in Region H be designated as “unique stream segments:” Armand Bayou, Austin Bayou, Bastrop Bayou, Big Creek (Fort Bend), Big Creek (San Jacinto), Cedar Lake Creek, Menard Creek, and Oyster Bayou.

8.2 – Unique Reservoir Sites

[#69] We oppose the recommendation that the sites for Little River Off-Channel Reservoir, Bedias Reservoir, and Little Reservoir be designated as unique reservoir sites. Among other concerns, there is no clear definition of each reservoir site, there is no discussion of whether and to what extent such a designation impacts the property value or resale of property within the designated area would be, and there is no real need for any of these reservoir projects.

8.4 – Regulatory, Administrative, and Legislative Recommendations

[#70] It is not practical to comment on each of these recommendations. Four that we would highlight:

- We support the recommendation that the Legislature adopt the recommended stakeholder process for determining bay and basin environmental flow requirements, and include Region H and the Galveston Bay Freshwater Inflows Group (GBFIG) in the Galveston Bay stakeholder group.
- We oppose the recommendation to "maintain the current rule of capture basis of groundwater law within Texas in all areas not subject to defined groundwater conservation districts."
- We support the recommendation to "implement the programs recommended by the Water Conservation Implementation Task Force."
- We are concerned about the recommendations for more "flexibility" in the use of alternative water management strategies and "modification" of notice requirements for regional plan amendments ("the devil is in the details").

CHAPTER 9 – INFRASTRUCTURE FINANCING [not included in the IPP]

CHAPTER 10 – PUBLIC INVOLVEMENT IN DEVELOPING THE 2006 REGION H WATER PLAN

[#71] We appreciate the extensive documentation of public participation provided by the Region H water planners in this chapter. We also appreciate the openness that the RHWPG has shown to our organizations in allowing us the opportunity to make presentations to the RHWPG at its meetings, to distribute our materials on water topics at its meetings, to announce our regional and state water conferences at its meetings, and to provide us with written materials upon request. In addition, we appreciate the change that was made in the format of the RHWPG meetings to provide the opportunity for public comment at more opportune times during the meetings rather than at the end of the meetings. Finally, we appreciate the opportunity that was provided by the RHWPG to have the Region H planning consultants make a presentation on the draft 2006 plan to a special public meeting co-hosted by Galveston Bay Foundation and the Sierra Club in August of this year.

[#72] We are concerned, however, about the relatively low level of public participation at the meetings of the RHWPG and the public hearings held by the planning group – outside of consultants, government officials, and professional advocates. The August 11 public meeting

co-hosted by GBF and Sierra Club in cooperation with the RHWPG was an outstanding exception to the rule about lack of public turnout at Region H events.

[#73] We are also concerned about the difficulty in obtaining materials prior to the RHWPG meetings that relate to agenda items at the meetings – hampering the ability to provide meaningful and helpful public input to the planning group members at the meetings. We understand that even RHWPG members have had trouble getting materials for the meeting far enough in advance (if at all) to be able to review those materials and be prepared to act on the issues to which those materials relate.

[#74] We would strongly urge the RHWPG to take steps to enhance the ability of the public to have the information to participate effectively in the regional planning process and to facilitate their ability to attend meetings and keep up-to-speed with the planning process. To that end we would recommend that the RHWPG do the following:

- Establish a separate website for Region H to which planning materials, meeting notices, and other such items could be posted electronically in advance of meetings and hearings (Regions C, G, and L are examples of regions that have such websites);
- Consider holding RHWPG meetings at a more easily accessible location than the San Jacinto River Authority offices (although we appreciate Chairman Adams' hospitality at that location).
- Consider holding at least some of the RHWPG meetings in the evening to allow more people who work during the day to attend a meeting and monitor the process.

Our organizations certainly stand ready and willing to help the RHWPG in enhancing public participation in the regional planning process.

Thank you again for the opportunity to submit these comments.

Sincerely,



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