

MEMORANDUM TO FILE

From: Tom Gooch

Date: August 25, 2004

Project: NTD-02182, Region C Water Plan

Subject: Response to Comments on Recommended Potentially Feasible Strategies for Conservation, Reuse, Connection of Existing Supplies, Surface Water and Groundwater

At the July 12, 2004, meeting of the Region C Water Planning Group, Freese and Nichols presented potentially feasible strategies for Region C in the following categories:

- Conservation
- Reuse
- Connection of Existing Supplies
- Surface Water
- Groundwater

Memoranda have been prepared by the Region C consultants on each of these topics and placed on the Region C Website. Freese and Nichols also presented a bibliography of studies of water supply in Region C developed since the 2001 Region C Water Plan was completed. As of August 25, 2004, we have received written comments on the strategies and the bibliography from the following individuals and entities:

- Comments suggesting additions to the bibliography:
 - Dallas County Park Cities Municipal Utility District
 - Sabine River Authority
- Comments opposing Black Cypress Reservoir
 - The City of Uncertain
 - Caddo Lake Area Chamber of Commerce and Tourism
 - Greater Caddo Lake Association
- Other comments on potentially feasible strategies
 - George Shannon
 - Dr. Paul Phillips
 - Robert Scott
 - Texas Committee on Natural Resources

These comments have been provided to the Region C Water Planning Group. In addition, we received verbal comments from the Tarrant Regional Water District and Dallas Water Utilities. This memorandum summarizes our response to the comments.

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The Texas Committee on Natural Resources also submitted comments on population and water demand projections, which will be addressed in a separate memorandum.

Comments Suggesting Additions to the Bibliography

Dallas County Park Cities Municipal Utility District suggested adding *Volumetric Survey of Lake Grapevine*, prepared by the Texas Water Development Board, to the Region C bibliography. The Sabine River Authority suggested added several reports to the bibliography:

- *Upper Sabine Basin Water Supply Study*, prepared by Kellogg, Brown and Root.
- *2003 Basin Summary Report: Sabine River Basin, Texas*, prepared by the Sabine River Authority under the authorization of the Clean Rivers Act.
- *Water Conservation and Drought Contingency Plan, Revised December 1999 and March 2002*, Sabine River Authority.
- Texas Water Conservation Task Force best management practices guide and report to the legislature (when these are completed).

Response: These reports will be added to the bibliography.

Comments Opposing Black Cypress Reservoir

The City of Uncertain, the Caddo Lake Area Chamber of Commerce and Tourism, and the Greater Caddo Lake Association each wrote a letter opposing the consideration of the Black Cypress Reservoir as a potentially feasible water supply project for Region C. Their letters and the comments attached to their letters are included in Attachment A to this memorandum.

Response: No Region C water suppliers are considering Black Cypress Reservoir as a potential source of water supply at this time. Therefore, we recommend removing Black Cypress Reservoir from the list of potentially feasible water management strategies for this planning effort.

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Other Comments on Potentially Feasible Strategies

George Shannon

On Table 2 of the memorandum on potentially feasible water conservation strategies, reuse should be shown as potentially suitable for all categories of use, including municipal use.

Response: The table was changed to show indirect reuse as potentially suitable for all categories of use, with direct reuse suitable for all categories of use except municipal use.

Dr. Paul Phillips

The potentially feasible water conservation strategies memorandum is a good analysis, and there is no need to change it. Conservation rates and incentives are the best approach to conservation, and rebates are philosophically wrong and ineffective in the long term. It is important that water supply utilities be left free to design conservation plans to fit their individual situations.

Response: Noted. No changes made. The planning group and the consultants will need to work on language in the report to indicate that water supply utilities should be allowed to design conservation plans to fit their individual situations.

Robert Scott

Mr. Scott recommends removing Marvin Nichols I Reservoir from the potentially feasible new water supply list. Mr. Scott's comments are included as Attachment B to this memorandum.

Response: Since Marvin Nichols Reservoir is being considered as a potential water supply by Region C suppliers, we recommend including it as a potentially feasible water management strategy. It should be noted that the Sulphur River Basin Authority is seeking a basin-wide study of water supply and environmental restoration alternatives in the Sulphur Basin. This study may show alternatives to Marvin Nichols, but it will not be completed during this cycle of regional water planning.

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Texas Committee on Natural Resources

The Texas Committee on Natural Resources (TCNR) commented on a number of recommended potentially feasible water management strategies. Their comments are included as Attachment C to this memorandum. The text below deals separately with each strategy on which they comment.

1. Lake Texoma. TCNR suggests that Lake Texoma can “economically supply all of Region C’s foreseeable future water requirements.” TCNR indicates in different places that 200,000 acre-feet per year or 300,000 acre-feet per year of Lake Texoma water could be blended in Lake Ray Robert/Lake Lewisville without desalination, rather than the 50,000 acre-feet per year listed with the proposed strategy. TCNR also indicates that they believe that water from Lake Texoma is a “highly cost-effective” strategy.

Response: The TCNR analysis of this strategy is incomplete in several respects:

- It is unlikely that 200,000 or 300,000 acre-feet per year could be blended in Lake Ray Roberts/Lake Lewisville without desalination, as they suggest.
 - Based on modeling of similar projects, blending of 200,000 or 300,000 acre-feet per year from Lake Texoma would result in TDS levels in Lake Ray Roberts and Lake Lewisville considerably in excess of drinking water standards during droughts.
 - It is unlikely that a blending project would be developed with drinking water standards as the target water quality. Water at drinking water standards for TDS would be considerably different in taste and corrosivity from most water supplies currently used in the Metroplex. Dallas Water Utilities, which holds most of the Texas water rights in Lake Ray Roberts and Lake Lewisville, has investigated blending up to 50 mgd (56,000 acre-feet per year) of Lake Texoma water in those lakes. For this the regional water plan, we will evaluate blending different amounts of water to establish an amount that would allow reasonable water quality in the receiving lakes and report to the planning group on our results.
- Based on previous cost estimates, desalination of water from Lake Texoma is likely to be more expensive than several other alternatives available to the Metroplex. These cost estimates will be updated as part of the evaluation of potentially feasible projects for the Metroplex.
- Based on previous estimates of the yield of Lake Texoma and on the division of Lake Texoma supplies between Oklahoma and Texas in the Red River Compact, it does not appear to be correct that the yield available to Texas can supply all of Region C’s foreseeable water requirements.

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2. Toledo Bend Reservoir. TCONR suggests adding a comment on the need for safeguards to protect an adequate level of inflows to Sabine Lake.

Response: No comment is needed. Like other alternatives, Toledo Bend Reservoir will be analyzed under Texas Water Development Board guidelines, and environmental impacts will be assessed.

3. Wright Patman/Sulphur Basin. TCONR indicates that the U.S. Army Corps of Engineers says that the Wright Patman/Jim Chapman system could produce "an added yield of 368,000 acre-feet per year". TCONR wants the evaluation of water from Wright Patman to be based on this amount plus the purchase of additional water from the City of Texarkana.

Response: The only study of the yield available from Wright Patman done for the Corps of Engineers of which I am aware is *System Operation Assessment of Lake Wright Patman and Lake Jim Chapman*, a Freese and Nichols study for which I was the project manager. The report shows the following:

- The maximum yield of Lake Wright Patman with a top of conservation pool at 228.64 is 363,717 acre-feet per year, which is 183,717 acre-feet per year more than Texarkana's current water right in the lake. (This is the amount assumed to be potentially available for use in Region C.)
- System operation of Lake Wright Patman and Lake Jim Chapman can increase the yield of the system beyond stand-alone yields. The system yield could be increased by about 109,000 acre-feet per year with the development of pipeline capacity of 300 mgd in addition to the capacity needed to deliver water from Lake Wright Patman.

Based on the results of *System Operation Assessment of Lake Wright Patman and Lake Jim Chapman*, we recommend analysis of a supply of up to 184,000 acre-feet per year from Lake Wright Patman.

- The development of pipeline capacity to deliver 300 mgd in addition to the capacity needed to deliver water from Lake Wright Patman will probably make the project with system operation less economical than the project without system operation. (The distance over which this capacity would be required is about 80 miles, from Lake Wright Patman to Lake Jim Chapman.)
- If additional water can be purchased from Texarkana, this supply can be incorporated in the project when it is developed.

4. Brazos River. TCONR suggests that the amount imported from the Brazos Basin should be assumed to be more than 28,000 acre-feet per year.

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Response: We will discuss the amount that might be imported from the Brazos Basin with the Tarrant Regional Water District and the Brazos River Authority. Importation from the Brazos Basin is limited by availability, water quality, and the need to meet projected in-basin needs before water is exported.

5. Sam Rayburn/B.A. Steinhagen. TCONR indicates that they assume that bringing water from Sam Rayburn and B.A. Steinhagen involves raising Dam B and increasing the pool of Steinhagen Reservoir, which they oppose.

Response: TCONR's assumption is incorrect. The importation of water from Sam Rayburn/B.A. Steinhagen does not involve raising Dam B.

6. Conservation. TCONR asserts that "the Region C draft" projects conservation savings of 10 gpcd in 2000, 27 gpcd in 2030, and 34 gpcd in 2050. They indicate that they are uncertain what the current per capita water use in Region C is and state that an accurate measurement of municipal and total per capita use for Region C is needed.

Response: Assuming that TCONR is referring to the draft memorandum on potentially feasible water conservation measures, they are incorrect in their description of the memorandum. The savings they cite are described in the draft memorandum as the savings from conservation included in the 2001 Region C Water Plan. The savings from conservation for this round of planning will be determined based on the analysis of specific conservation measures.

Figures 1, 2, and 3 show comparisons of municipal, total non-agricultural, and total per capita use in the year 2000 for the 16 regional water planning groups in the state, based on Texas Water Development Board data. According to Texas Water Development Board data:

- The municipal per capita demand in 2000 for Region C was 203 gallons per person per day. As shown on Figure 1, this is the third highest of the 16 planning regions.
 - The total non-agricultural per capita demand in 2000 for Region C was 224 gallons per capita per day, below the state average of 271 gallons per capita per day. As shown on Figure 2, this is the 6th lowest of the 16 planning regions.
 - The total per capita demand in 2000 for Region C was 235 gallons per capita per day, well below the state average of 717 gallons per capita per day. As shown on Figure 3, this is the lowest of the 16 planning regions.
7. Marvin Nichols Reservoir. TCONR indicates that Marvin Nichols Reservoir should not be included as a potentially feasible strategy and lists a number of comments that TCONR feels should be added to the table describing potentially feasible strategies.

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TCONR also suggests that the yield of Marvin Nichols Reservoir should be reduced under the assumption that conjunctive management with Lake Wright Patman will not be pursued.

Response: Since Marvin Nichols Reservoir is being considered as a potential water supply by Region C suppliers, we recommend including it as a potentially feasible water management strategy. It should be noted that the Sulphur River Basin Authority is seeking a basin-wide study of water supply and environmental restoration alternatives in the Sulphur Basin. This study may show alternatives to Marvin Nichols, but it will not be completed during this cycle of regional water planning. We will add “requires interbasin transfer permit” to the comments column for Marvin Nichols Reservoir and other proposed reservoirs which require interbasin transfer permits. We do not believe that it is appropriate to add the other comments suggested by TCONR. Conjunctive management with Lake Wright Patman would be pursued during permitting and development of the project.

8. Black Cypress Reservoir. TCONR indicates that Black Cypress Reservoir would have dramatic impacts on Caddo Lake and face dramatic opposition.

Response: No Region C water suppliers are considering Black Cypress Reservoir as a potential source of water supply at this time. Therefore, we recommend removing Black Cypress Reservoir from the list of potentially feasible water management strategies for this planning effort.

9. George Parkhouse I. TCONR indicates that many of the arguments against Marvin Nichols Reservoir also apply to George Parkhouse I.

Response: Since the Dallas Water Utilities is considering George Parkhouse I Reservoir as a potential water supply source, we recommend including it as a potentially feasible water management strategy.

10. Ralph Hall Lake. TCONR indicates that Ralph Hall Lake “would have the problems attendant on building a new reservoir and the unfavorable cost comparison that new reservoirs have to existing sources of supply.”

Response: It is incorrect to assert that new reservoirs will inevitably have an “unfavorable cost comparison” with existing sources of supply. Distance, the cost of raw water from an existing source, the quantity of water available, and the need for special treatment (such as desalination) will affect the comparative costs. The cost of the potentially feasible water management strategies will be analyzed for the Region C water plan using consistent assumptions to allow legitimate cost comparisons.

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11. Other New Reservoirs. TCONR indicates that Lake Columbia, Lake Tehuacana, Muenster Lake, and Lower Bois d'Arc Creek would "suffer in a cost comparison to conservation, reuse, and Lake Texoma."

Response: It is not clear that these specific new reservoirs will inevitably be more costly than any form of conservation, any specific reuse project, or any proposed use from Lake Texoma. The cost of the potentially feasible water management strategies will be analyzed for the Region C water plan using consistent assumptions to allow legitimate cost comparisons.

12. Groundwater. TCONR indicates that the development of groundwater from Roberts County from the Ogallala Aquifer will cost more than other alternatives. They also express concern over salinity levels, impacts on local wells in Roberts County, and equity issues.

Response: The cost of the potentially feasible water management strategies will be analyzed for the Region C water plan using consistent assumptions to allow legitimate cost comparisons. The salinity of groundwater in Roberts County is higher than most supplies currently used in Region C, but it is considerable lower than the salinity of water in Lake Texoma.

13. Interbasin Transfers. TCONR indicates that the Region C water plan should recognize the legislative requirement for the "highest practicable" water conservation for entities planning to use interbasin transfers.

The Region C water plan will recognize current state requirements for interbasin transfers, as required in Texas Water Development Board regulations governing planning.

14. Reuse. TCONR supports reuse projects and considers them a crucial element in water planning.

Response: Noted.

Verbal Comments from Dallas Water Utilities and Tarrant Regional Water District

Dallas Water Utilities

Dallas Water Utilities staff indicates that Black Cypress Reservoir is not being considered as a potential source of water supply at this time.

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Response: No Region C water suppliers are considering Black Cypress Reservoir as a potential source of water supply at this time. Therefore, we recommend removing Black Cypress Reservoir from the list of potentially feasible water management strategies for this planning effort.

Tarrant Regional Water District

Tarrant Regional Water District staff gave the following comments on the draft memoranda:

- Connection of Existing Supplies
 - Malakoff's supply will be from Cedar Creek Lake rather than Richland-Chambers Lake.
 - TRWD Lake Texoma supply should be considered potentially feasible and re-evaluated in this round of planning, especially as source for steam electric, mining, and manufacturing demands in Jack, Parker, and Wise Counties.
 - On Table 2, Cypress Basin supplies should be for Region C suppliers rather than just NTMWD and DWU.
 - On Table 2, the "Lake Worth Ground Storage and Well Removal" project should be the "City of Lake Worth Ground Storage and Well Removal Project."
- New Groundwater Supplies
 - It should be clarified that the Tarrant Regional Water District supplies from the Trinity Aquifer would be in the vicinity of Eagle Mountain Lake in Tarrant County.

Response: The changes will be made.

Figure 1
Municipal Per Capita Water Use (Year 2000)

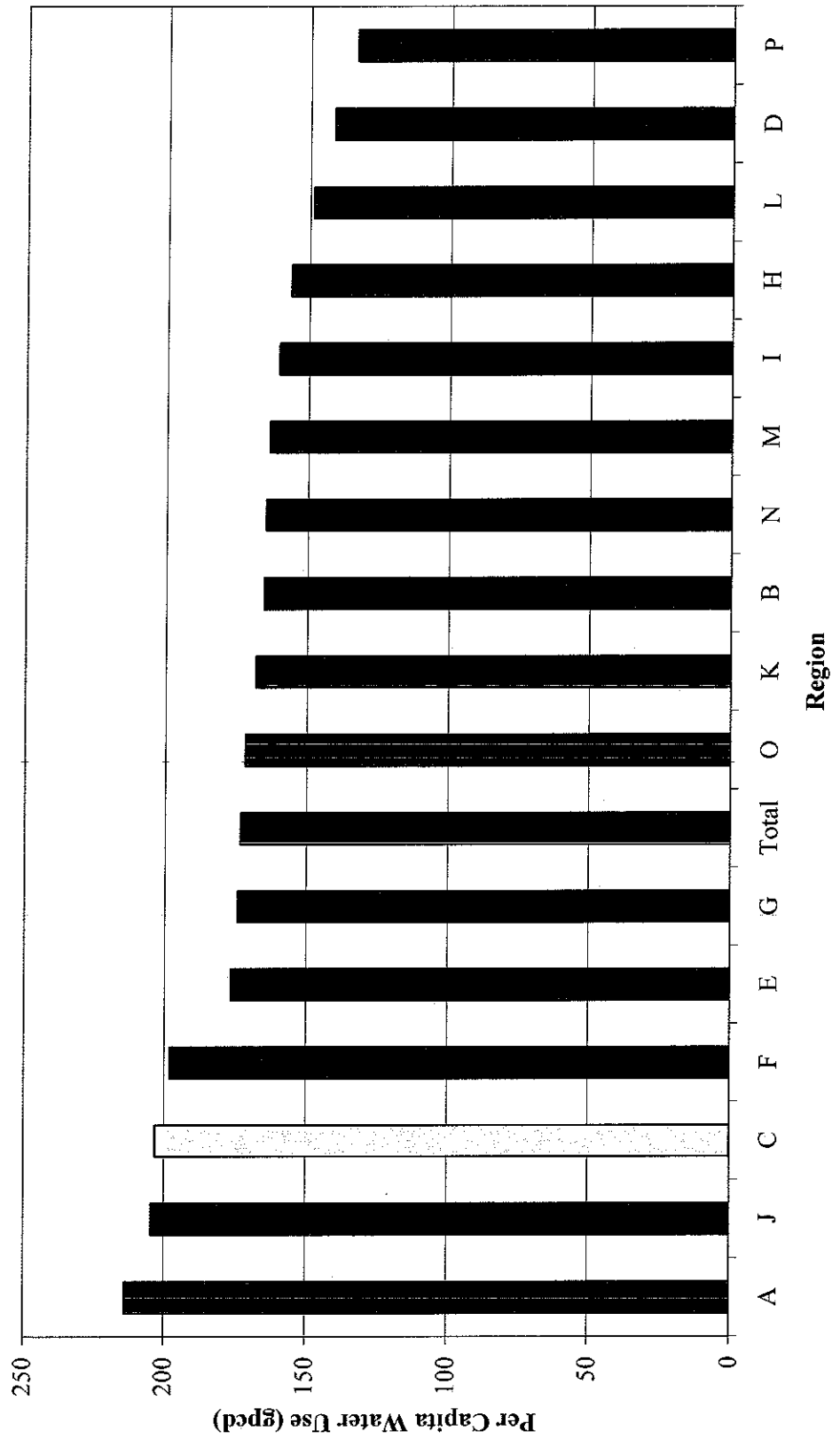


Figure 2
Non-Agricultural Per Capita Water Use (Year 2000)

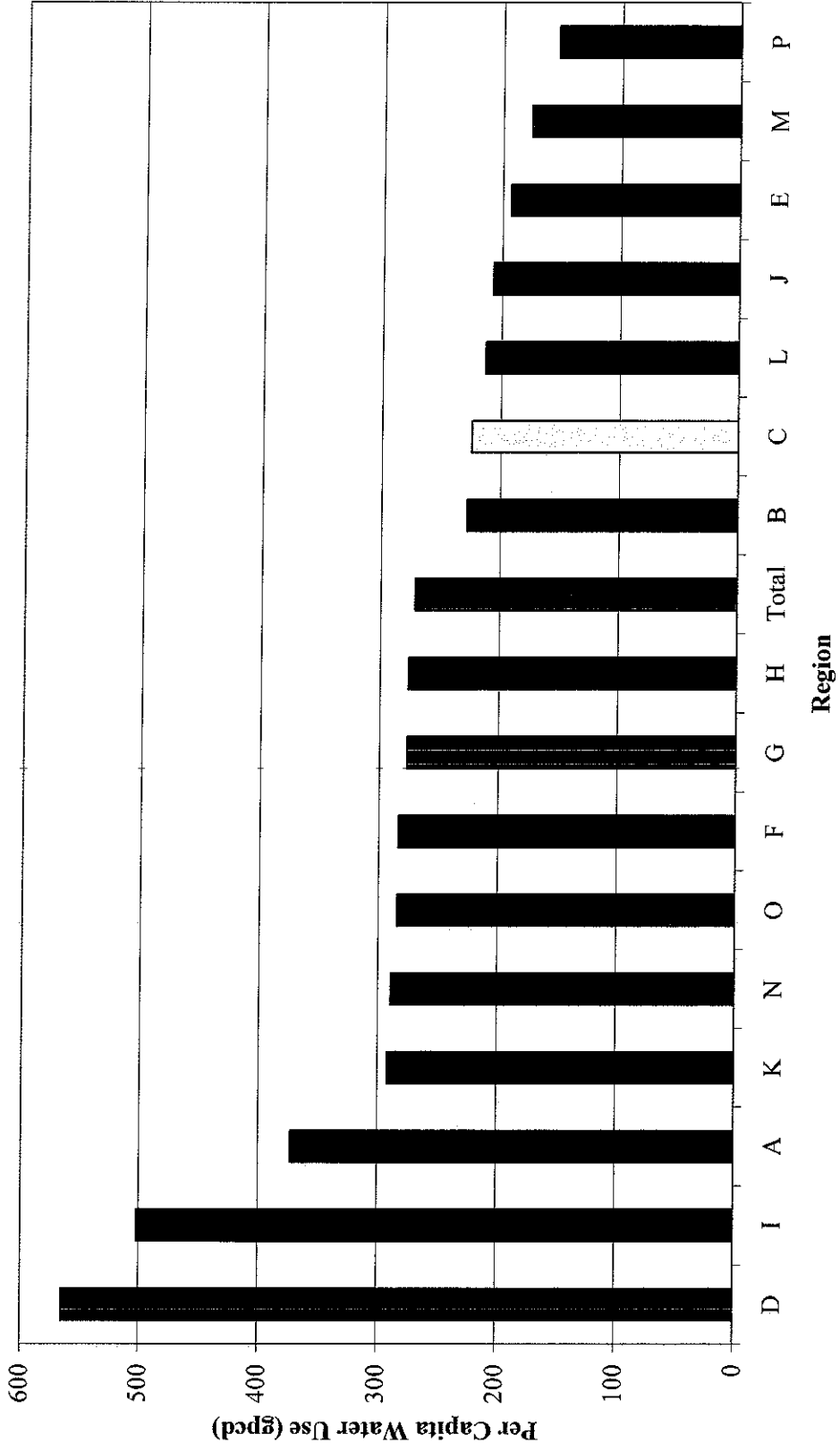
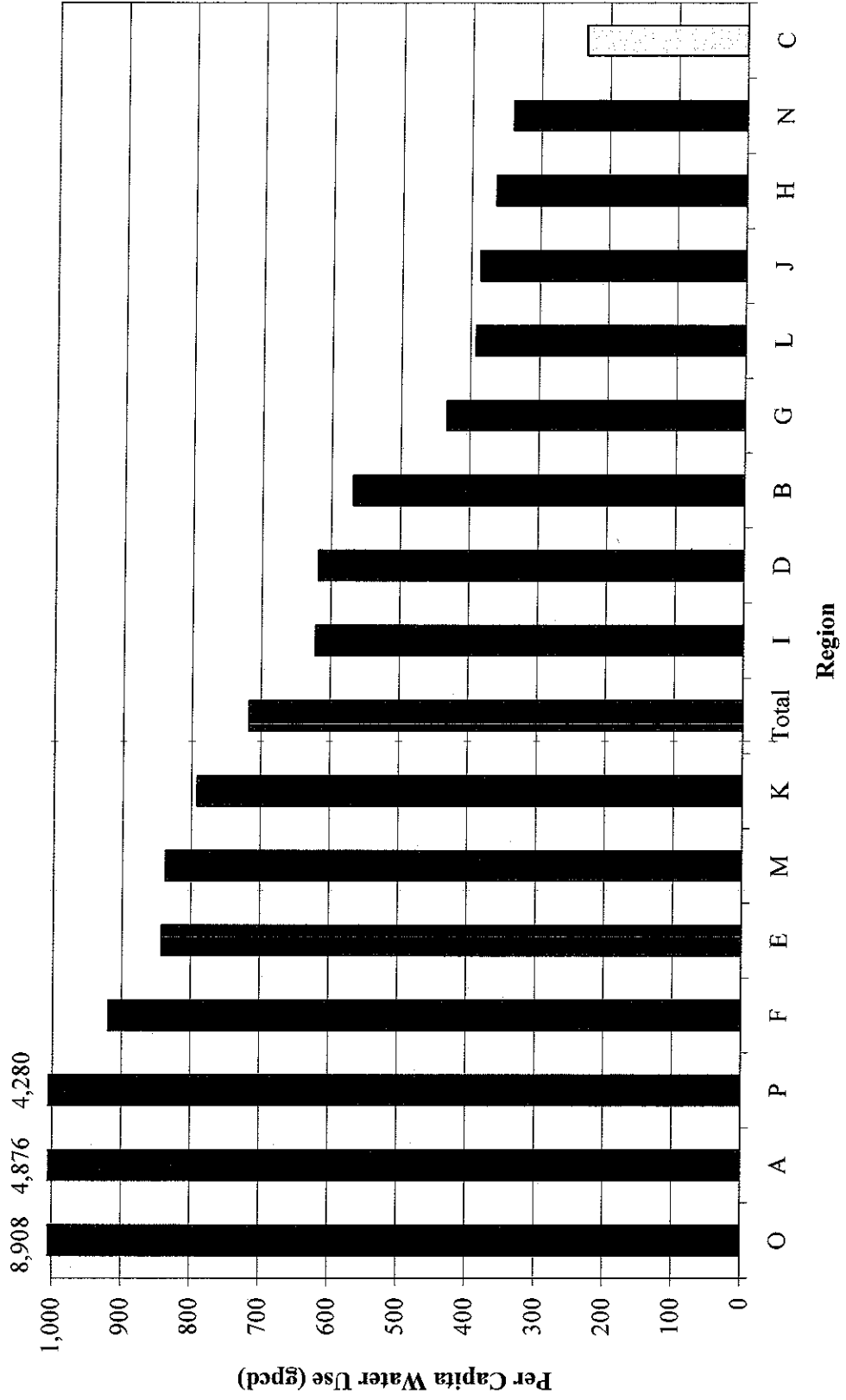


Figure 3
Total Per Capita Water Use (Year 2000)



ATTACHMENT A

**Comments Opposing Designation of Black Cypress Reservoir as a Potentially
Feasible Water Management Strategy for Region C**

August 12, 2004

Mr. Jim Parks, Chair
& Members Region C RWPG
North Texas Water Management District
P.O. Box 955
Hughes Spring, Texas 75656

Dear Chairman Parks & Members:

The City of Uncertain, Texas, requests that you reject the recommendation of Freese and Nichols that a new reservoir on Black Cypress Creek be considered as a new surface water supply source for Region C.

When you consider facts cited in the attached comments, which are endorsed by all of the Caddo Lake Coalition entities, we believe you will agree that a reservoir on Black Cypress would be environmentally harmful, is not viable, and would face unprecedented political opposition.

Sincerely,

Betty Holder
Mayor, Uncertain, Texas

Attached: "Comments on The Proposal to Include the Black Cypress Creek Reservoir in 'Potentially Feasible Water Supply Strategies' for Region C 2006 Water Plan."

Caddo Lake Area Chamber of Commerce and Tourism
Developing and Promoting Northeast Texas and The Area Lake Region

P.O. Box 228, Karnack, Texas 75661

August 12, 2004

Mr. Jim Parks, Chair
& Members Region C RWPG
North Texas Water Management District
P.O. Box 955
Hughes Spring, Texas 75656

Dear Chairman Parks & Members:

The Caddo Lake Area Chamber of Commerce and Tourism is strongly opposed to consideration of a new dam to be constructed on Black Cypress Creek for a new surface water supply for Region C.

We endorse the "Comments on The Proposal to Include the Black Cypress Creek Reservoir in Potentially Feasible Water Supply Strategies' for Region C 2006 Water Plan" that is attached to this letter.

We urge you to reject the recommendation of the consulting firm Freese and Nichols that a dam on Black Cypress Creek be considered and an analysis undertaken.

Sincerely,

Jean Rhodes-Werneke
President

"Comments" attached.

GREATER CADDO LAKE ASSOCIATION
P. O. Box 339 Karnack, Texas 75661

August 12, 2004

Mr. Jim Parks, Chair
& Members, Region C RWPG
North Texas Water Management District
P.O. Box 955
Hughes Spring, Texas 75656
jpark@ntmwd.com

Dear Chairman Parks & Members:

The Greater Caddo Lake Association urges you to reject the Freese & Nichols recommendation that a new reservoir on Black Cypress Creek be considered as a new surface water supply source in the Region C 2006 Water Plan.

The views of the GCLA are well expressed in the attached Comments, which have also been endorsed by all other members of the Caddo Lake Coalition.

Our group strongly opposes construction of a dam on Black Cypress Creek. We believe that if you give careful consideration to the attached comments you will agree that this project should not become a part of Region C's Water Plan.

Sincerely,

Robert Speight
President, GCLA

Attached: "Comments on The Proposal to Include the Black Cypress Creek Reservoir in 'Potentially Feasible Water Supply Strategies' for Region C 2006 Water Plan."

Comments on The Proposal to Include the Black Cypress Creek Reservoir in "Potentially Feasible Water Supply Strategies" for Region C 2006 Water Plan.

We understand that Region C's consultant, Freese and Nichols, has proposed including the examination of a new reservoir on Black Cypress Creek as a new surface water supply source for Region C.

We urge Region C to reject the consultant's recommendation. Pursuing analysis of a reservoir on Black Cypress Creek would be tantamount to throwing away money—money that could be better spent on analyzing realistic, cost-effective and environmentally sound strategies for the Region. The reservoir is not viable and any proposal for the reservoir would generate enormous opposition in the Caddo Lake region. Reductions in flood flows to Caddo Lake would have a very significant impact on the Lake and its valuable system of wetlands.

The proposed reservoir on Black Cypress was previously dismissed as a viable alternative for either Region C or Region D. The Texas Parks and Wildlife Department recommended Black Cypress Creek designation as an *ecologically unique segment*.¹ In fact, Region D reviewed 17 potential reservoir sites and identified 15 as suitable for designation as unique reservoir sites. The other two sites not so recommended include the proposed Black Cypress Reservoir site.

Moreover, the Region D 2001 Water Plan identifies several critical flaws associated with the proposed Black Cypress site, among them²:

- The site is within and adjacent to an area that has been classified as "having excellent quality [hardwood] bottomlands of high value to waterfowl."
- State and federal agency listings for threatened, endangered or rare plant or animal species indicate that several species potentially occur or have habitat in the project location.
- Soil data indicate the presence of wetlands within the reservoir site.
- There are three municipal solid waste landfills and one Superfund site in the reservoir study area.

Despite these complex permitting and feasibility issues, the Region C consultant's proposal to include Black Cypress (see attached table) asserts, with absolutely no basis in fact, that the reservoir "can be implemented" and that it "meets all regulatory requirements." This appears to be an attempt to divert, if not deliberately mislead, the Region C planning group members. The consultants fail to mention the very serious environmental flaws and barriers involved with the proposed Black Cypress site.

In addition, the consultant appears to have over-estimated the firm yield of the reservoir, claiming that it is 182,400, with no caveats. However, Region D's 2001 water plan states

¹ Like many regions, Region D did not recommend the designation of any ecologically unique segments, because of the need for legislative clarification of the significance of such a designation.

² 2001 North East Texas Regional Water Plan, at page 204.

that the estimated firm yield is only 176,770 acre-feet/year, and that is *before* the application of "state environmental water needs criteria."

In sum, Region C would be wasting time and money if it pursues further analysis of the Black Cypress site. The site is not suitable for a reservoir and no amount of proposed "mitigation" would change that fact.

See Table next page

ATTACHMENT B

Comments from Robert Scott

Comment received by e-mail on 8/11/04

August 11, 2004

To: Freeze and Nichols

Attn: Simone Kiel

Accompanying this cover note is a minimal statement to the New Surface Water Supplies portion of the Water Strategies review. It is followed by rather lengthy arguments to support my position.

I have looked at the other topics that seek responses and find nothing constructive that I might add. The requested comments, of any, is due today, so if there is anything that might be said, it will be short.

Robert O. Scott
Environmental Representative (1 of 2)

In Response to New Surface Water Supplies (Water Strategies)

Let me first set the stage for the commentary to follow. I have always ranked inundation by impoundments as being worse than the forestry practice of clear cutting. I abhor clear cutting, but at least clear cuts can with appropriate management effort be returned to a healthy mixed forest over a period of 80 to 100 years. Wooded natural areas, and so on are lost forever by water impoundments.

Statement

The Marvin Nichols I reservoir should be removed from the Potentially Feasible New Water Supply list.

The following commenter background, reasons and options address this statement.

Commenter Background:

Generally, I oppose inundation of bottomland hardwoods for the sake of creating a reservoir to sate the ever increasing water appetite. I have held, long before it was popular, that conservation of our finite resources (and water is) should always be the first objective to be met before any other considerations. Of course, needed gains through conservation may not be sufficient. With this realization, then and only then should the most conservative of measures be considered to meet our water needs, not wants. These measures must always address the need to preserve and protect our natural world and resources as much as possible for at least "seven generations" and longer.

Perhaps, 15 to maybe 20 years ago, I first encountered a proposed water project that, I felt, should not happen. It involved dreamers dreaming of impoundments on the Big Sandy in East Texas. Here too, bottomland

hardwoods and beautiful habitat would have been destroyed forever, not to mention losses to the landholder as well as natural habitat and lumbering. This dream did not materialize, yet.

Awareness of Marvin Nichols as a proposed reservoir site came from reviewing the 1997 State Water Plan. I am told that its proposal as a reservoir site may have occurred much earlier. I viewed the idea of Marvin Nichols in 1997 as being on par with the Big Sandy dreams. My view reached no ears but I did search to see if anyone was paying attention and shared my concerns. Sadly, the response was miserly at best.

I was not a staunch advocate of Marvin Nichols as proposed in the Region C 2001 State Water Plan, input. The bewildering methodologies and rapidity of water planning resulted in Marvin Nichols being a recommendation. In retrospect, objections not only from any concerned planning group members but from those that would be affected should have been made at that point. It didn't happen but it is never too late.

Reasons:

To be fair, it must be recognized that the proposed Marvin Nichols I would satisfy regional water wants for the next 50 years. However, this postpones the inevitable which is the need to develop a culture of water conservation. As you go westward from Region C, there are many towns and cities that have serious water needs, not a wants. Since the water isn't there, they have evolved a culture of water conservation. They continue to struggle, but the reality is if water isn't available you have to adapt.

Marvin Nichols would adversely impact a huge footprint only to provide a large pond or water tank to meet our present day water demand culture. By comparison to the increasingly arid regions, our water supplies are abundant. For these supplies to remain abundant a culture of water conservation must be developed and there will be loud protestation? So be it! The greater good, if that can be truthfully applied, will be that conservation will work but only with much determination by all.

A reservoir the size of Marvin Nichols destroys an ecosystem that we can't afford. The monetary costs of this reservoir project are mind-boggling. Then add on the huge expense of water transport and it become even more boggling. The loss of bottomland hardwood forests, wildlife habitat, pastureland, landscape and so on is too great to accept. The mitigation lands required are huge but, at least, in the short term would be well protected.

It seems unlikely that there would be land owners that would be willing sellers. Those same owners would lose their livelihood and their history. Then there is the loss to the timber industry. Believe me, I am no fan of timbering but it is still there and it is an industry, like it or not.

The alternative to land acquisition is condemnation. I strongly oppose land seizure by condemnation.

Options:

a. There must be a series of smaller less objectionable methods that collectively would meet the projected water need, not wants. The projected water needs would, hopefully, be reduced by development of a culture of water conservation. Admittedly, this is a "non-obtainium vision" but must somehow become our goal.

b. Desalination with all its associated environmental problems must be a consideration.

c. I don't like the thought of using Roberts County ground water, but it is seems better and less costly than a Marvin Nichols.

d. Water reuse by grand wetlands projects seems too obvious to be ignored. There will be hurdles whatever is chosen.

e. To date, no one has suggested a flood control requirement. With that thought, perhaps small flood control features/impoundments can be envisioned to augment water availability without wholesale destruction of an area.

Finally, I have cited my objections to Marvin Nichols as a reservoir. But, the other proposed impoundments need equally close scrutiny as they create their own vexing, perhaps over costly, problems. Soil erosion and lake filling are incompatible, so why choose sites that are known to be poor choices for this reason as well as other reasons? Then, there is the potential for loss of irreplaceable natural areas.

ATTACHMENT C

Comments from Texas Committee on Natural Resources

**COMMENTS BY TEXAS COMMITTEE ON NATURAL RESOURCES
TO THE REGION C WATER PLANNING GROUP
ON ITEMS TO BE VOTED ON AUGUST 31, 2004**

Texas Committee on Natural Resources (TCNR), a statewide conservation organization with a 35-year history of addressing resource issues in Texas, offers the following comments on issues to be decided by the Region C Water Planning Group:

CONNECTION OF SUPPLY FROM EXISTING WATER SOURCES

TCNR applauds the conclusion in the Power Point presentation made by Freese and Nichols at the July Region C meeting: "Include connection of existing supplies as a major component of the Region C plan."

It has long been TCONR's position that existing sources should be tapped before incurring the huge expense and environmental devastation of building a new reservoir.

Lake Texoma. We are most pleased to see inclusion of additional allocations of water from Lake Texoma in Table 3, "Water Management Strategies for Connection of Existing Supplies Recommended as Potentially Feasible for the 2006 Region C Water Plan", but we feel the presentation of the potential for water supply from Texoma is less favorable than it should be. The draft shows a potential for blending water from Texoma of only 50,000 AFY (and that with a question mark behind it) and there is no figure given in Table 3 for how much might be made available by desalination.

What is not even mentioned is the way water should be developed in Texoma: a combination of blending and desalination. The most economical way to develop Texoma water would be to pipe water to Ray Roberts/Lewisville and blend it, similar to what is already being done by NTMWD in Lake Lavon. Over the years, as the demand for water in the region would increase, the amount of water brought from Texoma would also increase. Eventually enough water might be brought from Texoma to raise the level of salinity in Lewisville above drinking water targets. Only when the salinity of the *blended* water in Lake Lewisville began to exceed drinking water standards would desalination be initiated. This strategy would require desalination of only a fraction of the water from Texoma, keeping costs down. Bringing water from Texoma has the added advantage of being a source within Region C, in keeping with the legislative directive for water planners to look first in their own regions

Most of the potential yield of Texoma is currently being used hydropower. Water is worth \$3 to \$5 per acre-foot for hydropower and \$300 to \$500 or more per acre-foot for water supply. Region C needs to be looking at reallocating much larger amounts of hydropower water to water supply than what is listed in Table 3. Following the scenario described above, water purveyors could blend 300,000 AFY or more before adding the cost of desalination. And according to experts on desalination of brackish water, desal would be considerably less expensive than bringing water all the way from the Sulphur Basin. An alternative approach to desalinating water from Texoma would be chloride control projects upstream on the Red River and its tributaries to reduce the salinity levels

in Texoma. Cost studies conducted by the U.S. Army Corps of Engineers suggest that some chloride control could be implemented very economically.

The potential exists for Lake Texoma to economically supply all of Region C's foreseeable future additional water requirements. Texoma's proximity to the DFW-North Texas demand center makes it a valuable resource indeed.

The "comments" column next to Lake Texoma mentions that "brine disposal is a concern". As mentioned above, a substantial amount of water (perhaps 200,000 AFY) could be blended with Region C's existing supplies without need for brine disposal. Should the amount of water being diverted from Texoma for blending reach an amount to make desalination or chloride control necessary, additional research would be needed to determine what would be the most economical way to handle the brine. Deep well injection is a possibility, but release back into the Red River (from whence it came) or even blending with the Trinity River's flows downstream of Dallas would likely be less costly. In any case the cost would be but a small fraction of the overall price of the water.

Table 4 prepared by Freese and Nichols, which lists the existing supply sources *not* recommended for the Region C Plan refers to water from Texoma for TRWD and NTMWD as "too costly". It is important that Region C members understand that while such small amounts of water might in an individual case be too costly, water from Texoma is overall a highly cost-effective strategy. Indeed, only conservation and reuse are cost competitive with water from Lake Texoma.

Toledo Bend Reservoir. Water from Toledo Bend Reservoir has long been discussed as a potential supply for the Dallas-Fort Worth-North Texas area. Preliminary results in studies currently underway by the Sabine River Authority indicate that the cost of water from Toledo Bend will be roughly the same as building Marvin Nichols Reservoir and bringing its water to Region C. While piping water from Toledo Bend is in keeping with TCONR's policy of using existing reservoirs before building new ones, our research indicates it would not meet our criteria of choosing the lowest-cost, lowest-impact source. Research shows that conservation, reuse, and additional reallocation of water from Lake Texoma all would be substantially less expensive per acre-foot than water from Toledo Bend and together could more than meet the future needs of Region C. If Toledo Bend is included as a potentially feasible strategy, the "comments" column should note the need for safeguards to protect an adequate level of for inflows to the estuary at the mouth of the Sabine River, known as Sabine Lake.

Wright Patman/Sulphur Basin. Table 3 shows a yield of only 184,000 AFY from Wright Patman. The U.S. Army Corps of Engineers, however, says the Wright Patman-Jim Chapman system could produce an added yield of up to 368,000 AFY. Freese and Nichols has consistently down-played the amount of water that could be made available from the Sulphur Basin without building Marvin Nichols. While bringing water from existing reservoirs in the Sulphur Basin would not be as cost-effective as water from Lake Texoma, it is a much-discussed potential source of supply and the projected availability should be accurately represented. The yield figure should include not only the 368,000 AFY of potential increased yield identified by the Corps, but also water currently available that is allocated to the City of Texarkana, which Texarkana officials have indicated a willingness to sell.

Brazos River. Table 3 refers to a specific proposal for TRWD to purchase 28,000 AFY from the Brazos River. Although our research of the Brazos as a potential water source for Region C has been limited, the indications are that there is substantially more water available from the Brazos than the 28,000 AFY included. While water from the Brazos has some salinity problems, its proximity to Region C population centers means it deserves study as a potentially lower-cost, lower-impact source than building any new reservoir would be.

Sam Rayburn/BA Steinhagen. While the exact proposal described on Table 3 as "Sam Rayburn/BA Steinhagen" is not made clear, we assume that producing 300,000 AFY would involve raising Dam B, which forms Steinhagen Reservoir. When the Lower Neches Valley Authority proposed raising Dam B, local and statewide opposition was swift and vocal. Raising Dam B would flood Martin Dies, Jr. State Park (the 6th most visited state park in Texas), inundate the 10,000-acre Angelina-Neches-Dam B Wildlife Management Area (some of the best remaining forested wetlands in Texas), and cover several Corps parks widely used by hunters and fishermen. If Freese and Nichols is proposing bringing water from the existing Sam Rayburn Reservoir, then the primary issue would be comparative costs. But if the proposal involves raising Dam B, then this should *not* be included as a recommended water management strategy.

CONSERVATION

The Region C draft projects conservation savings of 10 gpcd in 2000, 27 gpcd in 2030, and 34 gpcd in 2050. Whether these use reductions are reasonable depends on Region C's current per capita usage.

We have seen figures as high as 260 gpcd for Region C's current per capita use and as low as 180 gpcd. If Region C is currently averaging 180 gpcd, then a reduction of 34 gpcd would make it among the leaders in Texas water conservation. If on the other hand Region C is really using 250 gpcd or more, a reduction of 34 gpcd would fall considerably short of an adequate goal for regional water planners. What is needed is an accurate measurement of current per capita water use in Region C, both municipal and total. With that, it is impossible to establish reasonable targets for water use reduction.

Region C contains roughly a fourth of the population of the state of Texas. For this region to take a lead in promoting aggressive conservation of precious water resources could change forever the whole state's treatment of our natural resources.

We urge Region C to assume such a leadership role.

NEW SURFACE WATER SUPPLIES

Should Region C conserve water at a rate that is being achieved by other cities in Texas, continue the recent planning trend of increased reuse, and optimize existing sources of water supply, there would be no need for any new reservoirs to meet Region C's fifty-year demand.

Marvin Nichols Reservoir. As always seems to happen when water management strategies are listed, Marvin Nichols Reservoir is the Number 1 entry on Table 2, "Water Management Strategies for New Surface Water Supplies Recommended as Potentially

Feasible for the 2006 Region C Water Plan". The unprecedented opposition to Marvin Nichols, a level of environmental impact that has led biologists to describe Marvin Nichols as "unmitigable", and documentation of tens of millions to hundreds of millions of dollars in lost annual revenues to Northeast Texas if Marvin Nichols is built should be more than adequate to drop Marvin Nichols from the list of recommended strategies. Instead, it remains at the top of the list.

It is noteworthy that the "comments" column on Table 2 includes no comments, not even the "requires interbasin transfer permit" comment that showed up for a number of existing reservoir options. The comments column beside Marvin Nichols should include all the following problems and more: "unprecedented public opposition, tremendous loss of bottomland hardwood forests, very costly, massive land condemnation needed, possibly unmitigable", as well as "requires interbasin transfer permit". In response to concerns such as these, the Region D Water Planning Group has amended its regional plan to remove the recommendation that Marvin Nichols be built.

Table 2 lists a yield for Marvin Nichols of 619,100 AFY (with 495,300 AFY for Region C), but according to the 2002 Water Plan, this yield could only be realized if Nichols were operated in conjunction with Wright Patman Reservoir downstream. Since no cooperative management agreement has been pursued with the Corps, who manages Patman, it would be more accurate to list Marvin Nichols at the yield that appeared in the 2002 plan for Region D of 550,842 AFY (440,674 AFY for Region C). (Of course, using the more accurate, but smaller, yield figure, would mean that the cost per acre-foot would be higher)

Slide 89 of Freese and Nichols' July presentation to the Region C group asserts that the Sulphur River Basin Authority and the U.S. Army Corps of Engineers are "beginning" a basin-wide study of the Sulphur River. While it is true that the Corps has begun developing the scope of work for such a study, SRBA has not voted to participate and the Corps has received no funding for the study. The language in the Region C Plan should more accurately reflect the current status of the study, which is not yet "beginning".

TCONR and colleagues have compiled extensive information about the impacts and alternatives to Marvin Nichols in a booklet titled, *Marvin Nichols: Refocusing the Debate*. Many Region C members have been given a copy. An updated copy of the information is available at www.stopmarvinnichols.com

Black Cypress Reservoir. TCONR found it startling that Freese and Nichols included Black Cypress and indicated it is being "considered" by Dallas Water Utilities. Black Cypress Reservoir's location just upstream of Caddo Lake means that the potential impacts of Black Cypress are so great as to make it a poor choice for consideration for future water supply. The fact that there is no mention in the "comments" column of the dramatic impacts this water diversion could have on Caddo Lake is unconscionable. Opposition to this reservoir would without a doubt be dramatic.

George Parkhouse I. Although it was not recommended in the 2002 State Water Plan, George Parkhouse is sometimes spoken of as an alternative to Marvin Nichols and is also on the Sulphur River. Many of the same arguments against Marvin Nichols apply as well to Parkhouse. Because it would be smaller than Nichols, Parkhouse would have less dramatic environmental impacts, but would for the same reason cost more per unit

of water. We urge Region C instead to emphasize the lowest-cost, lowest-impact options for water supply – conservation, reuse, and water from Lake Texoma

Ralph Hall Lake. Like the other new reservoirs proposed for the Sulphur River, Ralph Hall Lake would have the problems attendant on building a new reservoir and the unfavorable cost comparisons that new reservoirs have to existing sources of supply.

Others. The other new reservoirs recommended in Table 3 -- Lake Columbia (not recommended in the 2002 Plan), Lake Tehuacana, Muenster Lake, and Lower Bois d'Arc Creek -- would similarly suffer in a cost comparison to conservation, reuse, and Lake Texoma.

GROUNDWATER

Among the inclusions in Table 2, "Water Management Strategies for New Groundwater Supplies Recommended as Potentially Feasible for the 2006 Region C Water Plan" is 200,000 AFY from Roberts County from the Ogallala Aquifer. Preliminary cost figures indicate that water from this project, known as Mesa Water, would be substantially more expensive than water from the Sulphur Basin or Toledo Bend and more than twice the cost of water from Lake Texoma, due largely to the need for a longer pipeline. Potential problems include dealing with salinity levels of the water, declines in local wells and small springs, and equity questions about potential future need for this water in the region of origin.

INTERBASIN TRANSFERS

In their Power Point presentation at the July Region C meeting, representatives of Freese and Nichols recommended that interbasin transfers be allowed "as needed". TCONR does not oppose interbasin transfers *per se*, indeed we recognize they are needed to optimize use of existing water resources. But we feel that the Region C Water Plan should recognize the language adopted by the state legislature that requires a basin importing water to implement the "highest practicable" conservation measure before importing water.

The need for more aggressive conservation should be emphasized when discussing interbasin transfers as well as when discussing conservation measures. Indeed, aggressive conservation should be the cornerstone of all Region C water planning.

REUSE

TCONR applauds the language in Freese and Nichols' power point presentation that repeatedly refers to reuse as "a major element" or "a major source of future supply". Should Region C reduce its per capita municipal water use to 180 gpcd, for example, reuse could readily provide all of the difference between the fifty-year demand and the region's current supplies (if you include what has already been reallocated in Texoma but not yet piped with current supplies) As water use increases in the Metroplex and North Texas over the next few decades, the potential for reuse will also increase, making this a crucial element in water planning.

POPULATION PROJECTIONS AND WATER DEMAND PROJECTIONS

TCONR calls the Region C Planning Group's attention to the comments on population and water demand projections submitted by Beth Johnson on behalf of the coalition of organizations opposing Marvin Nichols Reservoir and supporting water conservation, of which TCONR is a member.

THANK YOU FOR THE OPPORTUNITY TO COMMENT

Texas Committee on Natural Resources appreciates the opportunity to comment on the proposed potentially feasible water management strategies for Region C.

We would be happy to answer any questions or provide more background for any of our comments.

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