

TCEQ Public Meeting Form
Tuesday, September 11, 2007

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

12

TEXAS
COMMISSION ON
ENVIRONMENTAL
QUALITY
SEP 12 PM 4:34
CHIEF CLERK'S OFFICE

PLEASE PRINT:

Name: Corby Alexander

Address: 301 E Fifth

City/State: Bonham, TX Zip: 75667

Phone: (903) 583-7555

Please add me to the mailing list.

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

If yes, which one? City of Bonham

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
5691a

MESQUITE

T E X A S
Real. Texas. Flavor.

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2007 SEP 19 AM 11:08

CHIEF CLERKS OFFICE

OPA

SEP 19 2007

BY 

- Mike Anderson**
Mayor
- David L. Paschall**
Mayor Pro Tem
- John Monaco**
Deputy Mayor Pro Tem
- John L. Helman, Jr.**
Councilmember
- Stan H. Pickett**
Councilmember
- Shirley Roberts**
Councilmember
- Dennis Tarpley**
Councilmember

- Ted Barron**
City Manager

September 14, 2007

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

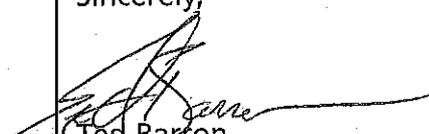
Reference: Water Use Permit
Lower Bois d'Arc Creek Reservoir
TCEQ Application No. 12151

Dear Sir/Madam:

Please accept this letter supporting the approval of the Water Use Permit (TCEQ Application No. 12151) for the Lower Bois d'Arc Creek Reservoir as submitted by the North Texas Municipal Water District (NTMWD). The City of Mesquite is one of the thirteen member cities currently being served by NTMWD. The proposed Lower Bois d'Arc Creek Reservoir will help meet future demands in our city and the other NTMWD customers in the North Texas area. The projected growth in this area will require additional water supplies even with current conservation activities occurring. Without this additional supply source, economic growth within the area could be limited and/or eliminated.

The City of Mesquite supports approval of this important project to sustain growth in our area as well as meeting future demands. If you have any questions or comments, please contact me at 972.216.6404.

Sincerely,


Ted Barron
City Manager

TMT: cp

cc: Carol Zolnerowich, Deputy City Manager
Mark Hindman, Assistant City Manager
Timothy M. Tumulty, Director of Public Works
File: TCEQ (Water Permit No. 12151) 09-14-07



WR
56919

OPA

SEP 17 2007

BY Jug

Dear Sirs: WR 12/51

I OWN A BUS. in The Com.
Lannins, And would like To see
The Proposed Lower Bois'd Arc Lake
Quilt.. And I Also FEEL This
would be A Very good Thing
for A County That HAS little or
Nothing

Domire Brewer

Co/owner

American Tool & Die

3280 F.M. 897

Dodd City TX.

75435

Phone 903-623-4481

FAX

4420
MW

TXS
COMMISSION
ON ENVIRONMENTAL
QUALITY

SEP 17 11:12:55

CHIEF CLERK'S OFFICE

Received:

Sep 17 2007 12:56pm

SEP-17-2007 12:53 From: AMERICAN T & DIE 9036234420

To: 5 239 3311

P.1/2

American Tool & Die
3280 FM 897
Dodd City, TX 75438
Phone 903-623-4488
Fax 903-623-4420

FROM: Dennis Brewer

TO: Texas Commission on Env. Quality

COMPANY: _____

FAX #: 512-239-3311

CHIEF CLERKS OFFICE

17 SEP 17 PM 12:55

TEXAS
COMMISSION ON ENVIRONMENTAL
QUALITY

WR
3691a

OPA

SEP 17 2007

9.17.2007

BY g

CHIEF CLERK'S OFFICE
7 SEP 17 PM 1:01
TAMU TEXAS A&M
COLLEGE OF FORESTRY
CENTRAL

To Whom it may Concern:

I own A 250 Acre farm

That will half under water on

CR 2945 1/2 mile South of Bois d'

Arce creek. I Believe That The

Lake would be A Big Plus for

Fannin Co. We need This

badly, As there is not much

income around here. We have

No good lake either. Go for it!

Thomas R. Brewer

903-582-8788

126 CARPENTER HOOP

BONHAM, TX, 75418

MW

10

TCEQ Public Meeting Form

Tuesday, September 11, 2007

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

TEXAS
COMMISSION ON
ENVIRONMENTAL
QUALITY
SEP 12 PM 4:34
CHIEF CLERK'S OFFICE

PLEASE PRINT:

Name: JOHN BURNETT
Address: 402 MOCKINGBIRD
City/State: Bonham TX Zip: 75418
Phone: (903) 583 8656

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)

→
OVER

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

MW

09/10/07

I support the lake and believe
it is vital to Fannin Co. to
assure ~~of~~ us of a future water
supply.

John W. Burnett

OPA RECEIVED 

SEP 11 2007

AT PUBLIC MEETING

mw

Wm 56919

OPA
SEP 21 2007
BY [Signature]

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

APPLICATION 12151 PROPOSED WATER USE PERMIT

2007 SEP 20 PM 2:41

Please include these comments in the formal comment record for the proposed Lower Bois d'Arc Creek Reservoir.

My name is Patti Curry Chun. I live in Fannin County at 6232 South FM 1743, Windom, Texas. My phone number is 903-623-4104. I am opposed to the issuance of the application for the Lower Bois d'Arc Creek Reservoir.

CHIEF CLERKS OFFICE

I attended the meetings held in Bonham on 9/11/07 and McKinney on 9/13/07. Here are the questions that I asked on 9/13/07.

To NTMWD I would like a list of your Member Cities and your Customer Cities.

My land is not in the lake footprint but I am concerned about the mitigation land that will be required if the proposed lake is approved.

The people that will be affected by the mitigated land should have the same chance to contest the lake as the people that will be in the footprint of the lake and own land in the Bois d'Arc Creek drainage above and below the dam.

It is my opinion that many of the people that will be affected have no idea that their land may be needed for the mitigation requirement. The Fannin County public should be better informed by sending out notices in the US Mail and published informative articles in the local newspapers. The deadline for formal comment and the contested case hearing requests should also be extended.

It is my understanding that the proposed lake footprint will cover 16,526 acres and a probable 1.5 to 1.8 times mitigated acres will also be required. If you do the calculations, that comes to a round off total of 46,000 acres that will be required for the lake footprint and the mitigation acres if the lake is approved. That is a huge amount of land to be taken out of production.

I am concerned about the economic impact of the lake on Fannin County.

To NTMWD You say that you will guarantee the Fannin County Tax Base and cover the amount of revenue lost when the lake footprint land and the mitigation land are purchased. How will you determine when the tax revenue levels off? How will you determine the value of the Tax Base? When will your guarantee go into effect? Will you only pay piece by piece? How will you calculate it? Will it be calculated on a prorated basis? What if there is no great development of expensive homes around the lake because of its shallow nature and the mud flats that will be present for at least three months out of each year? What if it takes twenty or more years for the Tax Base to level off? Will you still pay?

To NTMWD Will the new water treatment plant be able to remove Barium, Chromium, Magnesium, Arsenic, Lead, and Vanadium? I know that you say that the new water treatment plant you are building in Fannin County is state of the art, but can it clean all of the toxic chemicals out of the water that are draining into the Bois d'Arc Creek from VPG, the old dump ground and old buried cars?

If there is a shortage of water after the lake is built, will you give preferential treatment to Bonham and Fannin County over your other customers? You said no.

Does everyone pay the same price? You said there are Member Cities and Customer Cities and the Customer City price is five cents higher and Bonham is a Customer City. I wonder why the Bonham politicians did not negotiate the Member City price? How will you determine who gets the water? You said that all customers would get the same treatment? How will that work? Will the water be allotted on a per capita basis?

To TCEQ How do you determine if the application data is true and correct? Who double checks the applicants numbers?

It is my opinion that the only economic benefit of the proposed Lower Bois d'Arc Creek Reservoir will be for the people that build the feral hog traps and hunt and sell them.

Respectfully,

Patti Curry Chun

Patti Curry Chun 9-17-07

MW



Patti Curry Chun '76
6232 South FM 1743
Windom, TX 75492

CERTIFIED MAIL™



7007 0220 0004 6088 5043

TC E
Office of the Chief Clerk MC 105
12100 Park 35 Circle Bld. F
Austin, TX 78711



RECEIVED

SEP 20 2007

TCEQ MAIL CENTER
JR

hard copy of fax

CHIEF CLERK'S OFFICE
SEP 20 PM 5:01

Sep 17 07 12:09p

Received:

Sep 17 2007 12:02pm

*WR
5/6/9/19*

p.2

OPA

TEXAS
COMMISSION ON ENVIRONMENTAL

SEP 17 2007

APPLICATION 12151 PROPOSED WATER USE PERMIT

SEP 17 2007 BY *[Signature]*

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Respectfully,

Patti Curry Chun

Patti Curry Chun

9-17-07

MW

TEXAS
COMMISSION ON
GOVERNMENTAL

SEP 17 11:57

CHIEF CLERKS OFFICE

Fax

903-623-4104

To: TCEQ	From: Patti Chun
Fax: 512-239-3311	Pages: 1 page to follow
Phone: 512-239-3300	Date: 9-17-07
Re: Proposed Water Permit 12151	

Urgent For Review Please Comment Please Reply Please Recycle

for the formal comment record
 of application 12151
 proposed Lower Bois d'Arc Creek Reservoir
 located in Fannin County Texas

Respectfully
 Patti Curry Chun

A hard copy is being US mailed

TCEQ Public Meeting Form
Thursday, September 13, 2007

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

CHIEF CLERKS OFFICE

2007 SEP 14 AM 11:33

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

PLEASE PRINT:

Name: Patti Chan

Address: 6232 South FM 1743

City/State: Windom, TX Zip: 75492

Phone: (903) 623-4104

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.

mu

TCEQ Public Meeting Form

Tuesday, September 11, 2007

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

TEXAS
COMMISSION ON ENVIRONMENTAL
QUALITY
11 SEP 12 PM 11:34
CHIEF CLERK'S OFFICE

PLEASE PRINT:

Name: Ray Floyd
Address: 408 Ramsey
City/State: Bonham TX Zip: 75418
Phone: (903) 583 0130

Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group?

Yes No

If yes, which one?

Mayor Bonham

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)

We ARE committed to see the
Lake completed in Fannin County!
Please give this to the person at the information table. Thank you.

OPA RECEIVED
SEP 11 2007
AT PUBLIC MEETING

MW

TCEQ Public Meeting Form
Tuesday, September 11, 2007

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

8

TEXAS
COMMISSION ON ENVIRONMENTAL
QUALITY
SEP 12 PM 11:34
CHIEF CLERK'S OFFICE

PLEASE PRINT:

Name: Gregory Hall
Address: 328 CR 1035
City/State: Ravenna, TX Zip: 75476
Phone: 903-583-4044

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.

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MW

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TCEQ Public Meeting Form

Thursday, September 13, 2007

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

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
2007 SEP 14 AM 11:33
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: Gary Hartwell
Address: 8560 Shakespeare Ln
City/State: Frisco TX Zip: 75034
Phone: (972) 731-8151

Please add me to the mailing list.

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

If yes, which one? City of Frisco

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

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MW

TCEQ Public Meeting Form
Tuesday, September 11, 2007

1

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

CHIEF CLERKS OFFICE

SEP 12 PM 4:32

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

PLEASE PRINT: *The Honorable*

Name: Butch HENDERSON

Address: P.O. Box 710

City/State: LEONARD TX Zip: 75452

Phone: (903) 583 7455

Please add me to the mailing list.

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

If yes, which one? FANNIN County Commissioners Court
→ County Judge

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

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MW

Submitted by
Judge Butch Henderson

OPA RECEIVED

SEP 11 2007

AT PUBLIC MEETING

OFFICE OF ENVIRONMENTAL

SEP 11 PM 4:33

TEXAS
COMMISSION ON ENVIRONMENTAL

RESOLUTION
Fannin County Commissioners Court
March 28, 2005

A RESOLUTION OF THE FANNIN COUNTY COMMISSIONERS COURT ENDORSING AND ENCOURAGING THE STATE AND FEDERAL PERMITTING ACTIONS REQUIRED FOR THE PROPOSED LOWER BOIS D'ARC CREEK RESERVOIR TO BE LOCATED IN FANNIN COUNTY, TEXAS, REQUESTING THE NORTH TEXAS MUNICIPAL WATER DISTRICT (NTMWD) TO UNDERTAKE THE PERMITTING AND FUTURE CONSTRUCTION OF THE PROPOSED LOWER BOIS D'ARC CREEK RESERVOIR, AND ENCOURAGING THE FORMATION OF A LOCAL ENTITY TO REPRESENT THE INTERESTS OF FANNIN COUNTY COMMUNITIES, CITIES, TOWNS AND WATER PROVIDERS IN THE PLANNING, PERMITTING, AND CONSTRUCTION OF THE PROPOSED LOWER BOIS D'ARC CREEK RESERVOIR.

WHEREAS, the Fannin County Commissioners Court acknowledges there will be a need for water provider entities in Fannin County to secure an adequate and dependable drinking water supply in the future, and

WHEREAS, the Fannin County Commissioners Court believes that the proposed Lower Bois d'Arc Creek Reservoir represents the best location and most cost effective potential surface water supply reservoir to meet future water needs in Fannin County and other areas of NTMWD's service area needing water, and

WHEREAS, the NTMWD has a long history of providing dependable wholesale treated water service, and

WHEREAS, the NTMWD already has a presence in Fannin County through the execution of a contract with the City of Bonham to construct, own, and operate a water treatment plant for the City of Bonham, and

WHEREAS, the NTMWD already has expressed an interest in pursuing the proposed Lower Bois d'Arc Creek Reservoir project, and

WHEREAS, it is strongly believed that water supply entities in Fannin County should enter into a partnership with the NTMWD to make the proposed Lower Bois d'Arc Creek Reservoir project a reality.

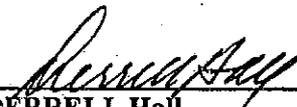
MW

CHIEF CLERK'S OFFICE
SEP 12 11 33 AM '05
COMMUNICATIONS
FANNIN COUNTY

Section 1. The Fannin County Commissioners Court is committed to support the permitting and construction of the proposed Lower Bois d'Arc Creek Reservoir project by the NTMWD and encourages NTMWD to initiate the feasibility study and permitting actions at the earliest possible date.

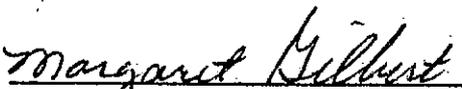
Section 2. The Fannin County Commissioners Court requests that the County Judge initiate actions with all interested political entities and water providers in Fannin County to encourage the formation of an entity to represent the interests of Fannin County communities, cities, towns and water providers during the planning, permitting, and construction of the proposed Lower Bois d'Arc Creek Reservoir and to coordinate and facilitate communications and future contractual relationships with NTMWD.

ADOPTED this 28th day of March, 2005, by the Fannin County Commissioners Court.



DERRELL Hall
Fannin County Judge

ATTEST:



Margaret Gilbert
Fannin County Clerk
by Cheryl Braden, Deputy

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TCEQ Public Meeting Form

Tuesday, September 11, 2007

North Texas Municipal Water District

Proposed Water Use Permit

No. 12151

CHIEF CLERKS OFFICE

SEP 12 PM 11:33

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLEASE PRINT:

Name: Bill Jones

Address: 327 MAIN

City/State: BOWLAK TX Zip: 75418

Phone: (903) 583-4811

Please add me to the mailing list.

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

If yes, which one? Bowlak Area Chamber of Commerce

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

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3

TCEQ Public Meeting Form

Thursday, September 13, 2007

North Texas Municipal Water District

Proposed Water Use Permit

No. 12151

CHIEF CLERKS OFFICE

2007 SEP 14 AM 11:33

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

PLEASE PRINT:

Name: STEPHEN B. MASSEY

Address: 607 Cmanche Drive

City/State: Allen TX Zip: 75013

Phone: (972) 390-1814

Please add me to the mailing list.

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

If yes, which one? City of Allen
Allen

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

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MW



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SEP 13 2007

AT PUBLIC MEETING

**Testimony of Stephen B. Massey, P.E. for TCEQ Permit Review of the
Lower Bois d'Arc Creek Reservoir
Fannin County
September 13, 2007**

Good evening, my name is Steve Massey, I live at 607 Comanche Drive, in Allen, Texas 75013. I have served as the Community Services Director for the City of Allen for seven years now. Among my duties are operation and maintenance of the City's water distribution system. Allen has a current population of approximately 77,000 and is one of the 13 member cities in the North Texas Municipal Water District.

I recently read some interesting facts in the Water Environment Federation's Summer 2007 Update. This journal indicates that within 25 years we will have 9 billion people living on the planet earth. It is now predicted that one-third of these people will by then be suffering a severe water shortage. Several United Nations reports endorse this dark scenario and also predict that two-thirds of the earth's population in 25 years will live in water stressed conditions. The State legislature's past efforts to mandate regional water planning led to a comprehensive state water plan. The regional water plan for Region C describes the water conservation, water reuse, and water resource development steps that are necessary to keep our Region from becoming part of the world's population that is negatively impacted by water shortages. I'll also comment that the recent legislation to designate specific new water resource development efforts such as this new Reservoir; are completely "on track."

This region's recent experience with drought management has proven that improved water conservation education and enactment of local regulations on land development can have a positive impact that reduces water consumption. The NTMWD water system member cities are now collectively working towards improved water conservation planning. Everyone is improving their educational staffing to dedicate towards water conservation education, creating and enhancing rebate programs to foster water conservation, improving our water leak detection programs, creating or modifying our water rate structures to assure that high water users face stiffer charges as their water use soars. Just last month the Allen City council added two new water rate tiers. We now have a total of five tiers, with the top tier charging among the highest rate in the state per 1,000 gallons to help curb high water usage. That rate is \$8.31 per thousand gallons.

However, I believe that despite these continuing regional efforts to establish the best management practices of water conservation; we would be remiss to not face up to the fact that our staggering regional growth mandates "action now" to plan, permit, design, and build our future water resources. New water supply reservoirs take decades of

MW

investment before they yield usable supplies. This proposed reservoir is no exception. We should not hesitate in making these important investments in the future of our State.

One last consideration, our past planning to cope with regional water demands must now also factor in the impacts of global warming. The September 2007 publication of the American Waterworks Association Journal discussed the recently published document "Climate Change 2007." This document is published by the Intergovernmental Panel on Climate Change and presents mounting evidence that climate change can only serve to accelerate our future water supply issues. The climate change report concludes that:

- (1) Drought affected areas will likely increase in extent. Droughts are expected to be more extensive, accompanied by increases in evaporation and greater irrigation demands.
- (2) Cities that currently experience heat waves are expected to be further challenged by an increasing number, intensity, and duration of heat waves.
- (3) More electric power will be required to move water to places of water need. Unfortunately, increased electric usage further contributes to global warming from our power plants. Therefore, we must think strategically in our efforts to make investments in capabilities to both store and move water. The "energy intensity" of moving water across long distances and terrain probably makes long distance water supply projects much less desirable from an environmental perspective and this must also be considered in planning of water resource development.

In conclusion, on behalf of the City of Allen and its residents, I can say that the Lower Bois d'Arc Creek Reservoir is a key component of our Regional C water supply plan. It offers a nearby site compared to several distant alternatives and we urge the Texas Commission on Environmental Quality to approve the permit that is currently under review to facilitate the construction of this water resource for the betterment of the millions of residents and businesses that will benefit long term from the investment.

Thank you for your time and attention.

Submitted by Steve Massey



American Water Works Association

OPA RECEIVED

SEP 13 2007

AT PUBLIC MEETING

September 2007 Volume 99 Number 9

Journal

SEPTEMBER 2007

JOURNAL AMERICAN WATER WORKS ASSOCIATION

SOURCE WATER

VOLUME 99 NUMBER 9



Krasner Receives 2007 A.P. Black Research Award



#BXNGWBJ *****CAR-RT LOT**C-003
#00060384 # JRNL SEP 07 1
MR. STEVE MASSEY, P.E.
ALLEN WATER DEPT.
305 CENTURY PKWY
ALLEN TX 75013-8042
P42
10/2

Source Water

Latest IPCC report on climate change

Perchlorate and nitrate in California water supplies

Cocystins in US water supplies



BY JOHN E. CROMWELL III, JOEL B. SMITH,
AND ROBERT S. RAUCHER

No Doubt About Climate Change and Its Implications for Water Suppliers

WATER SUPPLIES WILL BE
AFFECTED BY GLOBAL WARMING
IN NUMEROUS WAYS. UTILITIES
MUST ADAPT SUPPLY STRATEGIES
TO MITIGATE THE EFFECTS
OF ENVIRONMENTAL CHANGES.

With the release of its Fourth Assessment Report: "Climate Change 2007," the Intergovernmental Panel on Climate Change (IPCC) has removed many doubts that previously shrouded both scientific and policy discussions of climate change. Mounting evidence about climate change and its effects made the situation much clearer to the scientists and government policy analysts from around the world who participated in a six-year process and arrived at the consensus presented in the report.

The World Meteorological Organization and the United Nations Environment Program (UNEP) established the IPCC in 1988. IPCC's role is to assess on a comprehensive, objective, open, and transparent basis the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for the risk of human-induced climate change, its potential effects, and the options for adaptation and mitigation. The IPCC does not carry out research nor does it monitor climate-related data or other relevant parameters. Its assessment is based primarily on peer-reviewed and published scientific/technical literature.

A main activity of the IPCC is to provide at regular intervals an assessment of the state of knowledge on climate change. The First Assessment Report was completed in 1990, the second in 1995, and the third in 2001. Background reports are written by hundreds of scientists from around the world and are subject to extensive peer review. The "Summary for Policy Makers," typically a 20-page summary of the entire report that usually receives extensive attention in the press, is drafted by scientists but subject to approval by govern-

ments. In approving, adopting, and accepting reports, the IPCC makes every effort to reach consensus. If consensus cannot be reached, differing views are explained, and scientific and policy differences are distinguished. The IPCC's conclusions are not official until they have been accepted in a plenary meeting by the governments. Thus governments cannot ignore the conclusions of the IPCC because they have endorsed them.

The IPCC's adherence to scientific rigor and openness, coupled with the objective of articulating the best possible consensus views, might result in a slower and more cautious process of deliberation than some would prefer, but it also gives tremendous weight to IPCC findings when they are finally put forward as consensus statements.

During the six years since the release of the Third Assessment Report, the scientific evidence regarding climate change has become much more compelling. Accordingly, the Fourth Assessment Report (IPCC, 2007a-c), released in 2007, contains consensus statements that are much more profound than those in previous reports. This article provides a brief review of some of the statements that pertain to water resources. These statements serve as a foundation from which to examine the implications of climate change for water suppliers.

IPCC REPORT REMOVES DOUBTS ABOUT CLIMATE CHANGE

The Fourth Assessment Report made headlines because the IPCC made very strong statements that left no room for doubt that global warming is producing long-term effects on natural systems and that anthropogenic sources are a likely cause. The summary statements that captured attention were:

- Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

- Most of the observed increase in global average temperatures since the mid-twentieth century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.

- Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases.

Operating flexibility needs to be an even more important design consideration for future system improvements.

- A global assessment of data since 1970 has shown it is likely that anthropogenic warming has had a discernable influence on many physical and biological systems.

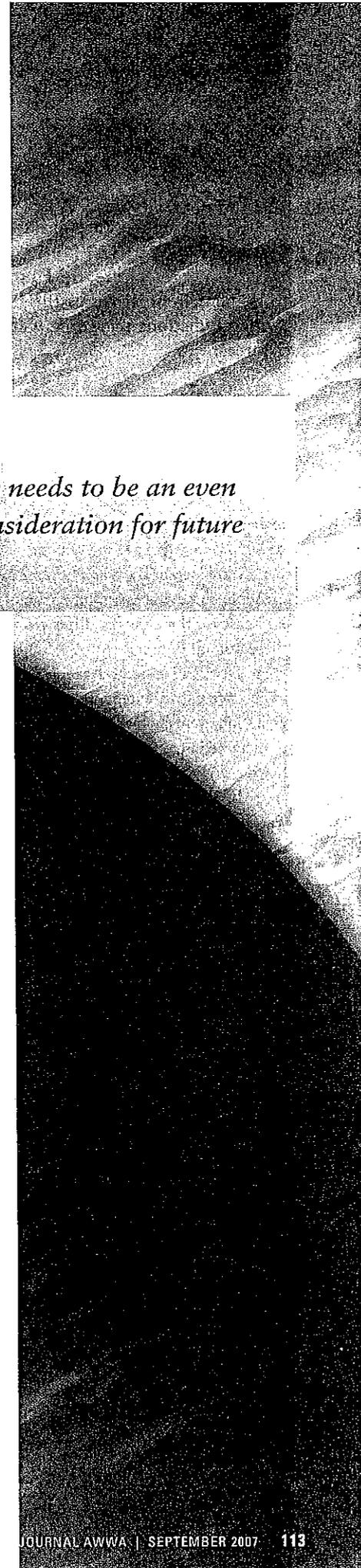
- Anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks, even if greenhouse gas concentrations were stabilized.

The first three of the preceding conclusions had been made in previous IPCC assessments, although with less confidence. This time the authors felt there was much stronger evidence. In addition, the conclusions tying human emissions to these impacts are new.

This IPCC assessment made it clear that continued warming is inevitable. Six scenarios of greenhouse gas emissions were considered. All would result in an acceleration of the rate at which global temperatures and sea levels are rising.

CONSEQUENCES FOR WATER RESOURCES

The Fourth Assessment Report states with "high confidence" that among the effects of global warming on hydrologic systems the following are presently occurring:



- Increased run-off and earlier spring peak discharge in many glacier- and snow-fed rivers.
- Warming of lakes and rivers in many regions, with affects (sic) on thermal structure and water quality.

Turning to the future, the Fourth Assessment Report makes the following predictions regarding water resources:

- By mid-century, annual average river runoff and water availability are projected to increase by 10–40% at high latitudes and in some wet tropical areas, and to decrease by 10–30% over some dry regions at mid-latitudes and in the dry tropics, some of which are presently water stressed areas. In some places and in particular seasons, the changes differ from these annual figures.
- Drought-affected areas will likely increase in extent. Heavy precipitation events, which are very likely to increase in frequency, will augment flood risk.
- In the course of the century water supplies stored in glaciers and snow cover are projected to decline, reducing water availability in regions supplied by meltwater from major mountain ranges, where more than one-sixth of the world population currently lives.
- Coasts are projected to be exposed to increasing risks, including coastal erosion, due to climate change and sea level rise (0.2–0.6 m by 2100, and probably more).

The IPCC's more specific projections regarding future effects of global warming in North America include the following statements:

- Warming in western mountains is projected to cause decreased snowpack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources.
- Disturbances from pests, diseases, and fire are projected to have increasing impacts on forests, with an

extended period of high fire risk and large increases in area burned.

- Moderate climate change in the early decades of the century is projected to increase aggregate yields of rain-fed agriculture by 5–20% (in mid- and high latitudes), but with important variability among regions. Major challenges are projected for crops that are near the warm end of their suitable range or depend on highly utilized water resources.
- Cities that currently experience heat waves are expected to be further challenged by an increased number, intensity, and duration of heat waves during the course of the century, with potential for adverse health effects.
- Coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution. Population growth and the rising value of infrastructure in coastal areas increase vulnerability to climate variability and future climate change, with losses projected to increase if the intensity of tropical storms increases.

BOTTOM LINE IMPLICATIONS FOR WATER SUPPLIERS: ADAPTATION

The IPCC concludes adaptation will be necessary to address the effects of warming that are already unavoidable because of past emissions. A further 0.6°C (1°F) increase in global mean temperature—relative to temperatures during the period from 1980 to 1999—is projected to occur by the end of the twenty-first century even if greenhouse gas concentrations remained at 2000 levels. The IPCC projects that the average rise in global temperatures could range from 1.1 to 6.4°C (about 2 to 12°F) by 2100 when examining a range of greenhouse gas emissions scenarios. Temperatures in the lower 48 states are expected to rise about a third more than the global average (Wigley, 1999).

One of the simplest ways to envision many of the implications of global warming for water resources is to follow the logic of what happens when water is heated; global

warming will basically accelerate the pace of the hydrologic cycle. Consistent with this, forecasters predict effects for water resources in the arid western regions of North America that are different from those in the humid eastern regions. Recent trends indicate that many of these effects are already happening.

In the West, warming effects may be seen most prominently in reduced water supply capacity. Snowpack will be smaller and melt earlier, altering the recharge of surface water and groundwater sources. In addition to less rainfall in this region, droughts are expected to be more extensive, with more heat waves and dry days, accompanied by increases in evaporation and greater irrigation demands. When precipitation does come, it is likely to be more intense. The combination of earlier snowmelt and more intense precipitation will likely increase turbidity, sedimentation, and the risk of flooding in many areas.

In the East, evidence of warming will primarily come in the form of increased rainfall frequency and intensity. The increased rainfall intensity will likely produce increased runoff and erosion with resulting increases in turbidity and sedimentation. Related effects include direct flood damage to water and wastewater facilities, loss of reservoir storage capacity for flood control and water supply, and increased sewage overflows during wet weather events.

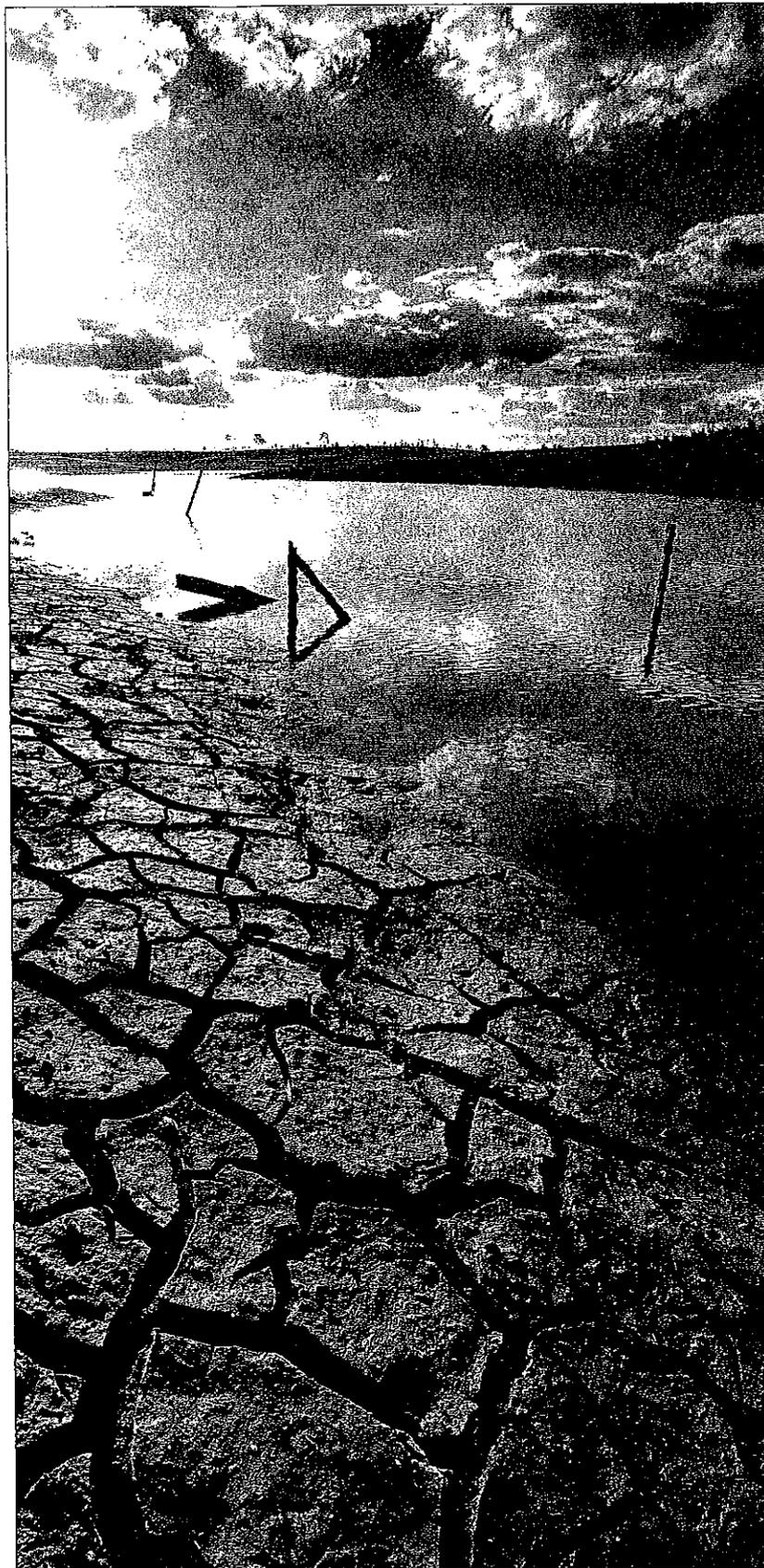
In both the East and the West, the changes in temperature and hydrology will produce changes in watershed vegetation and aquatic ecosystems, which in turn will have implications for water suppliers. One result will be changes in watershed conditions because of wildfires and pest infestations, both of which are likely to increase. With increased water temperatures and shallower reservoirs (because of lower base flows and sedimentation), eutrophic conditions will be more prevalent. Rising sea levels will pose the risk of flood damage to coastal water and wastewater facilities in both the East

and the West, especially as a result of more intense coastal storms. Rising sea level, coupled with lower base flows in freshwater sources because of altered recharge, will also increase the salinity of both coastal aquifers and brackish surface water sources.

The individual effects of climate change are staggering enough, but they will also have compound effects on water resources because of the interactions of natural and human systems. The bottom line in water supply planning has always been a matter of coping with variability. With the coming changes in climate, there will be a heightened need to respond to increased variability. Global warming will change the variability of many key parameters affecting the quantity and quality of water that would normally be available at specific times and places. In addition, the capability to store water in various forms and the demand for water will be changed.

Portfolio approach to planning encouraged. Given the difficulty of predicting the magnitude of individual effects, let alone compound effects, IPCC and others have recommended that adaptation planning should employ a portfolio approach. This approach would maintain a maximum degree of flexibility within the portfolio by devising coping strategies to address an array of possible climate change scenarios that may affect the quantity and quality of supply sources, and the demands placed on them. Reevaluating the entire portfolio from source to tap with respect to adaptation strategies may seem like a daunting task; however, there are several guiding philosophies that can offer a pragmatic way to start.

A first practical step in evaluating the adaptation strategies is to conduct a "bottom-up" vulnerability assessment. Rather than starting with complex climate modeling, it is more tractable to begin with what a utility already knows about its own systems and water sources to determine the points at which water quality or water quantity changes would pre-



Climate change processes will change the quantity and quality of water that is available at any given time and place. Water management plans based solely on historical records are likely to be vulnerable to these changes.

sent a major challenge. This type of “threshold analysis”—based on a utility’s current models and knowledge—can identify key climate-related tipping points (e.g., what reduction of instream flows would be most problematic given current supply strategies). Where possible, these thresholds could be verified through simulation modeling of altered operating regimes or through actual system tests. Once these thresholds are identified, climate expertise can be brought to bear in a focused manner to examine the potential process changes that could lead to these key tipping points being exceeded.

Once a water utility is equipped with a sense of its vulnerabilities, the IPCC and others recommend development of adaptation strategies by focusing first on ways to improve system flexibility and resiliency across the entire portfolio. In concert with this emphasis on flexibility, it may be prudent to adopt a step-wise approach that recognizes that irreversible choices or capital commitments might be easier to optimize within a portfolio as information improves over time.

TRIPLE BOTTOM LINE IMPLICATIONS: MITIGATION

In addressing water supply planning in the context of portfolio optimization, it is necessary to consider all of what should go into a sustainable solution. As has already happened in many water-short areas in both the East and West, it is possible to conceive of many ways to enhance the reliability of water resource management outcomes by essentially investing more energy to produce more water. But in evaluating these options, it must also be acknowledged that water utilities account for a significant share of total electric consumption and that power plant emissions account for a significant share of greenhouse gases. There is no doubt, therefore, that water utilities need to apply a broader “triple bottom line” discipline to the design of adaptation strategies in order to balance the cost and reliability

of water supply against social and environmental consequences. The key to implementing this approach in practice will be to apply it to overall portfolio outcomes and not just to the individual project elements. There are several areas in which the need for this broader thinking arises most visibly.

As urban and suburban areas continue to grow, water resource managers have already devised elaborate portfolio strategies to tap into multiple sources of supply and to make strategic investments in capabilities to move and store water. To wring every last drop from available supplies, flexibility in transmission and storage operations has been taken to great extremes in some water-short areas in order to stay within complex constraints imposed by environmental withdrawal limits and seasonal and annual swings in water availability. Although flexibility in transmission and storage will be valuable in re-optimizing current schemes to meet future challenges, some system features designed for the current understanding of climatic variability may not be reversible or easily adaptable under altered operating regimes that were never envisioned. Operating flexibility needs to be an even more important design consideration for future system improvements.

Balancing fiscal and environmental responsibility. The rising cost of electric power has caused many water utilities to reexamine their transmission and distribution operating strategies in search of ways to curtail electricity use during peak periods and conserve electric power. Some cost-saving strategies—such as using backup generators to serve peak-period loads (where not prohibited by air quality regulations)—may save money, but they do not reduce greenhouse gas emissions. On the other hand, renewable energy supply strategies such as solar- or wind-powered pumping, or in-line hydropower generation, may be more expensive initially but provide fuel-cost savings and avoid greenhouse gas emissions.

The challenge is to integrate such strategies at the level of the overall portfolio to produce the best systemwide operating outcomes in terms of cost, reliability, and social/environmental consequences. For example, the reliability profile of a solar- or wind-powered option may be that it is only viable if a backup generator is available to fill critical gaps. Although this would produce some greenhouse gas emissions, overall it would be less than a conventional power supply strategy.

As many water suppliers are already aware, the cost and energy investment required to reliably meet water supply needs can rise exponentially when hard, unmovable constraints arise in one part of the portfolio and cause everything else in the strategy to be shifted to more extreme levels. Global warming has the potential to cause simultaneous adverse changes in both the quantity and quality of available water. These compounded effects could greatly weaken the foundation of some existing integrated supply strategies. It is hard to compensate for such things as a smaller snow pack, an earlier spring runoff, or increased salinity.

Many water suppliers in overconstrained settings have already begun to turn to energy-intensive membrane treatment processes to enable desalination of saline water sources and reuse of highly treated wastewater effluent. These processes make it possible to overcome a deterioration in the reliability of normal supplies by meeting part of the demand from sources that will be abundant under most climate change scenarios (i.e., yields from water reuse and desalination supplies are drought-resistant). Although the costs—especially the energy cost—of these technologies are significant, the triple bottom line must be evaluated in the context of the overall portfolio. If these technologies can plug a gap or shore up a vulnerability produced by climate change processes in a way that enables a broader scope for optimization across the entire portfolio, then

they could play a critical role in making the broader strategy more sustainable. The economies of scale involved in such facilities also offer opportunities to address greenhouse gas emissions during the design phase of related power generation facilities and incorporate renewable energy sources into the strategy. Perhaps tomorrow's water can be decoupled from yesterday's energy, making the water sector a leader in the transition to carbon-neutral energy sources.

Demand management plays numerous roles. No portfolio of adaptation strategies to meet global warming challenges would be complete without including a comprehensive review of the water demand side of the equation. Warming processes will lead to altered demand patterns as a result of seasonal shifts in precipitation, more evaporation, more frequent heat waves, and more extensive droughts. From a triple bottom line perspective, conservation programs offer a bonus in reducing both water supply needs and energy use. Bolstering conservation incentives (and disincentives to outdoor water use) may become more essential as warming processes increase water demands, especially during peak demand periods when both water supply and electric power capacities are stretched to their limits. Any margin of relief from the more extreme water and energy supply strategies required to meet peak demands can significantly improve the triple bottom line of the overall supply strategy.

In many regions demand management is also related to population growth. Regional strategies for optimizing water supplies often meet with opposition in an indirect effort to control population growth. When broader regional portfolio optimization is blocked in this way, it can force individual jurisdictions to adopt more narrow and therefore less sustainable options because warming processes make it continually harder to meet demands with a limited range of adaptation options. At the other end of the spectrum, the energy intensity of moving water across distances and

terrain probably limits the potential of broader regional approaches in terms of the triple bottom line criterion.

IPCC REPORT ALSO AFFIRMS HOPE

Despite the IPCC's sobering confirmations that global warming processes are well under way and will produce effects that are unavoidable over the next several decades, the Fourth Assessment Report also holds out hope in showing that actions taken to reduce greenhouse gas emissions over the same time period are well within our technical and economic capacity and should be capable of stabilizing the situation.

- Studies indicate that there is substantial economic potential for the mitigation of global greenhouse gas emissions over the coming decades that could offset the projected growth of global emissions or reduce emissions below current levels.
- In order to stabilize the concentration of greenhouse gases in the atmosphere, emissions would need to peak and decline thereafter. The lower the stabilization level, the more quickly this peak and decline would need to occur. Mitigation efforts over the next two to three decades will have a large impact on opportunities to achieve lower stabilization levels.

Adaptation by water utilities could ameliorate many adverse effects,

although there will be costs to adaptations, and maintaining reliability may be more challenging. Many water utilities are already engaged in considering adaptation strategies and mitigation of greenhouse gas emissions. The state of California and municipalities from New York, N.Y., to Miami, Fla., to Los Angeles, Calif., to Seattle, Wash., are assessing their risks and developing strategies to lessen the effects of climate change. There is no doubt that it is time for all to rise to this call.

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If you have a comment about this article, please contact us at journal@awwa.org.

REFERENCES:

- IPCC (Intergovernmental Panel on Climate Change), 2007a (S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller, editors). Summary for Policy Makers. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York. http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Pub_SPM-v2.pdf.
- IPCC, 2007b (M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson, editors). Summary for Policy Makers. Climate Change 2007: Impacts,

Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York. <http://www.ipcc-wg2.org>.

IPCC, 2007c (B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, and L.A. Meyer, editors). Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York. <http://www.ipcc.ch/SPM040507.pdf>.

Wigley, T.M.L., 1999. The Science of Climate Change: Global and U.S. Perspectives. Arlington, Virginia: The Pew Center on Global Climate Change.

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SUMMER 07

Sleuthing Collection Systems

Larger-scale Artificial Networks Could Aid Stormwater Managers

Once rainfall hits streets, parking lots, and other impervious surfaces, the resulting runoff makes its way through a system of myriad pipes, channels, storage and treatment devices, pumps, and regulators. In fact, urban underground collection systems often are so complex that simulating the flow path of stormwater runoff can be tedious, if not impossible, in many large or older cities, according to engineering experts. Now, a novel approach being pursued by researchers at Northeastern University (Boston) soon could give stormwater managers an edge in designing and reconfiguring collection systems for meeting new conditions.

"In a perfect world, with unlimited manpower, time, and money, each city would map out every inch of its sewer network," said Ferdi Hellweger, assistant professor of civil and environmental engineering and associate director of Northeastern's Center for Urban Environmental Studies. "[But] when time and money are factors, artificial networks can be quite useful. We believe that the amazing technology that makes video games fun to play can make urban hydrologic models more realistic and powerful, and thus can help engineers and scientists better understand urban hydrology and manage our urban environment."

The researchers' goal is to develop a statistically equivalent way of generating artificial collection systems that cover large areas by trying to understand in test cases what is occurring in small areas.

"This kind of approach could enable us to explore the hydrologic response of a very large watershed to one of these urban stormwater systems in ways we couldn't otherwise," pointed out Richard Vogel, a professor of civil and environmental engineering at Tufts University (Medford, Mass.).

Virtual Systems

Currently, hydrologic analyses that model water flow through a city require a detailed description of the collection system, according to Hellweger. The problem is that in many situations, data on pipe location or size, for example, are unavailable or inaccurate, especially in older cities. "Even if you had detailed information on where every single pipe is in a city, you can't drill down into the ground and inspect the state of every pipe," Hellweger explained. Similarly, when city planners are trying to analyze different land-use scenarios, such as separating collection systems or developing a new area, such data do not yet exist, forcing engineers to make their best estimates.

Generating an equivalent system mathematically, on the other hand, could enable the development of efficient, large-scale analyses even in the absence of detailed information, Hellweger maintained. He and his colleagues are developing algorithms for simulating the effects of artificial collection system networks that are comparable to actual ones based on certain attributes, such as an area's pipe density and average flow length to outlets. They recently



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Navigating the Rising Currents of U.S. Water Reuse

It has been more than 5 years since the U.S. Environmental Protection Agency (EPA) completed the research for its 2004 Water Reuse Guidelines — the third version of this soup-to-nuts resource. The document is designed to put the latest information in the hands of those interested in establishing water reuse programs or standards, and for seasoned practitioners to review the latest reuse practices, technologies, challenges, and installations.

The 2004 edition of *Water Reuse Guidelines* delivers. It is "a tremendous source of information for people trying to get into the business of water reuse," said David York, water reuse coordinator for Florida's Department of Environmental Protection. It contains more than 50 in-depth case studies, lessons learned, information on funding options, a matrix of state water reuse regulations and practices, and details on international water reuse methods. It also presents advanced treatment technologies, such as desalination and membrane filtration; discusses emerging pollutants of concern (EPOCs), including pharmaceuticals, and pathogens in reclaimed water; and explains various uses for reclaimed water, including indirect potable reuse. Some of the largest indirect potable reuse projects, including California's Orange County Groundwater Replenishment System and those planned for San Antonio and Dallas, are well under way.

However, since the research for the guidelines was completed in 2002, there has been controversy in the water reuse field. The challenge is primarily twofold. On one hand, EPOCs are proving thorny to wastewater managers, regulators, engineers, and scientists. They are difficult to detect and challenging to remove, and it is not well understood what effects, if any, they have on human biology. On the other hand, scintillating reports and prophecies about water shortages, water grabs, and future water wars have water

professionals hashing out what water management and supply will be like in the future.

The Last River To Tap

According to the U.S. Geological Survey's most recent report on the *Estimated Use of Water in the United States*, the United States used about 1.5 billion m³/d (408 billion gal/d) of potable water in 2000, with California, Florida, and Texas

because populations are increasing and supplies are not." When preparing presentations for regulators around the country, he noted that he is fond of quoting U.S. Bureau of Reclamation Commissioner John Keys, who noted, "Wastewater is the last river to tap."

2025: Life on Planet Water

Don't blink. In 25 to 30 years, there could be 9 billion people on Earth — and one-third of them are projected to be "suffering a severe water shortage," York said. Several United Nations reports discuss this dark scenario, including The U.N. Environmental Program, which claims on its Freshwater Web site (freshwater.unep.net) that two-thirds of Earth's population by 2025 will live in "water stressed conditions."

Florida, no stranger to periods of drought (or to pharmaceuticals), formally started its water reuse program in the 1980s as a way to conserve and replenish water resources, with many early projects designed to resolve environmental degradation to surface waters caused by wastewater effluent disposal. While effectively managing wastewater is still a serious motivation for the program, York said, "there's nothing like a good drought to get you thinking about water conservation." Florida's program is now focused on how to supply water to a growing population during the next 20 to 30 years, he said. Though the Sunshine State receives more than 1395 mm (55 in.) of rainfall annually, "it is not always available at the right place and right time to meet our needs," he said. "Water is finite, but demand increases," he concluded.

The Cup Test

Several news items in recent years have reported that receiving waters, which in some cases supply drinking water downstream, contain levels of prescription drugs that can alter the sex of fish. At best, this fact causes concern

In 25 to 30 years, there could be 9 billion people on Earth — and one-third of them are projected to be "suffering a severe water shortage."

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accounting for one-fourth of all water withdrawals. According to Wade Miller, executive director of the WaterReuse Association (Alexandria, Va.), the United States currently recycles approximately 13.6 million m³/d (3.6 billion gal/d) of water. (The association is funding the first *National Database of Water Reuse Facilities*.)

According to Miller, U.S. water reuse in the next 25 to 30 years "is just going to increase,

for use of reclaimed water, especially for indirect potable reuse. EPOCs, including pharmaceuticals, according to EPA's guidelines document, are detectable in reclaimed water at parts per trillion levels. It also notes that the potential of reclaimed water to cause endocrine disruption in humans is unknown, and while gas chromatography, mass spectrometry, and bioassays are being used "routinely" to quantify pollutants in reclaimed water, ongoing research and additional monitoring of all EPOCs must continue.

Surface water contaminants have always been a concern to systems that draw from these sources. According to a 2003 World Health Organization report, *Health Risks in Aquifer Recharge Using Reclaimed Water*, in all areas of the world, "unplanned indirect reuse for potable water supplies is increasing, due to municipal water intakes located downstream from wastewater discharges or increasingly polluted rivers and reservoirs."

However, "emerging contaminants are an issue for the entire water industry," Miller stated. This is because groundwater is affected by surface runoff, septic systems, and other sources of intrusion.

"People have this view of groundwater as being pure and untouched by human hands," York said. "It's really not reality." More data are needed to develop risk-assessment tools for EPOCs and other contaminants, he said.

Meeting Today's Demands

"With today's modern technologies, we are able to make reused water as high quality as possible," York contended. According to Miller, the WaterReuse Association supports three avenues to meeting water demands in the 21st century: implementing alternative supplies (reclamation and desalination); improving storage, such as aquifer storage and recovery; and increasing water conservation practices.

Nationwide, states — including naturally water-rich Massachusetts — are considering alternative sources. Aquaria Water LLC (Brockton, Mass.) recently broke ground on a desalination plant that will provide Brockton, a large urban center in southeastern Massachusetts, between 7200 and 15,500 m³/d (1.9 and 4.1 mgd) of water for 20 years. Since EPA's guidelines document was issued in late 2004, "more states are expanding their regulations to cover more areas of reuse opportunity," such as the addition of aquifer storage and recovery to Florida's body of water reuse regulations, said Bob Matthews, technical services manager of water services at CDM (Cambridge, Mass.). Matthews was CDM project director for the guidelines document, which was produced jointly with EPA.

Putting EPA's Guidelines To Work

Since the 1992 version of EPA's Water Reuse Guidelines was issued, 13 states have updated

their water reuse guidelines or regulations, five states have implemented regulations or guidelines, seven states with guidelines have formalized water reuse regulations, New Jersey has deregulated water reuse and established guidelines, and 24 states have made no formal changes. Table 4-1 of the 2004 guidelines document is the most current summary of state activity, according to EPA. However, York, Matthews, and Miller said that regulators in Virginia, Pennsylvania, Colorado, New Jersey, and elsewhere are actively investigating the latest water reuse practices.

York stays connected to water managers and regulators nationwide through his work with the WaterReuse Symposium, an annual conference devoted to water reuse sponsored by the WaterReuse Association, American Water Works Association (Denver), and Water Environment Federation (Alexandria, Va.). Various factors get states involved with water reuse, he said, and "the *Guidelines* are an important component of that."

According to Matthews, most of the information states need to get started is contained in the guidelines document. "The way they should approach it is to take it in steps, then build a comprehensive program," he said. He recommends reviewing the institutional section (Chapter 5) first to become familiar with the legal, environmental, and political issues that face water reuse program development.

The Future

Each passing decade brings to light new discoveries, technologies, and challenges, and judging by the past three decades, an updated set of water reuse guidelines is needed to help beginner states get started and to update seasoned practitioners. With each new version of EPA's guidelines, the body of knowledge expands, the list of contributors gets longer, and the number of case studies increases — characteristics of an emerging field whose importance continues to emerge. Negative newspaper headlines and expanding populations developing in water-challenged areas also support a continued need for a thorough and up-to-date resource document on water reuse practices.

So, when the latest research investigations into EPOCs and advanced treatment technologies are completed, EPA's next water reuse guidelines document surely will highlight the latest discoveries, detection methods, technologies, installations, and of course — the latest emerging challenges that stoke the currents of water reuse in the United States.

Andrea S. Bistany, WE&T

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Attend the ABESP/WEF Scientist's Luncheon on October 15th featuring guest speaker Dr. Jörg E. Drewes, Associate Professor of Environmental Science and Engineering at the Colorado School of Mines. He will be presenting "Drinking Water Augmentation with Impaired Water Sources — Technologies and Water Quality Issues."

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

If yes, which one? CITY OF GARLAND

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

TCEQ Public Meeting Form
Tuesday, September 11, 2007

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

11/15/07
COMMISSIONAL
ON INFORMATION
09 SEP 12 PM 11:34
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: Larry N. Patterson
Address: P.O. Box 305
City/State: Lewisville, Tx Zip: 75067
Phone: (972) 219-1228

Please add me to the mailing list.

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

If yes, which one? Upper Trinity Regional Water District

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓ BELOW

D OPA RECEIVED

SEP 11 2007

AT PUBLIC MEETING

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)

I support this project!

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

mw

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2007 AUG 23 AM 10:11

CHIEF CLERKS OFFICE

WR
56919

OPA

AUG 21 2007

BY *WR*

Kevin Riley
Jodie Riley
500 N US HWY 385
Springlake TX 79082

August 21, 2007

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

Re: Permit Application No. 12151 North Texas Municipal Water District

We, the undersigned, Kevin Riley and Jodie Riley, are the owners and operators of the Riley Ranch located along and on either side of Bois d'Arc Creek in Fannin County, Texas, approximately 4 to 5 miles West of the proposed dam site. We strongly oppose the permitting of Application No. 12151, Lower Bois d'Arc Creek Reservoir, Red River Basin, Fannin County, Texas, for the following reasons.

- I. Environmental Reasons
 - A. The proposed dam and reservoir would destroy wildlife habitat for species such as Whitetail deer, turkey, and small fur bearers such as raccoons.
 - B. The proposed dam and reservoir would destroy the native ecosystem of the protected Nutmeg Hickory, the Burying Beetle, and Horned Toad Lizard.
 - C. The proposed reservoir would inundate a Caddo Indian burial ground located on our property.
 - D. The proposed dam and resulting reservoir would greatly diminish fresh water running into the Red River needed for salt water dilution of the Red River flow by shutting down normal water flows from smaller creeks.

- II. Public Health Reasons
 - A. The proposed dam and reservoir would affect public health by contaminating domestic shallow water wells for drinking water.

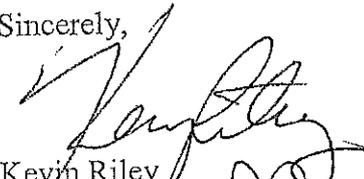
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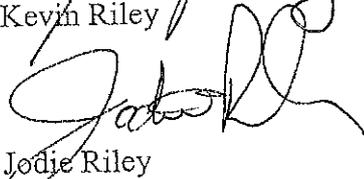
CHIEF CLERK'S OFFICE

- B. And greatly damaging the local water supply cooperative, the Bois 'd Arc Municipal Utilities District.
 - C. Cause increase in mosquito and other insect and disease vectors in area due to habitat loss of mosquito eating species.
 - D. Receive pollution from land fill on water shed banks approximately 2 ½ to 3 miles East of Bonham, Texas, on the north side of Texas Highway 54 at about 550' elevation.
 - E. Inundate sewage units and treatment facilities in the water shed.
- III. Inter-basin transfers to encourage wasteful use of water on lawns, yards, golf courses, swimming pools, and other non-critical uses and transfer economic benefits from one basin to another.
- IV. Our irrigation permit would be rendered useless for pumping water from Bois d'Arc Creek.
- V. The taking of this property would change the ranch from an economic unit to a non-economic unit.

Sincerely,



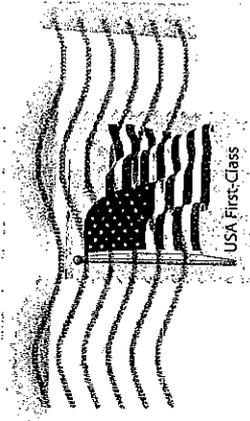
Kevin Riley



Jodie Riley

Kevin Riley
Jodie Riley
500 N US HWY 385
Springlake TX 79082

AMARILLO TX 791
21 AUG 2007 PM 2 T



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

RECEIVED

AUG 23 2007

TCEQ MAIL CENTER
RB



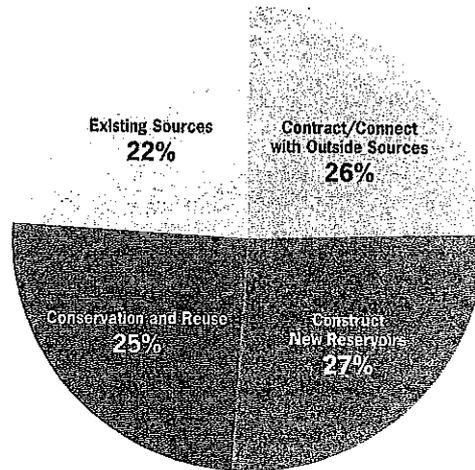
78711-3087

The Lower Bois d'Arc Creek Reservoir and Fannin County Conservation and Reuse



Efficient, Wise Use of Resources
Is Essential

Conservation and reuse are key strategies in the North Texas Municipal Water District's (NTMWD) long-range water supply plan, which includes providing service to Fannin County. In 2060, a quarter of the water demand within the NTMWD's service area will be met by conservation and reuse. Using existing resources efficiently now will extend them further, and NTMWD will need less water from additional sources.



By 2060, 25 percent of our projected water demand will be met by reuse and conservation.

- Raise your lawnmower's blade to 3 inches.
- Fix leaky faucets and toilets.
- Use a broom instead of a hose to clean sidewalks and driveways.



Raise Your Water IQ

Everyone must contribute to make NTMWD's long-range plan work. Every municipality, business and individual can make a difference today by using water more wisely. Simple things can make our water last:

- Water lawns only 1 inch per week.
- Install new landscaping after preparing beds with plenty of mulch.
- Choose Texas-hardy natives that require less water.
- Never water during the heat of the day. Water early in the morning and later in the evening to avoid wasteful evaporation.
- Frequently check sprinkler systems and repair broken sprinkler heads.

But Conservation Is Not Enough
Even with NTMWD's strong conservation and reuse programs, the NTMWD will need more water sources to meet the region's demands, particularly as rural areas give way to expanded suburban development.



Conservation includes practices that improve efficient uses of water or reduce consumption, loss or waste.

Water recycling or water reuse refers to reusing treated wastewater for beneficial purposes either directly or indirectly.

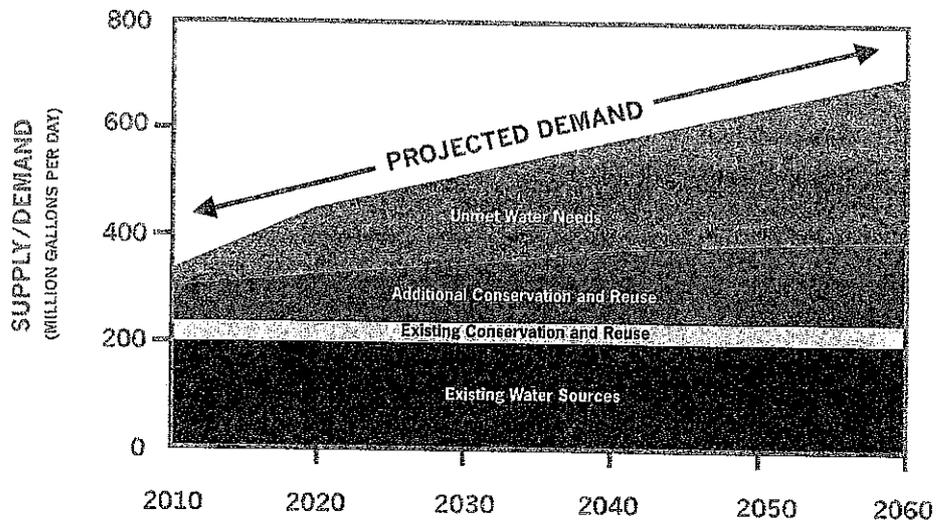
NTMWD Conservation Strategies
 The NTMWD recognizes the need for the efficient use of existing water supplies and the importance to extend the supplies as long as possible. The efficient use will delay the need for new supplies and delay the high cost of additional water supply development.

NTMWD has developed a water conservation and drought contingency plan that includes strategies for reducing the volume of water withdrawn from water supply sources, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. The plan has several key objectives:

- To reduce water consumption from the levels that would prevail without conservation efforts
- To reduce the loss and waste of water
- To improve efficiency in the use of water
- To document the level of recycling and reuse in the water supply
- To extend the life of current water supplies by reducing the rate of growth in demand

NTMWD is the first in Texas to implement the water-awareness campaign, "Water IQ: Know Your Water," which was developed for the Texas Water Development Board. The Water IQ campaign is designed to assist the public within the NTMWD's service area to learn more about their water resources and how easy it is to use water wisely and efficiently. To learn more

CONSERVATION AND REUSE ALONE WILL NOT MEET THE FUTURE WATER DEMANDS IN NORTH TEXAS



about your water source and water-saving tips, visit the Water IQ Web site at www.wateriq.org.

NTMWD Reuse Strategies
 Wastewater reuse is an important component of the NTMWD's current and future water supply plans. The ability to reuse water reduces the reliance on new water sources and increases the efficiency and conservation of existing supplies. Currently, NTMWD has the largest reuse program in Texas. More than 40 million gallons of highly treated effluent from the Wilson Creek Regional Wastewater Treatment Plant are being returned to Lavon Lake each day, providing NTMWD with additional water supply. To expand its ability to reuse water supplies, the NTMWD is constructing the East Fork Raw Water Supply Project for the use of treated effluent from other wastewater plants operated by the NTMWD or its Member Cities. This project will ultimately allow the NTMWD to reuse an additional 90 million gallons per day.

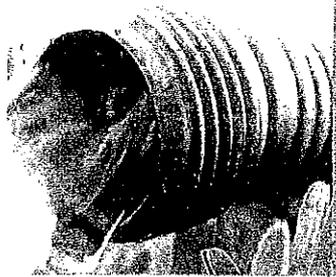
With the completion of the East Fork Raw Water Supply Project and

granting of current permit requests by the Texas Commission on Environmental Quality, the NTMWD will ultimately be able to reuse 140 million gallons of water per day.

What NTMWD Has Asked Our Customers to Do

The NTMWD has also asked Member and Customer Cities to implement policies and measures to curb peak water use during this current drought:

- Prohibit hosing of paved areas, buildings or windows
- Prohibit operation of ornamental fountains that use treated water
- Prohibit washing cars with a hose
- Prohibit wasteful landscape irrigation
- Prohibit outdoor irrigation between 10 a.m. and 6 p.m.
- Limit landscape watering to once weekly
- Prohibit draining and refilling swimming pools except to maintain normal evaporative losses
- Encourage conservation through a tiered rate structure
- Initiate rate surcharges for retail water use over a certain level



POP QUIZ

DO YOU KNOW WHERE YOUR WATER COMES FROM?

MOST PEOPLE IN TEXAS DON'T. IF YOUR COMMUNITY IS SERVED BY THE NORTH TEXAS MUNICIPAL WATER DISTRICT AND YOU THINK YOUR WATER COMES FROM LAKE LAVON, YOU'RE RIGHT. CONGRATULATIONS! YOU'RE WELL ON YOUR WAY TO RAISING YOUR WATER IQ.

With recent drought conditions, Lake Lavon is low and we need to make our water supply last.

If everyone uses just 5 percent less water, we can make our limited supply last longer.

North Texas has a new public education and awareness campaign to help you save water. It's called "Water IQ: Know your water." By raising your Water IQ, you'll use less water and be better prepared for mandatory water restrictions effective June 1.

TEN WAYS to save water around your home

- 1 Use 5 percent less water. Read your latest utility bill and note how many gallons you consumed. Simply multiply the number of gallons by .05—that's your 5 percent goal. For example, 8,000 gallons X .05 = 400 gallons. That's all you need to save for that month. You can easily save that much by fixing a leak or implementing some of these simple tips.
- 2 Slowly cut back watering your lawn to about 1 inch every seven days. Experts advise watering your lawn deeply and infrequently to promote a strong root system. Watering landscapes with sprinklers is limited to once every seven days as of June 1.
- 3 Water your lawn early in the morning or at night. Mid-day watering results in fast evaporation and scorches your lawn and plants. Beginning June 1, watering with sprinklers between 10 a.m. and 6 p.m. is prohibited.
- 4 Operate your in-ground sprinkler system manually—don't use the timer. Check sprinkler systems frequently for directional aim and broken heads to prevent watering driveways, sidewalks and streets.
- 5 If you own a pool, pay close attention to the water level. If it varies drastically from day to day, you probably have a leak and need to have it serviced immediately. Swimming pools may not be drained and refilled this summer except to replace normal water loss.
- 6 Use plenty of mulch in your beds—especially during a drought. Experts recommend 4 to 6 inches to prevent evaporation and keep soil moist.
- 7 Choose "water wise" plants like lantana, salvia and Mexican sage. Ask your local nursery or landscape professional for advice.
- 8 Raise your lawnmower blade and cut grass to a height of 3 inches—this shades the soil, which reduces evaporation, and allows roots to grow deeper.
- 9 Check for leaks in taps, pipes and hoses. It's an easy way to save water. One slow drip can waste 20 gallons of water daily (7,000 gallons per year).
- 10 Use soaker hoses instead of sprinklers to water trees, shrubs and beds more efficiently.



IT MAY NOT SEEM LIKE MUCH, BUT EVERY TIME YOU PRACTICE ONE OF THESE EASY TIPS YOU'RE HELPING LAKE LAVON LAST.



North Texas

The North Texas Municipal Water District is the first in Texas to implement the "Water IQ: Know your water" campaign, which was developed for the Texas Water Development Board. The North Texas Municipal Water District is a wholesale water provider serving 1.5 million people in the North Texas area.

Raise your Water IQ. To learn more about how you can help save water this



ICULTURE

A victory for the little guys

By Agriculture Commissioner Susan Combs

Fair too often, Texas and American farmers and ranchers have felt that courts have ignored their private property rights. When it's been the case of Man vs. Insect, courts have ruled time after time for the insect, leaving farmers, ranchers and other entities with land they couldn't use, develop or sell. In other words, land that was rendered virtually worthless.

The same held true when private property was "taken" for public projects. More than likely, landowners were not fairly compensated and land they did retain was often devalued or worse yet, destroyed.

Well, something commendable happened on the way to the courthouse.

The Texas Supreme Court recently upheld the decision that the Tarrant Regional Water District "took" the property of O.L. Gragg by flooding when the district discharged water from a reservoir after a heavy rain. In addition, the court upheld the lower court's award for damages. This is a ruling that has far-reaching implications to property owners across the state beyond a first glance. It was a crucial decision and one that stands up for private property rights across Texas.

Gragg and his partners sued for inverse condemnation, alleging that the flooding made their land useless for extended amounts of time. By the time the case was tried in 1998, the ranch had experienced a number of extensive floods similar to the one in 1990.

The court ruled that a "taking" had occurred, and damages were calculated based on the value of the property before and after the taking. The court of appeals upheld the verdict, as did the Texas Supreme Court.

For too many years, uncompensated takings have been an expensive burden of private property owners, who have often borne the full burden of the costs for the public good. It's a cruel consequence when landowners lose land to federal, state or local authorities and are not justly compensated for it. It has created an adversarial situation of doubt, distrust and discouragement.

While serving in the Texas Legislature, I was proud to author the Texas Private Property Rights Preservation Act protecting Texas landowners. That's why I applaud the Texas courts and the Texas Supreme Court for their bold actions and just decisions. It was a matter of fairness and responsibility - the water district needed to take responsibility for its actions and the

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.

Ownership of private property has been the foundation of this country. I applaud the Texas Legislature and the Texas Supreme Court for upholding this principle.



Come Share God's Word... Cowboy Style

Every Sunday 10:45 A.M.

Corner of Hwy. 121 and FM 1629 (Edhube Rd.)

Red River Horse Sale
 Hwy. 82 • Savoy • 903-961-5055
 Every Saturday - 1:00 p.m.
 Melvin Pinson, Owner Lic. TX 6816
 Selling: Horses, Tack, Trailers,
 Small Farm Equipment & Misc.
 Buy • Sell • Trade Daily
 "YOU BRING IT WE SELL IT"

The concept of takings comes from the Fifth Amendment of our nation's Constitution, which prohibits the taking of private property by the government for a public use without just compensation.

The Graggs have owned their land since 1949, and the ranch is one of the largest in East Texas located in both Anderson and Freestone counties. The Trinity River borders the land in some places and crosses the ranch's midpoint. Regular floodings of the river made the land extremely fertile, and the land was excellent for raising cattle with its abundant supply of natural forage.

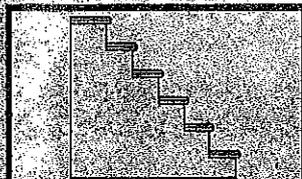
The Tarrant Regional Water District is a water control and improvement district that provides for the storage and conservation of water. In 1987, the district completed the 1.2 million acre-foot Richland-Chambers Reservoir to supply water to Tarrant County and the surrounding areas. The reservoir was built to supply water, not control floods, and the district keeps the reservoir as full as possible. A narrow discharge channel connects the dam to the Trinity River.

In March 1990, heavy rains caused extensive flooding in the Trinity Basin and for the first time, the reservoir released water through the floodgates. Consequently, for the first time, the Gragg Ranch suffered monumental flood damage, destroying levees and washing away crops and large tracts of land. O.L.

Graggs and their partners deserved fair compensation for their devastating loss.

There isn't much doubt that Texas must plan for its future water needs. The state cannot afford to be "water short." But when planning water projects - especially when constructing reservoirs - water districts and local authorities must ensure that landowners are justly compensated when their land is used or impacted for the public good. This is a basic right guaranteed by our Constitution. It should not only apply to land that is lost when the reservoir is built and filled, but also to downstream easements in case water releases cause downstream flooding.

In addition, if cities should outright condemn property to obtain surface water rights, first they must assure that they



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Hayes Equine Veterinary Services

welcomes new associate

Dr. Theresa Chappell, D.V.M.

to the horse practice.

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Denison, TX 75021

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Answered 24 Hours

Bonham Stockyard Report

Reported 08/07/06 Head Sold 1100

STOCKER COWS.....	63.00	82.00
SLAUGHTER COWS.....	32.00	62.00
BULLS.....	45.50	59.00
PAIRS.....	\$450.00 to \$800.00	
STEERS	AVG.	HIGH
200-300	144.74	175.00
300-400	122.50	155.00
400-500	112.97	132.00
500-600	105.47	118.00
600-700	96.57	109.00
700-800	92.03	104.00
800 & Up	75.33	90.00
HEIFERS		
200-300	118.74	141.00
300-400	113.45	134.00
400-500	110.17	130.00
500-600	103.90	116.00
600-700	94.50	106.00
700-800	75.04	85.00

Our business continues to grow due to referrals from our customers. We sincerely thank you for all your trust and support. If we can do anything to help you, let us know. Thank you for your business!

David and Kathy Minyard and Staff

Bonham Stockyards, Inc. David & Kathy Minyard
P.O. Box 338 Bonham, TX 75418
903-583-2700

WR
56919

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
APPLICATION FOR PERMIT TO APPROPRIATE STATE WATER
Texas Water Code §§ 11.121, 11.042, 11.046, 11.085, and 11.085(v)(4)
TAC CHAPTERS 30, 50, 281, 287, 288, 295, 297 AND 299
Water Supply Division, Water Rights Permitting MC-160
P.O. Box 13087

(if including a check, mail directly to P.O. Box 13088, Austin, TX 78711-3088)

Austin, Texas 78711-3087

Telephone (512) 239-4691, FAX (512) 239-4770

Notice: This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol.

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
AUG 2 2 54
CHIEF CLERKS OFFICE

1. **Name:** North Texas Municipal Water District

Mailing Address: 505 E. Brown Street P.O. Box 2408,

Wylie, Texas 75098

Email Address: jparks@ntmwd.com

FAX No.:

972-442-5405

A. **Customer Reference Number (if issued):** CN 601365448

Note: If you do not have a Customer Reference Number, complete Section II of the Core Data Form (TCEQ-10400) and submit it with this application.

B. Applicant owes fees or penalties?

Yes No

If yes, provide the amount and the nature of the fee or penalty as well as any identifying number:

C. **Lienholder Information** (provide this information on the holder of any liens on any land to which the water right would be appurtenant):

Not applicable

2. **Dam (structure), Reservoir and Watercourse Data:**

A. Type of Storage Reservoir (indicate by checking all applicable)

* Applicant shall provide a copy of the notice that was mailed to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir, will be located as well as copies of the certified mailing cards.

** TWC Section 11.143 for uses of water for other than domestic, livestock, or fish and wildlife from an existing, exempt reservoir with a capacity of 200 acre-feet or less. Please complete Paragraph 6 below if proceeding under TWC 11.143.

Date of Construction to be built

B. Location of Structure No. 1.

1) Watercourse: The dam will be located on Bois d'Arc Creek, approximately 2.7 miles downstream of the F.M. 1396 bridge over Bois d'Arc Creek

2) Location from County Seat: 15.2 miles in a northeastern direction from Bonham, Fannin County, Texas.

3) Location from nearby town (if other than County Seat): 9.7 miles in a north-northwestern direction from Honey Grove, a nearby town shown on county highway map.

4) The dam will be located in the King, G.W. Original Survey No. 604, Abstract No. 604, Kerr, K. Original Survey No. 614, Abstract No. 614, and Reynolds, J. Original Survey No. 931, Abstract No. 931, in Fannin County, Texas.

5) Station 42+33 on the centerline of the dam is S 23.2677 E (bearing), 514 feet (distance) from the southeast corner of Wood, O.H.P. Original Survey No. 1177, Abstract No. 1177, in Fannin County, Texas, also being at Latitude 33° 43' 05" N, Longitude 95° 58' 56" W.

C. Reservoir:

- 1) Acre-feet of water impounded by structure at normal maximum operating level: 367,609.
- 2) Surface area in acres of reservoir at normal maximum operating level: 16,526.

D. 1) If this is a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure, provide the Site No. Not applicable and watershed project name _____.

2) Do you request authorization to close the "ports" or "windows" in the service spillway?

Yes No

E. The drainage area above the dam and/or diversion point is 209,088 acres or 326.7 square miles.

3. Appropriation Request (total amount of water needed, including maximum projected uses and accounting for evaporative losses for off-channel storage, if applicable).

A. Appropriated water will be used as follows:

	Purpose*	Place of Use	Acre-feet per year
1)	Municipal, industrial and agricultural	Trinity, Red, Sabine and Sulphur River Basins	175,000
2)	Recreation	Red River Basin	0
3)			

*If agricultural use, list crops(s) to be irrigated: landscape, other crops

B. Lands to be irrigated (if applicable):

1) Applicant proposes to irrigate a total of not applicable acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of _____ acres in _____ County, Texas. A copy of the deed(s) describing the overall tract(s) with the recording information from the county deed records is attached.

2) Location of land to be irrigated:

In the _____ Original Survey No. _____, Abstract No. _____.

C. Diversion Point No. 1.

- 1) Watercourse: Lower Bois d'Arc Creek Reservoir
- 2) Location of point of diversion at on the perimeter of the proposed Lower Bois d'Arc Creek Reservoir. Reservoir location is in Fannin County, Texas as described in 2A.
- 3) Location from County Seat: Varies miles in a northeastern direction from Bonham, Fannin County, Texas. Location from nearby town (if other than County Seat): miles in a direction from , a nearby town shown on county highway map.
- 4) The diversion will be (check all appropriate boxes and if applicable, indicate whether existing or proposed):

	Existing	Proposed
Directly from stream		
From an on-channel reservoir		X
From stream to an off-channel reservoir		
From a stream to an on-channel reservoir		
From an off-channel reservoir		
Other method (explain fully, use additional sheets if necessary)		

5) Rate of Diversion (Check (√) applicable provision):

X 1. Diversion Facility:

- A. 163,889 Maximum gpm (gallons per minute)
 - 1) unknown Number of pumps
 - 2) unknown Type of pump
 - 3) unknown gpm, Pump capacity of each pump
 - 4) Portable pump Yes or X No.

 2. If by gravity:

- A. Headgate Diversion Dam Maximum gpm
- B. Other method (explain fully - use additional sheets if necessary)

D. Return Water or Return Flow (location and quantity information):

Applicant is requesting to reuse 100 percent of the return flows generated from the diversion and use of water from Lower Bois d'Arc Creek Reservoir. Until such time as the facilities are developed to reuse this water, water which is diverted but not consumed as a result of the above stated use, will be returned from wastewater treatment facilities to the Trinity River Basin, Sabine River Basin, Sulphur River Basin and/or the Red River Basin.

E. Surplus Water:

Since the applicant is requesting to reuse 100 percent of the return flows generated from the diversion and use of water from Lower Bois d'Arc Creek Reservoir, there will be no surplus water.

F. The drainage area above the diversion point is 209,088 acres or 326.7 square miles.

4. General Information:

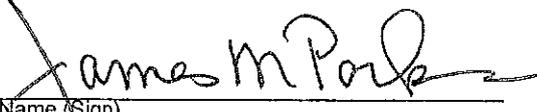
- A. The proposed or existing _____ works will be located on the land of the applicant, which will be acquired prior to construction, whose mailing address is 505 E. Brown Street, P.O. Box 2408, Wylie, Texas 75098.
- B. If an application for the appropriation is granted, either in whole or in part, construction works will begin within 2 years after such permit is issued. The proposed work will be completed within 2 years from the date the permit is issued.
- C. A Water Conservation Plan is attached? Yes _____ No
- D. _____ Interbasin transfer is not requested.
 Applicant requests authorization to transfer 175,000 acre-feet of water per annum from the Red River Basin to the Trinity, Sabine and Sulphur River Basins of which 175,000 acre-feet will be used for municipal, industrial and agricultural purposes.
- E. Bed and Banks request to transfer 175,000 acre-feet of water per year within the bed and banks of Pilot Grove Creek and Lake Lavon, tributary of Trinity River, Trinity River Basin.
- F. Is this project located within 200 river miles of the coast? _____ Yes No _____ Unknown

5. Maps, plats, plans, and drawings accompany this application as required by applicable TAC Sections.

Yes _____ No. Attach additional sheets for multiple dams and reservoirs, diversion points, etc.

6. _____ The dam(s) and reservoir(s) shown on the attached application was (were) constructed for domestic and livestock purposes and I/we elect to seek a permit under Section 11.143 of the Texas Water Code.

7. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. This information is provided in the attached Report Supporting an Application for a Texas Water Right for Lower Bois d'Arc Creek Reservoir.



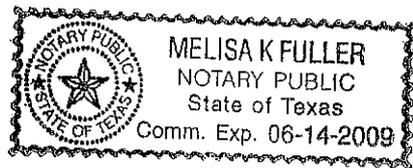
 Name (Sign)
 JAMES M. PARKS
 EXECUTIVE DIRECTOR

 Name (Printed)

 Name (Sign)

 Name (Printed)

SWORN TO AND SUBSCRIBED before me this 21ST day of DECEMBER, 2006.





 Notary Public for the State of Texas



OPA
2007 OCT 2 2007
BY [Signature]

September 14, 2007

WR
56919

TCEQ
Office of the Chief Clerk
Mc105
PO Box 13087
Austin, TX 78711-3087

2007 OCT -1 PM 3:01
CHIEF CLERKS OFFICE

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

RE: Application No. 12151

Dear Sirs:

I am Larry Robinson, the City Manager of McKinney, Texas. McKinney is a rapidly growing city with an estimated population of 118,000. It is located in Region C and is one of the 13 member cities that comprise the North Texas Municipal Water District (NTMWD). I am writing you in reference to the permit review and approval by TCEQ of the Lower Bois d'Arc Creek Reservoir Project in Fannin County.

It was recently reported in the Water Environment Federation's Summer 2007 Update that within 25 years there will be 9 billion people living on the planet Earth. It is now predicted that one-third of these people will be by then suffering a severe water shortage. Several United Nations reports endorse this dark scenario and also predict that two-thirds of the Earth's population in 25 years will live in water-stressed conditions. The State legislature's past efforts to mandate regional water planning led to a comprehensive state water plan. The water plan for Region C describes the water conservation, water reuse, and water resource development steps that are necessary to keep the residents of Region C from becoming part of the world's population that is negatively impacted by water shortages. I should also note that the recent legislation to designate specific new water resource development efforts, such as the Lower Bois d'Arc Creek Reservoir Project Reservoir, are "on track" to meet their completion dates.

This region's recent experience with drought management has proven that improved water conservation education and enactment of local regulations concerning land development do have a positive impact on reducing water consumption. The NTMWD member cities are now collectively working towards

CITY OF MCKINNEY

P.O. Box 517 • McKinney, Texas 75070 • Metro 972-562-6080

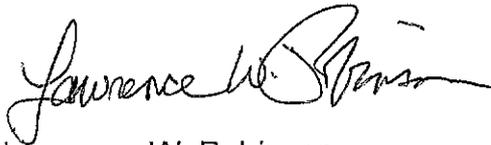
MWR

improved water conservation planning. All the cities are including water conservation education to create and/or enhance rebate programs to foster water conservation; to improve water leak detection programs; and to create or modify water rate structures to ensure that excessive water users face stiffer charges as their water use escalates.

However, I believe that despite these continuing regional efforts to establish the best management practices of water conservation, the North Texas region would be remiss to not confront the fact that our staggering regional growth mandates "action now" to plan, permit, design, and build future water resources. New water supply reservoirs take decades of investment before usable supplies are finally available. Decision-makers should not hesitate to make these important investments in the future of Texas.

In conclusion, on behalf of the City of McKinney and its citizens, I avow that the Lower Bois d'Arc Creek Reservoir is a key component of the Region C water supply plan as it offers a nearby site compared to several other distant alternatives. The City of McKinney urges the Texas Commission on Environmental Quality to quickly approve the permit that is currently under review. This will facilitate the construction of the Lower Bois d'Arc Creek Reservoir as a crucial water resource to enhance the quality of life of the millions of Texans who will need this water supply in the not too distant future.

Sincerely,

A handwritten signature in black ink, appearing to read "Lawrence W. Robinson". The signature is fluid and cursive, with a large initial "L" and "R".

Lawrence W. Robinson
City Manager

LR:kw



City Manager

CITY OF MCKINNEY

Administration

P.O. Box 517 • McKinney, Texas 75070



TCEQ
Office of the Chief Clerk
Mc105
PO Box 13087
Austin, TX 78711-3087

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BY *[Signature]*

September 24, 2007

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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

Chief Clerk
LaDonna Castañuela
TCEQ
MC 105
PO Box 13087
Austin, Texas 78711-3087

Delivered Via Fax:
(512) 239-3311

Dear Ms. Castañuela:

The purpose of this letter is to provide the support of the Allen Economic Development Corporation (AEDC) for issuance of a permit to the North Texas Municipal Water District (NTMWD) to build the Lower Bois d'Arc Creek reservoir (Application 12151).

The recent north Texas drought event opened the eyes of the regional economic development community to the importance of water supply to our long range economic development. The availability of a sustainable water supply for the long term is essential to the continuation of our presently vibrant regional economic development. This economic development enhances the City, County, and State tax bases and is the stimulus for new jobs and maintaining low unemployment.

We know from monitoring regional water planning that a new, large water supply reservoir like the Lower Bois d'Arc Reservoir is required in the 10-15 year time frame to sustain our regional development. The AEDC urges TCEQ to move expeditiously towards approval of the permit for this new reservoir so that the long effort to acquire property, design and construct the new reservoir and mitigation measures, and fill the new reservoir may stay on track to make the facility available by the current 2017 projection.

With warm regards,

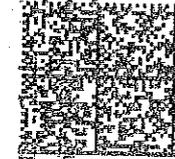
[Handwritten Signature]
Robert Wittingham
Executive Director/CEO

MW



Allen Economic Development Corp.
 100 Allentown Parkway • Suite 211
 Allen, Texas 75002
 972-727-0250

NORTH TEXAS P&DC



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September 24, 2007

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Chief Clerk
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BY *WR*

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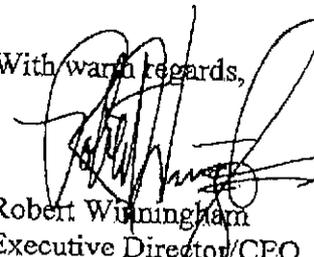
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With warm regards,


 Robert W. Wingham
 Executive Director/CEO

MW