WR 5691A

OPA HR

SEP 17 2007

BY

CHIEF CLERKS OFFICE

2007 SEP 17 AM 9:39

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TEXAS PARKS & WILDLIFE

September 17, 2007

Ms. LaDonna Castanuela
Office of the Chief Clerk
Texas Natural Resource Conservation Commission
MC 105
P.O. Box 13087
Austin, TX 78711-3087

Re: North Texas Municipal Water District Water Use Permit Application No. 12151; Lower Bois d'Arc Creek Reservoir

Dear Ms. Castanuela:

Texas Parks and Wildlife Department (TPWD) respectfully requests a contested case hearing regarding the North Texas Municipal Water District (NTMWD) Water Right Application No. 12151. Because the notice period for water right applications comes very early in the TCEQ review process, often there is not enough specific technical information available to fully evaluate a proposed project. To protect TPWD's ability to participate in the development of permit conditions to protect fish and wildlife resources, TPWD files this hearing request.

Pursuant to Texas Parks and Wildlife Code § 12.0011, TPWD is the state agency charged with the primary responsibility for protecting the state's fish and wildlife resources. Under Texas Water Code § 11.147, the Texas Commission on Environmental Quality (TCEQ), in making a final decision on any application to store, take or divert water, shall consider all information, evidence and testimony presented by TPWD. Under the same provision, TPWD has the right to be named a party in hearings on water use permit applications.

NTMWD seeks authorization to construct and maintain the Lower Bois d'Arc Creek Reservoir in the Red River Basin on Lower Bois d'Arc Creek in Fannin County. Authorization is sought to divert, store and use water from the reservoir for municipal, industrial and agricultural purposes and to use water within the reservoir for recreation. NTMWD also requests interbasin transfer authorization to use the reservoir water within the district's service area in the Red, Sabine, and Trinity River Basins and within Fannin County in the Sulphur River Basin. The applicant proposes to use the bed and banks of Pilot Grove Creek and the East Fork Trinity River to transport water diverted from the reservoir to Lake Lavon for subsequent diversion and use. The applicant further seeks authorization to reuse return flows generated from the diversion and use of water from the Lower Bois d'Arc Creek Reservoir. NTMWD also intends to manage the reservoir as part of a system operation with existing and future supplies. The reservoir is proposed to have a maximum normal operating

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800

www.tpwd.state.tx.us

capacity of 367,609 acre-feet of water and a surface area of 16,526 acres, and the applicant seeks to divert and use not to exceed 175,000 acre-feet of water annually. The final project will require additional acreage to address reservoir flood pool elevations and the significant mitigation required for such a reservoir.

The TCEQ must consider the impacts of NTMWD's application on water quality, instream uses and freshwater inflows and all water use permits may be conditioned to protect those flows. (Tex. Water Code §§ 11.147, 11.150, 11.152; 30 Tex. Admin. Code §§ 297.54-56.) TPWD's statutory obligation and ability to protect the fish and wildlife resources of the state are affected by the actions proposed under the current NTMWD application. The diversion and impoundment of flows from Lower Bois d'Arc Creek and the interbasin transfer of water to the Sabine, Trinity, and Sulphur River Basins directly impact the water quality and existing instream uses of Lower Bois d'Arc Creek, Pilot Grove Creek, the East Fork Trinity River, and Lake Lavon. Additionally, the use of the bed and banks of Pilot Grove Creek for transporting water may alter the geomorphology of that stream and has the potential to cause a loss of aquatic habitat. Maintaining adequate instream flows and habitat to protect fish and wildlife resources is critical to the duties of TPWD.

TPWD is concerned about the impact to fish and wildlife habitats caused by construction of the reservoir and the inundation of lands. The Commission must assess the effects of the issuance of NTMWD's proposed permit on fish and wildlife habitats and may require an applicant to mitigate adverse impacts on the habitats. (Tex. Water Code §§ 11.147, 11.152; 30 Tex. Admin. Code § 297.53.) A large variety of wildlife species and terrestrial habitats are found in or near the reservoir location and may be adversely impacted or destroyed by inundation. Several endangered or threatened species have known habitat in Fannin County. The Least Tern and American Burying Beetle are federally listed endangered species, and the Louisiana black bear is a federally listed threatened species in Fannin County. There are also state listed threatened species of birds, reptiles, and fishes in Fannin County.

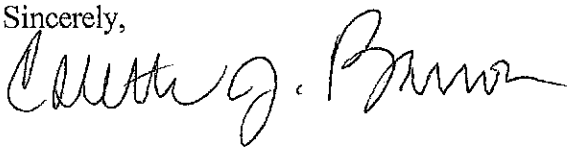
TPWD has expressed concerns about this proposed reservoir in both the first and second rounds of regional water planning. The proposed reservoir would inundate a 3,911 acre tract identified by the United States Fish and Wildlife Service as a Priority 4 preservation site in the Texas Bottomland Hardwood Preservation Program (1985). The proposed reservoir may also negatively impact 13,370 acres of habitat downstream at the Bois d'Arc Unit of the Caddo National Grasslands which is managed by TPWD as the Caddo National Grasslands Wildlife Management Area. Additionally, Bois d'Arc Creek from its headwaters in eastern Grayson County to its confluence with the Red River in Fannin County represents a valuable riparian conservation area. The proposed reservoir would inundate about 25% of the stream's length, and the downstream portion of the stream may be negatively impacted by the altered flow regime as a result of reservoir operations. Preliminary work involving TPWD staff has begun to identify habitat mitigation requirements but no work has been initiated yet to identify environmental flow needs.

A final TPWD concern is the reuse portion of the application. At the present time, the TCEQ does not appear to have a clear and consistent policy for evaluating and permitting indirect reuse applications, and therefore TPWD cannot discern the analysis that TCEQ will apply to evaluate the reuse project's impact on instream flows. The availability of return flows to meet environmental needs may be an important factor in determining impacts to fish and wildlife.

In its Report Supporting an Application for a Texas Water Right for Lower Bois d'Arc Creek Reservoir, NTMWD expresses a commitment to perform environmental studies and analyses that may address some or all of TPWD's concerns. The TCEQ will also perform a detailed technical review of the application and develop draft permit conditions that may alleviate some or all of TPWD's concerns. TPWD will continue to evaluate the merits of the proposed project as additional technical information becomes available. TPWD may withdraw its hearing request if its concerns can be met by the inclusion of special protective conditions in the permit or by other appropriate means.

Please use the information below to place TPWD on the official mailing list for this application. Should you have any questions, please call me at 512 389 8899. Thank you for your attention to this matter.

Sincerely,



Colette J. Barron, Attorney
State Bar of Texas No. 00783607
Texas Parks and Wildlife Department
Legal Division
4200 Smith School Road
Austin, TX 78744
512 389 8899 Phone
512 389 4482 Fax

cc: Dr. Larry McKinney, TPWD
Phil Durocher, TPWD
Ann Bright, TPWD

WR 5199

To: U. S. Army Corps of Engineers
ATTN. Regulatory Office
1645 South 101st E. Ave.
Tulsa, Oklahoma 74128-4609

To: Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711

CC: Senator Bob Deuell
2500 Stonewall Ste. 805
Greenville, Texas 75401

Representative Larry Phillips
421 N. Crockett St.
Sherman, Texas 75090

From: James G. Blaine
3011 C.R. 2730
Honey Grove, Texas 75446

WR PERM 12151

Subject: Public Notice No. SWT-0-14659

Statement: As a landowner in the proposed Lower Bois d' Arc Creek Reservoir I would like to call attention to some points that affect me, I would like your help to resolve these concerns, and I ask for your defense of my rights per the U. S. Constitution's Fourth Amendment. As a private citizen, I do hereby request the government protect me from the forcible taking of my property. Is there any help in Austin or Washington for a widow's son?

I do hereby request a lake site study/visit for those that make the decision to see the evidence of the following statements for themselves.

I as an affected land owner who will loose all my property and be forced to move all my personal property and loose all my children's and grand children's inheritance for generations do hereby request a public hearing in Fannin County concerning the Permit Application I do request that you come listen to those that will be directly affected by the dam.

I do herby request a through Environmental Impact Study be made of the area to be inundated and the mitigated property prior to consideration of a permit being issued for construction. We have a unique environment here that cannot be duplicated. There seems to be a disregard to the wildlife population in this area some of which I think are on the endangered species list. I have seen gray wolves, timber wolves, American or Louisiana black bear, mountain lions (brown and black), a large black and white woodpecker with a red splotch, alligator, jaguar, strange insects, and numerous frogs of varied species. If

some one would stay in the woods long enough and listen to the wildlife, they would become aware of all the various species that make up the ecology of Bois d' Arc Creek bottom.

In the Bois d' Arc Creek bottom there are numerous springs that run, even in a drought, that provides water for the wildlife and makes it's own little environmental habitat. Where will mitigated property be found like that? The only place around here is in the Bois d' Arc Creek bottom because water runs down hill eventually finding an out where it comes to the surface in the area around Bois d' Arc Creek bottom.

A natural lake in Bois d' Arc Creek bottom was partially formed by the migrating buffalo rolling in the dust of the sediment from Bois d' Arc Creek bottom for centuries. Which when the rains fill it up creates a fantastic waterfowl feeding lake for migratory birds.

After looking over the information provided by the North Texas Municipal water District and The U. S. Army Corps of Engineers, it seems that there is a lack of concern for the safety and health of the residents of Fannin County due to the various projected elevations and covered acres of the proposed reservoir. After studying the recorded flows of Bois d' Arc Creek, it is evident that there is no top level of the pool. As a matter of record the spillway at Lake Texoma, which is in close proximity, to this proposed Lower Bois d' Arc Creek Reservoir, has had three 100-year floods in the last fifty years. All of which made a crest above the mile wide spillway while the floodgates were wide open. If I am not mistaken one such "500" year flood level crested near twelve feet above the 5,280' wide 640'msl spillway elevation.

With that in mind and the projected "maximum" elevation of the 1,400' "emergency spillway" of 541' msl and in consideration of the sudden deluges that have inundated this area throughout history it is altogether possible for the proposed Lower Bois d' Arc Creek Reservoir dam to have flow over the top of the 556.7' msl dam. The back up of water would cause more extensive flooding in the City of Bonham than previous floods due to the lack of a place for the incoming water to go. The result of which would be the inundation of the sewer lines and sewer plan and pollution of all water in the proposed Lower Bois d' Arc Creek Reservoir. Not to mention, the extensive damages to the personal and commercial properties in Bonham and the surrounding area.

I ask what kind of rainfall would it take to overflow the top of the dam. If the reservoir was already, full? Has anyone thought of that? What is the necessary rainfall to create an engineering disaster that would flood and kill in Fannin County? Especially when in the future the runoff from rainfall will be higher due to an increase in population in the watershed of Bois d' Arc Creek with the additional houses and streets.

I wish to make you aware of some of the things that seems to have evaded the people that register the "archeological" and "historical" things due to their lack of due diligence is an unknown number of Indian camp sites, numerous Indian burial sites, two known slave burial sites, and a Confederate training site that will be inundated. The Caddo Indians made summer camp in this area up to about 1910. Their campgrounds can still be seen

where they dug around their lodges to carry off the water. The Indian burial mounds are easy to locate also. Campsites are numerous throughout Bois d' Arc Creek bottom due to the many years that this area was used for summer camp.

Many here question the motive for the construction of this dam due to the apparent desire of Garland to make Lake Lavon a constant level reservoir. This would give them the opportunity to have developers to sell "lake front" property at a high price, build high-end homes there and tax the same to increase the city coffers. Just as Dallas has done, with Lake Ray Hubbard. While displacing the people here, destroying their livelihood and inundating thousands of acres of private property where buffalo roamed and rolled in the dust, where the Indians camped for centuries and where families settled while this was the Republic of Texas.

It is estimated that $70,000,000.00 worth of Fannin County Water will be sold annually to the "metroplex" with little or no benefit to Fannin County; it's cities or the Citizens. What has happened to our Constitution that the rights of one group can be ignored and trashed by another? It is alleged that there is a need for water.

The need is for watering grass, exotic trees and plants and swimming pools. On average Dallas citizens, consume 260 gallons per day while the citizens of San Antonio only consume 130 gallons per day. This difference is dramatic. I therefore submit that their water needs are not near what they say. I believe that their needs can and should be met with water conservation, recycling water, use of cisterns for all homes and businesses, and the use of native plants that do not require large amounts of water and contribute to the excessive amount of water vapor in the air. That causes the green house effect in metro areas.

The economics of the proposed Lower Bois d' Arc Creek Reservoir is very complicated. In a quick synopsis, North Texas Municipal Water District Gets the money and Fannin County and it's citizens get the shaft.

NTMWD will have $70,000,000.00 worth of Fannin County water to sell annually at today's price. Fannin county will loose nearly 70,000 acres to two reservoirs with the mitigated property. There will be little or no taxes collected on those 70,000 acres, the people that live on that 70,000 acres will not be able to make an income from those 70,000 acres without permission from NTMWD. The businesses in the surrounding towns will loose the business from those people that lived on those 70,000 acres. The mills will not have the grain or cattle that would have been grown on those 70,000 acres. The people that live on the 70,000 acres will be like the lost children of Israel that were sold into slavery never to have a home again. I know because U. S. 75's reroute through Sherman, Texas displaced me from my childhood home in 1972. Mom and Dad relocated to another place but it was not home. It was not the same place that had been full of familiar faces and places where you were welcomed, recognized, and respected by the majority there. A place where your family had the first house in the town, the first Chief of Police and in general led in making the history of the town. A place where you knew

where to find a nest of baby rabbits, a baby crow or a baby squirrel for a pet and when you could find them.

Where do we go now?? I do not care for the money it will not replace this home place that was bought to replace the one lost to U. S. Highway 75 some 35 years ago. I need a place to go where I can spend my old age visiting with friends a place for solitude, a place for the dreams I want for my kids, so they have a place to come to, to appreciate and enjoy the sounds of nature and watch the wildlife while visiting.

Are all properties the same? NO! Can this place be replaced? NO! What we have is tangible and intangible. There may be a price that you can put on the tangible property but there is no price that you can put on the intangible!

Just as there is, a price to pay for the "relocation of wildlife" there is a cost to relocate people. A fair thing to ease the hurt of being uprooted for life is money and property at a 2 to 1 on property exchange in an area of my choice. Another fair thing that should be made part of the deal is a relocation allowance to move everything not nailed down and a tax-free property to live on for my descendants and myself forever! These things seem to cost a lot but, until you have been dislocated you do not know the heart ach and the cense of being lost and how hard it is to reestablish one's self respect in a strange place. What if a branch of the government decided to put something where George Washington's home is and were able to take it by eminent domain? Even if it were relocated, would it be the same? No, it never is the same. Your home is your home.

Land is Fannin County's most valuable asset. Land to Farm, land to sell in the future, land for our descendants, land that is taxed for operation of the county and towns, and land to hunt and play on.

Land values double every 12 years on the average. In 100 years the $3,000.00, an acre will be worth $25,000.00 an acre. This is a value that my grand children can see if they chose to live here.

They talk of a need for water but in this area, the water will be tainted with the lead arsenic that was used to treat cotton in this area. For years, lead arsenic was used as both an insect fighter and as a defoliant before picking. It is in the ground and in the Lake Bonham Water.

An impact, our whole life is tied to the land. The peace, our livelihood, something for our descendants is here. Where do we move our cattle? Each cow has a name, has a bloodline and has a temperament. We have raised them for our grand children's college fund. Where can we keep them? How do we live a normal life of a country person in a city? We know each other here. We know the predators here. How can anyone get compensated for the destruction of their lives, their livelihood, their heritage and their friends? Emanate domain causes an incomprehensible loss that kills the weak and sickens the strong much like the sacrifice of the virgins to appease the Gods in the heathen religions.

This land has paid for our being for generations and will continue to pay for our descendants being for generations. We are tied to the land in ways many will never understand. Just as the primitive tribes in the Amazon jungle could never understand why the people that have invaded their space want them to live like the invaders. I do not think that the people who live here along Bois d' Arc Creek bottom have a desire to live in a box in a city surrounded by strangers with their foreign traditions and some which are foreign to us.

In the article by NTMWD they say there is no value to the timber in Lower Bois d' Arc Creek. Do they know one tree from another? There are pecan, maple, walnut, bodis d' arc, many varieties of oak and ash trees that are marketable in the proposed Lower Bodis d' Arc Reservoir "foot print".

The shrinking farm land, growing human population has crossed on the graph of time, and soon there will be less and less food. Good clean drinkable water can be obtained from the sea. It is in the report by Freese and Nichols to the State of Texas Water Resources Board. The report also stated that dams are only a temporary means of providing water for Texas.

Building desalination plants on the coast would eliminate our state's water dependence from rain and wells. And it would free up hundreds of thousands of acres for growing food and for future development that would have been inundated. In addition, it would let the landowners maintain their homes and property.

By initiating a project of this magnitude it would not only be beneficial for future generations water needs but would be a benefit for the present sagging economy if it were broken into a large number of contracts across the state. Such an infusion would surely hasten the recovery of the economy all across Texas. And provide water for all Texans for many future generations.

Sincerely,

James G. Blaine

WR
5L919

To: U. S. Army Corps of Engineers
ATTN. Regulatory Office
1645 South 101st E. Ave.
Tulsa, Oklahoma 74128-4609

To: Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711

CC: Senator Bob Deuell
2500 Stonewall Ste. 805
Greenville, Texas 75401

Representative Larry Phillips
421 N. Crockett St.
Sherman, Texas 75090

H

From: Monika Blaine
3011 C.R. 2730
Honey Grove, Texas 75446

Subject: Public Notice No. SWT-0-14659

Statement: As a landowner in the proposed Lower Bois d' Arc Creek Reservoir I would like to call attention to some points that affect me, I would like your help to resolve these concerns, and I ask for your defense of my rights per the U. S. Constitution's Fourth Amendment. As a private citizen, I do hereby request the government protect me from the forcible taking of my property. Is there any help in Austin or Washington for a private landowner anymore?

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I as an affected land owner who will loose all my property and be forced to move all my personal property and loose all my children's and grand children's inheritance for generations do hereby request a public hearing in Fannin County concerning the Permit Application I do request that you come listen to those that will be directly affected by the dam.

I do herby request a through Environmental Impact Study be made of the area to be inundated and the mitigated property prior to consideration of a permit being issued for construction. We have a unique environment here that cannot be duplicated. There seems to be a disregard to the wildlife population in this area some of which I think are on the endangered species list. I have seen gray wolves, timber wolves, American or Louisiana black bear, mountain lions (brown and black), a large black and white woodpecker with a red splotch, alligator, jaguar, strange insects, and numerous frogs of varied species. If

some one would stay in the woods long enough and listen to the wildlife, they would become aware of all the various species that make up the ecology of Bois d' Arc Creek bottom.

I do not want to give up my land for the greed of a few others.

My husband and I worked all of our lives so we could retire in the country. We love this land and all of the creatures that live on it. When I asked what would happen to all of the animals, I was told that all we had was a few deer and wild hogs. This is not true. I have seen black panthers, cougars, turkeys, red wolves, gray wolves, otters, beavers, bobcats, foxes, and many more. Our ponds serve as habitat for many species of migratory ducks and geese.

I do not feel that Dallas has tried any conservation methods. Their usage is far higher than Austin or San Antonio.

I feel that an environmental impact study should be done before any decision should be made.

Our land is beautiful and should remain that way.

Sincerely,

Monika Blaine

Monika Blaine

James G Blaine
3011 County Road 2730
Honey Grove TX 75446-4212

100

Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711

WR 56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP 10 AM 11:25

Name: Monika Blaine Group Name: Citizens to save Bois d'Arc Creek Reservoir

Mailing Address: 3011 C.R. 2730 Honey Grove Tx. 75446
Phone: 903-378-3884 Fax
Email:

OPA

H SEP 10 2007

BY

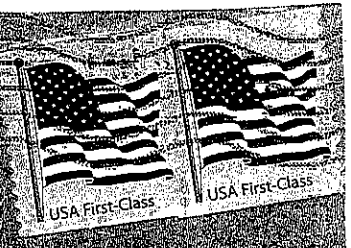
Applicant & Permit Number: NTMWD permit number 12151

I, Monika Blaine, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

The Bois d'Arc river bottom is the main thoroughfare for wildlife through the county. Once severed the wildlife through the county will suffer tremendously.
Speculative rumors of development are all Fannin County has been promised from this reservoir.
I don't believe that I should loose my land that we worked for all of our lives.
Too many people depend on their lively hood from this land.

Monika Blaine date 9/9/07
Signature

Citizens to Save Bois D Arc Creek
PO Box 36
Honey Grove Tx 75446



Office of the Chief Clerk, TCEQ, MC 105
PO Box 13087
Austin Tx 78711-3087

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WR 5b 9/19

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 20 PM 2:44

CHIEF CLERKS OFFICE

HR OPA

SEP 21 2007

BY

Name: Paula Brennecke

Group Name: CORE (Citizens Organizing for Resources and Environment)

Mailing Address 540 CR 2521, Bonham, TX 75418

Phone: 903-583-9508

Email: paulabren@cableone.net

Applicant & Permit Number: **NTMWD permit number 12151**

1 am requesting a contested hearing case on the project to build a dam on Lower Bois d'Arc Creek.

I will present two reasons (there are many more) here:

1) I believe — based on the Army Corps of Engineers study of the Bois d'Arc Basin Section 905(b) (WRDA 85) Analysis, by the Tulsa District — that flooding would damage existing lake and significant wetland areas. In addition to Fannin County being primarily agricultural, our natural resources attract visitors for hunting, birdwatching, etc. These visitors and our own residents should not be denied these opportunities if the reservoir is not necessary. The Dallas metroplex has not made the significant strides other major cities in Texas have made to conserve water. I don't have the exact per capita consumption figures, but theirs is *much* greater. I will not believe there is a real need for addition water as long as they continue to water their St. Augustine grass, fill their personal swimming pools and build giant fountains for their gated communities. I also believe other alternative water sources should be exhausted before building more reservoirs, here or elsewhere in the state.

2) Of more concern to me is the strong potential of water quality problems caused by the shallowness of the proposed reservoir.

Paula D Brennecke

9/14/2007

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Mrs & Mr Paula & Donald Brennecke
540 County Rd. 2521
Bonham, TX 75418-6914

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

OPA

SEP 14 2007

BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 AM 10:11

CHIEF CLERKS OFFICE

WR 12151

WR 2919

We are requesting a ~~contested~~ hearing on the proposed Lower Bois d' Arc Creek Reservoir.

I have pecan trees that I have worked for years planting and that are now producing. I have fruit trees, and also some black walnut trees.

We have deer and turkey that frequent our property.

A lot of people stand to loose a lot of valuable farm & ranch land. Where would we be without our farmers & ranchers?

Many people will have to relocate and we do not want to give up our home.

If the Lake goes in our community (Carson) will be non-existent.

There are some cemeteries that will be affected and one church that I know of.

We are putting it in God's hands as he knows best

W.L. & Mary Carson

Tommy & Amy Carson

Ronnie Goodwin

W.L + Mary Carson
9520 E FM 1396
Telephone, Tx 75488-6026

NORTH TEXAS PDC
TX 750 6 T
12 SEP 2007 PM

The Office of Chief Clerk
TCEQ, Mc 105
P.O. Box 13087
Austin, Tx 78711-3087

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CHIEF CLERKS OFFICE
2007 SEP 14 PM 1:30
TEXAS NORTHWESTERN JATHEMORNE CO.

WR 5691A

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP 14 AM 10:06

CHIEF CLERKS OFFICE

Name: R.P. Crawford Group Name: Red 'Arc Farm

Mailing Address: 690 CR 37500 Sumner, TX 75486

Phone: 903.739.8136 Fax

Email:

OPA

SEP 14 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, R.P. Crawford, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

our family farm has a permit (no. 4228) from TCEQ to divert 320 acre-ft of water per year from the Bois d' Arc Creek for irrigation. My concern is that if a dam is constructed on Lower Bois d' Arc Creek that restricts water flow, sufficient water to supply the irrigation pumps during the summer growing season will not be available.

In addition, if water from Bois d' Arc Creek does not flow to the Red River during dry periods, then our wildlife populations along the creek will be severely affected. Red 'Arc Farm currently has wildlife improvement contracts with USDA-CRP, USDA-EQUIP and US Fish and Wildlife - Partners in Wildlife.

R P Crawford date 9/11/07

Signature

Red'Arc Farm
690 DR 37500
Sumner, TX 75486

ALBUQUERQUE NM 871
11 SEP 2007 PM 2 L

Office of the Chief Clerk, MC 105
TCEQ
PO Box 13087
Austin, TX 78711-3087

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SEP 14 2007
TCEQ MAIL CENTER
RB

78711-3087

WR 5e919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP 14 AM 10:11
CHIEF CLERKS OFFICE

Name: Lela Foreman Group Name: Citizens to Save the Lower Bois d'Arc

Mailing Address: 8719 E FM 1396

Phone: 903-664-3241 Fax

Email:

OPA H

SEP 14 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

(1) Fannin County will retain no water rights. NTMWD will control the water rights, determine the quantity and price of water used by Fannin County. The revenues will benefit NTMWD, not Fannin County or its entities.

(2) The Bois d'Arc river bottom is the main thoroughfare for wildlife throughout the County. This area contains many valuable hardwood trees, and also nut bearing trees. The wildlife and hardwoods will suffer greatly.

(3) This area is situated at the point of two eco regions and has the most fertile agricultural land in the county, making it unique in value and irreplaceable.

(4) NTMWD has applied for up to 175,000 acre feet of water to be drawn per year from the reservoir; thus the shoreline will be mainly muddy flats in a typical NE Texas summer. Recreation and attraction of lakefront property will be less than significant.

(5) A federal funded study was conducted by the Tulsa District of the Army Corps of Engineers Bois d'Arc Basin Section 905 (b) WRDA 86. This cost an excess of $100 million dollars. The results of the study eliminated the lower portion of the basin primarily because of the lack of effective flood control, potential technical and environmental problems associated with locating a reservoir in bottomland areas of the lower Bois d'Arc Area. In addition the shallow nature of the reservoir would potentially pose water quality problems.

(6) This fertile farm land has been in my family for over 100 years. How can the American farmers going to produce food for our nation and other countries when the most fertile land is going for water reservoirs to help the metroplex population keep their lawns green + pristine.

Lela Foreman date 09-11-07
Signature

Ms. Lela Foreman
8719 E. Fm 1396
Telephone, TX 75488-6025

NORTH TEXAS P&DC
TX 760
12 SEP 2007 PM

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

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SEP 14 2007
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RB

WR 2e19

TEXAS COMMISSION ON ENVIRONMENTAL

SEP 12 AM 10:17

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: LARRY D. FRANKLIN Group Name: Citizens To Save Bois d' Arc Creek

Mailing Address: 15387 E FM 1396 Windom, Tx 75492

Phone: 903-378-3949 Fax

Email:

OPA

SEP 13 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

Fannin County will retain no water rights. Although the water source is located within the county, all rights will belong to NTMWD. Due to the size and depth of the reservoir the shoreline will be mainly a muddy flats in the typical NE Texas summers. The attraction of lakefront property will be less than significant.

Lower Bois D'Arc reservoir is situated at the point of two different eco regions and has the most fertile agricultural land in the county, making it unique in value and irreplaceable. It is a main thoroughfare for wildlife throughout the county.

According to the Army Corps of Engineers study of the Bois d' Arc Basin Section 905 (b) (WRDA 86) Analysis by the Tulsa District. Reservoir sites located at lower river miles 23.5, 24.8 and 28.6 were dropped from further consideration in the reconnaissance phase. Reservoir sites in the lower portion of the basin were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the lower Bois d' Arc Creek Basin. The shallow nature of the reservoir would potentially pose water quality problems.

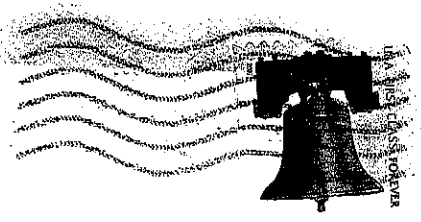
Larry D. Franklin date Sept. 10, 2007

Signature

F

Larry Franklin
15387 E FM 1396
Windom TX 75492-3652

NORTH TEXAS 750
TX 750 4 L
10 SEP 2007 PM



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TCEQ, MC 105
P.O. Box 13087
Austin, Tx. 78711-3087

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SEP 12 2007
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78711+3087

at Mulberry
John Gregory Hall
328 CR 1035 Ravenna, TX 75476
tel. 903/583-4044
greghall@texoma.net

WR 56919

September 16, 2007

HP/OPA
SEP 19 2007
BY

CHIEF CLERKS OFFICE
2007 SEP 19 AM 11:07
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

The Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Refer to NTMWD Application # 12151 to build a dam on Lower Bois d' Arc Creek

Dear Sir or Madam:

I request a Contested Case Hearing regarding this application because I believe it will negatively impact efforts that I have made during the last fifty years to protect the environment and habitat of wildlife on 570 acres which I own in the Caney Creek watershed in NW Fannin County. I have been active in a group of volunteers working to preserve and protect the Lake Fannin proprety of the U.S. Forest Service in the Caddo National Grasslands. Also, I am chairman of the Fannin County Historical Commission, but write only for myself as a member of the commission.

I am also a member of the Sierra Club and request that it be granted standing in future actions on my behalf.

The proposed dam and reservoir will destroy old growth hardwood timber in Fannin County that is immediately adjacent to the Caddo National Grasslands. It will interrupt wildlife migration corridors that lead upstream along Red River to my property on Caney Creek. This timber and habitat cannot be replaced by mitigation in other areas of the county or elsewhere.

Destruction of this Fannin County asset will close off realization of a vision that many have for our future quality of life. I believe that it will also submerge historical and archeological sites, including Confederate Camp Benjamin and Indian burial grounds.

Sincerely,

John Gregory Hall

John Gregory Hall

sent also by FAX on Sept 16, 2007

MW

Margy Hall
328 CR 1035
Ravenna, TX 75476

NORTH TEXAS P&DC
TX 750 3 T
17 SEP 2007 PM

Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

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SEP 19 2017
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78711+3087

at Mulberry 328 CR 1035 Ravenna, TX 75476 tel. 903/583-4044
John Gregory Hall greghall@texoma.net

September 16, 2007

The Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Refer to NTMWD Application # 12151 to build a dam on Lower Bois d' Arc Creek

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Sincerely,

John Gregory Hall

SIERRA CLUB
FOUNDED 1892
Lone Star Chapter
PO Box 1931
Austin, Texas 78767

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

NOT RESPONSIBLE FOR CONCEALED DAMAGE

CAPITOL COURIER
211 E. ALPINE ROAD
AUSTIN, TEXAS 78704
(512)444-4077

9-17-2007

Shipments must be properly packaged for carriage. Maximum value of this shipment is $50.00 unless a higher value is declared. Claims must be made within 48 hours of delivery.

TICKET NUMBER 149230

TIME DELIVERED 5:30 P.M.

DATE OF SHIPMENT 9-17-07

SENDER
Sierra Club
1202 San Antonio St
Austin, Tx 78701 477.1729

NUMBER OF PIECES	DESCRIPTION OF CONTENTS/SPECIAL INSTRUCTIONS	WEIGHT
1	LETTER	

RECEIVER
RECEIVER, COMPANY NAME
STREET ADDRESS
CITY, STATE, ZIP
CONTACT NAME

3RD PARTY

DELIVERY CHARGES
☒ SENDER ☐ RECEIVER ☐ COD ☐ 3RD PARTY

☐ RUSH ☑ 1 HOUR ☐ 2 HOUR ☐ 4 HOUR ☐ 1 DAY ☐ EXCH.

CHARGE ALLOCATION

BASE CHARGES	$
WEIGHT CHARGES	$
MILEAGE CHARGES	$
OTHER CHARGES	$
TOTAL DELIVERY CHARGES	$

DRIVER'S NAME
RECEIVED IN GOOD ORDER (SIGNATURE) John K. Kim
RECEIVED IN GOOD ORDER (PRINT NAME) Security officer

TRAVIS PRINTING - AUSTIN, TEXAS
44618

at Mulberry 328 CR 1035 Ravenna, TX 75476 tel. 903/583-4044
John Gregory Hall greghall@texoma.net

September 16, 2007

The Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

OPA HR
SEP 17 2007
BY

CHIEF CLERKS OFFICE
2007 SEP 17 AM 8:00
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Refer to NTMWD Application # 12151 to build a dam on Lower Bois d' Arc Creek

Dear Sir or Madam:

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Sincerely,

John Gregory Hall

MW

Received: Sep. 16 2007 03:11pm

FROM : GARY HALL MCCRAW OIL (. L PHONE NO. : 9035832109 (Sep. 15 2007 01:31PM P1

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 17 AM 8:00

CHIEF CLERKS OFFICE

FAX COVER SHEET

McCRAW OIL COMPANY, INC.
2207 N. CENTER
BONHAM, TX 75418
903/583-7481
903/583-2531 FAX

DATE: 9-16-07

TO: Office of Chief Clerk

COMPANY: TCEQ

FAX #: 1-512-239-3311

FROM: Gregory Hall

TOTAL PAGES: 2
(INCLUDING COVER SHEET)

NOTES/COMMENTS:

WR
B6919

at Mulberry 328 CR 1035 Ravenna, TX 75476 tel. 903/583-4044
John Gregory Hall greghall@texoma.net

September 16, 2007

OPA HL
SEP 17 2007
BY

CHIEF CLERKS OFFICE
2007 SEP 17 AM 8:01
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

The Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Refer to NTMWD Application # 12151 to build a dam on Lower Bois d' Arc Creek .

Dear Sir or Madam:

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I am also a member of the Sierra Club and request that it be granted standing in future actions on my behalf.

The proposed dam and reservoir will destroy old growth hardwood timber in Fannin County that is immediately adjacent to the Caddo National Grasslands. It will interrupt wildlife migration corridors that lead upstream along Red River to my property on Caney Creek. This timber and habitat cannot be replaced by mitigation in other areas of the county or elsewhere.

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Sincerely,

John Gregory Hall

John Gregory Hall

FAX COVER SHEET

McCRAW OIL COMPANY, INC.
2207 N. CENTER
BONHAM, TX 75418
903/583-7481
903/583-2531 FAX

DATE: 9-16-07

TO: Office of chief Clerk

COMPANY: TCEQ

FAX #: 1-512-239-3311

FROM: Gregory Hall

TOTAL PAGES: 2
(INCLUDING COVER SHEET)

NOTES/COMMENTS:

WR 5691 9

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 AUG 20 AM 10:27

CHIEF CLERKS OFFICE

Contested Case Hearing Request

OPA HR

AUG 20 2007

BY

Name: Harry, Lynda Hammett Group Name:

Mailing Address: 1494 CR 2917

Phone: 9036234175 Fax

Email:

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

I know that is it (not) a good site for the land or lake. The North sides of the land will cause problems because it is to low for water. Also because of the wild life. (deer, different birds, cougar, bobcats in their natural habitat.

There are better place for a lake. I do dirt work been a Dirt Contractor for 40 years I know the land

Harry + Lynda Hammett date 8-7-07

Signature

NORTH TEXAS PRDC
TX 750 6 1
16 AUG 2007 PM

HAMMETT'S EXCAVATION
& GAYLON HAMMETT
CITY, TX 75438

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

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AUG 20 2007
TCEQ MAIL CENTER
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CHIEF CLERKS OFFICE
2007 AUG 20 AM 10:27

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

WR 5619

OPA

Contested Case Hearing Request

H SEP 13 2007

BY DC

Name: KENNETH HASSELL Group Name: CITIZENS TO SAVE BOIS D'ARC CREEK

Mailing Address: 14262 CR 565, Farmersville, TX 75442
Phone: 972-784-8438 Fax 972-784-6646
Email: Kjhassell@att.net
FANNIN COUNTY PROPERTY: 678 CR 2746 HONEY GROVE, TX 75446
PHONE: 903 378 7225

CHIEF CLERKS OFFICE SEP 13 PM 2:59 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: NTMWD permit number 12151

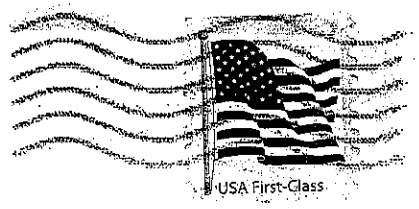
I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

1) A Corp of Engineers study of the Bois D'Arc Basin (TULSA) previously found a lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas. After the study, the reservoir sites were eliminated from further consideration. A Corp of Engineers (DALLAS) study in 1968 reached the same conclusion
2) Fannin County will retain no water rights.
3) Loss of tax revenue, agriculture, and jobs.
4) There will be a lack of lakefront property, if any, and, therefore no development.
5) Lower Bois D'Arc Reservoir is situated at the point of two different eco regions and has the most fertile agricultural land in the county making it unique in value and irreplaceable.
6) The river bottom is the main thoroughfare for wildlife throughout the county; wildlife will suffer.
7) Cedar, Oak, Pecan, and Walnut trees that are at least 80 or more years old will be destroyed.
8) Both marked and unmarked gravesites are located within the proposed lake area.

Kenneth Hassell date 9-11-07
Signature

Kenneth Hassell
14262 CR 565
Farmersville, Texas 75442

NORTH TEXAS P&DC
TX 750 3 T
11 SEP 2007 PM



The Offfice of the Chief Clerk
MC 105
TCEQ
P O Box 13087
Austin, Texas 78711-3087

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SEP 13 2007
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78711+3087

NATIONAL WILDLIFE FEDERATION
GULF STATES NATURAL RESOURCE CENTER
44 East Avenue, Suite 200
Austin, Texas 78701

(512) 476-9805
FAX (512) 476-9810
www.nwf.org

NATIONAL WILDLIFE FEDERATION®
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OPA HR
SEP 17 2007
BY

CHIEF CLERKS OFFICE
2007 SEP 17 AM 9:42
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

WR 3691 9

September 14, 2007

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

RE: Request for Contested Case Hearing In the Matter of the North Texas Municipal Water District's Application No. 12151

Dear Ms. Castañuela:

The National Wildlife Federation (NWF) hereby requests a contested case hearing on the above-referenced application through its Gulf States Natural Resource Center. NWF's contact information for purposes of this request is:

Myron J. Hess
National Wildlife Federation
44 East Avenue, Suite 200
Austin, TX 78701
Tel. 512-476-9805
Fax: 512-476-9810
E-mail: hess@nwf.org.

The National Wildlife Federation makes this **REQUEST FOR CONTESTED CASE HEARING** on the North Texas Municipal Water District's (the District's) Application No. 12151 because the proposed actions have significant potential to cause adverse impacts to the interests of the National Wildlife Federation and its members in a manner not common to the general public. NWF is a national, non-profit organization that dedicates itself to protecting natural resources and the right of people to use and enjoy them. NWF has approximately 39,000 members in Texas. Many of these National Wildlife members use and enjoy Texas' water, fish, and wildlife resources, including those in the Red River Basin that could be adversely affected by the application at issue here.

The Gulf States Natural Resource Center is a regional office of NWF and is located in Austin, Texas. One of the primary functions of the office is the implementation of a program to ensure adequate protection of stream and river flows to support fish and

wildlife resources in Texas. NWF is pursuing that goal through a variety of avenues, including the filing of this hearing request.

Through this application, the District seeks authorization to construct a major new reservoir covering an area of about 16,500 acres, to impound over 367,000 acre-feet of state-owned water, and to divert 175,000 acre-feet of state-owned water per year. The District also seeks authorization for an interbasin transfer to three river basins.

The proposed actions have the potential to cause significant adverse impacts on the natural resources of Texas, including by inundating thousands of acres of terrestrial wildlife habitat and by reducing flows in Lower Bois d'Arc Creek and in the Red River downstream of the confluence with that Creek. NWF is also concerned about ensuring that state-owned water is used efficiently. NWF acknowledges that its concerns may be adequately addressed through permit conditions included in the permit, if a permit is issued. However, because no such permit has been drafted and because the specifics of any permit conditions are currently unknown, it is necessary for NWF to submit a hearing request at this time in order to protect the interests of NWF and its members.

The District also seeks authorization to reuse all of the effluent resulting from the requested diversions. NWF believes that any permit issued should include conditions to ensure that some reasonable level of return flows will be provided to protect flows in receiving streams. Because the District's existing water rights in the receiving basins do not include adequate assurance that some reasonable level of return flows will be provided, particularly given the potential for unlimited levels of direct reuse, protective conditions to provide some reasonable level of return flows are appropriate here.

If the Commission grants the District's permit application without adequately protective provisions, the interests of NWF and its members in protecting fish and wildlife resources would be adversely affected, as would the ability of its members to use and enjoy those natural resources.

The National Wildlife Federation seeks to participate in the permitting process to ensure the development of appropriate habitat protection and environmental flow conditions in any authorization that may be granted. NWF also seeks to ensure that strong water conservation and drought management measures are required and implemented in order to help ensure that any diversions authorized are actually necessary and that the state's water is used in a manner consistent with the public welfare and without waste. In addition, NWF seeks to ensure that appropriate return flow conditions are included to help provide environmental flows in the receiving basin(s).

NWF would be glad to discuss permit provisions and other measures that, if included in any permit which might be granted, would make it possible for NWF to withdraw this hearing request.

Please contact me at the telephone number, physical address, or e-mail address listed above if you have questions or need additional information.

Sincerely,

Myron J. Hess
Texas Bar Number 09549415

WR 5619

TEXAS COMMISSION ON ENVIRONMENTAL

Contested Case Hearing Request

SEP 12 2007 CHIEF CLERKS OFFICE

Name: MABEL HOLMES Group Name: CITIZEN TO SAVE BOIS d' ARC CREEK

Mailing Address: 15924E FM 1396, WINDOM, TX 75492

Phone: 903-398-7294 Fax NA

Email: NA

OPA

SEP 13 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

The water distribution is not fair. Fannin County needs a portion of the income to lower taxes and give free water.

This will be a shallow lake, therefore not producing sufficient water during average rainfall seasons.

The loss of crops income will be great and the County income will suffer more due to no income from water and crops.

All of the residents should not suffer because a few elected officials of the county did not consider the Management of others.

Bois d' Arc Creek is not only rich for Fannin, Carson Community and Ladonia Chapel Community but is a Historical Creek that is rich with history. It provided a living of food and water for animals, native Americans and early Pioneers settlers.

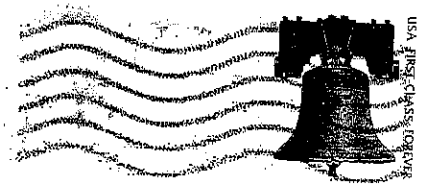
Most of the Property as in the fourth generation. Parts of Lots of Acres have this history.

Mabel Holmes date 9-9-2007
Signature

MW

Mabel Holmes
15924E FM 1396
Windom, Tx 75492

NORTH TEXAS PROC
TX 750 1 L
10 SEP 2007 PM



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MC 105
TCEQ
P.O. Box 12087
Austin, Tx 78711-3087

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SEP 12 2007
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RB

WR 5619

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 AUG 27 PM 2:39

CHIEF CLERKS OFFICE

Name: Chad Knight Group Name:

Mailing Address: 791 CR 2945 Dodd City, TX 75438

Phone: 903-227-0201 Fax 903-623-4221

Email: cknight@fanninelectric.com

OPA

H AUG 28 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

This reservoir would have a negative impact on Fannin County. The number one source of revenue for the county is farming and ranching. This reservoir would take away the most productive and richest soil in the county. It would also have a negative impact on the wildlife. The area that would be covered by the reservoir is home to the highest population of wildlife in Fannin County. Species rare to north Texas are found here. The ocelot and black bear have been seen here. Another negative of the reservoir is the toxic waste that was dumped into Bullard's creek by a previous dynamite plant. The plant was condemned and shut down as a result of the waste they were putting into the creek. The creek was not cleaned up. This would be a threat to public health if this were used as drinking water.

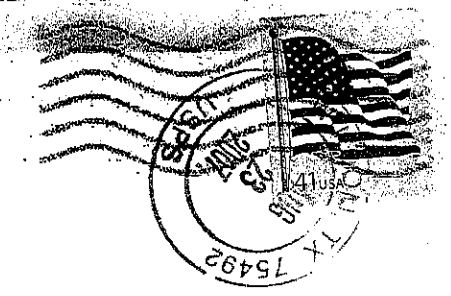
Take a look at a Texas map and see all of the lakes and reservoirs in North Texas. How many more do they need. Toledo Bend will sell water to north Texas. This is on the agenda, but it is far down the line. Why can they not use the water that is already there first and build reservoirs which destroy land, economics, families, and history only after there is no other choice. Why can they not raise the water level on current lakes by only six inches and have more than the reservoirs on the agenda will provide. The Trinity River water is a source that is not being utilized as well. This reservoir is not about the need for water!

Chad Knight date 8-22-07

Signature

Chad Knight
791 CR 2945
Dodd City, TX 75438

TX 750 4 L
23 AUG 2007 PM



CHIEF CLERKS OFFICE
07 AUG 27 PM 3:31
CLERK
ENVIRONMENTAL QUALITY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

RECEIVED
AUG 27 2007
TCEQ MAIL CENTER
RB

78711+3087

(9)

TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Chad Knight

Address: 791 CR 2945

City/State: Dodd City, TX **Zip:** 75438

Phone: (903) 227-0201

☑ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ **Yes** ☑ **No**

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

Contested Case Hearing Request

Name: Dustin Knight Group Name: Citizens to Save Lower Bois Dárc

Mailing Address: 1037 CR 2950 Dodd City, TX 75438
Phone: 9032270964 Fax
Email: dustin-knight99@yahoo.com

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
07 SEP 12 PM 4:31
CHIEF CLERKS OFFICE

Applicant & Permit Number: NTMWD permit number 12151

I, Dustin Knight, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:
all water rights will go to ~~North Texas M~~ NTMWD. The wildlife in our area will be hurt taking away ~60-70% of all hardwoods and bottom lands from the county. The loss of Fannin Counties agricultural fields and grazing from the ~~loss~~ native grasses. This lake will also affect the taxes for the citizens of Fannin County. ~~This~~ The waters quality will be poor. This is a very shallow lake. The permits asked for taking 175,000 acre feet of water annually. That is about half of the lakes water. This lake will not provide new housing districts around the lake because it will not have a constant lake level year round. Bonham sewer and the old landfield will also drain into the lake. Bois Dark Creek also carries large amounts of sediment ~~as~~ from the drainage areas around Whiteright, TX. This lake will silt in within a few years of construction making the lake shallower. There is also a flooding ~~issue for~~ issue for Bonham. NTMWD said there would be very little flooding. However, it already floods now. If you build a damn on one side of the creek flooding will not get better. If we have a 12" rain over the drainage area within a short time you will be adding ~300,000 acre feet of water to the lake. The total lake level is ~366,000 acre feet. If you double the amount of water coming into the lake the water has to go somewhere. This is going to cause more frequent flooding to the Fannin County region.

OPA RECEIVED
SEP 11 2007
AT PUBLIC MEETING

Dusti Knight date 9/11/07
Signature

MW

Contested Case Hearing Request

Name: Renea Knight Group Name:

Mailing Address: 791 CR 2945, Dodd City, TX 75438
Phone: 903-623-3601 Fax
Email: reneaknight@yahoo.com

Applicant & Permit Number: NTMWD permit number 12151

I, Renea Knight, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

Landowners are not being treated fairly by our County Commissioners. The commissioners are supposed to do what is in the best interest of the people in their precinct. In this case, the commissioners voted in early 2005 to support the lake without even consulting the landowners. They even told North Texas Municipal Water District that there was no opposition to the reservoir. This is totally false and they are giving away landowner's rights. Landowners need a contested case so they can let their concerns be heard. The commissioners will not voice the concerns of the landowners.

Renea Knight date 9-11-07
Signature

MW

WR
5E919

Contested Case Hearing Request **August 26, 2007**

Land Owners: Ronnie Knight
Rebecca Knight
Address:
317 CR 2950
Dodd City, Texas 75438
Home: 903-623-4665
Cell: 903-227-4588
Email: rebeccaknight@academicplanet.com

Concerning: Lower Bois d'Arc Reservoir Project
Application: NTMWD #12151 to build a dam on Lower Bois d'Arc Creek

We are requesting a contested case hearing on the projected building of a dam on the Lower Bois d'Arc Creek. We own property on this creek and have had a dairy business in the area since 1980. Prior to that Richard Knight, Ronnie's father, had the land and he was raised there. Presently, we are raising dairy heifers on the property, growing hay and grazing the land.

This project will effectively put us out of business and will destroy the life we have enjoyed since childhood. This area is filled with wild animals and birds which will be displaced or die. The animals that will be negatively affected will include deer, turkey, pheasant, rabbits, cougars, bob cats, raccoons, grey and black squirrels, opossums, armadillos, quail, woodpeckers, hummingbirds and wild canaries. The good insects including lady bugs and bees will be gone. The plant life affected will be many, many trees lost including oak, ash, pecan, elm, bois d'arc, maple and willows. Pasture land, crops, and cattle will not be available.

Our land will be on the shallow part of the proposed lake and will in essence be only a shallow mosquito infested mud hole with copperhead and water moccasin snakes everywhere. Our children have always been able to hunt on the land but this will destroy the area once used for that purpose.

Fannin County is a rural, agricultural area that produces farm products and cattle. This is what supports the population here and produces the jobs and tax dollars needed for our schools and community. Without the land, what are we to do to support ourselves economically? What can we pass on to our children? This project will cripple our families and community permanently.

For the above reasons, we sincerely ask that this permit be denied. Our futures are in your hands and your decision will change our lives forever.

Sincerely,

Ronnie Knight

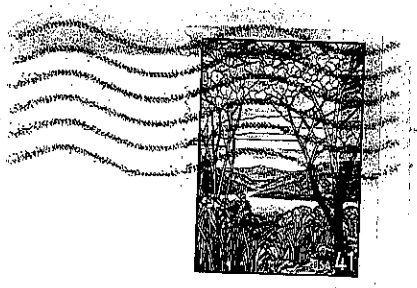
Ronnie Knight

Rebecca Knight

Rebecca Knight

Rownie Knight
317 CR 2950
Dodd City, Tx. 75438

NORTH TEXAS PDDC
TX 750 6 L
23 AUG 2007 PM



LOUIS COMFORT TIFFANY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

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AUG 29 2007
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RB

78711+3087

SIERRA CLUB
FOUNDED 1892
Lone Star Chapter

P. O. Box 1931
Austin, TX 78767
512-477-1729 (phone)
512-477-8526 (fax)
lonestar.chapter@sierraclub.org
www.texas.sierraclub.org

HR OPA
SEP 18 2007
BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2007 SEP 18 AM 8:19
CHIEF CLERKS OFFICE

WR 5e919

September 17, 2007

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

RE: Supplement to the Request for Contested Case Hearing in the Matter of the North Texas Municipal Water District's Application No. 12151 (Water Use Permit)

Dear Ms. Castañuela:

This letter is a supplement to our September 14, 2007 request for a contested case hearing on the above-referenced application. One of our members in Fannin County, John Gregory Hall, has submitted an individual request to you for a contested case hearing in this matter (a copy of a fax of his letter is enclosed), and he has specifically requested that the Sierra Club be granted standing on his behalf in future actions related to this water use permit application. By way of this letter the Sierra Club confirms that Mr. Hall is a member in good standing in our organization.

In addition to some of the issues that we raised in our September 14, 2007 request, Mr. Hall has raised issues related to the potential impact of the proposed Lower Bois d'Arc Creek reservoir on historical and archeological sites in Fannin County, and Sierra Club supports his raising of these issues.

At a later time, as appropriate, the Sierra Club will provide the names of additional Club members who would be affected by the granting of a permit for Application No. 12151 by the North Texas Municipal Water District.

Sincerely,

Ken Kramer

Ken Kramer, Director
Lone Star Chapter, Sierra Club

Enclosure

MW

SIERRA CLUB
FOUNDED 1892
Lone Star Chapter

P. O. Box 1931
Austin, TX 78767
512-477-1729 (phone)
512-477-8526 (fax)
lonestar.chapter@sierraclub.org
www.texas.sierraclub.org

WR 56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 PM 4:39

CHIEF CLERKS OFFICE

OPA HR
SEP 17 2007
BY

September 14, 2007

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

RE: Request for Contested Case Hearing in the Matter of the North Texas Municipal Water District's Application No. 12151 (Water Use Permit)

Dear Ms. Castañuela:

The Sierra Club hereby requests a contested hearing on the above-referenced application. The contact information for Sierra Club for purposes of this request is as follows:

Ken Kramer, Director
Lone Star Chapter, Sierra Club
P. O. Box 1931
Austin, TX 78767
512-477-1729 (phone)
512-477-8526 (fax)
ken.kramer@sierraclub.org

Sierra Club makes this request for a contested case hearing on North Texas Municipal Water District's (the District's) Application No. 12151 (Lower Bois d'Arc Reservoir) because the issuance of the permit and the subsequent activities associated with the construction and maintenance of the reservoir, the diversion and use of water from the reservoir, and the interbasin transfers of the water for which the application is being made have the significant potential to affect adversely the Sierra Club and its members in a manner not common to the general public.

The Sierra Club is a national, nonprofit organization whose mission is to "explore, enjoy and protect the planet." The Sierra Club nationally, the Lone Star Chapter of the Sierra Club in Texas, regional Sierra Club groups within Texas, and individual Sierra Club members in Texas conduct or participate in recreational activities, including canoeing and kayaking, hiking, camping, wildlife viewing, fishing, and similar outdoor pursuits, some

of which are part of organized Sierra Club outings. At this time the Sierra Club has approximately 24,000 members in Texas.

Over 4,000 of the Sierra Club members in Texas reside in the nine counties which include the service area of the North Texas Municipal Water District, some of which counties would be the locale for the impoundment, storage, diversion, and interbasin transfer of the water that is the subject of this permit application. Some of our members are customers and users of the water provided to retail suppliers by the District, and decisions by the District affect the source, availability, and price of their water.

At this time the Sierra Club has 31 members living in Fannin County, which is the county in which the proposed reservoir that is the subject of this application would be located, as well as one of the counties in the District's service area.

In the absence of a draft permit it is not possible at this time to identify all of the potential environmental and other impacts of the proposed reservoir, the diversion and use of the water, and the interbasin transfers of that water and the consequences of those impacts on Sierra Club activities and Sierra Club members. Specific permit conditions might alleviate some or all of the concerns that the Sierra Club and its members would have regarding the issuance of a permit for the proposed project.

Until such time that a draft permit is available and a further assessment may be made, however, the Sierra Club identifies the following preliminary areas of concerns:

(1) the impact of the construction and operation of the proposed reservoir and related diversion and interbasin transfers on the ability of the Sierra Club and its members to recreate on or in proximity to the rivers and streams that would be affected by the issuance of the permit in question;
(2) the intent of the District to use all of the effluent resulting from the requested diversions and the impact that the lack of return flows would have on water quality and instream flows on the relevant streams and river basins and subsequently on fish and wildlife habitat of importance to Sierra Club members who live or recreate in the affected areas;
(3) the inundation of or other impacts on the bottomland hardwoods or other riparian habitats that are significant for the maintenance of fish and wildlife resources of importance to Sierra Club members in the impacted areas;
(4) the lack of a complete and sufficient assessment of "the availability of feasible and practicable alternative supplies in the receiving basin to the water proposed for transfer;"
(5) the lack of a complete and sufficient assessment of "the proposed methods and efforts by the receiving basin to avoid waste and implement water conservation and drought contingency measures," and an evaluation of how those methods and efforts compare to the record and experiences of other areas of the state;
(6) the lack of a determination thus far of whether the applicant has "developed and implemented a water conservation plan *that will result in the highest practicable levels of water conservation and efficiency achievable within the jurisdiction of the applicant* [emphasis added]" as required by Sec. 11.085(l)(2) of the Texas

Water Code and the extent to which the applicant's track record on water conservation, efficiency, and drought management impacts the source, price, and availability of water to Sierra Club members served by retail water providers served by the District or other water suppliers affected or potentially affected by the issuance of the requested permit;

(7) the impact of the proposed reservoir, diversions, and interbasin transfers on the Caddo National Grasslands; and

(8) the adequacy of any mitigation activities or efforts that may be contemplated to offset some of the environmental impacts of the proposed reservoir, diversion and use, and/or interbasin transfers and how those mitigation activities or efforts may affect Sierra Club members in the area.

The Sierra Club seeks to participate in the permitting process to see that all of these concerns are addressed to the satisfaction of the organization and its affected members. Our organization stands ready to consider and evaluate any possible permit conditions that might negate or alleviate any or all of the above concerns.

Thank you for this opportunity to comment. Please contact us if any additional information or clarification of these comments is needed.

Sincerely yours,

Ken Kramer

Ken Kramer, Director
Lone Star Chapter, Sierra Club

SIERRA CLUB
FOUNDED 1892
Lone Star Chapter
PO Box 1931
Austin, Texas 78767

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

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211 E. ALPINE ROAD
AUSTIN, TEXAS 78704

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TICKET NUMBER

TIME DELIVERED | DATE OF SHIPMENT 4-14-07

SENDER
Sierra Club
1202 San Antonio St
Austin, Tx 78701 477.1729

NUMBER OF PIECES	DESCRIPTION OF CONTENTS/SPECIAL INSTRUCTIONS	WEIGHT
1	LETTER (REQUEST FOR CONTESTED	
	CASE HEARING - PERMIT	
	APPLICATION #12151	

RECEIVER
RECEIVER COMPANY NAME: T.C.E.Q. RM 1101
STREET ADDRESS: 12100 PARK 35 CIRCLE BLDG F
CITY, STATE, ZIP: AUSTIN TX 78753
CONTACT NAME: OFFICE

3RD PARTY

DELIVERY CHARGES
☒ SENDER ☐ RECEIVER ☐ COD ☐ 3RD PARTY
☐ RUSH ☐ 1 HOUR ☐ 2 HOUR ☐ 4 HOUR ☐ 1 DAY ☐ EXCH.

CHARGE ALLOCATION

BASE CHARGES	$
WEIGHT CHARGES	$
MILEAGE CHARGES	$
OTHER CHARGES	$
TOTAL DELIVERY CHARGES	$

DRIVER'S NAME | RECEIVED IN GOOD ORDER (SIGNATURE) | RECEIVED IN GOOD ORDER (PRINT NAME)

TRAVIS PRINTING, AUSTIN, TEXAS 44618

WR 56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 PM 2:56

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: Glenn Lee Group Name: Citizens to Save Bois D'Arc Creek

Mailing Address: 703 W. Market St., Honey Grove, TX 75446
Phone: 903-378-3624 Fax 903-378-2871
Email: rushgator2112@yahoo.com

OPA HR

SEP 17 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, Glenn Lee, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

I have concerns regarding the quality of the water that will come from the proposed Lower Bois D'Arc Reservior. According to a reconnaissance study conducted by the U.S. Army Corps of Engineers (USACE) in 2000, "... the shallow nature of the reservoir would potentially pose water quality problems." As a result, the USACE eliminated the Lower Bois D'Arc Creek basin from further consideration as a reservoir site. The USACE used approximately $100,000 in U.S. taxpayer funds in Fiscal year 2000 to come to this conclusion. I understand that the proposed project is not a USACE lake. However, if the USACE is rejecting further consideration of a project due to projected poor quality, among other criteria, then I believe it is cause for concern.

I am also concerned about the use of Fannin County natural resources by an entity whose primary goal is to export our natural resources to their customers outside the area. Fannin County's biggest assets are our natural resources - timber, ranchland, water etc. I am concerned about the apparent lack of local control we will have over one of our most precious resources - our water. If I understand the plan correctly, NTMWD will impound our local water supply that currently flows freely down Bois D'Arc Creek into the Red River, and then they will decide how much to charge us for our own resource that they received for relatively free. This is not a good deal for Fannin County.

In conclusion, I believe that the results of this project will be for me, excessive water rates and poor water quality. This will affect the economy of Fannin County, and therefore, my standard of living.

Signature date 9/12/2007

MW

CITIZENS TO SAVE BOIS D' ARC CREEK
PO BOX 36
HONEY GROVE TX 75446

CERTIFIED MAIL™

7006 2150 0004 0481 1159

UNITED STATES POSTAL SERVICE

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Austin, TX 78711-3087

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RETURN RECEIPT REQUESTED

78711$3087 2012

TCEQ Public Meeting Form

Tuesday, September 11, 2007

(11)

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Glenn Lee

Address: 703 W Market St.

City/State: Honey Grove TX **Zip:** 75446

Phone: (903) 378 3624

☒ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☒ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**
(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

M.A.

WR 36919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 10 AM 11:25

CHIEF CLERKS OFFICE

OPA

SEP 10 2007

BY

Contested Case Hearing Request

Name: Maeta Lee Group Name: Citizens to Save Bois D' Arc Creek

Mailing Address: 703 W Market St, Honey Grove TX, 75446
Phone: 903-378-7300 Fax: 903-378-2871
Email: maetalee@yahoo.com

Applicant & Permit Number: NTMWD permit number 12151

I, Maeta Lee, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

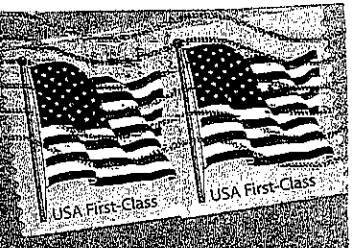
The Lower Bois D' Arc reservoir would be a bad deal for Fannin County. NTMWD would own all of the water rights. Fannin County has no rights to the water in the reservoir. They would have to buy it from NTMWD. Fannin County will lose valuable farmland, and part of their tax base. NTMWD will not take care of the shore line, that will be up to Fannin County. Fannin County should at least retain 50% of the water rights to the reservoir since it is in the county and taking up the county's land.

Also the Army Corps of Engineers (Tulsa District) did a study on the Bois D' Arc Basin in 2000. The title of the Study Bois D' Arc Basin Section 905(b) (WRDA 86) Analysis. "(b) Reservoir sites located at lower river miles 23.5, 24.8, and 28.6 were dropped from further consideration in the reconnaissance phase. Reservoir sites in the lower portion of the basin were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the Lower Bois D' Arc Creek Basin. The best location for a reservoir in the lower portion of the basin, at river mile 23.5 (Coffey Mill site), would inundate an existing Forest Service lake and significant wetland areas. In addition, the shallow nature of the reservoir would potentially pose water quality problems."

date 9-7-07

Signature

Citizens to Save Bois D Arc Creek
PO Box 36
Honey Grove Tx 75446



Office of the Chief Clerk, TCEQ MC 105
PO Box 13087
Austin Tx 78711-3087

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WR 56919

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 PM 4:10
CHIEF CLERKS OFFICE

Name: Scott Lipsett Group Name: CORE "Citizens Organized for Resources and Environment"

Mailing Address: P.O. Box 121 Randolph TX (President)

Phone: 903-640-3868 Fax 75475

Email:

1/ OPA

SEP 14 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

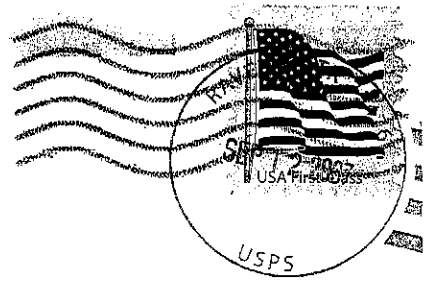
I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

The water rights will not belong to the city of Bonham. Approximately one half of the reservoirs water will be piped to Lake Lavon. Bonham is the only major town I'm close to and do my business. If this Reservoir happens, my friends and acquaintances will no longer reside in this area for me to visit and explore this area which is rich in history. Only now is this heritage being uncovered as I get to know the landowners, many of whom have lived their whole lives in the Bois D'Arc Bottoms. Once these irreplacable vegetation and hardwoods are covered in water then I'm surely effected by the loss of the beauty they present. And the trees, they are also helping to keep our Air Quality relatively clean compared to glowing sprawl of cities. Wilderness areas such as the Bois D'arc bottom are the last remaining lungs for breathing created by nature. I predict in the near future our next big crisis will be the air we breath!!

Scott Lipsett date 9/12/07
Signature

Scott Lippett
P.O. Box 121
Randolph Ty. 75475

NORTH TEXAS RPDC
TX 750 6 T
12 SEP 2007 PM



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7

TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Scott Lipsett

Address: P.O. Box 121

City/State: Randolph TX. **Zip:** 75475

Phone: (903) 640 3868

☐ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☑ Yes ☐ No

If yes, which one? CORE

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☑ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

WR 56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 10 AM 11:25

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: Gordon Locke Group Name: Citizens to Save Bois

Mailing Address: 13849 E FM 1396 Windom TX 75492

Phone: Fax

Email: locke@fanninelectric.com

OPA

H SEP 10 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, Gordon Locke, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

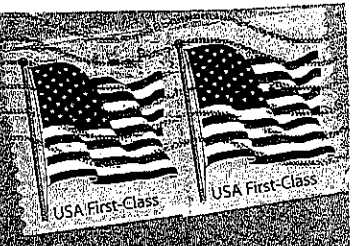
The Army Corps of Engineers, Tulsa District made a study of the area as a proposed lake site. According to the study 905(b)(WRDA86) for the Bois d' Arc Basin, the site was rejected for several reasons. Among the other reasons was that the shallow nature of the reservoir would create the possibility for poor water quality.

North Texas Municipal Water District has applied for a permit to, yearly, draw up to 175,000 acre feet. That;s every year, regardless if we have had decent rains or not. If , according to a study by R.J.Brandes Company entitled Elevation-Area-Capacity Relationship for Lower Bois d'Arc Reservoir figure 3.4.7-2,they draw only 165,000 acre feet that is enough to create a 4800 acre mudflat. That is lost acreage, not holding water nor usable for anything else.

Gordon Locke date 9/7/07

Signature

Citizens to Save Bois D Arc Creek
PO Box 36
Honey Grove Tx 75446



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Austin Tx 78711-3087

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP 10 AM 11:25

CHIEF CLERKS OFFICE

Name: Lem Locke Group Name: Citizens of Bois d'Arc Creek

Mailing Address: 13849 E FM1396, Windom, TX 75492
Phone: 903-378-2440 Fax
Email:

OPA

H SEP 10 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, L.R. Locke, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

As a long time property owner within the designated lake area, I have first hand knowledge of the adverse results the proposed lake would cause - such as:

1. Loss of the thousands of acres of the most productive agricultural land in this County.

2. The destruction of the natural habitat for numerous wildlife we have had in this area these many years.

3. The needless destruction and loss of valuable native timber that is in abundance in this area.

4. The extreme hardships that would be placed on the many displaced property owners - with little or no benefits from the water accumulated.

5. The proposed lake site is an undesirable location relative to the excessive acreage involved will not (for many reasons) provide comparable water supply - along with the excessive harmfull reaction to the overall environment.

L.R. Locke date 9-7-07
Signature

WR 3919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 AUG 27 PM 2:36

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: John Loschke Group Name: _____

Mailing Address: 874 CR 2750 Honey Grove TX 75446
Phone: 903-378-7116
Email: SFloschke@ATT.net

OPA

H AUG 28 2007

BY _____

Applicant & Permit number: NTMWD Permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

My concern with the reservoir water is that, this area is concentrated with large earthworms one foot long or more as adults. When the lake kills them being underground at perhaps 1000 lbs per acre it will take years for them to completely disintegrate.

When you add chlorine to treat the water for Bacteria you form Trichloromethane "$CHCl_3$" a deadly cancer causing agent. The EPA is considering extensive revisions to how much of all disinfection by-products are allowed in drinking water.

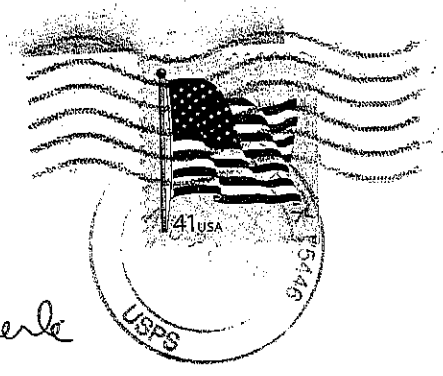
This needs to be studied to make sure you can use the water for drinking.

Signature: John Loschke date 8-23-07

MW

Mr. John Loschke
874 County Road 2750
Honey Grove, TX 75446-5202

NORTH TEXAS P&DC
TX 750 1 T
24 AUG 2007 PM



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MC 105
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P.O. Box 13087
Austin, TX 78711-3087

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78711-3087

WR
5619

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 AM 10:10

CHIEF CLERKS OFFICE

Name: Cathy J. Nelson Group Name: CORE

Mailing Address: 3385 E. Hwy 56 Dodd City, TX 75438
Phone: (903) 583-4951 Fax
Email: cathynelson@yahoo.com

H OPA

SEP 14 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

Our county is proposed to be used as a source of water for the neighboring counties. The Bois D'Arc lake project should not be in the permitting stage until all impact studies have been completed and reported on. The amount and location of mitigated land is not known. This could effect any land owner in the Bois D'Arc drainage area.

Texas old growth bottom land hardwoods are becoming extinct in North Texas. Much of the wild life habitat and agriculture land in North Texas is disappearing at an alarming rate. The hardwood forests and prairies in the Bois D'Arc Creek drainage area provide most of the wild life habitat in Fannin County. The fields that are in production in this bottom land provide much of the food supply for the wild life. This produces income from both hunting and agriculture for the landowners. Many of the families own land that has been in their families possesion for over a century. These families still depend upon this land for their income and families well being.

There are two closed landfills that border Sloans Creek within a mile of the proposed Bois D'Arc lake site. The City of Bonham's Landfill was operated approximately 15 years. The James Hamilton private landfill was operated over 30 years. Water Samples were taken from the site of the Bonham City Landfill on County Road 2935. The results show the presence of many heavy metals that are above EPA acceptable levels. Both of these sites need to be inspected and tested by TCEQ before the permitting process of the proposed Lower Bois D'Arc Reservior continues. The Texas Private Property Protection Act is being violated by NTMWD with the building of this reservior.

Cathy J Nelson date 9-11-07
Signature

mw

Cathy Melson
3385 E. Hwy 56
Wodd City, TX 75438

TX 750 6 T
12 SEP 2007 PM

USA 41

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

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RB

78711+3087

(6)

TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Cathy Melson

Address: 3385 E. HWY 56

City/State: Dodd City, TX **Zip:** 75438

Phone: (903) 449-1511

☑ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☑ **Yes** ☐ **No**

If yes, which one? CURE

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

WR 5b919

Contested Case Hearing Request

Name: Ellen Melson Group Name: CORE (Citizens Organizing for Resources & Environment)

Mailing Address: 3385 E. State Hwy 56, Dodd City, Fannin County, TX 75438

Phone: 903-583-4951 Fax: 903-583-4951

Email: sloanscreekfarm@netexas.net

HR OPA
SEP 19 2007
BY

CHIEF CLERKS OFFICE
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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: **NTMWD (North Texas Municipal Water District) Application # 12151 to build a dam on Lower Bois d' Arc Creek**

I want to request a contested case hearing on the project to build a dam on Lower Bois d'Arc Creek because:

I am a landowner, farmer/rancher whose farm is located on Sloans Creek, a tributary of Bois d' Arc Creek, about 2 miles upstream of the Proposed Lower Bois d' Arc Creek Reservoir. My land and livelihood could be significantly impacted and possibly lost to the building of this approximately 16,450 acre conservation pool reservoir with an approximate 4,500 acre flood pool and its approximate 1.8 times the conservation pool or approximately 30,000 acres for mitigation, still yet to be determined. I'm also concerned that this reservoir will have major negative impact on flooding our very productive Sloans Creek Bottom-land grazing and hay fields. I believe that this reservoir is particularly unnecessary since NTMWD has numerous other water resources that can be tapped if the infrastructure (i.e. pipelines) were built as well as NTMWD doesn't seem to have demonstrated the highest and best level of conservation measures as required by the Texas Private Property Rights Protection Act. I am also concerned with fair landowner compensation and affects on the Fannin County tax base, neither of which have been openly and equitably addressed by the NTMWD or other agencies involved. The "I'm not sure" or "We don't know yet" or "It will be properly handled" are not adequate responses for myself and other county residents who stand to be heavily impacted by this proposed reservoir. I believe that it needs to be brought to some agencies attention that at least 4 municipal sewage systems will discharge into the proposed reservoir, and that the now closed City of Bonham Landfill on County Road 2935 leaches and drains into Sloans Creek approximately 1.5 miles upstream of the proposed reservoir site. I am concerned about this site polluting the water supply in Sloans Creek, and thus polluting the proposed reservoir. I believe that a contested case hearing is the only avenue left that Fannin County citizens can get these concerns addressed and get truthful and evidence backed answers to our questions. So I, Ellen Melson, request a contested case hearing on NTMWD permit number 12151.

Signature: Ellen Melson Date: 9/13/07

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Public Notice Response and Environmental Impact Statement (EIS) Request

Name: Ellen Melson Group Name: Citizens to Save Bois d' Arc Creek

Mailing Address: 3385 E. State Hwy 56, Dodd City, Fannin County, TX 75438

Phone: 903-583-4951 Fax: 903-583-4951

Email: sloanscreekfarm@netexas.net

WR 5b919

Applicant & Permit Number: NTMWD (North Texas Municipal Water District) Application # 12151 to build a dam on Lower Bois d' Arc Creek

U.S. Army Corps of Engineers, Tulsa District Public Notice No. SWT-0-14659

I want to request a Environmental Impact Statement (EIS) on the project to build a dam on Lower Bois d'Arc Creek because:

> I am a landowner, farmer/rancher whose farm is located on Sloans Creek, a tributary of Bois d' Arc Creek, about 2 miles upstream of the Proposed Lower Bois d' Arc Creek Reservoir. My land and livelihood could be significantly impacted and possibly lost to the building of this reservoir. It is projected to cover over and ruin 16,526 acres of prime timber, crop, and ranch land. Also, 5,574 acres will be obtained for the flood pool.[1] As a result, 22,100 will be destroyed or rendered unusable for terrestrial wildlife and agricultural purposes by the reservoir. Also, its approximate 1.8 times the conservation pool or approximately 30,000 acres for mitigation, still yet to be determined, raises many questions and concerns. I believe a project of this magnitude justifies an Environmental Impact Statement as necessary to address the major issues facing the citizens of Fannin County, Texas.

> The probability that this reservoir will have major negative impact on flooding our very productive Sloans Creek Bottom-land grazing and hay fields.

> The possibility that this reservoir is particularly unnecessary since NTMWD has numerous other water resources that can be tapped if the infrastructure (i.e. pipelines, pump stations, etc.) were built.

> NTMWD doesn't seem to have demonstrated the highest and best level of conservation measures as required by the Texas Private Property Rights Protection Act. Per capita use of water in the NTMWD service area near Dallas, Tx is around 260 gal/day, while Austin, TX is at 200 gal/day and San Antonio, TX is around 130 gal/day. If Austin and San Antonio have much lower per capita water usage, how can NTMWD be practicing the highest and best level of conservation measures as required by the Texas Private Property Rights Protection Act. Why is this the case?

> I am also concerned with fair landowner compensation and affects on the Fannin County tax base, neither of which have been openly and equitably addressed by the NTMWD or other agencies involved. The "I'm not sure" or "We don't know yet" or "It will be properly handled" are not adequate re-

[1] NTMWD informational pamphlet "Land for a New Reservoir"

sponses for myself and other county residents who stand to be heavily impacted by this proposed reservoir. I believe all land impacted by the reservoir project, the pipelines proposed, or the resulting mitigation lands must be identified and negotiated in-good-faith between the landowners and NTMWD before construction of the project can begin. In the event this project is actually begun, I believe that all landowners displaced by any of the reservoir activities or associated activities should have their relocation costs of all property and personal affects covered by NTMWD, outside of the land purchase price.

> I believe that it needs to be brought to the regulating agencies attention that at least 2 municipal sewage systems will discharge into the proposed reservoir, and that the now closed City of Bonham Landfill on County Road 2935 leaches and drains into Sloans Creek approximately 1.5 miles upstream of the proposed reservoir site. I am concerned about this site polluting the water supply in Sloans Creek, and thus polluting the proposed reservoir.

> It concerns me that this project will displace hundreds of people, many from family farms and ranches that have been in the same family for over 140 years. Homes, farms, churches, cemeteries, and historical sites will be destroyed. Projected impact on rural and agricultural areas will be high.[2]

> It concerns me that this reservoir could have a huge negative impact on the agriculturally based local economy. With over 52,000 acres of land out of production, local crop and beef production will plummet. Agricultural revenues will shrink, supporting businesses will fail, and the population will decrease. With no new large industries coming to the area in the foreseeable future to take the place of lost farm and ranch jobs, unemployment will swell. In addition to those already forced to leave due to the loss of their land, many will be forced to leave the area to find work, resulting in further population decreases. Fannin County will be caught in a downward spiral of failing businesses, high unemployment, and shrinking population. Some suggest that the landowners affected will relocate to other areas of the county, but not if like-kind land is unavailable there to support their agricultural or wildlife enterprises.

> It is concerns me that this project will displace wildlife from the flooded area where they will have to compete for habitat in the mitigated land with existing wildlife. Species that had 52,000 acres as their habitat will have their habitats reduced to the 30,000 acres of mitigated land. This will affect hundreds of species, some of them threatened such as the eastern black bear. Projected impact on the environment is medium high.[3]

> It concerns me that property taxes for the remaining residents will skyrocket. The cost of running the county will not appreciably decrease. However, the tax base will be negatively impacted when 52,000 acres of farms, ranches, and residences are removed from the tax rolls. The remaining people will have to shoulder the burden, or will be forced to relocate to an area with a lower cost of living. Fannin County would also no longer be looked at favorably as a retirement location as it is now.

> It concerns me that Bois D'Arc Creek is an ill suited site for a reservoir. The fall of Bois D'Arc Creek bottom is on average 3.5 feet per mile moving from the southwest to the northeast. As a result, a 20

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[2] 2006 Region C Water Plan, Table 4D.2

[3] 2006 Region C Water Plan, Table 4D.2

foot drop in the lake level would result in the western shore receding 5.7 miles. A 20 foot drop in lake level during a dry summer would not be uncommon. As recently as December 28, 2006, Cooper Lake was 18 feet below conservation pool level[4]. I have no reason to believe that the Bois D'Arc Reservoir would be any different. North Texas Municipal Water District has projected 3,200 new waterfront and near waterfront homes to be constructed in 30 years.[5] The problem will be attracting 3,200 people to buy these homes that are located on a 5.7 mile long mud flat. Any structure that is built above the 100 year flood buffer zone as required, will very rarely, if ever, be in sight of anything resembling a lake. In reality, very few of these homes will ever be built, and the economic benefits never realized due to the poor quality of the reservoir. Also, the impacts on the Bois d'Arc Creek flood-plain and water flows have not been adequately addressed!

I believe that a Environmental Impact Statement for this project is justified and should be completed to address the numerous concerns that I have listed above as well as those other people concerned about this project are submitting. Fannin County citizens are owed the explanations and information that only an Environmental Impact Statement can provide. When someone is proposing a removal of some 20,000 to possibly 50,000 acres from the tax rolls and out of private land management, all proper procedures and analysis must be done. I personally believe that private land ownership is managed better, in general, than public land ownership, and definitely contributes much more to the local economy. I would hope that an EIS can get these concerns addressed and get truthful and evidence backed answers to our questions. So I, Ellen Melson, request a Environmental Impact Statement on NTMWD permit number 12151 and US Army Corps of Engineers Public Notice Number SWT-0-14659.

Signature: Ellen Melson Date: 11/11/08

[4] Fort Worth District Corps of Engineers Reservoir Report for 12/28/2006

[5] NTMWD informational pamphlet "Positive Economic Growth"

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Contested Case Hearing Request

Name: Nathan Melson Group Name: CORE (Citizens Organizing for Resources & Environment)

Mailing Address: 3385 E. State Hwy 56, Dodd City, Fannin County, TX 75438

Phone: 903-583-4951 Fax: 903-583-4951

Email: sloanscreekfarm@netexas.net

HR OPA
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BY

CHIEF CLERKS OFFICE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: **NTMWD (North Texas Municipal Water District) Application # 12151 to build a dam on Lower Bois d' Arc Creek**

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tention of TCEQ and the other agencies the 2005 letter that Dr. Larry McKinney of TP&WD sent to NTMWD stating their current recommendations on several Reservoirs including the proposed Lower Bois d' Arc Creek Reservoir. I am attaching a copy to this hearing request, and I completely agree with this letter in that the proposed Lower Bois d' Arc Creek Reservoir is not needed to meet NTMWD's water demand if other strategies were implemented (In fact, the Proposed Lower Bois d' Arc Creek, Fastrill, Marvin Nichols, and Ralph Hall Reservoirs would provide 800,000 acre/ft more water than NTMWD will need according to their own figures.) and it would destroy prime, and irreplaceable natural resources and wildlife habitat in Fannin County. Also, I am concerned that specific species of rare and/or endangered plants, animals, and habitat might be destroyed negatively affecting our county's nature tourism, wildlife tourism, and hunting. I am also enclosing a list of questions that I would like addressed by someone at the TCEQ agency. The reasons stated here, the unanswered questions on the reservoir, mitigation land, fair landowner compensation, other project impacts, and the obvious recommendations by several agencies including Texas Parks & Wildlife Department, the U.S. Army Corps of Engineers, and the U.S. Fish & Wildlife Services that the Proposed Lower Bois d' Arc Creek Reservoir is just a bad idea are why I, Nathan Melson, request a contested case hearing on NTMWD permit number 12151. Please see attached.

Signature: Nathan P. Melson Date: 9/13/07

Nathan Melson, 3385 E. State Hwy 56, Dodd City, TX 75438 **Public Hearing Questions**

1) TCEQ -- Has the environmental impact study been completed on this project?

When is it scheduled to be completed?

2) NTMWD-- How did the City of Bonham decide that having an agreement with NTMWD for a water treatment plant gave authority to build a lake in Fannin County, outside the city limits of Bonham?

3) NTMWD-- Why did the Fannin County Commisioners Court pass a resolution to support the permitting and construction of this lake almost 2.5 years ago on March 28, 2005 with little notice and without consulting their constituents in this county?

4) TCEQ--- According to Ducks Unlimited this project will ha a large negative impact on waterfowl and waterfowl hunting in Fannin Co., and it will flood at least 4 DU wetlands projects causing a large loss to DU funded programs in the county. Has a study beed done to show the impacts of this project on wildlife?

Where will all the wildlife of which Fannin Co. and Bois d' Arc bottom is known go from the 20,000 acre lake footprint?

Will there be a massive wildlife dieoff in store for Fannin Co. due to overcrowding on the habitat that is left?

5) TCEQ-- Who will have jurisdiction over Boid d' Arc Creek Drainage Zone for allowable levels of fertilizer, pesticide, siltation, effluent, herbicides, and sewer systems?

Will that still be locally controlled?

6)NTMWD-- How will this project be paid for?

Where is the money originating from?

Is there a better use of these dollars persuing current available water sources without taking people property and flooding it?

7) OPEN-- How many of you are home and/or property/business owners?

If someone where going to take your house or business and cover it up with water, then pay you what they, not you, think it is worth to replace, wouldn't you be at least concerned?

8)NTMWD-- Why is the gallons per capita per day use of water in the Metroplex projected to increase from approximately 238 gallons to 256 gallons when the state avg. is approximately 176 gallons, and how can that be classified as highest level of conservation measures according to the Texas Private Property Rights Preservation Act?

9) TCEQ-- Has the highest level of water conservation been defined? Yes or No, and Why or Why Not? If this hasn't been defined then how can we know if this reservoir is necessary or not?

10) NTMWD-- According to Mr. Gooch's presentation you will have to mitigate land at approximately 1.8 times the conservation pool of the reservoir, where will the projected 30,000 acres or more of mitigated land be?

How many more citizens of Fannin Co. will that impact?

How will that affect the Co. tax base?

11) TCEQ-- This procedure seems backwards-- Why isn't mitigation land identified along with the reservoir footprints at the start of the permitting process approximately 50,000 acres is a lot more people in this room affected than just the approximate 20,000 for the reservoir?

12) NTMWD-- At the meeting last night in Greenville it was said that the customers of NTMWD needs Fannin Co's water for a multitude of reason, but a main reason is for recreation and watering lawns in their service area. Should Fannin Co. citizens be expected to give up their land and livelihoods so that people can water their lawns wastefully? Don't you folks have to eat, wear clothes, and fuel your vehicles, before watering lawns?

13) NTMWD-- Are you currently persuing any other lake construction besides this one?

14) TCEQ or NTMWD-- Is there an Upper Bois d' Arc Reservoir in the current State Water Plan?

If so when and where will it likely be built?

Who would be building it?

15) TCEQ-- Are you aware that the Old Bonham City Landfill and the Private Hamilton Junkyard, both now closed, both drain into Sloans Creek which is a tributary of Bois d'Arc Creek? Explain the water sample here!!!

16) Why wasn't and announcement of this meeting sent in writing to the office of Cindy Loeffler at TPWD- Coastal & Water Resources division, since her division in Fresh Waters is one of the offices at TP&WD that you are supposed to be directly working with?

Why wasn't it published in the Fannin Co. Special, the Paper of Record for Fannin Co.?

17) NTMWD-- How will the reservoir not increase flooding above the dam when flow is restricted since Boid d' Arc Creek and many of its tributaries usually flash flood into the projected 100 year flood plain of your reservoir at least once a year?

18) TCEQ-- Has there been any studies done to show the effect of 9 inches of rain in a 12 hour period on this reservoir?

19) NTMWD-- Why is it that in a letter from TP&WD to NTMWD that they questioned your need for 20% more water than your projections say that you need in 2060, and that this amounted to 800,000 acre/ft per year of water or the combined sum of Lower Bois d'Arc, Fastrill, Marvin Nichols and Ralph Hall?

20) NTMWD-- How many landowners would be displaced by a water pipeline?

What is the projected cost of the reservoir?

What is the projected cost of the pipeline?

21) NTMWD-- Are your guaranteeing the total income for Fannin Co. will increase with this lake?

Will there be enough to replace the approximately 7.4 million dollar loss alone in Agricultural and Wildlife income?

If not are you prepared to replace it from your own funds?

22) NTMWD-- What percentage or amount of LBCR water will be available to Fannin Co.?

Will Fannin Co. be a member or a customer? Why?

23) NTMWD-- How many engineers does NTMWD employ?

How many lawyers?

25) TCEQ-- How many engineers does TCEQ employ for the entire state Water division?

How many lawyers does TCEQ employ for the entire state water division?

26) TCEQ-- Has TCEQ ever denied a permit for a reservoir? If so, when and why?

September 8, 2005

Mr. James M. Parks
RCWPG Chairman/Administrator
c/o NTMWD
P.O. Box 2408
Wylie, Texas 75098-2408

Dear Mr. Parks:

Thank you for the opportunity to review and comment on the 2005 Initially Prepared Regional Water Plan (IPP) for Region C. Texas Parks and Wildlife Department (TPWD) acknowledges the time, money and effort required to produce the regional water plan as mandated by Senate Bill 1 of the 75th Legislature. A number of positive steps have been taken since the first planning cycle to advance the issue of environmental protection. For example, the regional water planning groups were faced with a new requirement under 31 TAC §357.7(a)(8)(A), to perform a "quantitative reporting of environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico" when evaluating water management strategies. TPWD recognizes that each region's unique natural resources, water management strategies and funding limitations dictated the level of quantitative analysis for each regional plan. Nonetheless, TPWD feels strongly that quantification of environmental impacts is a critical step in planning for our state's future water needs while also protecting environmental resources.

TPWD staff has reviewed the IPP to determine if the following questions were addressed:

- Does the plan include a quantitative reporting of environmental factors including the effects on environmental water needs, habitat?
- Does the plan include a description of natural resources and threats to natural resources due to water quantity or quality problems?
- Does the plan discuss how these threats will be addressed?
- Does the plan describe how it is consistent with long-term protection of natural resources?
- Does the plan include water conservation as a water management strategy? Reuse?
- Does the plan recommend any stream segments be nominated as ecologically unique?
- If the plan includes strategies identified in the 2000 regional water plan, does it address concerns raised by TPWD at that time?

In general the Region C IPP does include a quantitative reporting of environmental factors including the effects on environmental water needs and habitat. The plan also includes a description of natural resources, threats to those natural resources due to water quantity or quality problems and discusses how those threats will be addressed. However, improvement can be made in reporting impacts associated with reservoir construction, including alterations of instream flows and the inundation of various habitats which both fish and wildlife depend on. The plan includes a description of how natural resources will be

protected in the long-term but is not as complete as is necessary for assessment needs. For areas in the Region where groundwater is the primary source of water supply, emphases should be placed on protecting springs that support fish and wildlife.

Region C is to be commended for including water conservation as a water management strategy. According to the IPP conservation within Region C can reduce municipal per capita use to less than 140 gpcd by 2020. The per capita use includes a credit for the water supply that comes from reuse. Even without crediting for reuse the Region is capable of reducing the pre capita municipal use to 140 gpcd. This will require an extensive education program to educate the end users but will also reduce the need for additional new reservoirs. TPWD encourages Region C to consider land stewardship (brush control/management) as an additional means of conserving water while also benefiting wildlife habitat.

It is disappointing that the plan does not recommend nomination of any stream segments as ecologically unique due to concerns regarding unintended consequences of designating a segment as ecologically unique. The primary concern voiced related to impacts to private property rights of landowners adjacent to a designated stream segment. The Region C plan does recommend unique sites for reservoir construction. A unique reservoir site would appear to have greater impacts associated with private landowner rights than an ecologically unique stream segment. Recommending stream segments as ecologically unique gives the regional water planning groups an opportunity to emphasize their commitment to planning for environmental water needs.

Many of TPWD's concerns identified in the 2000 regional water plan have been addressed. However, several concerns still remain. According to the Region C IPP "The total available supply of 4.05 million acre-feet per year in 2060 is about 20 percent greater than projected demand." That amounts to approximately 800,000 ac-ft extra supply or the equivalent sum total yield of Marvin Nichols, Lower Bois d'Arc, Fastrill and Ralph Hall reservoirs combined. New reservoirs, particularly in areas rich in bottomland hardwood forests, can represent a significant threat to the protection of the State's natural resources and should be considered carefully. Please be assured that TPWD will continue to work closely with the region to explore all possibilities to meet future water supply needs and assure the ecological health of the region's fish and wildlife resources.

Please see attached enclosure for additional specific comments and recommendations.

Sincerely,

Larry D. McKinney, Ph.D.
Director of Coastal Fisheries

LDM:CL:dh

Attachment

Attachment: Additional Specific Comments and Recommendations

Does the plan include a quantitative reporting of environmental factors including the effects on environmental water needs, habitat, etc.?
The Region C water plan includes some quantitative reporting of environmental factors associated with the recommended water management strategies. Table 4C.7 list the factors used to evaluate potentially feasible water management strategies and Appendix T summarizes the environmental evaluations which include quantitative reporting of acres impacted, wetland acres impacted, and number of threatened and endangered species. The plan includes 9 potentially feasible strategies for new reservoirs. Five of the new reservoirs (Marvin Nichols, Lower Bois d' Arc Creek, Fastrill, Ralph Hall, and Muenster) are recommended in the initially prepared plan and the remaining four reservoirs (George Parkhouse 1 & 2, Tehuacana, and Columbia) are in the plan as alternate strategies. This is a significant number of new reservoirs which will require more detailed information to quantify the environmental impacts. Appendix T is a start at reporting environmental impacts quantitatively. Considerably more work can be done to report impacts associated with reservoir construction, including alterations of instream flows and the inundation of various habitats which both fish and wildlife depend on. It will be important to report any limitations the planning groups has on reporting quantitative information for each recommended water management strategy.

Does the plan include a description of natural resources and threats to natural resources due to water quantity or quality problems?
Page 1.59 Agricultural and Natural Resources in Region C: It should be noted that springs can provide valuable habitat for fish and wildlife in the Region. Areas in the Region where groundwater is the primary source of water supply, emphases can be placed on protecting spring that support fish and wildlife. Page 1.65 State and Federal Natural Resource Holdings: This section lists many of the state and federal lands in Region C. These resources are important to the Region and nearly all have non-consumptive water uses, including recreation and fish and wildlife uses. This section can also be used to highlight the state and federal lands in neighboring regions especially Region D, due the dependence on East Texas surface water. Page 1.63 State and Federal Species of Special Concern in Region C: Please note that American peregrine falcon and black-footed ferret are no longer included as state species of concern for all counties in Region C. Similarly, the interior least tern is no longer included for Collin, Denton, Jack, and Rockwall counties.

Does the plan discuss how these threats will be addressed?
Page 1.69 Summary of Threats and Constraints to Water Supply in Region C: The last sentence of the first paragraph states "Constraints on the development of new supplies includes...challenges imposed by environmental concerns and permitting". Environmental concerns and permitting are necessary to protect many of Texas' natural resources. These elements should not be considered constraints to the development of new water supplies. Rather, environmental concerns and permitting should be considered as necessities.

Page 1.78 Water Related Threats to Agricultural and Natural Resources: Inundation of land due to reservoir development is a significant threat in Region C and in Region D. The return flows in the Trinity River may increase and enhance habitat in that reach. The impacts to the river basin the water is being pumped from should be considered also. Just as one river basin will have an increase in return flows another river basin will have a decrease in return flows.

Does the plan describe how it is consistent with long-term protection of natural resources?

Page 7.1 - Description of How the Regional Water Plan is Consistent with Long-Term Protection of the State's Water Resources, Agricultural Resources, and Natural Resources Water conservation, reuse, utilization of existing supplies will go a long way toward the protection of the State's resources. The water plan includes 9 new reservoirs, 4 of which are recommended strategies. The new reservoirs are the most significant threat toward the protection of the State's natural resources. It may be difficult to find quality land to mitigate for the priority bottomland hardwood habitat that exists at the proposed reservoir sites for Marvin Nichols and Fastrill Lake. Region C must also consider the protection of natural resources in Region D due to its dependence on out of region surface waters.

Does the plan include water conservation as a water management strategy? Reuse?

Conservation was a major strategy for the second round of planning with Region C reducing the municipal per capita use to less than 140 gpcd by 2020. The per capita use includes a credit for the water supply that comes from reuse. Although reuse will be one of the most important water management strategies, the Region is capable of reducing the pre capita municipal use to 140 gpcd without crediting for reuse. With the reuse credit it is feasible that the Region can reduce its municipal use below 100 gpcd by 2060. This will require an extensive education program to educate the end users but will also reduce the need for additional new reservoirs. TPW encourages Region C to consider land stewardship (brush control/management) as an additional means of conserving water while also benefiting wildlife habitat.

Does the plan recommend any ecologically unique stream segments?

Region C established a committee to review and recommend river and stream segments as ecologically unique. The committee recommended five stream segments for the planning group to consider. The planning group decided to not take action on any of the stream segments due to unanswered questions regarding unintended consequences of designating a segment as ecologically unique. The primary concern was impacts to private landowner right adjacent to a designated stream segment. The regional water planning groups have the task of recommending ecologically unique stream segments while the Legislature has the authority to designate a segment. The committee was able to decide on five streams that met the criteria of an Ecologically Unique Stream segment. Region C has the option of recommending the segments and using it as an opportunity for the Legislature to address the unanswered questions regarding the unintended consequences of designating a segment. It is interesting that 6 unique sites for reservoir construction are recommended without any of the same concerns regarding private landowner rights. A unique reservoir site would appear to have greater impacts associated with private landowner rights than an ecologically unique stream segment. Recommending stream segments as ecologically unique gives the regional water planning groups an opportunity to emphasize their commitment to planning for environmental water needs.

If the plan includes strategies identified in the 2000 regional water plan, does it address concerns raised at that time?

Comments for the Initially Prepared 2006 Region C Water Plan:

Page ES.9 – Recommended Water Management Strategies: The total available supply of 4.05 million acre-feet per year in 2060 is about 20 percent greater than the projected demand. The plan considers this a reasonable reserve to provide for future difficulties. There is a concern that this is excessive and could lead to the construction of new reservoirs without an actual need for the water. This type of planning has the consequence of removing valuable habitat important to fish and wildlife.

Page ES.11 - Recommended Water Management Strategies: Lake Fastrill is illustrated in the map with a supply of 112,100 acre-feet per year. The Texas State Railroad travels 25 miles between the Palestine and Rusk State Parks crossing over the Neches River at the Anderson and Cherokee County line. It appears the railroad is in the conservation pool of Lake Fastrill. In addition to the reservoir flooding valuable bottomland hardwood forests it would threaten the historic Texas State Railroad.

Page 1.14 Current Water Uses and Demand Centers in Region C There is one paragraph describing non-consumptive water uses. Detailed descriptions of each non-consumptive water use would be valuable information for planning for future water needs. This should also include non-consumptive uses outside of the planning region due to the Regions dependence on out of region surface water.

Page 4D.10 – Marvin Nichols Reservoir The proposed reservoir has moved upstream from its originally proposed location to reduce impacts to bottomland hardwoods. High quality bottomland hardwoods would still be inundated. Portions of TPWD's written comments for the 2001 Initial Prepared Water Plan continue to apply to the 2006 plan. "Proposed reservoir would inundate or otherwise impact downstream portions of a 94,252 acre tract identified by USFWS as a Priority 1 preservation site in the Texas Bottomland Hardwood Preservation Program (1985). This site contains habitat of high value to waterfowl and other wildlife. A reach of the Sulpher River downstream of the proposed site includes a wetland habitat mitigation area administered as the White Oak Creek WMA. These areas may be negatively impacted by altered flow regime as a result of reservoir operations. Construction of the proposed reservoir would eliminate or reduce habitat for six state-threatened, flow-dependant fish species: the creek chubsucker, western sand darter, blue sucker, blackside darter, paddlefish, and shovelnose sturgeon as well as several other species of aquatic and terrestrial animals." The Region D 2006 initial prepared plan documents no immediate or long-range need for yield from this proposed project within that region.

Page 4D.12 – Wright Patman Lake - Conversion of Flood Storage to Conservation Storage: Increasing the storage capacity of existing reservoirs is preferred over creating a new reservoir to meet future water supply demands. As operating Jim Chapman and Wright Patman Lake as a system operation become a reality it will be important to study how this may alter instream flows between the reservoirs. TPWD manages the White Oak Creek WMA and is interest on how the system operation and conversion of flood storage to conservation storage may influence how the WMA is managed.

Page 4D.17 – Lower Bois d'Arc Creek Reservoir: Portions of TPWD's written comments for the 2001 Initial Prepared Water Plan continue to apply to the 2006 plan. "The Proposed reservoir would inundate a 3,911 acre tract identified by USFWS as a Priority 4 preservation site in the Texas Bottomland Hardwood

Preservation Program (1985). This site contains habitat of high value to wildlife. Reservoir may negatively impact adjacent downstream Bois d'Arc Unit of the Caddo National Grasslands (13,370 ac.), which is managed by TPWD as the Caddo National Grasslands WMA.

Additionally, Bois d'Arc Creek from its headwaters in eastern Grayson County to its confluence with the Red River in Fannin County represents a valuable riparian conservation area. The proposed reservoir would inundate about 25% of this stream's length, and the downstream portion may be negatively impacted by altered flow regime as a result of reservoir operations."

Page 4D.18 - Lake Fastrill: The proposed reservoir would inundate portions of a Priority 1 bottomland hardwood site and a potential federal wildlife refuge. Several species of concern would be impacted. The threatened or endangered species include the paddle fish, creek chubsucker, blue sucker and the Neches River rose-mallow. The Texas State Railroad travels 25 miles between the Palestine and Rusk State Parks crossing over the Neches River at the Anderson and Cherokee County line. It appears the railroad is in the conservation pool of Lake Fastrill. In addition to the reservoir flooding valuable bottomland hardwood forests it would threaten the historic Texas State Railroad.

Page 5.1 – Impacts of Recommended Water Management Strategies: As more water is imported to Region C through interbasin transfers, care should be taken on what water quality is allowed to be pumped to the region. The water plan contains strategies that will import Brazos River, Red River, Sulphur River and Sabine River water into surface water of the Trinity River. Both the Red River and Brazos River basins have had toxic golden algal (prymnesium parvum) blooms which cause periodic fish kill. There are documented fish kills where golden alga free surface waters received water contaminated with golden alga which later resulted in a fish kill and a sustainable population of golden alga.

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Nathan Melson
3385 E. State Hwy 56
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TO: (PLEASE PRINT) PHONE ( )

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OPA

NOV 12 2008

Public Notice Response and Environmental Impact Statement (EIS) Request

Name: Nathan Melson Group Name: Citizens to Save Bois d' Arc Creek

Mailing Address: 3385 E. State Hwy 56, Dodd City, Fannin County, TX 75438

Phone: 903-583-4951 Fax: 903-583-4951

Email: sloanscreekfarm@netexas.net

WR 5099

RECEIVED
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OFFICE OF PUBLIC ASSISTANCE

CHIEF CLERKS OFFICE
2008 NOV 13 AM 9:28
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: NTMWD (North Texas Municipal Water District) Application # 12151 to build a dam on Lower Bois d' Arc Creek

U.S. Army Corps of Engineers, Tulsa District Public Notice No. SWT-0-14659

I want to request a Environmental Impact Statement (EIS) on the project to build a dam on Lower Bois d'Arc Creek because:

> I am a landowner, farmer/rancher whose farm is located on Sloans Creek, a tributary of Bois d' Arc Creek, about 2 miles upstream of the Proposed Lower Bois d' Arc Creek Reservoir. My land and livelihood could be significantly impacted and possibly lost to the building of this reservoir. It is projected to cover over and ruin 16,526 acres of prime timber, crop, and ranch land. Also, 5,574 acres will be obtained for the flood pool.[1] As a result, 22,100 will be destroyed or rendered unusable for terrestrial wildlife and agricultural purposes by the reservoir. Also, its approximate 1.8 times the conservation pool or approximately 30,000 acres for mitigation, still yet to be determined, raises many questions and concerns. I believe a project of this magnitude justifies an Environmental Impact Statement as necessary to address the major issues facing the citizens of Fannin County, Texas.

> The probability that this reservoir will have major negative impact on flooding our very productive Sloans Creek Bottom-land grazing and hay fields.

> The possibility that this reservoir is particularly unnecessary since NTMWD has numerous other water resources that can be tapped if the infrastructure (i.e. pipelines, pump stations, etc.) were built.

> NTMWD doesn't seem to have demonstrated the highest and best level of conservation measures as required by the Texas Private Property Rights Protection Act. Per capita use of water in the NTMWD service area near Dallas, Tx is around 260 gal/day, while Austin, TX is at 200 gal/day and San Antonio, TX is around 130 gal/day. If Austin and San Antonio have much lower per capita water usage, how can NTMWD be practicing the highest and best level of conservation measures as required by the Texas Private Property Rights Protection Act. Why is this the case?

> I am also concerned with fair landowner compensation and affects on the Fannin County tax base, neither of which have been openly and equitably addressed by the NTMWD or other agencies involved. The "I'm not sure" or "We don't know yet" or "It will be properly handled" are not adequate re-

[1] NTMWD informational pamphlet "Land for a New Reservoir"

sponses for myself and other county residents who stand to be heavily impacted by this proposed reservoir. I believe all land impacted by the reservoir project, the pipelines proposed, or the resulting mitigation lands must be identified and negotiated in-good-faith between the landowners and NTMWD before construction of the project can begin. In the event this project is actually begun, I believe that all landowners displaced by any of the reservoir activities or associated activities should have their relocation costs of all property and personal affects covered by NTMWD, outside of the land purchase price.

> I believe that it needs to be brought to the regulating agencies attention that at least 2 municipal sewage systems will discharge into the proposed reservoir, and that the now closed City of Bonham Landfill on County Road 2935 leaches and drains into Sloans Creek approximately 1.5 miles up-stream of the proposed reservoir site. I am concerned about this site polluting the water supply in Sloans Creek, and thus polluting the proposed reservoir.

> It concerns me that this project will displace hundreds of people, many from family farms and ranches that have been in the same family for over 140 years. Homes, farms, churches, cemeteries, and historical sites will be destroyed. Projected impact on rural and agricultural areas will be high.[2]

> It concerns me that this reservoir could have a huge negative impact on the agriculturally based local economy. With over 52,000 acres of land out of production, local crop and beef production will plummet. Agricultural revenues will shrink, supporting businesses will fail, and the population will decrease. With no new large industries coming to the area in the foreseeable future to take the place of lost farm and ranch jobs, unemployment will swell. In addition to those already forced to leave due to the loss of their land, many will be forced to leave the area to find work, resulting in further population decreases. Fannin County will be caught in a downward spiral of failing businesses, high unemployment, and shrinking population. Some suggest that the landowners affected will relocate to other areas of the county, but not if like-kind land is unavailable there to support their agricultural or wildlife enterprises.

> It is concerns me that this project will displace wildlife from the flooded area where they will have to compete for habitat in the mitigated land with existing wildlife. Species that had 52,000 acres as their habitat will have their habitats reduced to the 30,000 acres of mitigated land. This will affect hundreds of species, some of them threatened such as the eastern black bear. Projected impact on the environment is medium high.[3]

> It concerns me that property taxes for the remaining residents will skyrocket. The cost of running the county will not appreciably decrease. However, the tax base will be negatively impacted when 52,000 acres of farms, ranches, and residences are removed from the tax rolls. The remaining people will have to shoulder the burden, or will be forced to relocate to an area with a lower cost of living. Fannin County would also no longer be looked at favorably as a retirement location as it is now.

> It concerns me that Bois D'Arc Creek is an ill suited site for a reservoir. The fall of Bois D'Arc Creek bottom is on average 3.5 feet per mile moving from the southwest to the northeast. As a result, a 20

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[2] 2006 Region C Water Plan, Table 4D.2

[3] 2006 Region C Water Plan, Table 4D.2

foot drop in the lake level would result in the western shore receding 5.7 miles. A 20 foot drop in lake level during a dry summer would not be uncommon. As recently as December 28, 2006, Cooper Lake was 18 feet below conservation pool level[4]. I have no reason to believe that the Bois D'Arc Reservoir would be any different. North Texas Municipal Water District has projected 3,200 new waterfront and near waterfront homes to be constructed in 30 years.[5] The problem will be attracting 3,200 people to buy these homes that are located on a 5.7 mile long mud flat. Any structure that is built above the 100 year flood buffer zone as required, will very rarely, if ever, be in sight of anything resembling a lake. In reality, very few of these homes will ever be built, and the economic benefits never realized due to the poor quality of the reservoir. Also, the impacts on the Bois d'Arc Creek flood-plain and water flows have not been adequately addressed!

I believe that a Environmental Impact Statement for this project is justified and should be completed to address the numerous concerns that I have listed above as well as those other people concerned about this project are submitting. Fannin County citizens are owed the explanations and information that only an Environmental Impact Statement can provide. When someone is proposing a removal of some 20,000 to possibly 50,000 acres from the tax rolls and out of private land management, all proper procedures and analysis must be done. I personally believe that private land ownership is managed better, in general, than public land ownership, and definitely contributes much more to the local economy. I would hope that an EIS can get these concerns addressed and get truthful and evidence backed answers to our questions. So I, Nathan Melson, request a Environmental Impact Statement on NTMWD permit number 12151 and US Army Corps of Engineers Public Notice Number SWT-0-14659.

Signature: Nathan B Melson Date: 11/11/08

[4] Fort Worth District Corps of Engineers Reservoir Report for 12/28/2006

[5] NTMWD informational pamphlet "Positive Economic Growth"

Public Notice

U.S. Army Corps of Engineers
Tulsa District

Reply To:

U.S. Army Corps of Engineers
ATTN: Regulatory Office
1645 South 101st East Avenue
Tulsa, OK 74128-4609

SWT-0-14659
Public Notice No.

October 14, 2008
Public Notice Date

November 12, 2008
Expiration Date

PURPOSE
The purpose of this public notice is to inform you of a proposal for work in which you might be interested and to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest.

SECTION 10
The U.S. Army Corps of Engineers is directed by Congress through Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) to regulate all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States. The intent of this law is to protect the navigable capacity of waters important to interstate commerce.

SECTION 404
The U.S. Army Corps of Engineers is directed by Congress through Section 404 of the Clean Water Act (33 USC 1344) to regulate the discharges of dredged and fill material into all waters of the United States. These waters include lakes, rivers, streams, mudflats, sandflats, sloughs, wet meadows, natural ponds, and wetlands adjacent to other waters. The intent of the law is to protect these waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical, and biological integrity.

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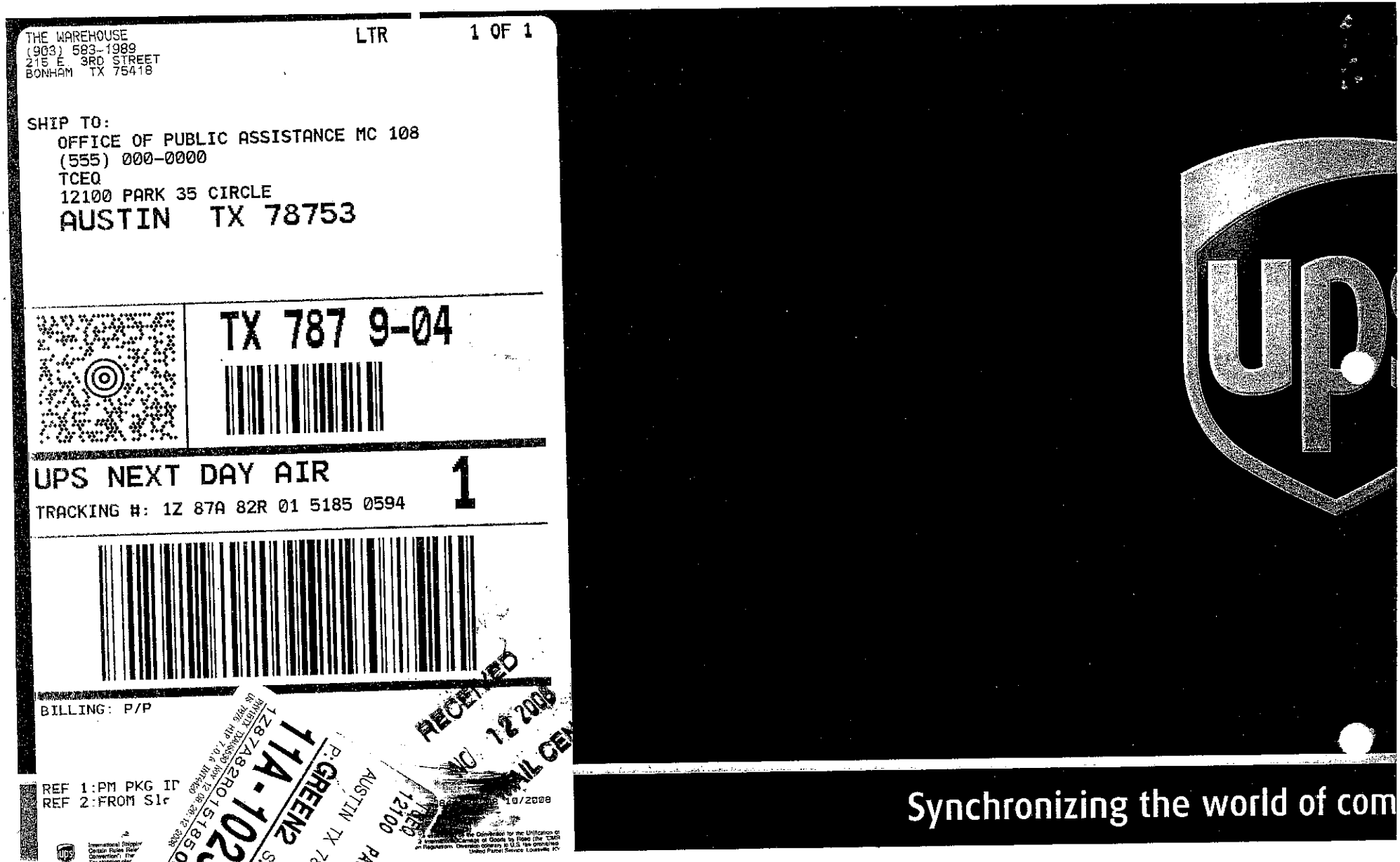
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TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT: Melson

Name: Nathan B. Melson

Address: 3385 E. State Hwy 56

City/State: Dodd City, TX **Zip:** 75438

Phone: (903) 583-4951

☒ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☒ Yes ☐ No

If yes, which one? CORE

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☒ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

I, Nathan Melson, am submitting this letter from TP&WD for TCEQ consideration.
Nathan Melson 9/11

September 8, 2005

OPA RECEIVED
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AT PUBLIC MEETING

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
SEP 12 PM 3:33
CHIEF CLERKS OFFICE

Mr. James M. Parks
RCWPG Chairman/Administrator
c/o NTMWD
P.O. Box 2408
Wylie, Texas 75098-2408

Dear Mr. Parks:

Thank you for the opportunity to review and comment on the 2005 Initially Prepared Regional Water Plan (IPP) for Region C. Texas Parks and Wildlife Department (TPWD) acknowledges the time, money and effort required to produce the regional water plan as mandated by Senate Bill 1 of the 75th Legislature. A number of positive steps have been taken since the first planning cycle to advance the issue of environmental protection. For example, the regional water planning groups were faced with a new requirement under 31 TAC §357.7(a)(8)(A), to perform a "quantitative reporting of environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico" when evaluating water management strategies. TPWD recognizes that each region's unique natural resources, water management strategies and funding limitations dictated the level of quantitative analysis for each regional plan. Nonetheless, TPWD feels strongly that quantification of environmental impacts is a critical step in planning for our state's future water needs while also protecting environmental resources.

TPWD staff has reviewed the IPP to determine if the following questions were addressed:

- Does the plan include a quantitative reporting of environmental factors including the effects on environmental water needs, habitat?
- Does the plan include a description of natural resources and threats to natural resources due to water quantity or quality problems?
- Does the plan discuss how these threats will be addressed?
- Does the plan describe how it is consistent with long-term protection of natural resources?
- Does the plan include water conservation as a water management strategy? Reuse?
- Does the plan recommend any stream segments be nominated as ecologically unique?
- If the plan includes strategies identified in the 2000 regional water plan, does it address concerns raised by TPWD at that time?

In general the Region C IPP does include a quantitative reporting of environmental factors including the effects on environmental water needs and habitat. The plan also includes a description of natural resources, threats to those natural resources due to water quantity or quality problems and discusses how those threats will be addressed. However, improvement can be made in reporting impacts associated with reservoir construction, including alterations of instream flows and the inundation of various habitats which both fish and wildlife depend on. The plan includes a description of how natural resources will be

MW

protected in the long-term but is not as complete as is necessary for assessment needs. For areas in the Region where groundwater is the primary source of water supply, emphases should be placed on protecting springs that support fish and wildlife.

Region C is to be commended for including water conservation as a water management strategy. According to the IPP conservation within Region C can reduce municipal per capita use to less than 140 gpcd by 2020. The per capita use includes a credit for the water supply that comes from reuse. Even without crediting for reuse the Region is capable of reducing the pre capita municipal use to 140 gpcd. This will require an extensive education program to educate the end users but will also reduce the need for additional new reservoirs. TPWD encourages Region C to consider land stewardship (brush control/management) as an additional means of conserving water while also benefiting wildlife habitat.

It is disappointing that the plan does not recommend nomination of any stream segments as ecologically unique due to concerns regarding unintended consequences of designating a segment as ecologically unique. The primary concern voiced related to impacts to private property rights of landowners adjacent to a designated stream segment. The Region C plan does recommend unique sites for reservoir construction. A unique reservoir site would appear to have greater impacts associated with private landowner rights than an ecologically unique stream segment. Recommending stream segments as ecologically unique gives the regional water planning groups an opportunity to emphasize their commitment to planning for environmental water needs.

Many of TPWD's concerns identified in the 2000 regional water plan have been addressed. However, several concerns still remain. According to the Region C IPP "The total available supply of 4.05 million acre-feet per year in 2060 is about 20 percent greater than projected demand." That amounts to approximately 800,000 ac-ft extra supply or the equivalent sum total yield of Marvin Nichols, Lower Bois d'Arc, Fastrill and Ralph Hall reservoirs combined. New reservoirs, particularly in areas rich in bottomland hardwood forests, can represent a significant threat to the protection of the State's natural resources and should be considered carefully. Please be assured that TPWD will continue to work closely with the region to explore all possibilities to meet future water supply needs and assure the ecological health of the region's fish and wildlife resources.

Please see attached enclosure for additional specific comments and recommendations.

Sincerely,

Larry D. McKinney, Ph.D.
Director of Coastal Fisheries

LDM:CL:dh

Attachment

Attachment: Additional Specific Comments and Recommendations

Does the plan include a quantitative reporting of environmental factors including the effects on environmental water needs, habitat, etc.?
The Region C water plan includes some quantitative reporting of environmental factors associated with the recommended water management strategies. Table 4C.7 list the factors used to evaluate potentially feasible water management strategies and Appendix T summarizes the environmental evaluations which include quantitative reporting of acres impacted, wetland acres impacted, and number of threatened and endangered species. The plan includes 9 potentially feasible strategies for new reservoirs. Five of the new reservoirs (Marvin Nichols, Lower Bois d' Arc Creek, Fastrill, Ralph Hall, and Muenster) are recommended in the initially prepared plan and the remaining four reservoirs (George Parkhouse 1 & 2, Tehuacana, and Columbia) are in the plan as alternate strategies. This is a significant number of new reservoirs which will require more detailed information to quantify the environmental impacts. Appendix T is a start at reporting environmental impacts quantitatively. Considerably more work can be done to report impacts associated with reservoir construction, including alterations of instream flows and the inundation of various habitats which both fish and wildlife depend on. It will be important to report any limitations the planning groups has on reporting quantitative information for each recommended water management strategy.

Does the plan include a description of natural resources and threats to natural resources due to water quantity or quality problems?
Page 1.59 Agricultural and Natural Resources in Region C: It should be noted that springs can provide valuable habitat for fish and wildlife in the Region. Areas in the Region where groundwater is the primary source of water supply, emphases can be placed on protecting spring that support fish and wildlife. Page 1.65 State and Federal Natural Resource Holdings: This section lists many of the state and federal lands in Region C. These resources are important to the Region and nearly all have non-consumptive water uses, including recreation and fish and wildlife uses. This section can also be used to highlight the state and federal lands in neighboring regions especially Region D, due the dependence on East Texas surface water. Page 1.63 State and Federal Species of Special Concern in Region C: Please note that American peregrine falcon and black-footed ferret are no longer included as state species of concern for all counties in Region C. Similarly, the interior least tern is no longer included for Collin, Denton, Jack, and Rockwall counties.

Does the plan discuss how these threats will be addressed?
Page 1.69 Summary of Threats and Constraints to Water Supply in Region C: The last sentence of the first paragraph states "Constraints on the development of new supplies includes...challenges imposed by environmental concerns and permitting". Environmental concerns and permitting are necessary to protect many of Texas' natural resources. These elements should not be considered constraints to the development of new water supplies. Rather, environmental concerns and permitting should be considered as necessities.

Page 1.78 Water Related Threats to Agricultural and Natural Resources: Inundation of land due to reservoir development is a significant threat in Region C and in Region D. The return flows in the Trinity River may increase and enhance habitat in that reach. The impacts to the river basin the water is being pumped from should be considered also. Just as one river basin will have an increase in return flows another river basin will have a decrease in return flows.

Does the plan describe how it is consistent with long-term protection of natural resources?

Page 7.1 - Description of How the Regional Water Plan is Consistent with Long-Term Protection of the State's Water Resources, Agricultural Resources, and Natural Resources Water conservation, reuse, utilization of existing supplies will go a long way toward the protection of the State's resources. The water plan includes 9 new reservoirs, 4 of which are recommended strategies. The new reservoirs are the most significant threat toward the protection of the State's natural resources. It may be difficult to find quality land to mitigate for the priority bottomland hardwood habitat that exists at the proposed reservoir sites for Marvin Nichols and Fastrill Lake. Region C must also consider the protection of natural resources in Region D due to its dependence on out of region surface waters.

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Comments for the Initially Prepared 2006 Region C Water Plan:

Page ES.9 – Recommended Water Management Strategies: The total available supply of 4.05 million acre-feet per year in 2060 is about 20 percent greater than the projected demand. The plan considers this a reasonable reserve to provide for future difficulties. There is a concern that this is excessive and could lead to the construction of new reservoirs without an actual need for the water. This type of planning has the consequence of removing valuable habitat important to fish and wildlife.

Page ES.11 - Recommended Water Management Strategies: Lake Fastrill is illustrated in the map with a supply of 112,100 acre-feet per year. The Texas State Railroad travels 25 miles between the Palestine and Rusk State Parks crossing over the Neches River at the Anderson and Cherokee County line. It appears the railroad is in the conservation pool of Lake Fastrill. In addition to the reservoir flooding valuable bottomland hardwood forests it would threaten the historic Texas State Railroad.

Page 1.14 Current Water Uses and Demand Centers in Region C There is one paragraph describing non-consumptive water uses. Detailed descriptions of each non-consumptive water use would be valuable information for planning for future water needs. This should also include non-consumptive uses outside of the planning region due to the Regions dependence on out of region surface water.

Page 4D.10 – Marvin Nichols Reservoir The proposed reservoir has moved upstream from its originally proposed location to reduce impacts to bottomland hardwoods. High quality bottomland hardwoods would still be inundated. Portions of TPWD's written comments for the 2001 Initial Prepared Water Plan continue to apply to the 2006 plan. "Proposed reservoir would inundate or otherwise impact downstream portions of a 94,252 acre tract identified by USFWS as a Priority 1 preservation site in the Texas Bottomland Hardwood Preservation Program (1985). This site contains habitat of high value to waterfowl and other wildlife. A reach of the Sulpher River downstream of the proposed site includes a wetland habitat mitigation area administered as the White Oak Creek WMA. These areas may be negatively impacted by altered flow regime as a result of reservoir operations. Construction of the proposed reservoir would eliminate or reduce habitat for six state-threatened, flow-dependant fish species: the creek chubsucker, western sand darter, blue sucker, blackside darter, paddlefish, and shovelnose sturgeon as well as several other species of aquatic and terrestrial animals." The Region D 2006 initial prepared plan documents no immediate or long-range need for yield from this proposed project within that region.

Page 4D.12 – Wright Patman Lake - Conversion of Flood Storage to Conservation Storage: Increasing the storage capacity of existing reservoirs is preferred over creating a new reservoir to meet future water supply demands. As operating Jim Chapman and Wright Patman Lake as a system operation become a reality it will be important to study how this may alter instream flows between the reservoirs. TPWD manages the White Oak Creek WMA and is interest on how the system operation and conversion of flood storage to conservation storage may influence how the WMA is managed.

Page 4D.17 – Lower Bois d'Arc Creek Reservoir: Portions of TPWD's written comments for the 2001 Initial Prepared Water Plan continue to apply to the 2006 plan. "The Proposed reservoir would inundate a 3,911 acre tract identified by USFWS as a Priority 4 preservation site in the Texas Bottomland Hardwood

Preservation Program (1985). This site contains habitat of high value to wildlife. Reservoir may negatively impact adjacent downstream Bois d'Arc Unit of the Caddo National Grasslands (13,370 ac.), which is managed by TPWD as the Caddo National Grasslands WMA.

Additionally, Bois d'Arc Creek from its headwaters in eastern Grayson County to its confluence with the Red River in Fannin County represents a valuable riparian conservation area. The proposed reservoir would inundate about 25% of this stream's length, and the downstream portion may be negatively impacted by altered flow regime as a result of reservoir operations."

Page 4D.18 - Lake Fastrill: The proposed reservoir would inundate portions of a Priority 1 bottomland hardwood site and a potential federal wildlife refuge. Several species of concern would be impacted. The threatened or endangered species include the paddle fish, creek chubsucker, blue sucker and the Neches River rose-mallow. The Texas State Railroad travels 25 miles between the Palestine and Rusk State Parks crossing over the Neches River at the Anderson and Cherokee County line. It appears the railroad is in the conservation pool of Lake Fastrill. In addition to the reservoir flooding valuable bottomland hardwood forests it would threaten the historic Texas State Railroad.

Page 5.1 – Impacts of Recommended Water Management Strategies: As more water is imported to Region C through interbasin transfers, care should be taken on what water quality is allowed to be pumped to the region. The water plan contains strategies that will import Brazos River, Red River, Sulphur River and Sabine River water into surface water of the Trinity River. Both the Red River and Brazos River basins have had toxic golden algal (prymnesium parvum) blooms which cause periodic fish kill. There are documented fish kills where golden alga free surface waters received water contaminated with golden alga which later resulted in a fish kill and a sustainable population of golden alga.

Have formal oral comment (2)

TCEQ Public Meeting Form

Monday, September 10, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Nathan Melson

Address: 3385 E State Hwy 56

City/State: Dodd City, TX Zip: 75438

Phone: (903 583-8951

☒ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☒ Yes ☐ No

If yes, which one? CORE

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☒ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.
(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

WR 36919

OPA HR

SEP 18 2007

BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 17 PM 2:45

CHIEF CLERKS OFFICE

Edward and Ellen Mills
4B Rhea Mills Circle
Prosper, TX 75078
Ed cell 214-632-4525
Ellen cell 214-578-6167

North Texas Municipal Water District
Application # 12151

We request a contested case hearing on the proposed Lower Bois D'Arc Creek Reservoir based on the following:
We currently own 113 acres of land in Fannin County, part of which includes area along the Bois D'Arc Creek bottomland. This land is a unique and rare environment for panthers, bobcats, wild turkeys, deer, fox, squirrels as well as numerous species of hawks, owls, woodpeckers, wood ducks and other birds. We have worked for years to enhance this habitat and have seen a significant increase in the number and size of the deer population as well as an increase in the turkey population. It is a rare pleasure to see a panther or bobcat in its natural habitat, something not many people can say they have seen. We have had the honor on numerous occasions due to our protection efforts.

Another unique fact about this area is the abundance of Indian artifacts along the creek banks. This link with our past is something to be preserved for future generations since this creek played a large part in the lives of Native Americans from this area. Once flooded it will be lost forever.

We have also been cultivating hardwoods for resale and growing Christmas trees as part of our plan for income when we retire. We love this land, care for it and don't want to lose it as part of some organization's idea of what is best for "the people".

The applicant has stated in their request that they want the right to take this land, build a dam, capture water, then divert up to one-half of the maximum yield of this water to other locations. Yet one of their own selling points for the lake is water recreation for people from miles around and tons of cash from these happy people as they play.
Anyone in the area can testify that Bois D'Arc creek is almost dry if not dry during the summer months. There will be very little water going into the lake yet up to 725 acre feet a day being pumped out. What sort of recreation can there be other than swatting mosquitoes?

Many people stood before you at the meeting in Bonham on Sept. 11, 2007 and described how they raise crops or cattle on their land. If we allow this to continue and we flood good pastureland how will we feed our children and ourselves? Has an economic study been done to show the affects of diminishing farmland on the nation as a whole? That is something that should be considered over the desires of one power hungry organization.

NTMWD has been using the fear of no water as their battle cry to push people into panic. Yet they flip around again and show slides stating that only 20% (+/-) of the water needs will be met through reservoirs. They show that a larger percentage of water quantity is gained by conservation and reclamation efforts. If this entity has the power to use Eminent Domain to take land then why not use some power to implement stricter conservation rules? Encourage cities to use native grasses such as buffalo grass for lawns (that is what we have). Offer incentives to families who use less than the normal amounts of water, ticket fools who run sprinklers during rainstorms. Let everyone who uses water be part of the solution instead of taking land so that subdivisions can look perfect.

Other things to consider are the studies by the Corp of Engineers that show this area as a poor site for a lake due to environmental issues and other factors. Other organizations that represent the environment are opposed as well. Information was presented on landfills and garbage that is buried in the area and could be a negative on water quality. Why not at least take the time to look into these issues before allowing farmland to be taken and flooded.

The budget proposed by the NTMWD allows landowners to see that the value of our land is minimal to this group. They then do slides to show how the land around the lake will increase in value and bring tons of tax money to the county. This presentation is insulting. Money is not all that makes the world go around. We need animals, land, trees and water. There are other sources for water but no more sources for land. We plead with you to reject this permit and allow us to keep our land.

Thanks for your time.
Ed and Ellen Mills

Edward Mills
Ellen Mills

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WR 56919

Edward and Ellen Mills
4B Rhea Mills Circle
Prosper, TX 75078
Ed cell 214-632-4525
Ellen cell 214-578-6167

North Texas Municipal Water District
Application # 12151

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SKIP NEWSOM
ATTORNEY AT LAW

6806 BEE CAVES ROAD, SUITE 1A
AUSTIN, TEXAS 78745
(512) 477-4121
FAX (512) 477-2860

Board Certified – Administrative Law
Texas Board of Legal Specialization

WR 56919

September 14, 2006

Ms. LaDonna Castañuela
Office of the Chief Clerk - MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin Texas 78711-3087

Re: Protest and Request for Contested Case Hearing by Bois D'Arc Municipal Utility District on Application No. 12151 by North Texas Municipal Water District

Dear Ms.Castañuela,

Bois D'Arc Municipal Utility District ("Bois D'Arc MUD) was created by H.B. 2171 of the 66th Legislature, June 6, 1979 and includes a TCEQ certificated water service area of approximately 305 square miles under water CCN No. 11753. Approximately 85 to 90% of the reservoir proposed by the referenced application is to be located within the Bois' D'Arc MUD. The proposed reservoir will inundate at least 35% of the District's service area and several miles of District easements and facilities to the detriment of the District, its customers and constiuents. The application additionally seeks to transfer surface water out of the basin of origin for use in other water basins to the great detriment of Bois D'Arc MUD, its customers and constituents and the present and future needs and welfare of Fannin County and surrounding areas..

Please consider this letter as Bois D'Arc MUD's official protest to and request for contested case hearing in Application No.12151 by North Texas Municipal Water District ("Applicant"). Based on the notice of the Application published per Texas Commission on Environmental Quality ("Commission") requirements, Bois D'Arc protests the issuance of the requested water right and reservoir permit to Applicant and submits the following contact information in support of its protest and request for party status and contested case hearing:

Name and Contact Information for Requesting Party:

Bois D'Arc Municipal Utility District
14101 E. FM 1396
Honey Grove TX 75446
(903) 378-7361

John Rapier, General Counsel
Bois D'Arc Municipal Utility District
Rapier, Wilson & Wendland, P.C.
103 W. McDermott
Allen, Texas 75013
Tel: 972.727.9904
Fax: 972.727.4273

Skip Newsom
Law Offices of Skip Newsom
8606 Bee Cave Road, Suite 1A
Austin, Texas 78746
Tel: 512.477-4121
Fax: 512.477-2860

Please include each or the above contacts on your mailing list in connection with all communications concerning this Application. Because Bois D'Arc's interests and those of its constituents will be adversely affected by the granting of the Application, it respectfully requests that the Commission set this matter for contested case hearing to determine the impacts of granting the Application and whether the Application is in the public interest and otherwise authorized by law.

Respectfully submitted,

Skip Newsom
Special Counsel to Bois D'Arc

cc:
John Rapier

SKIP NEWSOM
ATTORNEY AT LAW
6806 BEE CAVE ROAD; SUITE 1 A
AUSTIN, TEXAS 78746

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September 14, 2006

Ms. LaDonna Castañuela
Office of the Chief Clerk - MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin Texas 78711-3087

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Honey Grove TX 75446
(903) 378-7361

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Bois D'Arc Municipal Utility District
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103 W. McDermott
Allen, Texas 75013
Tel: 972.727.9904
Fax: 972.727.4273

Skip Newsom
Law Offices of Skip Newsom
8606 Bee Cave Road, Suite 1A
Austin, Texas 78746
Tel: 512.477-4121
Fax: 512.477-2860

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Respectfully submitted,

Skip Newsom
Special Counsel to Bois D'Arc

cc:
John Rapier

TEXAS COMMISSION ON ENVIRONMENTAL

Contested Case Hearing Request

07 SEP 10 AM 10:44 Odom

CHIEF CLERKS OFFICE

Name: ~~Ruby~~ J. Odom Group Name: Lower Bois D'Arc Project

Mailing Address: P. O. Box 354

Phone: 9036234031 Fax

Email:

WR 36919

OPA

H SEP 10 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

I have researched the Confederate Camp and the Confederate Soldiers buried there.

I have used published books and other published material in my research.

Camp Benjamen 1861 - 1862 in Fannin County near Bois D'Arc Creek. This Camp and the graves of the soldiers that are buried are marked by a 6 foot Concrete Cross.

If you dam up this Creek you will be inundating that brave men that gave their life for our Country. Putting this Camp under water.

I had four great grand fathers in the Civil war that fought with distinction.

I am a member of the Paris, Texas Chapter of the United Daughters of the Confederacy.

I am fileing for a Historical Marker.

Ruby J. Odom

Signature

date August 13, 2007

MW

Ruby Odom
PO Box 354
Windom, TX 75492-0354

NORTH TEXAS P&DC
TX 750 2 T
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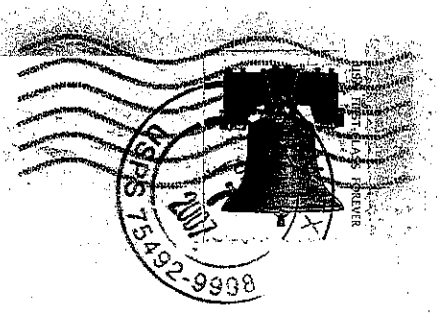

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 14 PM 2:46

CHIEF CLERKS OFFICE

OPA HR

SEP 17 2007

BY

CONTESTED CASE HEARING REQUEST

Name: Carlos A.Pardo

Mailing Address: 4085 Preston Hills Cir.Celina,TX.75009

Phone Number: 972-670-1925

Applicant and Permit Number:

NTMWD permit number 12151,to build a dam on Lower Bois d'Arc

I would like to request a contested case hearing on the permit above because of the following

1-**Eco-transitional area;** The Lower Bois d'Arc serves as the natural boundary between two well defined ecoregions in Texas. To the north **The East Central Texas Plains** and **The Texas Blackland Prairies** to the south and more particularly off of these,the merging of two subregions,**The Northern Post Oak Savanna** and **The Northern Blackland Prairie.** This creates an abundance of edaphic conditions that in turn sustain diverse plant communities and their related wildlife within the realm of one very large **riparian forest,** surrounded by **prairie** and pockets of **upland forests.** These riparian forest is known to serve as a highway of interchange for wildlife between north central Texas and southeastern Oklahoma.Some of the prairie remains in its native state.Ancient trees abound.

2-**Prime Farmland area;** Approximately one third of the several thousand acres of land that would be consumed by the new reservoir are considered Prime Farmland as identified by the United States Department of Agriculture,having the best combination of physical and chemical properties for the production of food,forage,feed,fiber and oilseed crops and available for these uses.The loss of this prime farmland would place pressure on marginal lands,which are less productive and more erodible in some cases.Examples of crops obtained from these prime soils are wheat,grain sorghum,corn,cotton, soybeans,peanuts,watermelons,black-eyed peas,sweetcorn,sweet potatoes,strawberries.Orchards of pecans,peaches,apples and pears are also favored.Alfalfa,improved pastures of coastal and common Bermuda,Bahia,Klein,Fescue and Lovegrass,white, burr and button clovers.Areas that remain as native range present eastern Gammagrass,Beaked panicum,little Bluestem, Florida paspalum,Virginia wildrye,longleaf Uniola,Indian and Switch grass.Stands of ancient oaks,Post,Burr,Water,and Red, both Shumard and Buckleyi.Stands of ancient and young Pecans, Hickcories,along with Walnuts.Very large stands of Ash and Cottonwood harvested commercially as well as stands of Loblolly pine.Several other species of trees and shrubs grow in these mixed environments.These soils are our savings account.

The trade off of all these natural resources for a reservoir of shallow waters is incorrect not only to the affected landowners but to the people of Texas as well,people who would definitely be better served if the Lower Bois d'Arc is left untouched and preserved.Most sincerely,

Carlos A. Pardo


CERTIFIED MAIL™
7007 0220 0001 2377 9535
USA 41
C.A.PARDO
4085 PRESTON HILLS CIR.
CELINA, TEXAS 75009
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Citizens to Save Bois D Arc Creek
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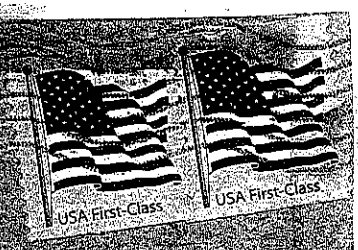

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WES REED
ATTORNEY AT LAW
4519 W. LOVERS LANE
DALLAS, TEXAS 75209
(214) 358-1330 * FAX (214) 358-1404

September 12, 2007

Chief Clerk
TCEQ
P.O. Box 13087
Austin, Texas 78711

RE: CONTESTED CASE HEARING REQUEST

Dear Clerk:

Joseph Reed, John Reed, and myself (Wes Reed) are requesting a hearing to contest the application (proposed water use permit number 12151) filed by North Texas Municipal Water District to build a lake in Fannin County, Texas. This proposed lake has been commonly called the Lower Bois D' Arc Creek Reservoir.

My brothers and I are fourth generation landowners and run a cow\calf operation on approximately 1500 acres and locally known as Reed Ranch. Our land is on the South side of Bois D' Arc Creek (25 acres does extend North of the creek) with an East boundary along Ward's Creek. If one takes FM 1743 North of 82 and turn right where the State Maintenance ends and follows the gravel road you will eventually enter the South central entrance to our property.

On our Ranch, we have approximately 200 acres of hardwoods, which run, along the said Creek. Throughout the Ranch we have areas of improved pastures as well as, hay meadows with several intermittent wildlife habitats areas. We have also improved the property with several lakes stocked with fish. We operate a working Ranch to raise beef cattle for sale and provide income through outdoor recreational rentals.

Over the years we have been a release site for small mammals and birds i.e., raccoons, bobcats, beaver and turkeys. We have continued to open our doors for rescued animals and provide them with a protected natural habitat. For years we did not allow hunting of any kind, but have allowed deer, duck, turkey and wild hog hunting on a very restricted and limited basis.

mw

If the lake were allowed to be constructed, this would disrupt our present operation and destroy the hardwood habitat we have protected. Our hay meadows would be flooded. Our most productive pastures would also be destroyed. Our ability to provide a natural habitat for wildlife would be greatly impaired. I have enclosed a copy of a study that was done on our Ranch in the hardwood timber bottom along Bois D' Arc Creek.

For the above stated reasons we would request a contested hearing in order to present our objections to the proposed lake.

Sincerely,

Wes Reed

WR:bm
Enclosures
c.c. Joe Reed
John Reed
Leeman Mills-Foreman Reed Ranch

Characterization of the Vegetation of the Reed Ranch, Fannin County, Texas, with Emphasis on Riparian Vegetation
July 14, 2005

The following is a report of a short trip to the Reed Ranch in northeast Texas. Because much of the ranch had been converted to tame pasture or was currently under cultivation, the primary focus of the survey was 200+/- acres of riparian vegetation along Bois d'Arc Creek.

Physical Setting.
The Reed Ranch is located in northeastern Fannin County, Texas, within the Crosstimbers and Southern Tallgrass Prairie Ecoregion. It is less than 10 miles south of the Caddo National Grasslands, Bois d'Arc Unit. The property is bounded on the north in part by Bois d'Arc Creek. A tributary, Ward Creek, joins Bois d' Arc Creek on the eastern edge of the property. The underlying geology of the bottomlands is Quarternary alluvium and alluvial terraces. Surrounding uplands are on Upper Cretaceous Blossom Sand and Brownstown Marl formations. Bottomland soils are typically Tinn Series (typic hapluderts). Upland soils are typically Ellis-Crockett associations (udertic paleustalfs and udertic ustocrepts).

Conservation Context
The Ranch is located within an area of conservation interest as designated by The Nature Conservancy's preliminary assessment of the biodiversity of the Crosstimbers and Southern Tallgrass Prairie Ecoregion . The Bois d'Arc Creek watershed is approximately 270,000 acres. Remote sensing and modeling have indicated that the potential for conservation of high quality riparian plant communities is high. Natural heritage records indicate that several plant communities and species of conservation interest occur within the watershed, including:

- Texas wideleaf false aloe (*Manfreda virginica ssp lata*). A plant.
- Little bluestem-Indiangrass-Prairie Bishop Prairie (*Schizachyrium scoparium-Sorghastrum nutans-Bifora americana Alfisol herbaceous vegetation type).* Remnant tallgrass prairie.
- Post oak-Blackjack oak- Little bluestem Woodland. *(Quercus stellata-Quercus marilandica-Schizachyrium scoparium woodland).* Remnant woodland and savanna.

Further, the federally listed American Burying Beetle (*Nicrophorus americanus*) occurs in adjacent Lamar County within similar habitat.

Survey of the Riparian Forest
The Reed ranch supports 200-300 acres of riparian forest along Bois d'Arc and Ward Creeks. Adjoining properties appear to support similarly-sized or larger forest tracts. Three south-to-north transects were walked and plant species encountered were recorded.

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7/14/05

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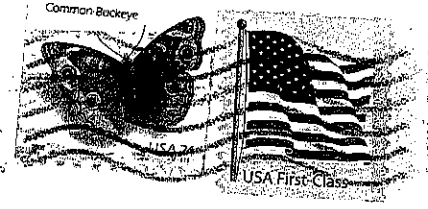
WES REED
ATTORNEY AT LAW
4519 W. LOVERS LANE
DALLAS, TEXAS 75209

DALLAS TX 752
13 SEP 2007 PM 2 L



Chief Clerk
TCEQ
P.O. Box 13087
Austin, Texas 78711

RECEIVED
SEP 14 2007
TCEQ MAIL CENTER
RB

78711-3087

WR
56919

WES REED
ATTORNEY AT LAW
4519 W. LOVERS LANE
DALLAS, TEXAS 75209
(214) 358-1330 * FAX (214) 358-1404

September 12, 2007

OPA
SEP 13 2007
BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
07 SEP 13 AM 9:10
CHIEF CLERKS OFFICE

Chief Clerk
TCEQ
P.O. Box 13087
Austin, Texas 78711

RE: CONTESTED CASE HEARING REQUEST

Dear Clerk:

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For the above stated reasons we would request a contested hearing in order to present our objections to the proposed lake.

Sincerely,

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WR:bm
Enclosures
c.c. Joe Reed
John Reed
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Physical Setting.
The Reed Ranch is located in northeastern Fannin County, Texas, within the Crosstimbers and Southern Tallgrass Prairie Ecoregion. It is less than 10 miles south of the Caddo National Grasslands, Bois d'Arc Unit. The property is bounded on the north in part by Bois d'Arc Creek. A tributary, Ward Creek, joins Bois d' Arc Creek on the eastern edge of the property. The underlying geology of the bottomlands is Quarternary alluvium and alluvial terraces. Surrounding uplands are on Upper Cretaceous Blossom Sand and Brownstown Marl formations. Bottomland soils are typically Tinn Series (typic hapluderts). Upland soils are typically Ellis-Crockett associations (udertic paleustalfs and udertic ustocrepts).

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4519 W. LOVERS LANE
DALLAS, TEXAS 75209
(214) 358-1330 * FAX (214) 358-1404

FAX COVER LETTER

DATE: September 12, 2007

TO: **Chief Clerk**

FAX NO. **512-239-3311**

FROM: **WES REED**

OUR FAX NO. **214-358-1404**

NO. OF PAGES: **COVER SHEET +** 6

(IF YOU DO NOT RECEIVE ALL INFO, PLEASE CALL (214) 358-1330.)

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WR
5/9/19

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PLEASE CALL IF YOU HAVE ANY QUESTIONS.

WRP 326 414

HR OPA

SEP 04 2007

Contested Case Hearing Request

BY DM

Name: Stewart Richardson Group Name: citizens to Save Bois d'Arc creek

Mailing Address: 9086 FM 100 Honey Grove, TX 75446
Phone: 903-378-2224 Fax
Email:

CHIEF CLERKS OFFICE
2007 SEP -4 AM 10:11
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

A dam on lowerbois D'arc creek would completely distray an entire ecosystem. I have worked and hunted in the bois d'arc creek bottoms for Over 20 years. This is truly a unique area. It is vital for wildlife of all kinds. 150 year old hardwood forest are common with a rare bottomland environment that's home to many species of animals and plants that will only grow in bottomland forest. Words on paper can't describe this beautiful valley. If we cannot convince the powers that be to stop destroying our natural waterways it will be lost forever. The plants, birds & mamals of wetland areas cannot survive on upland hilltops.

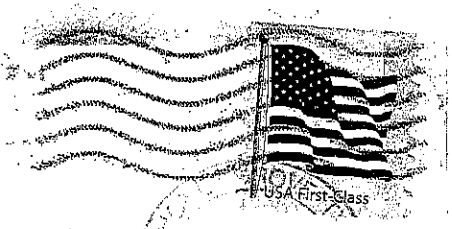
Please contact me for a personal tour of this Truly unique area. Do some research and you will see the bois d'arc creek is the only natural corridor in fannin county from the Red River south to the Sulfur River valley.

I have written many letters to politicians concerning this matter, all to no avail. Please study this, call me, let me show you this valley.

Stewart Richardson date 8-20-07
Signature

Stewart Richardson
9086 FM 100
Honey Grove, Texas 75446

NORTH TEXAS PROC
TX 750 6 L
31 AUG 2007 PM



The Office of Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

RECEIVED
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IRB

78711-3087

WR 5a919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 AUG 23 AM 10:13

CHIEF CLERKS OFFICE

OPA HR

AUG 24 2007

BY [redacted]

Contested Case Hearing Request

Name: Judy Russell Group Name: CORE

Mailing Address: 790 CR 2900 Dodd City TX 75438

Phone: 903-583-3052 Fax —

Email: Kenneth.russell@juno.com

Applicant & Permit Number: NTMWD permit number 12151

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The building of this reservoir will possibly take part, if not all, of our farm & ranch land. This is part of our family ~~food~~ livelihood. It will also destroy one of the largest hardwood forests in Northeast TX. It will destroy an array of wildlife, possibly endangered species. It will also cause the Southeast portion of Bonham TX to flood. It will destroy the site of "Fort Benjamen", a historic site.

Consuming water from this reservoir could pose a Health Hazard. The site of the Bonham Landfill is located approximately 1½ miles from the South end of this lake, upstream. Toxic waste is seeping from this waste dump running into Sloans Creek. Sloans Creek is a major creek that will feed this reservoir.

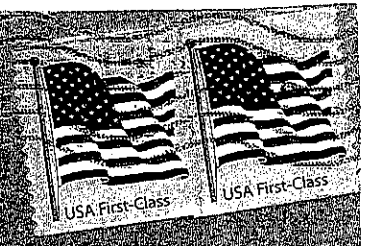
This landfill possibly contains high levels of heavy toxic metals.

The landfill is located on the bank of Sloans Creek!!, on CR 2900.

Judy Russell date 8-20-07
Signature

The old "Red Hamilton" dump ground is also located on Sloans Creek just South of the proposed Lower Bois d'arc Reservoir. It also contains tires, batteries etc

Citizens to Save Bois D Arc Creek
PO Box 36
Honey Grove Tx 75446



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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 AUG 23 AM 10:13

CHIEF CLERKS OFFICE

OPA H/R

AUG 24 2007

BY

Contested Case Hearing Request

Name: Kenneth Russell Group Name: Core

Mailing Address: 790 CR 2900 Dodd City, Tx. 75438

Phone: 903 583 3052 Fax same

Email: Kenneth.Russell@juno.com

WR 36919

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

This resevior is nothing but B.S.. It's a way that coorperations can use (water) as a scare tactic to steal people's Land. Our govenor and government has sold us out. It would take an idot to be live there is a water shortage. When there's nothing done about the water being wasted in this country (Dallas specifically). This directly afects me, because I Live in Fannin county.

Kenneth Russell date 8-20-07

Signature

TX 750 4 L
21 AUG 2007 PM

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WR 5619

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 17 AM 10:13
CHIEF CLERKS OFFICE

Name: Cathy Ryser Group Name: Citizens to Save Lower Bois d'Arc

Mailing Address: 4097 CR 2765 Honey Grove 75446

Phone: 903-378-2726 Fax

Email:

OPA HR
SEP 17 2007
BY

Applicant & Permit Number: NTMWD permit number 12151

I, Cathy Ryser, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

1. Price of land is not acceptable.
2. Hardwood timber will be destroyed.
3. Wildlife eco will be ruined.
4. Fluctuation of the lake level will cause a stinky, unsightly and mosquitoey bog or a grown up weed and grass bed with dead trees and I'll have to look right at it and smell it!!!
5. Loss of shoreline mitigated acres will lower the value of my property.
6. Loss of our highly productive bottom land/farm land.
7. It's just not morally right to take over our land and then eventually make us buy our own water from NTMW just to furnish the Dallas area with water which it can economically be piped from willing sources.

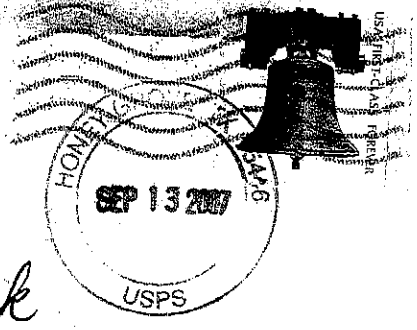
Cathy Ryser
Signature

date 9-13-07

MW

CATHY RYSER
4097 CR 2765
HONEY GROVE, TX 75446

NORTH TEXAS P&DC
TX 750 3 L
13 SEP 2007 PM



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WR
B&G 9/9

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

Contested Case Hearing Request

2007 SEP 14 AM 10:20
CHIEF CLERKS OFFICE

Name: Charles Ryser Group Name: Group to save Bois d' Arc Creek

Mailing Address: 4097 CR 2765 Honey Grove TX

Phone: 903-378-2726 Fax _____

Email: _____

OPA
SEP 14 2007

Applicant & Permit Number: NTMWD permit number 12151

I, Charles Ryser, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

1. Fannin Co. Will Return water negative
2. Lower Bois d' Arc Reservoir is situated at the point of two different eco regions & has the most fertile Ag. land in the county making it unique in value and irreplaceable.

3. Army Corps of Eng. states it is a poor lake site.

4. The Bois d' Arc river bottom is a major thoroughfare for wildlife throughout the county.

Charles Ryser date 9-6-07
Signature

Charles Russell
4097 Q2 Z65
Howey Grove Ln
78666

TX 750 1 L
12 SEP 2007 PM

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78711/3087

WR 5691 9

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 17 AM 10:11

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: Donna Ryser Group Name: Citizens to Save Lower Bois d' Arc

Mailing Address: 4227 CR 2765 Honey Grove, Tx 75446
Phone: (903) 378-7010 Fax (903) 378-7010
Email: donnaryser@yahoo.com

OPA HR

SEP 17 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, Donna Ryser, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

(1) Productive farm land will be taken away.

(2) Even though the lake will be in Fannin County, Fannin County will not retain the water rights. NTMWD will be the ones to determine the quality, quantity and price of the water.

(3) Since the water will be piped to the Dallas area, the "lake" will not maintain a consistant level and will become a "mud hole" especially in the summer months.

(4) Land that has been in families for over 100 years will be taken away. The worst part about that is that NTMWD is going to steal the land by making sure they don't have to pay a reasonable amount for the land.

(5) There is a lot of wildlife in this part of the country. If the lake is built, all that wildlife will be displaced.

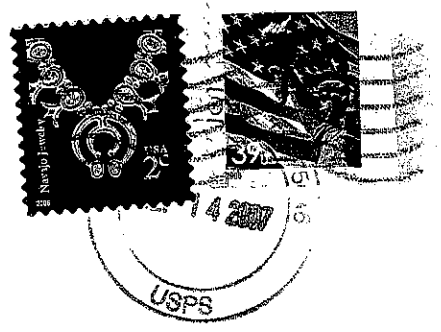
(6) Since there would be stipulations for developing the shoreline there would be very little chance of growth & development that is being promised by NTMWD.

Donna Ryser date 9-13-07
Signature

MD

Donna Ryser
4227 CR 2765
Honey Grove, Tx
75446

NORTH TEXAS P&DC
TX 750 3 T
14 SEP 2007 PM



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WR 36919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP 19 AM 11:05
CHIEF CLERKS OFFICE

Name: Erich Ryser Group Name: Citizens to Save Lower Bois d'Arc

Mailing Address: 404 Wentworth Dr. McKinney, TX 75070
Phone: 972-347-2470 Fax
Email:

HR OPA
SEP 19 20..
BY

Applicant & Permit Number: NTMWD permit number 12151

I, Erich Ryser, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

- There are more alternatives + ways to get water at a cheaper rate.
- Toledo Bin Lake will sell water to NTMW but NTMW would rather take land instead.
- NTMW will not offer enough $ for land.
- Timber + wildlife will be displaced + destroyed.
- Lake will be very shallow and be a muddy mess in the summer. It's one will want to build around a lake like this. That means no growth and a poor quality lake.
- Protected land will lower property value.

Erich Ryser date 9-16-07
Signature

MW

Hudson

14001 Dallas Parkway
Suite 1210
Dallas, TX 75240

$00.41°

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WR 3ba19

TEXAS COMMISSION ON ENVIRONMENTAL

Contested Case Hearing Request

'07 SEP 13 AM 9:59

CHIEF CLERKS OFFICE

Name:___Nathan Ryser_____ Group Name: Citizens to Save Bois 'd Arc Creek

Mailing Address:__602 Oak St_____
Phone:_903-227-1890___Fax__903-378-2871
Email: n_ryser@yahoo.com

OPA

SEP 13 2007

H BY

Applicant & Permit Number: NTMWD permit number 12151

I,___Nathan Ryser_____,wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

_The dam built on Bois d' Arc Creek will be detrimental in a number of ways to Fannin County.

Fannin County will retain no water rights under the existing agreement. Revenues from the water sold will only benefit NTMWD. Fannin County will be giving up tax base and land to benefit outside entities. Over 17,000 acres of land will be taken for flooding and easements plus an additional amount for mitigation. These estimates for mitigation have ranged from 30,000 to 51,000 acres. The most productive agricultural land in the region will be rendered useless.

NTMWD has applied to withdraw up to 175,000 acre feet of water per year. The total capacity of this proposed reservoir is 366,000 acre feet. A typical NE Texas summer will render this reservoir useless for recreation and possibly have a negative effect on water quality. Fannin County's only source of revenue from this reservoir would be recreation and development. The aforementioned management of water quantity in this reservoir will have a negative impact on both recreation and development of this reservoir. A good example is the neighboring Jim Chapman (Cooper Dam) which has produced no growth or prosperity for the local communities.

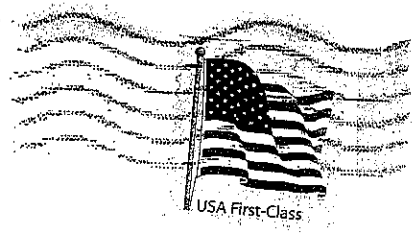
Bois d' Arc serves as the major wildlife thoroughfare throughout Fannin County. Severing this highly utilized natural path would be very detrimental to the county's wildlife. The site of this proposed reservoir is unique in that it is situated where two eco regions meet. Texas Parks and Wildlife has recognized this segment of stream as possessing unique qualities for flows and wildlife. Careful consideration should be heeded before destroying something that can never be replaced._____

_____

Nathan Ryser date 9-11-2007

Signature

CITIZENS TO SAVE BOIS D' ARC CREEK
PO BOX 36
HONEY GROVE TX 75446



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WR
56919

Applicant and Permit Number: NTMWD permit number 12151

Date: August 13, 2007

I, **William J. Sebastian** of Fannin County Texas, am requesting a Contested Hearing Case on the project to build a dam on Lower Bois d' Arc Creek. I request this hearing because the resulting body of water will not achieve a volume equal in value to the destruction to the environment and quality of life in northeast Texas and Fannin County. The so-called "lake" will be a muddy blight the majority of the time, with thousands of acres of dead trees, brush and muck caused by water temporarily held in the reservoir a few weeks or months out of the year. Deer, geese, ducks, turkey, cranes, eagles, and other wildlife will lose their natural habitat area.

The proposed lake is overall a bad idea. Project plans should be put on-hold until a thorough study and costs versus worth evaluation can be made. There are several ways much better to achieve the needed water without the proposed dam and reservoir on Lower Bois d' Arc Creek.

I am affected by this reservoir in that I am a citizen of Fannin County. The loss of county tax revenue from land lost to the reservoir will have to be made up by the other residents of Fannin County. Therefore I am directly affected financially.

I have specific alternatives related to future water requirements and will present them at the hearing.

Respectfully,

William J. Sebastian (signed) August 13, 2007 (date)

William J. Sebastian
1476 CR 2130
Telephone, TX 75488
903/664-3614
bsebast@airmail.net

OPA
AUG 16 2007
BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2007 AUG 15 AM 10:05
CHIEF CLERKS OFFICE

MW

William Sebastian
1476 CR 2130
Telephone, TX 75488

NORTH TEXAS P&DC
TX 750 5 T
14 AUG 2007 PM

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WR 5691P

TEXAS COMMISSION ON ENVIRONMENTAL

Contested Case Hearing Request

Strickland

Name MaryAnn Strickland & Karen A. Group Name _____

Mailing Address 7720, C.R. 1135, Leonard, TX 75452

Phone (903) 568-0788 Fax _____

Email MStrickland1941@MSN.com

HR OPA

SEP 06 2007

BY _____

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d'Arc Creek because:

Hunt Co. Property

Wildlife - We have coyotes, wild pigs, armadillos, squirrels, rabbits, skunks, raccoons, deer, foxes, wolves, frogs, snakes that have access to food and water on our land. We do not hunt and we do not permit hunting. - There are wild geese and ducks, owls, vultures, cardinals, hummingbirds, blue jays, crows, grackles, chaparrals, woodpeckers, doves, and more. - Honeybees, wasps, spiders, locusts, jarflies, beetles, butterflies, moths come round. - Wildlife creatures have been around longer than we have. I hope they can remain.

If a great number of acres of land is taken off the tax rolls, I will likely see an increase in my taxes.

When I lived in Dallas, the City had a program called Xeriscape at White Rock and other parks. They used native plants, had seminars for citizens to encourage their having native plants that required less water, also. What happened to it? Let Dallas city take care of some of their own needs before "citifying" the country.

MaryAnn Strickland — September 2, 2007

Signature — Date

Note. 2. There is a federal law or ruling that requires developers to use excessive irrigation on new properties to prevent erosion. Could this activity be re-evaluated to save water?

MW

TEXAS COMMISSION ENVIRONMENTAL QUALITY

Contested Case Hearing Request

2007 SEP -6 AM 9:01

CHIEF CLERKS OFFICE

Name Mary Ann Strickland Group Name

Mailing Address 7720, C.R. 1135, Leonard, TX 75452

Phone 903-568-0788 Fax

Email MStrickland1941@usn.com

OPA HR

SEP 06 2007

BY

WR 5619

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d'Arc Creek because:

I own Fannin Co. Property.

I have two houses side by side in Leonard, Texas, that belonged to my mother and father and my grandmother. The lots have many big, big trees — elm, pecan, cedar, walnut, smaller fruit trees, ornamental, mimosa, umbrella plant to name some. My grandmother died in 1969 and some of her jonquils and 4 o'clocks bloom every year!

My grandparents and my great grandparents came to Fannin Co. and Hunt Co. from 1878 to 1887. One grandmother was 7 and one was 11. Many things change but the place I was born in Fannin Co. is recognizable and I hope it remains. Bois d'Arc Creek was where we fished. I hope acres that probably do not need to be taken for the reservoir are not taken. Find another way for Bois d'Arc Creek. Just leave it.

Mary Ann Strickland 9-2-07

Signature Date

Economy - Fannin Co. has a viable farming and ranching One. Why not keep it?

If thousands of acres proposed to be a part of the reservoir and the mitigation area are taken from the tax rolls it seems obvious that my property taxes are likely to increase.

MW

Mary Ann Strickland
7720, C.R 1135
Leonard, TX 75452

NORTH TEXAS PRIDE
TX 750 6 L
04 SEP 2007 PM

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Here for oral comment (3)

TCEQ Public Meeting Form

Monday, September 10, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Mary Ann Strickland

Address: 7720 C.R. 1135

City/State: Leonard, TX **Zip:** 75452

Phone: (903) 568-0788

☑ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☑ No

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☒ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

WR 5a919

Contested Case Hearing Request

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP -7 AM 10:35

CHIEF CLERKS OFFICE

HP OPA

SEP 07 2007

BY

Name: Faye Wedell Group Name:

Mailing Address: P.O. Box 812; Bonham, TX 75418
Phone: 903/583-2661 Fax N/A
Email: N/A

Applicant & Permit Number: NTMWD permit number 12151

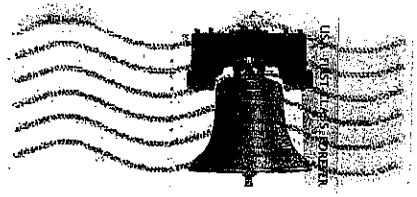
I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

I am concerned about the negative impact that the building of the Lower Bois d'Arc reservoir will have on Fannin Co., both environmentally & economically. I live in a rural area of Fannin Co. ~~on~~ on property that has been used for agricultural & ranching purposes for over a century. It has heavily wooded areas along a small creek & these serve has habitat for many wildlife species. Although my property would not be covered by water & subject to eminent domain by the reservoir itself, it could be declared property needed for mitigation purposes. The hardwoods and wildlife habitat along the Lower Bois d'Arc Creek represent & constitute an irreplaceable ecosystem, not only for Fannin Co. & the state of Texas, but also for our planet. We cannot afford as citizens of Earth to keep molesting the land, air, & water without paying a heavy price on many fronts. If the Lower Bois d' Arc Reservoir is permitted, it will cause loss of tax dollars for the County & schools; loss of agricultural income, which is the primary source of revenue & production for many families; loss of a unique & vital ecological system; decrease in property values within adjoining areas bought for mitigation. The only folks who will experience a gain are NTMWD, a private entity looking for profit; the developers who want to build around Lake Lavon once its shoreline is made more attractive for suburban sprawl; and those who want more water available for fountains, golf courses, & upkeep of expensive landscaping. It is time for us to focus on conservation & wise use of available resources, rather than continued exploitation of resources.

Faye Wedell date 9-4-2007
Signature

Elizabeth Wedell
P.O. Box 812
Bonham, TX 75418-0812

NORTH TEXAS P&DC
TX 750 3 L
05 SEP 2007 PM



CHIEF CLERK'S OFFICE
07 SEP -7 AM 10:32

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WR 56919

Contested Case Hearing Request

Name: JOHN W. Welch (Welch) Group Name: PREVENT CONSTRUCTION OF LOWER BOIS D'ARC LAKE

Mailing Address: 1588 CR 2655 TELEPHONE, TX 75488
Phone: 903-664-2943 Fax —
Email: —

OPA
SEP 10 2007
BY

Applicant & Permit Number: NTMWD permit number 12151

I, JOHN W. WELCH (Welch), wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

① LAKE WILL NOT PRODUCE A SUFFICIENT QUANITY OF POTABLE WATER

② WATER PRODUCED WILL GO TO DALLAS METRO PLEX AND NOT BE AVAILABLE FOR LOCAL USE

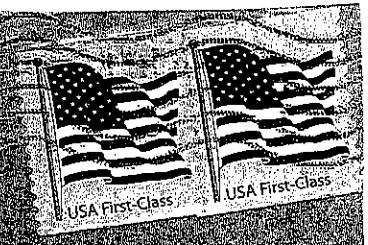
③ LAKE WILL DESTROY AGRICULTURE INDUSTRY IN COUNTY

2007 SEP 10 AM 11:25
CHIEF CLERKS OFFICE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

John W Welch date 09-07-07
Signature

MW

Citizens to Save Bois D Arc Creek
PO Box 36
Honey Grove Tx 75446



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(4)

TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
'07 SEP 12 PM 4:23
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: JOAN W. WELCH

Address: 1588 CR 2655

City/State: TELEPHONE, TX **Zip:** 75488

Phone: (903) 664-2943

☐ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☒ No

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**
(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

WR
5691 9

WITCHER FAMILY TEXAS PROPERTY TRUST

DOROTHY L. WITCHER TRUSTEE
JOHN REX WITCHER, TRUSTEE

TEXAS COMMISSION ON ENVIRONMENTAL

2007 SEP -7 PM 3:01

CHIEF CLERKS OFFICE

September 6, 2007

OPA

SEP 10 2007

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

Re: NTMWD Application #12151 to build a dam on Lower Bois d' Arc Creek

Dear Sir or Madam:

We want to request a contested hearing case on the project to build a dam on Lower Bois d'Arc Creek because we do not think it appropriate to flood thousands of acres of Fannin County land so that Dallas will be able to continue to water their lawns, country clubs and golf courses. The land that we own was bought by our Great Grandfather, so that his family would have a better life in Texas than they had in Virginia. That land was passed down to our Grandfather and our Father, and eventually to us. It is a well known fact that if this Lower Bois d' Arc Creek Dam project goes forward and the land is bought by the State for the project, that we will not get anything close to the going rate per acre before this project was first announced.

It is our most sincere hope that this project for a Dam on the Lower Bois d'Arc Creek does not go forward.

Sincerely,

Dorothy L. Witcher

Dorothy L. Witcher Trustee

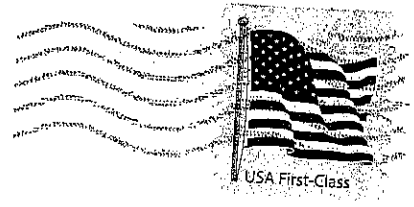
John Rex Witcher

John Rex Witcher, Trustee

8729 SOUTHWESTERN BLVD #1513 • DALLAS, TEXAS 75206-8279 • 214-526-5402 • jrexw@sbcglobal.net

John Rex Witcher
8729 Southwestern Blvd. #1513
Dallas, TX 75206-8279

DALLAS TX 752
06 SEP 2007 PM 7 T



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JR

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78711+3087

WR
5a9a19

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2007 SEP 26 PM 2:45

CHIEF CLERKS OFFICE

18 September 2007

WR
12151

OPA

SEP 27 2007

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

To: Chief Clerk

In our haste to fax in a letter requesting a Contested Case Hearing, on the 17th of September, for the Citizens to Save Bois d' Arc Creek Group our secretary typed the header reflecting me, as an individual, not the group requesting the hearing. I just signed the back page and did not look at the header until today. I had all ready mailed in a personal request as a member of Citizens to Save Bois d' Arc Creek and spoke at the McKinney public hearing. The reason this happened is I am the president of our group and she thought I should be on the header, my personal address and all.

The enclosed letter has the correct header information. The text is exactly the same as the fax and the signature is the same except for the addition of a signature and date line.

Please accept our corrected request for a Contested Case Hearing.

Sincerely,
H. D. Witcher Jr.
Harold D. Witcher, Jr.
President
Citizens to Save Bois d' Arc Creek
P.O. Box 36
Honey Grove, Texas 75446

Contested Case Hearing Request

Citizens to Save Bois d'Arc Creek
Mailing Address: P.O. Box 36 Honey Grove, Texas 75446
Phone: 903-378-7300 e-mail: saveboisdarc@yahoo.com

Applicant & Permit Number: NTMWD permit Number 12151

On behalf of the Citizens to Save Bois d'Arc Creek I, Harold D. Witcher, Jr. wish to request a contested case hearing on the project of build a dam on Lower Bois d'Arc Creek. First I would like to say the building of a dam on Bois d'Arc Creek is not about the need for water, but the control of all potential water sources in Northeast Texas. This is shown in Exhibit A, pages 1 and 2, entitled **2007 State Water Plan for NTMWD,** which are highlighted on page 2 showing existing lakes that NTMWD plan to acquire water from the in future. If conservation is one of their **future** plans, it sure isn't in place at this time. When lawn sprinklers are on in the Metroplex area, and it is raining, water is running down the street from sprinklers. When sprinklers are watering dormant grass in the middle of the winter allowing water to run down the street, this is not conservation. I grant dormant grass needs watering if there is no rainfall, but once a month is adequate. Speaking of water running down the street, all the runoff in the Dallas-Ft Worth Metroplex goes into the Trinity River basin. With all the pavement and buildings in the two metroplex areas covering the soil, none of the rainwater is absorbed, so it becomes run off, thus generating an astronomical amount of usable water that just runs down the Trinity to Lake Livingston and keeps Houston supplied with plenty of water. I do not see one plan in the works to capture this huge water source. The municipalities want to go outside of their existing river basin to acquire their water. They should be forced to harvest this water source first before going outside the Trinity Basin. The existing reservoirs should be utilized first before any more are built. It will be more economical to build pipelines now than the future if inflation is figured into the cost. I know pipelines are as controversial as the building of lakes, but they don't totally remove a person from his home, his land, or lively hood. They don't wreck ecosystems, or displace wildlife as reservoirs do. A pipeline from Wright Patman to Cooper Lake (Lake Chapman) is approximately 60 miles, which is as close or closer than a pipeline from Bois d'Arc to Lake Lavon. A pipeline from Cooper Lake to Lake Lavon already exists. Bois d' Arc Creek Reservoir will be an extremely shallow reservoir, which will produce poor quality water due to the growth of aquatic vegetation that causes off colors and taste. Evaporation losses of water will be extreme due to the large surface area and the shallow nature of the reservoir. At conservation level of 534 ft-msl the deepest part of the reservoir will only be 50-55 feet at dam. The Engineering Firm of Freese and Nichols states the depth to be 70 feet, which is to the bottom of the creek channel. I don't believe the channel depth should be considered because it is only 30 to 40 yards wide. The fall of the land from Highway 82 north is 3 to 5 feet per mile. As shown in Exhibit B, page 3-89, the reservoir will only be at 534 ft-msl 13 percent of the time (48 days) and below 50 percent full less than 20 percent of the months (73 days). With these estimates there will be extensive mud flats every year. People driving along Highway 82 won't even know there is a reservoir. NTMWD keeps tooting the economical development around

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H. D. Witcher Jr.

Harold D Witcher Jr.

date 17 Sept. 2007

PO Box 36
Phone: Honey Grove TX 75446
Fax: 903-378-2871

Citizens to Save Bois d' Arc Creek

Fax

To: Office of the Chief Clerk **FROM** Harold D Witcher Jr.

Fax: 512-239-3311 **Date:** 9-17-2007

Phone: **Pages:** 3

Re: Contested Case Hearing 12151 - NTMWD **CC:**

Urgent ☑ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

a Hard copy will follow by mail.

FAX JOURNAL REPORT

TIME : 09/17/2007 15:23
NAME :
FAX : 9033782871
SER.# : BROF6F448240

NO.	DATE	TIME	FAX NO./NAME	DURATION	PAGE(S)	RESULT	COMMENT
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BUSY: BUSY/NO RESPONSE
NG : POOR LINE CONDITION / OUT OF MEMORY
POL : POLLING
RET : RETRIEVAL
PC : PC-FAX

Contested Case Hearing Request

Harold D. Witcher Jr, President Citizens to Save Bois d'Arc Creek
Mailing Address: 972 CR 2705, Telephone, Texas 75488
Phone: 903-664-2714 e-mail: twitcher@estesinc.com

Applicant & Permit Number: NTMWD permit Number 12151

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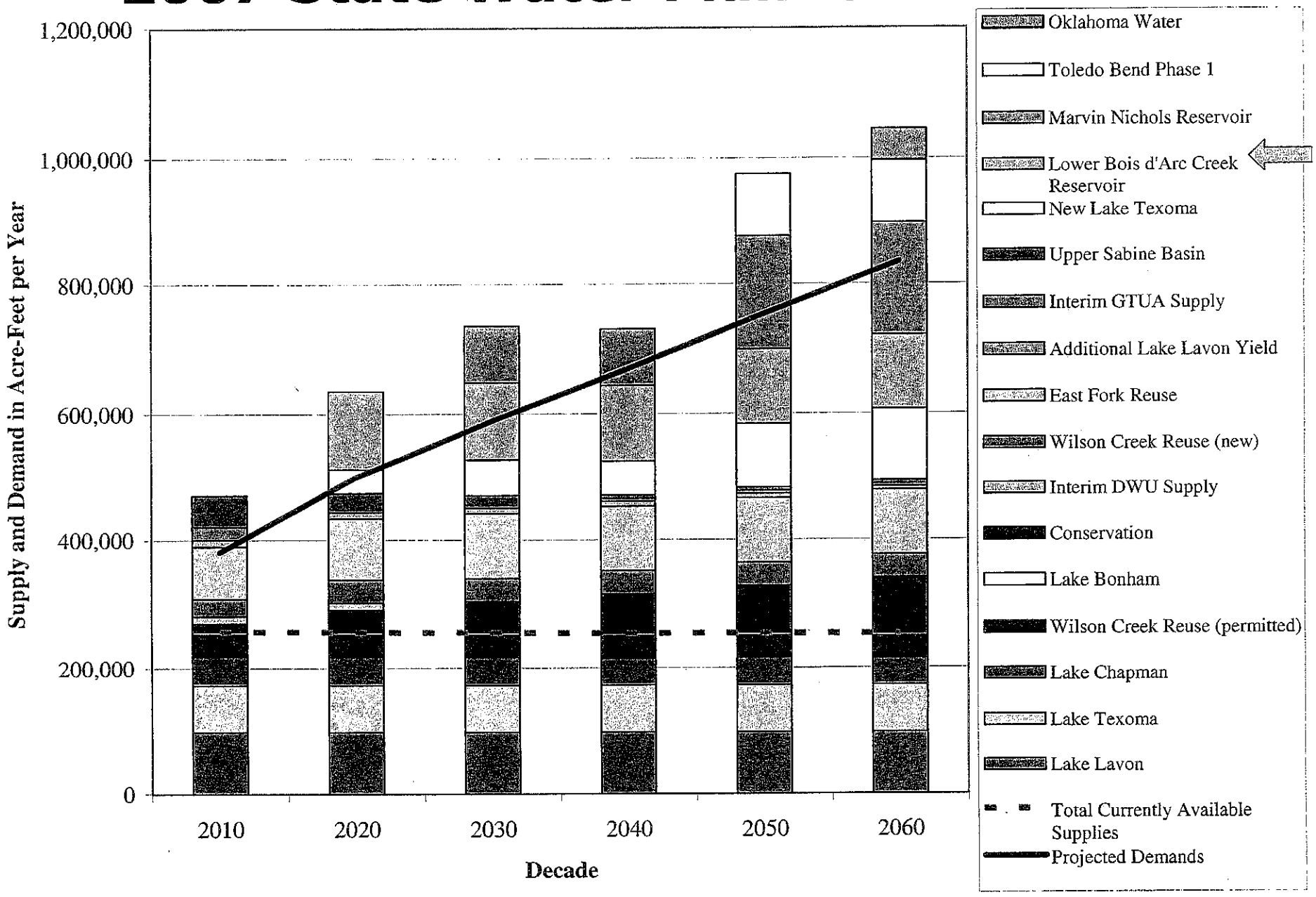
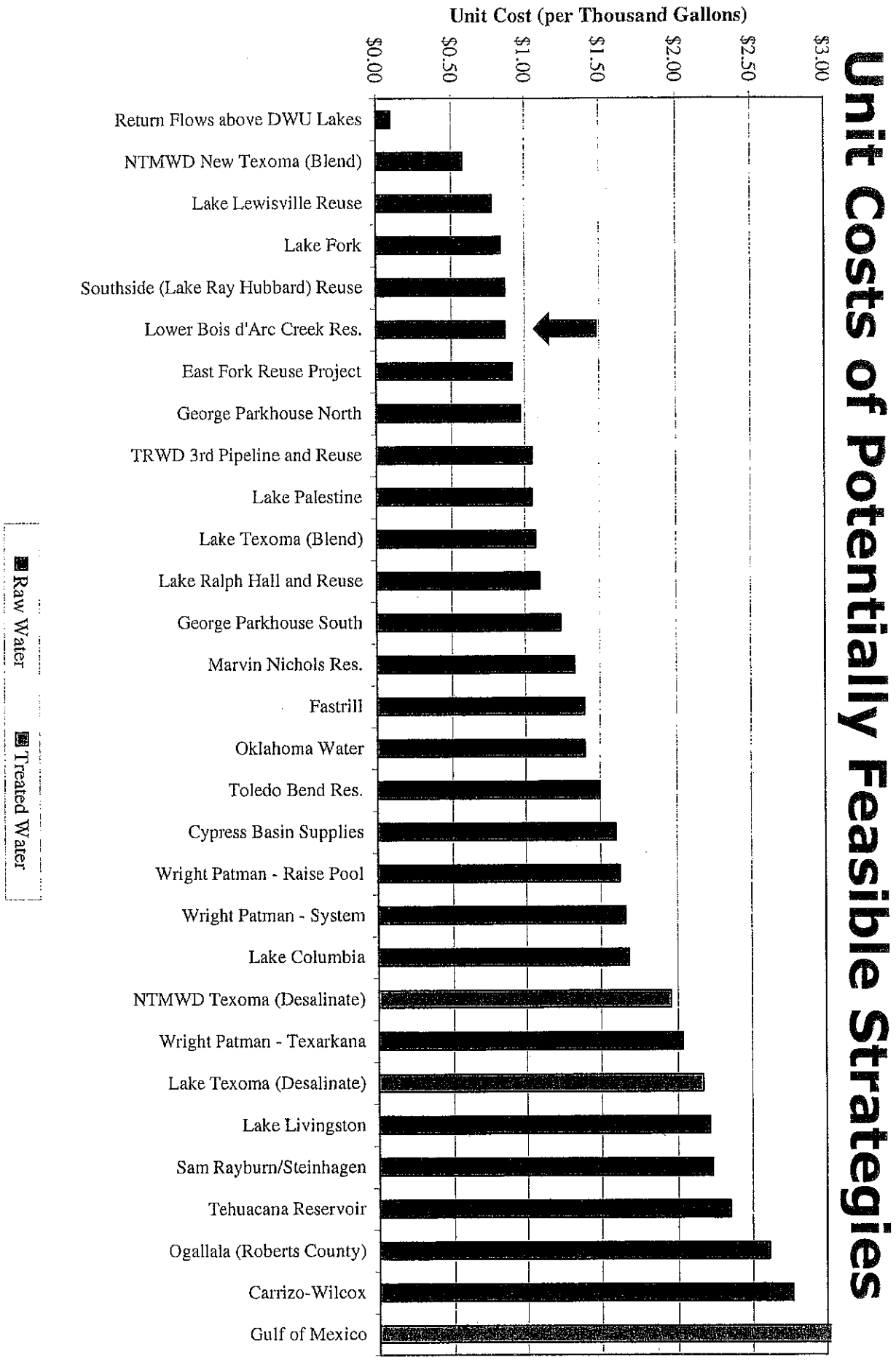
H. D. Witcher Jr. 17 Sept. 2007

Exhibit A

2007 State Water Plan for NTMWD



Unit Costs of Potentially Feasible Strategies



3.4.7 Lower Bois d'Arc Creek Reservoir

3.4.7.1 Description

Lower Bois d'Arc Creek Reservoir is a proposed reservoir on Bois d'Arc Creek, a tributary of the Red River. Figure 3.4.7-1 shows the location of the project, which is in Fannin County in North-Central Texas. A reservoir at this site (then called the Bonham Reservoir) was included in the Red River Compact (Red River Compact Commission, 1979). The project has been studied previously for the Red River Authority and the North Texas Municipal Water District (Freese and Nichols, 1984 and 1996) and was recommended as a water supply for the North Texas Municipal Water District in the 2001 and 2006 Region C Water Plans (Freese and Nichols et al., 2001 and 2006a) and the 2002 and 2007 Texas State Water Plan (Texas Water Development Board, 2002 and 2006).

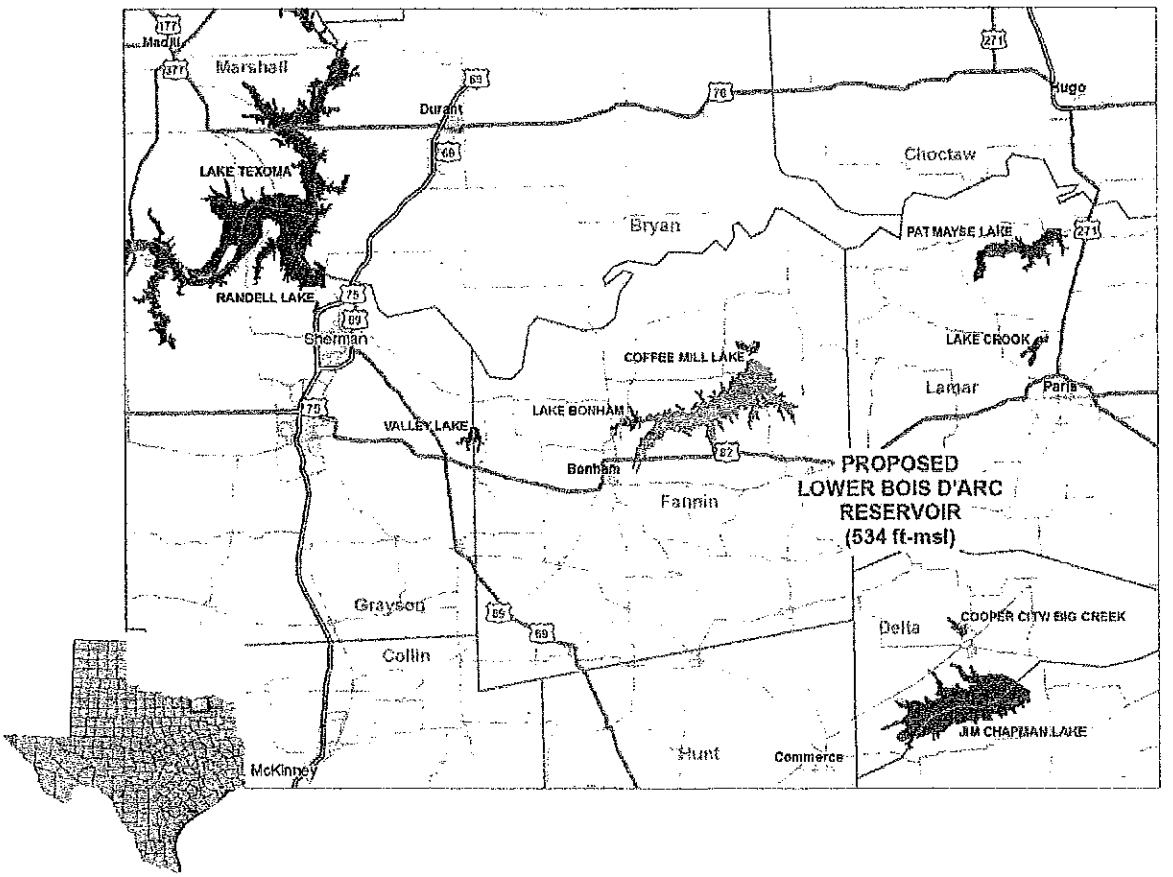


Figure 3.4.7-1. Location Map of Lower Bois d'Arc Creek Reservoir

Lower Bois d'Arc Creek Reservoir is recommended as a unique reservoir site in both the 2001 and 2006 Region C Water Plans. The reservoir is planned to provide water to the North Texas Municipal Water District, which serves water to customers over an eight-county area in north central Texas. The projected needs of the District for additional supply are 113,000 acft/yr in 2010, increasing to over 545,000 acft/yr by 2060 (Freese and Nichols et al, 2006a). The projected needs for additional water supply within 50 miles of the proposed reservoir site by 2060 are 728,028 acft/yr. The nearest major demand center is the Dallas-Fort Worth area, which is located approximately 60 miles southwest of the reservoir site.

3.4.7.2 Reservoir Yield Analysis

The reservoir area capacity data was developed from USGS topographic data and aerial photography that was flown in March 2004. The aerial photography provided 2-foot contour data at the reservoir site up to elevation 540 ft-msl. Table 3.4.7-1 shows the area-capacity-elevation (ACE) data for Lower Bois d'Arc Creek Reservoir. Figures 3.4.7-2 and 3.4.7-3 show the ACE curves and inundation at 10-foot contours.

The firm yields for Lower Bois d'Arc Creek Reservoir were performed using a modified version of the February 8, 2006 Red River WAM (Espey et al. 2002 and TCEQ 2006) Yields were calculated at elevations 530, 534, 536, and 538 ft-msl. The conservation elevation for the proposed reservoir is 534 ft-msl. The yield at this elevation is 126,280 acft/yr.

The hydrology at the Lower Bois d'Arc Creek dam site was calculated outside the WAM and input directly to the model. This adjustment was made because the original WAM underestimates the flows in the Bois d'Arc Creek watershed. From December 1962 to September 1985, the USGS operated the Bois d'Arc Creek near Randolph gage, which measured flows from about 22 percent of the proposed reservoir watershed. There were no known diversions or return flows above this gage, so the flows are representative of natural conditions. A recent study of the proposed reservoir compared these historical flows to naturalized flows in adjacent watersheds (Freese and Nichols, 2006b). This study concluded that naturalized flows in the Sulphur River Basin were probably a better estimator of flows in the Bois d'Arc Creek watershed than incremental flows in the main stem of the Red River, which is the default method used in the TCEQ Red River WAM. The study recommended adding a new primary control

Table 3.4.7-1.
Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

Elevation (feet)	Area (acre)	Capacity (acft)
464.0	5	4
470.0	19	76
480.0	378	1,197
490.0	2,001	15,109
500.0	4,288	50,684
510.0	6,987	99,108
520.0	10,601	180,995
530.0	14,724	302,570
534.0	16,526	367,609
540.0	19,616	467,767
550.0	23,967	678,337
560.0	29,670	954,617

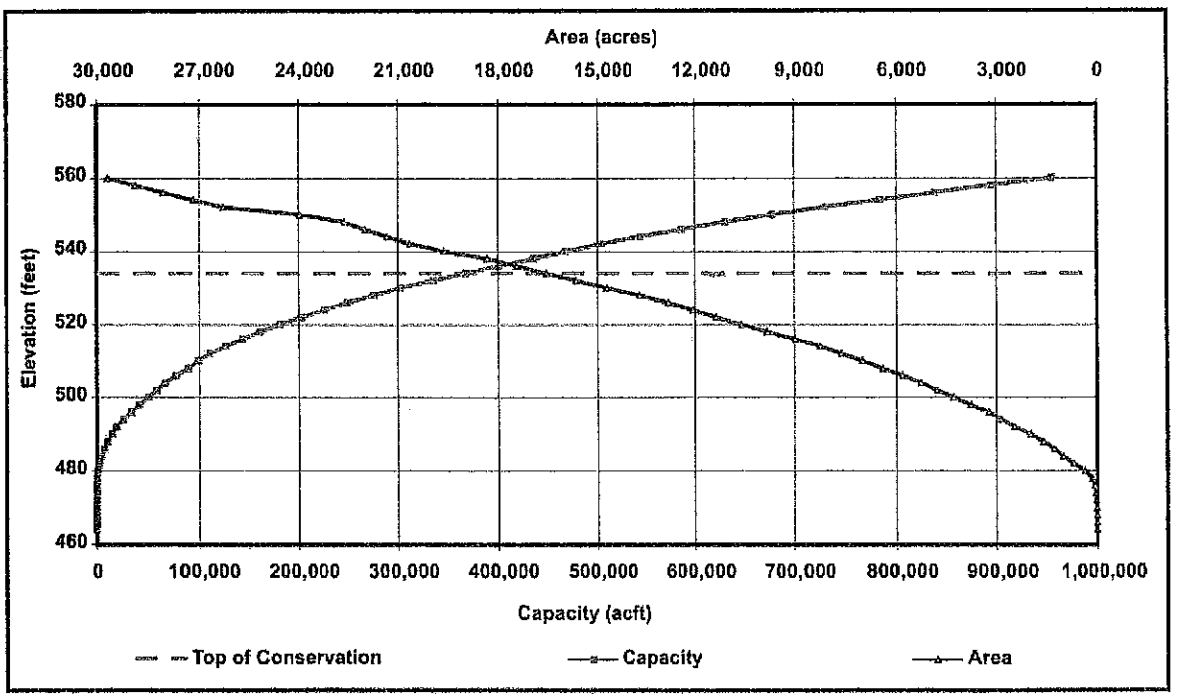


Figure 3.4.7-2. Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

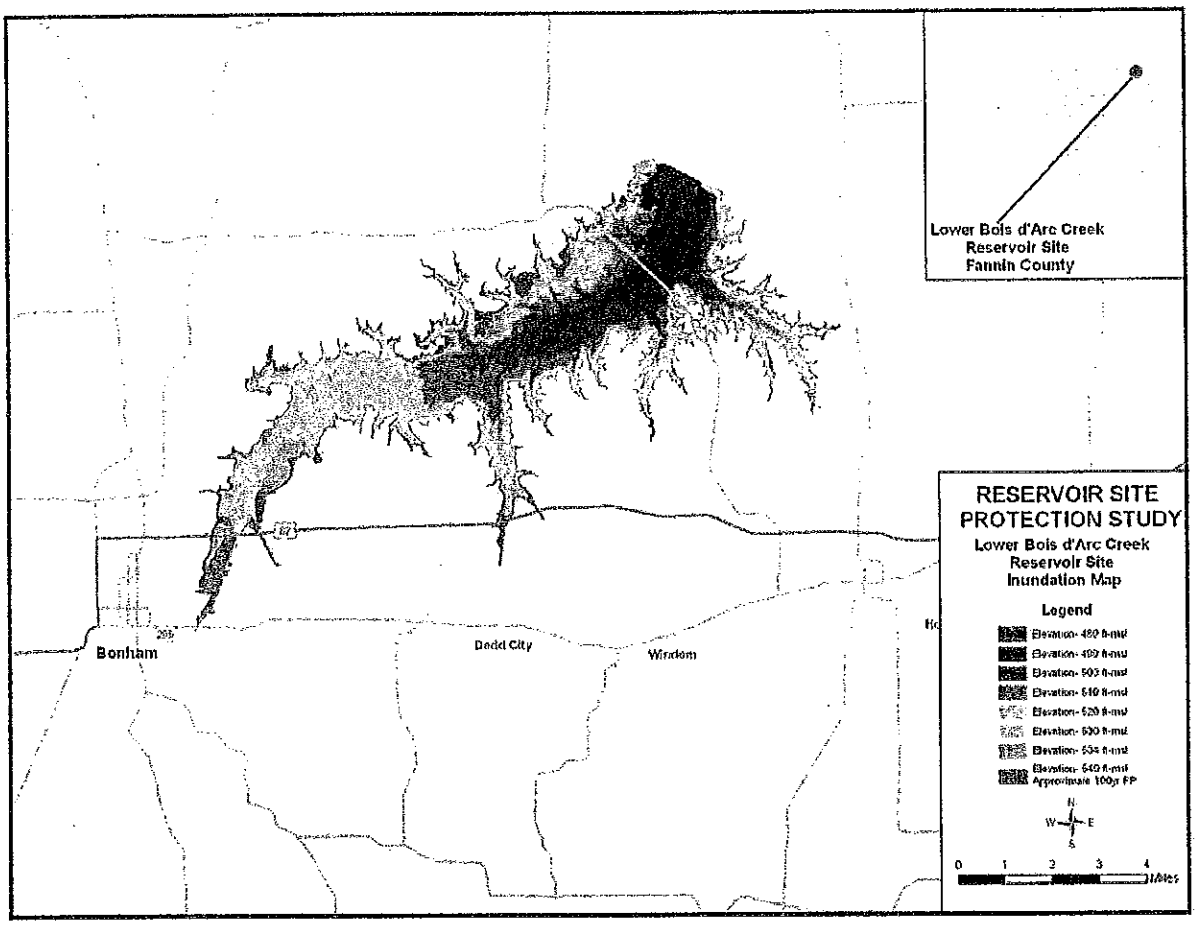


Figure 3.4.7-3. Inundation Map for Lower Bois d'Arc Creek Reservoir

point at the proposed reservoir site using flows based on data from the Randolph gage on Bois d'Arc Creek and naturalized flows in the Sulphur Basin. This method was adopted for the current yield evaluations. More information can be found in the *Report Supporting an Application for a Texas Water Right for Lower Bois d'Arc Creek Reservoir* (Freese and Nichols, 2006b).

For the hydrologic analyses, a new control point was added to the Red River WAM between secondary control points X10200 and X10260. This control point has a drainage area of 327 square miles. A standard firm yield was calculated assuming that water was passed to downstream senior water rights as determined in the WAM Run 3.

The yield studies used the Consensus Criteria for Environmental Flow Needs (CCEFN) bypass criteria developed in the 2006 study of the reservoir. The CCEFN criteria may be found

in Table 3.4.7-2. At the recommended conservation elevation, the bypass criteria reduce the yield of the reservoir by 880 acft/yr.

Table 3.4.7-2.
Consensus Criteria for Environmental Flow Needs for Lower Bois d'Arc Creek Reservoir

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median	acft/mo	1,568	2,515	2,348	1,873	1,779	706	105	12	30	103	467	1,201
	cfs	25.5	44.9	38.2	31.5	28.9	11.9	1.7	0.2	0.5	1.7	7.8	19.5
25th	acft/mo	447	884	827	664	520	100	4	0	0	0	47	144
	cfs	7.3	15.8	13.4	11.2	8.5	1.7	0.1	0.0	0.0	0.0	0.8	2.3
7Q2	acft/mo	0	0	0	0	0	0	0	0	0	0	0	0

Table 3.4.7-3 and Figure 3.4.7-4 show the results of the yield studies. Note that in Figure 3.4.7-4 the yield of the reservoir per acre-foot of increased conservation storage is higher at a conservation elevation of 538 feet. However, the proposed reservoir is immediately downstream of Lake Bonham and the City of Bonham. Increasing the elevation of the reservoir would impact the existing dam for Lake Bonham and increase the potential for flooding in the City of Bonham. The storage trace for the recommended conservation pool elevation and the storage frequency curve are shown in Figure 3.4.7-5. This figure shows that at the proposed conservation elevation of 534 feet, the reservoir would be full about 13 percent of the time and below 50 percent full (183,805 acft) less than 20 percent of the months.

Table 3.4.7-3.
Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

Conservation Pool Elevation (ft-msl)	Conservation Storage (acft)	Environmental Bypass Criteria	Yield (acft/yr)	Critical Period
530.0	302,570	CCEFN	117,190	7/75 - 8/80
534.0*	367,609	CCEFN	126,280	7/75 - 2/81
		None	127,160	7/75 - 2/81
536.0	401,647	CCEFN	130,820	7/75 - 2/81
538.0	436,333	CCEFN	139,570	7/51 - 2/57
*Proposed conservation storage.				

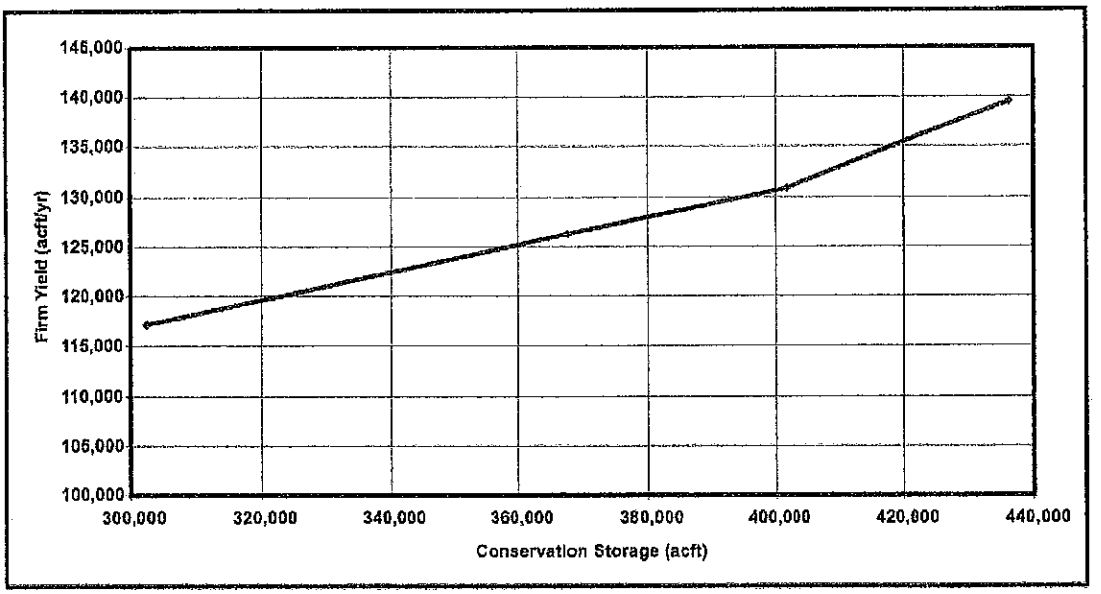


Figure 3.4.7-4. Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

3.4.7.3 Reservoir Costs

Costs for the Lower Bois d'Arc Creek Reservoir Dam assume a zoned earthen embankment and uncontrolled spillway. The length of the dam is estimated at 10,400 feet with a maximum height of 90 feet. The service spillway would include an approach channel; a 150-foot uncontrolled concrete weir, chute, hydraulic jump stilling basin, and outlet channel.

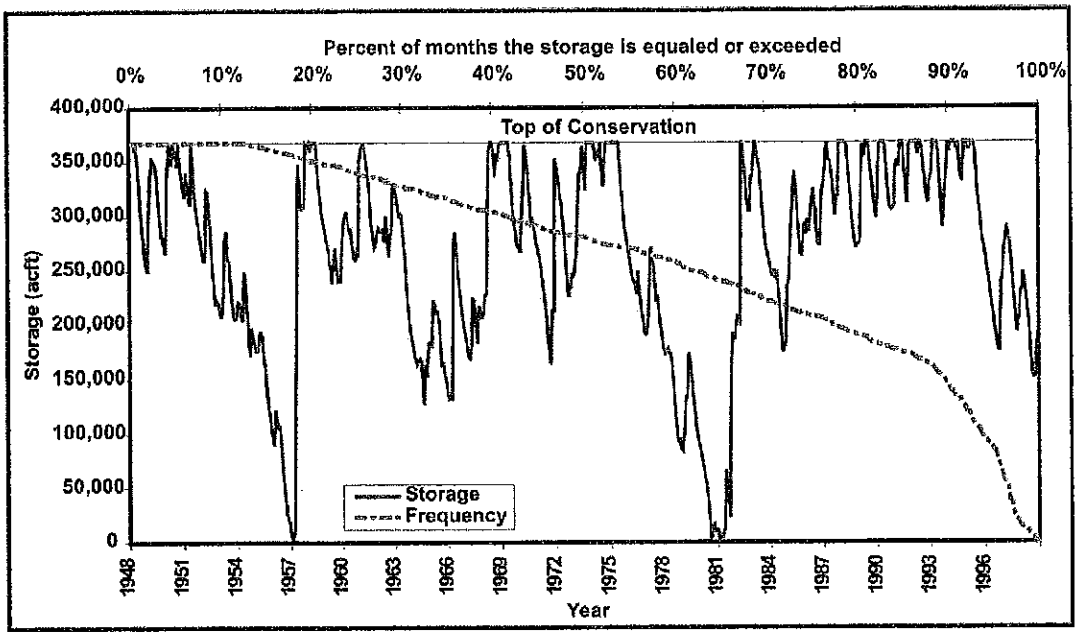


Figure 3.4.7-5. Simulated Storage in Lower Bois d'Arc Creek Reservoir (Conservation Elevation = 534 ft-msl, Diversion = 126,280 acft/yr)

Conflicts identified at the site include a cemetery, electrical lines, several roads (including U.S. Highway 82 and F.M. 1396), a 10-inch gas line and several other structures. A list of the potential conflicts is provided in Table 3.4.7-4. In addition to these conflicts, the cost estimate includes protection of the downstream slope of the Lake Bonham Dam, which will abut the upper reaches of the Lower Bois d'Arc Creek Reservoir. Costs for these conflict resolutions were developed from data provided by TNRIS and from the study report in support of the water right permit application for Lower Bois d'Arc Creek Reservoir (Freese and Nichols, 2006b). The conflict costs represent less than 10 percent of the total construction cost of the reservoir project. Figure 3.4.7-6 shows the conflicts as mapped by TNRIS.

Table 3.4.7-4.
List of Potential Conflicts for Lower Bois d'Arc Creek Reservoir

Gas Pipeline	Power Transmission Lines
Roads	Cemetery

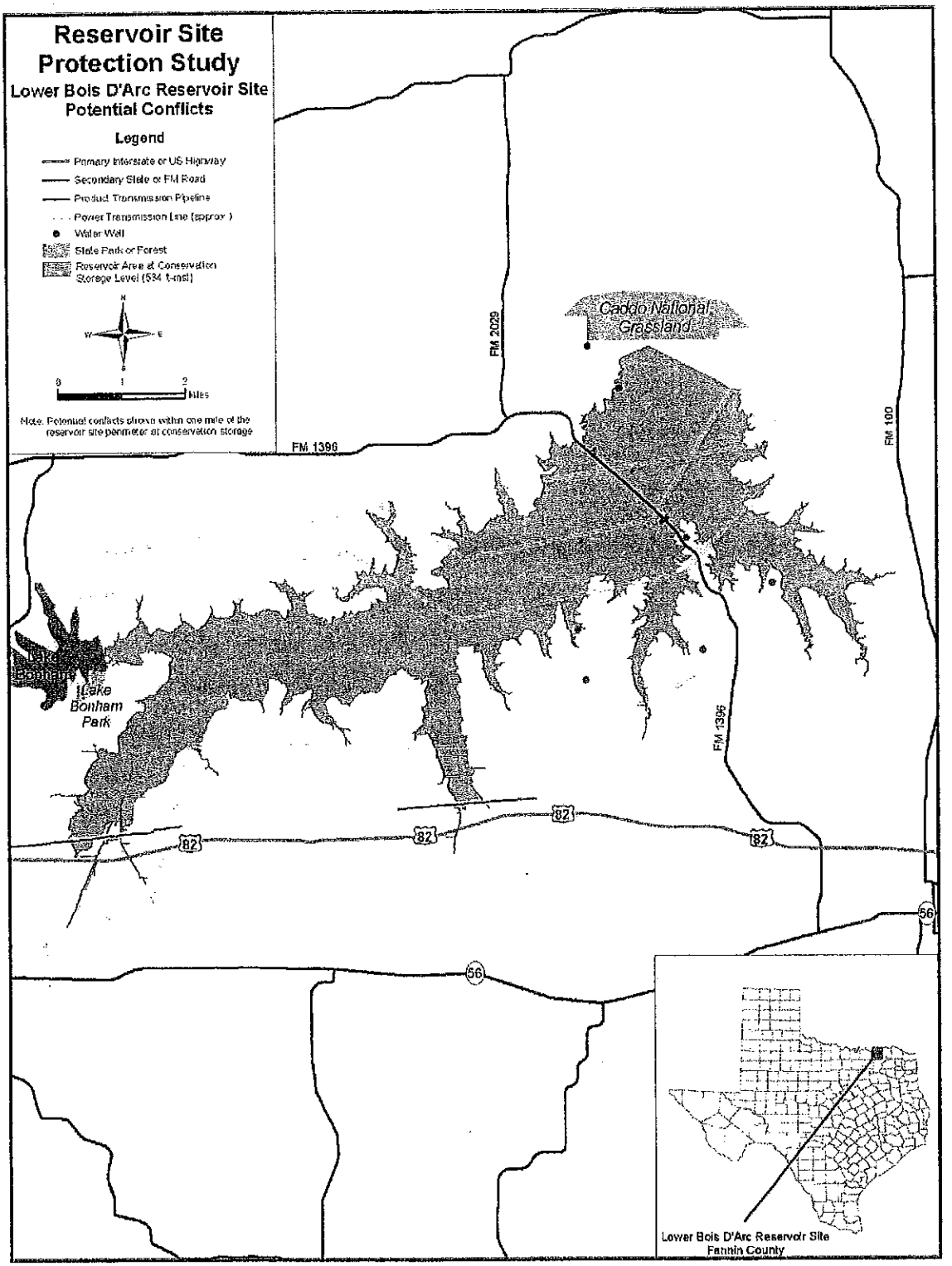


Figure 3.4.7-6. Potential Major Conflicts for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-5 shows the estimated capital costs for the Lower Bois d'Arc Creek Reservoir Project, including construction costs, engineering, permitting and mitigation. Unit costs for the dam and reservoir are based on the unit cost assumptions used in this study. Local costs could vary. Utilizing these unit costs, the total estimated cost of the project is $248 million (2005 prices). Assuming a yield of 126,200 acft/yr, raw water from the project will cost approximately $140 per acre-foot ($0.43 per 1,000 gallons) during the debt service period.

3.4.7.4 Environmental Considerations

Lower Bois d'Arc Creek Reservoir is located on an ecologically significant stream as identified by the Texas Parks and Wildlife Department. The designation is based on biological function, hydrologic function, and the presence of a riparian conservation area. The Region C Water Planning Group did not identify this stream segment as ecologically unique in the 2006 water plan. Portions of the creek that would be impacted by the reservoir were altered (straightened and widened) approximately 80 years ago to reduce localized flooding. The site is located immediately upstream of the Caddo National Grasslands, but would have minimal impacts to these lands. The U.S. Fish and Wildlife Service has identified Priority 4 bottomland hardwoods considered "moderate quality bottomlands with minor waterfowl benefits" (USFWS, 1985) in the vicinity of the project.

Lower Bois d'Arc Creek Reservoir will inundate 16,526 acres of land at conservation storage capacity. Table 3.4.7-6 and Figure 3.4.7-7 summarize existing landcover for the Lower Bois d'Arc Creek Reservoir site as determined by TPWD using methods described in Appendix C. Existing landcover within this reservoir site is dominated by upland deciduous forest (42 percent) with sizeable areas of grassland (28 percent) and agricultural land (17 percent). Bottomland hardwood forest comprises only about 2.2 percent of the reservoir area while marsh, swamp, and open water total about 3.5 percent of the reservoir area.

Table 3.4.7-5.
Cost Estimate — Lower Bois d'Arc Creek Reservoir @ Elevation 534 ft-msl

	Quantity	Unit	Unit Price	Cost
Dam & Reservoir				
Mobilization (5%)	1	LS	$2,976,100	$2,976,000
Clearing and Grubbing	85	AC	$4,000	$340,000
Care of Water During Construction (1%)	1	LS	$589,300	$589,000
Required Excavation	2,339,400	CY	$2.50	$5,849,000
Borrow Excavation	2,030,000	CY	$2.00	$4,060,000
Random Compacted Fill	3,261,000	CY	$2.50	$8,153,000
Core Compacted Fill	711,200	CY	$3.00	$2,134,000
Soil Bentonite Slurry Trench	497,700	SF	$15.00	$7,466,000
Soil Cement	114,900	CY	$65.00	$7,469,000
Flex Base Roadway	29,200	SY	$20.00	$584,000
Sand Filter Drain	293,000	CY	$35.00	$10,255,000
Grassing	41	AC	$4,500	$185,000
Intake Tower for Low-Flow Outlet	527	CY	$750	$395,000
Conduit for Low-Flow Outlet	660	CY	$500	$330,000
Impact Basin for Low-Flow Outlet	160	CY	$500.00	$80,000
Gates and Miscellaneous for Low-Flow Outlet	1	LS	$200,000	$200,000
Electrical System and Instrumentation for Low-Flow Outlet	1	LS	$195,000	$195,000
Spillway Structure and Reinforced Concrete	19,700	CY	$375	$7,388,000
Roller Compacted Concrete	49,900	CY	$60	$2,994,000
Bridge	3,000	SF	$150	$450,000
Barrier and Warning System	1	LS	$50,000	$50,000
Embankment Instrumentation	1	LS	$250,000	$250,000
Timber Guard Posts and Guard Rail	1	LS	$55,000	$55,000
Misc. Internal Drainage	1	LS	$50,000	$50,000
Engineering and Contingencies				$21,874,000
Subtotal for Dam & Reservoir				**$84,371,000**
Conflicts				
Utilities				
10-in Gas Pipeline	3,720	LF	$27	$100,000
138 KV Line	1	LS	N/A	$1,500,000
345 KV line	1	LS	N/A	$3,735,000
Other structures	1	LS	N/A	$3,000,000
Cemeteries	27	EA	$6,000	$162,000
Major Roads (raised)	5,000	LF	$900	$4,500,000
Other roads	7,200	LF	$150	$1,080,000
Lake Bonham (protection)	1	LS	$175,000	$175,000
Engineering and Contingencies at 35%				$4,988,000
Land Acquisition - Conservation Pool plus 10%	22,000	AC	$2,675.00	$58,850,000
Environmental Studies and Mitigation Lands	22,000	AC	$2,675.00	$58,850,000
CONSTRUCTION TOTAL				**$221,311,000**
Interest During Construction (36 months)				**$26,927,000**
TOTAL COST				**$248,238,000**
ANNUAL COSTS				
Debt Service (6% for 40 years)				$16,498,000
Operation & Maintenance				$1,125,000
Total Annual Costs				**$17,623,000**
UNIT COSTS				
Per Acre-Foot				$140
Per 1,000 Gallons				$0.43

Units: AC = Acre; CY = Cubic Yard; EA = Each; LB = Pound; LF = Linear Foot; LS = Lump Sum; SF = Square Foot; and SY = Square Yard.

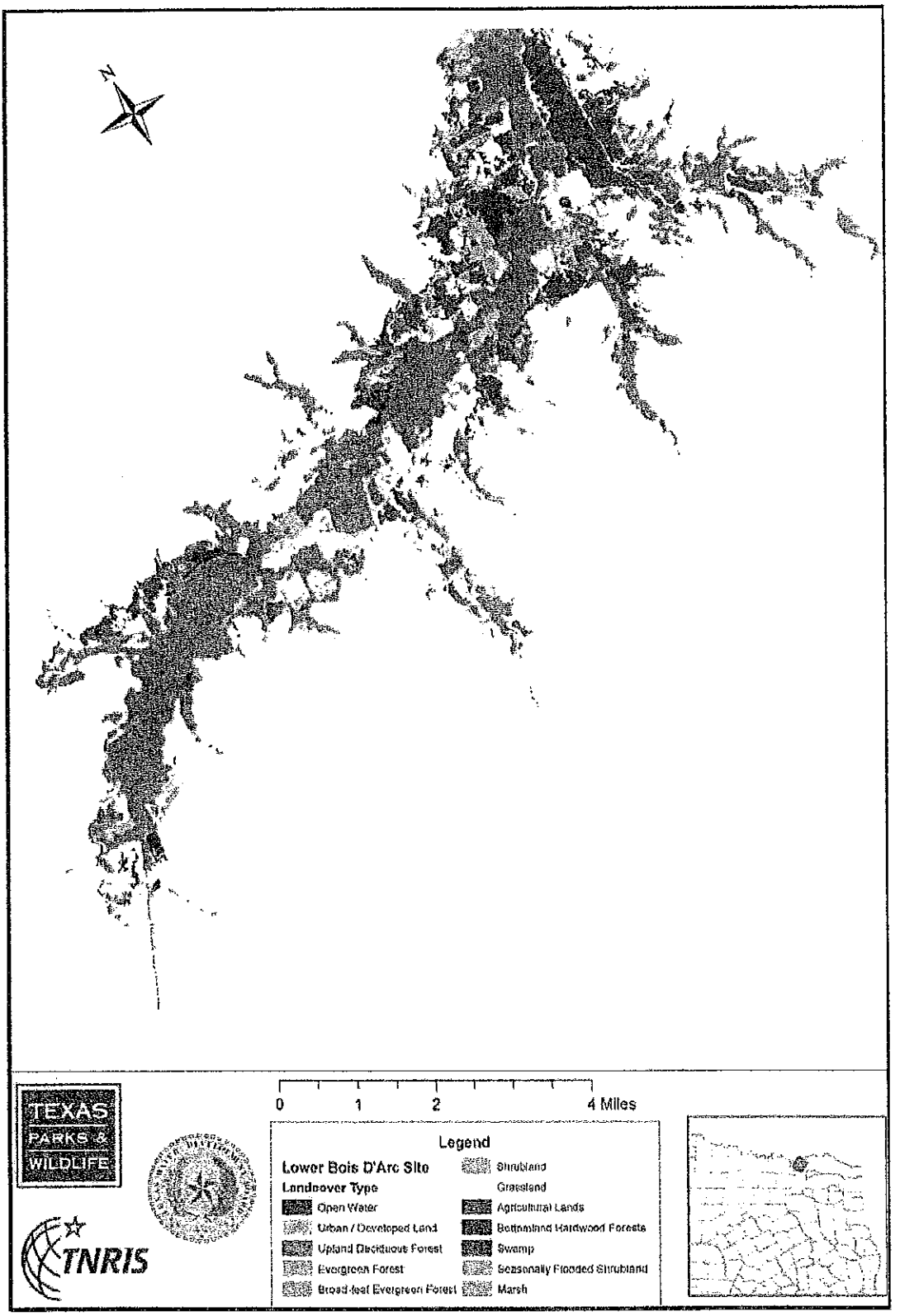


Figure 3.4.7-7. Existing Landcover for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-6.
Acreage and Percent Landcover for Lower Bois d'Arc Creek Reservoir

Landcover Classification	*Acreage*[1]	*Percent*
Bottomland Hardwood Forest	373	2.2%
Marsh	407	2.5%
Seasonally Flooded Shrubland	73	0.4%
Swamp	29	0.2%
Evergreen Forest	61	0.4%
Upland Deciduous Forest	6,936	41.9%
Grassland	4,671	28.2%
Shrubland	1,038	6.3%
Agricultural Land	2,826	17.1%
Open Water	135	0.8%
Total	16,549	100.0%

[1] *Acreage based on approximate GIS coverage rather than calculated elevation-area-capacity relationship.*

Exhibit C

BOIS D' ARC CREEK BASIN

SECTION 905(b) (WRDA 86) Analysis

1. STUDY AUTHORITY

a. This Section 905(b) (WRDA 86) Analysis was prepared as an initial response to the Energy and Water Development Act, 2000, Public Law 106-60, and House Committee on Appropriations Report 106-253, dated July 23, 1999, which reads in part:

> ".....Funds are included in the recommendation for a reconnaissance study of flooding and related water resource problems along the Bois d' Arc Creek near Bonham, Texas."

b. Funds in the amount of $100,000 were appropriated in Fiscal Year 2000 to conduct the reconnaissance phase of the Bois d' Arc Creek near Bonham, Texas, study. In response to the study authority, the reconnaissance phase of the study was initiated on January 17, 2000.

2. STUDY PURPOSE

The purpose of this study is to determine if there is Federal interest in providing flood control, water supply, recreation, and fish and wildlife improvements within the Bois D' Arc Creek Basin near Bonham, Texas. If Federal interest is determined, a feasibility report will be forwarded to Congress with a recommendation for authorization. This reconnaissance phase of the study has resulted in the finding that there is Federal interest in continuing the study into the feasibility phase. This Section 905(b) (WRDA 86) Analysis documents the basis for this finding and establishes the scope of the feasibility phase. As the document that establishes the scope of the feasibility study, this Section 905(b) (WRDA 86) Analysis is the basis for the Scope of Work chapter of the Project Study Plan.

3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICTS

a. The Bois d' Arc Creek Basin is located in northeastern Texas in Fannin and Grayson counties. Bois d' Arc Creek originates at the western border of Grayson County and flows northeasterly through Fannin County to its confluence with the Red River. See Attachment 1. Fannin County, Texas, is the non-Federal sponsor for the feasibility phase of this study.

b. Congressional interests includes Texas Senators Phil Gramm and Kay Bailey Hutchison and Congressman Ralph Hall of the Texas 4th Congressional District.

4. PRIOR STUDIES, REPORTS, AND EXISTING WATER PROJECTS

The following reports were reviewed as a part of this study:

a. 1968 Reconnaissance Report, Bonham Lake, Texas. This report, prepared by the Tulsa District, identified a feasible multipurpose lake for potential development. Data from this report are the basis for the project formulated in this reconnaissance report.

b. Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Comprehensive Study, Interagency Reconnaissance Report, March 1985. This report identified a number of potential lake sites that were considered in development of water supply within the northeastern Texas region, including Fannin County.

5. PLAN FORMULATION

During a study, the six planning steps set forth in the Water Resource Council's Principles and Guidelines are repeated to focus the planning effort and eventually to select and recommend a plan for authorization. The six planning steps are: (1) specify problems and opportunities, (2) inventory and forecast conditions, (3) formulate alternative plans, (4) evaluate effects of alternative plans, (5) compare alternative plans, and (6) select recommended plan. The phases of the planning process typically differ in the emphasis that is placed on each step. In the iterations conducted during the reconnaissance phase, the step of specifying problems and opportunities is emphasized, although the other steps are not ignored since the initial screening of preliminary plans that results from the other steps is critical to scoping follow-on feasibility phase studies. The subparagraphs that follow present the results of the reconnaissance phase. This information will be refined in future iterations of the planning steps during the feasibility phase.

a. Problems and Opportunities

(1) Existing conditions. Bois d' Arc Creek rises in the eastern portion of Grayson County near Whitewright, Texas, and flows in a northeasterly direction across Fannin County to enter the right bank of the Red River at mile 611.8. The watershed has a length of about 58 miles, a maximum width of about 18 miles, and a drainage area of about 425 square miles. According to State estimates of the 1999 population, Fannin County had 28,700 residents, a population larger than its 1990 census count of 24,804. The City of Bonham is the largest city in Fannin County and had an estimated population of 7,500. The residents of Fannin County are primarily low to middle income, with a median family income of $26,600 in 1990, the most recent data on family income for the area. The median family income for all residents in Texas was $31,553. The per capita income in Fannin County was $9,509 compared to the State per capita income of $12,904. Manufacturing and retail trade are the two largest employing industries in the county. The average 1999 unemployment rate in Fannin County of 5.3% is slightly higher than the State of Texas rate of 4.6% for the same year. In 1927, local interests organized three drainage districts, and the upper two-thirds Bois d' Arc Creek was modified through construction of a straight channel. Overflows from the natural and modified portions of

Bois d' Arc Creek pose threats to urban development in the City of Bonham and surrounding agricultural areas within the basin.

(2) Flood problem. The Bois d' Arc Creek floodplain and its tributaries have been associated with flooding of residential and commercial structures in and near the town of Bonham, Texas. Recent flooding occurred along Bois d' Arc Creek and in the City of Bonham in October 1981, May 1989, and January 1998. The most significant flooding from available records occurred in 1989 when flood rescue operations for a number of Bonham residents took place. The Bonham floodplain administrator indicated that at least 100 homes were flooded by the event. In addition, flooding from Bois d' Arc Creek damaged agricultural crops and equipment. Flood control measures of a Federal project will primarily impact areas of the City of Bonham and Fannin County, Texas.

(3) Water supply. Officials of the City of Bonham and Fannin County, Texas, have projected a need for additional water supply within the region by the year 2014. Additional water supplies in the Bois d' Arc Creek Basin would provide benefits to the northeastern Texas region.

(4) Recreation. Fannin County officials have indicated that a multipurpose project could provide additional recreational facilities that are desired by area residents. The population in Fannin County has been projected to grow 36% from 2000 to the year 2050. In addition, significant population increases that include the Dallas metroplex will place pressure for new and expanded recreation facilities in the region.

(5) Ecosystem restoration. An opportunity exists to provide ecosystem restoration features along Bois d' Arc Creek. Historical wetlands within the basin have been adversely affected by modifications to the original Bois d' Arc channel. Water releases from a multipurpose lake project would provide flows beneficial to some 3,000 acres of wetlands in the lower portion of the basin. The Bois d' Arc Creek Basin has suffered declines and impacts to bottomland hardwood forests and riparian vegetation as have other areas within the state. Vegetation along the stream has been removed, and the land has been converted to grasslands, improved pasture, and agricultural lands. The decline in this habitat type has led to preservation and restoration efforts by a number of entities within the state and by the U.S. Fish and Wildlife Service. Within the Bois d' Arc Creek Basin, these wetland resources would probably be classified as Resource Category II, which connotates high value for species and the habitat as scarce or becoming scarce. At least one area, the Caddo National Forest and Grassland, exists in the lower basin and is managed by the U.S. Forest Service.

(a) Bottomland hardwoods and riparian vegetation are critical for habitat diversity and maintenance of wildlife species. Numerous species utilize these habitats, including turkey, whitetail deer, furbearers, waterfowl, songbirds, and various species of small mammals, birds, amphibians, and reptiles. Species of special concern (Texas Parks and Wildlife Threatened and Endangered Species) that are known to occur or have a high probability of occurring in the Bois d' Arc Creek Basin include the bald eagle, Interior least tern, Eskimo curlew, red-cockaded woodpecker, paddlefish, American swallow-tailed kite, white-faced ibis, wood stork, Arctic peregrine falcon, and Texas horned lizard.

(b) The Bois d' Arc Creek watershed has been modified by agricultural practices. The riparian corridor along the creek has been severely reduced and floodplain wetlands converted to farmland. The loss of stream bank vegetation has contributed to siltation within the stream, bank caving, and elevated stream temperatures, and has reduced the carrying capacity of the aquatic ecosystem. An aquatic habitat restoration project that would restore the riparian corridor along the stream would provide multiple benefits to the aquatic ecosystem of the creek. Protected bottomland hardwood tree and native grass plantings along the stream would restore lost or degraded aquatic habitat, reduce siltation, and provide a travel corridor for wildlife species along the stream to the Red River. Wildlife species likely to benefit from a habitat restoration project would include turkey, whitetail deer, wood duck, various species of amphibians, reptiles, and songbirds. Improved stream water quality, reduced siltation, and reduced stream temperatures would benefit the aquatic community as well. Species most likely to benefit would include largemouth bass, various species of sunfish, channel and flathead catfish, the minnow community, and some species of darters. It could also positively impact fish species of special concern such as the blue sucker, American eel, and paddlefish, especially in the lower reaches of the stream near its confluence with the Red River.

b. Inventory and Forecast Conditions

(1) Inventory. Data formulated for the 1968 reconnaissance report, including summaries of damages and costs for the alternatives considered, were the basis for a justified project in the Bois d' Arc Creek Basin. These data were updated to reflect expected costs and benefits for the basin in its current state of development. No additional structural inventory or hydrology was generated. Although there is evidence of additional development and potentially higher values for specific agricultural products, the more conservative cost and benefit values for the 1968 conditions were updated.

(2) Expected future conditions. The State of Texas projects that the Fannin County population will be 41,000 in the year 2050. This growth is linked to overall economic development in northeast Texas as employment opportunities in retail, services, and manufacturing continue to expand. Associated with this growth will be demand for water supply and recreation. In the absence of a project to address the flood control, water supply, and recreation needs of the area, continued growth and regional development would be limited. Flood damages within the Bois d' Arc Creek Basin would continue to occur and threaten the safety of residents and cause loss to property, agricultural products, and equipment.

c. Formulate Alternative Plans

(1) Planning objectives and constraints. The national or Federal objective of water and related land resources planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment, pursuant to national environmental statures, applicable executive orders, and other Federal planning requirements.

(a) Contributions to NED are increases in the net value of the national output of goods and services expressed in monetary units and are the direct net benefits that accrue in the planning area and the rest of the Nation.

(b) The Corps has added a second objective for National Ecosystem Restoration (NER) in response to legislation and administration policy. This objective is to contribute to the Nation's ecosystems through ecosystem restoration, with contributions measured by changes in the amounts and values of habitat.

(2) Public concerns. A number of public concerns were identified during the reconnaissance study. Input was received through coordination with the potential sponsor, Fannin County and some initial coordination with City of Bonham officials. Public concerns that are related to establishing planning objectives and planning constraints are:

(a) Recent flood events in and near the City of Bonham from Bois d' Arc Creek and its tributaries have created concern among area residents and government officials for reduction of potential damages.

(b) Growth in commercial and industrial activity in the City of Bonham and in the Fannin County area in recent years has resulted in the need for permanent additional water supply to accommodate future growth within the region. Projections by the Texas Water Development Board, 2002 State Water Plan, indicate a population growth in Region C (which includes Fannin County) of about 65% from 1990 to the year 2050. Projections of water demand for the same period in Texas Region C indicate an increase of 150% over current use.

(c) Recreational opportunity is limited in Fannin County. Area residents consider the potential for increased multipurpose recreation to be a benefit.

(d) Bottomland environmental resources located along Bois d' Arc Creek include unique natural wetlands that are subject to periods of drought during the year. The potential exists for project features to augment flow conditions within the lower portions of the basin to restore riparian and aquatic ecosystems that have been lost from historical modifications of Bois d' Arc Creek.

(3) Study planning objectives. The objectives of NED and NER are general statements and are not specific enough for direct use in plan formulation. The water and related land resource problems and opportunities identified in this study are stated as specific planning objectives to provide focus for the formulation of alternatives. Planning objectives reflect the problems and opportunities and represent desired positive changes in the without-project conditions. The planning objectives are specified as follows:

(a) Reduce existing flood related damages in the Bois d' Arc Creek Basin in Fannin County, Texas.

(b) Provide additional municipal and industrial water supply for the northern Texas region, including municipalities and other users in Fannin County.

(c) Provide recreation opportunities for residents and visitors to the northeastern Texas region.

(d) Restore the riparian ecosystem in the lower basin of Bois d' Arc Creek to a more naturally functioning system.

(e) Minimize real estate acquired for any project considered for development.

(f) Identify alternatives that meet local acceptability criteria.

(4) Planning constraints. Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The planning constraints identified in this study are as follows:

(a) Any recommended project must be justified under established Federal planning criteria.

(b) Federal participation in the recommended plan is limited to 65% of the implementation cost, unless Congress specifically authorizes participation at another rate. Amounts over the Federal limit would be a local expense.

(c) The recommended project must be acceptable and supported by a local sponsor. Feasibility studies must be cost shared 50%. Separable allocated costs for construction will be determined in the feasibility phase.

(5) Problems warranting Federal participation. The problem identified in the Bois d' Arc Creek watershed is significant risk of flood damage to urban areas of the City of Bonham and flooding of agricultural areas northeast of the city. Ecosystem restoration opportunities exist in the lower portions of Bois d' Arc Creek Basin, which contain large wetland resources.

d. Effects of Alternative Plans

(1) A variety of measures were considered. Some were found to be infeasible due to technical, economic, or environmental constraints. Each measure was assessed and a determination made regarding whether it should be retained in the formulation of alternative plans. Descriptions and results from evaluating the measures considered in this study are presented below:

(a) No Action. The Corps is required to consider "No Action" as an alternative to comply with requirements of the National Environmental Policy Act. No Action is the condition reasonably expected to prevail over the period of analysis given current conditions and trends and assuming that no project would be implemented by the Federal Government to achieve the planning objectives. No Action, which is synonymous with the Without-Project Condition, forms the basis from which all other alternative plans are measured.

(b) Nonstructural measures. Nonstructural plans included flood proofing and relocation of structures subject to flood damage.

(c) Structural measures. Several structural measures were considered in the 1968 reconnaissance report. One alternative considered was channel improvement at Bois d' Arc Creek and its tributaries. The measures were directed at improvement of the flood control problem only. Reservoirs that could provide multipurpose benefits within the basin included sites at river miles 23.5, 24.8, 28.6, and 43.1.

e. Comparison of Alternative Plans

(1) Preliminary plans eliminated from further consideration. Preliminary plans are composed of one or more management measures that remain after initial screening. These plans and results of their evaluations are given below:

(a) Nonstructural plans were not economically justified, practical, or locally acceptable for application within Fannin County. In addition, no nonstructural measures were identified that met all water resource needs within the basin.

(b) Because of the diverse water resource needs within the Bois d' Arc Creek Basin, structural measures were formulated based on locating a multipurpose reservoir that could provide flood control, water supply, recreation, and fish and wildlife. Reservoir sites located at lower river miles 23.5, 24.8, and 28.6 were dropped from further consideration in the reconnaissance phase. Reservoir sites in the lower portion of the basin were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the lower Bois d' Arc Creek Basin. The best location for a reservoir in the lower portion of the basin, at river mile 23.5 (Coffey Mill site), would inundate an existing Forest Service lake and significant wetland areas. In addition, the shallow nature of the reservoir would potentially pose water quality problems.

(c) Combinations of upstream reservoirs and channel modifications were considered as potential solutions to the flood control needs within the Bois d' Arc Creek Basin. One alternative included locating a small reservoir on the Powder Creek tributary of Bois d' Arc Creek in combination with channel clearing and widening on Powder Creek and Bois d' Arc Creek channels. These plans were found to not be economically justified. In addition, the smaller detention reservoir would not provide significant water supply yield. Consequently, these combination plans were eliminated from further consideration.

(2) Preliminary plans remaining for further consideration. Descriptions and results from evaluating the preliminary plans considered further in this study are presented below:

(a) No Action. The No Action plan was carried further into the evaluation. However, the plan would not satisfy the planning objectives to reduce flood damages along Bois d' Arc Creek or provide water supply, recreation, and fish and wildlife benefits.

(b) Multipurpose Reservoir. Using the results of the 1968 Tulsa District reconnaissance report, a preliminary plan was identified that included construction of a multipurpose reservoir at the Bonham site (mile 43.1) located upstream from the City of Bonham. This reservoir would provide flood reduction benefits, 27 million gallons per day of water supply, opportunities for recreation, and potential fish and wildlife benefits. Ecosystem restoration benefits within the Bois d' Arc Creek Basin from water releases from the Bonham Reservoir to historical wetlands downstream were also considered.

(3) Preliminary evaluation of alternatives. With the No Action plan, expected annual flood damages of about $808,000 were estimated within the 100-year floodplain. Updating the 1968 Bois d' Arc reconnaissance report derived this estimate of loss. It is likely these damage amounts are understated due to construction of additional structures, higher value cropping patterns, and intensified farming practices that have developed within the 100-year floodplain since 1967. In consideration of these increased values, a complete inventory of annual flood damages could range from $800,000 to $1,500,000. Projections of net water supply needs indicate a deficit beginning in the year 2014. To address this need, another reservoir site in the lower portion of the Bois d' Arc Basin named the "New Bonham" site was proposed in the 2000 Texas Water Plan for Region C. Construction of this reservoir was estimated to cost $191 million. This site was used to estimate benefits for the Federal project located at river mile 43.1 that includes water supply as the least costly water supply alternative. The Federal multipurpose reservoir alternative is estimated to cost in the range of $90 million, or $7,540,000 in average annual costs (100 years, 6-5/8%).

Average annual benefits of $10,020,000 were estimated for the preliminary plan. This estimate includes annual benefits for flood damage reduction, water supply, recreation, and fish and wildlife. The estimated benefit-to-cost ratio (BCR) would meet the Federal criterion of a BCR of at least 1.

f. Recommended Plan

The multipurpose Bonham Reservoir located at river mile 43.1 is the recommended plan.

6. FEDERAL INTEREST

Based on the preliminary screening of alternatives, an alternative can be developed to address flood control, water supply, recreation, and fish and wildlife needs in an economically justified, environmentally acceptable manner in the feasibility phase. Flood control is an output with a high budget priority; therefore, there is Federal interest in conducting the feasibility study. In addition, the potential for low flow augmentation to wetland areas below the proposed reservoir would improve native ecosystem habitat as part of an ecosystem restoration project that could be developed within existing policy.

7. PRELIMINARY FINANCIAL ANALYSIS

As the non-Federal sponsor, Fannin County, Texas would be required to provide 50% of the cost of the feasibility phase. A letter of intent from the local sponsor is included as Attachment 2. The letter states their willingness to enter into negotiations for the feasibility phase, their ability to pursue the feasibility study and share in its cost, and their understanding that cost sharing at a minimum of 35%, including the LERRD's, is also required for construction of the potential project.

8. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS AND EXCEPTIONS

a. Mapping and imagery of topographic wetlands and agricultural features are available and sufficient for field investigations. Mapping for design purposes will be acquired.

b. An Environmental Impact Statement will be necessary. Cultural surveys will be required. Costs for a cultural inventory may be reduced based on coordination of available data and a reduced scope of survey.

c. The cost estimate assumes no problems with hazardous, toxic, and radiological, waste (HTRW) materials. An initial site assessment will be performed to determine the potential risk for HTRW.

d. The study schedule assumes the sponsor fully supports the schedule.

e. The real estate estimate for LERRD's will be based on a gross appraisal. The detailed Real Estate Design Memo will be part of the plans and specifications phase.

f. The feasibility report will be produced on paper. A CD-ROM will be produced to include the report and appendices.

9. FEASIBILITY PHASE MILESTONES

Milestone	Description	Duration (months)	Cumulative (months)
1	Initiate Study	0	0
2	Public Workshop #1 (scoping)	2	2
3	Feasibility Scoping Meeting	8	10
4	In Progress Review	12	22
5	Alternative Formulation Briefing	12	34
6	Draft Feasibility Report	4	38
7	Final Pubic Meeting	1	39
8	Feasibility Review Conference (if needed)	1	40
9	Policy Compliance Review incl. ITR	1	41
10	Final Report to Division	3	44
11	DE's Public Notice	1	45
-	Chief's Report	6	51
-	Completion	4	55

10. FEASIBILITY PHASE COST ESTIMATE

Major Work Items	Federal	Local Sponsor		Total
		Cash	In-Kind	
Public Involvement	$ 15,000	$ 10,000	$ 5,000	$ 30,000
Environmental Studies	$130,000	$130,000		$260,000
Economic Studies	$ 20,000	$ 20,000		$ 40,000
Project Management (5%)	$ 12,000	$ 0	$12,000	$ 24,000
Plan Formulation	$ 50,000	$ 50,000		$100,000
Engineering/Design	$300,000	$280,000	$10,000	$600,000
Real Estate Studies	$ 25,000	$ 20,000	$ 5,000	$ 50,000
Report Preparation	$ 18,000	$ 18,000		$ 36,000
Washington Level Review Contingency (5%)	$ 25,000	$ 25,000		$ 50,000
Study Contingency (15%)	$ 75,000	$ 75,000		$150,000
Total	$670,000	$638,000	$32,000	$1,340,000

11. POTENTIAL ISSUES AFFECTING INITIATION OF FEASIBILITY PHASE

None.

12. VIEWS OF OTHER RESOURCE AGENCIES

Coordination with other resource agencies would be initiated during preparation of the Project Study Plan and would continue during the feasibility phase.

13. PROJECT AREA MAP

A map of the study area is provided as Attachment 1.

14. RECOMMENDATIONS

On the basis of the above findings, I recommend that this Reconnaissance Study be certified as being in accordance with current policy and that a feasibility study be conducted. The estimated feasibility study cost is $1,340,000 for 53 months. Fannin County, Texas, will be the lead cost-sharing sponsor. A Project Study Plan is currently being developed.

Date 6 September 2000

LEONARDO V. FLOR
Colonel, EN
Commanding

Exhibit D

4D. Evaluation of Major Water Management Strategies

This section of the report reviews the evaluation of major potentially feasible water management strategies. Major strategies are defined as those that would supply more than 60,000 acre-feet per year and those that involve the construction of a new reservoir supplying over 1,000 acre-feet per year. Table 4D.1 lists the major potentially feasible water management strategies for Region C, and Figure 4D.1 shows the location of the water supplies for the major strategies considered. In this round of planning, the Region C Water Planning Group investigated a large number of potentially feasible water management strategies that were not studied in the 2001 *Region C Water Plan* [1]. In particular, the planning group looked at a number of existing projects that might have water available for Region C.

As discussed in Section 4C, potentially feasible water management strategies for Region C were evaluated on the basis of quantity, reliability, cost, environmental factors, impacts on agricultural and rural areas, impacts on natural resources, impacts on other water management strategies and third party impacts, impacts to key water quality parameters, consistency with plans of Region C water suppliers, and consistency with the plans of other regions. Table 4D.2 summarizes the evaluation of the potentially feasible strategies listed in Table 4D.1. Figure 4D.2 shows the comparative unit costs of the strategies. Appendix T gives more details on non-cost evaluations for the strategies, and Appendix U contains detailed cost estimates. The costs shown in Table 4D.2 and Figure 4D.2 should be used with caution. The costs for a given source can vary a great deal based on the amount used and where the water is delivered.

The remainder of this section discusses the evaluations of the specific potentially feasible major water management strategies for Region C. (Conservation strategies are discussed in Section 4B and Chapter 6.)

4D.1 Toledo Bend Reservoir

Toledo Bend Reservoir is an existing impoundment located in the Sabine River Basin on the border between Texas and Louisiana. It was built in the 1960s by the Sabine River Authority of Texas (SRA) and the Sabine River Authority of Louisiana. The yield of the project is split equally between the two states, and Texas' share of the yield is slightly over 1,000,000 acre-feet

per year [2]. The SRA holds a Texas water right to divert 750,000 acre-feet per year from Toledo Bend and is seeking the right to divert an additional 293,300 acre-feet per year.

Table 4D.1
Major Potentially Feasible Water Management Strategies for Region C

Strategy	Maximum Supply Available to Region C in Acre-Feet per Year	Location Number in Figure 4D.1
Conservation and Reuse (Includes Projects Listed below)	1,068,627	N/A
Toledo Bend Reservoir	600,000	24
Gulf of Mexico with Desalination	Unlimited	18
Marvin Nichols Reservoir	489,840	20
Wright Patman Lake – System	390,000	22
Lake Texoma Not Yet Authorized - Blend	220,000	3
Lake Texoma Not Yet Authorized - Desalination	207,000	3
Sam Rayburn Reservoir/B.A. Steinhagen	200,000	23
Lake Livingston	200,000	17
Ogallala Groundwater (Roberts County)	200,000	1
TRWD Third Pipeline and Reuse	188,765	8
Wright Patman Lake - Raise Flood Pool	180,000	22
Oklahoma Water	165,000 or more	16
Lower Bois d'Arc Creek Reservoir	123,000	9
Lake Fork Reservoir	120,000	10
George Parkhouse Lake (North)	118,960	12
Lake Palestine	114,337	14
Lake Texoma - Blend	113,000	3
Lake Fastrill	112,100	15
George Parkhouse Lake (South)	108,480	13
Lake Texoma - Desalination	105,000	3
East Fork Reuse Project	102,000	5
Wright Patman Lake - Texarkana	100,000	22
Carrizo-Wilcox Groundwater (Brazos County)	100,000	6
Cypress Basin Supplies (Lake O' the Pines)	89,600	21
Return Flows above DWU Lakes	79,605	N/A
Southside (Lake Ray Hubbard) Reuse	67,253	4
Lewisville Lake Reuse	67,253	2
Tehuacana Reservoir	56,800	7
Lake Ralph Hall and Reuse	50,740	11
Lake Columbia	35,800	19

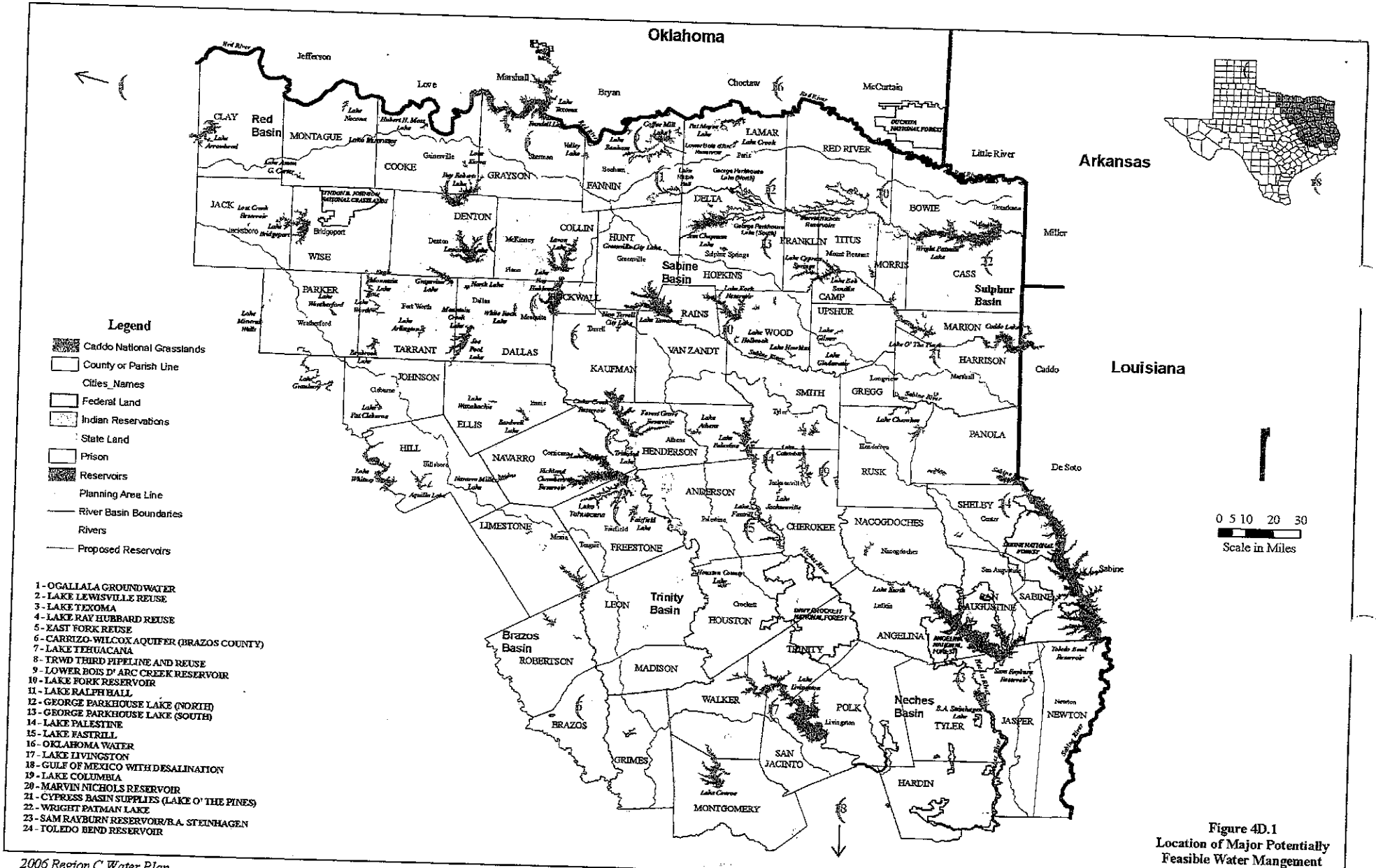


Figure 4D.1
Location of Major Potentially Feasible Water Mangement Strategies for Region C

Table 4D.2
Summary of Costs and Impacts of Major Potentially Feasible Strategies for Region C

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGaL)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Toledo Bend Reservoir	DWU, NTMWD, SRA, TRWD & UTRWD	600,000	$2,428,789,000	$1.50	$0.60	High	Medium low	Low	Low	Medium Low	Low	Yes	Yes	Requires IBT and agreements with multiple users	Costs are weighted average for all four potential participants.
Gulf of Mexico	DWU, NTMWD, or TRWD	Unlimited (costs for 200,000 acre-feet per year)	$2,836,207,000	$5.57	$2.41	Medium	Medium	Low	Medium Low	Low	Low	No	N/A	Technology is still developing for this application at this scale. May require state water right permit and IBT.	Strategy was costed to central location. Capital Cost was based on one supplier. Supply is treated water.
Marvin Nichols Reservoir	DWU, Irving, NTMWD, TRWD and UTRWD	489,840	$2,092,720,000	$1.33	$0.37	High	High	High	Medium high	High	Medium	Yes	Not inconsistent	Requires new water rights permit and IBT.	Costs are weighted average for all five potential participants.
Wright Patman - System	DWU, Irving, NTMWD, TRWD, and UTRWD	390,000	$1,891,022,000	$1.66	$0.58	High	Medium	Low	Medium	Medium	Medium Low	No (alternate)	Not inconsistent	Requires IBT, contract with USACE, contract with Texarkana, and new or amended water right permit.	Costs are based on 130,000 acre-feet per year for each potential participant.
Lake Texoma Not Yet Authorized (Blend)	DWU, TRWD, or UTRWD	220,000 (Costs for 113,000 acre-feet per year)	$182,588,000	$1.07	$0.25	High	Medium low	Low	Medium Low	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, Congressional authorization, and contract with USACE.	
Lake Texoma Not Yet Authorized (Desalinate)	DWU or TRWD	207,000 (Costs are for 105,000)	$621,448,000	$2.17	$0.85	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, Congressional authorization, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Sam Rayburn Reservoir/Lake B.A. Steinhagen	DWU, NTMWD, or TRWD	200,000	$1,306,045,000 to $1,525,001,000	$2.04 to $2.42	$0.59 to $0.72	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires IBT and contract with LNVA.	May be competing interest in supply in other region.
Lake Livingston	DWU, NTMWD, or TRWD	200,000	$1,142,917,000 to $1,299,183,000	$1.99 to $2.25	$0.72 to $0.83	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires contract with TRA.	May be competing interest in supply in other region.
Ogallala Groundwater (Roberts County)	DWU, NTMWD, or TRWD	200,000	$1,650,619,000 to $1,994,699,000	$2.40 to $2.83	$0.55 to $0.61	High	Medium low	Medium	Medium	Medium Low	Medium	No (alternate)	Not inconsistent	Requires additional water rights.	Assumes 400,000 acres of water rights. Currently permitted or contracted for 150,000 acres.
TRWD 3rd Pipeline and Reuse	TRWD	188,765	$626,347,000	$1.05	$0.31	Low	Low	Low	Low	Low	Medium	Yes	N/A	Permit is in hand.	
Wright Patman - Raise Flood Pool	DWU, Irving, NTMWD, or TRWD	180,000	$825,088,000 to $1,038,329,000	$1.42 to $1.83	$0.37 to $0.54	High	Medium	Low	Medium Low	Medium Low	Medium Low	Yes	Not inconsistent	Requires IBT, contract with USACE and new or amended water right permit.	
Oklahoma Water	DWU, Irving NTMWD, TRWD, and/or UTRWD	165,000 or more (costs based on 115,000)	$477,214,000	$1.40	$0.47	High	Low	Low	Low	Medium Low	Medium Low	Yes	N/A	Oklahoma has moritorium for export of water out of state. May require an IBT.	
Lower Bois d'Arc Creek Reservoir	NTMWD	123,000	$399,190,000	$0.87	$0.14	High	Medium high	High	Medium	Medium	Low	Yes	N/A	Requires new water rights permit and IBT.	
Lake Fork Reservoir	DWU	120,000	$362,916,000	$0.84	$0.17	High	Low	Low	Low	Medium Low	Low	Yes	Yes	Project is underway.	
George Parkhouse Lake (North)	DWU, NTMWD, and/or UTRWD	118,960	$362,322,000 to $365,002,000	$0.91 to $1.00	$0.23 to $0.27	High	Medium high	Medium high	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	Costs are for NTMWD and DWU.
Lake Palestine	DWU	111,460 [3]	$414,447,000	$1.08	$0.25	High	Low	Low	Low	Medium Low	Low	Yes	Yes	DWU has IBT permit.	

Table 4D.2, Continued

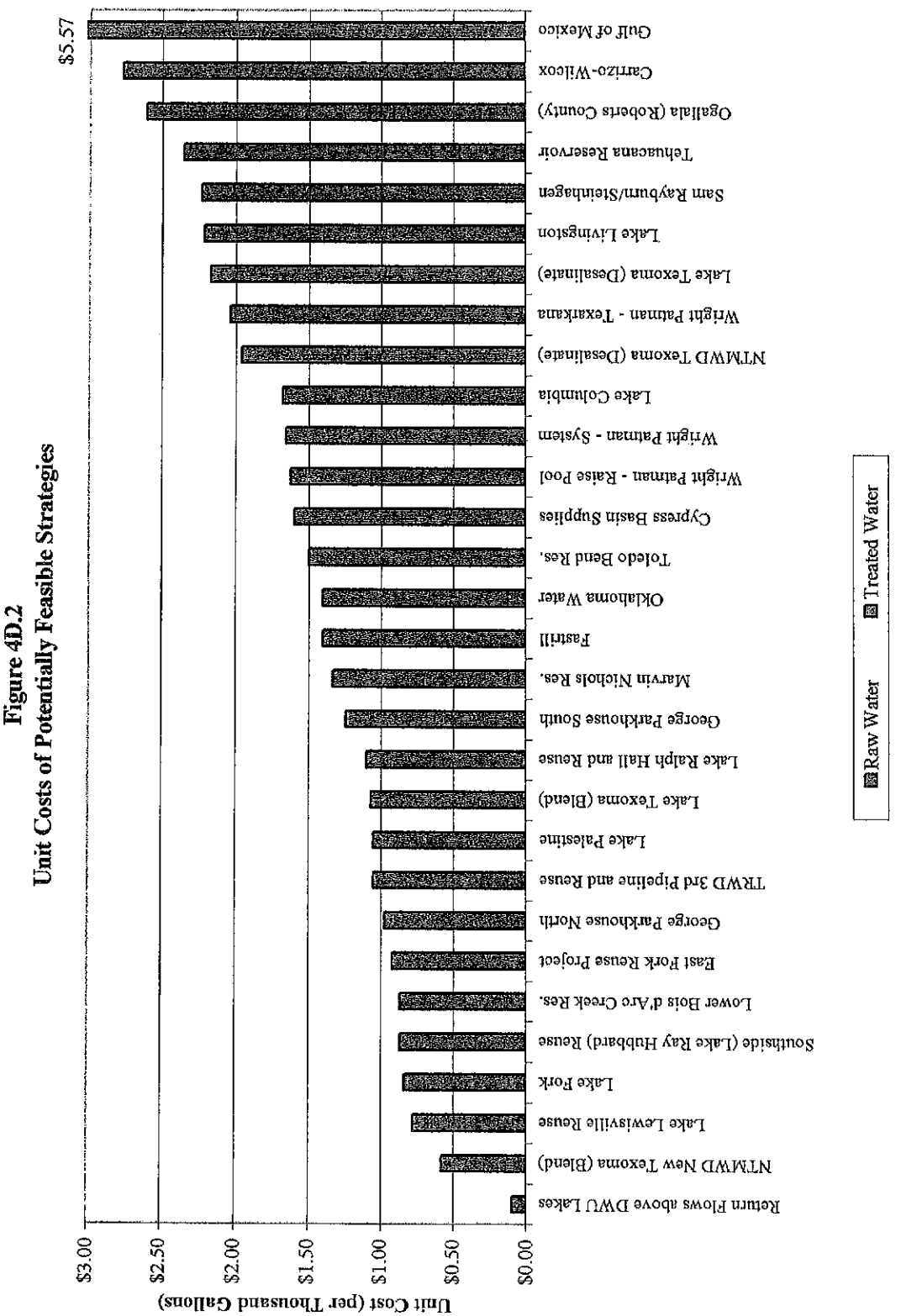
Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
New Lake Texoma (Blend)	NTMWD	113,000	$201,829,000	$0.58	$0.18	High	Medium low	Low	Medium Low	Medium Low	Medium	Yes	N/A	Requires IBT, state water right and contract with USACE.	NTMWD has applied for water right and is negotiating with USACE.
Lake Fastrill	DWU	112,100	$569,170,000	$1.40	$0.27	High	High	Medium	Medium high	Medium	Low	Yes	Unknown	Requires new water right permit and IBT.	
George Parkhouse Lake (South)	NTMWD and/or UTRWD	108,480	$480,099,000	$1.24	$0.25	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	
Lake Texoma Desalinate	NTMWD	105,000	$538,635,000	$1.96	$0.82	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.
East Fork Reuse Project	NTMWD	102,000	$288,879,000	$0.92	$0.21	High	Low	Low	Low	Low	Medium	Yes	N/A	Requires water right permit.	
Wright Patman Lake – Texarkana	DWU, Irving, NTMWD, or TRWD	100,000	$429,176,000 to $670,735,000	$1.70 to $2.37	$0.65 to $0.87	High	Low	Low	Low	Medium Low	Medium Low	No (alternate)	Not inconsistent	Requires agreement with Texarkana and IBT.	
Carrizo-Wilcox Groundwater (Brazos County and vicinity)	DWU or NTMWD	100,000	$506,662,000 to $577,413,000	$2.65 to $2.89	$1.24 to $1.28	High	Medium	Medium	Medium High	Medium	Low	No (alternate)	No	Requires coordination with local groundwater districts. Competing uses for water.	
Cypress Basin Supplies (Lake O' the Pines)	DWU, NTMWD, or TRWD	89,600	$257,192,000 to $469,493,000	$1.25 to $1.97	$0.60 to $0.78	High	Low	Low	Low	Medium Low	Low to Medium Low	No (alternate)	Not inconsistent	Requires IBT, renegotiating existing contracts, and contract with NETMWD.	
Return Flows above DWU Lakes	DWU and UTRWD	79,605	$0	$0.10	$0.10	High	Low	Low	Medium Low	Low	Low	Yes	N/A	Requires contracts with wastewater dischargers.	
Southside (Lake Ray Hubbard) Reuse	DWU	67,253	$200,333,000	$0.87	$0.21	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	Requires water right permit.	

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Lewisville Lake Reuse	DWU	67,253	$191,439,000	$0.78	$0.15	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	May require water right permit.	
Tehuacana Reservoir	TRWD	56,800	$511,829,000	$2.35	$0.35	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	N/A	Requires new water rights permit.	
Lake Ralph Hall and Reuse	UTRWD	50,740	$211,153,000	$1.10	$0.17	High	Medium high	Medium	Medium	Medium	Medium	Yes	N/A	Requires new water right and IBT.	
Lake Columbia	DWU	35,800	$223,705,000	$1.68	$0.29	High	Medium high	Medium	Medium	Medium	Medium	No (alternate)	Yes	Requires contract with ANRA and IBT.	

Note: a. DWU has a contract for 114,337 acre-feet per year for water from Lake Palestine. Based on the firm yield of the reservoir, the estimated amount of supply available to DWU in 2020 is 111,460 acre-feet per year

Figure 4D.2
Unit Costs of Potentially Feasible Strategies



The SRA and Metroplex water suppliers have been investigating the possibility of developing substantial water supplies from Toledo Bend Reservoir, with up to 100,000 acre-feet per year delivered to SRA customers in the upper Sabine River Basin (Region D, the North East Texas Region) and up to 600,000 acre-feet per year delivered to Region C. (Toledo Bend Reservoir is located in Region I, the East Texas Region.) The development of this supply will require an agreement among the SRA and Metroplex suppliers, an interbasin transfer permit from the Sabine River Basin to the Trinity River Basin, and development of water transmission facilities. Because Toledo Bend Reservoir is so far from Region C (about 200 miles), this is a relatively expensive source of supply for the Region. However, it does offer a substantial water supply, and environmental impacts will be limited because it is an existing source.

As discussed in Section 4E, getting water from Toledo Bend Reservoir is a recommended strategy for the North Texas Municipal Water District (200,000 acre-feet per year) and the Tarrant Regional Water District (200,000 acre-feet per year). It is an alternative strategy for Dallas Water Utilities and the Upper Trinity Regional Water District. The recommended strategy involves the use of 500,000 acre-feet per year (100,000 for SRA customers in the upper Sabine River Basin and 400,000 for the Metroplex). The Region C capital cost of the recommended strategy is $1.92 billion. (This differs from the cost in Table 4D.2 because the recommended strategy develops less supply from Toledo Bend Reservoir than is potentially feasible.)

4D.2 Gulf of Mexico with Desalination

The cost of desalination has been decreasing in recent years, and some municipalities in Florida and California have been developing desalinated seawater as a supply source. The State of Texas has sponsored initial studies of potential seawater desalination projects [3], and this is seen as a potential future supply source for the state. Because of the distance to the Gulf of Mexico, seawater desalination is not a particularly promising source of supply for Region C. However, seawater desalination has been mentioned through public input during the planning process, and it was evaluated in response to that input.

The supply from seawater desalination is essentially unlimited, but the cost is a great deal higher than the cost of other water management strategies for Region C. Developing water from

the Gulf of Mexico with desalination is not a recommended or alternative strategy for any water supplier in Region C.

4D.3 Marvin Nichols Reservoir

The proposed Marvin Nichols Reservoir is located on the Sulphur River in the Sulphur River Basin in Senate Bill One Planning Region D, the North East Texas Region. The proposed reservoir is about 115 miles from the Metroplex. Development of Marvin Nichols Reservoir was a major strategy for Region C in the 2001 *Region C Water Plan* [1], called Marvin Nichols I Reservoir North in that plan Since 2001, the Sulphur River Basin Authority and Metroplex water suppliers have been studying the development of Marvin Nichols Reservoir. As a result of those studies, the proposed location for the reservoir has been moved upstream to reduce impacts to bottomland hardwoods. The Sulphur River Basin Authority and Metroplex water suppliers are currently pursuing a basin-wide study of the Sulphur River Basin in cooperation with the Fort Worth District of the Corps of Engineers to obtain additional information on potential water supplies from the basin, including Marvin Nichols Reservoir.

Using the Sulphur River Basin Water Availability Model [4] and assuming that the proposed Lake Ralph Hall is in place as a senior water right, the estimated yield of Marvin Nichols Reservoir is 612,300 acre-feet per year after allowing for downstream water rights and environmental releases as required by the Texas Water Development Board's environmental flow criteria. (The yield analysis assumes that the reservoir will be operated as a system with Wright Patman Lake, protecting Wright Patman Lake's senior water right while minimizing impacts on the yield of Marvin Nichols Reservoir. The cooperative operation assumed in this report will require negotiations between the operators of Marvin Nichols Reservoir and the City of Texarkana, which holds a Texas water right in Wright Patman Lake.)

The yield is slightly less than the 619,100 acre-feet per year estimated in the 2001 *Region C Water Plan* [1] because Lake Ralph Hall is assumed to be in place as a senior water right. (If Lake Ralph Hall were not developed, the yield of Marvin Nichols Reservoir would be 640,800 acre-feet per year operated as a system with Wright Patman Lake, based on the Sulphur River Basin WAM – somewhat higher than estimated in the 2001 *Region C Water Plan.*) Assuming that 20 percent of the yield is used to provide water in Region D and 80 percent is made

available to Region C, Marvin Nichols Reservoir will provide 489,840 acre-feet per year of additional water supply for Region C.

As a major reservoir project, Marvin Nichols Reservoir will have significant environmental impacts. The reservoir would inundate about 68,000 acres. The 1984 U.S. Fish and Wildlife Service *Bottomland Hardwood Preservation Program* [5] classified some of the land that would be flooded as a Priority 1 bottomland hardwood site, which is "excellent quality bottomlands of high value to key waterfowl species." The proposed new location of the dam will reduce but not eliminate the impact on bottomland hardwoods and will slightly increase the acreage required for the reservoir. Permitting the project and developing appropriate mitigation for the unavoidable impacts will require years, and it is important that water suppliers start that process well in advance of the need for water from the project. Development of the Marvin Nichols Reservoir will require an interbasin transfer permit to bring the water from the Sulphur River Basin to the Trinity River Basin. The project will include a major water transmission system to bring the new supply to the Metroplex. The project will make a substantial water supply available to the Metroplex, and the unit cost is less than that of most other major water management strategies.

As discussed in Section 4E, the proposed Marvin Nichols Reservoir is a recommended strategy for the North Texas Municipal Water District (174,840 acre-feet per year), the Tarrant Regional Water District (280,000 acre-feet per year), and Upper Trinity Regional Water District (35,000 acre-feet per year). It is an alternative strategy for Dallas Water Utilities and the city of Irving. The Region C capital cost of the recommended strategy is $2.16 billion. (This differs from the value in Table 4D.2 because the delivery locations of the recommended strategy are different from the delivery locations assumed in Table 4D.2.)

4D.4 Wright Patman Lake

Wright Patman Lake is an existing reservoir on the Sulphur River in the Sulphur River Basin, about 150 miles from the Metroplex. It is located in Region D, the North East Texas Region, and owned and operated by the U.S. Army Corps of Engineers. The City of Texarkana has contracted with the Corps of Engineers for storage in the lake and holds a Texas water right to use up to 180,000 acre-feet per year from the lake. (In order to obtain a reliable supply of 180,000 acre-feet per year from the lake, Texarkana would have to activate a contract with the Corps of Engineers to increase the conservation storage in the lake.)

There are three different ways in which water could be made available from Wright Patman Lake for water suppliers in Region C:

- Water could be purchased from the City of Texarkana under its existing water right.
- Flood storage in Wright Patman Lake could be converted to conservation storage, and the increased yield could be used in Region C.
- Wright Patman Lake could be operated as a system with Jim Chapman Lake (formerly Cooper Lake) upstream to further increase yield.

Each of these approaches to developing supplies from Wright Patman Lake is discussed below.

Purchase from Texarkana. The 180,000 acre-feet per year for which Texarkana currently has a water right is in excess of their projected demands. Texarkana could sell 100,000 acre-feet per year and still have sufficient supplies to meet its projected needs. It is assumed that development of this supply would require activating the contract between Texarkana and the Corps of Engineers for additional conservation storage (which would require some environmental studies and mitigation) and improvements to Texarkana's pump station on the lake.

Conversion of Flood Storage to Conservation Storage. According to a recent study conducted for the Corps of Engineers, increasing the top of conservation storage in Wright Patman Lake to elevation 228.64 feet msl and allowing diversions as low as elevation 215.25 feet msl would increase the yield of the project to about 364,000 acre-feet per year [6]. It was assumed that 180,000 acre-feet per year of the additional supply developed could be made available to water suppliers in the Metroplex. The yield of Wright Patman Lake could be increased to much more than 364,000 acre-feet per year by converting additional flood storage to conservation storage and increasing the top of conservation storage. However, increases beyond elevation 228.64 feet msl will inundate portions of the White Oak Creek mitigation area, located upstream from Wright Patman Lake. (Approximately 500 acres of the mitigation area are below elevation 230 feet msl, and about 3,800 acres are below elevation 240 [6].)

System Operation with Jim Chapman Lake (formerly Cooper Lake). The recent study conducted for the Corps of Engineers indicated that system operation of Wright Patman Lake and Jim Chapman Lake could increase the yield from the two projects by about 108,000 acre-feet per year [6]. It was assumed that the combination of purchasing water from Texarkana,

converting flood storage to conservation storage, and system operation with Jim Chapman Lake could make 390,000 acre-feet per year available for Region C from Wright Patman Lake.

As discussed in Section 4E, converting Wright Patman Lake flood storage to conservation storage is a recommended water management strategy for Dallas Water Utilities, providing 112,100 acre-feet per year. The capital cost of this recommended strategy is $572,036,000. Wright Patman Lake is an alternative water management strategy for Irving, North Texas Municipal Water District, Tarrant Regional Water District, and Upper Trinity Regional Water District. The basin-wide study of the Sulphur River Basin discussed in Section 4D.3 will provide additional information on the potential for developing supplies from Wright Patman Lake.

4D.5 Lake Texoma

Lake Texoma is an existing Corps of Engineers reservoir on the Red River on the border between Texas and Oklahoma. Under the terms of the Red River Compact, the yield of Lake Texoma is divided equally between Texas and Oklahoma. Lake Texoma is used for water supply, hydropower generation, flood control, and recreation. In Texas, the North Texas Municipal Water District, the Greater Texoma Utility Authority, the City of Denison, TXU, and the Red River Authority have contracts with the Corps of Engineers and Texas water rights allowing them to use water from Lake Texoma [7].

The U.S. Congress has passed a law allowing the Corps to reallocate an additional 300,000 acre-feet of storage in Lake Texoma from hydropower use to water supply, 150,000 acre-feet for Texas and 150,000 acre-feet for Oklahoma. The North Texas Municipal Water District is negotiating to purchase 100,000 of the 150,000 acre-feet of storage for Texas and has applied for a Texas water right to divert an additional 113,000 acre-feet per year from Lake Texoma. The remaining 50,000 acre-feet of storage was reserved by Congress for the Greater Texoma Utility Authority.

Further reallocation of hydropower storage to water supply in Lake Texoma would provide additional yield. According to the Corps of Engineers, the firm yield of Lake Texoma with all hydropower storage reallocated to water supply would be 1,088,500 acre-feet per year [8]. Texas' share would be 544,250 acre-feet per year, leaving about 220,000 acre-feet per year of additional supply available to Texas by the reallocation of more hydropower storage to municipal use

(beyond the supplies already contracted for and the currently authorized reallocation). Further reallocation would require a new authorization by Congress.

Lake Texoma is only about 50 miles from the Metroplex. The lake has elevated levels of dissolved solids, and the water must be blended with higher quality water or desalinated for municipal use. The elevated dissolved solids in Lake Texoma would have some environmental impacts whether the water is used by blending or desalination. Use for most Region C needs will require an interbasin transfer permit. Blending water from Lake Texoma with water from other sources provides an inexpensive supply for Region C. Desalination provides treated water but is a more expensive strategy and there are considerable uncertainties in the long-term costs.

The estimated costs for desalination of water from Lake Texoma are based on current cost information for large desalination facilities. However, they are more uncertain than other cost estimates in this plan for a couple of reasons. There is not an established track record of success in the development of large brackish water desalination facilities. Most of the large desalination facilities built to date are located on or near the coast. If a 100 million gallon per day or larger plant were to be developed for Lake Texoma water, it would be the largest inland desalination facility in the world. In addition, the method and cost of brine disposal for such a facility are uncertain. Brine disposal has the potential to significantly increase the estimated cost for desalination. Detailed studies to solidify the cost estimates will be required if this strategy is pursued.

As discussed in Section 4E, Lake Texoma is a recommended source of additional water supply for the North Texas Municipal Water District (113,000 acre-feet per year) and the Greater Texoma Utility Authority (56,500 acre-feet per year). It is an alternative source of supply for Dallas Water Utilities and the Upper Trinity Regional Water District.

4D.6 Sam Rayburn Reservoir/Lake B.A. Steinhagen

Sam Rayburn Reservoir is an existing Corps of Engineers reservoir on the Angelina River in the Neches River Basin. Lake B.A. Steinhagen is located on the Neches River downstream from Sam Rayburn Reservoir. The two reservoirs are located in Region I, the East Texas Region. The Lower Neches Valley Authority holds Texas water rights in the projects, and they have indicated that as much as 200,000 acre-feet per year might be available to water suppliers in Region C. In order to preserve hydropower generation from Sam Rayburn Reservoir, the Lower Neches

Valley Authority wants the water to be diverted from Lake B.A. Steinhagen, which is about 200 miles from the Metroplex.

Because of the distance, this is a relatively expensive source of supply for Region C, with raw water costing over $2.00 per thousand gallons until the debt service is paid on the initial construction. Because this is an existing supply, the environmental impacts of this water management strategy are relatively low. An interbasin transfer permit and a transmission system would be required to develop this water management strategy for Region C. Developing water from Sam Rayburn Reservoir/Lake B.A. Steinhagen is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and Tarrant Regional Water District.

4D.7 Lake Livingston

Lake Livingston is an existing reservoir on the Trinity River in Region H. The Trinity River Authority (TRA) and the City of Houston hold the water rights for Lake Livingston. The TRA has indicated that as much as 200,000 acre-feet per year might be available to water suppliers in Region C from the lake. Lake Livingston is about 180 miles from the Metroplex. Region H may be considering other potential uses of the supply from Lake Livingston.

Lake Livingston is a relatively expensive source of supply for Region C, with raw water costing about $2.20 per thousand gallons until the debt service is paid on the initial construction. Because this is an existing supply, the environmental impacts of this water management strategy are relatively low. Since Lake Livingston is in the Trinity River Basin, no interbasin transfer permit would be needed for this water management strategy, but a transmission system would be required. Water from Lake Livingston is not a recommended strategy for any Region C supplier, but it is an alternative strategy for Dallas Water Utilities, the North Texas Municipal Water District, and the Tarrant Regional Water District.

4D.8 Ogallala Groundwater (Roberts County)

Mesa Water, Incorporated, is interested in selling groundwater from the Ogallala aquifer in Roberts County to water suppliers in Region C. (Roberts County is in Region A, the Panhandle Region.) Mesa Water controls rights to 150,000 acre-feet per year of groundwater in Roberts County with options for additional supply and has permits from the local groundwater

conservation district to export groundwater. Mesa Water has indicated that they can develop a reliable supply of 200,000 acre-feet per year for water suppliers in Region C through 2060 and beyond. The groundwater in Roberts County is about 250 miles from the Metroplex.

Because of the distance, this is a relatively expensive source of supply for Region C, with raw water costing about $2.50 per thousand gallons until the debt service is paid on the initial construction. Since this is a groundwater supply, no interbasin transfer permit would be required. Ogallala groundwater from Roberts County is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and the North Texas Municipal Water District.

4D.9 Tarrant Regional Water District Third Pipeline and Reuse

The Tarrant Regional Water District recently received a water right permit from the Texas Commission on Environmental Quality allowing the diversion of return flows of treated wastewater from the Trinity River. The water will be pumped from the river into constructed wetlands for treatment and then pumped into Richland-Chambers Reservoir and Cedar Creek Reservoir. This project will increase the safe yield of the two lakes and also provide an additional 115,500 acre-feet per year of new supply. The total supply made available by the reuse project is 188,765 acre-feet per year in 2060. In order to deliver the currently available supplies and the supplies developed from the reuse project, TRWD will need to build a third pipeline from Richland-Chambers Reservoir and Cedar Creek Reservoir to Tarrant County. This strategy was included in the 2001 *Region C Water Plan* [1].

This is a relatively inexpensive source of new supply for the Tarrant Regional Water District, and the environmental impacts are low. It is a recommended strategy for the Tarrant Regional Water District, and the estimated capital cost is $626,347,000. The Richland-Chambers Reservoir reuse project will probably be built first, around 2010. The Cedar Creek Reservoir reuse project and the third pipeline will be needed around 2018.

4D.10 Water from Oklahoma

Metroplex water suppliers have been pursuing the purchase of water from existing sources in Oklahoma in recent years. Water from Oklahoma was a recommended strategy for North Texas Municipal Water District and Tarrant Regional Water District in the 2001 *Region C Water Plan*

[1]. At the present time, the Oklahoma Legislature has established a temporary moratorium on the export of water from the state. In the long run, Oklahoma remains a promising source of water supply for Region C.

Raw water from Oklahoma would cost about $1.40 per thousand gallons and would have relatively low environmental impacts because of the use of existing sources. Water from Oklahoma is a recommended strategy for the North Texas Municipal Water District (50,000 acre-feet per year), the Tarrant Regional Water District (50,000 acre-feet per year) and the Upper Trinity Regional Water District (15,000 acre-feet per year), with a capital cost of $477,214,000. It is an alternative strategy for Dallas Water Utilities and Irving.

4D.11 Lower Bois d'Arc Creek Reservoir

The proposed Lower Bois d'Arc Creek Reservoir was a recommended strategy for the North Texas Municipal Water District in the 2001 *Region C Water Plan* [1]. The project is located in Region C on Bois d'Arc Creek in Fannin County, upstream from the Caddo National Grasslands. It would yield 123,000 acre-feet per year and would provide an inexpensive source of supply for Region C. The project would inundate 16,358 acres. The 1984 Fish and Wildlife Service *Texas Bottomland Hardwood Preservation Program* [5] report classified the Bois d'Arc Creek bottoms in the reservoir area as Priority 4 bottomland hardwoods, which are "moderate quality bottomlands with minor waterfowl benefits." Development would require a water right permit and an interbasin transfer permit. Lower Bois d'Arc Creek Reservoir is a recommended water management strategy for the North Texas Municipal Water District and would have a capital cost of $399,190,000.

4D.12 Lake Fork Reservoir

Dallas Water Utilities has a contract with the Sabine River Authority for water from Lake Fork Reservoir and an interbasin transfer permit allowing the use of up to 120,000 acre-feet per year from the lake in the Trinity River Basin. Lake Fork Reservoir is located in Region D on Lake Fork Creek in the Sabine River Basin. Dallas Water Utilities has long planned to connect Lake Fork Reservoir to its water supply system and is in the process of constructing transmission facilities, which are scheduled for completion in 2007. Development of a supply from Lake Fork Reservoir provides water at a low cost and with a low environmental impact, and it is a

recommended water management strategy for Dallas Water Utilities. The capital cost for the strategy is $362,916,000.

4D.13 George Parkhouse Lake (North)

George Parkhouse Lake (North) is a potential reservoir located in Region D on the North Sulphur River in Lamar and Delta Counties. It would yield 148,700 acre-feet per year (with 118,960 acre-feet per year available for Region C), but its yield would be reduced substantially by development of Lake Ralph Hall or Marvin Nichols Reservoir. George Parkhouse Lake (North) would provide an inexpensive source of supply for Region C. The project would inundate 12,250 acres. Ninety percent of the land impacted is cropland or pasture. There are no designated priority bottomland hardwoods located within or adjacent to the site. Development would require a water right permit and an interbasin transfer permit. George Parkhouse Lake (North) is not a recommended water management strategy for any Region C water supplier. It is an alternative strategy for the Dallas Water Utilities, North Texas Municipal Water District, the Tarrant Regional Water District, and the Upper Trinity Regional Water District.

4D.14 Lake Palestine

Dallas Water Utilities has a contract with the Upper Neches River Municipal Water Authority for 114,337 acre-feet per year of water from Lake Palestine and an interbasin transfer permit allowing the use of water from the lake in the Trinity River Basin. Lake Palestine is located in East Texas Region on the Neches River. Dallas Water Utilities plans to connect Lake Palestine to its water supply system around the year 2015. Development of a supply from Lake Palestine provides water at a low cost and with a low environmental impact, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost for the strategy is $414,447,000.

4D.15 Lake Fastrill

The proposed Lake Fastrill is being investigated by the Upper Neches River Municipal Water Authority and Dallas Water Utilities as a potential water supply source. According to preliminary studies, the project would have a yield of 148,780 acre-feet per year [9]. It would inundate 24,950 acres, including a portion of a potential wildlife refuge currently being studied by the U.S. Fish and Wildlife Service. As a major reservoir project, it has the potential to have

significant environmental impacts. The 1984 Fish and Wildlife Service *Texas Bottomland Hardwood Preservation Program* [5] classified some of the land that would be flooded by Lake Fastrill as a Priority 1 bottomland hardwood site, which is "excellent quality bottomlands of high value to key waterfowl species." The Texas State Railroad is located near the proposed reservoir site. As part of the permitting process for Lake Fastrill, this facility would be protected. The cost estimates for the lake include protection of the railroad. Development would require a water right permit and an interbasin transfer permit. Lake Fastrill is a recommended water management strategy to supply 112,100 acre-feet per year for Dallas Water Utilities. (The remainder of the supply would be available for use in East Texas Region.) The Region C share of Lake Fastrill would have a capital cost of $569,170,000.

4D.16 George Parkhouse Lake (South)

George Parkhouse Lake (South) is a potential reservoir located in Region D on the South Sulphur River in Hopkins and Delta Counties. It is located downstream from Jim Chapman Lake and would yield 135,600 acre-feet per year (with 108,480 acre-feet per year available for Region C). Its yield would be reduced substantially by the development of Marvin Nichols Reservoir. George Parkhouse Lake (South) would inundate 29,740 acres. Ninety percent of the land impacted is cropland or pasture. There are no designated priority bottomland hardwoods located within or adjacent to the site. Development would require a water right permit and an interbasin transfer permit. George Parkhouse Lake (South) is not a recommended water management strategy for any Region C water supplier. It is an alternative strategy for the North Texas Municipal Water District and the Upper Trinity Regional Water District.

4D.17 East Fork Reuse Project

The North Texas Municipal Water District has applied for a water right to develop the East Fork Reuse Project. The project was added to the 2001 *Region C Water Plan* by amendment in January 2005. The project calls for diversion of return flows of treated wastewater from the East Fork of the Trinity River near Crandall into a constructed wetland for treatment. Water would then be pumped into Lake Lavon, diverted from the lake, and treated for municipal use. The project would supply 102,000 acre-feet per year. The project is a relatively inexpensive source of water, and the environmental impact is low. The East Fork Reuse Project is a recommended strategy for the North Texas Municipal Water District, and the capital cost is $288,879,000.

4D.18 Carrizo-Wilcox Aquifer Groundwater (Brazos County and Vicinity)

The Carrizo-Wilcox aquifer covers a large area of east, central, and south Texas. Organizations and individuals have been studying the development of water supplies in Brazos County and surrounding counties for export. Metroplex water suppliers have been approached as possible customers for the water. (The supplies under discussion are located in Region G, called the Brazos G Region, and these supplies have also been studied for use by communities in that region.) Brazos County is about 150 miles from the Metroplex.

This is a relatively expensive source of supply for Region C, with delivered raw water costing about $2.75 per thousand gallons until the debt service is paid on the initial construction. Since this is a groundwater supply, no interbasin transfer permit would be required. Carrizo-Wilcox groundwater from Brazos County and vicinity is not a recommended strategy for any Region C supplier. It is an alternative strategy for the North Texas Municipal Water District.

4D.19 Cypress Basin Supplies (Lake O' the Pines)

Lake O' the Pines is an existing Corps of Engineers reservoir, with Texas water rights held by the Northeast Texas Municipal Water District. The lake is on Cypress Creek in the Cypress Basin in Senate Bill One water planning Region D, the North East Texas Region. Some Metroplex water suppliers have explored the possibility of purchasing supplies in excess of local needs from the Cypress Basin for use in the Metroplex. There could be as much as 89,600 acre-feet per year available for export from the basin. Development of this source would require contracts with the Northeast Texas Municipal Water District and other Cypress River Basin suppliers with excess supplies and an interbasin transfer permit. Since this water management strategy obtains water from an existing source, the environmental impacts would be low.

Lake O' the Pines is about 120 miles from the Metroplex, and the distance and limited supply make this a relatively expensive water management strategy. Obtaining water from the Cypress River Basin is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and the North Texas Municipal Water District.

4D.20 Return Flows above Dallas Water Utilities Lakes

There are significant discharges of wastewater return flows in the watersheds of many of the lakes used for water supply in Region C. Dallas Water Utilities has water rights in excess of the

yields of many of its lakes, which means that return flows to the lakes can legally be diverted and used as they occur. In order to make this a reliable supply, Dallas Water Utilities plans to contract with wastewater dischargers in these watersheds to continue to discharge treated wastewater effluent, making the additional supplies available on a continuing basis [10]. The cost of this supply is assumed to be $0.10 per thousand gallons, and the 2060 supply is estimated to be 79,605 acre-feet per year [10]. This is a recommended water management strategy for Dallas Water Utilities and the Upper Trinity Regional Water District. There is no capital cost for this alternative, but it would require on-going payments for continued discharges.

4D.21 Southside (Lake Ray Hubbard) Reuse

The 2001 *Region C Water Plan* [1] included development of the Dallas Southside Reuse Plan as a recommended water management strategy for Dallas Water Utilities. This strategy was further analyzed in Dallas Water Utilities' recent recycled water implementation plan [11]. Water would be pumped from the Southside wastewater treatment plant to into a constructed wetland for treatment. After treatment, water would be pumped into Lake Ray Hubbard, diverted from the lake, and treated for municipal use. The strategy would provide 67,253 acre-feet per year. This water management strategy would provide a relatively inexpensive water supply with relatively low environmental impacts, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost is $200,333,000.

4D.22 Lewisville Lake Reuse

Indirect reuse through Lewisville Lake was analyzed in Dallas Water Utilities' recent recycled water implementation plan [11]. The strategy would provide 67,253 acre-feet per year. Treated wastewater at the Central Wastewater Treatment Plant would receive further treatment for reuse. Water would then be pumped into Lewisville Lake, diverted from the lake, and treated for municipal use. This water management strategy would provide a relatively inexpensive water supply with relatively low environmental impacts, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost is $191,439,000.

4D.23 Tehuacana Reservoir

Tehuacana Reservoir is a proposed reservoir on Tehuacana Creek in Freestone County in Region C. It was an alternative strategy for the Tarrant Regional Water District in the 2001

Region C Water Plan [1]. Tehuacana Reservoir would flood about 15,000 acres adjacent to Richland-Chambers Reservoir and would have a yield of 56,800 acre-feet per year. There are no priority bottomland hardwoods within the site. Development of this supply would require a new water right permit, construction of the reservoir, and up-sizing TRWD's third pipeline to deliver that water to Tarrant County. Tehuacana Reservoir is not a recommended water management strategy for any Region C supplier. It is an alternative strategy for the Tarrant Regional Water District.

4D.24 Lake Ralph Hall and Reuse

The Upper Trinity Regional Water District has applied for a water right permit for the proposed Lake Ralph Hall, located on the North Fork of the Sulphur River in Fannin County in Region C. The reservoir would flood 7,600 acres. The yield of the project would be 32,940 acre-feet per year, and Upper Trinity Regional Water District plans to apply for the right to reuse return flows from water originating from the project, providing an additional 17,800 acre-feet per year. Developing Lake Ralph Hall and the related reuse is a strategy for the Upper Trinity Regional Water District, and the capital cost is $211,153,000.

4D.25 Lake Columbia

The Angelina and Neches River Authority has a Texas water right for the development of the proposed Lake Columbia on Mud Creek in the Neches River Basin in East Texas Region. The Authority is pursuing development of the reservoir and has applied for a Federal 404 permit from the Corps of Engineers. In its recent long-range planning effort, Dallas Water Utilities studied purchasing 35,800 acre-feet per year from Lake Columbia and delivering the water through Lake Palestine [10]. Lake Columbia would flood about 11,500 acres. Lake Columbia is not a recommended water management strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities.

4D.26 Summary of Recommended Major Water Management Strategies

Table 4D.3 is a summary of the recommended major water management strategies for Region C. There are 15 recommended major strategies, supplying a total of 2.24 million acre-feet per year to Region C at a capital cost of $8.6 billion.

Table 4D.3
Recommended Major Water Management Strategies for Region C

Strategy	Supplier	Supply (Acre-Feet per Year)	Supplier Capital Cost	Supplier Unit Cost ($/kGal.)	
				Pre-Amort.	Post-Amort.
Toledo Bend Reservoir	NTMWD	200,000	$886,002,000	$1.56	$0.57
	TRWD	200,000	$1,035,188,000	$1.92	$0.77
Marvin Nichols Reservoir	NTMWD	174,840	$534,125,000	$0.94	$0.26
	TRWD	280,000	$1,482,167,000	$1.66	$0.48
	UTRWD	35,000	$142,761,000	$1.27	$0.36
TRWD 3rd Pipeline & Reuse	TRWD	188,765	$626,347,000	$1.05	$0.31
Lower Bois d'Arc Ck. Res.	NTMWD	123,000	$399,190,000	$0.87	$0.14
Lake Fork Reservoir	DWU	120,000	$362,916,000	$0.84	$0.17
Oklahoma Water	NTMWD	50,000	$128,898,000	$0.95	$0.37
	TRWD	50,000	$287,349,000	$1.86	$0.58
	UTRWD	15,000	$60,967,000	$1.36	$0.45
Lake Palestine	DWU	111,460	$414,447,000	$1.08	$0.25
New Lake Texoma (Blend)	NTMWD	113,000	$201,829,000	$0.58	$0.18
Lake Fastrill	DWU	112,100	$569,170,000	$1.40	$0.27
Wright Patman Lake - Flood Pool	DWU	112,100	$572,036,000	$1.50	$0.36
East Fork Reuse Project	NTMWD	102,000	$288,879,000	$0.92	$0.21
Return Flows above DWU Lakes	DWU and UTRWD	79,605	$0	$0.10	$0.10
Southside (Lake Ray Hubbard) Reuse	DWU	67,253	$200,333,000	$0.87	$0.21
Lewisville Lake Reuse	DWU	67,253	$191,439,000	$0.78	$0.15
Lake Ralph Hall and Reuse	UTRWD	50,740	$211,153,000	$1.10	$0.17
Region C Total		**2,252,116**	**$8,595,196,000**		

Note: The costs and unit costs in Table 4D.3 may be different from those in Table 4D.2 because the amounts and participants may be different.

SECTION 4D
LIST OF REFERENCES

(1) Freese and Nichols, Inc., Alan Plummer Associates, Inc., Chiang, Patel & Yerby, Inc., and Cooksey Communications, Inc.: *Region C Water Plan*, prepared for the Region C Water Planning Group, Fort Worth, January 2001.

(2) Brown and Root, Inc., *Yield Study Toledo Bend Reservoir*, prepared for the Sabine River Authority of Texas and the Sabine River Authority of Louisiana, Houston, July 1991.

(3) Texas Water Development Board, Large-Scale Demonstration Seawater Desalination in Texas, Report of Recommendations for the Office of Governor Rick Perry, Austin, [Online], Available URL: http://www.twdb.state.tx.us/Desalination/FINAL%2012-16-02.pdf, May 2005.

(4) R.J. Brandes Company, *Final Report – Water Availability Modeling for the Sulphur River Basin*, prepared for the Texas Water Development Board, Austin, June 1999.

(5) U.S. Fish and Wildlife Service: Department of the Interior Final Concept Plan, *Texas Bottomland Hardwood Preservation Program*, Albuquerque, 1984.

(6) Freese and Nichols, Inc., *System Operation Assessment of Lake Wright Patman and Lake Jim Chapman*, prepared for the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, January 2003.

(7) Freese and Nichols, Inc., *Report in Support of Amending Permit 5003*, prepared for the North Texas Municipal Water District, Fort Worth, February 2005.

(8) U.S. Army Corps of Engineers, Tulsa District, *Draft Environmental Assessment, Lake Texoma Storage Reallocation Study, Lake Texoma, Oklahoma and Texas*, Tulsa, January 2005.

(9) HDR Engineering, Inc.: "Fastrill Reservoir - Preliminary Technical Information for 2006 Region C Regional Water Plan," Austin, April 2005.

(10) Chiang, Patel and Yerby, Inc.: *Draft 2005 Update to the City of Dallas Long Range Water Supply Plan*, Dallas, February 2005, and related presentations to the City Council and Council Committees.

(11) Alan Plummer Associates, Inc.: *Draft Recycled Water Implementation Plan*, Dallas, August 2004.

Citizens to Save Boisd'Arc Creek
PO Box 36
Honey Grove, TX 75446

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: H. D. "Thump" Witcher, Jr. Group Name: Citizens to Save Bois d' Arc Creek
Mailing Address: 972 CR 2705 Telephone, Texas 75488
Phone: 903-664-2714 Fax: N/A
E-mail: twitcher@estesinc.com

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d' Arc Creek because:

First I would like to say the building of a dam on Bois d' Arc Creek is not about the need for water, but the control of all potential water sources in Northeast Texas. This is shown in Exbit A, pages 1 and 2, entitled **2007 State Water Plan for NTMWD**, which are highlighted showing existing lakes that NTMWD plan to aquire water from in the future. The existing reservoirs should be utilized first before anymore are built. It will be more economical to build pipelines now than in the future if inflation is figured into the cost. I know pipelines are as controversial as the building of lakes, but they don't totally remove a person from his home, his land or lively hood. They don't wreck ecosystems, displace wildlife or other issues that reservoirs do. A pipeline from Wright Patman to Cooper Lake (Lake Chapman) is approximately 60 miles, which is as close or closer than a pipeline from Bois d' Arc to Lake Lavon. A pipeline from Cooper Lake to Lake Lavon all ready exists.

Bois d' Creek Reservoir will be a extremely shallow reservoir, which will produce poor quality water due to the growth of aquatic vegetation that causes off colors and taste. Evaporation losses will be extreme due to the large surface area and the shallow nature of the reservoir. At conservation level of 534 ft-msl the deepest part of the reservoir will only be 50 to 55 foot at the dam. This is not the depth at the bottom of Bois d' Arc Creek channel. I don't believe the channel depth should be consider because it is only 30 to 40 yards wide. The fall of the land from Highway 82 north is 3 to 5 foot per mile. As shown in Exhibit B, page 3-89, the reservoir will only be at 534 ft-msl 13 percent of the time and below 50 percent full less than 20 percent of the months. With these estimates there will be extensive mud flats every year. People driving along Highway 82 won't even know there is a reservoir.

Exhibit C, comprised by the Corps of Engineers, Tulsa District, initiated January 17, 2000, determined as shown on page 7, sub paragraph (b) that all dam sites within NTMWD plan were dropped from further consideration.

Exhibit D, page 2 Table 4D.2, shows that total impacts from getting water from Toledo Bend Reservoir to be low compared to Bois d' Arc Reservoir, page 3, which is medium to medium high.

According to an article I read in the National Geographic several years ago the fire fly population had dropped extensively and no one could determine why. In the last three years the appearance of fire flies has increased greatly in Bois d' Arc bottom, but not on the adjacent hills,

therefore something is conducive with the bottom land ecosystem that is helping in their return. If these insects are an important part of our eco system then we need to protect them. Tree frogs are an important part that needs to be taken under consideration. World wide frogs are suffering from their habitat losses. If this reservoir is built the Eastern Wild Turkey, White Tailed Deer and other wildlife will suffer. In Exhibit B, page 3-94, NTMWD has projected having to purchase an additional 22,000 acres for mitigated lands. This is the same amount of land that would be acquired for the reservoir. This tells you that there will be a large amount of wildlife displaced if Bois d' Arc Creek Reservoir is built.

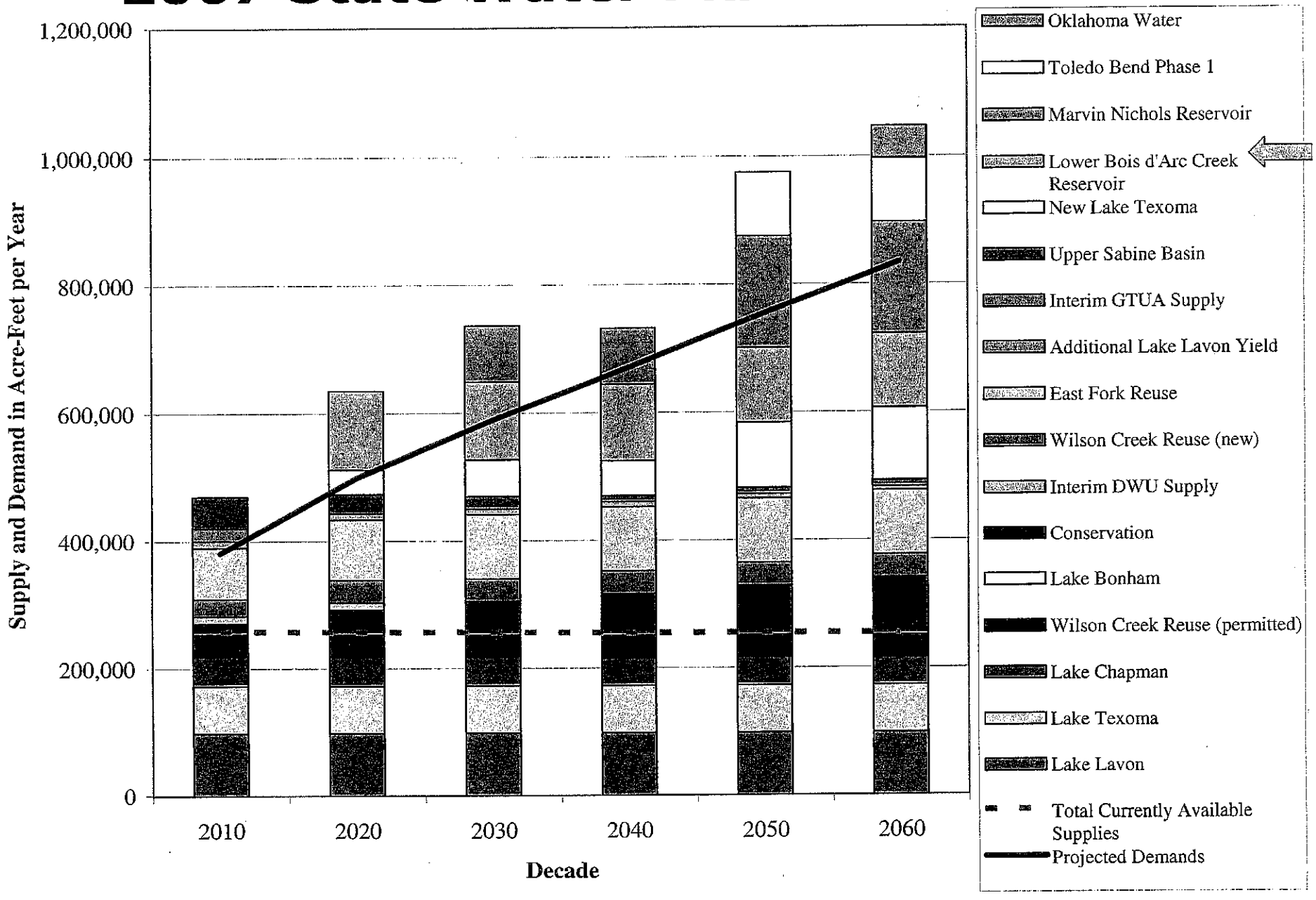
I personally will lose my new home that, as of today, I have only lived in for 6 years and every acre I own. I have approximately 485 acres total, 120 in cultivation, 150 improved pasture, 185 of hardwood bottom and 30 of ditches, creeks and marginal land. I can move to a new home, but I can't pickup 485 acres that I have worked my whole life to acquire and the improvements and move it. I will have to start over if this reservoir is built and I will be in my mid 60's when I have to move.

H.D. "Thump" Witherspoon Jr. date 6 September 2007

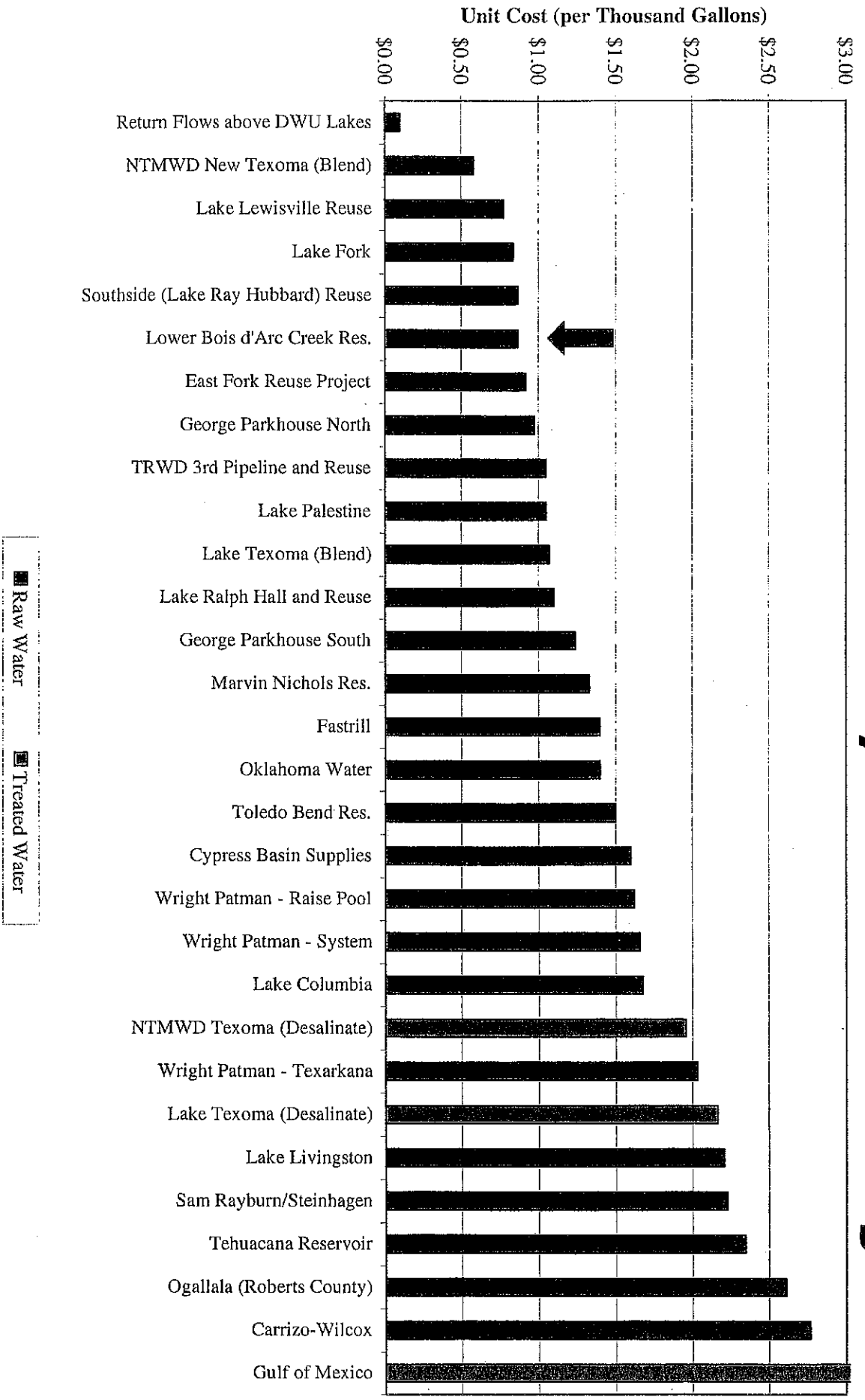
Signature

Exhibit A

2007 State Water Plan for NTMWD



Unit Costs of Potentially Feasible Strategies



3.4.7 Lower Bois d'Arc Creek Reservoir

3.4.7.1 Description

Lower Bois d'Arc Creek Reservoir is a proposed reservoir on Bois d'Arc Creek, a tributary of the Red River. Figure 3.4.7-1 shows the location of the project, which is in Fannin County in North-Central Texas. A reservoir at this site (then called the Bonham Reservoir) was included in the Red River Compact (Red River Compact Commission, 1979). The project has been studied previously for the Red River Authority and the North Texas Municipal Water District (Freese and Nichols, 1984 and 1996) and was recommended as a water supply for the North Texas Municipal Water District in the 2001 and 2006 Region C Water Plans (Freese and Nichols et al., 2001 and 2006a) and the 2002 and 2007 Texas State Water Plan (Texas Water Development Board, 2002 and 2006).

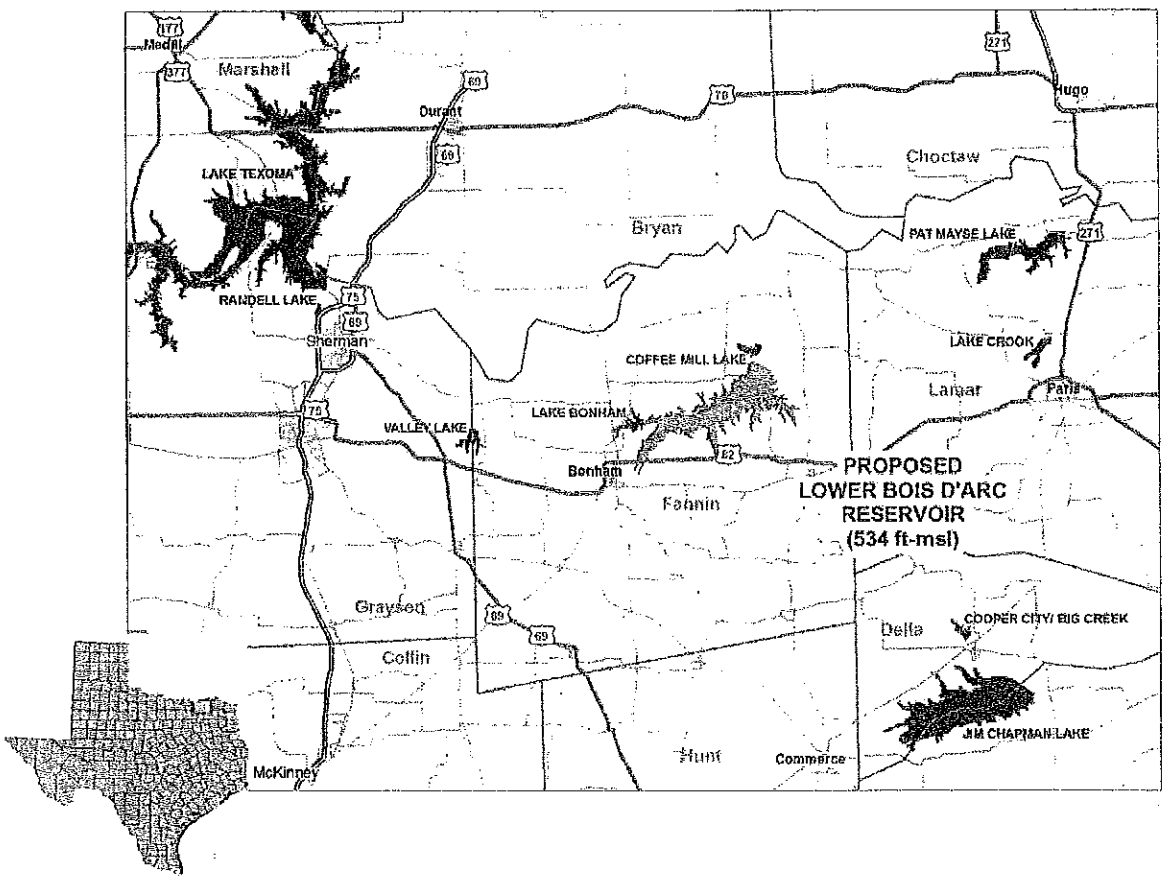


Figure 3.4.7-1. Location Map of Lower Bois d'Arc Creek Reservoir

Lower Bois d'Arc Creek Reservoir is recommended as a unique reservoir site in both the 2001 and 2006 Region C Water Plans. The reservoir is planned to provide water to the North Texas Municipal Water District, which serves water to customers over an eight-county area in north central Texas. The projected needs of the District for additional supply are 113,000 acft/yr in 2010, increasing to over 545,000 acft/yr by 2060 (Freese and Nichols et al, 2006a). The projected needs for additional water supply within 50 miles of the proposed reservoir site by 2060 are 728,028 acft/yr. The nearest major demand center is the Dallas-Fort Worth area, which is located approximately 60 miles southwest of the reservoir site.

3.4.7.2 Reservoir Yield Analysis

The reservoir area capacity data was developed from USGS topographic data and aerial photography that was flown in March 2004. The aerial photography provided 2-foot contour data at the reservoir site up to elevation 540 ft-msl. Table 3.4.7-1 shows the area-capacity-elevation (ACE) data for Lower Bois d'Arc Creek Reservoir. Figures 3.4.7-2 and 3.4.7-3 show the ACE curves and inundation at 10-foot contours.

The firm yields for Lower Bois d'Arc Creek Reservoir were performed using a modified version of the February 8, 2006 Red River WAM (Espey et al. 2002 and TCEQ 2006) Yields were calculated at elevations 530, 534, 536, and 538 ft-msl. The conservation elevation for the proposed reservoir is 534 ft-msl. The yield at this elevation is 126,280 acft/yr.

The hydrology at the Lower Bois d'Arc Creek dam site was calculated outside the WAM and input directly to the model. This adjustment was made because the original WAM underestimates the flows in the Bois d'Arc Creek watershed. From December 1962 to September 1985, the USGS operated the Bois d'Arc Creek near Randolph gage, which measured flows from about 22 percent of the proposed reservoir watershed. There were no known diversions or return flows above this gage, so the flows are representative of natural conditions. A recent study of the proposed reservoir compared these historical flows to naturalized flows in adjacent watersheds (Freese and Nichols, 2006b). This study concluded that naturalized flows in the Sulphur River Basin were probably a better estimator of flows in the Bois d'Arc Creek watershed than incremental flows in the main stem of the Red River, which is the default method used in the TCEQ Red River WAM. The study recommended adding a new primary control

Table 3.4.7-1.
Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

Elevation (feet)	Area (acre)	Capacity (acft)
464.0	5	4
470.0	19	76
480.0	378	1,197
490.0	2,001	15,109
500.0	4,288	50,684
510.0	6,987	99,108
520.0	10,601	180,995
530.0	14,724	302,570
534.0	16,526	367,609
540.0	19,616	467,767
550.0	23,967	678,337
560.0	29,670	954,617

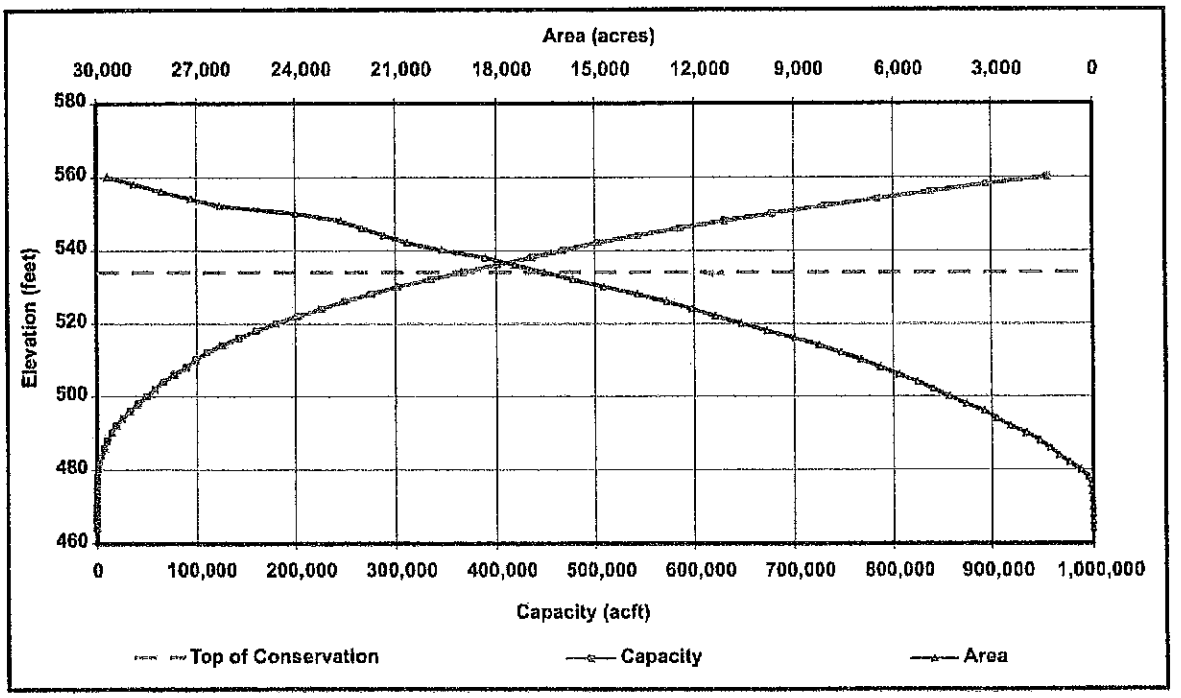


Figure 3.4.7-2. Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

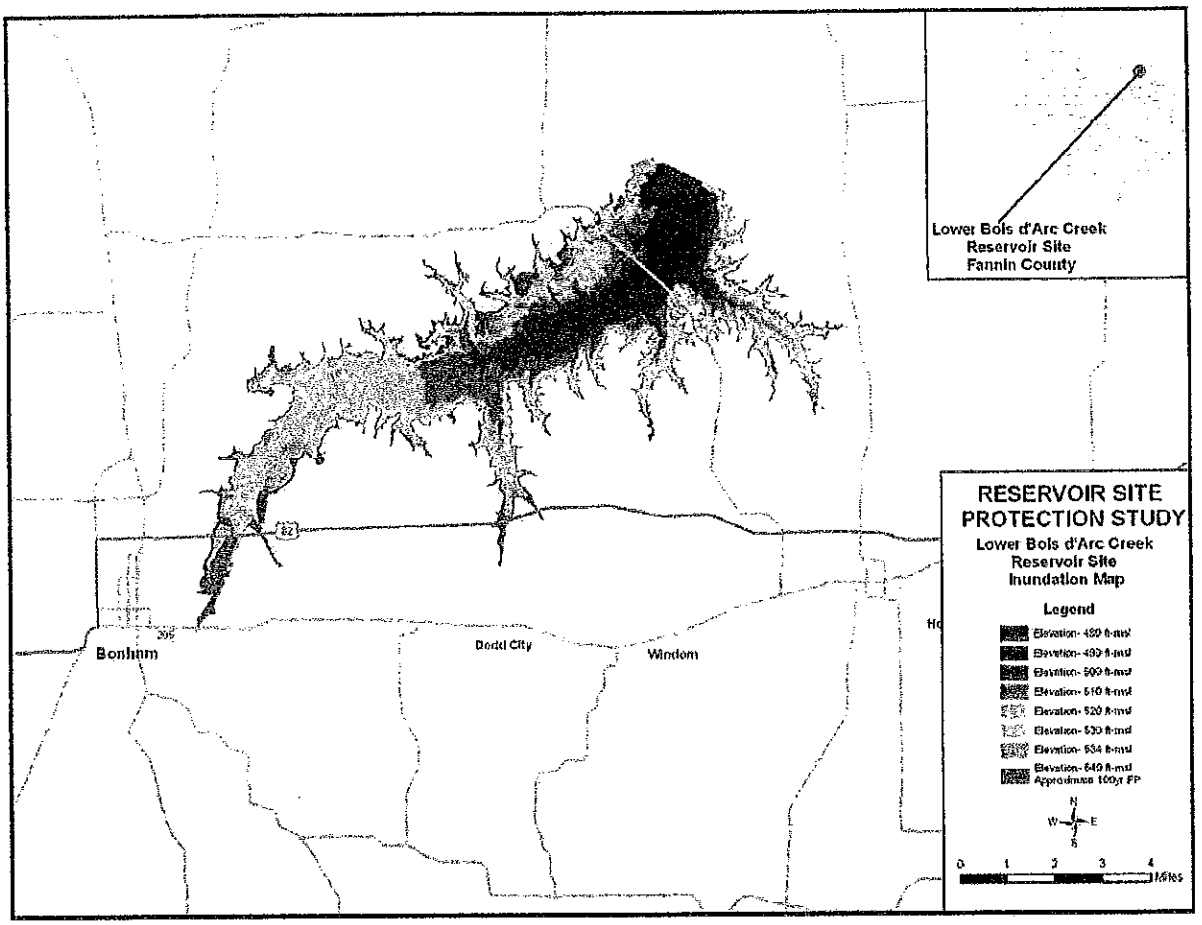


Figure 3.4.7-3. Inundation Map for Lower Bois d'Arc Creek Reservoir

point at the proposed reservoir site using flows based on data from the Randolph gage on Bois d'Arc Creek and naturalized flows in the Sulphur Basin. This method was adopted for the current yield evaluations. More information can be found in the *Report Supporting an Application for a Texas Water Right for Lower Bois d'Arc Creek Reservoir* (Freese and Nichols, 2006b).

For the hydrologic analyses, a new control point was added to the Red River WAM between secondary control points X10200 and X10260. This control point has a drainage area of 327 square miles. A standard firm yield was calculated assuming that water was passed to downstream senior water rights as determined in the WAM Run 3.

The yield studies used the Consensus Criteria for Environmental Flow Needs (CCEFN) bypass criteria developed in the 2006 study of the reservoir. The CCEFN criteria may be found

in Table 3.4.7-2. At the recommended conservation elevation, the bypass criteria reduce the yield of the reservoir by 880 acft/yr.

Table 3.4.7-2.
Consensus Criteria for Environmental Flow Needs for Lower Bois d'Arc Creek Reservoir

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median	acft/mo	1,568	2,515	2,348	1,873	1,779	706	105	12	30	103	467	1,201
	cfs	25.5	44.9	38.2	31.5	28.9	11.9	1.7	0.2	0.5	1.7	7.8	19.5
25th	acft/mo	447	884	827	664	520	100	4	0	0	0	47	144
	cfs	7.3	15.8	13.4	11.2	8.5	1.7	0.1	0.0	0.0	0.0	0.8	2.3
7Q2	acft/mo	0	0	0	0	0	0	0	0	0	0	0	0

Table 3.4.7-3 and Figure 3.4.7-4 show the results of the yield studies. Note that in Figure 3.4.7-4 the yield of the reservoir per acre-foot of increased conservation storage is higher at a conservation elevation of 538 feet. However, the proposed reservoir is immediately downstream of Lake Bonham and the City of Bonham. Increasing the elevation of the reservoir would impact the existing dam for Lake Bonham and increase the potential for flooding in the City of Bonham. The storage trace for the recommended conservation pool elevation and the storage frequency curve are shown in Figure 3.4.7-5. This figure shows that at the proposed conservation elevation of 534 feet, the reservoir would be full about 13 percent of the time and below 50 percent full (183,805 acft) less than 20 percent of the months.

Table 3.4.7-3.
Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

Conservation Pool Elevation (ft-msl)	*Conservation Storage (acft)*	*Environmental Bypass Criteria*	*Yield (acft/yr)*	*Critical Period*
530.0	302,570	CCEFN	117,190	7/75 - 8/80
534.0*	367,609	CCEFN	126,280	7/75 - 2/81
		None	127,160	7/75 - 2/81
536.0	401,647	CCEFN	130,820	7/75 - 2/81
538.0	436,333	CCEFN	139,570	7/51 - 2/57
*Proposed conservation storage.				

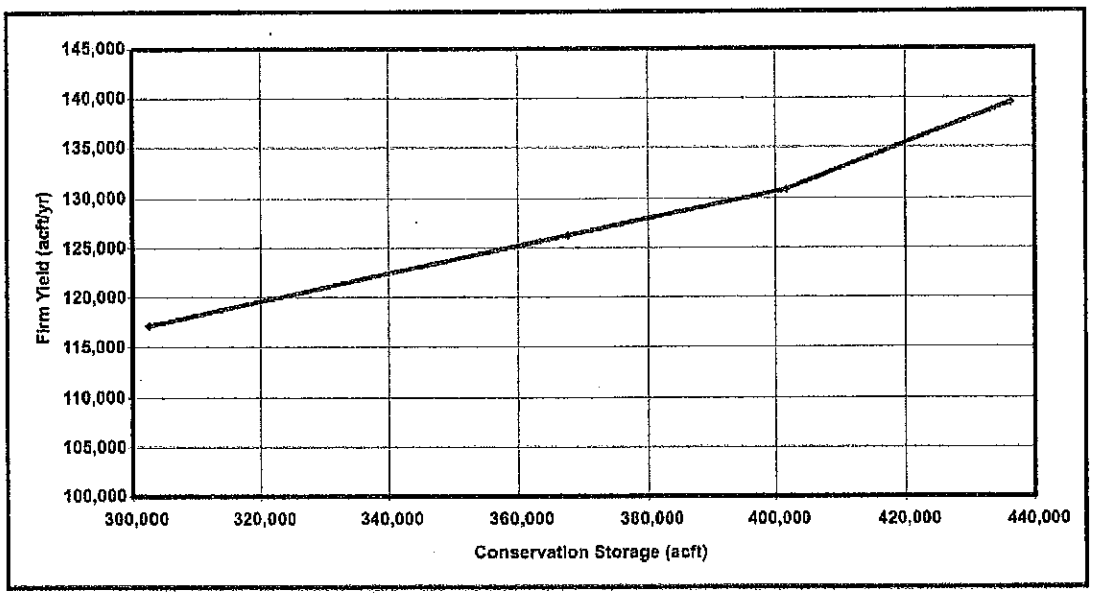


Figure 3.4.7-4. Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

3.4.7.3 Reservoir Costs

Costs for the Lower Bois d'Arc Creek Reservoir Dam assume a zoned earthen embankment and uncontrolled spillway. The length of the dam is estimated at 10,400 feet with a maximum height of 90 feet. The service spillway would include an approach channel; a 150-foot uncontrolled concrete weir, chute, hydraulic jump stilling basin, and outlet channel.

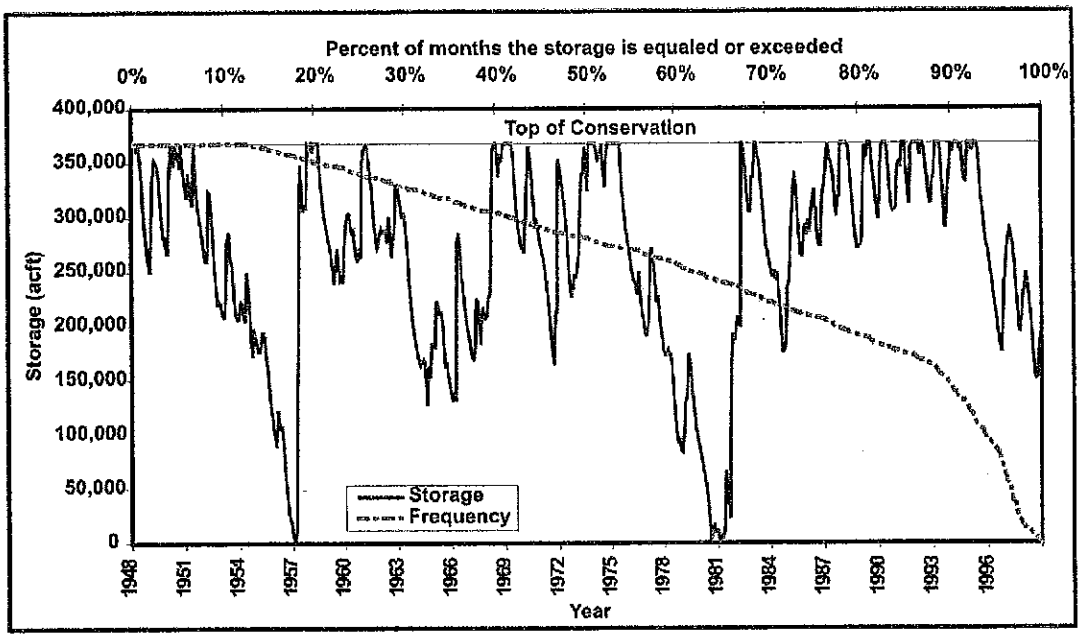


Figure 3.4.7-5. Simulated Storage in Lower Bois d'Arc Creek Reservoir (Conservation Elevation = 534 ft-msl, Diversion = 126,280 acft/yr)

Conflicts identified at the site include a cemetery, electrical lines, several roads (including U.S. Highway 82 and F.M. 1396), a 10-inch gas line and several other structures. A list of the potential conflicts is provided in Table 3.4.7-4. In addition to these conflicts, the cost estimate includes protection of the downstream slope of the Lake Bonham Dam, which will abut the upper reaches of the Lower Bois d'Arc Creek Reservoir. Costs for these conflict resolutions were developed from data provided by TNRIS and from the study report in support of the water right permit application for Lower Bois d'Arc Creek Reservoir (Freese and Nichols, 2006b). The conflict costs represent less than 10 percent of the total construction cost of the reservoir project. Figure 3.4.7-6 shows the conflicts as mapped by TNRIS.

Table 3.4.7-4.
List of Potential Conflicts for Lower Bois d'Arc Creek Reservoir

Gas Pipeline	Power Transmission Lines
Roads	Cemetery

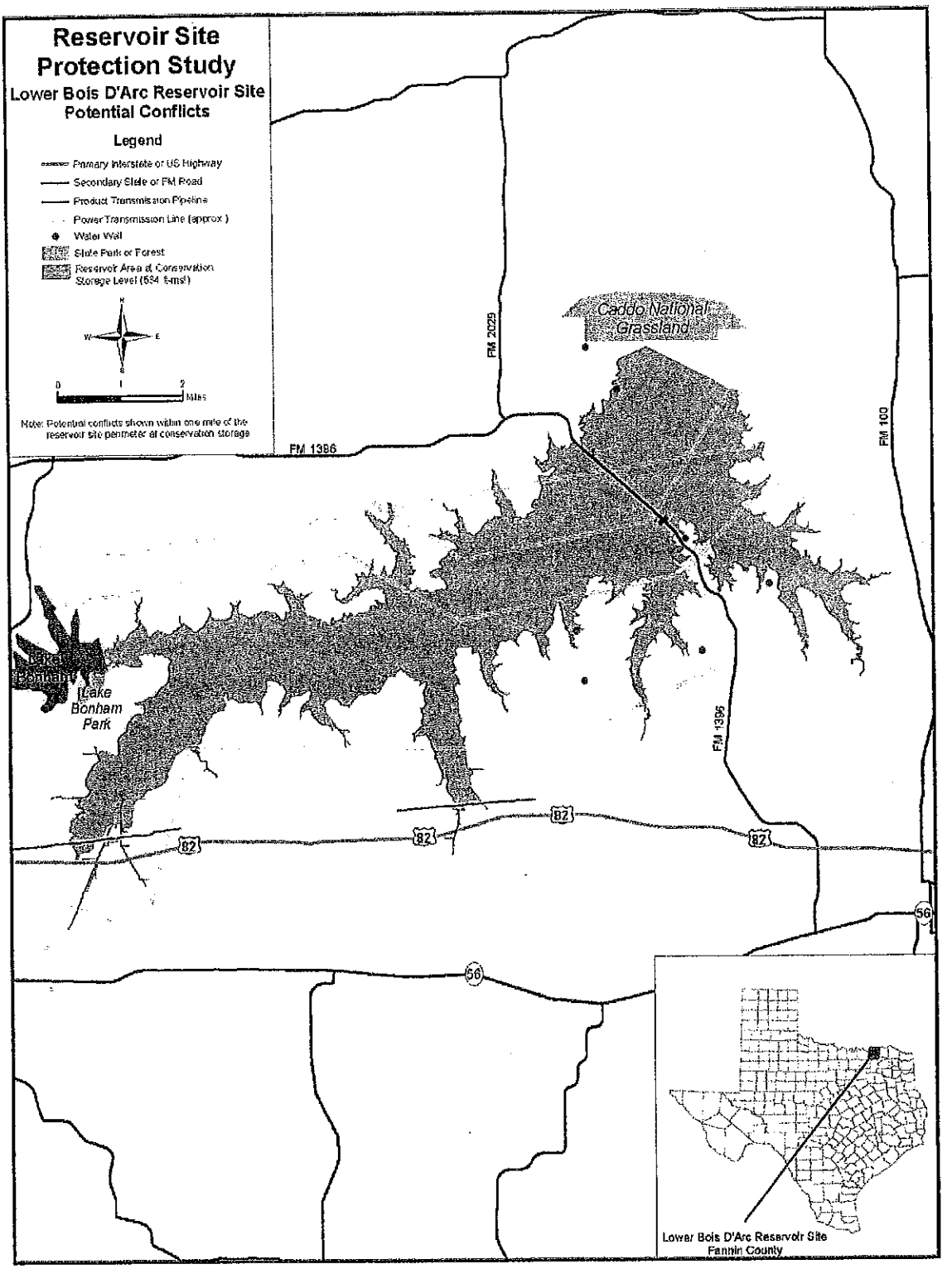


Figure 3.4.7-6. Potential Major Conflicts for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-5 shows the estimated capital costs for the Lower Bois d'Arc Creek Reservoir Project, including construction costs, engineering, permitting and mitigation. Unit costs for the dam and reservoir are based on the unit cost assumptions used in this study. Local costs could vary. Utilizing these unit costs, the total estimated cost of the project is $248 million (2005 prices). Assuming a yield of 126,200 acft/yr, raw water from the project will cost approximately $140 per acre-foot ($0.43 per 1,000 gallons) during the debt service period.

3.4.7.4 Environmental Considerations

Lower Bois d'Arc Creek Reservoir is located on an ecologically significant stream as identified by the Texas Parks and Wildlife Department. The designation is based on biological function, hydrologic function, and the presence of a riparian conservation area. The Region C Water Planning Group did not identify this stream segment as ecologically unique in the 2006 water plan. Portions of the creek that would be impacted by the reservoir were altered (straightened and widened) approximately 80 years ago to reduce localized flooding. The site is located immediately upstream of the Caddo National Grasslands, but would have minimal impacts to these lands. The U.S. Fish and Wildlife Service has identified Priority 4 bottomland hardwoods considered "moderate quality bottomlands with minor waterfowl benefits" (USFWS, 1985) in the vicinity of the project.

Lower Bois d'Arc Creek Reservoir will inundate 16,526 acres of land at conservation storage capacity. Table 3.4.7-6 and Figure 3.4.7-7 summarize existing landcover for the Lower Bois d'Arc Creek Reservoir site as determined by TPWD using methods described in Appendix C. Existing landcover within this reservoir site is dominated by upland deciduous forest (42 percent) with sizeable areas of grassland (28 percent) and agricultural land (17 percent). Bottomland hardwood forest comprises only about 2.2 percent of the reservoir area while marsh, swamp, and open water total about 3.5 percent of the reservoir area.

Table 3.4.7-5.
Cost Estimate — Lower Bois d'Arc Creek Reservoir @ Elevation 534 ft-msl

	Quantity	Unit	Unit Price	Cost
Dam & Reservoir				
Mobilization (5%)	1	LS	$2,976,100	$2,976,000
Clearing and Grubbing	85	AC	$4,000	$340,000
Care of Water During Construction (1%)	1	LS	$589,300	$589,000
Required Excavation	2,339,400	CY	$2.50	$5,849,000
Borrow Excavation	2,030,000	CY	$2.00	$4,060,000
Random Compacted Fill	3,261,000	CY	$2.50	$8,153,000
Core Compacted Fill	711,200	CY	$3.00	$2,134,000
Soil Bentonite Slurry Trench	497,700	SF	$15.00	$7,466,000
Soil Cement	114,900	CY	$65.00	$7,469,000
Flex Base Roadway	29,200	SY	$20.00	$584,000
Sand Filter Drain	293,000	CY	$35.00	$10,255,000
Grassing	41	AC	$4,500	$185,000
Intake Tower for Low-Flow Outlet	527	CY	$750	$395,000
Conduit for Low-Flow Outlet	660	CY	$500	$330,000
Impact Basin for Low-Flow Outlet	160	CY	$500.00	$80,000
Gates and Miscellaneous for Low-Flow Outlet	1	LS	$200,000	$200,000
Electrical System and Instrumentation for Low-Flow Outlet	1	LS	$195,000	$195,000
Spillway Structure and Reinforced Concrete	19,700	CY	$375	$7,388,000
Roller Compacted Concrete	49,900	CY	$60	$2,994,000
Bridge	3,000	SF	$150	$450,000
Barrier and Warning System	1	LS	$50,000	$50,000
Embankment Instrumentation	1	LS	$250,000	$250,000
Timber Guard Posts and Guard Rail	1	LS	$55,000	$55,000
Misc. Internal Drainage	1	LS	$50,000	$50,000
Engineering and Contingencies				$21,874,000
Subtotal for Dam & Reservoir				**$84,371,000**
Conflicts				
Utilities				
10-in Gas Pipeline	3,720	LF	$27	$100,000
138 KV Line	1	LS	N/A	$1,500,000
345 KV line	1	LS	N/A	$3,735,000
Other structures	1	LS	N/A	$3,000,000
Cemeteries	27	EA	$6,000	$162,000
Major Roads (raised)	5,000	LF	$900	$4,500,000
Other roads	7,200	LF	$150	$1,080,000
Lake Bonham (protection)	1	LS	$175,000	$175,000
Engineering and Contingencies at 35%				$4,988,000
Land Acquisition - Conservation Pool plus 10%	22,000	AC	$2,675.00	$58,850,000
Environmental Studies and Mitigation Lands	22,000	AC	$2,675.00	$58,850,000
CONSTRUCTION TOTAL				**$221,311,000**
Interest During Construction (36 months)				**$26,927,000**
TOTAL COST				**$248,238,000**
ANNUAL COSTS				
Debt Service (6% for 40 years)				$16,498,000
Operation & Maintenance				$1,125,000
Total Annual Costs				**$17,623,000**
UNIT COSTS				
Per Acre-Foot				$140
Per 1,000 Gallons				$0.43

Units: AC = Acre; CY = Cubic Yard; EA = Each; LB = Pound; LF = Linear Foot; LS = Lump Sum; SF = Square Foot; and SY = Square Yard.

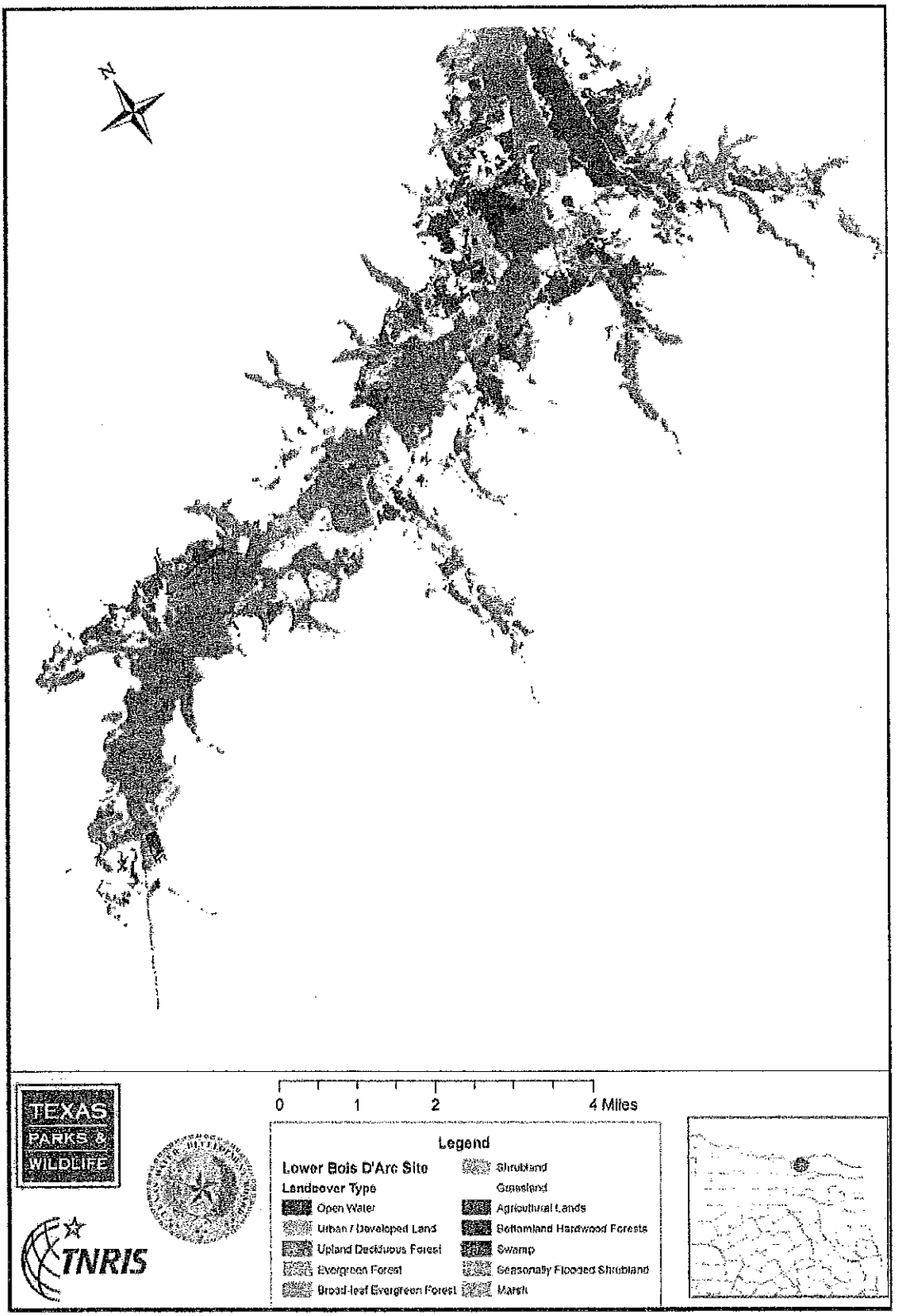


Figure 3.4.7-7. Existing Landcover for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-5 shows the estimated capital costs for the Lower Bois d'Arc Creek Reservoir Project, including construction costs, engineering, permitting and mitigation. Unit costs for the dam and reservoir are based on the unit cost assumptions used in this study. Local costs could vary. Utilizing these unit costs, the total estimated cost of the project is $248 million (2005 prices). Assuming a yield of 126,200 acft/yr, raw water from the project will cost approximately $140 per acre-foot ($0.43 per 1,000 gallons) during the debt service period.

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Lower Bois d'Arc Creek Reservoir will inundate 16,526 acres of land at conservation storage capacity. Table 3.4.7-6 and Figure 3.4.7-7 summarize existing landcover for the Lower Bois d'Arc Creek Reservoir site as determined by TPWD using methods described in Appendix C. Existing landcover within this reservoir site is dominated by upland deciduous forest (42 percent) with sizeable areas of grassland (28 percent) and agricultural land (17 percent). Bottomland hardwood forest comprises only about 2.2 percent of the reservoir area while marsh, swamp, and open water total about 3.5 percent of the reservoir area.

Table 3.4.7-6.
Acreage and Percent Landcover for Lower Bois d'Arc Creek Reservoir

Landcover Classification	*Acreage*[1]	*Percent*
Bottomland Hardwood Forest	373	2.2%
Marsh	407	2.5%
Seasonally Flooded Shrubland	73	0.4%
Swamp	29	0.2%
Evergreen Forest	61	0.4%
Upland Deciduous Forest	6,936	41.9%
Grassland	4,671	28.2%
Shrubland	1,038	6.3%
Agricultural Land	2,826	17.1%
Open Water	135	0.8%
Total	16,549	100.0%

[1] *Acreage based on approximate GIS coverage rather than calculated elevation-area-capacity relationship.*

Exhibit C

BOIS D' ARC CREEK BASIN

SECTION 905(b) (WRDA 86) Analysis

1. STUDY AUTHORITY

a. This Section 905(b) (WRDA 86) Analysis was prepared as an initial response to the Energy and Water Development Act, 2000, Public Law 106-60, and House Committee on Appropriations Report 106-253, dated July 23, 1999, which reads in part:

> ".....Funds are included in the recommendation for a reconnaissance study of flooding and related water resource problems along the Bois d' Arc Creek near Bonham, Texas."

b. Funds in the amount of $100,000 were appropriated in Fiscal Year 2000 to conduct the reconnaissance phase of the Bois d' Arc Creek near Bonham, Texas, study. In response to the study authority, the reconnaissance phase of the study was initiated on January 17, 2000.

2. STUDY PURPOSE

The purpose of this study is to determine if there is Federal interest in providing flood control, water supply, recreation, and fish and wildlife improvements within the Bois D' Arc Creek Basin near Bonham, Texas. If Federal interest is determined, a feasibility report will be forwarded to Congress with a recommendation for authorization. This reconnaissance phase of the study has resulted in the finding that there is Federal interest in continuing the study into the feasibility phase. This Section 905(b) (WRDA 86) Analysis documents the basis for this finding and establishes the scope of the feasibility phase. As the document that establishes the scope of the feasibility study, this Section 905(b) (WRDA 86) Analysis is the basis for the Scope of Work chapter of the Project Study Plan.

3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICTS

a. The Bois d' Arc Creek Basin is located in northeastern Texas in Fannin and Grayson counties. Bois d' Arc Creek originates at the western border of Grayson County and flows northeasterly through Fannin County to its confluence with the Red River. See Attachment 1. Fannin County, Texas, is the non-Federal sponsor for the feasibility phase of this study.

b. Congressional interests includes Texas Senators Phil Gramm and Kay Bailey Hutchison and Congressman Ralph Hall of the Texas 4th Congressional District.

4. PRIOR STUDIES, REPORTS, AND EXISTING WATER PROJECTS

The following reports were reviewed as a part of this study:

a. 1968 Reconnaissance Report, Bonham Lake, Texas. This report, prepared by the Tulsa District, identified a feasible multipurpose lake for potential development. Data from this report are the basis for the project formulated in this reconnaissance report.

b. Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Comprehensive Study, Interagency Reconnaissance Report, March 1985. This report identified a number of potential lake sites that were considered in development of water supply within the northeastern Texas region, including Fannin County.

5. PLAN FORMULATION

During a study, the six planning steps set forth in the Water Resource Council's Principles and Guidelines are repeated to focus the planning effort and eventually to select and recommend a plan for authorization. The six planning steps are: (1) specify problems and opportunities, (2) inventory and forecast conditions, (3) formulate alternative plans, (4) evaluate effects of alternative plans, (5) compare alternative plans, and (6) select recommended plan. The phases of the planning process typically differ in the emphasis that is placed on each step. In the iterations conducted during the reconnaissance phase, the step of specifying problems and opportunities is emphasized, although the other steps are not ignored since the initial screening of preliminary plans that results from the other steps is critical to scoping follow-on feasibility phase studies. The subparagraphs that follow present the results of the reconnaissance phase. This information will be refined in future iterations of the planning steps during the feasibility phase.

a. Problems and Opportunities

(1) Existing conditions. Bois d' Arc Creek rises in the eastern portion of Grayson County near Whitewright, Texas, and flows in a northeasterly direction across Fannin County to enter the right bank of the Red River at mile 611.8. The watershed has a length of about 58 miles, a maximum width of about 18 miles, and a drainage area of about 425 square miles. According to State estimates of the 1999 population, Fannin County had 28,700 residents, a population larger than its 1990 census count of 24,804. The City of Bonham is the largest city in Fannin County and had an estimated population of 7,500. The residents of Fannin County are primarily low to middle income, with a median family income of $26,600 in 1990, the most recent data on family income for the area. The median family income for all residents in Texas was $31,553. The per capita income in Fannin County was $9,509 compared to the State per capita income of $12,904. Manufacturing and retail trade are the two largest employing industries in the county. The average 1999 unemployment rate in Fannin County of 5.3% is slightly higher than the State of Texas rate of 4.6% for the same year. In 1927, local interests organized three drainage districts, and the upper two-thirds Bois d' Arc Creek was modified through construction of a straight channel. Overflows from the natural and modified portions of

Bois d' Arc Creek pose threats to urban development in the City of Bonham and surrounding agricultural areas within the basin.

(2) Flood problem. The Bois d' Arc Creek floodplain and its tributaries have been associated with flooding of residential and commercial structures in and near the town of Bonham, Texas. Recent flooding occurred along Bois d' Arc Creek and in the City of Bonham in October 1981, May 1989, and January 1998. The most significant flooding from available records occurred in 1989 when flood rescue operations for a number of Bonham residents took place. The Bonham floodplain administrator indicated that at least 100 homes were flooded by the event. In addition, flooding from Bois d' Arc Creek damaged agricultural crops and equipment. Flood control measures of a Federal project will primarily impact areas of the City of Bonham and Fannin County, Texas.

(3) Water supply. Officials of the City of Bonham and Fannin County, Texas, have projected a need for additional water supply within the region by the year 2014. Additional water supplies in the Bois d' Arc Creek Basin would provide benefits to the northeastern Texas region.

(4) Recreation. Fannin County officials have indicated that a multipurpose project could provide additional recreational facilities that are desired by area residents. The population in Fannin County has been projected to grow 36% from 2000 to the year 2050. In addition, significant population increases that include the Dallas metroplex will place pressure for new and expanded recreation facilities in the region.

(5) Ecosystem restoration. An opportunity exists to provide ecosystem restoration features along Bois d' Arc Creek. Historical wetlands within the basin have been adversely affected by modifications to the original Bois d' Arc channel. Water releases from a multipurpose lake project would provide flows beneficial to some 3,000 acres of wetlands in the lower portion of the basin. The Bois d' Arc Creek Basin has suffered declines and impacts to bottomland hardwood forests and riparian vegetation as have other areas within the state. Vegetation along the stream has been removed, and the land has been converted to grasslands, improved pasture, and agricultural lands. The decline in this habitat type has led to preservation and restoration efforts by a number of entities within the state and by the U.S. Fish and Wildlife Service. Within the Bois d' Arc Creek Basin, these wetland resources would probably be classified as Resource Category II, which connotates high value for species and the habitat as scarce or becoming scarce. At least one area, the Caddo National Forest and Grassland, exists in the lower basin and is managed by the U.S. Forest Service.

(a) Bottomland hardwoods and riparian vegetation are critical for habitat diversity and maintenance of wildlife species. Numerous species utilize these habitats, including turkey, whitetail deer, furbearers, waterfowl, songbirds, and various species of small mammals, birds, amphibians, and reptiles. Species of special concern (Texas Parks and Wildlife Threatened and Endangered Species) that are known to occur or have a high probability of occurring in the Bois d' Arc Creek Basin include the bald eagle, Interior least tern, Eskimo curlew, red-cockaded woodpecker, paddlefish, American swallow-tailed kite, white-faced ibis, wood stork, Arctic peregrine falcon, and Texas horned lizard.

(b) The Bois d' Arc Creek watershed has been modified by agricultural practices. The riparian corridor along the creek has been severely reduced and floodplain wetlands converted to farmland. The loss of stream bank vegetation has contributed to siltation within the stream, bank caving, and elevated stream temperatures, and has reduced the carrying capacity of the aquatic ecosystem. An aquatic habitat restoration project that would restore the riparian corridor along the stream would provide multiple benefits to the aquatic ecosystem of the creek. Protected bottomland hardwood tree and native grass plantings along the stream would restore lost or degraded aquatic habitat, reduce siltation, and provide a travel corridor for wildlife species along the stream to the Red River. Wildlife species likely to benefit from a habitat restoration project would include turkey, whitetail deer, wood duck, various species of amphibians, reptiles, and songbirds. Improved stream water quality, reduced siltation, and reduced stream temperatures would benefit the aquatic community as well. Species most likely to benefit would include largemouth bass, various species of sunfish, channel and flathead catfish, the minnow community, and some species of darters. It could also positively impact fish species of special concern such as the blue sucker, American eel, and paddlefish, especially in the lower reaches of the stream near its confluence with the Red River.

b. Inventory and Forecast Conditions

(1) Inventory. Data formulated for the 1968 reconnaissance report, including summaries of damages and costs for the alternatives considered, were the basis for a justified project in the Bois d' Arc Creek Basin. These data were updated to reflect expected costs and benefits for the basin in its current state of development. No additional structural inventory or hydrology was generated. Although there is evidence of additional development and potentially higher values for specific agricultural products, the more conservative cost and benefit values for the 1968 conditions were updated.

(2) Expected future conditions. The State of Texas projects that the Fannin County population will be 41,000 in the year 2050. This growth is linked to overall economic development in northeast Texas as employment opportunities in retail, services, and manufacturing continue to expand. Associated with this growth will be demand for water supply and recreation. In the absence of a project to address the flood control, water supply, and recreation needs of the area, continued growth and regional development would be limited. Flood damages within the Bois d' Arc Creek Basin would continue to occur and threaten the safety of residents and cause loss to property, agricultural products, and equipment.

c. Formulate Alternative Plans

(1) Planning objectives and constraints. The national or Federal objective of water and related land resources planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment, pursuant to national environmental statures, applicable executive orders, and other Federal planning requirements.

(a) Contributions to NED are increases in the net value of the national output of goods and services expressed in monetary units and are the direct net benefits that accrue in the planning area and the rest of the Nation.

(b) The Corps has added a second objective for National Ecosystem Restoration (NER) in response to legislation and administration policy. This objective is to contribute to the Nation's ecosystems through ecosystem restoration, with contributions measured by changes in the amounts and values of habitat.

(2) Public concerns. A number of public concerns were identified during the reconnaissance study. Input was received through coordination with the potential sponsor, Fannin County and some initial coordination with City of Bonham officials. Public concerns that are related to establishing planning objectives and planning constraints are:

(a) Recent flood events in and near the City of Bonham from Bois d' Arc Creek and its tributaries have created concern among area residents and government officials for reduction of potential damages.

(b) Growth in commercial and industrial activity in the City of Bonham and in the Fannin County area in recent years has resulted in the need for permanent additional water supply to accommodate future growth within the region. Projections by the Texas Water Development Board, 2002 State Water Plan, indicate a population growth in Region C (which includes Fannin County) of about 65% from 1990 to the year 2050. Projections of water demand for the same period in Texas Region C indicate an increase of 150% over current use.

(c) Recreational opportunity is limited in Fannin County. Area residents consider the potential for increased multipurpose recreation to be a benefit.

(d) Bottomland environmental resources located along Bois d' Arc Creek include unique natural wetlands that are subject to periods of drought during the year. The potential exists for project features to augment flow conditions within the lower portions of the basin to restore riparian and aquatic ecosystems that have been lost from historical modifications of Bois d' Arc Creek.

(3) Study planning objectives. The objectives of NED and NER are general statements and are not specific enough for direct use in plan formulation. The water and related land resource problems and opportunities identified in this study are stated as specific planning objectives to provide focus for the formulation of alternatives. Planning objectives reflect the problems and opportunities and represent desired positive changes in the without-project conditions. The planning objectives are specified as follows:

(a) Reduce existing flood related damages in the Bois d' Arc Creek Basin in Fannin County, Texas.

(b) Provide additional municipal and industrial water supply for the northern Texas region, including municipalities and other users in Fannin County.

(c) Provide recreation opportunities for residents and visitors to the northeastern Texas region.

(d) Restore the riparian ecosystem in the lower basin of Bois d' Arc Creek to a more naturally functioning system.

(e) Minimize real estate acquired for any project considered for development.

(f) Identify alternatives that meet local acceptability criteria.

(4) Planning constraints. Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The planning constraints identified in this study are as follows:

(a) Any recommended project must be justified under established Federal planning criteria.

(b) Federal participation in the recommended plan is limited to 65% of the implementation cost, unless Congress specifically authorizes participation at another rate. Amounts over the Federal limit would be a local expense.

(c) The recommended project must be acceptable and supported by a local sponsor. Feasibility studies must be cost shared 50%. Separable allocated costs for construction will be determined in the feasibility phase.

(5) Problems warranting Federal participation. The problem identified in the Bois d' Arc Creek watershed is significant risk of flood damage to urban areas of the City of Bonham and flooding of agricultural areas northeast of the city. Ecosystem restoration opportunities exist in the lower portions of Bois d' Arc Creek Basin, which contain large wetland resources.

d. Effects of Alternative Plans

(1) A variety of measures were considered. Some were found to be infeasible due to technical, economic, or environmental constraints. Each measure was assessed and a determination made regarding whether it should be retained in the formulation of alternative plans. Descriptions and results from evaluating the measures considered in this study are presented below:

(a) No Action. The Corps is required to consider "No Action" as an alternative to comply with requirements of the National Environmental Policy Act. No Action is the condition reasonably expected to prevail over the period of analysis given current conditions and trends and assuming that no project would be implemented by the Federal Government to achieve the planning objectives. No Action, which is synonymous with the Without-Project Condition, forms the basis from which all other alternative plans are measured.

(b) Nonstructural measures. Nonstructural plans included flood proofing and relocation of structures subject to flood damage.

(c) Structural measures. Several structural measures were considered in the 1968 reconnaissance report. One alternative considered was channel improvement at Bois d' Arc Creek and its tributaries. The measures were directed at improvement of the flood control problem only. Reservoirs that could provide multipurpose benefits within the basin included sites at river miles 23.5, 24.8, 28.6, and 43.1.

e. Comparison of Alternative Plans

(1) Preliminary plans eliminated from further consideration. Preliminary plans are composed of one or more management measures that remain after initial screening. These plans and results of their evaluations are given below:

(a) Nonstructural plans were not economically justified, practical, or locally acceptable for application within Fannin County. In addition, no nonstructural measures were identified that met all water resource needs within the basin.

(b) Because of the diverse water resource needs within the Bois d' Arc Creek Basin, structural measures were formulated based on locating a multipurpose reservoir that could provide flood control, water supply, recreation, and fish and wildlife. Reservoir sites located at lower river miles 23.5, 24.8, and 28.6 were dropped from further consideration in the reconnaissance phase. Reservoir sites in the lower portion of the basin were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the lower Bois d' Arc Creek Basin. The best location for a reservoir in the lower portion of the basin, at river mile 23.5 (Coffey Mill site), would inundate an existing Forest Service lake and significant wetland areas. In addition, the shallow nature of the reservoir would potentially pose water quality problems.

(c) Combinations of upstream reservoirs and channel modifications were considered as potential solutions to the flood control needs within the Bois d' Arc Creek Basin. One alternative included locating a small reservoir on the Powder Creek tributary of Bois d' Arc Creek in combination with channel clearing and widening on Powder Creek and Bois d' Arc Creek channels. These plans were found to not be economically justified. In addition, the smaller detention reservoir would not provide significant water supply yield. Consequently, these combination plans were eliminated from further consideration.

(2) Preliminary plans remaining for further consideration. Descriptions and results from evaluating the preliminary plans considered further in this study are presented below:

(a) No Action. The No Action plan was carried further into the evaluation. However, the plan would not satisfy the planning objectives to reduce flood damages along Bois d' Arc Creek or provide water supply, recreation, and fish and wildlife benefits.

(b) Multipurpose Reservoir. Using the results of the 1968 Tulsa District reconnaissance report, a preliminary plan was identified that included construction of a multipurpose reservoir at the Bonham site (mile 43.1) located upstream from the City of Bonham. This reservoir would provide flood reduction benefits, 27 million gallons per day of water supply, opportunities for recreation, and potential fish and wildlife benefits. Ecosystem restoration benefits within the Bois d' Arc Creek Basin from water releases from the Bonham Reservoir to historical wetlands downstream were also considered.

(3) Preliminary evaluation of alternatives. With the No Action plan, expected annual flood damages of about $808,000 were estimated within the 100-year floodplain. Updating the 1968 Bois d' Arc reconnaissance report derived this estimate of loss. It is likely these damage amounts are understated due to construction of additional structures, higher value cropping patterns, and intensified farming practices that have developed within the 100-year floodplain since 1967. In consideration of these increased values, a complete inventory of annual flood damages could range from $800,000 to $1,500,000. Projections of net water supply needs indicate a deficit beginning in the year 2014. To address this need, another reservoir site in the lower portion of the Bois d' Arc Basin named the "New Bonham" site was proposed in the 2000 Texas Water Plan for Region C. Construction of this reservoir was estimated to cost $191 million. This site was used to estimate benefits for the Federal project located at river mile 43.1 that includes water supply as the least costly water supply alternative. The Federal multipurpose reservoir alternative is estimated to cost in the range of $90 million, or $7,540,000 in average annual costs (100 years, 6-5/8%).

Average annual benefits of $10,020,000 were estimated for the preliminary plan. This estimate includes annual benefits for flood damage reduction, water supply, recreation, and fish and wildlife. The estimated benefit-to-cost ratio (BCR) would meet the Federal criterion of a BCR of at least 1.

f. Recommended Plan

The multipurpose Bonham Reservoir located at river mile 43.1 is the recommended plan.

6. FEDERAL INTEREST

Based on the preliminary screening of alternatives, an alternative can be developed to address flood control, water supply, recreation, and fish and wildlife needs in an economically justified, environmentally acceptable manner in the feasibility phase. Flood control is an output with a high budget priority; therefore, there is Federal interest in conducting the feasibility study. In addition, the potential for low flow augmentation to wetland areas below the proposed reservoir would improve native ecosystem habitat as part of an ecosystem restoration project that could be developed within existing policy.

7. PRELIMINARY FINANCIAL ANALYSIS

As the non-Federal sponsor, Fannin County, Texas would be required to provide 50% of the cost of the feasibility phase. A letter of intent from the local sponsor is included as Attachment 2. The letter states their willingness to enter into negotiations for the feasibility phase, their ability to pursue the feasibility study and share in its cost, and their understanding that cost sharing at a minimum of 35%, including the LERRD's, is also required for construction of the potential project.

8. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS AND EXCEPTIONS

a. Mapping and imagery of topographic wetlands and agricultural features are available and sufficient for field investigations. Mapping for design purposes will be acquired.

b. An Environmental Impact Statement will be necessary. Cultural surveys will be required. Costs for a cultural inventory may be reduced based on coordination of available data and a reduced scope of survey.

c. The cost estimate assumes no problems with hazardous, toxic, and radiological, waste (HTRW) materials. An initial site assessment will be performed to determine the potential risk for HTRW.

d. The study schedule assumes the sponsor fully supports the schedule.

e. The real estate estimate for LERRD's will be based on a gross appraisal. The detailed Real Estate Design Memo will be part of the plans and specifications phase.

f. The feasibility report will be produced on paper. A CD-ROM will be produced to include the report and appendices.

9. FEASIBILITY PHASE MILESTONES

Milestone	Description	Duration (months)	Cumulative (months)
1	Initiate Study	0	0
2	Public Workshop #1 (scoping)	2	2
3	Feasibility Scoping Meeting	8	10
4	In Progress Review	12	22
5	Alternative Formulation Briefing	12	34
6	Draft Feasibility Report	4	38
7	Final Pubic Meeting	1	39
8	Feasibility Review Conference (if needed)	1	40
9	Policy Compliance Review incl. ITR	1	41
10	Final Report to Division	3	44
11	DE's Public Notice	1	45
-	Chief's Report	6	51
-	Completion	4	55

10. FEASIBILITY PHASE COST ESTIMATE

Major Work Items	Federal	Local Sponsor		Total
		Cash	In-Kind	
Public Involvement	$ 15,000	$ 10,000	$ 5,000	$ 30,000
Environmental Studies	$130,000	$130,000		$260,000
Economic Studies	$ 20,000	$ 20,000		$ 40,000
Project Management (5%)	$ 12,000	$ 0	$12,000	$ 24,000
Plan Formulation	$ 50,000	$ 50,000		$100,000
Engineering/Design	$300,000	$280,000	$10,000	$600,000
Real Estate Studies	$ 25,000	$ 20,000	$ 5,000	$ 50,000
Report Preparation	$ 18,000	$ 18,000		$ 36,000
Washington Level Review Contingency (5%)	$ 25,000	$ 25,000		$ 50,000
Study Contingency (15%)	$ 75,000	$ 75,000		$150,000
Total	$670,000	$638,000	$32,000	$1,340,000

11. POTENTIAL ISSUES AFFECTING INITIATION OF FEASIBILITY PHASE

None.

12. VIEWS OF OTHER RESOURCE AGENCIES

Coordination with other resource agencies would be initiated during preparation of the Project Study Plan and would continue during the feasibility phase.

13. PROJECT AREA MAP

A map of the study area is provided as Attachment 1.

14. RECOMMENDATIONS

On the basis of the above findings, I recommend that this Reconnaissance Study be certified as being in accordance with current policy and that a feasibility study be conducted. The estimated feasibility study cost is $1,340,000 for 53 months. Fannin County, Texas, will be the lead cost-sharing sponsor. A Project Study Plan is currently being developed.

Date 6 September 2000

LEONARDO V. FLOR
Colonel, EN
Commanding

Exhibit D

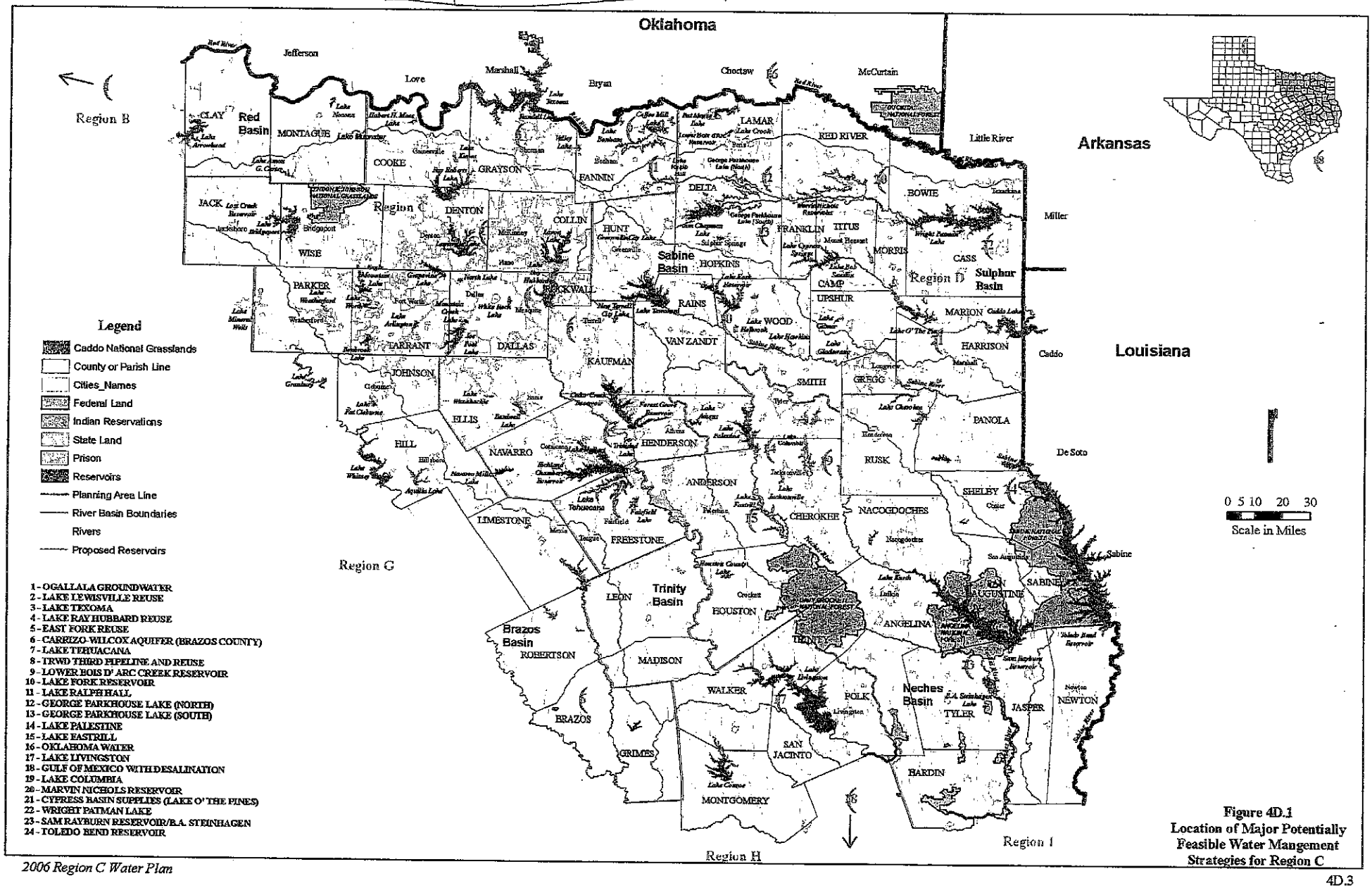

Figure 4D.1
Location of Major Potentially Feasible Water Mangement Strategies for Region C

Table 4D.2
Summary of Costs and Impacts of Major Potentially Feasible Strategies for Region C

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Toledo Bend Reservoir	DWU, NTMWD, SRA, TRWD & UTRWD	600,000	$2,428,789,000	$1.50	$0.60	High	Medium low	Low	Low	Medium Low	Low	Yes	Yes	Requires IBT and agreements with multiple users	Costs are weighted average for all four potential participants.
Gulf of Mexico	DWU, NTMWD, or TRWD	Unlimited (costs for 200,000 acre-feet per year)	$2,836,207,000	$5.57	$2.41	Medium	Medium	Low	Medium Low	Low	Low	No	N/A	Technology is still developing for this application at this scale. May require state water right permit and IBT.	Strategy was costed to central location. Capital Cost was based on one supplier. Supply is treated water.
Marvin Nichols Reservoir	DWU, Irving, NTMWD, TRWD and UTRWD	489,840	$2,092,720,000	$1.33	$0.37	High	High	High	Medium high	High	Medium	Yes	Not inconsistent	Requires new water rights permit and IBT. .	Costs are weighted average for all five potential participants.
Wright Patman - System	DWU, Irving, NTMWD, TRWD, and UTRWD	390,000	$1,891,022,000	$1.66	$0.58	High	Medium	Low	Medium	Medium	Medium Low	No (alternate)	Not inconsistent	Requires IBT, contract with USACE, contract with Texarkana, and new or amended water right permit.	Costs are based on 130,000 acre-feet per year for each potential participant.
Lake Texoma Not Yet Authorized (Blend)	DWU, TRWD, or UTRWD	220,000 (Costs for 113,000 acre-feet per year)	$182,588,000	$1.07	$0.25	High	Medium low	Low	Medium Low	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, Congressional authorization, and contract with USACE.	
Lake Texoma Not Yet Authorized (Desalinate)	DWU or TRWD	207,000 (Costs are for 105,000)	$621,448,000	$2.17	$0.85	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, Congressional authorization, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Sam Rayburn Reservoir/Lake B.A. Steinhagen	DWU, NTMWD, or TRWD	200,000	$1,306,045,000 to $1,525,001,000	$2.04 to $2.42	$0.59 to $0.72	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires IBT and contract with LNVA.	May be competing interest in supply in other region.
Lake Livingston	DWU, NTMWD, or TRWD	200,000	$1,142,917,000 to $1,299,183,000	$1.99 to $2.25	$0.72 to $0.83	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires contract with TRA.	May be competing interest in supply in other region.
Ogallala Groundwater (Roberts County)	DWU, NTMWD, or TRWD	200,000	$1,650,619,000 to $1,994,699,000	$2.40 to $2.83	$0.55 to $0.61	High	Medium low	Medium	Medium	Medium Low	Medium	No (alternate)	Not inconsistent	Requires additional water rights.	Assumes 400,000 acres of water rights. Currently permitted or contracted for 150,000 acres.
TRWD 3rd Pipeline and Reuse	TRWD	188,765	$626,347,000	$1.05	$0.31	Low	Low	Low	Low	Low	Medium	Yes	N/A	Permit is in hand.	
Wright Patman - Raise Flood Pool	DWU, Irving, NTMWD, or TRWD	180,000	$825,088,000 to $1,038,329,000	$1.42 to $1.83	$0.37 to $0.54	High	Medium	Low	Medium Low	Medium Low	Medium Low	Yes	Not inconsistent	Requires IBT, contract with USACE and new or amended water right permit.	
Oklahoma Water	DWU, Irving NTMWD, TRWD, and/or UTRWD	165,000 or more (costs based on 115,000)	$477,214,000	$1.40	$0.47	High	Low	Low	Low	Medium Low	Medium Low	Yes	N/A	Oklahoma has moritorium for export of water out of state. May require an IBT.	
Lower Bois d'Arc Creek Reservoir	NTMWD	123,000	$399,190,000	$0.87	$0.14	High	Medium high	High	Medium	Medium	Low	Yes	N/A	Requires new water rights permit and IBT.	
Lake Fork Reservoir	DWU	120,000	$362,916,000	$0.84	$0.17	High	Low	Low	Low	Medium Low	Low	Yes	Yes	Project is underway.	
George Parkhouse Lake (North)	DWU, NTMWD, and/or UTRWD	118,960	$362,322,000 to $365,002,000	$0.91 to $1.00	$0.23 to $0.27	High	Medium high	Medium high	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	Costs are for NTMWD and DWU.
Lake Palestine	DWU	111,460 [a]	$414,447,000	$1.08	$0.25	High	Low	Low	Low	Medium Low	Low	Yes	Yes	DWU has IBT permit.	

Page 3 of 5

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
New Lake Texoma (Blend)	NTMWD	113,000	$201,829,000	$0.58	$0.18	High	Medium low	Low	Medium Low	Medium Low	Medium	Yes	N/A	Requires IBT, state water right and contract with USACE.	NTMWD has applied for water right and is negotiating with USACE.
Lake Fastrill	DWU	112,100	$569,170,000	$1.40	$0.27	High	High	Medium	Medium high	Medium	Low	Yes	Unknown	Requires new water right permit and IBT.	
George Parkhouse Lake (South)	NTMWD and/or UTRWD	108,480	$480,099,000	$1.24	$0.25	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	
Lake Texoma Desalinate	NTMWD	105,000	$538,635,000	$1.96	$0.82	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.
East Fork Reuse Project	NTMWD	102,000	$288,879,000	$0.92	$0.21	High	Low	Low	Low	Low	Medium	Yes	N/A	Requires water right permit.	
Wright Patman Lake – Texarkana	DWU, Irving, NTMWD, or TRWD	100,000	$429,176,000 to $670,735,000	$1.70 to $2.37	$0.65 to $0.87	High	Low	Low	Low	Medium Low	Medium Low	No (alternate)	Not inconsistent	Requires agreement with Texarkana and IBT.	
Carrizo-Wilcox Groundwater (Brazos County and vicinity)	DWU or NTMWD	100,000	$506,662,000 to $577,413,000	$2.65 to $2.89	$1.24 to $1.28	High	Medium	Medium	Medium High	Medium	Low	No (alternate)	No	Requires coordination with local groundwater districts. Competing uses for water.	
Cypress Basin Supplies (Lake O' the Pines)	DWU, NTMWD, or TRWD	89,600	$257,192,000 to $469,493,000	$1.25 to $1.97	$0.60 to $0.78	High	Low	Low	Low	Medium Low	Low to Medium Low	No (alternate)	Not inconsistent	Requires IBT, renegotiating existing contracts, and contract with NETMWD.	
Return Flows above DWU Lakes	DWU and UTRWD	79,605	$0	$0.10	$0.10	High	Low	Low	Medium Low	Low	Low	Yes	N/A	Requires contracts with wastewater dischargers.	
Southside (Lake Ray Hubbard) Reuse	DWU	67,253	$200,333,000	$0.87	$0.21	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	Requires water right permit.	

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Lewisville Lake Reuse	DWU	67,253	$191,439,000	$0.78	$0.15	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	May require water right permit.	
Tehuacana Reservoir	TRWD	56,800	$511,829,000	$2.35	$0.35	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	N/A	Requires new water rights permit.	
Lake Ralph Hall and Reuse	UTRWD	50,740	$211,153,000	$1.10	$0.17	High	Medium high	Medium	Medium	Medium	Medium	Yes	N/A	Requires new water right and IBT.	
Lake Columbia	DWU	35,800	$223,705,000	$1.68	$0.29	High	Medium high	Medium	Medium	Medium	Medium	No (alternate)	Yes	Requires contract with ANRA and IBT.	

Note: a. DWU has a contract for 114,337 acre-feet per year for water from Lake Palestine. Based on the firm yield of the reservoir, the estimated amount of supply available to DWU in 2020 is 111,460 acre-feet per year

30 total Strategies

~~BDR - rank 13 of~~

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CERTIFIED MAIL

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P.O. Box 13087
Austin TX 78711-3087

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TCEQ MAIL CENTER
JH

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TCEQ Public Meeting Form

Thursday, September 13, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: H.D. "Thump" Witcher, Jr.

Address: 972 CR 2705

City/State: Telephone, TX **Zip:** 75488

Phone: (903) 664-2714

☐ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☒ Yes ☐ No

If yes, which one? Citizens to Save Bois d' Arc Creek

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☒ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**
(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

Submitted by H. D. "Thump" Witcher JR

AT PUBLIC MEETING

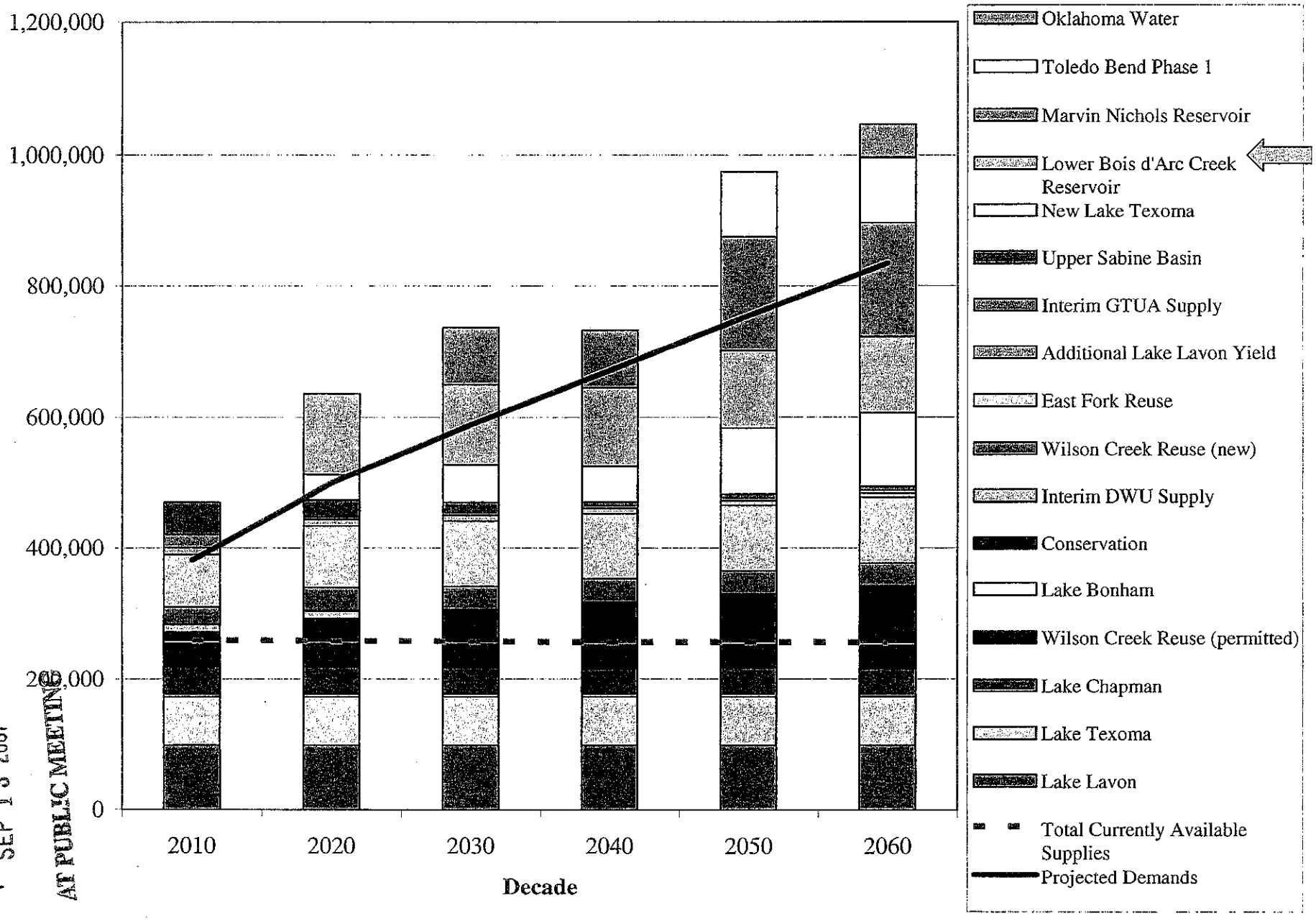
First I would like to say the building of a dam on Bois d' Arc Creek is not about the need for water, but the control of all potential water sources in Northeast Texas. This is shown in Exbit A, pages 1 and 2, entitled **2007 State Water Plan for NTMWD**, which are highlighted, showing existing lakes that NTMWD plan to aquire water from in the future. Conservation is one of their **future** plans, it sure isn't in place at this time. When lawn sprinklers are on and it is raining, water running done the street from sprinklers and sprinklers watering dormant grass in the middle of the winter with water running down the street, this is not conservation. I grant dormant grass needs watering if there is no rainfall, but once a month is adequate. Speaking of water running down the street, all of the run off in the Dallas-Ft. Worth Metroplex goes into the Trinity River basin. With all of the pavement and building's in the two metroplex's covering the soil, none of the rainwater is absorbed, so it becomes run off, thus generating an astronomical amount of usable water that just runs down the Trinity to Lake Livingston and keeps Houston supplied with plenty of water. I do not see one plan in the works to capture this huge water source. The municipalities want to go outside of their existing river basin to acquire their water. They should be forced to harvest this water source first before going outside of the Trinity Basin. The existing reservoirs should be utilized first before anymore are built. It will be more economical to build pipelines now than in the future if inflation is figured into the cost. I know pipelines are as controversial as the building of lakes, but they don't totally remove a person from his home, his land or lively hood. They don't wreck ecosystems, displace wildlife or other issues that reservoirs do. A pipeline from Wright Patman to Cooper Lake (Lake Chapman) is approximately 60 miles, which is as close or closer than a pipeline from Bois d' Arc to Lake Lavon. A pipeline from Cooper Lake to Lake Lavon all ready exists.

Bois d' Creek Reservoir will be a extremely shallow reservoir, which will produce poor quality water due to the growth of aquatic vegetation that causes off colors and taste. Evaporation losses will be extreme due to the large surface area and the shallow nature of the reservoir. At conservation level of 534 ft-msl the deepest part of the reservoir will only be 50 to 55 foot at the dam. This is not the depth at the bottom of Bois d' Arc Creek channel. I don't believe the channel depth should be consider because it is only 30 to 40 yards wide. The fall of the land from Highway 82 north is 3 to 5 foot per mile. As shown in Exhibit B, page 3-89, the reservoir will only be at 534 ft-msl 13 percent of the time(48 days) and below 50 percent full less than 20 percent of the months(73 days). With these estimates there will be extensive mud flats every year. People driving along Highway 82 won't even know there is a reservoir. NTMWD keeps tooting the economical development around this reservoir. Who in their right mind would buy a lake front lot knowing the reservoir is going to be half empty two and a half months out of every year and guess when those months will be, half of June, July and August. People wanting access to the water will have to dredge out a long channel before the reservoir is filled.

Exhibit C, comprised by the Corps of Engineers, Tulsa District, initiated January 17, 2000, determined as shown on page 7, sub paragraph (b) that all dam sites within NTMWD plan were dropped from further consideration.
Exhibit D, page 4D.4, Table 4D.2, shows that total impacts from getting water from Toledo Bend Reservoir to be low, Wright Patman low to medium, compared to Bois d' Arc Reservoir, page 4D.5, which is medium to medium high.
According to an article I read in the National Geographic several years ago the fire fly population had dropped extensively and no one could determine why. In the last three years the appearance of fire flies has increased greatly in Bois d' Arc bottom, but not on the adjacent hills, therefore something is conducive with the bottom land ecosystem that is helping in their return. If these insects are an important part of our eco system then we need to protect them. Tree frogs are an important part that needs to be taken under consideration. World wide frogs are suffering from their habitat losses. If this reservoir is built the Eastern Wild Turkey, White Tailed Deer and other wildlife will suffer. In Exhibit B, page 3-94, NTMWD has projected having to purchase an additional 22,000 acres for mitigated lands. This is the same amount of land that would be acquired for the reservoir. This tells you that there will be a large amount of wildlife displaced if Bois d' Arc Creek Reservoir is built.
I personally will lose my new home that, as of today, I have only lived in for 6 years and every acre I own. I have approximately 485 acres total, 120 in cultivation, 150 improved pasture, 185 of hardwood bottom and 30 of ditches, creeks and marginal land. I can move to a new home, but I can't pickup 485 acres that I have worked my whole life to acquire and the improvements and move it. I will have to start over if this reservoir is built and I will be in my mid 60's when I would have to move.

Exhibit A

2007 State Water Plan for NTMWD



Submitted by H.D. "Thump" Witcher Jr

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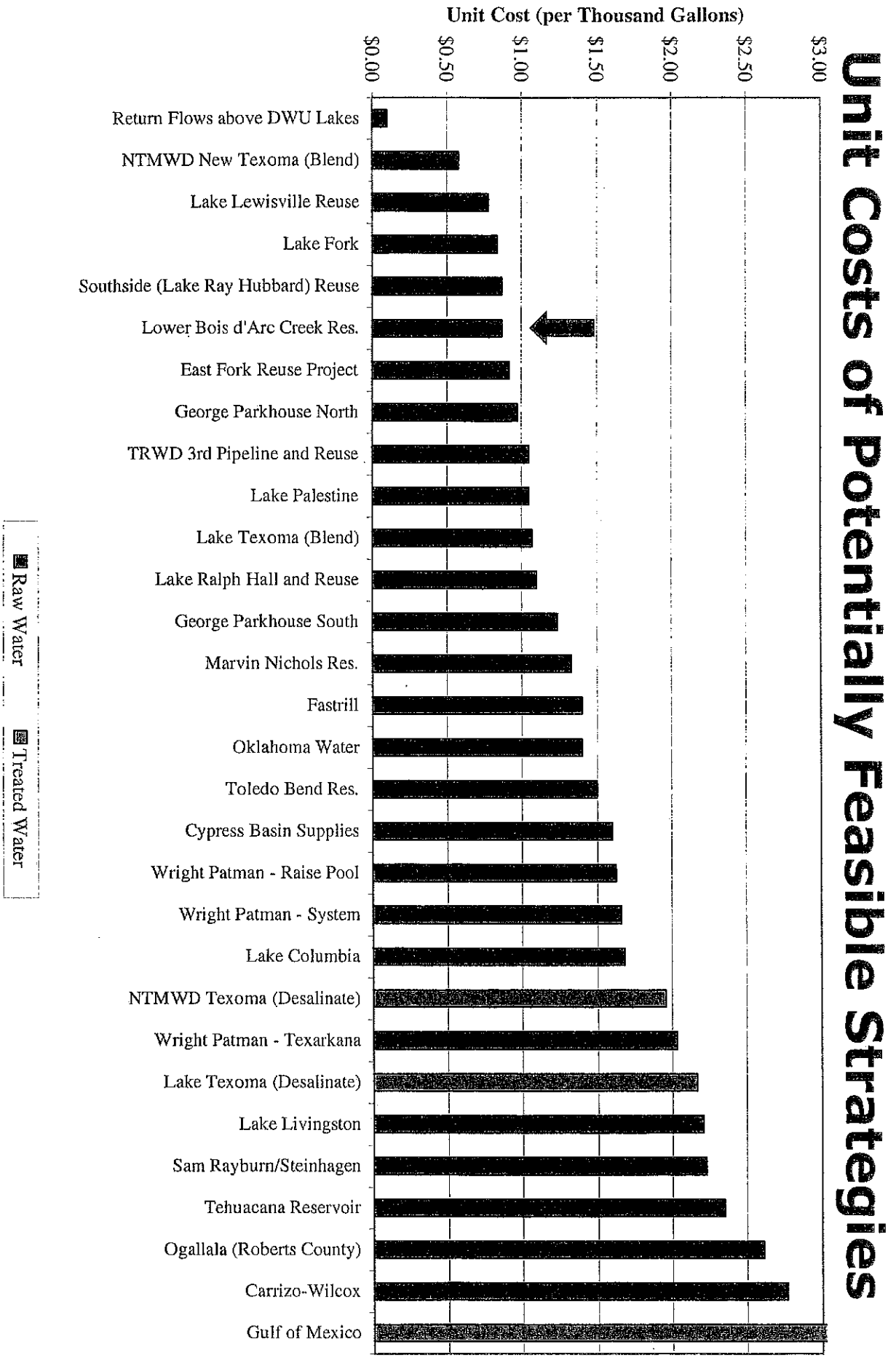
TPWD


Unit Costs of Potentially Feasible Strategies
Unit Cost (per Thousand Gallons)
$0.00
$0.50
$1.00
$1.50
$2.00
$2.50
$3.00
Return Flows above DWU Lakes
NTMWD New Texoma (Blend)
Lake Lewisville Reuse
Lake Fork
Southside (Lake Ray Hubbard) Reuse
Lower Bois d'Arc Creek Res.
East Fork Reuse Project
George Parkhouse North
TRWD 3rd Pipeline and Reuse
Lake Palestine
Lake Texoma (Blend)
Lake Ralph Hall and Reuse
George Parkhouse South
Marvin Nichols Res.
Fastrill
Oklahoma Water
Toledo Bend Res.
Cypress Basin Supplies
Wright Patman - Raise Pool
Wright Patman - System
Lake Columbia
NTMWD Texoma (Desalinate)
Wright Patman - Texarkana
Lake Texoma (Desalinate)
Lake Livingston
Sam Rayburn/Steinhagen
Tehuacana Reservoir
Ogallala (Roberts County)
Carrizo-Wilcox
Gulf of Mexico
Raw Water
Treated Water

Page 2 of 2

Exhibit B

3.4.7 Lower Bois d'Arc Creek Reservoir

Submitted by
H.D. "Thump" Watcher JR

3.4.7.1 Description

Lower Bois d'Arc Creek Reservoir is a proposed reservoir on Bois d'Arc Creek, a tributary of the Red River. Figure 3.4.7-1 shows the location of the project, which is in Fannin County in North-Central Texas. A reservoir at this site (then called the Bonham Reservoir) was included in the Red River Compact (Red River Compact Commission, 1979). The project has been studied previously for the Red River Authority and the North Texas Municipal Water District (Freese and Nichols, 1984 and 1996) and was recommended as a water supply for the North Texas Municipal Water District in the 2001 and 2006 Region C Water Plans (Freese and Nichols et al., 2001 and 2006a) and the 2002 and 2007 Texas State Water Plan (Texas Water Development Board, 2002 and 2006).

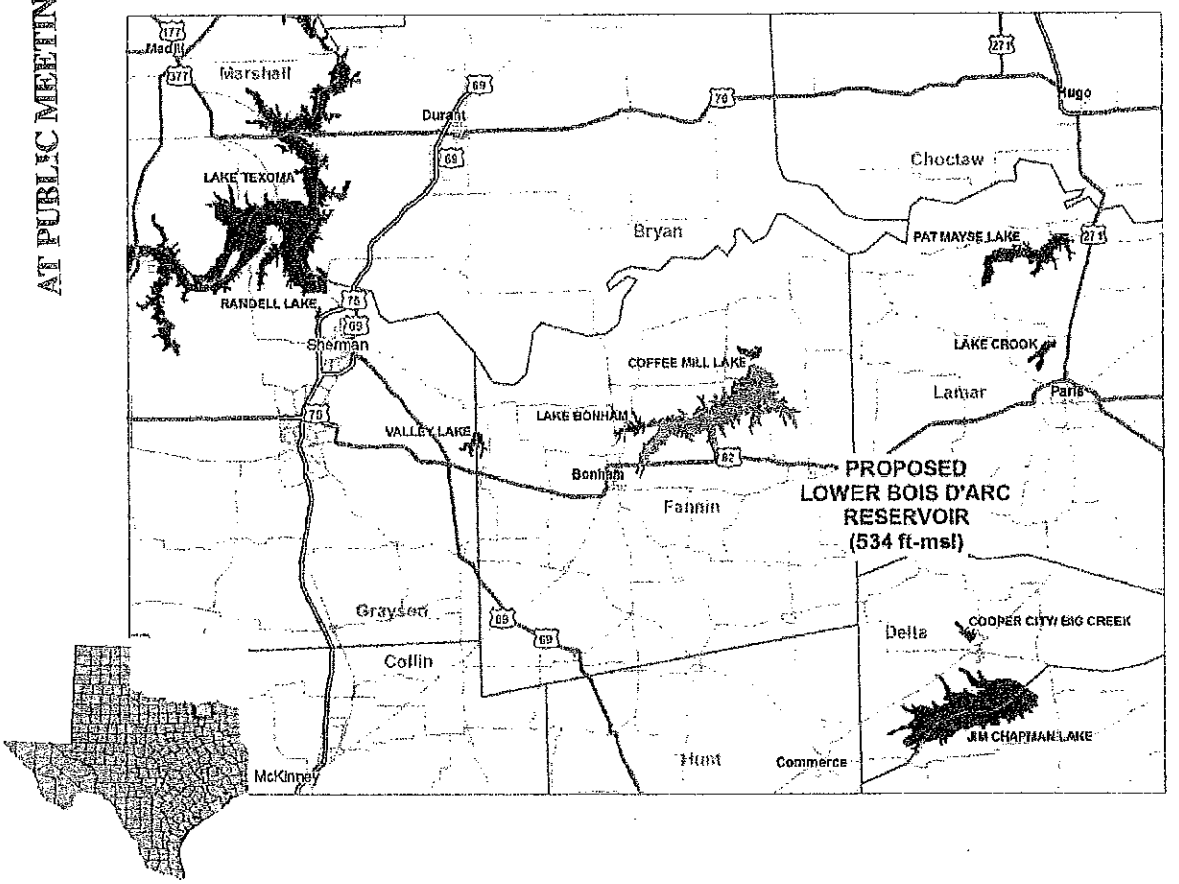


Figure 3.4.7-1. Location Map of Lower Bois d'Arc Creek Reservoir

Lower Bois d'Arc Creek Reservoir is recommended as a unique reservoir site in both the 2001 and 2006 Region C Water Plans. The reservoir is planned to provide water to the North Texas Municipal Water District, which serves water to customers over an eight-county area in north central Texas. The projected needs of the District for additional supply are 113,000 acft/yr in 2010, increasing to over 545,000 acft/yr by 2060 (Freese and Nichols et al, 2006a). The projected needs for additional water supply within 50 miles of the proposed reservoir site by 2060 are 728,028 acft/yr. The nearest major demand center is the Dallas-Fort Worth area, which is located approximately 60 miles southwest of the reservoir site.

3.4.7.2 Reservoir Yield Analysis

The reservoir area capacity data was developed from USGS topographic data and aerial photography that was flown in March 2004. The aerial photography provided 2-foot contour data at the reservoir site up to elevation 540 ft-msl. Table 3.4.7-1 shows the area-capacity-elevation (ACE) data for Lower Bois d'Arc Creek Reservoir. Figures 3.4.7-2 and 3.4.7-3 show the ACE curves and inundation at 10-foot contours.

The firm yields for Lower Bois d'Arc Creek Reservoir were performed using a modified version of the February 8, 2006 Red River WAM (Espey et al. 2002 and TCEQ 2006) Yields were calculated at elevations 530, 534, 536, and 538 ft-msl. The conservation elevation for the proposed reservoir is 534 ft-msl. The yield at this elevation is 126,280 acft/yr.

The hydrology at the Lower Bois d'Arc Creek dam site was calculated outside the WAM and input directly to the model. This adjustment was made because the original WAM underestimates the flows in the Bois d'Arc Creek watershed. From December 1962 to September 1985, the USGS operated the Bois d'Arc Creek near Randolph gage, which measured flows from about 22 percent of the proposed reservoir watershed. There were no known diversions or return flows above this gage, so the flows are representative of natural conditions. A recent study of the proposed reservoir compared these historical flows to naturalized flows in adjacent watersheds (Freese and Nichols, 2006b). This study concluded that naturalized flows in the Sulphur River Basin were probably a better estimator of flows in the Bois d'Arc Creek watershed than incremental flows in the main stem of the Red River, which is the default method used in the TCEQ Red River WAM. The study recommended adding a new primary control

Table 3.4.7-1.
Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

Elevation (feet)	Area (acre)	Capacity (acft)
464.0	5	4
470.0	19	76
480.0	378	1,197
490.0	2,001	15,109
500.0	4,288	50,684
510.0	6,987	99,108
520.0	10,601	180,995
530.0	14,724	302,570
534.0	16,526	367,609
540.0	19,616	467,767
550.0	23,967	678,337
560.0	29,670	954,617

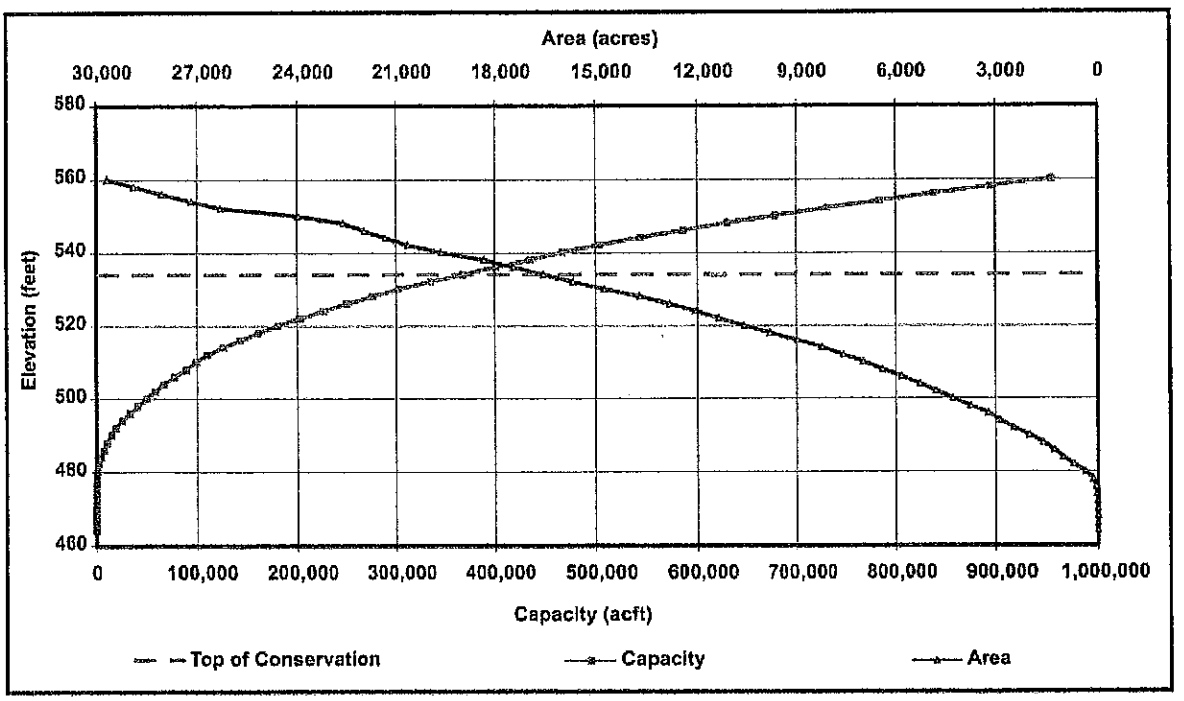


Figure 3.4.7-2. Elevation-Area-Capacity Relationship for Lower Bois d'Arc Creek Reservoir

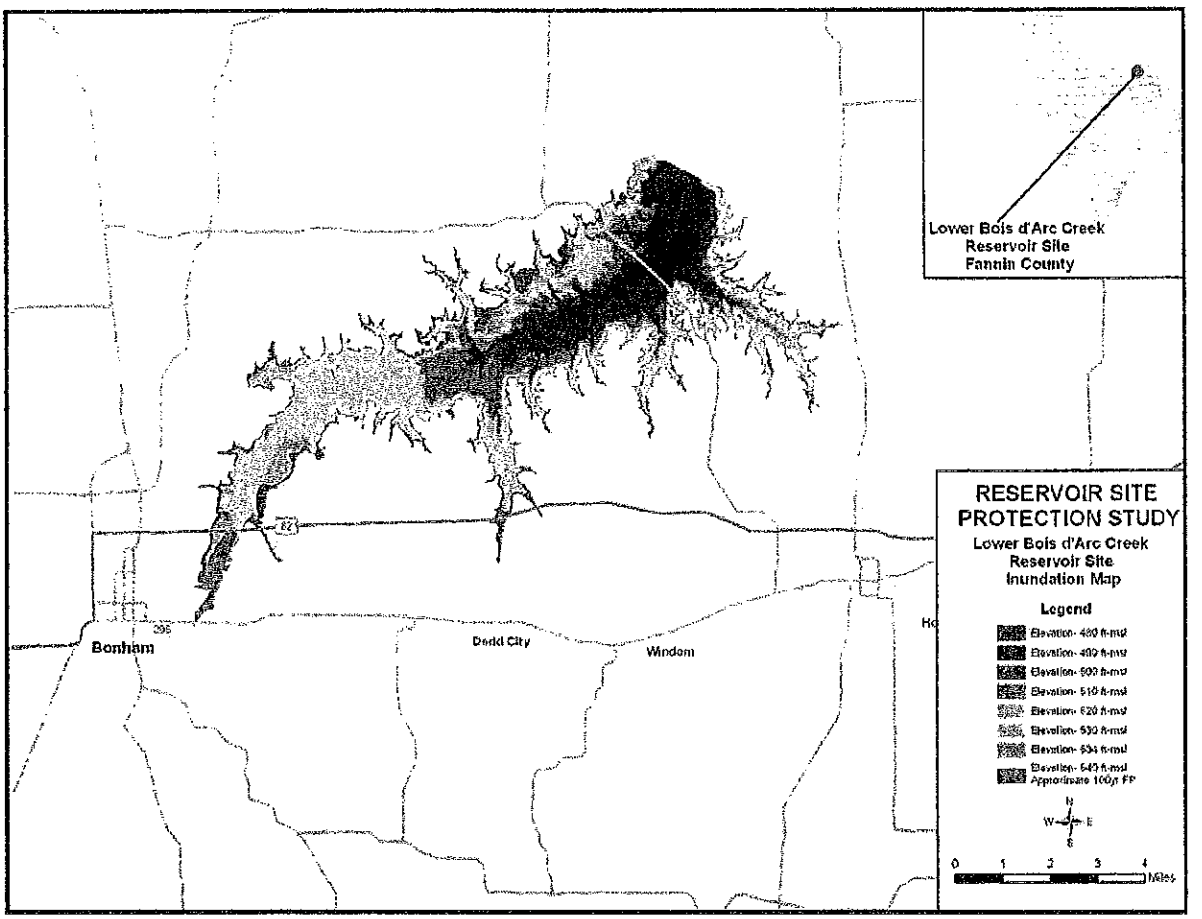


Figure 3.4.7-3. Inundation Map for Lower Bois d'Arc Creek Reservoir

point at the proposed reservoir site using flows based on data from the Randolph gage on Bois d'Arc Creek and naturalized flows in the Sulphur Basin. This method was adopted for the current yield evaluations. More information can be found in the *Report Supporting an Application for a Texas Water Right for Lower Bois d'Arc Creek Reservoir* (Freese and Nichols, 2006b).

For the hydrologic analyses, a new control point was added to the Red River WAM between secondary control points X10200 and X10260. This control point has a drainage area of 327 square miles. A standard firm yield was calculated assuming that water was passed to downstream senior water rights as determined in the WAM Run 3.

The yield studies used the Consensus Criteria for Environmental Flow Needs (CCEFN) bypass criteria developed in the 2006 study of the reservoir. The CCEFN criteria may be found

in Table 3.4.7-2. At the recommended conservation elevation, the bypass criteria reduce the yield of the reservoir by 880 acft/yr.

Table 3.4.7-2.
Consensus Criteria for Environmental Flow Needs for Lower Bois d'Arc Creek Reservoir

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median	acft/mo	1,568	2,515	2,348	1,873	1,779	706	105	12	30	103	467	1,201
	cfs	25.5	44.9	38.2	31.5	28.9	11.9	1.7	0.2	0.5	1.7	7.8	19.5
25th	acft/mo	447	884	827	664	520	100	4	0	0	0	47	144
	cfs	7.3	15.8	13.4	11.2	8.5	1.7	0.1	0.0	0.0	0.0	0.8	2.3
7Q2	acft/mo	0	0	0	0	0	0	0	0	0	0	0	0

Table 3.4.7-3 and Figure 3.4.7-4 show the results of the yield studies. Note that in Figure 3.4.7-4 the yield of the reservoir per acre-foot of increased conservation storage is higher at a conservation elevation of 538 feet. However, the proposed reservoir is immediately downstream of Lake Bonham and the City of Bonham. Increasing the elevation of the reservoir would impact the existing dam for Lake Bonham and increase the potential for flooding in the City of Bonham. The storage trace for the recommended conservation pool elevation and the storage frequency curve are shown in Figure 3.4.7-5. This figure shows that at the proposed conservation elevation of 534 feet, the reservoir would be full about 13 percent of the time and below 50 percent full (183,805 acft) less than 20 percent of the months.

Table 3.4.7-3.
Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

Conservation Pool Elevation (ft-msl)	Conservation Storage (acft)	Environmental Bypass Criteria	Yield (acft/yr)	Critical Period
530.0	302,570	CCEFN	117,190	7/75 - 8/80
534.0*	367,609	CCEFN	126,280	7/75 - 2/81
		None	127,160	7/75 - 2/81
536.0	401,647	CCEFN	130,820	7/75 - 2/81
538.0	436,333	CCEFN	139,570	7/51 - 2/57

*Proposed conservation storage.

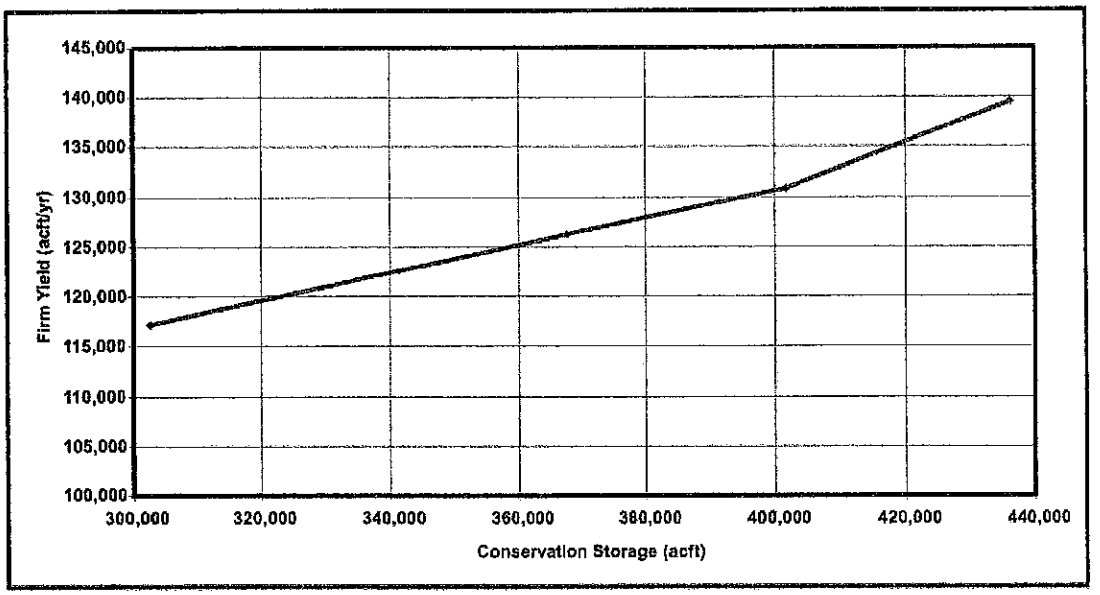


Figure 3.4.7-4. Firm Yield vs. Conservation Storage for Lower Bois d'Arc Creek Reservoir

3.4.7.3 Reservoir Costs

Costs for the Lower Bois d'Arc Creek Reservoir Dam assume a zoned earthen embankment and uncontrolled spillway. The length of the dam is estimated at 10,400 feet with a maximum height of 90 feet. The service spillway would include an approach channel; a 150-foot uncontrolled concrete weir, chute, hydraulic jump stilling basin, and outlet channel.

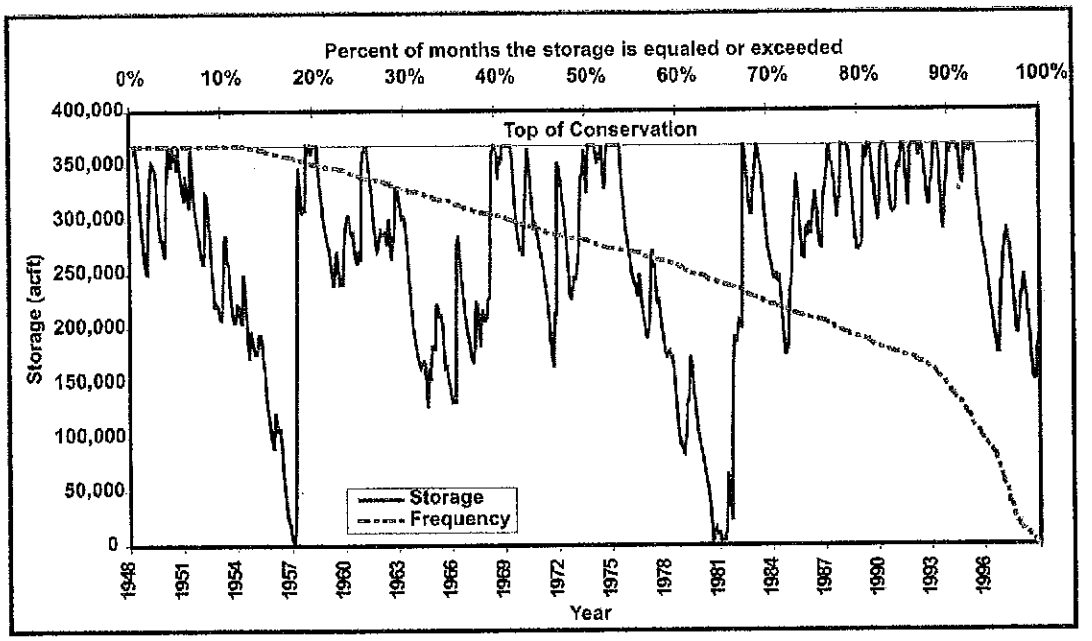


Figure 3.4.7-5. Simulated Storage in Lower Bois d'Arc Creek Reservoir (Conservation Elevation = 534 ft-msl, Diversion = 126,280 acft/yr)

Conflicts identified at the site include a cemetery, electrical lines, several roads (including U.S. Highway 82 and F.M. 1396), a 10-inch gas line and several other structures. A list of the potential conflicts is provided in Table 3.4.7-4. In addition to these conflicts, the cost estimate includes protection of the downstream slope of the Lake Bonham Dam, which will abut the upper reaches of the Lower Bois d'Arc Creek Reservoir. Costs for these conflict resolutions were developed from data provided by TNRIS and from the study report in support of the water right permit application for Lower Bois d'Arc Creek Reservoir (Freese and Nichols, 2006b). The conflict costs represent less than 10 percent of the total construction cost of the reservoir project. Figure 3.4.7-6 shows the conflicts as mapped by TNRIS.

Table 3.4.7-4.
List of Potential Conflicts for Lower Bois d'Arc Creek Reservoir

Gas Pipeline	Power Transmission Lines
Roads	Cemetery

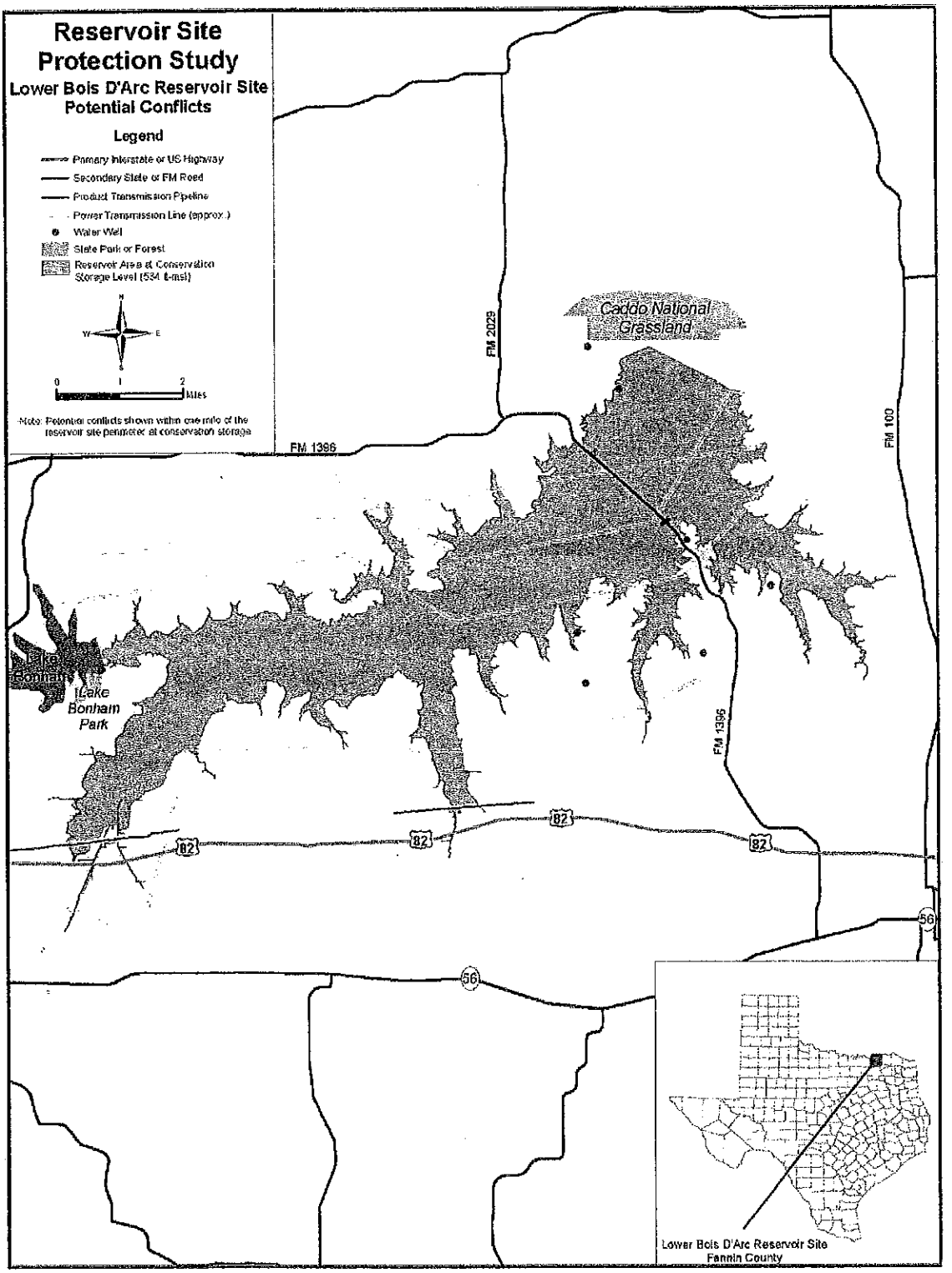


Figure 3.4.7-6. Potential Major Conflicts for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-5 shows the estimated capital costs for the Lower Bois d'Arc Creek Reservoir Project, including construction costs, engineering, permitting and mitigation. Unit costs for the dam and reservoir are based on the unit cost assumptions used in this study. Local costs could vary. Utilizing these unit costs, the total estimated cost of the project is $248 million (2005 prices). Assuming a yield of 126,200 acft/yr, raw water from the project will cost approximately $140 per acre-foot ($0.43 per 1,000 gallons) during the debt service period.

3.4.7.4 Environmental Considerations

Lower Bois d'Arc Creek Reservoir is located on an ecologically significant stream as identified by the Texas Parks and Wildlife Department. The designation is based on biological function, hydrologic function, and the presence of a riparian conservation area. The Region C Water Planning Group did not identify this stream segment as ecologically unique in the 2006 water plan. Portions of the creek that would be impacted by the reservoir were altered (straightened and widened) approximately 80 years ago to reduce localized flooding. The site is located immediately upstream of the Caddo National Grasslands, but would have minimal impacts to these lands. The U.S. Fish and Wildlife Service has identified Priority 4 bottomland hardwoods considered "moderate quality bottomlands with minor waterfowl benefits" (USFWS, 1985) in the vicinity of the project.

Lower Bois d'Arc Creek Reservoir will inundate 16,526 acres of land at conservation storage capacity. Table 3.4.7-6 and Figure 3.4.7-7 summarize existing landcover for the Lower Bois d'Arc Creek Reservoir site as determined by TPWD using methods described in Appendix C. Existing landcover within this reservoir site is dominated by upland deciduous forest (42 percent) with sizeable areas of grassland (28 percent) and agricultural land (17 percent). Bottomland hardwood forest comprises only about 2.2 percent of the reservoir area while marsh, swamp, and open water total about 3.5 percent of the reservoir area.

Table 3.4.7-5.
Cost Estimate — Lower Bois d'Arc Creek Reservoir @ Elevation 534 ft-msl

	Quantity	Unit	Unit Price	Cost
Dam & Reservoir				
Mobilization (5%)	1	LS	$2,976,100	$2,976,000
Clearing and Grubbing	85	AC	$4,000	$340,000
Care of Water During Construction (1%)	1	LS	$589,300	$589,000
Required Excavation	2,339,400	CY	$2.50	$5,849,000
Borrow Excavation	2,030,000	CY	$2.00	$4,060,000
Random Compacted Fill	3,261,000	CY	$2.50	$8,153,000
Core Compacted Fill	711,200	CY	$3.00	$2,134,000
Soil Bentonite Slurry Trench	497,700	SF	$15.00	$7,466,000
Soil Cement	114,900	CY	$65.00	$7,469,000
Flex Base Roadway	29,200	SY	$20.00	$584,000
Sand Filter Drain	293,000	CY	$35.00	$10,255,000
Grassing	41	AC	$4,500	$185,000
Intake Tower for Low-Flow Outlet	527	CY	$750	$395,000
Conduit for Low-Flow Outlet	660	CY	$500	$330,000
Impact Basin for Low-Flow Outlet	160	CY	$500.00	$80,000
Gates and Miscellaneous for Low-Flow Outlet	1	LS	$200,000	$200,000
Electrical System and Instrumentation for Low-Flow Outlet	1	LS	$195,000	$195,000
Spillway Structure and Reinforced Concrete	19,700	CY	$375	$7,388,000
Roller Compacted Concrete	49,900	CY	$60	$2,994,000
Bridge	3,000	SF	$150	$450,000
Barrier and Warning System	1	LS	$50,000	$50,000
Embankment Instrumentation	1	LS	$250,000	$250,000
Timber Guard Posts and Guard Rail	1	LS	$55,000	$55,000
Misc. Internal Drainage	1	LS	$50,000	$50,000
Engineering and Contingencies				$21,874,000
Subtotal for Dam & Reservoir				**$84,371,000**
Conflicts				
Utilities				
10-in Gas Pipeline	3,720	LF	$27	$100,000
138 KV Line	1	LS	N/A	$1,500,000
345 KV line	1	LS	N/A	$3,735,000
Other structures	1	LS	N/A	$3,000,000
Cemeteries	27	EA	$6,000	$162,000
Major Roads (raised)	5,000	LF	$900	$4,500,000
Other roads	7,200	LF	$150	$1,080,000
Lake Bonham (protection)	1	LS	$175,000	$175,000
Engineering and Contingencies at 35%				$4,988,000
Land Acquisition - Conservation Pool plus 10%	22,000	AC	$2,675.00	$58,850,000
Environmental Studies and Mitigation Lands	22,000	AC	$2,675.00	$58,850,000
CONSTRUCTION TOTAL				**$221,311,000**
Interest During Construction (36 months)				**$26,927,000**
TOTAL COST				**$248,238,000**
ANNUAL COSTS				
Debt Service (6% for 40 years)				$16,498,000
Operation & Maintenance				$1,125,000
Total Annual Costs				**$17,623,000**
UNIT COSTS				
Per Acre-Foot				$140
Per 1,000 Gallons				$0.43

Units: AC = Acre; CY = Cubic Yard; EA = Each; LB = Pound; LF = Linear Foot; LS = Lump Sum; SF = Square Foot; and SY = Square Yard.

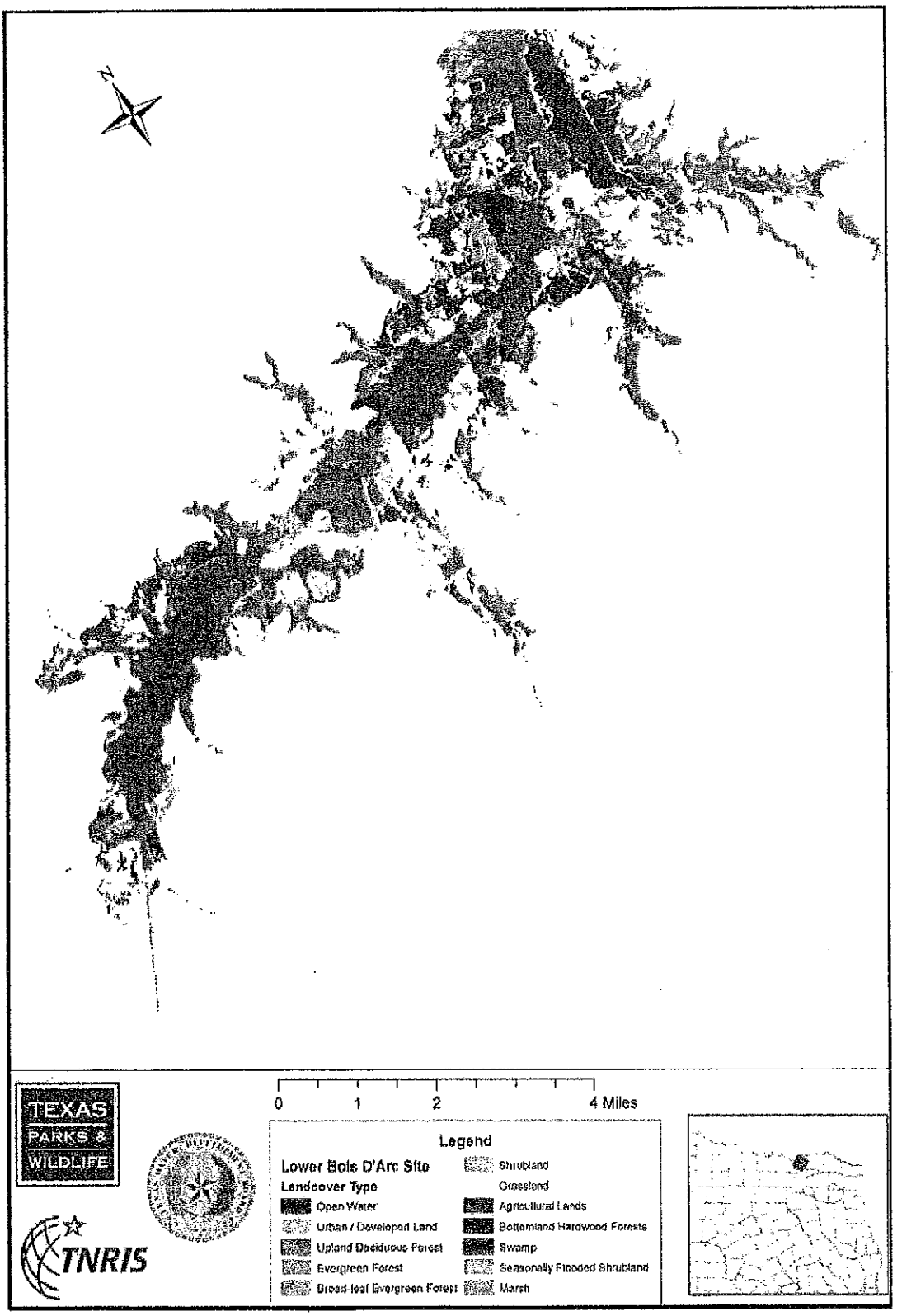


Figure 3.4.7-7. Existing Landcover for Lower Bois d'Arc Creek Reservoir

Table 3.4.7-6.
Acreage and Percent Landcover for Lower Bois d'Arc Creek Reservoir

Landcover Classification	*Acreage*[1]	*Percent*
Bottomland Hardwood Forest	373	2.2%
Marsh	407	2.5%
Seasonally Flooded Shrubland	73	0.4%
Swamp	29	0.2%
Evergreen Forest	61	0.4%
Upland Deciduous Forest	6,936	41.9%
Grassland	4,671	28.2%
Shrubland	1,038	6.3%
Agricultural Land	2,826	17.1%
Open Water	135	0.8%
Total	16,549	100.0%

[1] *Acreage based on approximate GIS coverage rather than calculated elevation-area-capacity relationship.*

Exhibit C

Submitted by H.D. "Thump" Witcher

BOIS D' ARC CREEK BASIN

SECTION 905(b) (WRDA 86) Analysis

1. STUDY AUTHORITY

a. This Section 905(b) (WRDA 86) Analysis was prepared as an initial response to the Energy and Water Development Act, 2000, Public Law 106-60, and House Committee on Appropriations Report 106-253, dated July 23, 1999, which reads in part:

> ".....Funds are included in the recommendation for a reconnaissance study of flooding and related water resource problems along the Bois d' Arc Creek near Bonham, Texas."

b. Funds in the amount of $100,000 were appropriated in Fiscal Year 2000 to conduct the reconnaissance phase of the Bois d' Arc Creek near Bonham, Texas, study. In response to the study authority, the reconnaissance phase of the study was initiated on January 17, 2000.

2. STUDY PURPOSE

The purpose of this study is to determine if there is Federal interest in providing flood control, water supply, recreation, and fish and wildlife improvements within the Bois D' Arc Creek Basin near Bonham, Texas. If Federal interest is determined, a feasibility report will be forwarded to Congress with a recommendation for authorization. This reconnaissance phase of the study has resulted in the finding that there is Federal interest in continuing the study into the feasibility phase. This Section 905(b) (WRDA 86) Analysis documents the basis for this finding and establishes the scope of the feasibility phase. As the document that establishes the scope of the feasibility study, this Section 905(b) (WRDA 86) Analysis is the basis for the Scope of Work chapter of the Project Study Plan.

3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICTS

a. The Bois d' Arc Creek Basin is located in northeastern Texas in Fannin and Grayson counties. Bois d' Arc Creek originates at the western border of Grayson County and flows northeasterly through Fannin County to its confluence with the Red River. See Attachment 1. Fannin County, Texas, is the non-Federal sponsor for the feasibility phase of this study.

b. Congressional interests includes Texas Senators Phil Gramm and Kay Bailey Hutchison and Congressman Ralph Hall of the Texas 4th Congressional District.

4. PRIOR STUDIES, REPORTS, AND EXISTING WATER PROJECTS

The following reports were reviewed as a part of this study:

a. 1968 Reconnaissance Report, Bonham Lake, Texas. This report, prepared by the Tulsa District, identified a feasible multipurpose lake for potential development. Data from this report are the basis for the project formulated in this reconnaissance report.

b. Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Comprehensive Study, Interagency Reconnaissance Report, March 1985. This report identified a number of potential lake sites that were considered in development of water supply within the northeastern Texas region, including Fannin County.

5. PLAN FORMULATION

During a study, the six planning steps set forth in the Water Resource Council's Principles and Guidelines are repeated to focus the planning effort and eventually to select and recommend a plan for authorization. The six planning steps are: (1) specify problems and opportunities, (2) inventory and forecast conditions, (3) formulate alternative plans, (4) evaluate effects of alternative plans, (5) compare alternative plans, and (6) select recommended plan. The phases of the planning process typically differ in the emphasis that is placed on each step. In the iterations conducted during the reconnaissance phase, the step of specifying problems and opportunities is emphasized, although the other steps are not ignored since the initial screening of preliminary plans that results from the other steps is critical to scoping follow-on feasibility phase studies. The subparagraphs that follow present the results of the reconnaissance phase. This information will be refined in future iterations of the planning steps during the feasibility phase.

a. Problems and Opportunities

(1) Existing conditions. Bois d' Arc Creek rises in the eastern portion of Grayson County near Whitewright, Texas, and flows in a northeasterly direction across Fannin County to enter the right bank of the Red River at mile 611.8. The watershed has a length of about 58 miles, a maximum width of about 18 miles, and a drainage area of about 425 square miles. According to State estimates of the 1999 population, Fannin County had 28,700 residents, a population larger than its 1990 census count of 24,804. The City of Bonham is the largest city in Fannin County and had an estimated population of 7,500. The residents of Fannin County are primarily low to middle income, with a median family income of $26,600 in 1990, the most recent data on family income for the area. The median family income for all residents in Texas was $31,553. The per capita income in Fannin County was $9,509 compared to the State per capita income of $12,904. Manufacturing and retail trade are the two largest employing industries in the county. The average 1999 unemployment rate in Fannin County of 5.3% is slightly higher than the State of Texas rate of 4.6% for the same year. In 1927, local interests organized three drainage districts, and the upper two-thirds Bois d' Arc Creek was modified through construction of a straight channel. Overflows from the natural and modified portions of

Bois d' Arc Creek pose threats to urban development in the City of Bonham and surrounding agricultural areas within the basin.

(2) Flood problem. The Bois d' Arc Creek floodplain and its tributaries have been associated with flooding of residential and commercial structures in and near the town of Bonham, Texas. Recent flooding occurred along Bois d' Arc Creek and in the City of Bonham in October 1981, May 1989, and January 1998. The most significant flooding from available records occurred in 1989 when flood rescue operations for a number of Bonham residents took place. The Bonham floodplain administrator indicated that at least 100 homes were flooded by the event. In addition, flooding from Bois d' Arc Creek damaged agricultural crops and equipment. Flood control measures of a Federal project will primarily impact areas of the City of Bonham and Fannin County, Texas.

(3) Water supply. Officials of the City of Bonham and Fannin County, Texas, have projected a need for additional water supply within the region by the year 2014. Additional water supplies in the Bois d' Arc Creek Basin would provide benefits to the northeastern Texas region.

(4) Recreation. Fannin County officials have indicated that a multipurpose project could provide additional recreational facilities that are desired by area residents. The population in Fannin County has been projected to grow 36% from 2000 to the year 2050. In addition, significant population increases that include the Dallas metroplex will place pressure for new and expanded recreation facilities in the region.

(5) Ecosystem restoration. An opportunity exists to provide ecosystem restoration features along Bois d' Arc Creek. Historical wetlands within the basin have been adversely affected by modifications to the original Bois d' Arc channel. Water releases from a multipurpose lake project would provide flows beneficial to some 3,000 acres of wetlands in the lower portion of the basin. The Bois d' Arc Creek Basin has suffered declines and impacts to bottomland hardwood forests and riparian vegetation as have other areas within the state. Vegetation along the stream has been removed, and the land has been converted to grasslands, improved pasture, and agricultural lands. The decline in this habitat type has led to preservation and restoration efforts by a number of entities within the state and by the U.S. Fish and Wildlife Service. Within the Bois d' Arc Creek Basin, these wetland resources would probably be classified as Resource Category II, which connotates high value for species and the habitat as scarce or becoming scarce. At least one area, the Caddo National Forest and Grassland, exists in the lower basin and is managed by the U.S. Forest Service.

(a) Bottomland hardwoods and riparian vegetation are critical for habitat diversity and maintenance of wildlife species. Numerous species utilize these habitats, including turkey, whitetail deer, furbearers, waterfowl, songbirds, and various species of small mammals, birds, amphibians, and reptiles. Species of special concern (Texas Parks and Wildlife Threatened and Endangered Species) that are known to occur or have a high probability of occurring in the Bois d' Arc Creek Basin include the bald eagle, Interior least tern, Eskimo curlew, red-cockaded woodpecker, paddlefish, American swallow-tailed kite, white-faced ibis, wood stork, Arctic peregrine falcon, and Texas horned lizard.

(b) The Bois d' Arc Creek watershed has been modified by agricultural practices. The riparian corridor along the creek has been severely reduced and floodplain wetlands converted to farmland. The loss of stream bank vegetation has contributed to siltation within the stream, bank caving, and elevated stream temperatures, and has reduced the carrying capacity of the aquatic ecosystem. An aquatic habitat restoration project that would restore the riparian corridor along the stream would provide multiple benefits to the aquatic ecosystem of the creek. Protected bottomland hardwood tree and native grass plantings along the stream would restore lost or degraded aquatic habitat, reduce siltation, and provide a travel corridor for wildlife species along the stream to the Red River. Wildlife species likely to benefit from a habitat restoration project would include turkey, whitetail deer, wood duck, various species of amphibians, reptiles, and songbirds. Improved stream water quality, reduced siltation, and reduced stream temperatures would benefit the aquatic community as well. Species most likely to benefit would include largemouth bass, various species of sunfish, channel and flathead catfish, the minnow community, and some species of darters. It could also positively impact fish species of special concern such as the blue sucker, American eel, and paddlefish, especially in the lower reaches of the stream near its confluence with the Red River.

b. Inventory and Forecast Conditions

(1) Inventory. Data formulated for the 1968 reconnaissance report, including summaries of damages and costs for the alternatives considered, were the basis for a justified project in the Bois d' Arc Creek Basin. These data were updated to reflect expected costs and benefits for the basin in its current state of development. No additional structural inventory or hydrology was generated. Although there is evidence of additional development and potentially higher values for specific agricultural products, the more conservative cost and benefit values for the 1968 conditions were updated.

(2) Expected future conditions. The State of Texas projects that the Fannin County population will be 41,000 in the year 2050. This growth is linked to overall economic development in northeast Texas as employment opportunities in retail, services, and manufacturing continue to expand. Associated with this growth will be demand for water supply and recreation. In the absence of a project to address the flood control, water supply, and recreation needs of the area, continued growth and regional development would be limited. Flood damages within the Bois d' Arc Creek Basin would continue to occur and threaten the safety of residents and cause loss to property, agricultural products, and equipment.

c. Formulate Alternative Plans

(1) Planning objectives and constraints. The national or Federal objective of water and related land resources planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment, pursuant to national environmental statures, applicable executive orders, and other Federal planning requirements.

(a) Contributions to NED are increases in the net value of the national output of goods and services expressed in monetary units and are the direct net benefits that accrue in the planning area and the rest of the Nation.

(b) The Corps has added a second objective for National Ecosystem Restoration (NER) in response to legislation and administration policy. This objective is to contribute to the Nation's ecosystems through ecosystem restoration, with contributions measured by changes in the amounts and values of habitat.

(2) Public concerns. A number of public concerns were identified during the reconnaissance study. Input was received through coordination with the potential sponsor, Fannin County and some initial coordination with City of Bonham officials. Public concerns that are related to establishing planning objectives and planning constraints are:

(a) Recent flood events in and near the City of Bonham from Bois d' Arc Creek and its tributaries have created concern among area residents and government officials for reduction of potential damages.

(b) Growth in commercial and industrial activity in the City of Bonham and in the Fannin County area in recent years has resulted in the need for permanent additional water supply to accommodate future growth within the region. Projections by the Texas Water Development Board, 2002 State Water Plan, indicate a population growth in Region C (which includes Fannin County) of about 65% from 1990 to the year 2050. Projections of water demand for the same period in Texas Region C indicate an increase of 150% over current use.

(c) Recreational opportunity is limited in Fannin County. Area residents consider the potential for increased multipurpose recreation to be a benefit.

(d) Bottomland environmental resources located along Bois d' Arc Creek include unique natural wetlands that are subject to periods of drought during the year. The potential exists for project features to augment flow conditions within the lower portions of the basin to restore riparian and aquatic ecosystems that have been lost from historical modifications of Bois d' Arc Creek.

(3) Study planning objectives. The objectives of NED and NER are general statements and are not specific enough for direct use in plan formulation. The water and related land resource problems and opportunities identified in this study are stated as specific planning objectives to provide focus for the formulation of alternatives. Planning objectives reflect the problems and opportunities and represent desired positive changes in the without-project conditions. The planning objectives are specified as follows:

(a) Reduce existing flood related damages in the Bois d' Arc Creek Basin in Fannin County, Texas.

(b) Provide additional municipal and industrial water supply for the northern Texas region, including municipalities and other users in Fannin County.

(c) Provide recreation opportunities for residents and visitors to the northeastern Texas region.

(d) Restore the riparian ecosystem in the lower basin of Bois d' Arc Creek to a more naturally functioning system.

(e) Minimize real estate acquired for any project considered for development.

(f) Identify alternatives that meet local acceptability criteria.

(4) Planning constraints. Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The planning constraints identified in this study are as follows:

(a) Any recommended project must be justified under established Federal planning criteria.

(b) Federal participation in the recommended plan is limited to 65% of the implementation cost, unless Congress specifically authorizes participation at another rate. Amounts over the Federal limit would be a local expense.

(c) The recommended project must be acceptable and supported by a local sponsor. Feasibility studies must be cost shared 50%. Separable allocated costs for construction will be determined in the feasibility phase.

(5) Problems warranting Federal participation. The problem identified in the Bois d' Arc Creek watershed is significant risk of flood damage to urban areas of the City of Bonham and flooding of agricultural areas northeast of the city. Ecosystem restoration opportunities exist in the lower portions of Bois d' Arc Creek Basin, which contain large wetland resources.

d. Effects of Alternative Plans

(1) A variety of measures were considered. Some were found to be infeasible due to technical, economic, or environmental constraints. Each measure was assessed and a determination made regarding whether it should be retained in the formulation of alternative plans. Descriptions and results from evaluating the measures considered in this study are presented below:

(a) No Action. The Corps is required to consider "No Action" as an alternative to comply with requirements of the National Environmental Policy Act. No Action is the condition reasonably expected to prevail over the period of analysis given current conditions and trends and assuming that no project would be implemented by the Federal Government to achieve the planning objectives. No Action, which is synonymous with the Without-Project Condition, forms the basis from which all other alternative plans are measured.

(b) Nonstructural measures. Nonstructural plans included flood proofing and relocation of structures subject to flood damage.

(c) Structural measures. Several structural measures were considered in the 1968 reconnaissance report. One alternative considered was channel improvement at Bois d' Arc Creek and its tributaries. The measures were directed at improvement of the flood control problem only. Reservoirs that could provide multipurpose benefits within the basin included sites at river miles 23.5, 24.8, 28.6, and 43.1.

e. Comparison of Alternative Plans

(1) Preliminary plans eliminated from further consideration. Preliminary plans are composed of one or more management measures that remain after initial screening. These plans and results of their evaluations are given below:

(a) Nonstructural plans were not economically justified, practical, or locally acceptable for application within Fannin County. In addition, no nonstructural measures were identified that met all water resource needs within the basin.

(b) Because of the diverse water resource needs within the Bois d' Arc Creek Basin, structural measures were formulated based on locating a multipurpose reservoir that could provide flood control, water supply, recreation, and fish and wildlife. Reservoir sites located at lower river miles 23.5, 24.8, and 28.6 were dropped from further consideration in the reconnaissance phase. Reservoir sites in the lower portion of the basin were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the lower Bois d' Arc Creek Basin. The best location for a reservoir in the lower portion of the basin, at river mile 23.5 (Coffey Mill site), would inundate an existing Forest Service lake and significant wetland areas. In addition, the shallow nature of the reservoir would potentially pose water quality problems.

(c) Combinations of upstream reservoirs and channel modifications were considered as potential solutions to the flood control needs within the Bois d' Arc Creek Basin. One alternative included locating a small reservoir on the Powder Creek tributary of Bois d' Arc Creek in combination with channel clearing and widening on Powder Creek and Bois d' Arc Creek channels. These plans were found to not be economically justified. In addition, the smaller detention reservoir would not provide significant water supply yield. Consequently, these combination plans were eliminated from further consideration.

(2) Preliminary plans remaining for further consideration. Descriptions and results from evaluating the preliminary plans considered further in this study are presented below:

(a) No Action. The No Action plan was carried further into the evaluation. However, the plan would not satisfy the planning objectives to reduce flood damages along Bois d' Arc Creek or provide water supply, recreation, and fish and wildlife benefits.

(b) Multipurpose Reservoir. Using the results of the 1968 Tulsa District reconnaissance report, a preliminary plan was identified that included construction of a multipurpose reservoir at the Bonham site (mile 43.1) located upstream from the City of Bonham. This reservoir would provide flood reduction benefits, 27 million gallons per day of water supply, opportunities for recreation, and potential fish and wildlife benefits. Ecosystem restoration benefits within the Bois d' Arc Creek Basin from water releases from the Bonham Reservoir to historical wetlands downstream were also considered.

(3) Preliminary evaluation of alternatives. With the No Action plan, expected annual flood damages of about $808,000 were estimated within the 100-year floodplain. Updating the 1968 Bois d' Arc reconnaissance report derived this estimate of loss. It is likely these damage amounts are understated due to construction of additional structures, higher value cropping patterns, and intensified farming practices that have developed within the 100-year floodplain since 1967. In consideration of these increased values, a complete inventory of annual flood damages could range from $800,000 to $1,500,000. Projections of net water supply needs indicate a deficit beginning in the year 2014. To address this need, another reservoir site in the lower portion of the Bois d' Arc Basin named the "New Bonham" site was proposed in the 2000 Texas Water Plan for Region C. Construction of this reservoir was estimated to cost $191 million. This site was used to estimate benefits for the Federal project located at river mile 43.1 that includes water supply as the least costly water supply alternative. The Federal multipurpose reservoir alternative is estimated to cost in the range of $90 million, or $7,540,000 in average annual costs (100 years, 6-5/8%).

Average annual benefits of $10,020,000 were estimated for the preliminary plan. This estimate includes annual benefits for flood damage reduction, water supply, recreation, and fish and wildlife. The estimated benefit-to-cost ratio (BCR) would meet the Federal criterion of a BCR of at least 1.

f. Recommended Plan

The multipurpose Bonham Reservoir located at river mile 43.1 is the recommended plan.

6. FEDERAL INTEREST

Based on the preliminary screening of alternatives, an alternative can be developed to address flood control, water supply, recreation, and fish and wildlife needs in an economically justified, environmentally acceptable manner in the feasibility phase. Flood control is an output with a high budget priority; therefore, there is Federal interest in conducting the feasibility study. In addition, the potential for low flow augmentation to wetland areas below the proposed reservoir would improve native ecosystem habitat as part of an ecosystem restoration project that could be developed within existing policy.

7. PRELIMINARY FINANCIAL ANALYSIS

As the non-Federal sponsor, Fannin County, Texas would be required to provide 50% of the cost of the feasibility phase. A letter of intent from the local sponsor is included as Attachment 2. The letter states their willingness to enter into negotiations for the feasibility phase, their ability to pursue the feasibility study and share in its cost, and their understanding that cost sharing at a minimum of 35%, including the LERRD's, is also required for construction of the potential project.

8. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS AND EXCEPTIONS

a. Mapping and imagery of topographic wetlands and agricultural features are available and sufficient for field investigations. Mapping for design purposes will be acquired.

b. An Environmental Impact Statement will be necessary. Cultural surveys will be required. Costs for a cultural inventory may be reduced based on coordination of available data and a reduced scope of survey.

c. The cost estimate assumes no problems with hazardous, toxic, and radiological, waste (HTRW) materials. An initial site assessment will be performed to determine the potential risk for HTRW.

d. The study schedule assumes the sponsor fully supports the schedule.

e. The real estate estimate for LERRD's will be based on a gross appraisal. The detailed Real Estate Design Memo will be part of the plans and specifications phase.

f. The feasibility report will be produced on paper. A CD-ROM will be produced to include the report and appendices.

9. FEASIBILITY PHASE MILESTONES

Milestone	Description	Duration (months)	Cumulative (months)
1	Initiate Study	0	0
2	Public Workshop #1 (scoping)	2	2
3	Feasibility Scoping Meeting	8	10
4	In Progress Review	12	22
5	Alternative Formulation Briefing	12	34
6	Draft Feasibility Report	4	38
7	Final Pubic Meeting	1	39
8	Feasibility Review Conference (if needed)	1	40
9	Policy Compliance Review incl. ITR	1	41
10	Final Report to Division	3	44
11	DE's Public Notice	1	45
-	Chief's Report	6	51
-	Completion	4	55

10. FEASIBILITY PHASE COST ESTIMATE

Major Work Items	Federal	Local Sponsor		Total
		Cash	In-Kind	
Public Involvement	$ 15,000	$ 10,000	$ 5,000	$ 30,000
Environmental Studies	$130,000	$130,000		$260,000
Economic Studies	$ 20,000	$ 20,000		$ 40,000
Project Management (5%)	$ 12,000	$ 0	$12,000	$ 24,000
Plan Formulation	$ 50,000	$ 50,000		$100,000
Engineering/Design	$300,000	$280,000	$10,000	$600,000
Real Estate Studies	$ 25,000	$ 20,000	$ 5,000	$ 50,000
Report Preparation	$ 18,000	$ 18,000		$ 36,000
Washington Level Review Contingency (5%)	$ 25,000	$ 25,000		$ 50,000
Study Contingency (15%)	$ 75,000	$ 75,000		$150,000
Total	$670,000	$638,000	$32,000	$1,340,000

11. POTENTIAL ISSUES AFFECTING INITIATION OF FEASIBILITY PHASE

None.

12. VIEWS OF OTHER RESOURCE AGENCIES

Coordination with other resource agencies would be initiated during preparation of the Project Study Plan and would continue during the feasibility phase.

13. PROJECT AREA MAP

A map of the study area is provided as Attachment 1.

14. RECOMMENDATIONS

On the basis of the above findings, I recommend that this Reconnaissance Study be certified as being in accordance with current policy and that a feasibility study be conducted. The estimated feasibility study cost is $1,340,000 for 53 months. Fannin County, Texas, will be the lead cost-sharing sponsor. A Project Study Plan is currently being developed.

Date 6 September 2008

LEONARDO V. FLOR
Colonel, EN
Commanding

Exhibit D

Submitted by H D "Thump" Witche

4D. Evaluation of Major Water Management Strategies

This section of the report reviews the evaluation of major potentially feasible water management strategies. Major strategies are defined as those that would supply more than 60,000 acre-feet per year and those that involve the construction of a new reservoir supplying over 1,000 acre-feet per year. Table 4D.1 lists the major potentially feasible water management strategies for Region C, and Figure 4D.1 shows the location of the water supplies for the major strategies considered. In this round of planning, the Region C Water Planning Group investigated a large number of potentially feasible water management strategies that were not studied in the 2001 *Region C Water Plan* [1]. In particular, the planning group looked at a number of existing projects that might have water available for Region C.

As discussed in Section 4C, potentially feasible water management strategies for Region C were evaluated on the basis of quantity, reliability, cost, environmental factors, impacts on agricultural and rural areas, impacts on natural resources, impacts on other water management strategies and third party impacts, impacts to key water quality parameters, consistency with plans of Region C water suppliers, and consistency with the plans of other regions. Table 4D.2 summarizes the evaluation of the potentially feasible strategies listed in Table 4D.1. Figure 4D.2 shows the comparative unit costs of the strategies. Appendix T gives more details on non-cost evaluations for the strategies, and Appendix U contains detailed cost estimates. The costs shown in Table 4D.2 and Figure 4D.2 should be used with caution. The costs for a given source can vary a great deal based on the amount used and where the water is delivered.

The remainder of this section discusses the evaluations of the specific potentially feasible major water management strategies for Region C. (Conservation strategies are discussed in Section 4B and Chapter 6.)

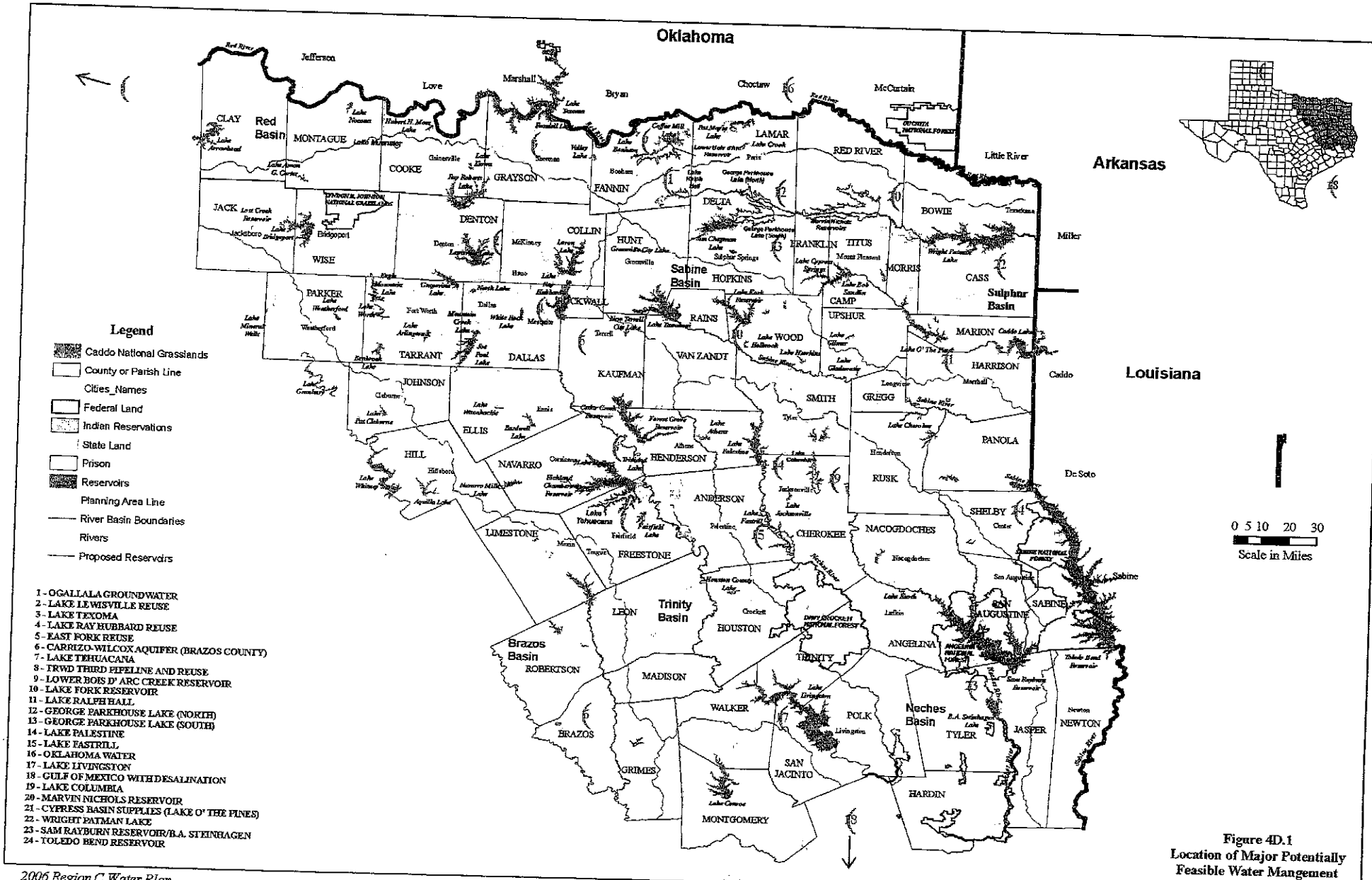
4D.1 Toledo Bend Reservoir

Toledo Bend Reservoir is an existing impoundment located in the Sabine River Basin on the border between Texas and Louisiana. It was built in the 1960s by the Sabine River Authority of Texas (SRA) and the Sabine River Authority of Louisiana. The yield of the project is split equally between the two states, and Texas' share of the yield is slightly over 1,000,000 acre-feet

per year [2]. The SRA holds a Texas water right to divert 750,000 acre-feet per year from Toledo Bend and is seeking the right to divert an additional 293,300 acre-feet per year.

Table 4D.1
Major Potentially Feasible Water Management Strategies for Region C

Strategy	Maximum Supply Available to Region C in Acre-Feet per Year	Location Number in Figure 4D.1
Conservation and Reuse (Includes Projects Listed below)	1,068,627	N/A
Toledo Bend Reservoir	600,000	24
Gulf of Mexico with Desalination	Unlimited	18
Marvin Nichols Reservoir	489,840	20
Wright Patman Lake – System	390,000	22
Lake Texoma Not Yet Authorized - Blend	220,000	3
Lake Texoma Not Yet Authorized - Desalination	207,000	3
Sam Rayburn Reservoir/B.A. Steinhagen	200,000	23
Lake Livingston	200,000	17
Ogallala Groundwater (Roberts County)	200,000	1
TRWD Third Pipeline and Reuse	188,765	8
Wright Patman Lake - Raise Flood Pool	180,000	22
Oklahoma Water	165,000 or more	16
Lower Bois d'Arc Creek Reservoir	123,000	9
Lake Fork Reservoir	120,000	10
George Parkhouse Lake (North)	118,960	12
Lake Palestine	114,337	14
Lake Texoma - Blend	113,000	3
Lake Fastrill	112,100	15
George Parkhouse Lake (South)	108,480	13
Lake Texoma - Desalination	105,000	3
East Fork Reuse Project	102,000	5
Wright Patman Lake - Texarkana	100,000	22
Carrizo-Wilcox Groundwater (Brazos County)	100,000	6
Cypress Basin Supplies (Lake O' the Pines)	89,600	21
Return Flows above DWU Lakes	79,605	N/A
Southside (Lake Ray Hubbard) Reuse	67,253	4
Lewisville Lake Reuse	67,253	2
Tehuacana Reservoir	56,800	7
Lake Ralph Hall and Reuse	50,740	11
Lake Columbia	35,800	19



1 - OGALLALA GROUNDWATER
2 - LAKE LEWISVILLE REUSE
3 - LAKE TEXOMA
4 - LAKE RAY HUBBARD REUSE
5 - EAST FORK REUSE
6 - CARRIZO-WILCOX AQUIFER (BRAZOS COUNTY)
7 - LAKE TEHUACANA
8 - TRWD THIRD PIPELINE AND REUSE
9 - LOWER BOIS D' ARC CREEK RESERVOIR
10 - LAKE FORK RESERVOIR
11 - LAKE RALPH HALL
12 - GEORGE PARKHOUSE LAKE (NORTH)
13 - GEORGE PARKHOUSE LAKE (SOUTH)
14 - LAKE PALESTINE
15 - LAKE FASTRILL
16 - OKLAHOMA WATER
17 - LAKE LIVINGSTON
18 - GULF OF MEXICO WITH DESALINATION
19 - LAKE COLUMBIA
20 - MARVIN NICHOLS RESERVOIR
21 - CYPRESS BASIN SUPPLIES (LAKE O' THE PINES)
22 - WRIGHT PATMAN LAKE
23 - SAM RAYBURN RESERVOIR/B.A. STEINHAGEN
24 - TOLEDO BEND RESERVOIR

Figure 4D.1
Location of Major Potentially Feasible Water Mangement Strategies for Region C

Table 4D.2
Summary of Costs and Impacts of Major Potentially Feasible Strategies for Region C

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environmental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implementation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Toledo Bend Reservoir	DWU, NTMWD, SRA, TRWD & UTRWD	600,000	$2,428,789,000	$1.50	$0.60	High	Medium low	Low	Low	Medium Low	Low	Yes	Yes	Requires IBT and agreements with multiple users	Costs are weighted average for all four potential participants.
Gulf of Mexico	DWU, NTMWD, or TRWD	Unlimited (costs for 200,000 acre-feet per year)	$2,836,207,000	$5.57	$2.41	Medium	Medium	Low	Medium Low	Low	Low	No	N/A	Technology is still developing for this application at this scale. May require state water right permit and IBT.	Strategy was costed to central location. Capital Cost was based on one supplier. Supply is treated water.
Marvin Nichols Reservoir	DWU, Irving, NTMWD, TRWD and UTRWD	489,840	$2,092,720,000	$1.33	$0.37	High	High	High	Medium high	High	Medium	Yes	Not inconsistent	Requires new water rights permit and IBT.	Costs are weighted average for all five potential participants.
Wright Patman - System	DWU, Irving, NTMWD, TRWD, and UTRWD	390,000	$1,891,022,000	$1.66	$0.58	High	Medium	Low	Medium	Medium	Medium Low	No (alternate)	Not inconsistent	Requires IBT, contract with USACE, contract with Texarkana, and new or amended water right permit.	Costs are based on 130,000 acre-feet per year for each potential participant.
Lake Texoma Not Yet Authorized (Blend)	DWU, TRWD, or UTRWD	220,000 (Costs for 113,000 acre-feet per year)	$182,588,000	$1.07	$0.25	High	Medium low	Low	Medium Low	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, Congressional authorization, and contract with USACE.	
Lake Texoma Not Yet Authorized (Desalinate)	DWU or TRWD	207,000 (Costs are for 105,000)	$621,448,000	$2.17	$0.85	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, Congressional authorization, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Sam Rayburn Reservoir/Lake B.A. Steinhagen	DWU, NTMWD, or TRWD	200,000	$1,306,045,000 to $1,525,001,000	$2.04 to $2.42	$0.59 to $0.72	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires IBT and contract with LNVA.	May be competing interest in supply in other region.
Lake Livingston	DWU, NTMWD, or TRWD	200,000	$1,142,917,000 to $1,299,183,000	$1.99 to $2.25	$0.72 to $0.83	High	Low	Low	Low	Medium Low	Low	No (alternate)	Unknown	Requires contract with TRA.	May be competing interest in supply in other region.
Ogallala Groundwater (Roberts County)	DWU, NTMWD, or TRWD	200,000	$1,650,619,000 to $1,994,699,000	$2.40 to $2.83	$0.55 to $0.61	High	Medium low	Medium	Medium	Medium Low	Medium	No (alternate)	Not inconsistent	Requires additional water rights.	Assumes 400,000 acres of water rights. Currently permitted or contracted for 150,000 acres.
TRWD 3rd Pipeline and Reuse	TRWD	188,765	$626,347,000	$1.05	$0.31	Low	Low	Low	Low	Low	Medium	Yes	N/A	Permit is in hand.	
Wright Patman - Raise Flood Pool	DWU, Irving, NTMWD, or TRWD	180,000	$825,088,000 to $1,038,329,000	$1.42 to $1.83	$0.37 to $0.54	High	Medium	Low	Medium Low	Medium Low	Medium Low	Yes	Not inconsistent	Requires IBT, contract with USACE and new or amended water right permit.	
Oklahoma Water	DWU, Irving NTMWD, TRWD, and/or UTRWD	165,000 or more (costs based on 115,000)	$477,214,000	$1.40	$0.47	High	Low	Low	Low	Medium Low	Medium Low	Yes	N/A	Oklahoma has moritorium for export of water out of state. May require an IBT.	
Lower Bois d'Arc Creek Reservoir	NTMWD	123,000	$399,190,000	$0.87	$0.14	High	Medium high	High	Medium	Medium	Low	Yes	N/A	Requires new water rights permit and IBT.	
Lake Fork Reservoir	DWU	120,000	$362,916,000	$0.84	$0.17	High	Low	Low	Low	Medium Low	Low	Yes	Yes	Project is underway.	
George Parkhouse Lake (North)	DWU, NTMWD, and/or UTRWD	118,960	$362,322,000 to $365,002,000	$0.91 to $1.00	$0.23 to $0.27	High	Medium high	Medium high	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	Costs are for NTMWD and DWU.
Lake Palestine	DWU	111,460 [a]	$414,447,000	$1.08	$0.25	High	Low	Low	Low	Medium Low	Low	Yes	Yes	DWU has IBT permit.	

Table 4D.2, Continued

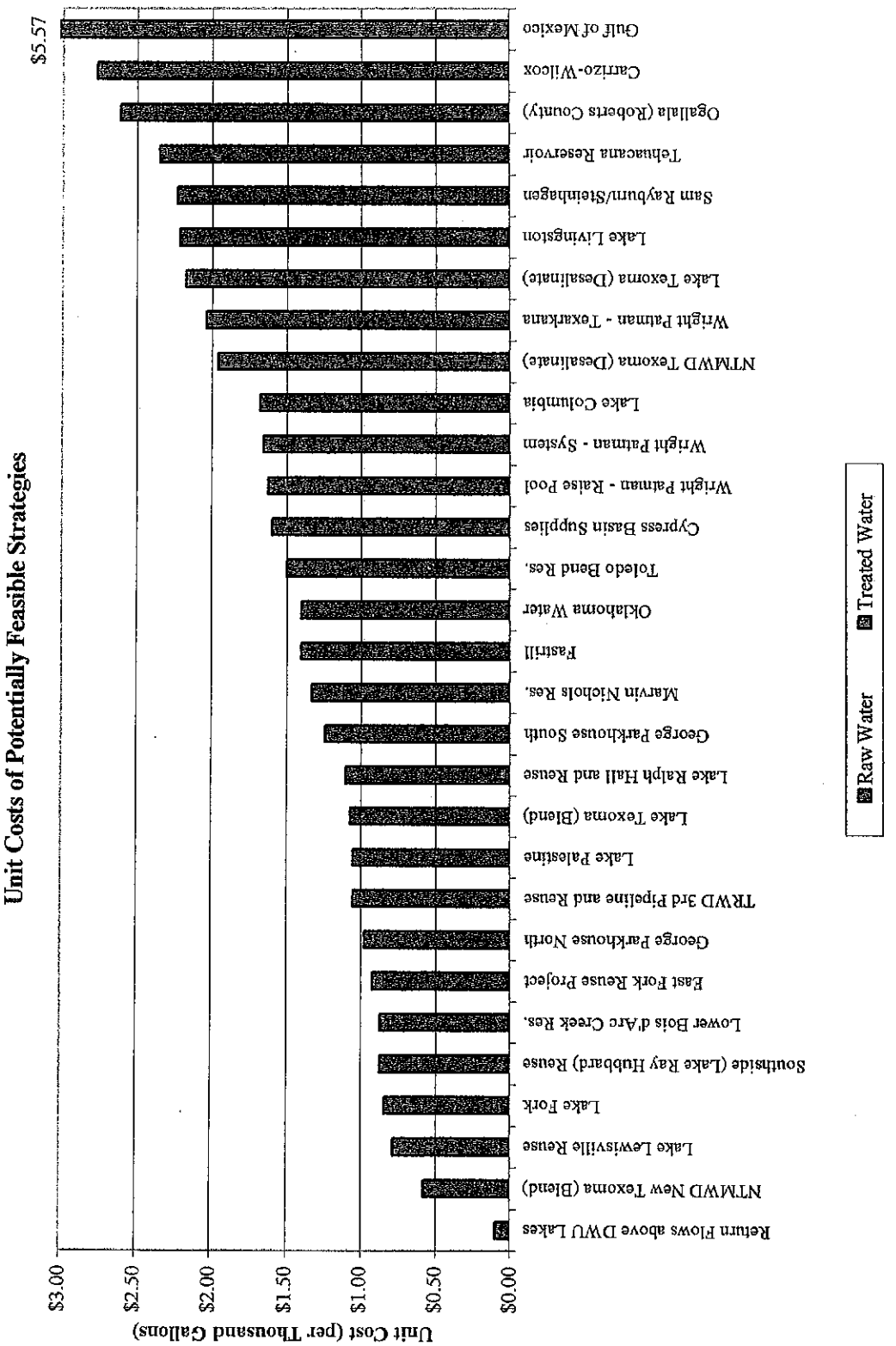
Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
New Lake Texoma (Blend)	NTMWD	113,000	$201,829,000	$0.58	$0.18	High	Medium low	Low	Medium Low	Medium Low	Medium	Yes	N/A	Requires IBT, state water right and contract with USACE.	NTMWD has applied for water right and is negotiating with USACE.
Lake Fastrill	DWU	112,100	$569,170,000	$1.40	$0.27	High	High	Medium	Medium high	Medium	Low	Yes	Unknown	Requires new water right permit and IBT.	
George Parkhouse Lake (South)	NTMWD and/or UTRWD	108,480	$480,099,000	$1.24	$0.25	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	Not inconsistent	Requires new water rights permit and IBT.	
Lake Texoma Desalinate	NTMWD	105,000	$538,635,000	$1.96	$0.82	High	Medium	Low	Medium	Medium Low	Medium	No (alternate)	N/A	Requires IBT, state water right, contract with USACE and brine discharge permit (or deep well injection).	Delivers treated water.
East Fork Reuse Project	NTMWD	102,000	$288,879,000	$0.92	$0.21	High	Low	Low	Low	Low	Medium	Yes	N/A	Requires water right permit.	
Wright Patman Lake – Texarkana	DWU, Irving, NTMWD, or TRWD	100,000	$429,176,000 to $670,735,000	$1.70 to $2.37	$0.65 to $0.87	High	Low	Low	Low	Medium Low	Medium Low	No (alternate)	Not inconsistent	Requires agreement with Texarkana and IBT.	
Carrizo-Wilcox Groundwater (Brazos County and vicinity)	DWU or NTMWD	100,000	$506,662,000 to $577,413,000	$2.65 to $2.89	$1.24 to $1.28	High	Medium	Medium	Medium High	Medium	Low	No (alternate)	No	Requires coordination with local groundwater districts. Competing uses for water.	
Cypress Basin Supplies (Lake O' the Pines)	DWU, NTMWD, or TRWD	89,600	$257,192,000 to $469,493,000	$1.25 to $1.97	$0.60 to $0.78	High	Low	Low	Low	Medium Low	Low to Medium Low	No (alternate)	Not inconsistent	Requires IBT, renegotiating existing contracts, and contract with NETMWD.	
Return Flows above DWU Lakes	DWU and UTRWD	79,605	$0	$0.10	$0.10	High	Low	Low	Medium Low	Low	Low	Yes	N/A	Requires contracts with wastewater dischargers.	
Southside (Lake Ray Hubbard) Reuse	DWU	67,253	$200,333,000	$0.87	$0.21	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	Requires water right permit.	

Table 4D.2, Continued

Strategy	Potential Supplier(s)	Potential Region C Supply (Acre-Feet per Year)	Region C Share of Capital Cost	Unit Cost for Region C ($/kGal.)		Reliability	Environ-mental Factors	Agricultural/ Rural Impacts	Other Natural Resources	3rd Party Impacts	Key Water Quality Parameters	Consistency		Implement-ation Issues	Comments
				Pre-Amort.	Post-Amort.							Suppliers	Other Regions		
Lewisville Lake Reuse	DWU	67,253	$191,439,000	$0.78	$0.15	High	Low	Low	Medium Low	Low	Medium	Yes	N/A	May require water right permit.	
Tehuacana Reservoir	TRWD	56,800	$511,829,000	$2.35	$0.35	High	Medium High	Medium High	Medium	Medium	Low	No (alternate)	N/A	Requires new water rights permit.	
Lake Ralph Hall and Reuse	UTRWD	50,740	$211,153,000	$1.10	$0.17	High	Medium high	Medium	Medium	Medium	Medium	Yes	N/A	Requires new water right and IBT.	
Lake Columbia	DWU	35,800	$223,705,000	$1.68	$0.29	High	Medium high	Medium	Medium	Medium	Medium	No (alternate)	Yes	Requires contract with ANRA and IBT.	

Note: a. DWU has a contract for 114,337 acre-feet per year for water from Lake Palestine. Based on the firm yield of the reservoir, the estimated amount of supply available to DWU in 2020 is 111,460 acre-feet per year

Figure 4D.2
Unit Costs of Potentially Feasible Strategies



The SRA and Metroplex water suppliers have been investigating the possibility of developing substantial water supplies from Toledo Bend Reservoir, with up to 100,000 acre-feet per year delivered to SRA customers in the upper Sabine River Basin (Region D, the North East Texas Region) and up to 600,000 acre-feet per year delivered to Region C. (Toledo Bend Reservoir is located in Region I, the East Texas Region.) The development of this supply will require an agreement among the SRA and Metroplex suppliers, an interbasin transfer permit from the Sabine River Basin to the Trinity River Basin, and development of water transmission facilities. Because Toledo Bend Reservoir is so far from Region C (about 200 miles), this is a relatively expensive source of supply for the Region. However, it does offer a substantial water supply, and environmental impacts will be limited because it is an existing source.

As discussed in Section 4E, getting water from Toledo Bend Reservoir is a recommended strategy for the North Texas Municipal Water District (200,000 acre-feet per year) and the Tarrant Regional Water District (200,000 acre-feet per year). It is an alternative strategy for Dallas Water Utilities and the Upper Trinity Regional Water District. The recommended strategy involves the use of 500,000 acre-feet per year (100,000 for SRA customers in the upper Sabine River Basin and 400,000 for the Metroplex). The Region C capital cost of the recommended strategy is $1.92 billion. (This differs from the cost in Table 4D.2 because the recommended strategy develops less supply from Toledo Bend Reservoir than is potentially feasible.)

4D.2 Gulf of Mexico with Desalination

The cost of desalination has been decreasing in recent years, and some municipalities in Florida and California have been developing desalinated seawater as a supply source. The State of Texas has sponsored initial studies of potential seawater desalination projects [3], and this is seen as a potential future supply source for the state. Because of the distance to the Gulf of Mexico, seawater desalination is not a particularly promising source of supply for Region C. However, seawater desalination has been mentioned through public input during the planning process, and it was evaluated in response to that input.

The supply from seawater desalination is essentially unlimited, but the cost is a great deal higher than the cost of other water management strategies for Region C. Developing water from

the Gulf of Mexico with desalination is not a recommended or alternative strategy for any water supplier in Region C.

4D.3 Marvin Nichols Reservoir

The proposed Marvin Nichols Reservoir is located on the Sulphur River in the Sulphur River Basin in Senate Bill One Planning Region D, the North East Texas Region. The proposed reservoir is about 115 miles from the Metroplex. Development of Marvin Nichols Reservoir was a major strategy for Region C in the 2001 *Region C Water Plan* [1], called Marvin Nichols I Reservoir North in that plan Since 2001, the Sulphur River Basin Authority and Metroplex water suppliers have been studying the development of Marvin Nichols Reservoir. As a result of those studies, the proposed location for the reservoir has been moved upstream to reduce impacts to bottomland hardwoods. The Sulphur River Basin Authority and Metroplex water suppliers are currently pursuing a basin-wide study of the Sulphur River Basin in cooperation with the Fort Worth District of the Corps of Engineers to obtain additional information on potential water supplies from the basin, including Marvin Nichols Reservoir.

Using the Sulphur River Basin Water Availability Model [4] and assuming that the proposed Lake Ralph Hall is in place as a senior water right, the estimated yield of Marvin Nichols Reservoir is 612,300 acre-feet per year after allowing for downstream water rights and environmental releases as required by the Texas Water Development Board's environmental flow criteria. (The yield analysis assumes that the reservoir will be operated as a system with Wright Patman Lake, protecting Wright Patman Lake's senior water right while minimizing impacts on the yield of Marvin Nichols Reservoir. The cooperative operation assumed in this report will require negotiations between the operators of Marvin Nichols Reservoir and the City of Texarkana, which holds a Texas water right in Wright Patman Lake.)

The yield is slightly less than the 619,100 acre-feet per year estimated in the 2001 *Region C Water Plan* [1] because Lake Ralph Hall is assumed to be in place as a senior water right. (If Lake Ralph Hall were not developed, the yield of Marvin Nichols Reservoir would be 640,800 acre-feet per year operated as a system with Wright Patman Lake, based on the Sulphur River Basin WAM – somewhat higher than estimated in the 2001 *Region C Water Plan.*) Assuming that 20 percent of the yield is used to provide water in Region D and 80 percent is made

available to Region C, Marvin Nichols Reservoir will provide 489,840 acre-feet per year of additional water supply for Region C.

As a major reservoir project, Marvin Nichols Reservoir will have significant environmental impacts. The reservoir would inundate about 68,000 acres. The 1984 U.S. Fish and Wildlife Service *Bottomland Hardwood Preservation Program* [5] classified some of the land that would be flooded as a Priority 1 bottomland hardwood site, which is "excellent quality bottomlands of high value to key waterfowl species." The proposed new location of the dam will reduce but not eliminate the impact on bottomland hardwoods and will slightly increase the acreage required for the reservoir. Permitting the project and developing appropriate mitigation for the unavoidable impacts will require years, and it is important that water suppliers start that process well in advance of the need for water from the project. Development of the Marvin Nichols Reservoir will require an interbasin transfer permit to bring the water from the Sulphur River Basin to the Trinity River Basin. The project will include a major water transmission system to bring the new supply to the Metroplex. The project will make a substantial water supply available to the Metroplex, and the unit cost is less than that of most other major water management strategies.

As discussed in Section 4E, the proposed Marvin Nichols Reservoir is a recommended strategy for the North Texas Municipal Water District (174,840 acre-feet per year), the Tarrant Regional Water District (280,000 acre-feet per year), and Upper Trinity Regional Water District (35,000 acre-feet per year). It is an alternative strategy for Dallas Water Utilities and the city of Irving. The Region C capital cost of the recommended strategy is $2.16 billion. (This differs from the value in Table 4D.2 because the delivery locations of the recommended strategy are different from the delivery locations assumed in Table 4D.2.)

4D.4 Wright Patman Lake

Wright Patman Lake is an existing reservoir on the Sulphur River in the Sulphur River Basin, about 150 miles from the Metroplex. It is located in Region D, the North East Texas Region, and owned and operated by the U.S. Army Corps of Engineers. The City of Texarkana has contracted with the Corps of Engineers for storage in the lake and holds a Texas water right to use up to 180,000 acre-feet per year from the lake. (In order to obtain a reliable supply of 180,000 acre-feet per year from the lake, Texarkana would have to activate a contract with the Corps of Engineers to increase the conservation storage in the lake.)

There are three different ways in which water could be made available from Wright Patman Lake for water suppliers in Region C:

- Water could be purchased from the City of Texarkana under its existing water right.
- Flood storage in Wright Patman Lake could be converted to conservation storage, and the increased yield could be used in Region C.
- Wright Patman Lake could be operated as a system with Jim Chapman Lake (formerly Cooper Lake) upstream to further increase yield.

Each of these approaches to developing supplies from Wright Patman Lake is discussed below.

Purchase from Texarkana. The 180,000 acre-feet per year for which Texarkana currently has a water right is in excess of their projected demands. Texarkana could sell 100,000 acre-feet per year and still have sufficient supplies to meet its projected needs. It is assumed that development of this supply would require activating the contract between Texarkana and the Corps of Engineers for additional conservation storage (which would require some environmental studies and mitigation) and improvements to Texarkana's pump station on the lake.

Conversion of Flood Storage to Conservation Storage. According to a recent study conducted for the Corps of Engineers, increasing the top of conservation storage in Wright Patman Lake to elevation 228.64 feet msl and allowing diversions as low as elevation 215.25 feet msl would increase the yield of the project to about 364,000 acre-feet per year [6]. It was assumed that 180,000 acre-feet per year of the additional supply developed could be made available to water suppliers in the Metroplex. The yield of Wright Patman Lake could be increased to much more than 364,000 acre-feet per year by converting additional flood storage to conservation storage and increasing the top of conservation storage. However, increases beyond elevation 228.64 feet msl will inundate portions of the White Oak Creek mitigation area, located upstream from Wright Patman Lake. (Approximately 500 acres of the mitigation area are below elevation 230 feet msl, and about 3,800 acres are below elevation 240 [6].)

System Operation with Jim Chapman Lake (formerly Cooper Lake). The recent study conducted for the Corps of Engineers indicated that system operation of Wright Patman Lake and Jim Chapman Lake could increase the yield from the two projects by about 108,000 acre-feet per year [6]. It was assumed that the combination of purchasing water from Texarkana,

converting flood storage to conservation storage, and system operation with Jim Chapman Lake could make 390,000 acre-feet per year available for Region C from Wright Patman Lake.

As discussed in Section 4E, converting Wright Patman Lake flood storage to conservation storage is a recommended water management strategy for Dallas Water Utilities, providing 112,100 acre-feet per year. The capital cost of this recommended strategy is $572,036,000. Wright Patman Lake is an alternative water management strategy for Irving, North Texas Municipal Water District, Tarrant Regional Water District, and Upper Trinity Regional Water District. The basin-wide study of the Sulphur River Basin discussed in Section 4D.3 will provide additional information on the potential for developing supplies from Wright Patman Lake.

4D.5 Lake Texoma

Lake Texoma is an existing Corps of Engineers reservoir on the Red River on the border between Texas and Oklahoma. Under the terms of the Red River Compact, the yield of Lake Texoma is divided equally between Texas and Oklahoma. Lake Texoma is used for water supply, hydropower generation, flood control, and recreation. In Texas, the North Texas Municipal Water District, the Greater Texoma Utility Authority, the City of Denison, TXU, and the Red River Authority have contracts with the Corps of Engineers and Texas water rights allowing them to use water from Lake Texoma [7].

The U.S. Congress has passed a law allowing the Corps to reallocate an additional 300,000 acre-feet of storage in Lake Texoma from hydropower use to water supply, 150,000 acre-feet for Texas and 150,000 acre-feet for Oklahoma. The North Texas Municipal Water District is negotiating to purchase 100,000 of the 150,000 acre-feet of storage for Texas and has applied for a Texas water right to divert an additional 113,000 acre-feet per year from Lake Texoma. The remaining 50,000 acre-feet of storage was reserved by Congress for the Greater Texoma Utility Authority.

Further reallocation of hydropower storage to water supply in Lake Texoma would provide additional yield. According to the Corps of Engineers, the firm yield of Lake Texoma with all hydropower storage reallocated to water supply would be 1,088,500 acre-feet per year [8]. Texas' share would be 544,250 acre-feet per year, leaving about 220,000 acre-feet per year of additional supply available to Texas by the reallocation of more hydropower storage to municipal use

(beyond the supplies already contracted for and the currently authorized reallocation). Further reallocation would require a new authorization by Congress.

Lake Texoma is only about 50 miles from the Metroplex. The lake has elevated levels of dissolved solids, and the water must be blended with higher quality water or desalinated for municipal use. The elevated dissolved solids in Lake Texoma would have some environmental impacts whether the water is used by blending or desalination. Use for most Region C needs will require an interbasin transfer permit. Blending water from Lake Texoma with water from other sources provides an inexpensive supply for Region C. Desalination provides treated water but is a more expensive strategy and there are considerable uncertainties in the long-term costs.

The estimated costs for desalination of water from Lake Texoma are based on current cost information for large desalination facilities. However, they are more uncertain than other cost estimates in this plan for a couple of reasons. There is not an established track record of success in the development of large brackish water desalination facilities. Most of the large desalination facilities built to date are located on or near the coast. If a 100 million gallon per day or larger plant were to be developed for Lake Texoma water, it would be the largest inland desalination facility in the world. In addition, the method and cost of brine disposal for such a facility are uncertain. Brine disposal has the potential to significantly increase the estimated cost for desalination. Detailed studies to solidify the cost estimates will be required if this strategy is pursued.

As discussed in Section 4E, Lake Texoma is a recommended source of additional water supply for the North Texas Municipal Water District (113,000 acre-feet per year) and the Greater Texoma Utility Authority (56,500 acre-feet per year). It is an alternative source of supply for Dallas Water Utilities and the Upper Trinity Regional Water District.

4D.6 Sam Rayburn Reservoir/Lake B.A. Steinhagen

Sam Rayburn Reservoir is an existing Corps of Engineers reservoir on the Angelina River in the Neches River Basin. Lake B.A. Steinhagen is located on the Neches River downstream from Sam Rayburn Reservoir. The two reservoirs are located in Region I, the East Texas Region. The Lower Neches Valley Authority holds Texas water rights in the projects, and they have indicated that as much as 200,000 acre-feet per year might be available to water suppliers in Region C. In order to preserve hydropower generation from Sam Rayburn Reservoir, the Lower Neches

Valley Authority wants the water to be diverted from Lake B.A. Steinhagen, which is about 200 miles from the Metroplex.

Because of the distance, this is a relatively expensive source of supply for Region C, with raw water costing over $2.00 per thousand gallons until the debt service is paid on the initial construction. Because this is an existing supply, the environmental impacts of this water management strategy are relatively low. An interbasin transfer permit and a transmission system would be required to develop this water management strategy for Region C. Developing water from Sam Rayburn Reservoir/Lake B.A. Steinhagen is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and Tarrant Regional Water District.

4D.7 Lake Livingston

Lake Livingston is an existing reservoir on the Trinity River in Region H. The Trinity River Authority (TRA) and the City of Houston hold the water rights for Lake Livingston. The TRA has indicated that as much as 200,000 acre-feet per year might be available to water suppliers in Region C from the lake. Lake Livingston is about 180 miles from the Metroplex. Region H may be considering other potential uses of the supply from Lake Livingston.

Lake Livingston is a relatively expensive source of supply for Region C, with raw water costing about $2.20 per thousand gallons until the debt service is paid on the initial construction. Because this is an existing supply, the environmental impacts of this water management strategy are relatively low. Since Lake Livingston is in the Trinity River Basin, no interbasin transfer permit would be needed for this water management strategy, but a transmission system would be required. Water from Lake Livingston is not a recommended strategy for any Region C supplier, but it is an alternative strategy for Dallas Water Utilities, the North Texas Municipal Water District, and the Tarrant Regional Water District.

4D.8 Ogallala Groundwater (Roberts County)

Mesa Water, Incorporated, is interested in selling groundwater from the Ogallala aquifer in Roberts County to water suppliers in Region C. (Roberts County is in Region A, the Panhandle Region.) Mesa Water controls rights to 150,000 acre-feet per year of groundwater in Roberts County with options for additional supply and has permits from the local groundwater

conservation district to export groundwater. Mesa Water has indicated that they can develop a reliable supply of 200,000 acre-feet per year for water suppliers in Region C through 2060 and beyond. The groundwater in Roberts County is about 250 miles from the Metroplex.

Because of the distance, this is a relatively expensive source of supply for Region C, with raw water costing about $2.50 per thousand gallons until the debt service is paid on the initial construction. Since this is a groundwater supply, no interbasin transfer permit would be required. Ogallala groundwater from Roberts County is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and the North Texas Municipal Water District.

4D.9 Tarrant Regional Water District Third Pipeline and Reuse

The Tarrant Regional Water District recently received a water right permit from the Texas Commission on Environmental Quality allowing the diversion of return flows of treated wastewater from the Trinity River. The water will be pumped from the river into constructed wetlands for treatment and then pumped into Richland-Chambers Reservoir and Cedar Creek Reservoir. This project will increase the safe yield of the two lakes and also provide an additional 115,500 acre-feet per year of new supply. The total supply made available by the reuse project is 188,765 acre-feet per year in 2060. In order to deliver the currently available supplies and the supplies developed from the reuse project, TRWD will need to build a third pipeline from Richland-Chambers Reservoir and Cedar Creek Reservoir to Tarrant County. This strategy was included in the 2001 *Region C Water Plan* [1].

This is a relatively inexpensive source of new supply for the Tarrant Regional Water District, and the environmental impacts are low. It is a recommended strategy for the Tarrant Regional Water District, and the estimated capital cost is $626,347,000. The Richland-Chambers Reservoir reuse project will probably be built first, around 2010. The Cedar Creek Reservoir reuse project and the third pipeline will be needed around 2018.

4D.10 Water from Oklahoma

Metroplex water suppliers have been pursuing the purchase of water from existing sources in Oklahoma in recent years. Water from Oklahoma was a recommended strategy for North Texas Municipal Water District and Tarrant Regional Water District in the 2001 *Region C Water Plan*

[1]. At the present time, the Oklahoma Legislature has established a temporary moratorium on the export of water from the state. In the long run, Oklahoma remains a promising source of water supply for Region C.

Raw water from Oklahoma would cost about $1.40 per thousand gallons and would have relatively low environmental impacts because of the use of existing sources. Water from Oklahoma is a recommended strategy for the North Texas Municipal Water District (50,000 acre-feet per year), the Tarrant Regional Water District (50,000 acre-feet per year) and the Upper Trinity Regional Water District (15,000 acre-feet per year), with a capital cost of $477,214,000. It is an alternative strategy for Dallas Water Utilities and Irving.

4D.11 Lower Bois d'Arc Creek Reservoir

The proposed Lower Bois d'Arc Creek Reservoir was a recommended strategy for the North Texas Municipal Water District in the 2001 *Region C Water Plan* [1]. The project is located in Region C on Bois d'Arc Creek in Fannin County, upstream from the Caddo National Grasslands. It would yield 123,000 acre-feet per year and would provide an inexpensive source of supply for Region C. The project would inundate 16,358 acres. The 1984 Fish and Wildlife Service *Texas Bottomland Hardwood Preservation Program* [5] report classified the Bois d'Arc Creek bottoms in the reservoir area as Priority 4 bottomland hardwoods, which are "moderate quality bottomlands with minor waterfowl benefits." Development would require a water right permit and an interbasin transfer permit. Lower Bois d'Arc Creek Reservoir is a recommended water management strategy for the North Texas Municipal Water District and would have a capital cost of $399,190,000.

4D.12 Lake Fork Reservoir

Dallas Water Utilities has a contract with the Sabine River Authority for water from Lake Fork Reservoir and an interbasin transfer permit allowing the use of up to 120,000 acre-feet per year from the lake in the Trinity River Basin. Lake Fork Reservoir is located in Region D on Lake Fork Creek in the Sabine River Basin. Dallas Water Utilities has long planned to connect Lake Fork Reservoir to its water supply system and is in the process of constructing transmission facilities, which are scheduled for completion in 2007. Development of a supply from Lake Fork Reservoir provides water at a low cost and with a low environmental impact, and it is a

recommended water management strategy for Dallas Water Utilities. The capital cost for the strategy is $362,916,000.

4D.13 George Parkhouse Lake (North)

George Parkhouse Lake (North) is a potential reservoir located in Region D on the North Sulphur River in Lamar and Delta Counties. It would yield 148,700 acre-feet per year (with 118,960 acre-feet per year available for Region C), but its yield would be reduced substantially by development of Lake Ralph Hall or Marvin Nichols Reservoir. George Parkhouse Lake (North) would provide an inexpensive source of supply for Region C. The project would inundate 12,250 acres. Ninety percent of the land impacted is cropland or pasture. There are no designated priority bottomland hardwoods located within or adjacent to the site. Development would require a water right permit and an interbasin transfer permit. George Parkhouse Lake (North) is not a recommended water management strategy for any Region C water supplier. It is an alternative strategy for the Dallas Water Utilities, North Texas Municipal Water District, the Tarrant Regional Water District, and the Upper Trinity Regional Water District.

4D.14 Lake Palestine

Dallas Water Utilities has a contract with the Upper Neches River Municipal Water Authority for 114,337 acre-feet per year of water from Lake Palestine and an interbasin transfer permit allowing the use of water from the lake in the Trinity River Basin. Lake Palestine is located in East Texas Region on the Neches River. Dallas Water Utilities plans to connect Lake Palestine to its water supply system around the year 2015. Development of a supply from Lake Palestine provides water at a low cost and with a low environmental impact, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost for the strategy is $414,447,000.

4D.15 Lake Fastrill

The proposed Lake Fastrill is being investigated by the Upper Neches River Municipal Water Authority and Dallas Water Utilities as a potential water supply source. According to preliminary studies, the project would have a yield of 148,780 acre-feet per year [9]. It would inundate 24,950 acres, including a portion of a potential wildlife refuge currently being studied by the U.S. Fish and Wildlife Service. As a major reservoir project, it has the potential to have

significant environmental impacts. The 1984 Fish and Wildlife Service *Texas Bottomland Hardwood Preservation Program* [5] classified some of the land that would be flooded by Lake Fastrill as a Priority 1 bottomland hardwood site, which is "excellent quality bottomlands of high value to key waterfowl species." The Texas State Railroad is located near the proposed reservoir site. As part of the permitting process for Lake Fastrill, this facility would be protected. The cost estimates for the lake include protection of the railroad. Development would require a water right permit and an interbasin transfer permit. Lake Fastrill is a recommended water management strategy to supply 112,100 acre-feet per year for Dallas Water Utilities. (The remainder of the supply would be available for use in East Texas Region.) The Region C share of Lake Fastrill would have a capital cost of $569,170,000.

4D.16 George Parkhouse Lake (South)

George Parkhouse Lake (South) is a potential reservoir located in Region D on the South Sulphur River in Hopkins and Delta Counties. It is located downstream from Jim Chapman Lake and would yield 135,600 acre-feet per year (with 108,480 acre-feet per year available for Region C). Its yield would be reduced substantially by the development of Marvin Nichols Reservoir. George Parkhouse Lake (South) would inundate 29,740 acres. Ninety percent of the land impacted is cropland or pasture. There are no designated priority bottomland hardwoods located within or adjacent to the site. Development would require a water right permit and an interbasin transfer permit. George Parkhouse Lake (South) is not a recommended water management strategy for any Region C water supplier. It is an alternative strategy for the North Texas Municipal Water District and the Upper Trinity Regional Water District.

4D.17 East Fork Reuse Project

The North Texas Municipal Water District has applied for a water right to develop the East Fork Reuse Project. The project was added to the 2001 *Region C Water Plan* by amendment in January 2005. The project calls for diversion of return flows of treated wastewater from the East Fork of the Trinity River near Crandall into a constructed wetland for treatment. Water would then be pumped into Lake Lavon, diverted from the lake, and treated for municipal use. The project would supply 102,000 acre-feet per year. The project is a relatively inexpensive source of water, and the environmental impact is low. The East Fork Reuse Project is a recommended strategy for the North Texas Municipal Water District, and the capital cost is $288,879,000.

4D.18 Carrizo-Wilcox Aquifer Groundwater (Brazos County and Vicinity)

The Carrizo-Wilcox aquifer covers a large area of east, central, and south Texas. Organizations and individuals have been studying the development of water supplies in Brazos County and surrounding counties for export. Metroplex water suppliers have been approached as possible customers for the water. (The supplies under discussion are located in Region G, called the Brazos G Region, and these supplies have also been studied for use by communities in that region.) Brazos County is about 150 miles from the Metroplex.

This is a relatively expensive source of supply for Region C, with delivered raw water costing about $2.75 per thousand gallons until the debt service is paid on the initial construction. Since this is a groundwater supply, no interbasin transfer permit would be required. Carrizo-Wilcox groundwater from Brazos County and vicinity is not a recommended strategy for any Region C supplier. It is an alternative strategy for the North Texas Municipal Water District.

4D.19 Cypress Basin Supplies (Lake O' the Pines)

Lake O' the Pines is an existing Corps of Engineers reservoir, with Texas water rights held by the Northeast Texas Municipal Water District. The lake is on Cypress Creek in the Cypress Basin in Senate Bill One water planning Region D, the North East Texas Region. Some Metroplex water suppliers have explored the possibility of purchasing supplies in excess of local needs from the Cypress Basin for use in the Metroplex. There could be as much as 89,600 acre-feet per year available for export from the basin. Development of this source would require contracts with the Northeast Texas Municipal Water District and other Cypress River Basin suppliers with excess supplies and an interbasin transfer permit. Since this water management strategy obtains water from an existing source, the environmental impacts would be low.

Lake O' the Pines is about 120 miles from the Metroplex, and the distance and limited supply make this a relatively expensive water management strategy. Obtaining water from the Cypress River Basin is not a recommended strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities and the North Texas Municipal Water District.

4D.20 Return Flows above Dallas Water Utilities Lakes

There are significant discharges of wastewater return flows in the watersheds of many of the lakes used for water supply in Region C. Dallas Water Utilities has water rights in excess of the

yields of many of its lakes, which means that return flows to the lakes can legally be diverted and used as they occur. In order to make this a reliable supply, Dallas Water Utilities plans to contract with wastewater dischargers in these watersheds to continue to discharge treated wastewater effluent, making the additional supplies available on a continuing basis [10]. The cost of this supply is assumed to be $0.10 per thousand gallons, and the 2060 supply is estimated to be 79,605 acre-feet per year [10]. This is a recommended water management strategy for Dallas Water Utilities and the Upper Trinity Regional Water District. There is no capital cost for this alternative, but it would require on-going payments for continued discharges.

4D.21 Southside (Lake Ray Hubbard) Reuse

The 2001 *Region C Water Plan* [1] included development of the Dallas Southside Reuse Plan as a recommended water management strategy for Dallas Water Utilities. This strategy was further analyzed in Dallas Water Utilities' recent recycled water implementation plan [11]. Water would be pumped from the Southside wastewater treatment plant to into a constructed wetland for treatment. After treatment, water would be pumped into Lake Ray Hubbard, diverted from the lake, and treated for municipal use. The strategy would provide 67,253 acre-feet per year. This water management strategy would provide a relatively inexpensive water supply with relatively low environmental impacts, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost is $200,333,000.

4D.22 Lewisville Lake Reuse

Indirect reuse through Lewisville Lake was analyzed in Dallas Water Utilities' recent recycled water implementation plan [11]. The strategy would provide 67,253 acre-feet per year. Treated wastewater at the Central Wastewater Treatment Plant would receive further treatment for reuse. Water would then be pumped into Lewisville Lake, diverted from the lake, and treated for municipal use. This water management strategy would provide a relatively inexpensive water supply with relatively low environmental impacts, and it is a recommended water management strategy for Dallas Water Utilities. The capital cost is $191,439,000.

4D.23 Tehuacana Reservoir

Tehuacana Reservoir is a proposed reservoir on Tehuacana Creek in Freestone County in Region C. It was an alternative strategy for the Tarrant Regional Water District in the 2001

Region C Water Plan [1]. Tehuacana Reservoir would flood about 15,000 acres adjacent to Richland-Chambers Reservoir and would have a yield of 56,800 acre-feet per year. There are no priority bottomland hardwoods within the site. Development of this supply would require a new water right permit, construction of the reservoir, and up-sizing TRWD's third pipeline to deliver that water to Tarrant County. Tehuacana Reservoir is not a recommended water management strategy for any Region C supplier. It is an alternative strategy for the Tarrant Regional Water District.

4D.24 Lake Ralph Hall and Reuse

The Upper Trinity Regional Water District has applied for a water right permit for the proposed Lake Ralph Hall, located on the North Fork of the Sulphur River in Fannin County in Region C. The reservoir would flood 7,600 acres. The yield of the project would be 32,940 acre-feet per year, and Upper Trinity Regional Water District plans to apply for the right to reuse return flows from water originating from the project, providing an additional 17,800 acre-feet per year. Developing Lake Ralph Hall and the related reuse is a strategy for the Upper Trinity Regional Water District, and the capital cost is $211,153,000.

4D.25 Lake Columbia

The Angelina and Neches River Authority has a Texas water right for the development of the proposed Lake Columbia on Mud Creek in the Neches River Basin in East Texas Region. The Authority is pursuing development of the reservoir and has applied for a Federal 404 permit from the Corps of Engineers. In its recent long-range planning effort, Dallas Water Utilities studied purchasing 35,800 acre-feet per year from Lake Columbia and delivering the water through Lake Palestine [10]. Lake Columbia would flood about 11,500 acres. Lake Columbia is not a recommended water management strategy for any Region C supplier. It is an alternative strategy for Dallas Water Utilities.

4D.26 Summary of Recommended Major Water Management Strategies

Table 4D.3 is a summary of the recommended major water management strategies for Region C. There are 15 recommended major strategies, supplying a total of 2.24 million acre-feet per year to Region C at a capital cost of $8.6 billion.

Table 4D.3
Recommended Major Water Management Strategies for Region C

Strategy	Supplier	Supply (Acre-Feet per Year)	Supplier Capital Cost	Supplier Unit Cost ($/kGal.)	
				Pre-Amort.	Post-Amort.
Toledo Bend Reservoir	NTMWD	200,000	$886,002,000	$1.56	$0.57
	TRWD	200,000	$1,035,188,000	$1.92	$0.77
Marvin Nichols Reservoir	NTMWD	174,840	$534,125,000	$0.94	$0.26
	TRWD	280,000	$1,482,167,000	$1.66	$0.48
	UTRWD	35,000	$142,761,000	$1.27	$0.36
TRWD 3rd Pipeline & Reuse	TRWD	188,765	$626,347,000	$1.05	$0.31
Lower Bois d'Arc Ck. Res.	NTMWD	123,000	$399,190,000	$0.87	$0.14
Lake Fork Reservoir	DWU	120,000	$362,916,000	$0.84	$0.17
Oklahoma Water	NTMWD	50,000	$128,898,000	$0.95	$0.37
	TRWD	50,000	$287,349,000	$1.86	$0.58
	UTRWD	15,000	$60,967,000	$1.36	$0.45
Lake Palestine	DWU	111,460	$414,447,000	$1.08	$0.25
New Lake Texoma (Blend)	NTMWD	113,000	$201,829,000	$0.58	$0.18
Lake Fastrill	DWU	112,100	$569,170,000	$1.40	$0.27
Wright Patman Lake - Flood Pool	DWU	112,100	$572,036,000	$1.50	$0.36
East Fork Reuse Project	NTMWD	102,000	$288,879,000	$0.92	$0.21
Return Flows above DWU Lakes	DWU and UTRWD	79,605	$0	$0.10	$0.10
Southside (Lake Ray Hubbard) Reuse	DWU	67,253	$200,333,000	$0.87	$0.21
Lewisville Lake Reuse	DWU	67,253	$191,439,000	$0.78	$0.15
Lake Ralph Hall and Reuse	UTRWD	50,740	$211,153,000	$1.10	$0.17
Region C Total		**2,252,116**	**$8,595,196,000**		

Note: The costs and unit costs in Table 4D.3 may be different from those in Table 4D.2 because the amounts and participants may be different.

SECTION 4D
LIST OF REFERENCES

(1) Freese and Nichols, Inc., Alan Plummer Associates, Inc., Chiang, Patel & Yerby, Inc., and Cooksey Communications, Inc.: *Region C Water Plan*, prepared for the Region C Water Planning Group, Fort Worth, January 2001.

(2) Brown and Root, Inc., *Yield Study Toledo Bend Reservoir*, prepared for the Sabine River Authority of Texas and the Sabine River Authority of Louisiana, Houston, July 1991.

(3) Texas Water Development Board, Large-Scale Demonstration Seawater Desalination in Texas, Report of Recommendations for the Office of Governor Rick Perry, Austin, [Online], Available URL: http://www.twdb.state.tx.us/Desalination/FINAL%2012-16-02.pdf, May 2005.

(4) R.J. Brandes Company, *Final Report – Water Availability Modeling for the Sulphur River Basin*, prepared for the Texas Water Development Board, Austin, June 1999.

(5) U.S. Fish and Wildlife Service: Department of the Interior Final Concept Plan, *Texas Bottomland Hardwood Preservation Program*, Albuquerque, 1984.

(6) Freese and Nichols, Inc., *System Operation Assessment of Lake Wright Patman and Lake Jim Chapman*, prepared for the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, January 2003.

(7) Freese and Nichols, Inc., *Report in Support of Amending Permit 5003*, prepared for the North Texas Municipal Water District, Fort Worth, February 2005.

(8) U.S. Army Corps of Engineers, Tulsa District, *Draft Environmental Assessment, Lake Texoma Storage Reallocation Study, Lake Texoma, Oklahoma and Texas*, Tulsa, January 2005.

(9) HDR Engineering, Inc.: "Fastrill Reservoir - Preliminary Technical Information for 2006 Region C Regional Water Plan," Austin, April 2005.

(10) Chiang, Patel and Yerby, Inc.: *Draft 2005 Update to the City of Dallas Long Range Water Supply Plan*, Dallas, February 2005, and related presentations to the City Council and Council Committees.

(11) Alan Plummer Associates, Inc.: *Draft Recycled Water Implementation Plan*, Dallas, August 2004.

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SEP 17 2007

BY

CHIEF CLERKS OFFICE

SEP 17 PM 4:26

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

Harold D. Witcher Jr, President Citizens to Save Bois d'Arc Creek
Mailing Address: 972 CR 2705, Telephone, Texas 75488
Phone: 903-664-2714 e-mail: twitcher@estesinc.com

Applicant & Permit Number: NTMWD permit Number 12151

On behalf of the Citizens to Save Bois d'Arc Creek I, Harold D. Witcher, Jr. wish to request a contested case hearing on the project of build a dam on Lower Bois d'Arc Creek. First I would like to say the building of a dam on Bois d'Arc Creek is not about the need for water, but the control of all potential water sources in Northeast Texas. This is shown in Exhibit A, pages 1 and 2, entitled **2007 State Water Plan for NTMWD,** which are highlighted on page 2 showing existing lakes that NTMWD plan to acquire water from the in future. If conservation is one of their **future** plans, it sure isn't in place at this time. When lawn sprinklers are on in the Metroplex area, and it is raining, water is running down the street from sprinklers. When sprinklers are watering dormant grass in the middle of the winter allowing water to run down the street, this is not conservation. I grant dormant grass needs watering if there is no rainfall, but once a month is adequate. Speaking of water running down the street, all the runoff in the Dallas-Ft Worth Metroplex goes into the Trinity River basin. With all the pavement and buildings in the two metroplex areas covering the soil, none of the rainwater is absorbed, so it becomes run off, thus generating an astronomical amount of usable water that just runs down the Trinity to Lake Livingston and keeps Houston supplied with plenty of water. I do not see one plan in the works to capture this huge water source. The municipalities want to go outside of their existing river basin to acquire their water. They should be forced to harvest this water source first before going outside the Trinity Basin. The existing reservoirs should be utilized first before any more are built. It will be more economical to build pipelines now than the future if inflation is figured into the cost. I know pipelines are as controversial as the building of lakes, but they don't totally remove a person from his home, his land, or lively hood. They don't wreck ecosystems, or displace wildlife as reservoirs do. A pipeline from Wright Patman to Cooper Lake (Lake Chapman) is approximately 60 miles, which is as close or closer than a pipeline from Bois d'Arc to Lake Lavon. A pipeline from Cooper Lake to Lake Lavon already exists. Bois d' Arc Creek Reservoir will be an extremely shallow reservoir, which will produce poor quality water due to the growth of aquatic vegetation that causes off colors and taste. Evaporation losses of water will be extreme due to the large surface area and the shallow nature of the reservoir. At conservation level of 534 ft-msl the deepest part of the reservoir will only be 50-55 feet at dam. The Engineering Firm of Freese and Nichols states the depth to be 70 feet, which is to the bottom of the creek channel. I don't believe the channel depth should be considered because it is only 30 to 40 yards wide. The fall of the land from Highway 82 north is 3 to 5 feet per mile. As shown in Exhibit B, page 3-89, the reservoir will only be at 534 ft-msl 13 percent of the time (48 days) and below 50 percent full less than 20 percent of the months (73 days). With these estimates there will be extensive mud flats every year. People driving along Highway 82 won't even know there is a reservoir. NTMWD keeps tooting the economical development around

MW

the reservoir. Who in their right mind would buy a lake front lot knowing the reservoir is going to be half empty two and a half months out of every year? And guess when those months will be. That's right. June, July, and August. People wanting access to the water will have to dredge out a long channel before the reservoir is filled.

Exhibit C, comprised by the Corps of Engineers, Tulsa District, initiated January 17, 2000, determined as shown on page 7, sub paragraph (b) that all dam sites within NTMWD plan were dropped from further consideration.

Exhibit D, page 4D. 4, Table 4D.2, shows that total impacts from getting water from Toledo Bend Reservoir to be low. Wright Patman would be low to medium, impact compared to Bois d'Arc Reservoir, page 4D.5, which is medium high.

According to an article I read in the National Geographic several years ago the firefly population had dropped extensively and no one could determine why. In the last three years the appearance of fireflies has increased greatly in Bois d'Arc bottom, but not on the adjacent hills. Therefore, something is conducive with the bottomland ecosystem that is helping their return. If these insects are an important part of our ecosystem, then we need to protect them. Tree frogs are also suffering from habitat losses. If this reservoir is built the Eastern Wild Turkey, White Tailed Deer, and other wild life will suffer. In Exhibit B, page 3-94, NTMWD has projected having to purchase an additional 22,000 acres for mitigated lands. This is the same amount of land that would be acquired for the reservoir. This tells you that there will be a large amount of wildlife displaced if Bois d'Arc Creek Reservoir is built.

H. D. Witcher Jr. 17 Sept. 2007

PO Box 36
Phone: Honey Grove TX 75446
Fax: 903-378-2871

Citizens to Save Bois d' Arc Creek

Fax

To: Office of the Chief Clerk FROM Harold D Witcher Jr.

Fax: 512-239-3311 Date: 9-17-2007

Phone: Pages: 3

Re: Contested Case Hearing CC:
12151 - NTMWD

Urgent ☑ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

a Hard copy will follow by mail.

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BY

Contested Case Hearing Request

Name: Charles Yarbrough Group Name: Citizens to Save Bois D'Arc Creek

Mailing Address: 404 Pecan St

Phone: 903-378-2801 Fax N/A

Email: N/A

CHIEF CLERKS OFFICE 2007 SEP 12 AM 10:1

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Applicant & Permit Number: NTMWD permit number 12151

I want to request a contested hearing case on the project to build a dam on Lower Bois d'Arc Creek because:

The quality of the water from this mud hole will be poor quality, shallow except in creek area. When pumped a large part of the area will be a swamp. When the water does come up wild life will be pushed to the part where unwanted.

Land taken in for the reservoir and other needed land will be taken off the county tax roll, placing a financial burden on all businesses and residence of the county. The most productive land in the county will be under water. The economic impact does not look good for Fannin County schools, business or land owners.

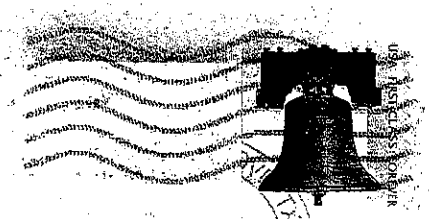
There is a need for better quality water than this mud hole will provide.

Charles Yarbrough date Sept 8, 2007

Signature

Mr. Charles E. Yarbrough
404 Pecan St.
Honey Grove, TX 75446-1821

TX 750 5 L
10 SEP 2007 PM



The Office of the Chief Clerk
MC 105
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P.O. Box 13087
Austin, Texas 78711-3087

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AT PUBLIC MEETING

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Contested Case Hearing Request

Charles Michael Yarbrough and John Edward Yarbrough
2325 CR 2765 3576 CR 2765
Honey Grove, TX 75446 Honey Grove, TX 75446
(903) 378-7291 (903) 378-2536

Applicant and Permit Number: NTMWD permit number 12151

We want to request a contested case hearing on the project to build a dam on Bois D' Arc Creek creating the reservoir to be known as Lower Bois D' Arc Creek Reservoir because

1. The project will negatively affect us by taking away our best and most productive property and probably put us out of business. There are no industries or businesses in the county to offer employment to people in their early 50's with no other experience except farming and ranching. Our families have been farming this land for about 80 years and we had planned on passing it to our children if they wanted to continue farming it. We have depended totally on this land for our living and there are others such as our parents and elderly relatives who now depend on us. The loss of this land will put a hardship on all of us as well as the agri-supply businesses that we purchase inputs from and the grain elevators and companies that we sell livestock to as well as the regular businesses such as the grocery stores, utility companies, fuel suppliers, insurance companies, etc. The land represents not only business property but also our heritage and jobs and retirement plans. It has provided for us and we have cared for it and tried to improve it, as finances would allow. The land in the creek bottoms is considered by the USDA to be prime farmland because of the fertility, slope, soil type and climate. This type of land is a natural resource that cannot be replaced by any other type of land in its productivity. The hillsides provide excellent winter pasture since they drain well and provide a shelter from the wind and drier places to feed hay. The natural beauty and abundant wildlife could never be replaced.
2. Fannin County's major business is agriculture and removing the amount of prime farmland from production required for the applicant's project will devastate the county's economy. Agricultural production income in the county accounted for $ 67,482,500 in 2005 making agriculture the highest producing business in the county. Between wildlife mitigation and the reservoir, from around 46,526 to 66,104 acres or more will be removed from agricultural production in the county causing an estimated $7.7 million to $11.4 million drop in the county's economy.
3. There are many very large trees, which are hundreds of years old, growing along the banks of the many tributaries that feed into Bois D' Arc Creek. These trees have lived here since before state hood and will be killed by flooding the creek bottoms even if for only a few months of the

year. The wildlife, both native and introduced, will be displaced onto less fertile hillsides and into areas more densely populated with people. Feral hogs, bobcats, panthers, coyotes, hawks and owls are the main predators in the area. These animals are most often seen in the bottoms along the creeks and they will also be forced into areas were people are more densely populated. The loss of crops in the bottoms will deprive the foraging wildlife of the quantity and quality of food they are accustomed to even with mitigation. Protected from constant hunting and trapping pressure, the feral hog population will explode if the mitigation land is located around the reservoir. The reservoir level fluctuations will cause extensive mud flats, which will shift the ecosystem to one that favors the feral hog over the other resident wildlife. The overpopulation of feral hogs, which are omnivores, will deplete the food supply for the native wildlife. Feral hogs also create major water quality problems due to their tendency to wallow in the mud flats around water sources. The Texas Animal Health Commission has sent out information to residents in this area warning them that feral hogs can carry diseases such as swine brucellosis, pseudorabies and others that are communicable to humans. The feral hog is already present in the area and any advantage given to it by increasing its habitat or shifting the ecosystem to favor it will accelerate the population increase and the damage that they cause.

4. Most longtime residents have seen Bois D' Arc Creek out and over highway 56 east of Bonham with no dam at all on the creek. Backing water up to US 82 northeast of Bonham before one of the big rains will surely cause increased flooding in the county seat and possibly stopping east-west transportation in the county. There have already been 3 times in 2007 that water has backed up and covered the creek bottom between US 82 and highway 56 and there is no dam on the creek now!
5. The slope of Bois D' Arc Creek is only about 3.5 to 5 ft per mile between US 82 and FM 1396. The average depth of the proposed reservoir is 22 feet but most of the reservoir between US 82 and FM 1396 would be very shallow. NTMWD is requesting a permit to remove about half of the water in the reservoir (175,000 acre feet) per year. This will cause mud flats that will be a mosquito breeding haven in a county that already has had cases of West Nile virus and that poses a public health threat. The mud flats will grow up with cattails and marsh plants and then be flooded when the winter and spring rains come and the decaying plant material will cause oxygen depletion problems each summer. The oxygen depletion will cause fish kills and add to the stench of the rotting plant material, again causing water quality problems and a public health hazard.
6. The proposed reservoir is oriented southwest to northeast, the same as the prevailing wind. The sixteen mile long level surface of the reservoir will allow the wind to whip up high waves causing erosion of the north and east banks and will help to keep the water stirred, which will bring up sediment and decaying organic material, causing water quality problems.

7. The old Bonham city dump ground was on the west bank of Sloan's Creek just north of highway 56. The junk has all been buried but it used to have everything from old cars to household trash in it. The water leaching from that hill probably contains lead from old batteries to mercury from broken thermometers and every toxin and carcinogen in between and it runs to Bois D' Arc creek. Most of the land farmed in the bottom along the creek was in cotton from before the 1920's through about 1960 and pesticides containing lead compounds were used to control insects and defoliants containing arsenic were used on the cotton. It is highly probable that the soil still contains these two toxins because after a warm rain, you can sometimes still smell it in the air.
8. North Texas Municipal Water District is violating the Texas Private Property Rights Preservation Act by being in rural Fannin County looking to build a reservoir before consistently using the highest level of water conservation at all times and NTMWD has not seriously considered alternative water supplies. They have only considered their own economics and their own people and not the economics of the areas where the reservoirs are built or the hardships that they cause to the people who live there. Building reservoirs is much like buying used computers. They are outdated before you get them. NTMWD is already trying to get Marvin Nichols, Fastrill, Parkhouse I&II and others built as well because Lower Bois D'Arc must not be enough for the water hogs. Why not save the money that will be spent on all these projects and go to the coast and desalinate ocean water? There is a much greater supply and it's already there. NTMWD seems perfectly willing to build pipelines to all of the proposed reservoirs and pump them so why do they always throw up pipeline and pumping costs on the one project that would solve the problem? New technologies for desalinating ocean water are being developed every day and the US Navy has been doing it for a very long time. NTMWD could team with Region C and the other 15 regions and build a Texas size desalination plant and sell water all the way to Amarillo and El Paso without wasting another acre of prime farmland or forcing another farmer off his property. The cost of desalinated water delivered to most of Texas would indeed be higher than the cost of water from a nearby reservoir but they do not want just one reservoir; they want one now and before it is even permitted, they want more reservoirs even farther away. To use the computer analogy, quit buying the out of date technology and invest in the future technology today! Water is a precious commodity and if NTMWD has to charge more for it, then maybe their customers will conserve more of it.
9. The Texas Private Property Rights Preservation Act also requires the applicant to justly compensate the landowners for property taken. NTMWD has only $ 86,893,700 budgeted for land acquisition. The reservoir will require 16,525 acres and according to the Tulsa District of the Army Corps of Engineers, the mitigation requirement could be up to 49,578 acres or more. The average that NTMWD could pay would only be

$ 1,314.50 per acre with all improvements included and that is not even close to the average price of an acre of land in Fannin County. If the land were to be used at its highest and best use, which would probably be to collect rainfall if you could sell the water at the same rate that NTMWD is paying for raw water from Texoma, $350.00 / acre ft, the land would produce an annual income of $1,254.17 on average using an annual average rainfall of 43 inches. Not many people would voluntarily sell income producing property that has no input and very little maintenance cost for little more than one year's production.

10. There are high voltage power transmission lines and natural gas transmission pipelines in the path of the proposed reservoir. These are currently in sparsely populated areas but they will have to be moved south into much more densely populated areas to go around the south end of the reservoir and during times of heavy rainfall, they will still be subject to damage by erosion and flooding.

Charles Michael Yarbrough — 11 Sept 2007

Charles Michael Yarbrough — Date

John Edward Yarbrough — 9-11-07

John Edward Yarbrough — Date

Presented as a comment for the record at the TCEQ public hearing for NTMWD permit #12151 in Greenville, TX on 10 Sept. 2007 by Charles Michael Yarbrough, 2325 CR 2765, Honey Grove, TX 75446

Who Benefits from Water Supply Reservoirs in Fannin County?

There are two reservoirs that are planned to be built in Fannin County by Dallas area municipal water districts, Ralph Hall Reservoir on the Sulphur River and Lower Bois D' Arc Creek Reservoir on Bois D' Arc creek. The acerage for the reservoirs and their mitigaton acerage will be removed from private property owners and the county and school tax rolls when the reservoirs are built. The remainder of the county will have to make up the lost county and school tax revenue. Fannin County is primarily used for agricultural production (70%) and that land is taxed on its agricultural production value so the lion's share of the taxes are paid by businesses and homeowners. There are not many large businesses in Fannin County so the brunt of the tax burden is borne by homeowners. Therefore this issue affects all of the people in the county in a big way.

The Fannindel, Honey Grove, Dodd City, Sam Rayburn and Bonham school districts will all loose a portion of their tax bases if Ralph Hall and Lower Bois D' Arc Reservoirs are built. Bonham ISD will suffer the least even if the Lower and Upper Reservoirs are built. For every student whose family is evicted from their home and moves out of the district, the local school district will lose money from the state as well as the loss of the local school property tax base.

The main portion of the land removed from the school and county tax bases is the land mitigated for wildlife. The US Army Corps of Engineers and TCEQ are responsible for determining the amount and type of land to be mitigated. Legacy Ridge Golf Course had to mitigate land for wildlife since they flooded land along Bois D' Arc Creek and the Corps made a determination of three to one. North Texas MWD has been estimating the mitigation on the Lower Reservoir at 30,000 acres. If the Corps of Engineers makes NTMWD mitigate the Lower Reservoir at 3:1, there will have to be 49,578 acres mitigated. NTMWD will have to find and purchase the mitigation land within the Bois D' Arc creek drainage basin according to the Tulsa District of the Army Corps of Engineers.

The amount and location of the mitigation land will probably cause the closing and consolidation of several schools in the county. Bonham ISD will loose some tax base to mitigation and a small portion to the Lower Reservoir but if the reservoirs cause one or more schools to consolidate with Bonham, they will pick up what ever tax base the consolidating school still had plus the students and the state money that is funded on a per student basis. Bonham ISD is the most likely school to benefit from consolidation since the location of reservoirs will

separate the other districts. If Fannindel ISD should be forced to close, the students would probably be distributed between Honey Grove, Wolfe City, Cooper and Commerce schools depending on where they lived. Bonham schools are in a win-win situation while all other schools in the county are in a definite loss mode.

The public schools collectively are probably the largest employer in the county and usually the largest employer in the town. Most school jobs pay above minimum wage and if these jobs are lost, the families who used to work them will no longer spend most of that money in the county. Our children will be bussed longer distances to larger schools. Competition for academic and athletic scholarships will intensify and fewer students will be exposed for possible scholarships because there are only so many starters for each athletic team and only one valedictorian and salutatorian from each school.

North Texas Municipal Water District has already contracted with the city of Bonham to supply them with water at 5 cents per thousand gallons above the price that they charge any of their other member cities. That should tell you how much they appreciate being in Fannin County and should indicate to you how they intend to treat us.

Since most of the city and municipal water supplies are tied together by pipes and inter-local agreements, we'll all get a taste of North Texas Municipal Water District's hospitality and probably some of their re-use water. State law requires that municipal sewage effluent be treated to potable water standards before being released into a creek or river. Lower Bois D'Arc will receive the effluent from Bonhan's sewage treatment plant as well as the sewage effluent from Dodd City, Windom and Honey Grove because they all drain to Bois D' Arc creek. Bonham's sewage treatment plant is at 540 ft elevation. The flood elevation of the lower reservoir is 541 ft meaning that every time the reservoir fills to flood stage, the treatment plant will be flooded and possibly release raw sewage into the rerservoir.

The water level in municipal water supply reservoirs fluctuates greatly. NTMWD estimates that it will take three years of average rainfall to fill the lower reservoir. The reservoir is reported to hold 367,000 acre-feet of water. The average annual flow in Bois D' Arc Creek is about 120,000 acre-feet. NTMWD applied for a permit with TCEQ to remove 175,000 acre-feet of water per year. Do the math and you will see that the lower reservoir will only be half full or less most of the time under average conditions and may be dry under less than average conditions. When conditions are above average, Bonham will suffer worse flooding than it ever has before along Powder Creek and Pig Branch.

Most long time residents have seen water over Hwy. 56 up to where Pitcock Wrecker is located without a dam on Bois D' Arc. The flooding of Bonham will probably be used as the impetus to get the upper reservoir built. Building

another reservoir will not make it rain more and the flow down Bois D' Arc will remain the same. The upper reservoir will be drained to the lower reservoir and will only contain water during times of above average rainfall so it will also be a mud hole most of the time. Along with the permit to build the upper reservoir, NTMWD will likely request additional water rights which will lower the water level of the lower reservoir further during times of average or below average rainfall.

If the proposed Lower Bois D' Arc gets three to four feet low, the water will recede1 mile and you won't even be able to see water from Bonham. The average depth of the lower reservoir is 22 feet. If the lower reservoir is full, it will take 23 days to pump it down 1 foot but it will only take 61 days (an additional 38 days) to pump the reservoir to half full by pumping the entire175,000 acre-feet of water to Lake Lavon. Just imagine the sea of mud, cattails, snapping turtles, mosquitoes and water moccasins and the disease threat that will be imposed on the residents of Fannin County.

Don't expect any good fishing either. When the pump comes on and moves 1 acre-foot of water every 2 minutes, the fish and everything else around will be pumped through the 3 ft. diameter pipe to Lavon. The removal of such a large percentage of the water (about 50%) causes large areas of the shallow part of the reservoir to dry up. This area of the reservoir is the nursery for small food fish. When the nursery dries up, the food chain is broken at the start and every thing larger suffers. Just ask about the quality of fishing at any other heavily pumped water supply reservoir such as Cooper.

The reservoirs planned for Fannin County will be owned by a municipal water district and there are differences in Corps built lakes and municipal water district reservoirs. The Corps of Engineers have a set of criteria that require their projects to provide multiple benefits such as water supply, recreation, flood control, wildlife enhancement, etc. The Corps of Engineers have twice rejected building the lower reservoir on Bois D' Arc Creek, once in 1968 and again in 2000, because it would aggravate the flooding of Bonham and due to the shallow nature of the reservoir there was concern over the quality of the water. Water supply district reservoirs do not have to provide any thing except water, but all new reservoirs must be mitigated for wildlife by the Corps of Engineers.

The location of the mitigation land is largely up to the reservoir owner so long as the amount and type of land specified by the Corps is met. The regulations requiring mitigation suggest a band around the reservoir be mitigated to form a wildlife travel lane and form a buffer strip. The buffer strip keeps homes, farms and ranches away from the water and thus keeps septic system effluent, fertilizer and pesticide runoff away from the water. It also kills any development around a reservoir that they know will have a widely fluctuating water level. This keeps irate homeowners from complaining to county commissioners, judges and state legislators about their substantial investment being devalued by being on a mud hole.

There will also be an economic impact on Fannin County. Fannin County is largely agricultural (70% of the land is used for agricultural production) and the agriculture industry produced $ 67,483,000 worth of production income in 2005. It is this sector of the economy that has and is currently providing the main backbone for growth and expansion in the county. Nearly half of the agricultural income in the county is derived from the sale of livestock, primarily beef cattle. Important cash crops include wheat, grain sorghum, soybeans and corn. Soil is the most important natural resource in the county. Forage for livestock and food, fiber and timber are produced on the soils in the county. The best, deepest and most fertile and productive soils are always found in the creek and river bottom lands, and these are the lands that are flooded when reservoirs are built.

The construction of one to three water supply reservoirs will remove from ten to twenty percent of the most productive prime farmland in the county from agricultural production. This will reduce the county's agricultural production by as much as 40% or about 27 million dollars annually. The loss of this income will be felt by all of the retailers in the county and especially by the agri-supply and market businesses. The one livestock market business and several grain elevators and fertilizer and pesticide retailers will probably close. Grain production will be cut about twenty to thirty percent as well as hay and cattle production.

We have been told that Fannin County is growing and that we need more water. The only water selling entity in Fannin County to restrict water usage in the last two very droughty years has been the city of Bonham. They were never short of water but they just didn't have large enough pipes to keep the pressure up. The city of Bonham still has four water wells that supplied the city before Lake Bonham was built that could be used to help supply future water needs. Bonham has neglected their wells for 35 years and doesn't even keep them in good repair for emergency use so they evidently don't need additional water. The rest of the county relies on ground water and to date, none have ever run out of water.

The need for additional water exists outside of Fannin County and even there the need is in question. The Dallas metro area has the highest per capita water use of any area in the United States. They could use a lot more conservation and a lot less water but the people supplying the water derive job security, influence, power and mostly profit by developing water supplies and selling water. Water has become the excuse while the quest for money is the reason for reservoir development in the counties around the Dallas metro area. If NTMWD was really concerned about conservation, they would raise their water rates to encourage conservation. Instead, they offer water to cities cheaper than most cities can produce their own, by using the power of eminent domain to obtain land and resources at forced rates and the economy of scale to feed their own growth.

Since the Texas Supreme Court ruling in the Hubenak case, entities using eminent domain have been able to legally steal rural property for a fraction of its true value and without regard to the hardship it places on the people whose property is being condemned. The money to build these reservoirs is coming from the Dallas metro area, the water is going to the Dallas metro area and we have been promised economic growth if we allow them to use our resources to feed their water hogs. The promise has not held up in any of the other rural areas where water supply reservoirs have been built and we have no guarantee that it will here. There is no clear advantage for Fannin County to have any of the proposed reservoirs built. All of the advantages are for the Dallas metro area.

Would you please tell me why I should be willing to give up my work place, my job, my retirement plan, my home, my way of life and all that I have worked for so that the people in the Dallas metro area can water their St. Augustine grass, fill their swimming pools and wash their cars weekly and especially when I am forced to do so at an economic loss? Even if you pay me market value for my property, who will pay my moving expense? Where will I find the same amount of the same kind of land for the same price? Who will make up my lost wages while I am moving to a different place, assuming that I can find the same amount of the same kind of property at the same price? If I can't find the same amount or the same kind of property for the amount I receive, who will make up my loss?

This whole project is not really about water, it is about money and greed. Water has become the excuse but money is the reason. North Texas admitted that they could go to the coast and desalinate sea water for about $ 5.70 per thousand gallons of treated water but Lower Bois D' Arc could supply raw water for less than $1.00 per thousand. I am paying $5.00 per thousand now for treated water and eventually, Lower Bois D' Arc won't be enough for the greedy water hogs. They are already planning Marvin Nichols Reservoir. The ocean is the only reservoir that they could never pump dry. Reservoirs are only temporary solutions but again, it's not about solutions, people or even water. It's all about greed for money.

WR 56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2007 SEP 10 AM 11:2

CHIEF CLERKS OFFICE

Contested Case Hearing Request

Name: Charles Michael Yarbrough Group Name: Citizens to Save Bois D'Arc Creek

Mailing Address: 2325 CR 2765

Phone: 903 328 7291 Fax

Email:

OPA

H SEP 10 2007

BY

Applicant & Permit Number: NTMWD permit number 12151

I, C. Michael Yarbrough, wish to request a contested case hearing on the project to build a dam on Lower Bois d' Arc Creek because:

according to Texas law, I own everything from the center of the earth out to the edge of the atmosphere for every square inch of land that I hold title to. This includes the minerals below, water below and the rainfall that falls on it. I have the right to capture. When the lake developers force me to divest myself of the surface, they also take the right of capture from me, essentially transfering my water, sunshine and surface rights to them. I have been using my water to grow forage and cattle to harvest the forage and been marketing cattle. I will lease my water rights to them (NTMWD) but I do not wish to sell or transfer my rights or property.

Also, the Army Corps of Engineers has determined in 2000 that "due to the shallow nature of the lake would potentially cause water quality problems. I can foresee, with the extensive water removal (approx ½ the capacity of the reservoir) public health concerns from mosquitoes breeding in the mud flats and spreading West Nile virus.

Charles Michael Yarbrough date 6 Sept 2007

Signature

Marisa Weber

From:	PUBCOMMENT-OCC
Sent:	Thursday, October 17, 2013 12:53 PM
To:	PUBCOMMENT-OCC2
Subject:	FW: Public comment on Permit Number WRPERM 12151
Attachments:	A Petition to.docx

WR 56919

From: cyarbrough@wildblue.net [mailto:cyarbrough@wildblue.net]
Sent: Thursday, October 17, 2013 11:29 AM
To: donotReply@tceq.state.tx.us
Subject: Public comment on Permit Number WRPERM 12151

REGULATED ENTY NAME 10212151001 DP1 WRPERM 12151

RN NUMBER: RN105156137

PERMIT NUMBER: WRPERM 12151

DOCKET NUMBER:

COUNTY: COLLIN, DALLAS, DENTON, FANNIN, HOPKINS, HUNT, KAUFMAN, RAINS, ROCKWALL

PRINCIPAL NAME: NORTH TEXAS MWD

CN NUMBER: CN601365448

FROM

NAME: Charles Michael Yarbrough

E-MAIL: cyarbrough@wildblue.net

COMPANY:

ADDRESS: 2325 COUNTY ROAD 2765
HONEY GROVE TX 75446-5210

PHONE: 9033787291

FAX:

COMMENTS: I am sending you a paper copy of the attached letter concerning water rights permit # 12151. Thank you in advance.

MW

A Petition to

Texas Commission on Environmental Quality

And

U.S. Army Corps of Engineers

For the Denial of

TCEQ Permit # 12151 and USACE CWA Section 404 Permits

We, the undersigned, respectfully request that you deny TCEQ permit #12151 and the USACE CWA Section 404 permit to North Texas Municipal Water District for the construction of the Lower Bois d' Arc Reservoir based on the following facts.

North Texas Municipal Water District had plans to bring in fresh water from other sources (Oklahoma) and water from Lake Texoma, which is salty, and blend them in Lower Bois d' Arc Reservoir to meet water quality standards. This action would keep the reservoir levels up and create a nice, nearly constant level reservoir and could bring economic development to Fannin County according to NTMWD.

The U.S. Supreme Court unanimously ruled in June of 2013 to uphold two lower court's rulings which upheld Oklahoma's state law barring the sale of water across state lines. This action stopped the importation of fresh water to Lower Bois d' Arc since there is no other unused source of fresh water available nearby.

Since the finding of zebra mussels in Lake Texoma in 2009, water transfers from Lake Texoma have been prohibited to other reservoirs by the Lacey Act and other state regulatory rules.

These actions together make the operation of the proposed Lower Bois d' Arc Creek Reservoir, at river mile 24.8, essentially the same as they were proposed for the reservoir at the river mile 23.5 site studied in 'Bois D' Arc Creek Basin Section 905(b) (WRDA 86) Analysis', published by the US ACE in 2000. In this report, "reservoir sites in the lower portion of the basin (at river miles 23.5, 24.8 and 28.6) were eliminated primarily because of the lack of effective flood control and potential technical and environmental problems associated with locating reservoirs in wetland areas in the lower Bois d' Arc Creek Basin. The best location for a reservoir in the lower portion of the basin at river mile 23.5 would inundate an existing Forest Service lake and significant wetland areas. In addition, the shallow nature of the reservoir would potentially pose water quality problems." The main difference in the two locations (the site at 23.5 and the current proposed site at 24.8) is that the current proposed reservoir is south of the Caddo National Grasslands and would have less deep water and the

current permit request is for overdraft operation, further exacerbating the shallow nature and potential water quality problems.

TCEQ must certify state water quality standards will be met for any U.S. ACE CWA Section 404 permits and without the option of adding water to the reservoir and an overdraft permit requested, the previous findings of the Corps can only be greatly exacerbated. We, therefore request that these permits be denied.

Signature Printed Name Mailing Address

WR
5ec919

OPA

DEC 22 2008

BY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2008 DEC 22 AM 10:37

CHIEF CLERKS OFFICE

2325 CR 2765
Honey Grove, TX 75446
18 Dec. 2008

Chief Clerk's Office, MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Permit application # 12151

Dear Sirs:

I received the enclosed letter from my county commissioner in mid November. The letter is addressed to you, TCEQ, and signed by him. The letter expresses his change in position about the proposed Lower Bois D' Arc Creek Reservoir being sought by North Texas Municipal Water District. Since this letter is addressed to you and signed by him, I am forwarding the original letter sent to me to you for inclusion in the public record. You may have already received the letter from Commissioner Strickland and it may already be in the public record.

Sincerely,

Charles Michael Yarbrough

Charles Michael Yarbrough

enclosures

mw

Pct 3
18101 E FM 1396
Honey Grove, TX 75446

Mike Yarbrough
2325 CR 2765
Honey Grove, TX 75446

FANNIN COUNTY COMMISSIONER PCT. #3
DEWAYNE STRICKLAND
18101 E. FM 1396
HONEY GROVE, TEXAS 75446
903-378-2941

Texas Commission on Environmental Quality
ATTN: 401 Co-ordinator
MSC-150
P.O. Box 13087
Austin, Texas, 78711-3087

Reference: Public Notice NO. SWT-0-14659

I am writing this letter in reference to the Lower Bois d'Arc Lake, which is proposed for northern Fannin County, Texas. This lake is to be built by North Texas Water Authority, and will be located in my precinct.

I believe an environmental study and a site visit study should be made before proceeding with this lake.

The property owners around this proposed lake are against the project. I ask that you respect their wishes and stop proceedings for this lake. I also am not in favor of this lake, as I firmly believe the lake will not benefit this county. Nor will it develop interest in this area and will not increase property values, but decrease them. Your assistance in this matter will be greatly appreciated.

Yours truly,

Dewayne Strickland

Dewayne Strickland
Commissioner
Fannin County Precinct 3

C. M. Yarbrough
2325 CR 2765
Honey Grove, TX 75446

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2008 DEC 22 AM 10:26

CHIEF CLERKS OFFICE

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Chief Clerk's Office, MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

78711-3087

RECEIVED
DEC 22 2008
TCEQ MAIL CENTER
RB

(2)

TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Michael Yarbrough

Address: 2325 CR 2765

City/State: Honey Grove TX **Zip:** 75446

Phone: (903) 378 7291

☐ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☑ **I wish to provide formal written comments at tonight's public meeting.**
(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

Formal oral comment (1)

TCEQ Public Meeting Form

Monday, September 10, 2007

North Texas Municipal Water District
Proposed Water Use Permit
No. 12151

PLEASE PRINT:

Name: Michael Yarbrough

Address: 2325 CR 2765

City/State: Honey Grove TX **Zip:** 75446

Phone: (903) 378 7291

☐ **Please add me to the mailing list.**

Are you here today representing a municipality, legislator, agency, or group? ☐ **Yes** ☐ **No**

If yes, which one? _____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

☑ **I wish to provide formal oral comments.**

☐ **I wish to provide formal written comments at tonight's public meeting.**

(Written comments may be submitted at any time during the meeting)

Please give this to the person at the information table. Thank you.

MW

OPA

JUL 11 2007

BY

Michael Yarbrough
2325 CR 2765
Honey Grove, TX 75446
12 Feb. 2007 mailed Feb 21, 2007

Texas Commission on Environmental Quality
Kellye Rila
MC 160
P. O. Box 13087
Austin, TX 78711-3087

WR Perm 12151

Dear Ms. Rila

A news article by former Texas Agriculture Commissioner Susan Combs titled 'A victory for the little guys' appeared in the Aug. 15 edition of the Fannin County Special. This article states that the Texas Private Property Preservation Act requires that "if cities should outright condemn property to obtain surface water rights, they must assure that they have implemented the highest levels of water conservation before going to our rural areas in search of water and private land for reservoirs. Legislation passed during the 78th regular legislative session makes that a law. In addition, the legislation requires cities to prepare a drought contingency plan; make a good faith effort to obtain practicable alternative water supplies; and show that the city needs the water rights to provide for domestic needs within the next 10 years."

WR 5619

North Texas Municipal Water District has plans to build the Lower Bois D'Arc Creek Reservoir in Fannin County in the near future. NTMWD held a meeting to learn more about the reservoir on Jan. 30, 2007. One of the papers they handed out describes their conservation plan, which consists of 10 suggestions to save water including cutting back yard watering to only one inch per seven days!!! How is this even considered conservation at all? That would be 52 inches of water in addition to all the rainfall!!! Our area only receives around 40 inches of rainfall per year on an average year! Their suggestions are just that. suggestions only! There is no penalty for wasting water and no enforcement of any restrictions on the use of water. How can this possibly be using the highest levels of water conservation? Why should my neighbors and I be forced to give up our property, our jobs, our retirement plans and our plans to pass our property on to our sons and daughters when the greedy water hogs won't even obey the law?

I was told that you were the person who was in charge of making sure that the water districts obeyed the law. If you are not the person to whom this should have been sent, please pass it on to the right person(s). I hope to hear from you concerning this matter

MW

NTMWD has millions of our tax dollars, a staff of lawyers, the experience of legally stealing by eminent domain, coercion or outright lying, all the property from farmers and ranchers for their other 25 reservoirs, and they've made enough campaign contributions to own several hundred politicians. We are just farmers and ranchers trying to make an honest living and that's a full time job. We are counting on you and the law to help even the field.

We demand that you deny North Texas Municipal Water District the permit to build this reservoir until they obey the law to the letter!

I have enclosed copies of Susan Combs article and NTMWD's conservation suggestions.

Sincerely,

Michael Yarbrough

Michael Yarbrough

We, the undersigned, also agree with the contents of this letter.

Joe Reed with Reed Ranch
Larry D. Broach - 1205 CR 2901
3 Ranch

Joe Carpenter Carpenter Ranch
903-623-2461

Bob Ledwell
Ron Mankart
Carl Ryser
Betty Ryser
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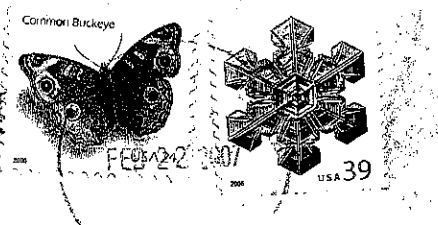

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