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STERLING C. ROBERTSON DAM AND LIMESTONE LAKE ON THE NAVASOTA RI--ETC(U)
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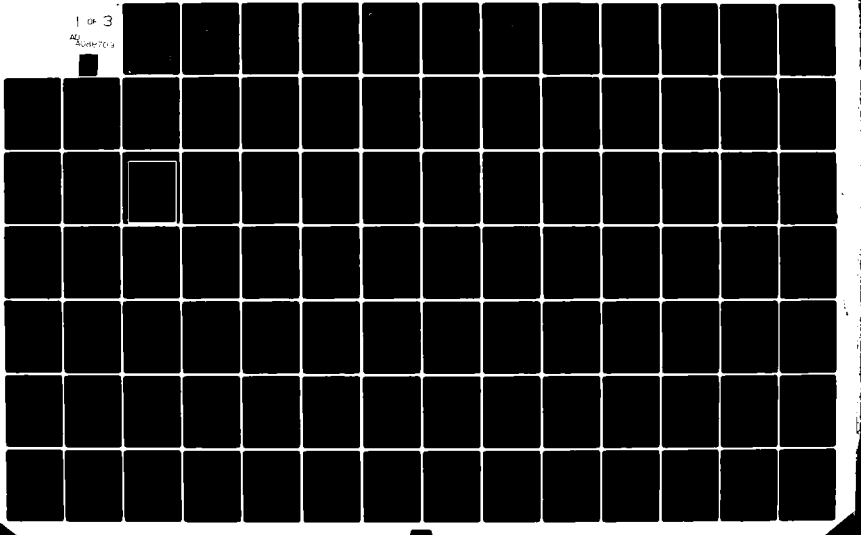

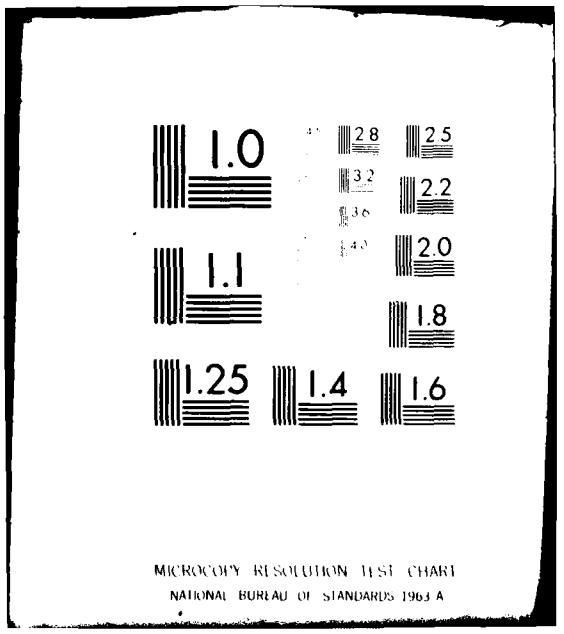
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LEVEL II

FINAL ENVIRONMENTAL STATEMENT

STERLING C. ROBERTSON DAM
AND
LIMESTONE LAKE
ON THE
NAVASOTA RIVER, TEXAS
(Leon, Limestone and Robertson Counties)

PREPARED BY
U. S. ARMY ENGINEER DISTRICT, FORT WORTH, TEXAS
OCTOBER 1976

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A088 709 (9) / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (6) Final Environmental Statement Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas, (and Addendum)	5. TYPE OF REPORT & PERIOD COVERED Final Environmental Statement Addendum 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) US Army Corps of Engineers Ft. Worth, TX	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Corps of Engineers ✓ Ft. Worth, TX	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS (12) 214
11. CONTROLLING OFFICE NAME AND ADDRESS Ft. Worth District, Corps of Engineers Engineering Division, Plng Br, SWFED-P POB 17300, Ft. Worth, TX 76102 (11)	12. REPORT DATE October 1976 13. NUMBER OF PAGES 185/27
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) NA	15. SECURITY CLASS. (of this report) Unclas 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Environmental Impact Statement
Sterling C. Robertson Dam
Limestone Lake
Navasota River, Texas

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Brazos River Authority has made application for a permit for the construction of the Sterling C. Robertson Dam on the Navasota River in Robertson and Leon Counties at RM 124.5. Purpose of project is to conserve and develop the water resources of the upper Navasota River in order to provide dependable water supplies to meet municipal, domestic, industrial, and agricultural needs in the area of the upper Navasota watershed and in the lower Brazos Basin and adjoining coastal areas downstream of the project.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102

REPLY TO
ATTENTION OF:

SWFED-PR

Inclosed is an addendum with copies of letters commenting on the final environmental statement for the Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas. Eleven letters expressed support for the project, urged issuance of a Section 404 permit for the project, or offered no comment. Three letters received required a response to amplify a point of concern considered in the decision making process.

This information may be filed with your copy of the final environmental statement since it is considered a part of that document.

Copies of the inclosed letters and responses where required have been filed with the President's Council on Environmental Quality and are being mailed to all recipients of the final environmental statement.

Sincerely yours,

for J. J. Johnson
ARTHUR D. DENYS
Chief, Engineering Division

1 Incl
As stated

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333
TELEPHONE (404) 633-3311

March 24, 1977

Col. John F. Wall, District Engineer
U.S. Army Engineer District, Fort Worth
Post Office Box 17300
Fort Worth, Texas 76102

Dear Colonel Wall:

We have reviewed the final environmental statement on the Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas, for potential vectorborne disease impacts and find that these impacts have not been considered. Our letter of May 14, 1976, which delineated the potential vector mosquito problem is included in "Section IX - Coordination".

We note that the Texas Department of Health Resources recommended insect monitoring and control on the reservoir. We concur in this recommendation, and emphasize the need for its reconsideration especially in the absence of structural modifications to minimize the occurrence of larval mosquito habitats.

We appreciate the opportunity to participate in the review process, and if we can provide further technical assistance please advise.

Sincerely yours,

Samuel G. Breeland
Water Resources Activity
Chief, Medical Entomology Branch
Vector Biology & Control Division
Bureau of Tropical Diseases

cc: Council Environ. Qual.
Mr. Bobby Davis
HEW Region VI
Prin. Environ. Ofcr/HEW

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102

REPLY TO
ATTENTION OF:

SWFED-PR

15 APR 1977

Mr. Samuel G. Breeland
Chief, Medical Entomology Branch
Department of Health,
Education, and Welfare
Public Health Service
Center for Disease Control
Atlanta, Georgia 30333

Dear Mr. Breeland:

This is in response to comments contained in your letter dated March 24, 1977 relating to the final environmental statement for the Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas. Copies of this letter and your letter will be sent to all recipients of the final environmental statement.

We have noted your comments, and we feel the statements made in response to your letter of May 14, 1976 on the draft statement remain essentially correct. It is expected that the effect of Lake Limestone will actually be to decrease the amount of larval mosquito habitat in comparison with that now existing in the area affected by the project. Most of the area that will be covered by Lake Limestone is flat, low-lying bottomland with often saturated soil and numerous pools of stagnant water that provide good mosquito habitat. The net overall result of Lake Limestone, with its deeper water and fluctuating pool level, should be a reduction in such habitats.

If control of mosquitos becomes a problem in areas around the lake, the Brazos River Authority has expressed a willingness to cooperate fully with Federal, State, and local governmental entities in carrying out programs for mosquito control.

SWFED-PR

15 APR 1977

Mr. Samuel G. Breeland

Your interest in the project is appreciated.

Sincerely yours,

JOHN [illegible] WALL
Colonel, CE
District Engineer

RON CLOWER
STATE SENATOR
DISTRICT 9
DALLAS, ELLIS, NAVARRO,
LIMESTONE COUNTIES

The Senate of The State of Texas Austin 78711

Committees:
HUMAN RESOURCES
INTERGOVERNMENTAL RELATIONS
STATE AFFAIRS

Chairman:
CONSUMER AFFAIRS SUB-COMMITTEE

March 25, 1977

Colonel John F. Wall
District Engineer
U.S. Army Engineer
District 4 of Texas
Box 17300
Ft. Worth, Texas 76102

Dear Colonel Wall:

I appreciate the opportunity to comment on the final Environmental Impact Statement of the Sterling C. Robertson Dam on Lake Limestone on the Navasota River. In reviewing this statement, one serious omission is evident. For all practical purposes, there is virtually no recognition of the loss of energy resources which will be a direct result of the construction of this lake. Specifically, I refer to Section 2 subsections 2.07, 2.08 and 2.09. The reading of these 3 sections seems to run contrary to the conclusion in the last sentence of Section 7 by the Brazos River Authority that "the preliminary investigation indicates no continuous deposits of commercially recoverable lignite in the reservoir area." This is a stark contrast to the sentence in Section 1 subsection 1.02, which says "the most urgent immediate need (for the construction of the dam and reservoir) is for water for cooling of steam electric generating facilities to be built in the upper Navasota Water Shed where extensive deposits of lignite will be utilized to replace dwindling gas and oil supplies as a source of fuel for production of electric energy." In addition, the geology map of the area Section 2, page 2 indicates that the Calvert Bluff formation which, according to subsection 2.07, contains 80% of the lignite reserves in the State of Texas almost completely encircles the proposed reservoir area.

In addition, I have information which indicates the leasing by Phillips Coal Company of a significant amount of

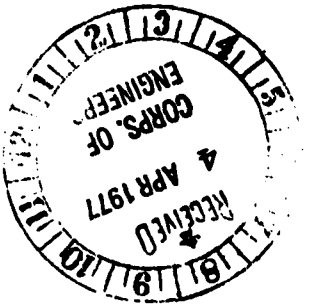
lignite mineral leases on both sides of the lake, virtually to the shore of the proposed reservoir. There is no indication in the entire final environmental impact statement as to the extent of lost oil and gas reserves in this area. I am familiar with this area, and I know that there is oil and gas production on all sides of the lake. I have discussed the extent of production with certain persons in the oil business in this part of Texas, and they indicate to me that there are some producing gas wells within a few hundred feet of the lakeshore, primarily in the Oletha gasfield. I cannot comprehend why some consideration was not given to the effect on oil and gas production. Section 4, subsection 4.15 deals almost exclusively with the impact on the possible production of lignite even though Section 4.35 dealing with the impact on land use indicates that in the area required for the lake, there will be a loss of land use for oil and gas production.

In this time of severe energy shortages, it seems to me incumbent upon any agency of the State or Federal Government to give serious rather than cursory consideration to the effects of any project which would forever prohibit the recovery of important energy resources. In Section 1, subsection 1.05, Land Acquisition you indicate that on the land to be inundated by the lake, the landowner will be allowed to retain mineral rights but with recovery operations limited. After discussing this matter with several persons involved, I understand that the limit which is being imposed by the Brazos River Authority is to deny any development of these resources. I hope you will give this particular aspect of the proposed construction of this dam serious consideration in making a final decision about the Section 404 permit. I would appreciate any information you have concerning this question of energy resources and neither your attempt nor Brazos River Authority's attempt to mitigate the loss.

Sincerely,

Ron Clower

RC:mt
cc: Brazos River Authority
Ms. Imagene White



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102

REPLY TO ATTENTION OF:

15 APR 1977

SWFED-PR

Honorable Ron Clower
Texas Senate
Austin, Texas 78711

Dear Senator Clower:

This is the final reply to comments contained in your letter dated March 25, 1977 relating to the final environmental statement for the Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas. Copies of this letter and your letter will be sent to all recipients of the final environmental statement.

We have noted your comments and additional information provided by the Brazos River Authority, and we feel that sections in the environmental statement pertaining to loss of energy resources due to construction of Lake Limestone are essentially correct. I will expand on some of the background data used in making these statements in the final environmental statement.

The US Army Corps of Engineers and the Brazos River Authority share your concern for the need to conserve energy and effectively utilize every available energy resource. This has been given careful consideration in the planning and construction of Lake Limestone. There are a few producing oil and gas wells not far from Lake Limestone, and there has been some production in the general area for many years. There are, however, no wells in the lake area itself. Prior to initiation of construction, the Brazos River Authority engaged the firm of DeGolyer and MacNaughton of Dallas as consultants to advise them regarding prospects for oil and gas production under or adjacent to the proposed reservoir. In their report to the Brazos River Authority, DeGolyer and MacNaughton expressed the opinion that it is unlikely that there are deposits of recoverable oil and gas directly under the lake area, but if there are, they should be at such depths as to allow recovery by operations from the surface of the land outside the lake area.

15 APR 1977

SWFED-PR
Honorable Ron Clower

The Brazos River Authority is also particularly aware of the general situation with regard to lignite in the upper Navasota River watershed, since one of the principal needs for water from Lake Limestone will be for cooling purposes for lignite fired electric generating plants to be built about 10 miles from the lake. Because of the existence of extensive deposits of minable lignite in the general area, the possibility of the existence of minable lignite deposits within the lake area has received special consideration. As reported in the environmental statement, preliminary investigations by a consulting geologist indicated no continuous deposits of commercially recoverable lignite in the area to be inundated by the lake. More detailed investigations made in conjunction with the land acquisition program have confirmed these preliminary studies. This does not mean that there is no possibility of minable lignite deposits existing in some areas not yet acquired by the Brazos River Authority. Their experience to date indicates that if there are any economically recoverable lignite deposits that may be lost with construction of the lake, they would exist only under a small portion of the project lands yet to be acquired. If there are lignite deposits of sufficient extent or continuity to give them any market value, this will be given full consideration by the Brazos River Authority in determining fair market value of the land being acquired.

It is the policy of the Brazos River Authority to acquire for its lakes only the minimum interests in lands which are considered necessary for effective construction, operation, and maintenance of the project, so that landowners may retain in private ownership as much of their land as possible. It is also the policy of the Brazos River Authority to pay the full fair market value of the land or interests in the land which it must buy. If the landowner desires to retain ownership of oil, gas, and mineral interests, the Brazos River Authority is willing to agree, but it must be recognized that recovery operations cannot be conducted on the surface of the land purchased for the lake. The Brazos River Authority also recognizes that the landowner must be fairly compensated for the effects these restrictions have on the fair market value of any oil, gas, or minerals that may be present and gives full consideration to these factors in evaluating the fair market value of land or interests in land that must be acquired.

Thank you for your interest in this project. Your comments will be considered in the final decision on issuance of a Section 404 permit for this project.

Sincerely yours,

JOHN F. WALL
Colonel, CE
District Engineer

IMAGENE WHITE
309 W. Trinity
Groesbeck, Texas - 76642

March 25, 1977

Department of the Army
Fort Worth District, Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Attention: Mr. Skip Harrell

Dear Sir:

In compliance with our telephone conversation yesterday, I am submitting herein my comments regards the oil and gas resources and the coal and lignite resources that are under Lake Limestone on the Navasota River in Leon, Limestone, and Robertson Counties. As I explained yesterday, I did not submit these earlier as I thought the Environmental Impact Study related to the proposed wildlife management area.

We have property on both sides of the river that is being inundated by the lake. The property on the West side of the lake is under an oil and gas lease. The property on the East side of the proposed lake is not under an oil and gas lease. I am told by an oil and gas company that has considered it, that they do not want to lease the land because it is going under the lake. The Brazos River Authority is allowing us to retain our oil and gas and other minerals, our coal and lignite, but we are being forced to put into the deed the wording "it being provided however, that no operations for the recovery of any such oil, gas, coal and lignite, or other minerals shall be conducted on the surface of said premises," or similar such wording. From the experience I have had to date in trying to lease our land on the East side of the river, we know that we shall not likely be able to lease the property on the West side once the current lease is dropped or expires.

I am advised that the "no operations" clause forces an oil and gas company to drill on geography, not geology, and that slant hole drilling is too expensive. I am also advised that it is questionable if they could drill to the middle of the lake by slant drilling, which would eliminate some acreage from production possibly even by this expensive method. For whatever reason they choose, they are declining to buy a lease on acreage that was not under prior lease. There is production on both sides of the lake, and a well is currently being drilled that would further determine the extent of the oil and gas reserves. How can we as land owners determine what full impact the lake and the "no operations" clause

is having on us as land owners or the energy resources we may own. I would urge you to consider this as a part of the environmental impact study for this lake.

The only explorations for coal and lignite in the lake basin on our property to our knowledge that have been made were made by us. We hired a firm to drill for coal and lignite. Three holes drilled in the lake basin showed the following:

On the East side of the river:

Test #1:	at 17'-18'	one foot
	at 26'-28'	two feet
	at 59'-68'	nine feet
Test #2:	at 60'-61'	one foot
	at 61'-66'	coal with a little shale
	at 66'-70'	coal with some shale
Test #3:	at 25'-28'	three feet
	at 116'-128'	twelve feet
	at 128'-133'	coal with some shale

On the West side of the river, our neighbor cooperated with us to make the following finding in the lake basin:

at 32'-37'	five feet
at 40'-44'	four feet
at 125'-132'	seven feet

We used the same method of drilling that we understand was used for years by coal companies in buying leases. We saved samples and have these.

A block of coal leases have been bought approaching our land. On those tracts adjacent to the lake, the company leased the tract save and except what had been conveyed to Brazos River Authority. Most of our property will be under the lake and we have not been approached in this activity by this company. These leases are a matter of public record. However, I believe that this supports our belief that there is recoverable coal and lignite that will be inundated under the lake, and that we as land owners are being damaged.

The land owners are being forced to go to the same expense to prove up reserves that a coal company would incur getting ready to mine. We feel that this is an unnecessary burden, as this is not

an ordinary expense placed on landowners marketing coal and lignite assets. We believe that our rights are being limited and even cut off.

The same is true of the oil and gas production. Our rights are certainly being restricted. This brings up the question of value of these rights, and whose rights take precedence.

I would ask that you give some attention to the assessment of the impact of the lake on the oil, gas and mineral development and also the development of coal and lignite reserves that might be under the lake.

Thank you for your consideration.

Sincerely yours,

Imagene White

Imagene White

cc: Honorable Senator Ron Clower, Austin, Texas

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102

REPLY TO
ATTENTION OF:

15 APR 1977

SWFED-PR

Ms. Imagene White
309 W. Trinity
Groesbeck, Texas 76642

Dear Ms. White:

This is in response to comments contained in your letter dated March 25, 1977, relating to the final environmental statement for the Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas. Copies of this letter and your letter will be sent to all recipients of the final environmental statement.

The primary concern expressed in your letter is that Lake Limestone will impact on oil, gas, and lignite resources within the inundated area, and that acquisition policies of the Brazos River Authority restrict mineral rights retained by the landowner. It is the policy of the Brazos River Authority to acquire for its lakes only the minimum interests in land which are required for effective construction, and operation and maintenance of the project, so that landowners may retain in private ownership as much of their land as possible. It is also the policy of the Authority to pay the full market value of the land or interests in land which it must buy. If the landowner desires to retain ownership of oil, gas, or mineral interests, the Authority is willing to agree; but it must be recognized that recovery operations cannot be conducted on the surface of the land purchased for the lake. The Authority recognizes that the landowner must be fairly compensated for the effect of this restriction on fair market value of any oil, gas, or minerals that may be present, and in its land acquisition program, full consideration is given to these factors in evaluating fair market value of the land or interests in land that must be acquired.

The Brazos River Authority is aware of the general situation with regard to lignite resources in the Upper Navasota Watershed, and since extensive deposits of minable lignite do exist near the lake, the possibility of the existence of minable lignite deposits within the project area has received

SWFED-PR 15 APR 1977
Ms. Imagene White

special consideration. The Authority's experience in acquiring land to date has shown that there are no economically minable lignite deposits in the river bottom area which will be inundated by Lake Limestone. Investigations by a geological consultant hired by the Authority have revealed that existing lignite deposits are in small pockets or lenses, and deposits of sufficient extent or continuity to give them commercial market value have not been found. This does not mean the Brazos River Authority has concluded that there is no possibility of minable lignite in the lake area not yet acquired. The Authority will consider on an individual basis the circumstances relating to each parcel of land to be acquired, and full consideration to the effects on lignite deposits as well as other pertinent factors will be given in determining fair market value of the land.

As for oil and gas resources, the Brazos River Authority is aware of some renewed interest in the possibility of developing additional oil and gas production in the general area of the lake. Prior to initiation of construction, a consulting firm was hired by the Authority to advise them regarding prospects for oil and gas production under or adjacent to the proposed reservoir. In their report, the consultants expressed the opinion that it is unlikely that there are deposits of recoverable gas or oil directly under the lake, but if there are, they should be at such depths that they could be recovered by operations from the surface of the land outside the lake area. As with lignite deposits, full consideration of any existing oil and gas resources and pertinent factors concerning their marketablity, will be given in determining fair market value of each parcel to be acquired.

Thank you for your interest in this project.

Sincerely yours,

JOHN P. WADE
Colonel, CE
District Engineer

A VOLUNTARY ASSOCIATION OF LOCAL GOVERNMENTS

HEART OF TEXAS COUNCIL OF GOVERNMENTS

110 SOUTH TWELFTH STREET · WACO, TEXAS 76701 · 817 756-6631

3/EEB/db
704/350
February 22, 1977

Colonel Joe Sheard
District Engineer
U.S. Army Engineer District
P.O. Box 17300
Ft. Worth, TX 76102

Subj: Final Environmental Impact Statement: Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas

Ref: (a) Corp of Engineers letter, February 10, 1977

Dear Col. Sheard:

We have reviewed the final environmental impact statement for the above mentioned dam and lake. We find that our position has not changed. The potential direct benefits of this project out weighs the loss and/or commitment of resources. We feel that the Brazos River Authority has more than met its responsibility to the public in the protection of the environment during and after construction of the dam. Therefore, we again approve of this project, and it should be completed without further delay. If we can be of any further assistance in this matter, please contact us at your earliest convenience.

Sincerely,

Jimmy Gilmore
Deputy Director

Bartlett, Texas
February 28, 1977

Dept. of The Army
Ft. Worth Dist, Corp. of Engineers
John F. Wall, Col; CE
District Engineer
P.O. Box 17300
Ft. Worth, Texas 76102

Dear Sir:

Concerning the Sterling C. Robertson Dam and Limestone Lake Project, being Constructed by the Brazos River Authority. I have opposed the Federal Interior Dept. - Fish + Wildlife Service request, that the Authority Purchase an additional 15,000 Acres plus to be set aside for wildlife, displaced due to this Project. The dam, I understand is well under Construction and the permit shouldn't have applied to any Project already under Construction.

I was born and reared in Limestone County, just east of the Navasota river. I have seen the area go out of raw Crop Production and there now exist a natural habitat, over the largest part of

the County. I cannot see why any tax money or Brazos River Authority money, should be spent for 15,000 acres Plus, for something that is already available, at no cost.

Land owners outside the Project area would welcome more wildlife on their Private land. This would give them another source of income by leasing land for hunting. The wildlife affected, in the Project will move to this upland. There is ample food, cover and shelter already available for this wildlife.

I have ask for Congressman Ray Roberts, chairman of the Subcommittee on Water Resources to support ammendment of Section 404 of PL 92-500. Whether this bill passes the House + Senate or not, I think the Brazos River Authority, should be given a Permit to Complete the Sterling C. Robertson dam and Limestone Lake Project, without the requirement to purchase, 15,000 acres Plus, to be set aside for Wildlife, that is already available without costing Anyone one dollar.

I am a Conservationist with the U.S.D.A. with

27 years service. I am well familiar with Wildlife, Wildlife Practices and Habitat. Also well familiar with the Navasota river and Limestone County. We have some deer, squirrel quail + dove in Limestone County, but need to increase the population of the existing Wildlife and the Lake Project will do just that, bring wildlife out of the Permanet pool area to our upland.

I would appreciate your support to give the go ahead on this Project, without the 15,000 acre plus for Wildlife set aside. The Brazos River Authority has no funds for such Purchase, as seems to be the first such deal of this nature they have encountered. I believe it is more harmful to displace our People from 15,000 acres. The People can't move to the upland into natural existing habitats. (Wildlife Cav).

Your support will be appreciated very much.

Yours Truly,

Thomas H. Mc.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P.O. Box 648
Temple, Texas 76501

March 1, 1977

Mr. Arthur D. Denys, Chief
Engineering Division
Department of the Army
Fort Worth District Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Denys:

We have reviewed the final environmental statement for Sterling C. Robertson Dam and Limestone Lake on the Navasota River in Texas and have no comments on the final statement.

We feel that the impact statement as written adequately reflects the impacts this project will have on the soil, water, and plant resources.

We appreciate the opportunity of commenting on the draft environment statement and reviewing the final statement.

Sincerely,

C. Budd Fountain Acting

George C. Marks
State Conservationist

GROESBECK INSURANCE AGENCY
P. O. Box 557
GROESBECK, TEXAS 76642

Phone 729-3403

DATE March 2 1977

TO

Dist. Engineer, Dept. Of Army
Ft. Worth Dist. Corpe Of Engineer,
P; O. Box 17300
Ft. Worth, Texas 76102

SUBJECT Sterling C. Robertson Dam.
Lake Limestone

Mr. John F. Wall
Colonel , CE
Dist. Engineer;

Gentlemen;

The above project we feel is so important to Limestone and Robertson Counties we don't know how to actually put a value it, would be to us here, we are classed as a low income County, and any help for our area is just what we need and we feel the Parks & wildlife Dept. is doing what they feel is needed, but this is not the way most of us feel here as we need our land as taxable property also, there is plenty of open woods aroung the Lake that will serve the wildlife in the area.
We will appreciate any and all your dept.can do to help us along with this project, as we feel it is the best thing our County can have in the way of employent and our naturla resourses in our County and we need it. Thank You.

Yours Truely,

SIGNED Ernest L. Snider

☐ PLEASE REPLY ☐ NO REPLY NECESSARY

State of Texas

COUNTY OF LEON

Centerville, Texas 75833

March 3, 1977

District Engineer
Department of the Army
Fort Worth District
Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Sirs:

The Commissioners' Court of Leon County has been very much in favor of the building of the Sterling C. Robertson Dam and the completion of the Lake Limestone Project. We believe the people of the County are very much interested in the completion of the Lake and we know of no one in this County that is against the Project.

Please consider Leon County as being a strong supporter for the issuance of the Department of the Army Permit that is needed for the completion of the Sterling C. Robertson Dam and Lake Limestone.

Yours truly,

James O. Hill

James O. Hill,
County Judge

JOH:mb

RAILROAD COMMISSION OF TEXAS

SURFACE MINING DIVISION

MACK WALLACE, Chairman
JIM C. LANGDON, Commissioner
JON NEWTON, Commissioner

ROY D. PAY..
Direct

BROWN BUILDING • CAPITOL STATION - P.O. DRAWER 12967 • AUSTIN, TEXAS 787

March 4, 1977

Col. John F. Wall
District Engineer
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Col. Wall:

This is to advise you that the Commission has no comment to make concerning the Brazos River Authority application for the placing of fill material in the Navasota River at river mile 124.5.

Yours very truly,

Roy D. Payne
Director

RDP:mes

TEXAS UTILITIES COMPANY

2001 BRYAN TOWER · DALLAS, TEXAS 75201

March 7, 1977

Office of Environmental Policy Development
Office of the Chief of Engineers
U. S. Army Corps of Engineers
1000 Independence Avenue, S.W.
Washington, D.C. 20314

Attention: DAEN-CWR-P

Sterling C. Robertson Dam and Limestone Lake
Environmental Impact Statement
ELR Order No. 70195

Gentlemen:

This is in response to the notification of filing of the final environmental impact statement of the subject project published on FR10026, February 18, 1977. The Texas Utilities Company System, serving approximately one third the area and population of Texas with electrical energy, requests the following comments be considered and filed with the final environmental impact statement of the Sterling C. Robertson Dam and Limestone Lake Project.

The Texas Utilities Company System through a subsidiary, Texas Utilities Generating Company, entered on February 12, 1974 and agreement with the Brazos River Authority for industrial water supply from Limestone Lake to be constructed by the Authority. Under this agreement, Texas Utilities Generating Company would receive 25,000 acre feet of water annually to support two new generating stations, Twin Oak and Oak Knoll Steam Electric Stations, to be located in the Navasota River Basin. These stations, each with 1,500 megawatts capacity, are to be "mine-mouth" plants located adjacent to lignite deposits, adequate for 35 year operations, in Robertson and Limestone Counties, Texas. The stations will be provided to meet our customers' demands for electrical energy in the 1980's and are a part of the System's plan to convert from primary reliance on natural gas and fuel oil as boiler fuels to lignite, western coal and nuclear fuels. This System objective effectively implements State and Federal goals of conserving decreasing supplies of domestic natural gas and oil.

Alternative water supply for Twin Oak and Oak Knoll Stations would result in higher costs of electrical energy to our customers. Pumping our needs for supplemental water supply from either the Brazos or Trinity Rivers would increase our annual operating costs a minimum of $5 million annually. Moving our lignite fuel to new sites near existing water resources would increase our annual costs by approximately $30 million annually. In either of these alternatives additional right-of-way requirements of at least 1,000 acres would create additional environmental disruption and economic hardship. Neither of these alternatives to Limestone Lake water supply would offer the bonus of an additional 38,000 acre feet of water supply offered by the Limestone Lake Project to other potential municipal, agricultural or industrial users in Limestone - Robertson Counties area.

Unquestionably, the Limestone Lake Project, as conceived and implemented by the Brazos River Authority, offers the best solution for our System's and others' need for future water supply in the Upper Navasota Basin. The Project is being implemented to assure economical cost of water to potential users, to enhance water quality in the Upper Navasota River and to create least impact upon man's environment. On the basis of these merits, we recommend the early granting to the Brazos River Authority of a Section 404 Permit for the construction of Sterling C. Robertson Dam and Limestone Lake.

Yours very truly,

Perry G. Brittain

Perry G. Brittain
Executive Vice President

District Engineer
Department Of The Army
Fort Worth District
Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

March 11, 1977

Dear Sirs:

Due to the position you hold, I am under the assumption that you are intellegent peopleand I hope you will try to understand the meaning and importance of the following statements;

1. I think you should immediately issue a Corp Of Engineer permit, section 404 of public law 92-500 for the purpose of constructing the Robert C. Sterling Dam and Lake Limestone project.

2. The U.S.Fish & Wildlife service is wrong in their demands for B.R.A. to aquire an additional 15, 000 acres for a game refugefor the following reasons;

   (a) If the land is left in private ownership the wildlife will feed off the grasses and grain planted by ranchers and farmers.

   (b) On the other hand, if the Federal Government owns this land there will be no food planted for the wildlife.

   (c) If the land is left in private ownership the poaching of wildlife will be far less than if owned by the Federal Government.

   (d) It is very easy to see that the wildlife is far better off on privately owned land than on land owned by the Federal Government.

   (e) Another important factor is, the school, county and state will loose needed revenuein taxes if the land should become owned by the Federal Government.

   (f) This area particularly needs this lake to supply water needed for Electric Generating plants that will be powered by lignite coal found in this area.

Yours Truely,

Tom H. Chrisley, Jr.

Tom H. Chrisley, Jr.
Rt. 2 Box 142A
Groesbeck, Texas 76642

District Engineer, Dept. Of The Army
Fort Worth District, Corps Of Engineers
P. O. Box 17300
FortWorth, Te xas 76102

March 11, 1977

Dear Sirs:

I think you should issue a Copr of Engineer Permit, section 404- of Public Law 92-500 for the purpose of constructing the Robert C. Sterling Dam and Lake Limestone Project for the following reasons;

1. I think the demands from the U.S. Fish & Wildlife Service on B.R.A. to purchase an additional 15,000 acres for a wildlife refuge is rediculas. The wildlife will continue as always to feed on the grain and grasses planted by the farmers and ranchers.

2. The school,county and state wil loose needed revenue in taxes if an additional 15,000 acres were taken from private ownership.

3. This lake is needed to supply water for power plants that will provide needed jobs for our people in this area.

I hope this permit will be issued without any furthur delay.

Yours truely,

Mrs. Rosetta Chrisley

Mrs. Rosetta Chrisley
Rt. 2 Box 142 A
Groesbeck, Texas 76642

The Farmers State Bank

P.O. BOX 499 • GROESBECK, TEXAS • 76642 • 817/729-3272

GARY VOGEL
VICE PRESIDENT & CASHIER

March 11, 1977

Colonel John F. Wall, District Engineer
U. S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Wall:

I appreciate the opportunity to comment on the Final Environmental Impact Statement on the Sterling C. Robertson Dam and Lake Limestone Project.

The FEIS is very informative and shows that the Corps went to great detail to properly research all environmental effects of Lake Limestone. I still have the same feelings that I expressed in my April 23, 1976, letter, which is illustrated on pages IX-92 and IX-93 of the FEIS. I am pleased to quote the following from page IX-3 "The policy of the Corps of Engineers in administering the Department of the Army permit program is to support the State's position unless there are overriding factors of national interest. None have been identified with this permit application, and the overall public interest would be served by issuance of the Department of the Army permit for the Sterling C. Robertson Dam and Lake Limestone project." Governor Briscoe, in his letter on page IX-76, clearly states that the position of the State of Texas is for the permit to be "issued immediately without any delay for further mitigation discussions and/or evaluations."

Since both the Corps of Engineers and the State of Texas take the position that the Section 404 permit be issued without the mitigation, I sincerely urge you to do this as soon as possible. The people of the Groesbeck area are awaiting your response with great hope and concern.

Sincerely,

Gary Vogel

Gary Vogel

GV:bl

United States Senate

COMMITTEE ON PUBLIC WORKS
WASHINGTON, D.C. 20510

March 16, 1977

Colonel John Wall
District Engineer
Department of the Army
Fort Worth District, Corps of
Engineers
Post Office Box 17300
Fort Worth, Texas 76102

Dear Colonel Wall:

This letter is in response to your request for comments on the Final Environmental Impact Statement for the Lake Limestone Project. I have been contacted by many constituents in central Texas expressing their desire to see that this project is completed.

The Brazos River Authority, a State of Texas agency, undertook construction of this project on the Navasota River in July, 1975, prior to any federal requirement for Section 404 permits. As you know, the project was being undertaken without the use of federal funds. The project had received all necessary state and federal licenses, permits and approvals required prior to initiating construction. After the new 404 regulations were published, the Authority was advised that a Phase II permit would be needed. This permit was applied for in October 1975. Had the Fish and Wildlife Service not objected, a permit would probably have already been issued by the Corps of Engineers.

Fish and Wildlife's original recommendation that the Authority purchase an additional 15,800 acres of privately owned farm and ranch land, and its more recent recommendation of 5,000 acres to use as wildlife management areas for mitigation make it impossible for the project to continue. As you are aware, the Brazos River Authority has neither the legal authority nor the funds to purchase the land. Consequently, the possibility exists that this one-third completed project may be stopped and this urgently needed water resource project may be abandonded.

The legislative intent of Section 404 is to safeguard against pollution. Mitigation of wildlife is certainly an important concern, but what is at issue here is the very existence of the project. It is evident that the Brazos River Authority is both financially and legally precluded from undertaking a program of mitigation as demanded by the Fish and Wildlife Service.

Conflicting federal objectives may, in fact, be responsible for halting this project - one which was begun under one set of regulations and then in mid-course was placed under another set of regulations imposed retroactively.

I am hopeful that the District office's review of this application will be favorable, and should the application be referred to the Secretary of the Army for a final decision, he will move swiftly toward approval.

Sincerely,

Lloyd Bentsen

SUMMARY

Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas (Leon, Limestone and Robertson Counties)

( ) Draft Environmental Statement (X) Final Environmental Statement

Responsible Office: U.S. ARMY ENGINEER DISTRICT, FORT WORTH, TEXAS
Colonel John F. Wall, District Engineer
P.O. Box 17300
Fort Worth, Texas 76102
Telephone: 817-334-2301

1. **Name of Action:** (X) Administrative ( ) Legislative

2. **Description of Action:** The Brazos River Authority, a duly constituted state agency, has made application for a permit under Section 404 of Public Law 92-500, 86 Stat. 816, for the construction of the Sterling C. Robertson Dam on the Navasota River in Robertson and Leon Counties at river mile 124.5. This site is about 22 miles northeast of Franklin, Texas, and about 6 miles northwest of Marquez, Texas. The purpose of the project is to conserve and develop the water resources of the upper Navasota River in order to provide dependable water supplies to meet municipal, domestic, industrial, and agricultural needs in the area of the upper Navasota watershed and in the lower Brazos Basin and adjoining coastal areas downstream of the project.

3. **Environmental Impacts:** Dependable water supply for present and projected future local and downstream demands for municipal, industrial, and agricultural water supplies. Direct and indirect economic benefits expected to accrue for a sizable portion of central and north-central Texas. Additional aquatic habitat expected to be beneficial to a wide variety of aquatic species and water quality is expected to remain good.

Adverse Environmental Effects: The project will require the conversion of some 14,200 acres of terrestrial habitat to aquatic habitat. Secondary development adjacent to the area will further deplete terrestrial habitat. Minor and temporary adverse impacts will occur during construction affecting both terrestrial and aquatic species. Loss of taxable land will temporarily adversely affect the local area; however, the enhanced land values after completion of the project should soon make up for these losses.

4. **Alternatives:** Denial of the permit. Granting the permit as requested. Granting the permit with conditional requirements.

5. **Comments Received:**

Advisory Council on Historic Preservation
Federal Power Commission
U.S. Department of Agriculture
  Forest Service
  Soil Conservation Service
U.S. Department of Commerce
U.S. Department of Health, Education, and Welfare
  Washington D.C.
  Public Health Service

U.S. Department of the Interior
U.S. Department of Transportation
U.S. Environmental Protection Agency
State of Texas
- Budget and Planning Office
- Brazos River Authority
- Texas Parks and Wildlife Department
- Texas Water Development Board
- Texas Water Rights Commission
- Texas Air Control Board
- Texas Department of Health Resources
- Texas Water Quality Board
- Texas State Soil and Water Conservation Board

Southern Methodist University
Greater Fort Worth Sierra Club
Wildlife Management Institute
Heart of Texas Council of Governments

6. Draft Statement to CEQ: April 27, 1976
   Final Statement to CEQ:

ENVIRONMENTAL STATEMENT
STERLING C. ROBERTSON DAM AND LIMESTONE LAKE ON THE NAVASOTA RIVER, TEXAS
(Leon, Limestone and Robertson Counties)

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SECTION IV — THE PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

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SECTION VI — ALTERNATIVES TO THE PROPOSED ACTION

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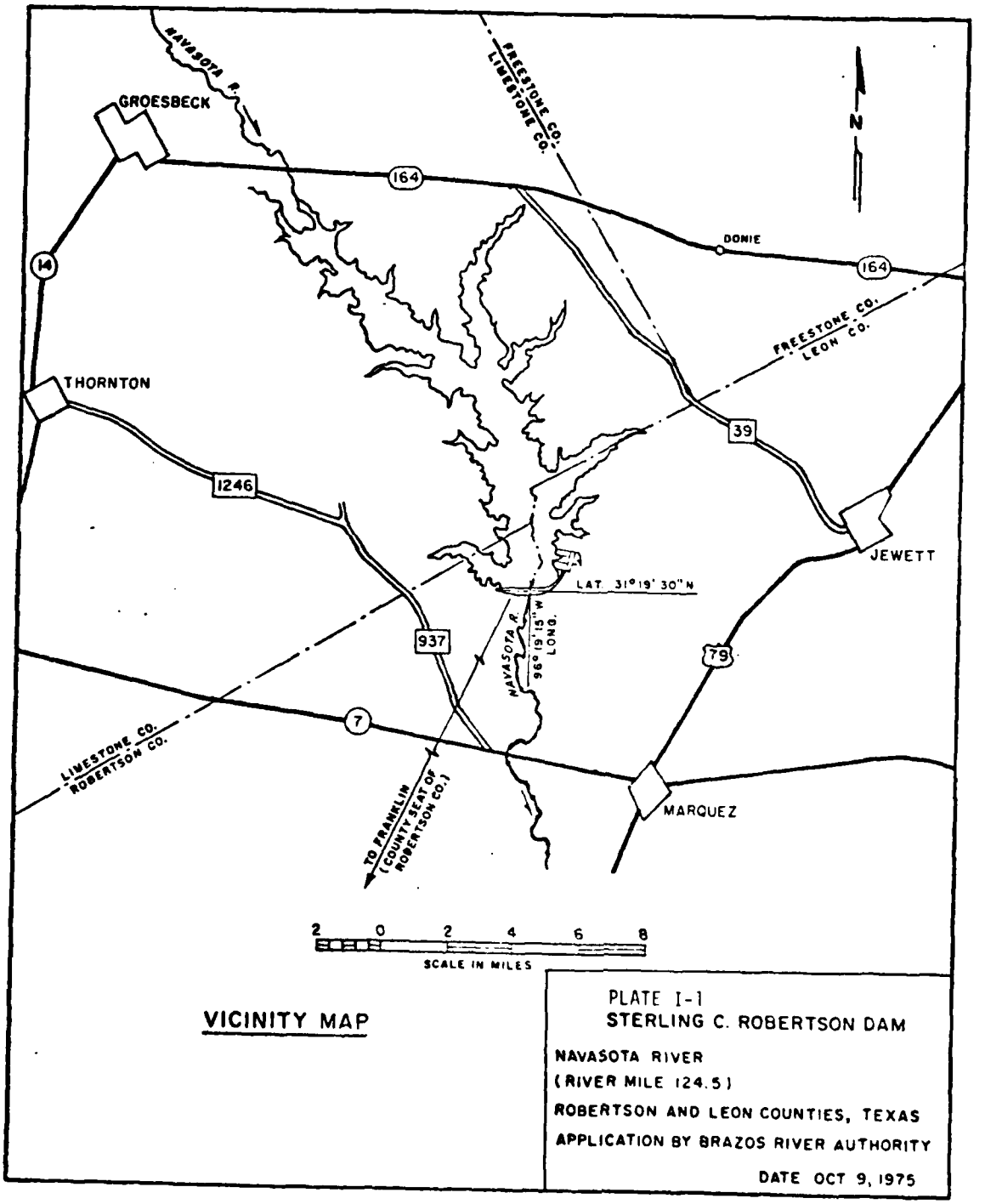
SECTION I — PROJECT DESCRIPTION

1.01 **Authority.** The basis for the U.S. Army Corps of Engineers responsibility to regulate the disposal of dredged or fill material is the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500). Section 404 of that Act charges the Secretary of the Army, acting through the Chief of Engineers, to regulate the discharge of dredged or fill material in the waters of the United States. This authority under Section 404 was implemented by the Corps of Engineers by CFR 209.120 on July 25, 1975. The implementation is phased over three years. The Navasota River, as a principal tributary to a navigable stream (waters of the United States) came under regulatory authority of the Corps of Engineers on July 1, 1976. This regulatory authority is primarily to insure that the chemical, biological integrity of waters of the United States is protected from the irresponsible and unregulated discharges of dredged or fill material that could permanently destroy or alter the character of these valuable resources. This program provides for the consideration of all concerns of the public--environmental, social, and economic in the Corps' decision making process to either issue or deny permits. As a part of its responsibility to protect water quality, the Corps of Engineers' Section 404 permit program has thus been extended to many areas that have never been subjected to Federal regulation for this type of non-Federal project.

1.02 **Nature of the Proposed Action.** The Brazos River Authority, a duly constituted state agency, has made application for a permit under Section 404 of Public Law 92-500 for the construction of the Sterling C. Robertson Dam on the Navasota River in Robertson and Leon Counties at river mile 124.5. (See plate I-1.) This site is about 22 miles northeast of Franklin, Texas, and about 6 miles northwest of Marquez, Texas. The purpose of the project is to conserve and develop the water resources of the upper Navasota River in order to provide dependable water supplies to meet municipal, domestic, industrial, and agricultural needs in the area of the upper Navasota watershed and in the lower Brazos Basin and adjoining coastal areas downstream of the project. The most urgent immediate need is for water for cooling of steam-electric generating facilities to be built in the upper Navasota watershed, where extensive deposits of lignite will be utilized to replace dwindling gas and oil supplies as a source of fuel for production of electric energy. In addition to meeting this and other water needs in the local area, Lake Limestone will be operated in conjunction with other lakes in the Brazos River Authority's basinwide water supply system to help meet urgent downstream water needs, especially in the coastal area south of Houston where land subsidence caused by the pumping of ground water is giving added emphasis to the need for dependable surface water supplies from the Brazos, not only to meet increasing future water needs but also to meed those present needs which cannot continue to be met by pumping from wells. Based on contracts already made and on additional requests received, it is expected that all the available water supplies from Lake Limestone will be committed before construction is completed. Lake Limestone, with its 14,000 acre water surface, will also provide an attractive outdoor recreation facility which will be open for free use by the public for boating, fishing, and other water-based recreational activities.

1.03 Limestone Lake would have a surface area of 14,200 acres and would impound 217,494 acre-feet of water at elevation 363 feet mean sea level (msl), its normal operating level. The lake would cover 12 to 15 miles of the existing Navasota River and would have shore-line of about 130 miles. The lake would have no flood-control storage so flood waters would be passed on downstream.



VICINITY MAP

PLATE I-1
STERLING C. ROBERTSON DAM
NAVASOTA RIVER
(RIVER MILE 124.5)
ROBERTSON AND LEON COUNTIES, TEXAS
APPLICATION BY BRAZOS RIVER AUTHORITY
DATE OCT 9, 1975

1.04 The lake would be included in the system of operation of certain reservoirs in the Brazos River Basin authorized by the Texas Water Rights Commission Order of July 23, 1964, amended July 23, 1968. The system operation, as described in the Water Rights Commission Permit No. 2950 issued to the Brazos River Authority on July 29, 1974, stipulates that the Brazos River Authority determine low flows prior to beginning impoundment, correlate low flow at a station upstream from the reservoir site with low flow at the damsite, and pass through the dam all low flows up to 6 cubic feet per second. Low flows greater than 6 cubic feet per second would be passed through to serve superior downstream water rights. When low flow falls below 2 cubic feet per second, a minimum of 2 cubic feet per second will be passed through the dam until low flows cease. In order to permit releases of water through the dam from different selected levels in the lake, the following facilities will be provided: in the left end pier of the service spillway, a 10-inch valved pipe with gated intakes at depths of 12, 24, and 37.5 feet when the normal maximum lake surface at elevation 363 feet msl; in the right end pier of the service spillway, two 36-inch valved pipes with gated intakes at depths of 12, 25, and 37.5 feet below elevation 363 feet msl. Net evaporation loss values for the 30 year period (1941—1970) as taken from Texas Water Development Board Report 64 are: (1) average annual net reservoir loss, 2.31 ft.; (2) maximum calendar year evaporation, in 1951, 5.17 ft.; (3) mimimum calendar year evaporation, in 1957, 0.21 ft.

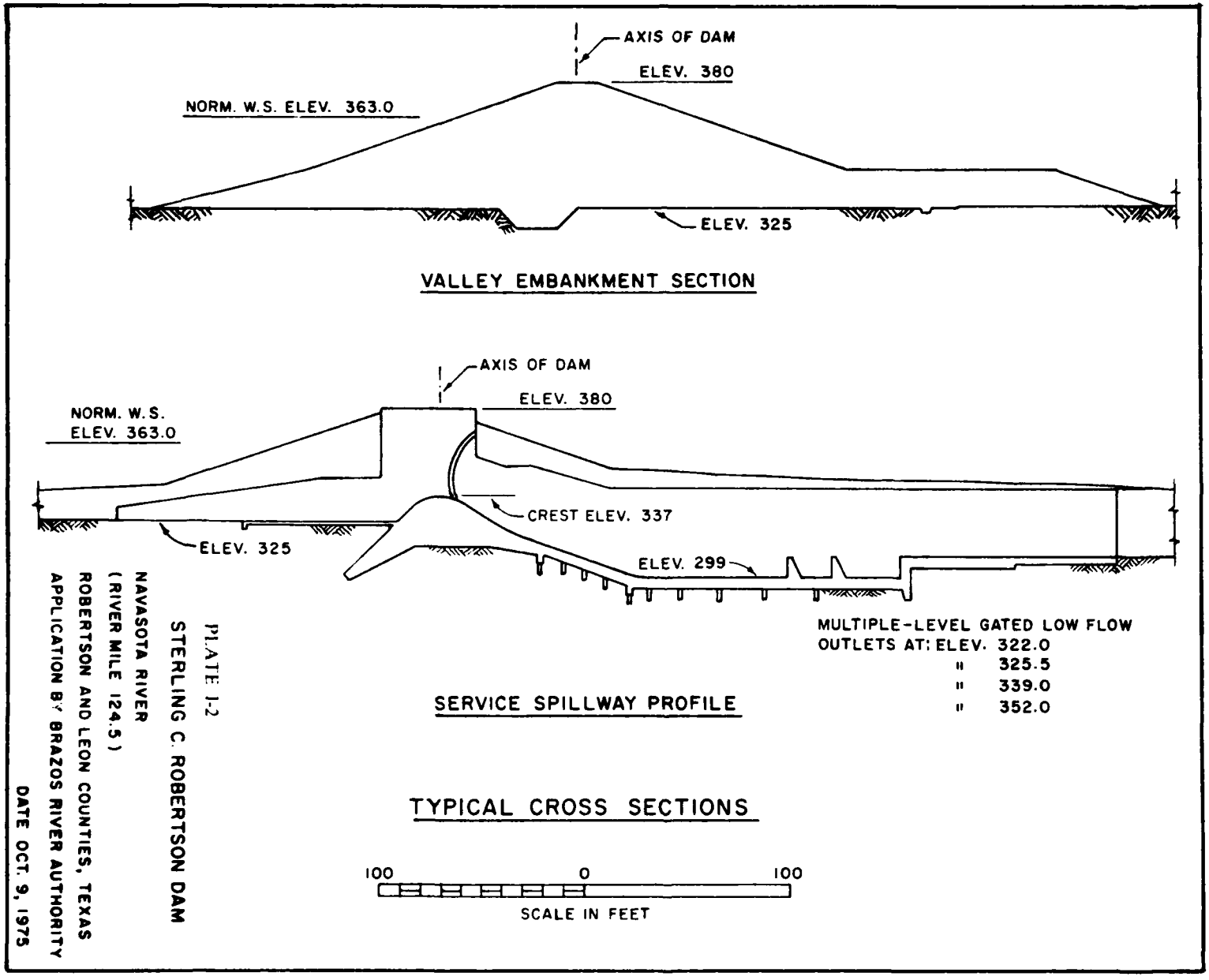
1.05 **Land Acquisition.** Land acquisition criteria and guidelines for the Sterling C. Robertson Dam and Lake Limestone project have been established by the Brazos River Authority. Land needed for construction of the dam and appurtenant structures (about 800 acres) will be acquired in fee, except for oil and gas rights. The necessity of excluding public access to the dam and areas immediately downstream for safety reasons will be taken into consideration in acquiring the land. Land in the area to be inundated by the lake will be acquired in fee up to elevation 363 feet mean sea level (normal pool level), with the landowner retaining mineral rights (but with recovery operations limited as needed to accommodate the lake and its operation). The number of acres to be acquired for the project include approximately 15,000 acres in fee and 6,000 acres in easement.

1.06 Certain clearing and grubbing activities will be required in connection with the construction of the Sterling C. Robertson Dam and Lake Limestone both within and above the 363 foot msl contour.

1.07 **Project Costs.** The total cost of the project has been estimated by the Brazos River Authority to be $50,000,000.

1.08 No state or Federal tax monies or funding will be involved in meeting the costs of the project. It is being financed by the Brazos River Authority through the sale of bonds to private investors. The initial issue of bonds to finance the project, in the amount of $30 million, was sold by the Authority on June 19, 1975. Revenue from the sale of water to the Texas Utilities Generating Company and other future contractors for water will be used to pay off the bonds and operate and maintain Limestone Lake.

1.09 Construction of the project was initiated July 22, 1975, and a contract for construction of the embankment and spillway portions of the project was awarded in July 1975, to the Texas Bitulithic Company in the amount of $15,678,567. The project is expected to be completed in 1978, and become fully operational by 1980.


AXIS OF DAM
ELEV. 380
NORM. W.S. ELEV. 363.0
ELEV. 325
VALLEY EMBANKMENT SECTION
AXIS OF DAM
ELEV. 380
NORM. W.S.
ELEV. 363.0
CREST ELEV. 337
ELEV. 325
ELEV. 299
MULTIPLE-LEVEL GATED LOW FLOW
OUTLETS AT: ELEV. 322.0
" 325.5
" 339.0
" 352.0
SERVICE SPILLWAY PROFILE
TYPICAL CROSS SECTIONS
100 0 100
SCALE IN FEET
PLATE I-2
STERLING C. ROBERTSON DAM
NAVASOTA RIVER
(RIVER MILE 124.5)
ROBERTSON AND LEON COUNTIES, TEXAS
APPLICATION BY BRAZOS RIVER AUTHORITY
DATE OCT. 9, 1975

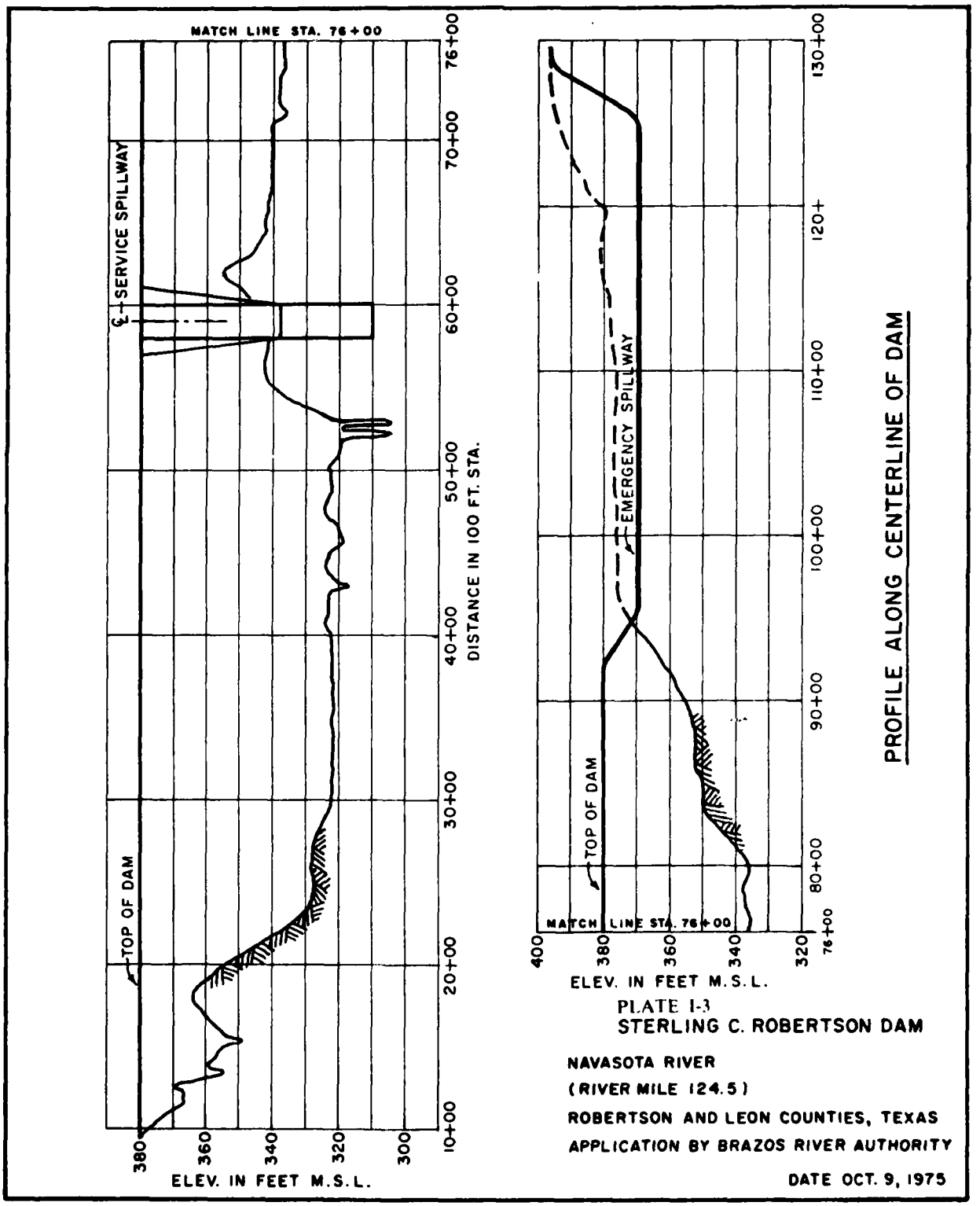


PLATE I-3
STERLING C. ROBERTSON DAM

NAVASOTA RIVER
(RIVER MILE 124.5)
ROBERTSON AND LEON COUNTIES, TEXAS
APPLICATION BY BRAZOS RIVER AUTHORITY

DATE OCT. 9, 1975

SECTION II — ENVIRONMENTAL SETTING WITHOUT THE PROJECT

2.01 **Physiography.** The reservoir will be situated near the southwestern end of the Sandy Hills region which comprises the northern part of the East Texas Timber Belt. The boundary between the Black Prairie and the East Texas Timber Belt is approximately five miles north of the upstream end of the proposed reservoir. The Sandy Hills region is characteristically hilly to gently rolling with the topography controlled by alternating sands and shales. The non-marine shales and sands exposed in the reservoir area exhibit little resistance to erosion. Drainage lines are frequent, and the valleys are generally broad and shallow with low rounded interstream divides.

2.02 The area has supported a relatively dense forest cover composed of oak, hickory, and elm in contrast to the Black Prairie to the northwest dominated vegetationally by grasses and the Piney Woods to the southeast dominated by pines, oaks, sweetgum, and hickory on the uplands and oak, sugarberry, elm, and bush palmetto in the bottomlands. Forests in the general area of the reservoir are presently confined mainly to the Navasota River flood plain and its tributaries.

2.03 **Geology.** The proposed damsite and reservoir area will be situated entirely on the outcrop belt of the Wilcox group which is composed of the Calvert, Bluff, Simsboro, and Hooper formations. (See plate II-1.) The Wilcox group overlies the Midway group which outcrops to the west, and is overlain by the Carrizo formation which outcrops to the east. The outcrop belt of the Wilcox group is 16 to 20 miles wide in the project area, and the strike of Wilcox formations is approximately N.35°E. The Wilcox consists mainly of unconsolidated sediments deposited in a terrestrial environment.

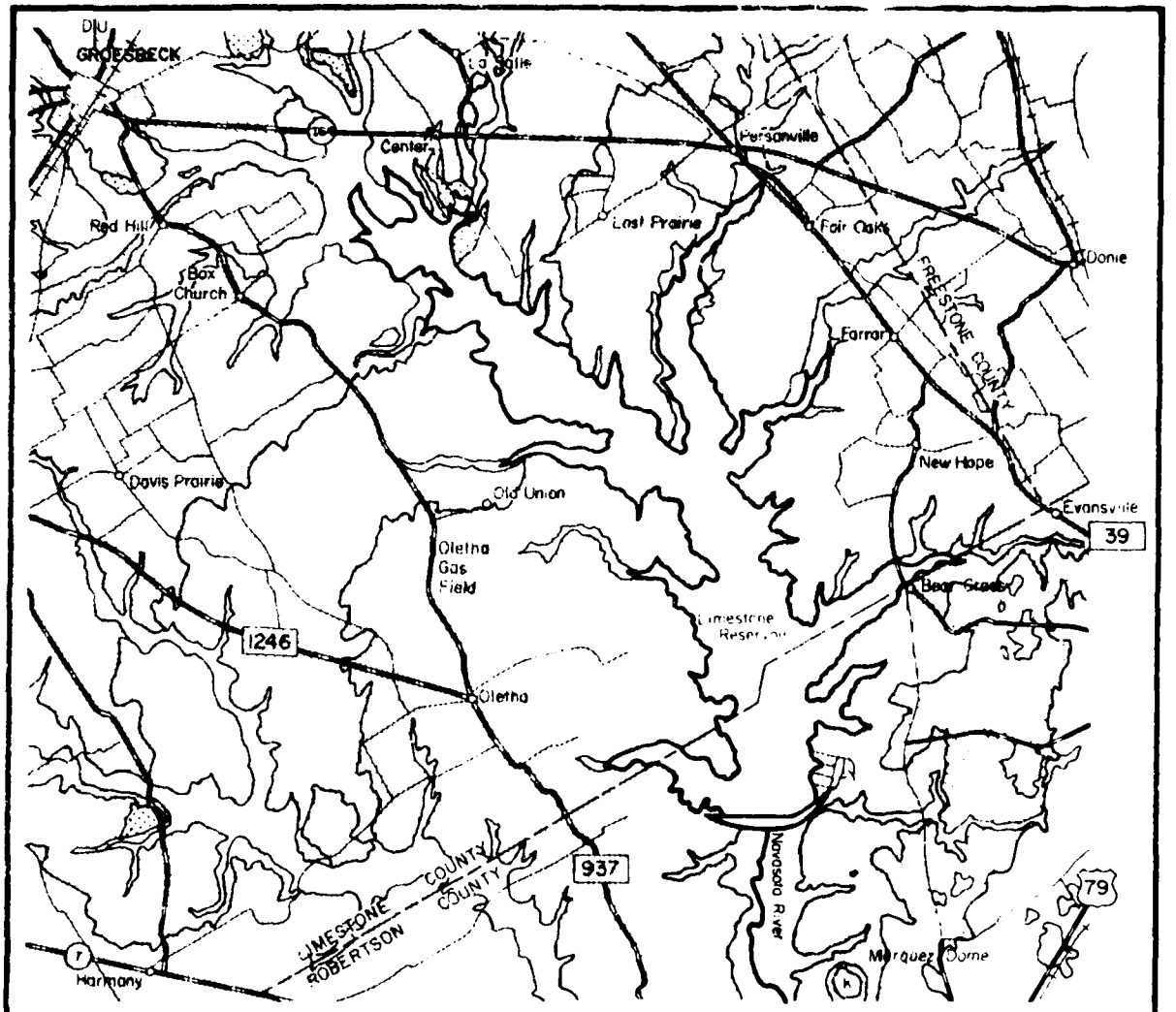
2.04 **Ground Water.** The Carrizo-Wilcox aquifer is the major source of ground water in Leon and Robertson Counties and to a lesser extent in Limestone County. Ground water withdrawals in 1960 were about 550 acre-feet but represent a very small percentage of the quantity that could be developed.

2.05 Alluvium in the Navasota River Valley provides limited amounts of water for domestic and stock purposes through hand dug wells. These wells are typically about 36 inches in diameter and usually less than 40 feet in depth. Yields are strongly dependent on seasonal rainfall conditions.

2.06 **Economic Geology.** Mineral production in the three-county area as reported by the U.S. Bureau of Mines for 1970, 1971, and 1972 consisted of sand and gravel, natural gas, petroleum, clays, natural gas liquids, and stone. The average value of production for the 3-year period was: Limestone County $4,911,000; Leon County $3,150,000; and Robertson County—$51,000.

2.07 **Potential Lignite Resources.** Kaiser (1974) estimates that there are 10.4 billion short tons of lignite in Texas within 200 feet of the surface and that about 80 percent of these reserves occur in the Calvert Bluff formation. This formation crosses the project site, but preliminary investigations indicate no continuous deposits of commercially recoverable lignite in the reservoir area (BRA, 1976).

2.08 Although largely undeveloped, lignite has been mined at various places in the vicinity of the proposed reservoir. From 1907 to 1930, 1½ to 2 million short tons were taken from 6 to 9 foot seams near Bear Grass and Evansville in northwestern Leon



SCALE IN MILES

3 0 3 6

LEGEND

- ALLUVIUM
- FLUVIATILE TERRACE DEPOSITS
- CARRIZO FORMATION
- CALVERT BLUFF FORMATION
- SIMSBORO FORMATION
- HOOPER FORMATION
- MIDWAY GROUP
- K — UPPER CRETACEOUS UNDIVIDED

ROBERTSON DAM AND LIMESTONE RESERVOIR

GEOLOGY

U S ARMY ENGINEER DISTRICT, FT WORTH

PLATE II-1

County. Seven mines, ranging from 30 to 110 feet in depth, were located about 8 to 10 miles northeast of the proposed damsite. Similar operations near Donie, in Freestone County, were reported by Lonsdale and Crawford (1928). Potential commercial deposits also occur in Limestone County. Kaiser (1974) estimates that there are 169 million short tons within 200 feet of the surface in Limestone County.

2.09 Lignite seams in this region were formed in a delta environment and are considered to be better in quality than those Calvert Bluff lignites formed in a fluvial environment (northeast of the Trinity River) and those formed in a lagoonal environment (south of Bastrop County). Deltaic lignite, in contrast to fluvial and lagoonal types, has generally a low ash content, moderate sulfur content, high heating value, a tabular shape and a wide extent (up to 10 miles). Analyses indicate that lignites from Bear Grass and Evansville are fairly typical of the deltaic lignite zone between the Colorado and Trinity Rivers.

2.10 **Soils.** Soil types and their areal extent are relatively well known in the project area consistent with the coverage given the area in geologic and soils survey work. These data have been presented on generalized county soil maps prepared by the Soil Conservation Service of the U.S. Department of Agriculture (USDA) in 1960, 1961, and 1962. Related published soil surveys have furnished information on the agriculture and climate of the area. In 1971, 1972, and 1973, surveys and studies were made which provided bases for making estimates of yields of the common agricultural crops under defined levels of management and various land-use capability interpretations.

2.11 In general, there are three upland soils series groups and two flood plain soils series groups represented. The upland types are: (1) Axtell-Tabor Series Group (which covers approximately two-thirds of the area), (2) Kenney-Freestone Series Group, and (3) Crockett-Mabank Series Group. The flood plain types are: (1) Gowen-Hahatche Series Group, and (2) Kaufman-Gladewater Series Group.

Climatology

2.12 **Climate.** Historical meteorological data are not available for the Sterling C. Robertson Dam and Lake Limestone project area. The nearest weather station is located in Mexia, Texas, about 25 miles northeast of the Sterling C. Robertson Dam site. The climatological summary presented herein was extracted from U.S. Department of Commerce (undated).

2.13 Mexia is located in the northeastern portion of Limestone County, in North Central Texas, near the border of the Blackland Prairie and the Post Oak Belt. The surrounding terrain is level to rolling and is drained by the Navasota River. The city lies in the humid, subtropical belt that extends northward from the Gulf of Mexico, and its climate is dominated by this during spring, summer, and autumn. In the winter, the interaction of cold polar air from the north with the moist tropical air from the Gulf is frequent over the region. Rainfall at Mexia, averaging 37.44 inches annually, is fairly evenly distributed throughout the year, except for a relatively dry period in July and August. The driest year on record at Mexia was 1954 when 20.44 inches of rain fell. The wettest year was 1957 with 58.03 inches of rain. Short periods of heavy rainfall may occur at almost anytime of the year. Most rainfall is associated with thunderstorms.

2.14 The summer months are hot and humid. During the winter and early spring months, cold polar air masses push down through the region producing sudden temperature changes. When these cold air masses are overrun by moist air from the south,

several days of cold, cloudy weather follow. These conditions are usually of short duration. Winters are normally mild and periods of cold weather usually last for only a few days at a time. An average of 36 days per year experience a temperature drop to 32°F. or below. Snowfall is rare and is not a significant source of moisture.

2.15 Mean annual relative humidity is 80 to 85 percent at 6 a.m., 55 to 60 percent at noon, and 50 to 55 percent at 6 p.m. Central Standard Time.

2.16 Mexia has an average growing season (freeze-free period) of 255 days. The average date of the first freeze in the fall is November 26th. The average date of the last spring freeze is March 15th. Mexia receives an average of about 60 to 65 percent of the total possible sunshine annually. January is the cloudiest month. The prevailing wind is from the south.

2.17 Table II-1 shows the means and extremes of temperature and precipitation recorded in Mexia during the period 1931 to 1965.

Water Quality

2.18 **Surface Water Quality.** Historical data on surface water quality in the Navasota River are available from several sources. The U.S. Geological Survey has water quality stations on the Navasota River near Bryan, near Easterly, and near Groesbeck. Both the Bryan and the Easterly stations are downstream from the proposed project site. The Groesbeck station is about 1 2 miles upstream from the headwaters of the proposed lake. Some physiochemical data are available on the quality of the water at these stations from 1967 to the present. Clark (1973) included a number of water quality parameters in his ecological investigation of the Navasota River. Southwest Research Institute (SwRI)(1975) conducted a year-long water quality investigation in the upper portion of the Navasota River and its tributaries.

2.19 One of the sampling stations of Clark (1973) was at the crossing of Texas State Highway 7 and the Navasota River a location approximately 3 miles south of the proposed Sterling C. Robertson Dam site. Clark compared the chemical characteristics of the Navasota River with concurrent measurements made in the Trinity River, the Brazos River, and the Colorado River, and to the average values for North American rivers. Silica values for the Trinity River and the Brazos River were below the average value. Sodium, chloride, sulfate, and potassium values for Brazos River waters were more than three times the North American average. The Brazos also shows consistently higher values for dissolved solids, hardness, and conductivity. This general condition is due largely to the geology of the upper watershed where extensive saline strata are naturally exposed. The general chemical characteristics of the waters of the Navasota River as measured by Clark appeared to be of better general quality than those of the Brazos River.

2.20 The water quality investigation of SwRI (1975) was a survey for the combined projects of Oak Knoll, Twin Oaks, and Limestone Lakes. The survey consisted of 10 sample sites and the measurement of 43 parameters. Of the entire survey area and the parameters examined, numerous violations of "most stringent" criteria were observed for the following parameters: boron, chloride, iron, mercury, oil and grease, phenols, suspended solids, total dissolved solids, and vanadium. Alkalinity was also reported as being undersirable but the concern seems unwarranted. Turbidity, which corresponds to suspended solids, was also high. However, of the 10 sample sites surveyed, only two are of direct relationship to Limestone Lake. These sites were stationed immediately upstream

Table II-I

Means and Extremes of Temperature and Precipitation Recorded In Mexia, 1931-1965

Month	Temperature (°F)							**	Precipitation Totals (Inches)								Mean number of days					Month
	Means			Extremes								Snow, Sleet						Temperatures				
																		Max.		Min.		
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Mean degree days	Mean	Greatest daily	Year	Mean	Maximum monthly	Year	Greatest daily	Year	Precip. .10 inch or more	90° and above	32° and below	32° and below	0° and below	
(a)	35	35	35	35		35		11	35	35		35	35				12	12	12	12	12	
Jan	57.0	35.7	46.4	86	1943	-1	1949	629	3.12	3.91	1932	0.8	6.0	1944			4	0	2	14	0	Jan
Feb	60.8	39.2	50.0	87	1940	0	1951	441	3.10	3.31	1932	0.3	3.6	1940			6	0	*	7	0	Feb
Mar	68.0	44.7	56.4	95	1946	12	1943	308	2.94	5.95	1965	0.2	2.0	1954			4	0	0	4	0	Mar
Apr	76.3	54.7	65.5	96	1963	30	1950+	80	3.84	4.12	1944	T	T	1938			6	*	0	0	0	Apr
May	82.8	63.1	73.0	97	1963+	41	1954	8	4.82	4.70	1959	0	0				6	3	0	0	0	May
Jun	90.2	69.8	80.0	105	1936+	55	1964	*	3.33	4.15	1938	0	0				5	16	0	0	0	Jun
Jul	94.8	72.9	83.9	110	1954	62	1950+	0	2.05	4.10	1936	0	0				3	27	0	0	0	Jul
Aug	96.7	72.5	84.6	110	1936	60	1944+	0	1.78	3.62	1958	0	0				3	28	0	0	0	Aug
Sep	90.6	67.2	78.9	109	1939	40	1942	1	3.35	11.80	1932	0	0				4	20	0	0	0	Sep
Oct	81.6	56.8	69.2	102	1938	32	1957+	53	2.83	4.40	1957	0	0				4	4	0	*	0	Oct
Nov	68.1	45.0	56.6	90	1948	20	1950	255	3.15	3.73	1944	0.2	5.5	1937			4	0	0	2	0	Nov
Dec	59.8	38.2	49.0	84	1955+	9	1950	514	3.13	2.95	1935	0.2	4.5	1963			5	0	*	9	0	Dec
Year	77.2	55.0	66.1	110	Jul. 1954+	-1	Jan. 1949	2289	37.44	11.80	Sep. 1932	1.7	6.0	Jan. 1944			54	98	2	36	0	Year

(a) Average length of record, years

T Trace, an amount too small to measure.

** Base 65°F

\+ Also on earlier dates, months, or years.

* Less than one half.

and downstream of the proposed lake site on the Navasota River. The data for the parameters of concern and several others of interest at these two sites are summarized in tables A-1 and A-2.

2.21 In summary, water quality at the two sites was highly variant with flow, with poorest water quality generally resulting from high flows following heavy rainfall. Numerous violations of Texas Water Quality Board (TWQB) standards of chlorides, fecal coliforms, and total dissolved solids were noted. Boron, oil and grease, suspended solids, vanadium, and phenols were also at undersirable levels. Mercury was not detected at the lower site and was detected in only 5 of 12 samples at the upstream site. However, detected concentrations were relatively high when compared to the various standards. Iron exceeded the USPHS drinking water standard in only one sample at each site. The pH was normally quite alkaline but dropped below the 6.5 minimum on a total of three samples from both sites. Overall, water quality was generally good with the exception of several very stringent criteria and others that should have negligible impact. Mercury and phenols are perhaps the only relatively serious parameters. Mercury exceeded accepted levels for consumption on only 2 of 19 sample-months combined for the two sites on the Navasota River. Phenols were generally high, and, in view of their high rate of decomposition in natural waters, contamination may have been recent.

2.22 **Point Source Discharges.** The Brazos River Authority's *Water Quality Management Plan for the Brazos Basin* (1975) lists point sources in the Navasota River Basin. Four sources which lie within the drainage area of the Limestone Lake are given in table II-2, which also shows recommended discharge permit limitations. None of these dischargers are located within 5 miles of the Limestone Lake site, so secondary sewage treatment is expected to be adequate treatment for these dischargers (BRA, 1975).

2.23 **Non-point Sources.** No quantitative data are available on the non-point source discharges from rural or urban areas into the Navasota River. Measurements taken within the River and in tributary streams by SwRI (1975) included some water from rural and urban runoff.

Table II-2

Point Sources in the Limestone Lake Watershed

		Proposed NPDES Permit			
Name	**Q MGD**	**BOD mg/l**	**SS mg/l**	**Cl_2 mg/l**	**Fecal Col. #/100ml**
City of Mexia	1.0	20	20	1.0	200
TDMH & MR Mexia State	0.45	20	20	1.0	200
City of Teague	0.21	30	30	1.0	200
City of Groesbeck	0.28	30	30	1.0	200

MGD = millions of gallons per day
mg l = milligrams per liter
Q = total volume discharged
BOD = Biochemical oxygen demand
SS = suspended solids
Cl_2 = chlorine residual in effluent

2.24 **Ground Water Quality.** SwRI (1975) found that existing data on the quality of well water was available for some wells in Limestone and Robertson Counties, but none of the wells was located near enough to the proposed activities of project construction to be meaningful. Using the same procedures as they had with the surface water quality analyses, six wells were sampled for 12 months. The comparison of the results with the most stringent drinking water standards, existing or proposed, showed only seven parameters that ever exceeded the standards, and five were in excess in more than 10 percent of the samples taken. Those five were: boron, iron, phenols, total dissolved solids, and turbidity.

2.25 **Air Quality.** The only air quality data available from the area of the Sterling C. Robertson Dam site and Limestone Lake site are those collected by SwRI (1975). They measured existing levels of particulates, sulfur dioxide, oxides of nitrogen, carbon monoxide, and ozone. Between December 1973 and December 1974, sixteen air quality samples were taken for periods of up to 24 hours. They found the area to be nearly pollutant-free and about what could be expected in any agricultural ranching community with a sandy soil type and little or no industry and commerce.

2.26 **Noise.** The only data available on existing noise levels in the Lake Limestone area are those collected by SwRI (1975). Twelve test sites were chosen in the areas of the Lake Limestone site and the sites of the Oak Knoll and Twin Oak electric generating plants. Ambient noise was recorded at each site at four different times during the day: (1) early morning; (2) mid-morning; (3) afternoon; and (4) evening.

2.27 Two types of noise data were measured at each site: (1) a histogram of dBA level versus number of readings; and (2) an octave band analysis. The former show the percentage of readings at each level over a 20-dBA range for a 5 minute time interval while the latter indicates the frequency bands which contribute the most to overall noise measurement at each test site. Simultaneous measurements of relative humidity, barometric pressure, wind velocity and direction, and temperature were made.

Texas Outdoor Recreation Plan

2.28 **Recreation.** The draft Texas Outdoor Recreation Plan (TORP) prepared by the Texas Parks and Wildlife Department indicates that land access to public recreational waters in Texas should be increased. Texas has many lakes, reservoirs, rivers, and streams; however, existing public recreation areas adjacent to many of these waters are crowded while the waters themselves are under utilized. Additional land areas which are set aside for outdoor recreation purposes should be adjacent to existing water resources. In providing additional lands, priorities should be given to lands for utilization as recreation areas in close proximity to larger metropolitan areas.

2.29 The current supply of recreation lake surface acres in Texas is, in a statewide view, estimated to provide adequate resources for the activities of boating, fishing, and skiing. However, the spatial distribution of these resources in many instances is less than ideal. The problem is that there is a considerable need for additional surface acres for the larger metropolitan areas. Considering this fact and the estimated requirements for water recreation, water resource agencies operating in the State should place priorities, where possible, in providing additional surface acreages in or near the urban areas.

2.30 The TORP indicates that a wide deficit exists between the projected recreational needs in the Brazos River basin and the output capacities of all existing and proposed water resource development projects.

2.31 The Lake Limestone area overlaps State planning regions 20 and 21. Table II-3 depicts the projected resource requirements identified in the TORP for the above referenced State planning regions and the recommended River Authority responsibilities for meeting the future recreation lands and facilities needs. No attempt has been made to apportion these needs to Lake Limestone.

Table II-3

Summary of Recreation Land, Water, and Facility Requirements—Lake Limestone Area 1980 and 2000

Recreation Resource	Unit Measure	Incremental Resource Requirements Rural and Urban Areas 1980	2000	River Authority Allocation of Responsibility	Recommended River Authority Responsibility 1980	2000
Park Land	acres	6,104	18,140	18%	1,100	3,265
Hunting Land	acres	0	484	0%	0	0
Campsites	sites	1,940	5,251	26%	507	1,365
Picnicking	tables	4,035	10,650	23%	942	2,450
Boat Ramps	2 ln/ramp	298	672	11%	33	74
Fishing Facilities	lin. yds	2,672	5,711	22%	581	1,256
Swimming Beaches	sq. yds.	1,298	5,718	17%	221	972
Bicycle Trails	miles	8	18	0%	0	0
Horseback Trails	miles	40	131	0%	0	0
Walk, Hike, and Nature Study Trails	miles	79	203	10%	8	20
Recreation Water	surface acres	443	2,152	20%	89	430

2.32 Recreation opportunities are provided by all levels of government and the private sector. Water resource developments are the major recreational attractions in the area. Table II-4 presents data on the major recreation resources in the area.

2.33 The majority of recreational demand in the area is of the water oriented type. Water oriented activities are: swimming, boating, water skiing, fishing, picnicking, camping, sightseeing, and hiking.

2.34 Land based recreational activities in the flood plain are, for the most part, limited to hunting and camping on private lands. Public access to the river for fishing, boating, canoeing, and other water oriented activities is limited primarily to highway crossing.

2.35 The draft TORP presents an inventory of existing parks and recreation lands in the Lake Limestone area (Regions 20 and 21). Table II-5 depicts the existing parks and recreation lands, by administration, in the area.

Table II-4

Major Recreation Resources In The Lake Limestone Area

Recreation Resource	Administering Agency	Public Land Acres	Surface Acres
Waco Lake	C of E	3,666	7,270
Fairfield State Park	Texas Parks & Wildlife Dept	1,460	2,400
Old Fort Parker State Park	TPWD	11	0
Fort Parker State Park (Lake Springfield)	TPWD	1,485	750
Fort Fisher State Park	TPWD	35	0
Lake Mexia	Bistone Municipal Water District	1,240	1,200
Camp Creek Lake	Camp Creek Water Company	0	750
Bryan Utilities Lake	City of Bryan	250	829
Houston County Lake	Houston County Water Control & Improvement District No. 1	Exact acreage unknown	1,282
Tradinghouse Creek Lake	Texas Power & Light Co.	2,613	2,010
Alcoa Lake	Aluminum Company of America	5	880

Table II-5

Existing Parks and Recreation Lands in the Lake Limestone Area by Administration

Existing Areas	Federal		State		Local	Private	Total
	COE[1]	TPWD[2]	RA[3]	WD[4]			
Number of Parks	27	9	0	1	16	54	107
Total Parks and Recreation Lands (in acres)	8,233	4,961	0	1,246	1,505	5,425	21,370
Developed Land (in acres)	2,220	2,000	0	1,240	951	1,453	7,864
Undeveloped Land (in acres)	6,013	2,961	0	6	554	3,972	13,506

[1]Corps of Engineers
[2]Texas Parks and Wildlife Department
[3]River Authorities
[4]Water Districts

2.36 **Flora.** The proposed lake is to be located in the Post Oak Savannah vegetational area (Gould, 1969). This region includes both oak-hickory or deciduous forest formation and true prairie association of the grassland formation. The topography is gently rolling to hilly with elevations between 300 and 800 feet msl. Annual precipitation is about 40 inches. Upland soils are light colored acid sandy loams or sands. Bottomland soils are darker acid sandy loams or clays (Gould, 1969).

2.37 According to SwRI (1975), a total of 210 species were identified resulting from 2 series of plant collections from the Navasota River Study area. In the study, two general vegetative sites were determined, i.e., the forest and prairie types. Of the 14,200 acres to be inundated by the proposed lake, about 9,500 acres (66.7 percent) are in forest, and about 4,700 acres (or 33.3 percent) are in prairie. Species common to the upland forest site included post oak *(Quercus stellata)*, several grasses *(Panicum sp.)*, winged elm *(Ulmus alata)*, slender copperleaf *(Acalypha gracilens)*, holly *(Ilex sp.)*, blackjack oak *(Quercus marilandica)*, bull briar *(Smilax bona-nox)*, flatsedge *(Cyperus sp.)*, and Spanish mulberry *(Callicarpa americana)*. Common bottomland forest species included pecan *(Carya illinoensis)*, post oak *(Quercus stellata)*, hackberry *(Celtis sp.)*, elm *(Ulmus sp.)*, and holly. Species common in the prairie site included *Croton* sp., prairie crusae *(Crusea tricocca)*, Bermudagrass *(Cynodon dactylon)*, flatsedge, *Panicum* sp., sneezeweed *(Helenum amarum)*, Drummond nailwort *(Paronychia drummondii)*, *Paspulum* sp., coast sandbur *(Cenchrus incertus)*, sedge *(Carex* sp), *Oxalis* sp., and vetch *(Vicia* sp.). The U.S. Fish and Wildlife Service reported that within the bottomland forests and cleared bottomlands there are approximately 9,300 acres of seasonally flooded wetlands.

2.38 There are no known species in the project area classified as rare, endangered or threatened by extinction. However, the Texas Forest Service has recorded a national champion tree, *Ulmus crassifolia* (cedar elm), which is located within the proposed lake area on the Navasota River.

Fauna.

2.39 **Fish.** A total of 56 species belonging to 14 families and 9 orders were taken during 136 collections at 105 localities on the Navasota River between May 1967 and July 1968 by Rozenburg, et al. (1972). Several types of habitats were sampled, including sandy stretches, gravel and sand riffles, narrow gravel-bottom streams, and large mud-bottom reservoirs. Some of the more common species collected are found throughout most of all of Texas. However, certain species reach the limits of their recorded range in the Navasota drainage area. The stoneroller *(Campostoma anomalum),* apparently reaches its southeastern boundary in this watershed. The blackspot shiner *(Notropis atrocaudalis)* and blackspotted topminnow *(Fundulus olivaceous)* apparently reach their western boundary, and the western limit of the ranges of the dollar sunfish *(Lepomis marginatus),* bantam sunfish *(L. symmetricus),* and goldstripe *(Etheostoma parvipinne)* are at the eastern edge of the Navasota drainage area. The fauna collected is different from other parts of the Brazos River drainage in that the species are more representative of eastern drainages, i.e., Austroriparian (Blair, 1950), rather than the rest of the Brazos (Rozenburg et al., 1972).

2.40 There are no estuaries within the Navasota River watershed. Therefore, there are no internal considerations in relation to estuaries for the three limiting boundaries; impoundment, flood plain, and watershed. However, looking externally, the waters of the Navasota River are a significant contributor to the maintenance of the limited estuaries both at the river mouth and through circulation of the intracoastal canal, in the Lower Brazos River basin. (TAMU, 1973)

2.41 There are no known species considered rare, endangered, or threatened by extinction in the project area.

2.42 **Birds.** The diversity of birds in Texas naturally reflects the extremely varied climate, physiography, and vegetation of the State. Each region supports certain species adapted to a particular combination of weather, terrain, and flora (Oberholser et al., 1974).

2.43 From over 540 species reported in the state by Peterson (1963), field personnel sighted and identified 103 different species in the project area and an additional 10 more not specifically identified (SwRI, 1975). Some of the more common species were: starling, turkey vulture, meadowlark, crow, cardinal, mourning dove, Brewer's blackbird, barn swallow, robin, Savannah sparrow, dickcissel, song sparrow, tufted titmouse, Carolina chickadee, Harris' sparrow, common grackle, Canada goose, junco, snow goose, killdeer, scissor-tailed flycatcher, upland plover, mallard duck, vesper sparrow, lesser yellowlegs, and white-rumped sandpiper. Also, one reported endangered species, the American peregrine falcon, was sighted in the study area (SwRI, 1975).

2.44 Species listed by the Texas Organization of Rare and Endangered Species (TOES, 1975) as rare, endangered, or threatened by extinction and having a range that is either statewide or includes all or part of the study area are:

Species	Range in State	Habitat Preference
Swallow-tailed kite *(Elanoides forficatus)*	eastern half	open woodlands
bald eagle *(Haliaeetus leucocephalus)*	statewide	lakes & larger rivers

golden eagle *(Aquila chrysaetos)*	statewide	mountains & hill country
osprey *(Pandion haliaetus*	statewide	lakes & reservoirs
peregrine falcon *(Falco peregrinus)*	statewide	lakes & mountains
prairie falcon *(F. mexicanus)*	statewide except extreme east	open country and arid areas
Merlin *(F. columbarius)*	statewide	open country

2.45 **Mammals.** The study area is located along the north to south border that divides Blair's (1950) Texan and Austroriparian biotic provinces (fig. II-1). There is an important intermixing of faunas in this transitional area. This is demonstrated by the fact that of the 49 mammals reported to occur in the Texan, 41 also occur in the Austroriparian. Within the Texan there is also an interdigitation (i.e., different ecological associations existing in the same area because of local soils related differences) of forest and grassland associations. The Austroriparian or eastern species found in the Texan are restricted mostly to the oak-hickory forest or flood plain forest. Similarly, the species entering the Texan from the west are largely limited to the prairies (Blair, 1950).

2.46 Twenty species of mammals were sighted during field trips in the study area (SwRI, 1975). The most frequently sighted mammals were the raccoon and the armadillo. Coyote, deer, bobcat, and oppossum were also common. Because of unfavorable weather conditions very few identifications were obtained from trapping rodents, resulting in little information on these species (SwRI, 1975).

2.47 Davis (1974) reports an additional 23 species of mammals with a range in the state that includes all or a portion of the study area. These species include mainly bats, rodents, and carnivores.

2.48 There are no known species in the project area classified as rare, endangered, or threatened by extinction.

2.49 **Amphibians and Reptiles.** Raun and Gehlbach (1972) reported, either from the literature or by observation, 71 amphibian and reptile species in Limestone, Leon, and Robertson counties. These included 4 sirens, salamanders, and newts, 18 frogs and toads, 11 turtles, 10 skinks and lizards, 1 alligator, and 27 snakes.

2.50 In field studies, SwRI (1975) sighted and identified 19 of the same species (12 frogs and toads, 4 skinks and lizards, and 3 snakes) and one additional species of lizard. The amphibians were sighted mainly during the warmer months at stream and tank sites. Very few reptiles were observed because they followed the same seasonal cyclic pattern caused by the lower temperatures in January and February.

2.51 The alligator, *Alligator mississippiensis*, is the only known species classified as rare or endangered known to exist in the project area.

Figure II-1. The location and extent of the Navasota River Basin within the Biotic Provinces of Texas (Blair, 1950).

2.52. **Navasota River Limnology.** An inventory of the aquatic and benthic organisms of the Navasota River conducted by Clark (1973) included taxonomic investigations of the blue-green algae, bacteria, protista (green algae, diatoms, and protozoans), invertebrates (flatworms, nematodes, rotifers, roundworms, arthropods, clams and mussels, and snails) and vertebrates (bony fishes).

Archeological Characteristics.

2.53 **Archeological Elements.** The Upper Navasota Dam and Reservoir (Lake Limestone) will affect portions of Leon, Limestone, and Robertson counties in east central Texas. The project area is located in the western edge of the East Texas Timber Belt; soils are claypan Alfisols of the Lufkin-Axtell-Taber associations (Godfrey et al., 1973). Soils within the present flood plain are of the Navasota series.

2.54 Through interagency agreements with the Brazos River Authority, the Texas Archeological Survey Project of the University of Texas has made a survey of the area affected by the project. The affected area was surveyed to a projected level of 370 feet to insure full coverage of the reservoir margins. Additional data as reported by local collectors in adjacent areas were recorded as a part of the survey to provide comparisons to data and artifiacts collected within the confines of the project itself.

2.55 With a few exceptions, the sites in the survey area are contained within a thin sandy matrix up to one foot thick overlying clays of Eocene Age. The exceptions include those sites which are contained in sands significantly deeper than one foot. Many of the sites are now in cultivated or pasture lands which were formerly wooded. These have been cleared of timber within recent years with the aid of bulldozers; this, in itself, constitutes an inherent threat to the integrity of archeological deposits by churning the surface layers. This effect is compounded in this area especially by virtue of the shallow, fragile nature of the artifact-bearing deposits. Burrowing animals have also contributed to the mixing of layers. The occasional pot-hunter, superficially, appears to have caused little damage.

2.56 As a consequence of these combined activities, it can be postulated that the vertical separation of artifacts accumulated through time at any given shallow site within the reservoir area has been obscured to the point that visible separation is not possible. However, that does not mean the sites are no longer of potential value. Gross trends of vertical distribution and horizontal clusterings of various artifacts can yield information of significance in determining resource use or activity-specific areas such as chipping localities and cooking areas. Time-diagnostic artifacts may be compared with adjacent areas to reveal the general age ranges.

2.57 **Archeological Evidence.** As a result of the survey by Prewitt (1974), 52 archeological sites were recorded within or around the margins of the proposed reservoir. Four sites had been previously recorded near the upper end of the reservoir, and an additional eight sites are known in the area. Of more than 60 archeological sites in the affected area, 16 were deemed by the Texas Archeological Survey to be worthy of further investigation (Prewitt, 1974):(41 LN 20, 21, 25; 41 LT 12, 14, 17, 26, 30, 31, 32, 33, 34, 35, 42, 44; 41 RT 2.)

2.58 Under a permit from the Texas Antiquities Commission, the Brazos River Authority contracted to have archeological salvage operations carried out by the Texas Archeological Survey at the Barkley site (41 LN 20) and the Louie Sadler site (41 RT 2). The report covering this salvage activity indicates that both sites appear to be just above the normal

flood levels, on erosional remnants along either side of the Navasota River, but, according to local informants, they are subject to partial inundation by the occasional short-term flood. Both yielded evidence of extensive prehistoric utilization.

2.59 Although much important information was obtained from these excavations (Prewitt, 1975), the data from these two sites alone are too meager to allow complete or accurate definition of the adaptive strategies of the Paleo-Indian inhabitants. Accordingly, the Brazos River Authority is presently making arrangements to have competent salvage operations carried out at the other 14 sites recommended for further investigation above (BRA, 1976). Preliminary results indicate that five sites will require additional work. All further investigative work will be accomplished in accordance with the "Procedures" and recommendations of the Advisory Council.

2.60 **Land Use.** Current land use in Leon, Limestone, and Robertson Counties is predominately agricultural. Ranching exceeds all other agricultural pursuits with livestock accounting for most of the effort within the three-county area. However, Leon, Limestone, and Robertson counties are in one of the State's prime deer hunting locations and leasing of privately owned lands for hunting is a significant land use activity.

2.61 In addition to ranching some truck crops, cotton, sorghum, grains, melons, peas, peaches, and pecans are harvested in the three-county area.

2.62 Although some firewood is cut and sold and there is some logging of merchantable hardwoods, the harvesting of trees for income is limited. Mining activities in the area are presently limited to the production of clay, sand, and gravel. Some oil and gas is produced in the three-county area.

Social, Cultural, and Economic Characteristics.

2.63 **Socioeconomic Characteristics.** The socioeconomic parameters of Leon, Limestone, and Robertson Counties are heavily influenced by the basically rural makeup of this three-county area. Leon County is classified as 100 percent rural as it does not contain a community of 2,500 or more inhabitants. Limestone and Robertson are classified as 67.3 and 64 percent rural respectively, whereas the State of Texas has about a 20 percent rural population.

2.64 A decline in population has been experienced since 1930 in the three-county area, and this trend is projected to continue throughout the remainder of this century. A portion of this decrease in population is attributed to those of wage-earning age seeking employment elsewhere, usually in the metropolitan areas. This exodus has influenced the birth rates and the death rates of the individual counties leaving them significantly lower and higher than the respective rates for the State. As expected, the median age of the population for county is also considerably above that of the State. The State is consistently higher than the three counties in percentage of population below age 45 and is lower in percentage of all age brackets above age 45.

2.65 Educational achievement for those persons 25 years old and older in 1970 ranged in median years of schooling from 9.3 years in Robertson County to 9.8 years in Limestone County to 10.1 years in Leon County. The median years of education for the State, for persons 25 years old and older, was 11.6 years. For many, lack of education reduces their ability to compete for more desirable jobs and results in their entrenchment in the lower paying occupations.

2.66 The total population of the three-county area in 1970 was 41,244 with a racial composition of 70.1 percent whites and 29.9 percent blacks. The State's racial composition in 1970 was 12.9 percent blacks and 87.1 percent whites. The Spanish American ethnic group, counted primarily in the white race but includes some blacks and other races, accounted for 3.8 percent of the population in the three-county area, whereas this group accounted for 18.4 percent of the 1970 State population.

2.67 **Housing.** The three counties and the State have reasonably the same percentage of owner-occupied homes. However, the percentage of renter-occupied units is considerably higher in the State than in Leon, Limestone, and Robertson Counties. Leon County, with 28.1 percent of its houses for sale or rent, almost doubles that perventage in the other two counties and triples that of the State (SwRI, 1975). High vacancy among rental units is not unexpected considering the loss of population experienced by the counties.

2.68 **Government.** According to SwRI (1975): "The three-county area has basically a typically rural form of government. At the county level, each of the counties is administered by a County Judge and a Commissioner's Court, and a general law-type of government is used by most of the municipalities in the area; these make no local ordinances and depend upon State laws for their community. A few of the municipalities have a homerule form of government and provide local ordinances which supplement State laws."

2.69 **Employment.** Employment in the category "agriculture, forestry, and fisheries industry" (U.S. Bureau of Census, 1972) is significantly higher in the three counties of Leon, Limestone, and Robertson than it is for the State. However, manufacturing employment is proportionately lower than that for the State. The three-county area ranks high compared to the State in personal services.

2.70 **Occupations.** The State of Texas has a higher percentage of people in professional, technical and kindred workers, sales, and clerical occupations than the counties of Leon, Limestone, and Robertson. However, the three-county area is higher than the State in farmers and farm managers, and farm laborers and farm foremen. The percentage of private household workers in the three counties is about two and one-half times that for the State.

2.71 **Unemployment.** The unemployment rate for Leon and Robertson Counties has increased at a much faster rate than the State. In April of 1975, the State has an unemployment rate of 5.9 percent, Limestone County 4.6 percent, Leon County 7.8 percent, and Robertson County 8.2 percent (Texas Employment Commission, 1975).

2.72 **Business Patterns.** The majority of the businesses in Leon, Limestone, and Robertson Counties are small, with about 80 percent of the reporting units employing seven or fewer persons. Four of the six units employing 100 to 249 persons are engaged in manufacturing, one unit in this category is engaged in mining, and the remaining one in services. Limited business opportunities exist in the three-county area.

2.73 **Income Distribution.** The three-county area has more people in the lower income bracket than the State average. The area has a high percentage of families with income less than the government-defined poverty level, with Leon and Robertson Counties having more than twice the average State poverty percentage. Per capita income for Leon, Limestone, and Robertson Counties were 71 percent, 74 percent, and 61 percent of the

State's per capita income in 1970. The three counties have a larger percentage of families with an income level up to $6,000 than the established State average, but fewer than the State in levels above $9,000.

2.74 **Hunting and Fishing.** Access to lands for public fishing and hunting is virtually non-existent in the three-county area. Available fishing waters include Lake Springfield and Lake Mexia and highway crossings over the Brazos and Navasota Rivers. Hunting is generally available only to those owning land with suitable wildlife habitat and those individuals who lease hunting lands from them.

2.75 **Transportation Systems.** A well-defined transportation network exists in the three-county area. There are a total of 234 miles of railroad; over 3,100 miles of highways, streets, and roads; 408 miles of power transmission lines; and 866 miles of pipeline. Leon County is the only county with a section of interstate highway. There are several private airfields in the area, but most are unimproved fields with limited facilities.

2.76 **History.** Robertson County was organized in 1838 and at that time included the present Leon, Freestone, Limestone, and Navarro Counties. In 1846, the present limits of the above counties were created.

2.77 The three-county area of Leon, Limestone, and Robertson Counties was occupied by Towakoni, Kichai, Waco, Caddo, Anadarko, Delaware, and Cherokee Indians before the arrival of white settlers (*Texas State Historical Association*, 1952).

2.78 Early Spanish explorers crossed the area as early as 1690, and the Spanish founded missions in the area as late as 1716 (Texas State Historical Association, 1952). Indians occupied the area as late as the middle 1830's and numerous skirmishes resulted between the Indians and the white settlers.

2.79 The plantation owners from the south found the river lands suitable for cotton and brought their slaves to assist in this frontier land. The area, which has remained largely agricultural, was discovered in the early 1900's to have oil and gas deposits and boom towns sprang up. The production of oil and gas has declined, however.

2.80 **Future Environmental Setting Without the Project.** The future environmental setting without the project will be determined to a great extent by the activities of man in and adjacent to the upper Navasota River basin. Changes will occur, and evaluation of probable changes, however difficult, must be carried out.

2.81 **Population Changes.** The populations of Leon, Limestone, and Robertson Counties are predicted to decline throughout the remainder of this century. This decrease in population will tend to raise the median age of the citizenry, lower the birth rate, and raise the death rate in the three-county area.

2.82 **Economic Activities.** The loss of population and lack of sufficient new industrial growth in the three-county area will cause a gradual decrease in the employment rolls through the year 2000. While it is anticipated that the per capita income will increase at a rate faster than that of the State, it will remain significantly behind the State in actual per capita income. The trend in agricultural practices from croplands to grazing lands will continue.

2.83 **Water Quality.** The Brazos River Authority, the State of Texas, and the nation as a whole are committed to reaching the goals set forth in Public Law 92-500. The water in the upper Navasota River should remain of good quality in the future, regardless of watershed activities, since any activities will be carefully regulated regarding their effects on water quality.

2.84 **Future Water Supply Requirements.** Without the project there would exist an immediate need for industrial water supply in the local area for makeup water at the Twin Oaks and Oak Knoll electric generating stations. Since no other in-basin source is available, water would have to be brought into the area from outside the basin at significant increases in costs. Additional local and downstream water requirements anticipated would also suffer from the lack of availability of sufficient water.

2.85 **Flood Plain Vegetation Trends.** The trend of clearing flood plain areas for grazing would likely continue in the future, since the area is not suited to the forestry industry or to more intensive agriculture. Some additional clearing could occur for the purpose of accessing mineral deposits.

2.86 **Recreation.** The reservoir site is primarily a wooded bottomland interspersed with cleared pasture areas, much of which is subject to frequent flooding. Some of the "improved" pasture areas will continue to gradually revert to native vegetation. Recreational use of the river will continue to be limited by the lack of public access and the periodic alternating periods of flooding and of low-or-no-flow conditions. Primary recreational use of the reservoir site will remain deer hunting on privately owned lands.

2.87 If no public recreation lands are set aside at the reservoir site, it is safe to anticipate changes in the open spaces and woodlands that now exist by the year 2020. Encroachment on bottomlands can be anticipated with a substantial loss in wooded cover as the land is converted for grazing. Currently the land is overgrazed. If overgrazing continues, more growth of undersirable plant species can be anticipated.

2.88 Public recreational opportunities in the three-county area will remain much as they are: Fort Parker and Old Fort Parker State Parks. Private outdoor recreation activities will continue to be comprised primarily of hunting anf fishing on private lands.

2.89 **Lignite Deposits.** Considerable exploration and mining studies by the Brazos River Authority and others have indicated that the lignite deposits within the Lake Limestone project limits are lenticular in nature and without sufficient continuity and areal extent to be commercially recoverable.

SECTION III — RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS

3.01 **State of Texas Land Use Authority.** At the state level, the Texas Water Quality Board, the General Land Office and the School Land Board have statutory authority to consider land use in formulating policy or in controlling activities within their respective jurisdiction. (BRA, 1975).

3.02 Although various state and local entities are authorized to exercise some sort of land use controls, no system of formal review of land use decisions which affect the major portions of Texas lands presently exists. Therefore, only informal and indirect influences rather than the classical zoning type decisions are commonly used.

3.03 The Texas Water Quality Board has influenced density of development (although not the specific use of the land) by promulgation of orders regulating septic tank installation. The Brazos River Authority presently administers such orders around Lakes Granbury and Somerville pursuant to Section 21.083 of the Texas Water Code. Similar orders can be issued and administered by a county under Section 21.084 of the Texas Water Code. In general, such orders are applicable where extensive use of septic tanks pose a threat to water quality, as might be the case adjacent to reservoirs.

3.04 Non-statutory methods of influencing land use decisions include selecting sites for such public facilities as parks, highways, reservoirs, etc.

3.05 In the preparation of the *Water Quality Management Plan for the Brazos Basin*, the Brazos River Authority reviewed all available land use plans and inventories and delineated those activities which might affect stream segment classification and waste load allocation. As future plans and land use studies are made available, they will be reviewed by the Brazos River Authority so as to determine their expected impact on water quality (BRA, 1975).

3.06 No conflicts are known to exist between the proposed Sterling C. Robertson Dam and Lake Limestone project and any land use plan.

SECTION IV — THE PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

Impact on Water, Air, and Noise.

4.01 **Impact on Water Quality.** Some adverse impacts on the existing water quality can be expected during the construction period primarily in the form of increased turbidity and sedimentation, increased levels of dissolved solids, and the potential for accidental spills of fuels, oils, etc., associated with construction activities. These adverse effects are expected to be held to a minimum by the regulation of activities by the Texas Water Quality Board. Shoreline erosion by wind-driven waves, in addition to the erodibility of sandy and shaly clay materials in other areas, is expected to contribute to the general turbidity of the lake water.

4.02 While the lake is filling, and for some time following, low oxygen levels and high organic concentrations can be expected in the reservoir itself as inundated vegetation is undergoing decomposition. The generally good quality of water entering the lake can be expected to minimize this adverse condition which will be gradually lessening with time. Temperature stratification can be expected to establish a thermocline below which water temperatures will be colder, dissolved oxygen concentrations will be lower. Because of the high variance in existing water quality, it is difficult to predict the water quality of the proposed impoundment. Nevertheless, water quality will be as good or better than the water entering the lake in that it will be averaged out. The peaks, i.e., poorest water quality, will be removed. The SwRI (1975) report indicates that phenols are a problem in the area. However, phenols decay rapidly in natural surface waters and the lake will "treat" the water in this respect. However, since these concentrations appear, from the limited data available, to be constantly replenished, additional lagooning or treatment may be required prior to municipal use. Sediments settling out in the lake will carry heavy metals and nutrients which will benefit water quality to some extent. The water quality downstream from Lake Limestone can be expected to show an improvement beginning with the impoundment of water. Decreases can be expected in coliform bacteria, turbidity, suspended solids and organic matter, color, silica, and biochemical oxygen demand (McKee and Wolfe, 1963). It is also recognized that removal of particulate matter will result in the removal of organic pollutants such as pesticides and heavy metals (LeGrand, 1966). It can be anticipated that the lake will tend to "smooth out" the extremes found in the concentrations of parameters in the river during preimpoundment studies (McKee and Wolfe, 1963). Another downstream water quality benefit that can be anticipated following completion of the project is the low-flow augmentation which is a requirement of the Texas Water Rights Commission Permit for the Sterling C. Robertson Dam and Lake Limestone project. Under present conditions, there are often periods when there is no flow in the Navasota River throughout a large part of its reach.

4.03 **Impact on Air Quality.** During construction there will be an increase in particulate matter. Watering trucks will be used extensively in an effort to keep dust to a minimum during this period. Pollutants resulting from the internal combustion engines should be dispersed by the almost ever-present winds with no adverse environmental impacts. Disposal of waste materials and materials from clearing and grubbing operations must be done in an acceptable manner with regard to air quality considerations.

4.04 **Noise Impacts.** Estimates of noise impacts in the area of Lake Limestone during construction and during the operational period by SwRI (1975) account for both the activities connected with the Sterling C. Robertson Dam and Lake Limestone project and

the planned facilities of the Texas Utilities Service, Inc. They estimate that during the construction period, average noise levels will range from about 78 to 85 dBA, depending on the particular phase of construction. They further estimate that, assuming the construction noise levels are measured at 300 feet from the sources, the noise levels will attenuate to background noise levels at distances of 2 to 3 miles from the construction sites. During the operational period for Lake Limestone, noise is expected to result primarily from activities related to recreation and will be made up primarily of power boat noises. Since population levels are extremely low in the area, no adverse community reation to increased noise levels is anticipated.

Impact on Biological Elements.

4.05 **Natural River.** There will be an elimination and loss of about 15 miles of riverine habitat on the Navasota River resulting from inundation. This distance represents about 8.7 percent of its total length or about 10 percent of the total distance of natural flowing river. A benefit to the river after completion of the project will be the low flow augmentation which is required by The Texas Water Rights Commission permit, since present conditions include many periods of no flow in the Navasota.

4.06 The average annual flow in the river channel below the dam will be reduced by about two percent as a result of using part of the lake's water storage capacity. Although there is no flood control storage in the proposed lake, the dam will reduce the larger peak flood crests. However, most of the flood waters will go over the spillway and should provide enough overbank flooding to the riverine ecosystem below the project. Sedimentation rates were determined from Bulletin 5219 prepared by the Soil Conservation Service for the Texas Board of Water Engineers. Curves showing the relationship of average annual rate of sediment production to drainage area size were utilized for various land resource types to determine annual sediment production for the drainage area above the dam site. As a result, a 50-year sediment allowance of 14,500 acre-feet reflecting anticipated 2030 conditions was distributed in the reservoir. Since the dam will stop materials carried in suspension by the river water flowing into the lake, an initially low sediment burden will result downstream of the reservoir. However, the river will regain its sediment burden at the expense of a given river reach below the dam, which will suffer from increased erosion that is flow dependent.

4.07 Although no estuaries occur on the Navasota River, the water from the Navasota River contributes to the flow in the lower Brazos and thus has an effect on the fresh water salt water ratio in the limited estuary at the mouth of the Brazos where the river flows directly into the Gulf of Mexico. The significance of Brazos River estuarine flows is increased through circulation of the waters in the intracoastal waterway network.

4.08 **Flows in the Navasota and Brazos River Basins.** Table IV-1 demonstrates the percent reduction in average annual flows for the Navasota and Brazos Rivers if certain projects are constructed as proposed.

4.09 **Habitat.** There will be a permanent loss of 14,200 acres of terrestrial wildlife habitat, including about 9,300 acres of wetlands, within the water supply pool, for which there is no mitigation measure associated with the proposed project. The proposed lake will increase available aquatic habitat for migrant waterfowl, shorebirds, and other aquatic species. Peripheral lands containing upland forests and prairie habitats will largely remain in private ownership, but possible lakeshore development could result in adverse impacts through misuse or abuse.

Table IV-1

PERCENT REDUCTION IN AVERAGE ANNUAL FLOW

PROJECT(S)	BRYAN GAUGE [1]	RICHMOND GAUGE [2]
Limestone	2.23%	1.81%
Limestone, Oak Knoll, and Twin Oak	30.49%	2.47%
Limestone, Oak Knoll, Twin Oak, and Millican		6.48%
Limestone, Oak Knoll, Twin Oak, Millican, and Navasota II		9.89%
Limestone, Oak Knoll, Twin Oak, and Navasota II	77.79%	6.31%

[1] Bryan gauge is located at river mile 68.4 on the Navasota River, approximately 55 miles below the Lake Limestone damsite.

[2] Richmond gauge is located at river mile 92 on the Brazos River in Fort Bend County.

4.10 **Amphibians and Reptiles.** Those species now inhabiting the bottomlands would suffer the greatest impact due to displacement by inundation. Public development at the lake and private developments in proximity to the project will cause additional displacement of upland species through reduction of available habitat and physical disturbance. Some protection and restabilization and upland populations will occur in suitable habitats along the periphery of the lake because of developmental restrictions on project lands. In the downstream area, water releases will aid in stabilizing certain bottomland species.

4.11 **Birds.** Approximately one-fourth of the avian species in the project area will be reduced or eliminated due to alteration of specific nesting, feeding or other behavioral requirements usually associated with bottomland hardwood forests. Avian use will decline after about five years which is generally associated with decreasing lake fertility, loss of suitable nesting spots (due to death, fall, and decay of inundated timber), and reduced availability of desirable food plants. Those species that inhabit generally open country, prairies, fields, brushy plains, roadsides, etc., should suffer very little, if any, detrimental effects. Aquatically orineted species which usually occupy lakes, ponds, mudflats, and shorelines will benefit from the proposed lake.

4.12 **Fish.** Construction of the proposed dam and lake will cause some change in the local fish fauna. Riffle-dwelling species and other lotic (flowing water) fishes will be adversely affected as the reservoir fills, and streams are replaced by the lake. Suitable habitats, e.g., gravel-riffles and sandbar areas, will be inundated or destroyed by construction. The Dusky darter *(Percina sciera)* will face probable extermination in the lake area resulting from elimination of these riffle areas. In addition, other small fishes

such as the ribbon shiner *(Notropis fumeus),* silver band shiner *(N. shumardi),* ghost shiner *(N. buchanani),* silvery minnow *(Hybognathus nuchalis),* tadpole madtom *(Noturus gyrinus),* bluntnose darter *(Etheostoma chlorosomum),* and slough darter *(E. gracile)* which are found almost exclusively in lotic habitats, will be adversely affected. Species already inhabiting lentic (pooled water) habitats such as gizzard shad *(Dorosoma cepedianum),* white crappie *(Pomoxis annularis),* smallmouth buffalofish *(Ictiobus bubalus),* several species of sunfish *(Lepomis sp.),* largemouth bass *(Micropterus salmoides),* and freshwater drum *(Aplodonotus grunniens)* will benefit from the reservoir. The resulting reservoir will probably develop large populations of catfish *(Ictalurus sp.)* and sunfish which are popular game species, as well as several non-game species of gar *(Lepisosteus sp.),* carp *(Cyprinus sp.),* and buffalofish (Rozenburg et al., 1972).

4.13 **Mammals.** The most seriously affected species will include those associated with the bottomland forest adjacent to the river, such as rabbits and squirrels. The whitetail deer would also be adversely impacted due to the reduction in suitable or preferred habitat. Most terrestrial species within the conservation pool will be lost due to inundation or displacement. This loss is expected because adjacent habitat is at carrying capacity. Aquatic species should be benefited and could, as a consequence, experience habitat expansions.

4.14 **Vegetation.** There will be a loss of species within the reservoir area, i.e., aquatic species within the 15 mile reach of the Navasota River, and terrestrial species (66 percent forests, including a national champion cedar elm; and 33 percent prairie types) within the 14,200 acres of the water supply pool. Aquatic vegetation affects environmental factors such as dissolved oxygen, carbon dioxide, ammonia, pH, light penetration, and siltation. Alterations of these factors could cause serious effects such as heavy algae production or eutrophication. Future public and private development around the project and in the downstream area is expected to further reduce existing species. An increase in aquatic plants can be expected along the periphery of the lake. Many of these aquatic species aid in reducing shoreline erosion, are extremely significant to wildlife, and serve as important habitat in the fishery aspect of the lake. In the downstream area, periodic water releases would aid in preserving the existing bottomland species.

4.15 **Impact on Geological Elements.** Most of the area that will be inundated by Lake Limestone is actually within the present flood plain of the Navasota River, which would make it economically infeasible to utilize surface mining techniques in the area, even if mineable lignite deposits did exist there. It is not considered likely that the criteria used to determine the mineability of lignite will be significantly altered in the future. Therefore, the lenticular type of lignite deposits in the area to be inundated by Lake Limestone will not be likely to be developed regardless of future activities within the area.

Impact on Cultural Elements

4.16 **Impact on Archeological Elements.** Funding will be provided for the salvage of the significant archeological sites not yet excavated (BRA, 1976). All further investigative work will be accomplished in accordance with the "Procedures" of the Advisory Council of Historic Preservation and the State historical preservation officer. The remainder of the sites within and around the margins of the reservoir will suffer varying degrees of direct and indirect effects. Observation of sites of similar nature (e.g., shallow sand caps overlying clay) in other reservoir areas has demonstrated the potential dangers which inundation and fluctuation of shorelines pose to archeological materials. Witty (1973)

observed severe directional scour and deflation of totally inundated sites, and Prewitt and Lawson (1972) observed severe lateral erosion and deflation at sites subjected to shoreline situations.

4.17 There is no doubt that the sites in Lake Limestone will be similarly affected. The *inherent* nature of the principal use of the lake will contribute to directional scour of sites on the flood plain and fluctuating shoreline erosion of sites along the valley margins. Indirect (or deferred) effects will probably result from the anticipated secondary use of the reservoir as a recreation area. Wave action generated from fishing and pleasure boats should aggravate shoreline erosion, and relic hunters will undoubtedly be attracted to those sites exposed along the shoreline. These people destroy archeological sites through indiscriminate digging for the sake of aesthetially pleasing artifacts which they trade, sell, or proudly display on their mantle pieces. The results of such "pothunting" contributes little toward the understanding of prehistoric peoples other than the fact that many of them were true artisans in the manufacture of certain artifacts.

4.18 **Impact on Population.** The Sterling C. Robertson Dam and Lake Limestone will increase the population of the three-county area. In addition to the 200 employees in construction crews for 2½ years, a permanent work force of 10 employees will be required to operate and maintain the Brazos River Authority facility. This facility will aid the operation of the two electric power plants which will permanently employ an estimated 600 employees. The resulting increase in population caused by these combined facilities will help offset the declining population trends of the three counties. This past and projected loss in population is considered to have an adverse impact on the area and any slowing of this trend must be considered advantageous. There are no inhabitants within the project area that will require relocation.

4.19 **Impact on Education.** With the exception of maintaining enrollment in the public school systems, there is no substantial impact on education anticipated. The immigration of employees and their families may stabilize the median years of education for the area.

4.20 **Impact on Racial and Ethnic Characteristics.** No significant impact on the racial or ethnic characteristics of the three-county area is anticipated.

4.21 **Impact on Employment.** Temporary employment during construction will be beneficial for local persons engaged as construction workers. An addition of ten permanent positions for the operation and maintenance of the dam and lake will help alleviate the area's downward trend in employment opportunities. The expected development around the proposed Lake Limestone will create opportunities for those engaged in construction. This development will also create employment in the service fields needed in the support of this development. Some loss in agricultural employment can be anticipated with the reduction of some 14,200 acres of rural farm and forestry lands. The creation of new job opportunities should more than offset employment losses in the three-county area.

4.22 **Impact on Occupations.** Beneficial impacts should result in occupations as more diversified employment opportunities emerge, thus providing the local population a greater selection of potential occupations. An estimated 11 farm and livestock operations will cease to exist because all or most of the land will be required for the project. An additional group of agricultural tracts, estimated at six, will be severed into two or more parts, but are considered to remain as economic units from a functional standpoint.

4.23 **Impact on County Business Patterns.** Impacts should be beneficial as new, diverse businesses evolve. Secondary developments as a result of Lake Limestone will enhance the opportunity for the creation of local businesses to provide services and goods for these developments and the affiliated recreation pursuits.

4.24 **Impact on Income Distribution.** Impacts on income distribution will be negligible but beneficial in that the project should somewhat enhance the median income for the immediate area and provide a small opportunity to reduce the number of families below the poverty level.

4.25 **Impact on Hunting and Fishing.** An adverse impact on the hunting which now occurs on private lands will be created with the inundation of some 14,200 acres of Lake Limestone. Waterfowl hunting will be available, but some benefits may be offset by the loss in acorn production. Fishing will be greatly enhanced for the general public.

4.26 **Impact on Transportation Systems.** Improvement of existing and development of new roads and streets may be necessitated by the project. The development of roads and housing around Lake Limestone may create a significant secondary environmental impact. Careful planning prior to these developments can greatly reduce the adverse results of these actions.

4.27 **Impact on Local Government and Institutions.** The ten permanent employees required for the operation and maintenance of the project and their families will have a beneficial effect on the area suffering from emigration. There may be a temporary situation during the 2½ years of construction which may cause some local concern regarding an influx of construction workers. This situation should not have an adverse effect on any local governmental agency or public institution such as schools. Long term secondary growth caused by the project may require additional actions on the part of county governments regarding land use and enforcement of local ordinances. Increased land values are anticipated to provide an additional tax base for the three-county area. Area governments may have to increase some services, such as solid waste disposal, fire protection, and law enforcement.

Impact on Recreation Elements

4.28 **Impact on Recreation.** Although the fishing, hunting, and river-type recreation activities in the project area are now limited to landowners and their invited guests and lessees, the project will adversely impact private fishing, hunting, and river-type recreation for such persons. The greatest impact will be within the 14,200 acre water supply pool where 12 to 15 miles of the Navasota River and 14,200 acres of terrestrial wildlife habitat will be permanently lost.

4.29 This river segment receives little or no use from waterway recreationists (canoeing, kayaking, and rafting), since characteristically it has low or no flow at normal water levels. Consequently, this river section was not identified as having potential for inclusion in a statewide system of waterways in the publication, "Texas Waterways, A Feasibility Report on a System of Wild Scenic and Recreational Waterways in Texas," prepared by the Texas Parks and Wildlife Department.

4.30 With respect to trails, the proposed project would have no effect upon any existing trails which have potential for inclusion in a statewide trails system, as identified in the publication, "Texas Trailways, A Feasibility Report on a System of Trails in Texas," prepared by the Texas Parks and Wildlife Department.

4.31 In the Brazos Valley Development Council's Recreation and Open Space Plan, the Navasota River from the Limestone-Robertson County line to the Brazos River, only 1.6% of which is within the project limits, was itemized as a desirable open space corridor and consequently has potential for trail development.

4.32 After the project becomes operational, the expected recreational use will adversely affect the environment at access points through soil compaction and denudation of the flora. Because of the lack of facilities to limit foot and vehicular traffic, such abuse can be expected to increase erosion and lake sedimentation. Until such time as picnicking and camping facilities are provided, the need for these facilities will not be satisfied. Even then, Lake Limestone does not have the capability of satisfying all the recreational needs of the area.

4.33 With the lake in operation, public recreation opportunities will be greatly increased and will provide a boost to the area's economy in the lake-related investment. The lake is expected to receive heavy visitation from fishermen during the early years of its existence when it offers excellent fishing during its new-lake stage. Other attributes of the lake which will contribute to high visitation are the large size of the lake (14,200 acres and 130 miles of shoreline). Additionally, the construction of Lake Limestone will create a river fishery below the dam. The Navasota River is not heavily fished but the construction of Sterling C. Robertson Dam and the subsequent low flow water releases will result in a river fishery which is more productive than presently exists. The characteristics of the outflowing water will differ from the river water. Outflowing water will be less turbid and have lower levels of many nutrients. The more constant flow will enhance the establishment of fishes and other organisms which cannot survive the regular summer high temperatures and intermittent streams flows of the upper Navasota River.

4.34 Present plans call for the acquisition of five access areas with the total acreage to be less than 150 acres. Initial development would include necessary sanitation facilities, boat ramps, and parking areas. It is expected that these areas will be further developed at some later date by the construction of picnic areas and camping facilities. This would necessitate facilities and manpower to deal with the associated problems of solid waste disposal, law enforcement, etc. The recreation development at Lake Limestone should complement existing and future area public recreation developments. Competition should exist only in camping facilities and this should be minimal.

4.35 **Impact on Land Use.** Impacts on land use will result in the loss of agricultural activities within the area required for the lake. This includes ranching farming (cotton, sorghum, melons, peas, peaches, pecans, grains), mining, oil and gas production, hunting, and cutting firewood.

4.36 **Impact on Texas Utilities Services, Inc.** The Texas Utilities Services, Inc., design and construction agent for Dallas Power and Light Company, Texas Electric Service Company, and Texas Power and Light Company, proposes to construct two lignite-fueled steam-electric generating facilities in Limestone and Robertson Counties. Southwest Research Institute (SwRI) (1975) conducted a detailed environmental assessment of the impact of the construction and operation of these facilities on the environment.

4.37 The Twin Oak cooling lake will be constructed on Duck Creek and will have a surface area of 2,330 acres at elevation 401 feet msl. It will contain 30,319 acre-feet of water, of which 13,200 acre-feet per annum will go to consumptive use of the generating station.

4.38 The Oak Knoll facility will be located on Steele Creek in Limestone County just north of the Limestone-Robertson County Line. Oak Knoll Cooling Pond will have a surface area of 2,780 acres at elevation 382 feet msl. This pond will contain 32,818 acre-feet of water and the consumptive use of the facility is expected to be 11,900 acre-feet per annum.

4.39 **Impact on Federal Projects.** There are two Congressionally authorized projects downstream from the proposed Lake Limestone project (i.e., Millican Reservoir at river mile 24.1 and Navasota No. 2 Reservoir at river mile 83.4). These projects would suffer reduced dependable water supply yields; however, the federal purposes of flood control, recreation, and fish and wildlife enhancement will not be affected. More detailed studies are now underway to determine the effects that the upstream projects (The Sterling C. Robertson Dam, Lake Limestone, and the Twin Oak and Oak Knoll cooling ponds) would have on the dependable yield and cost allocations. Table IV-2 sums the anticipated effects on the water supply yields of the authorized Millican and Navasota No. 2 Reservoirs.

Table IV-2

Effect of Proposed Upper Navasota River Basin Development on Water Supply Yields of Authorized Millican and Navasota No. 2 Reservoirs

Development Water Supply Yields (acre-feet/year)

	Present Conditions	2030 Conditions		
	Millican	Millican	Navasota No. 2	Both
Millican only	218,584	219,185	-----	-----
Millican plus proposed Upper Navasota River Projects	166,667	167,276	-----	-----
Millican and Navasota No. 2 only	-----	129,762	227,824	357,586
Millican and Navasota No. 2 plus proposed Upper Navasota River Projects	-----	131,609	153,565	285,174

SECTION V — ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

5.01 **General.** This section contains a summary of the adverse environmental effects which are considered significantly adverse to the broad public spectrum but which are unavoidable consequences of the proposed action. It should be pointed out that any discussion of impacts is necessarily subjective, so no degree of importance of one impact over any other is intended nor should any be implied.

5.02 A total of about 14,200 acres consisting of mixed forests, native grassland, savannah grazing land, and wetlands, will be lost to the water supply pool of Limestone Lake. Removal of this land from productive agriculture constitutes an unavoidable adverse effect.

5.03 **Effects on Water Quality.** Construction activities will result in local and temporary adverse effects on water quality, primarily in the form of turbidity and sedimentation. While the lake is filling, and for some time following, low oxygen and high organic concentrations can be expected. Following stratification, low levels of dissolved oxygen concentration will be established below the thermocline.

5.04 **Effects on Air Quality.** During constuction, there will be an increase in particulate matter. Watering trucks will be used extensively to keep dust to a minimum.

5.05 **Noise.** The ambient noise level in the vicinity of the project would rise both during the construction period and during operation of the project. This would thus constitute an unavoidable adverse effect.

5.06 **Effects on Vegetation.** Approximately 9,500 acres of forest and 4,700 acres of prairie or grassland will be inundated and(or) cleared, including a national champion cedar elm.

5.07 **Effects on Terrestrial Habitat.** The loss of 14,200 acres of mixed forest and prairie land will mean a loss of habitat to a wide variety of terrestrial and avian species. The populations of animals will either make adjustments to the displacement or suffer eventual loss due to the lack in carrying capacity of the remaining habitat.

5.08 **Effects on Aquatic Habitat.** The loss of some 12 to 15 miles of lotic (flowing water) habitat will adversely affect those species which inhabit that reach and which require flowing water. (See section IV discussion of impacts on aquatic species.)

5.09 **Relocations.** An estimated 11 farm and livestock operations will cease to exist because of all or most of the land will be required for the project. An additional six agricultural tracts will be severed into two or more parts, but are considered to remain as economic units from a functional standpoint. Even though there are no inhabitants which will require relocation, it will be necessary to raise and provide bridges for three county roads and FM 1512. Three pipelines and two electric power lines will also require relocation. The highway relocations will result in temporary adverse effects on travel patterns and create temporary inconvenience to local motorists. The pipeline and power line relocations will have a temporary adverse effect on the local flora and fauna, and all the above actions will add to air, noise, and water pollution during the construction period.

5.10 **Effects on Archeological Elements.** Funds will be made available for the salvaging of materials from the most important of the known archeological sites before construction of the project is completed (BRA, 1976). All further investigative work will be accomplished in accordance with the "Procedures" of the Advisory Council of Historic Preservation and the State historical preservation officer. All remaining archeological resources will suffer adverse effects, both direct and indirect, as a result of the project.

5.11 **Effects on Recreation.** Loss of the 14,200 acres of terrestrial habitat would reduce the land area available for hunting to the extent it is now permitted by private landowners. Since hunting is now the principal form of outdoor recreation in this area, this reduction would be adverse to those who hunt in the area.

SECTION VI — ALTERNATIVES TO THE PROPOSED ACTION

6.01 **General.** The Corps of Engineers is considering several alternatives in connection with the Brazos River Authority's application for a Section 404 permit for the construction of the Sterling C. Robertson Dam and Lake Limestone: (1) denial of the permit; (2) granting the permit as requested; and (3) granting the permit with one or more conditional requirements. Comparing these plans, denying the permit would have the least effect on fish and wildlife resources. Number 3 would result in a reduction of adverse impacts on fish and wildlife. Project implementation without the inclusion of any mitigation measure is the most adverse in terms of impacts on existing fish and wildlife resources.

6.02 **Denial of the Permit.** The denial of the permit would result in the following losses as of July 1, 1976 (BRA, 1976):

DIRECT COSTS

Planning and engineering	1,108,000
Permits and special studies	131,000
Administration and finance	382,000
Lands	4,057,000
Construction	5,014,000
Subtotal	$ 10,692,000

ADDITIONAL COSTS

Interest paid on bonds	10,139,000
Penalties paid for materials in process	893,000
Contract abandonment costs	244,000
Site restoration costs	3,820,000
Total	$ 25,788,000

Partially offsetting the above losses would be the following credits:

Net salvageable lands	3,121,000
Interest earned on project funds	4,557,000
Total credits	$ 7,678,000

The total net cost of project abandonment as of July 1, 1976 would therefore be $18,110,000 ($25,788,000 - $7,678,000).

AREA ECONOMIC LOSSES

Limestone, Leon, and Robertson counties, in which the project is located, have all been designated by the Economic Development Administration as redevelopment area counties under the Public Works and Economic Development Act of 1965, as amended. All three counties are characterized by declining populations, low employment rates, high commuting rates (work outside home county), and low per capita income and family incomes.

Information obtained from the Executive Director of the Central Texas Economic Development District on March 16, 1976, indicates that the above trends were continuing through 1976 (BRA, 1976).

The direct payrolls associated with construction of the Sterling C. Robertson Dam and Lake Limestone project are estimated to be $3,600,000 in the 18 months that will be required to complete the project after July 1, 1976. The maintenance and operation payrolls at the project will total an estimated $4 million over a 40-year period. These would, of course, be forgone if the project was abandoned.

LAND USE LOSSES

Disruption caused to the agricultural activities on the 6,900 acres of land which were acquired by July 1, 1976 has not been estimated or included in the above cost estimates, nor have any other secondary costs. Clearing and habitat losses or disruptions have already occurred on much of the project land and could not be effectively restored to prior conditions.

6.03 **BRA Alternatives.** If it is determined that the permit application should be denied, then the following alternatives which have previously been investigated by the Brazos River Authority will become available:

(1) No development of any facilities;
(2) Development of facilities other than the proposed project to supply local and downstream water supply demands; and
(3) Various sizes of development at the site of the proposed dam and reservoir.

6.04 **No Development.** Failing to develop this or any facility for either local or downstream water supply needs would result in postponing the utilization of a valuable, locally abundant mineral, lignite coal. The electric generating plants, if built, would require the importation of water at significantly higher costs. Other details of this alternative can be found in Section II, "Future Environmental Setting Without the Project."

6.05 **Sources of Water Other than the Proposed Project.** Alternative sources of water other than the proposed project were considered both in terms of meeting local water demands and meeting downstream water demands.

6.06 Consideration was given to the use of water in the proposed Millican Reservoir, an authorized Corps of Engineers project, as an alternative to satisfy both present and projected future local and downstream water supply needs, especially the known local industrial need for 25,000 acre-feet per year by 1979. While Millican Reservoir would yield sufficient water for part of both the present and projected future local and downstream

water supply needs, the Millican Reservoir project is still in the preconstruction planning stage and it is not likely to be completed in time to meet the immediate industrial demands in the local area. Even if Millican Reservoir were to be completed in time to meet the immediate local industrial demand, the pumping distance would be 6 times the distance from Lake Limestone and would involve pumping water to an elevation 150 feet higher, resulting in high pumping costs, transportation facility costs, and a high degree of energy consumption when compared with the costs of supplying the same amount of water from Lake Limestone.

6.07 Another alternative considered in providing for local and downstream water needs was the proposed Navasota No. 2 Reservoir, an authorized project of the Corps of Engineers. However, since the planned completion date for this reservoir is 2010, insufficient planning and design has been undertaken to make it a contender for supplying water to satisfy either the present or anticipated future local and downstream water demands for several decades.

6.08 Sites other than the proposed Lake Limestone site were considered in hydrologic investigations of the upper Navasota River Watershed by the Brazos River Authority. Only two of the sites tested were found to be capable of supplying sufficient water for the immediate industrial water supply demand. The Lake Limestone site is the most efficient in terms of being able to satisfy both present and anticipated future local and downstream water supply requirements and at the same time minimizing adverse environmental impacts (BRA, 1974).

6.09 Transfer of water from the Brazos River to meet the local needs for industrial cooling water was considered. This would require releases of water from storage in reservoirs upstream, since there is no water left available from unregulated flows of the Brazos. The pumping distance from the Brazos River to the proposed power plant cooling ponds is three times further than the proposed Lake Limestone. This would bring about higher pumping and transportation facility costs as well as higher energy consumption. This alternative fails to provide any additional water for other needs in the local area either now or in the future and fails to provide water to meet the present and future projected needs in the downstream areas.

6.10 **Alternative Sizes of the Project.** Several sizes for the proposed Lake Limestone were considered as alternatives (BRA, 1974). The minimum size to satisfy the immediate local industrial demand would be a reservoir capable of yielding 25,000 acre-feet of water per year. This would not, however, provide for other immediate local and downstream water needs that may arise, nor would it provide for the increased future needs of any municipality, industry, or agricultural operation in either the local or downstream areas.

6.11 The Brazos River Authority conducted studies to determine the optimum size for the proposed Limestone Lake in terms of both the most efficient yield of water from a single reservoir at this site and in terms of the most efficient yield of water from the watershed through a reservoir system operation when Millican, Navasota No. 2, and Limestone Lake are all considered together. The size proposed is the optimum to satisfy these considerations (BRA, 1974).

6.12 **Granting the Permit as Requested.** If it is determined that the permit should be granted to the Brazos River Authority as requested, then the overall environmental impacts would be those primarily addressed by this document.

6.13 **Granting of a Conditional Permit.** A conditional permit may be granted if it is determined by the Corps of Engineers that mitigation is required to reduce environmental losses. These measures could include the recommendations by the Fish and Wildlife Service:

a. Acquire 15,800 acres of land in fee title, adjacent to the project area. These mitigation areas shall be made available through suitable agreements to the Texas Parks and Wildlife Department for administration as wildlife management areas.

b. The lake shall be filled incrementally to meet short-term projections of water demands.

c. The project shall be operated to provide low volume downstream releases.

A conditional permit would necessitate that these or other appropriate mitigative measures be resolved and implemented by the State of Texas for this action.

SECTION VII — THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

7.01 **Trends.** Local land use has been gradually moving toward the less intensive agricultural use, grazing. Populations in the local rural areas have been declining as have the populations in the entire three-county area.

7.02 **Environmental Losses.** The proposed action will remove from agricultural productivity some 14,200 acres of land, about two-thirds of which is wooded, presently being used for grazing. There will be a loss to the tax base as 14,200 acres of land are converted from private to public ownership. This same area will be lost as terrestrial wildlife habitat, and as private recreational hunting lands for those who presently are able to hunt there. Approximately 12 to 15 miles of a free-flowing (although intermittent) river with much natural beauty for those presently able to enjoy it would be lost. Additional losses will occur locally as secondary effects of the action. The proposed action would preclude the construction of a Federal flood control reservoir at that site. However, the Corps of Engineers determined in previous studies that the proposed Lake Limestone damsite was too far upstream for a flood control reservoir to be economically feasible.

7.03 **Environmental Benefits.** The proposed action will provide benefits as follows:

(1) A dependable water supply yield which can be used for both local and downstream (as far as the Gulf of Mexico) demands for municipal, industrial, and agricultural water supplies (generally, downstream agriculture increases in intensiveness as one moves to the Brazos River and on toward the Gulf of Mexico).

(2) The manmade lake, open to the public, will be esthetically pleasing to a large number of visitors and will provide lake habitat not now available for fish and waterfowl.

(3) Secondary economic and social benefits will accrue to those people and entities within the three-county area and the State of Texas. Land valued in the areas adjacent to the lake will increase, adding to the tax base to a degree expected to exceed the losses noted above.

SECTION VIII — ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

8.01 **Land.** Approximately 14,200 acres of land, about two-thirds of which is presently upland and bottomland forests and one-third pasture and farmland, plus approximately 1,000 additional acres which will ultimately be used for relocations, access roads, etc., would be irretrievably committed for the life of the project. The most significant changes would be the conversion of 14,200 acres of the area now terrestrial to a 14,200 acre surface lake. Secondary effects adjacent to the lake will result in a variety of land use changes which will depend on the degree of state and local land use controls applied to them.

8.02 **Ecosystems.** Ecosystems existing on land within and adjacent to the project area will be irreversibly disrupted. The aquatic ecosystems existing within the 12 to 15 miles of river to be inundated will be irretrievably modified.

8.03 **Energy.** Determination of the quantity of energy required to construct the Sterling C. Robertson Dam and Lake Limestone would be virtually impossible, since it would include all human energy contributions in addition to the energy expended to manufacture all project components and the energy expended by construction activities. Energy requirements were considered carefully by the Brazos River Authority when studying alternatives to the proposed action. All energy expended in the process of completing the project would be irretrievably consumed.

8.04 **Archeology.** Analysis of archeological sites has shown that they are fragile in nature and that they will suffer irreversible adverse effects from both direct and secondary impacts of dam construction and lake impoundment. These same adverse impacts can be expected to be incurred by as yet undiscovered sites within the area of the lake.

SECTION IX — COORDINATION

9.01 **Public Notice.** The Fort Worth District, U.S. Army Corps of Engineers, on December 3, 1975, issued a public notice in connection with the Brazos River Authority's application for a permit pursuant to Section 404 of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500).

9.02 **General.** The National Environmental Policy Act of 1969 requires that the expertise and views of a broad range of knowledgeable people be used in preparing environmental statements. This section contains the written correspondence of those who have provided input for the draft environmental statement. Table IX-1 is provided to facilitate finding the correspondence of particular agencies, organizations, or individuals and responses of the Corps of Engineers to those comments.

9.03 **Comment and Response.** Copies of the draft environmental statement were sent to Federal, State, local agencies and individuals for review and comment on the accuracy and adequacy of the information contained in the statement. The comments received have been reviewed and evaluated and, where applicable, incorporated in this final statement. Copies of these letters (in the left hand column) with the Corps of Engineers response (in the right hand column) are presented on pages IX-4 through IX-56.

9.04 **The Issues of Mitigation.** Since coordination of the draft statement, the issue of mitigation has become a major concern of this project, and the controversy caused by the mitigation proposals is difficult to resolve. In an effort to clear up some of the confusion concerning mitigation, the positions of the agencies involved have been summarized in the following paragraphs.

Department of the Interior

9.05 **US Fish and Wildlife Service.** The US Fish and Wildlife Service through the Department of the Interior recommends that the permit be denied unless the following modifications are included as conditions of the permit:

a. Acquire 15,800 acres of land in fee title, adjacent to the project area. These mitigation areas shall be made available through suitable agreements to the Texas Parks and Wildlife Department for administration as wildlife management areas.

b. The lake shall be filled incrementally to meet short-term projections of water demands.

c. The project shall be operated to provide low volume downstream releases.

In a letter to the Fort Worth District Engineer, the Fish and Wildlife Service states: "Our recommended denial of the permit was not unconditional. An effort on our part to prevent the construction of the reservoir would not be in the broad public interest; however, neither is the uncompensated destruction of the State's wildlife resources in the broad public interest. The concept of compensating the loss of wildlife resources resulting from water development has been declared to be in the public interest by virtue of Congress passing the Fish and Wildlife Coordination Act. In the face of large scale development, the acquisition of wildlife habitat, even if the habitat is on private land, is necessary if losses of wildlife resources are to be partially compensated."

State of Texas

9.06 **Texas Parks and Wildlife Department.** The Texas Parks and Wildlife Department has not recommended any modifications be included as conditions of the permit. The Parks and Wildlife Department views the value of wildlife resources as equal to all others in the planning process. Because wildlife belongs to the public in common, the public is entitled to mitigation for wildlife habitat losses that are incurred from justified water development projects. Losses should be prevented, or if not possible, mitigated or compensated for, in that order of priority. The Parks and Wildlife Department recognizes that water development projects are undertaken to provide increased storage and transportation of water for the projected needs of the populace, and to alleviate the harmful effects of floods. While it is generally agreed that such water projects adversely affect wildlife, the rationale for their construction is understood. Planning for the water needs of citizens is an honorable pursuit, and where projects show potential to significantly alleviate hardship among people, the projects should not be opposed by wildlife resource managers and decision makers.

9.07 **The Brazos River Authority.** The Brazos River Authority has stated that they are in full compliance with all Federal, State, and local laws, regulations, and requirements. As such, they do not intend to implement the recommendations of the Fish and Wildlife Service. The complete discussion and rationale for the recommendations is contained in a letter from the Brazos River Authority dated March 19, 1976 which is included in section IX.

9.08 **The Office of the Governor.** In his letter of August 4, 1976 (included in section IX) Governor Briscoe stated that BRA has expressed willingness to explore all possibilities for action to mitigate wildlife losses that are capable of implementation. This could include necessary legislative action. Governor Briscoe has also requested that because of the need for water supply, a permit be issued without delay and that other issues be resolved subsequently.

9.09 **Attempts to Resolve the Issue.** Acquisition of mitigation lands by a Texas River Authority is controversial and complex. Publicity concerning the Fish and Wildlife Service recommendations was widespread and there appeared to be extreme opposition to mitigation. There is a very strong "private land ownership ethic" in Texas and landowners did not favor losing land for the lake, but they could recognize it as a general public benefit; they generally were strongly opposed to the taking of lands for wildlife mitigation. The Fish and Wildlife Service has stated informally that the 15,800 mitigation acres is negotiable but the Brazos River Authority maintains that any land acquisition for mitigation lies outside of its charter. The powers and duties of the BRA, as defined by Vernon's Ann. Civ. St. Art. 8380-101 are to make "...maximum utilization of storm, flood and unappropriated flow water of the Brazos River watershed for the purposes for which the district is created, as expressed and indicated in this Act...." The specified authorized purposes of BRA are enumerated under section 3 of the statute. Nothing therein expressly permits BRA to purchase additional lands for mitigation of losses to fish and wildlife resources and their associated habitat. In *Brazos River Authority v. Harmon*, 178 S.W. 2d 281 (Tex. Civ. App. 1944), writ refused, the court ruled that the powers of eminent domain given river authorities do not authorize them to take land for a public park, campsite, or recreational purposes. Herein lies the problem. Most State water-oriented agencies do not have the authority to condemn lands for mitigation, or to pass costs on to reservoir water users. The solution has to come from new legislation. Responsible State officials have agreed to continue to resolve the mitigation issue.

9.10 **The Corps of Engineers.** Mitigation of project related impacts is also a major concern of Federal projects, and the Corps is aware of both sides of the issue in this particular case. However, the Federal government has no authority to purchase mitigation lands at non-Federal projects. The policy of the Corps of Engineers in administering the Department of the Army permit program is to support the State's position unless there are overriding factors of national interest. None have been identified with this permit application, and the overall public interest would be served by issuance of the Department of the Army permit for the Sterling C. Robertson Dam and Lake Limestone project.

Table IX-I
COORDINATION WITH OTHERS

Advisory Council
On Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

July 20, 1976

Mr. David T. Killen
Acting Chief, Planning Branch
Corps of Engineers, Fort Worth District
Department of the Army
P. O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Killen:

This is in response to your letter of July 1, 1976 (SWFED-PR) concerning the Sterling C. Robertson Dam and Limestone Lake Project, Brazos River Valley, Texas.

Apparently you do not realize that the Federal agency's responsibilities for the preservation of historic and cultural properties pursuant to Section 106 of the National Historic Preservation Act of 1966, Executive Order 11593, "Protection and Enhancement of the Cultural Environment" and the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800) extend beyond federally funded projects to include *any Federal action, activity, or program* or the approval, sanction, assistance or support of any other action, activity or program. In this instance, the Corps of Engineers' approval of a permit for the construction of a dam and a reservoir is an undertaking that would appear to require Advisory Council comment pursuant to Executive Order 11593. The environmental statement for the project identifies the fact that numerous archeological sites containing important information about the pre-history of the area will be affected.

The Corps is guided in obtaining Council comment by Section 800.4 of the "Procedures". The first step [800.4(2)] is to determine if the cultural resources within the project impact area meet the criteria for inclusion in the National Register of Historic Places. This is done in consultation with the Texas State Historic Preservation Officer. If the affected cultural resources meet the National Register criteria the Corps is responsible for following the remaining steps in Sections 800.4 and 800.5 in obtaining Council comment.

IX-4

Corps of Engineers Response:

All further investigative work will be accomplished in accordance with the "Proce dures" and recommendations of the Advisory Council.

It is noted from your letter and the environmental statement that the Brazos River Authority intends to fund an extensive archeological data recovery program to mitigate "any adverse effect" of the proposed project. Permitting such a program to proceed on sites eligible for inclusion in the National Register without affording the Council an opportunity to comment in accordance with the "Procedures" would violate Executive Order 11593.

Please contact Michael H. Bureman of Council's staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946, to assist you in completing this process as expeditiously as possible to avoid any unnecessary delays in the implementation of this project.

Sincerely yours,

Michael H. Bureman

for Louis S. Wall
Assistant Director, Office
of Review and Compliance

cc:
Dr. Clement M. Silvestro-Chairman, ACHP
Mr. Truett Latimer-TX:SHPO
Mr. Richard G. Laverty-CORPS:FLO

IX-5

FEDERAL POWER COMMISSION
WASHINGTON, D.C. 20426

IN REPLY REFER TO:

JUL 1 1976

Colonel Joe H. Sheard
District Engineer, Corps of Engineers
Department of the Army
P.O. Box 17300
Fort Worth, Texas 76102

Reference: SWFED-PR

Dear Colonel Sheard:

This is in reply to Engineering Division Chief Walhood's letter of April 16, 1976, addressed to the Commission's Acting Advisor on Environmental Quality, inviting comments of the Federal Power Commission on the draft environmental statement concerning a permit application by the Brazos River Authority for construction of Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas.

IX-6

The proposed project would involve the construction of the Sterling C. Robertson Dam on the Navasota River in Robertson and Leon Counties, Texas. The dam would create the Limestone Lake, impounding 217,495 acre-feet of water at its normal pool at elevation 363 feet mean sea level. The project would provide dependable water supplies for municipal, industrial, and irrigation uses by entities or persons who have contracted, or will contract, with the Brazos River Authority.

These comments of the Federal Power Commission's Bureau of Power are made in accordance with the National Environmental Policy Act of 1969 and the August 1, 1973, Guidelines of the Council on Environmental Quality. Our principal concern with projects affecting land and water resources is the possible effect of such projects on bulk electric power facilities, including potential hydroelectric developments, and on natural gas pipeline facilities.

Water from the proposed project would first be used to meet the immediate need for at least 25,000 acre-feet of water per annum required as makeup water for the cooling ponds of two planned electric generating facilities. These two facilities are the 1,500-megawatt Twin Oak plant to be owned by the Texas Power and Light Company and the 1,500-megawatt Oak Knoll plant to be owned jointly by the Dallas Power and Light Company, the Texas Electric Service Company, and the Texas Power and Light Company. The draft statement indicates

Corps of Engineers Response:

that these two planned facilities would be needed to meet projected long-range electric energy demands.

The Commission staff notes that the April 1, 1976, report of the Electric Reliability Council of Texas to the Commission identifies the Twin Oak plant as a generating facility planned for 1982 operation. Other data on file with the Commission indicates that the first 750-megawatt unit of the Oak Knoll plant is now scheduled for operation in 1985. Both plants will utilize locally-mined lignite which will be needed to replace older plants using gas and oil for boiler fuel.

The draft statement notes that the only mineral production in the immediate vicinity of the proposed reservoir is natural gas production, but that all active wells are located above its maximum pool elevation. The draft statement also notes that all dry or abandoned gas wells located within the proposed reservoir limits that could provide poilution hazards would be plugged.

The draft statement indicates that relocations would be required for three pipelines and two electric power transmission lines. Presumably, the pipelines include natural gas pipelines. It should be noted that any relocation of these facilities should be conducted in such a manner as to minimize any disruption of service.

The opportunity to comment on the draft environmental statement is appreciated.

Very truly yours,

Alton P. Dowell

for W. Ridgway
Chief, Bureau of Power

IX-7

Concur. This work will be accomplished by those who are most knowledgeable of the regulatory requirements applicable to that particular work and with a minimum of inconvenience to the users of those facilities.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

1720 Peachtree Road, N. W.
Atlanta, Georgia 30309

8400
June 11, 1976

Mr. Gordon A. Walhood
Chief, Engineering Division
Fort Worth Distirct, Corps of Engineers
P. O. Box 17300
Fort Worth, TX 76102

Dear Mr. Walhood:

The United States Forest Service, State and Private Forestry has reviewed the draft environmental impact statement covering, "Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas".

Implementation of this project has the concurrence of our State Cooperator, the Texas Forest Service. Consequently, forest lands and resources of the area are not expected to be significantly impacted. We do recommend, however, that the Texas Forest Service be contacted relative to possible State or National champion trees in the project area.

Thank you for the opportunity to review and comment on this draft EIS.

Sincerely,

ROBERT K. DODSON
Area Environmental Coordinator

Copy: State Forester, Texas

IX-8

Corps of Engineers Response:

The Texas Forest Service has indicated the presence of a National champion tree in the project area and this has been included in the statement, the setting and impacts.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. Box 648
Temple, Texas 76501

May 21, 1976

Mr. Gordon A. Walhood
Chief, Engineering Division
Department of the Army
Fort Worth District, Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Walhood:

We have reviewed the draft environmental impact statement for the Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas. The following comments are submitted for your consideration:

1. Paragraph 2.34 - The area of the proposed reservoir is correctly described as a Post Oak Savannah vegetational area. However, in other sections of the document, the area is incorrectly referred to as a deciduous forest or a forest.

2. Section IV - Information needs to be included on effects to land use.

3. Paragraph 4.15 - Vegetation - A statement on the kinds and amounts of the various types of vegetation lost should be included.

4. Paragraph 4.22 - Impact on Occupations - Information is needed on the number of farm and livestock operators that will be lost or severed.

5. Paragraph 5.02 - Effects on the Land - Our information indicates that most of the land lost will be open native grassland and savannah grazing lands.

6. Paragraph 5.09 - Relocations - Information should be included on number of units severed and the number which will no longer be economic units.

7. Paragraph 8.01 - The kinds of land committed should be clarified.

It is noted that Section IX-Coordination contains a recommendation for acquisition of an additional 15,200 acres of agricultural land for the mitigation of wildlife habitat. Two areas are recommended, one upstream in Limestone County and the other downstream in Leon and Robertson Counties.

IX-9

Corps of Engineers Response:

Deciduous forest are vegetative communities dominated by trees which lose their leaves at the end of the growing period. In light of the fact that environmental statements are written for the lay person, the use of the term deciduous forest or forest to differentiate between an area currently dominated by trees versus grass is considered in the proper context.

Impacts on land use were included as requested.

Amounts of the two main types of vegetation were included.

This information was included as requested.

Native grassland and savannah grazing lands were included.

Livestock and farm units effected were included in paragraph 5.09.

Kinds of land has been qualified into upland and bottomland forests and farm and pasture lands.

The acquisition of this land would increase the impacts on agricultural production and the number of farm and ranch units affected. The mitigation area in Limestone County is more valuable for agricultural production than the land in the lake area. This area is better suited for production of crops and improved grasses and presently contains a large acreage of improved grasses. The land downstream from the proposed reservoir is similar to that being inundated in the reservoir.

We appreciate the opportunity to review this draft and provide you our comments.

Sincerely,

Acting

George C. Marks
State Conservationist

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230

May 24, 1976

Mr. Gordon A. Walhood
Fort Worth District, Corps of Engineers
Department of the Army
Post Office Box 17300
Fort Worth, Texas 76102

Dear Mr. Walhood:

This is in reference to your draft environmental impact statement entitled "Sterling C. Robertson Dam, and Limestone Lake, on the Navasota River, Texas (Leon, Limestone and Robertson Counties)." The enclosed comment from the National Oceanic and Atmospheric Administration is forwarded for your consideration.

IX-11

Thank you for giving us an opportunity to provide this comment, which we hope will be of assistance to you. We would appreciate receiving eight copies of the final statement.

Sincerely,

Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

Enclosure Memo from: Mr. Gordon Lill
National Ocean Survey

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administrati
Rockville, MD 20852

Date May 19, 1976

Reply to Attn of

Subject DEIS 7604.46 - Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas

To Director, Office of Ecology and Environmental Conservation, NOAA

The National Geodetic Survey does not have any comments on subject draft environmental impact statement, other than the possible impact on monuments of the National Geodetic Control Networks.

IX-12

Bench marks, triangulation stations, and traverse stations have been established by the National Geodetic Survey in the vicinity of the proposed project. Construction required for the project could result in destruction or damage to some of these monuments.

The National Geodetic Survey requires sufficient advance notification of impending disturbance or destruction of monuments so that plans can be made for their relocation. The National Geodetic Survey recommends that provision be made in the project funding to cover costs of monument relocation.

Gordon Lill
Deputy Director
National Ocean Survey

Corps of Engineers Response:

The National Geodetic Survey will be given advance notice of any Brazos River Authority activity that will result in destruction or damage to their monuments. Specific provisions have not been made in project funding to cover the cost of monument relocations.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

JUN 7 1974

Mr. Gordon A. Walhood, P.E.
Chief, Engineering Division
Fort Worth District, Corps of Engineers
Department of the Army
P. O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Walhood:

We have reviewed the draft Environmental Impact Statement concerning the Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas. A copy of our comments is enclosed for your consideration.

IX-13

Thank you for the opportunity to review the document.

Sincerely,

Charles Custard
Director
Office of Environmental Affairs

Enclosure

cc: Warren Muir (2)
Richard O. Hayes
Boris Osheroff
Dean Blue

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL

BUREAU OF LABORATORIES
VECTOR-BORNE DISEASES DIVISION
POST OFFICE BOX 2087
FORT COLLINS, COLORADO 80522

May 14, 1976

Mr. Charles Custard
Director, Office of
Environmental Affairs
Department of Health, Education,
and Welfare
Room 4740, North Wing
330 Independence Avenue, SW
Washington, D.C. 20201

Dear Mr. Custard

In response to your letter, we have reviewed the draft environmental statement on the Sterling C. Robertson Dam and Limestone Lake on the Navisota River, Texas and we are submitting our comments on vector-borne disease problems which might result from this project.

IX-1-4

Potential vector-borne disease problems could emanate from the reservoir and the irrigation development. The reservoir poses the usual mosquito producing situation common to all impoundments. Unprepared shorelines, especially in the upper reaches and in embayments; seepages below the dam site and in shallow marshy areas; marginal pools, created as the reservoir is drawn down; and drainage ditches, poorly constructed and maintained, are possible habitats which need to be considered in order to preclude mosquito problems which might ensue. However, proper design and operation will help to keep such conditions at a minimum.

The development of irrigation presents a mosquito-encephalitis problem well known in Texas. The common encephalitis mosquito, Culex tarsalis, is associated with agricultural irrigation, and development of the project should include steps to minimize mosquito-producing conditions usually associated with this type of project. Seepages from unlined distribution canals are an important source of mosquitoes, as are unleveled fields which retain water and poorly designed and maintained return flow structures. As with reservoirs, these aspects of an irrigation system can be designed to eliminate much of the attendant mosquito problem.

Texas experienced some 37 human cases of encephalitis in 1975. It is important in the development of this water resources project that

Corps of Engineers Response:

additional mosquito-producing habitats should not be created. The mosquito species capable of transmitting encephalitis are widely-distributed in Texas and are likely to be found in the project locality. The statement notes (page C-41) that Anopheles species and Culex species are found, but does not specify particular species.

The following information should be included in the statement. Which species of vector mosquitoes are found in the locality of the proposed project, and how abundant are they? Have any mosquito-borne encephalitis cases been reported from the nearby area? If a vector mosquito problem is caused as the result of the project, what steps will be taken to control it? These questions should be answered early in the planning stages, and perhaps the answers can be obtained from Mr. Bobby L. Davis, Entomologist, Texas Department of Health Resources, 1100 West 49th Street, Austin, Texas 78756.

We are pleased to cooperate with your offices in reviewing the proposed Limestone Lake project. If we can furnish any other information, please let us know.

Sincerely yours,

Richard O. Hayes

Richard O. Hayes, Ph.D., M.P.H.
Chief, Water Resources Branch

cc: Mr. Bobby Davis
Mr. Samuel Hoover

IX-15

The following species of mosquitos are probably among those present in the project area, where there is suitable habitat:

Aedes vexans - a floodplain mosquito that is found in floodwater meadows and savannas where it lays its eggs out of water. Has been linked with Western and St. Louis encephalitis. Common in surrounding counties.

Anopheles quadrimaculatus - a potential carrier of malaria; very common in the eastern portion of Texas.

Anopheles crucians - very common in east Texas.

Culex quinquefasciatus - very common; a vector of St. Louis encephalitis; preferred habitat is often characterized by areas with septic tank seepage or sewage effluent has resulted in stagnated or polluted waters. Around lakes, they would be associated more with areas with rest rooms, park or camping grounds, and trash around recreation areas, etc.

Culex tarsalis - common; a vector of Western Equine encephalitis.

Control of mosquitos includes removal of potholes and dead water areas, removal of floating debris so minnows can feed on the mosquitos, and fogging programs, to mention a few. Generally, new lakes cover up more suitable habitat than they create.

United States Department of the Interior

OFFICE OF THE SECRETARY
SOUTHWEST REGION
Room 4030, 517 Gold Avenue SW.
Albuquerque, New Mexico 87102

June 18, 1976

ER 76/391

Col. Joe H. Sheard
District Engineer
Corps of Engineers P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

The Department of the Interior has reviewed the Draft Environmental Statement for the Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Section 404 Permit; Leon, Limestone, and Robertson Counties, Texas.

The following comments are suggested for your consideration in developing the final environmental statement.

General Comments

The statement generally is adequate in its treatment of effects on fish and wildlife resources, but there are certain specific deficiencies regarding the impact of the project on animals which will be displaced by the reservoir.

The alternatives section should discuss in detail the associated impacts on fish and wildlife. Alternative Number 1 would have the least effect on fish and wildlife resources. Alternative Number 3 would result in a reduction of adverse project impacts on fish and wildlife. The selected alternative, project implementation without the inclusion of suggested mitigation measures, is the most adverse in terms of impact on existing fish and wildlife resources.

In view of the fact that the environmental statement concerns an application for a Section 404 Permit, regulating the discharge of dredge or fill material in the waters of the United States, it should present a description of the fill material proposed for placement in the Navasota River. In addition no mention was found of the proposed source of the 6.5 million cubic yards of fill material required for the 8,400-foot embankment, and the volume was first found in attached correspondence (Public Notice of 3 December 1975, Character of Work, line 4). Appendix A-3 has been referred to on page 3 for details of

Corps of Engineers Response:

This assessment of associated impacts on fish and wildlife resources regarding the three alternatives mentioned has been included in Section VI. Also, a discussion on the issues of mitigation has been included in Section IX.

clearing and grubbing activities, a part of which is presumably required in areas of borrow excavation, but the only information that has been found on this activity is a brief reference to "the areas of borrow excavation" (p. A-10, line 14). As far as could be determined, these areas have not been delineated or otherwise identified in the draft environmental statement.

The borrow material, approximately 6.5 million cubic yards, consists of a mixture of sands and clays in layers at different depths which are being utilized selectively for the various materials required in the embankment. The excavated borrow area will be covered by the embankment or inundated by the lake. There is no spoil bank as such.

Specific Comments

SUMMARY

Item 5--The region for the Bureau of Reclamation is SOUTHWEST REGION rather than Region 5.

This notation was included as requested.

ENVIRONMENTAL SETTING WITHOUT THE PROJECT

Page 4, paragraph 2.03--The Wilcox Group is composed of the Calvert Bluff, Simsboro, and Hooper formations. This added notation would improve the coordination between paragraph 2.03 and plate II-1.

Page 9, paragraph 2.31--This section would be enhanced if the discussion included a more detailed accounting of the recreation opportunities and facilities available within the market area. Recreation opportunities and facilities at Tradinghouse Reservoir, Fairfield Lake State Park, and Bryan Utilities Lake should be noted in this section.

The Recreation Section was revised to incorporate these features within the market area.

It is suggested that reference be made to the Texas State Comprehensive Outdoor Recreation Plan in the assessment of recreation needs for the area.

THE PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

Page 19, paragraph 4.04--There should be some adverse effects from sedimentation, evaporation, and concentration resulting from project operations. The particulates mentioned are deposited somewhere. These effects could be discussed in this section.

The difference in the initial storage and 50 year storage capacity of the Lake is a reduction of 14,500 acre feet.

Page 20, 21, and 25; paragraphs 4.12, 4.14, and 5.07--Statements in these paragraphs give the distinct impression that displaced wildlife will relocate or "shift their ranges in accordance with changing water levels." It is well documented in ecological literature that the removal of habitat from its natural state of production generally and eventually results in the loss of wildlife rather than its displacement. As habitat is lost, the carrying capacity of the ecosystem is reduced and this in turn results in a corresponding reduction of animal populations. This should be reflected in the statement.

Concur. This impact was included in the discussions.

Page 21, paragraph 4.16--There should be some indication of consultation with the State Historic Preservation Officer concerning the possible impact of the project upon sites that could be in the process of nomination to the National Register of Historic Places.

Coordination with the State has been accomplished by BRA through the Texas Archeological Survey at the University of Texas, and correspondence to this effect has been included in Section IX.

Page 22, paragraph 4.28--If Limestone Lake "will fill a void caused by a lack of sufficient water-based recreation in the area," the reference information to back up the statement should be included in subsection 2.31. The Texas State Comprehensive Outdoor Recreation Plan indicates no additional surface acres are needed in rural areas until 2000.

The revision of the Recreation Section was included to cover this issue.

Pages 23 and 24--The scope of the statement's coverage should be expanded to include Texas Utilities Service's plans for constructing two power plants, two cooling reservoirs, and the associated strip-mining of lignite. Paragraph 4.35 states that Lake Limestone is "an essential part of the Texas Utilities Services, Inc., electric generating plant operation." The environmental impact statement often mentions the favorable impacts of secondary economic development and population growth resulting from the power generation. The detrimental impacts of power development should likewise be discussed.

Only general impacts have been included in regard to these proposed facilities, i.e. land requirements. Southwest Research Institute (1975) conducted a detailed environmental assessment of the impacts resulting from planned construction and operation of these two power generating facilities on the environment.
This assessment is available for study at the Fort Worth District Office, Corps of Engineers.

ALTERNATIVES TO THE PROPOSED ACTION

Page 28, paragraph 6.05--This subsection is extremely narrow in its scope and does not give serious consideration to other alternatives.

This section should address the entire Navasota Basin and plans for two other projects--Navasota No. 2 and Millican Reservoir. They are closely interrelated and impacts on the river cannot be clearly perceived without exploring this relationship in more detail.

A table was included in Section IV, Impact on Navasota Basin, which addresses other planned projects and accumulative effects.

The two primary reasons for selecting this project alternative appear to be lower pumping costs and its capability of meeting local municipal and industrial needs sooner than Millican and Navasota No. 2. From the limited information provided, it is impossible to compare the sizable future costs of building Limestone plus two other reservoirs rather than building one reservoir capable of fulfilling more objectives (functions)--water supply recreation, fish and wildlife, flood control, and irrigation. Limestone as currently designed is incapable of achieving this.

The impact of this project on the environment cannot be isolated from the total impact of the three reservoir projects on this watershed. The construction of Limestone, with its inherent limitations in meeting defined basin needs, leads inevitably to the construction of the other two. The costs and benefits of all alternatives to meeting

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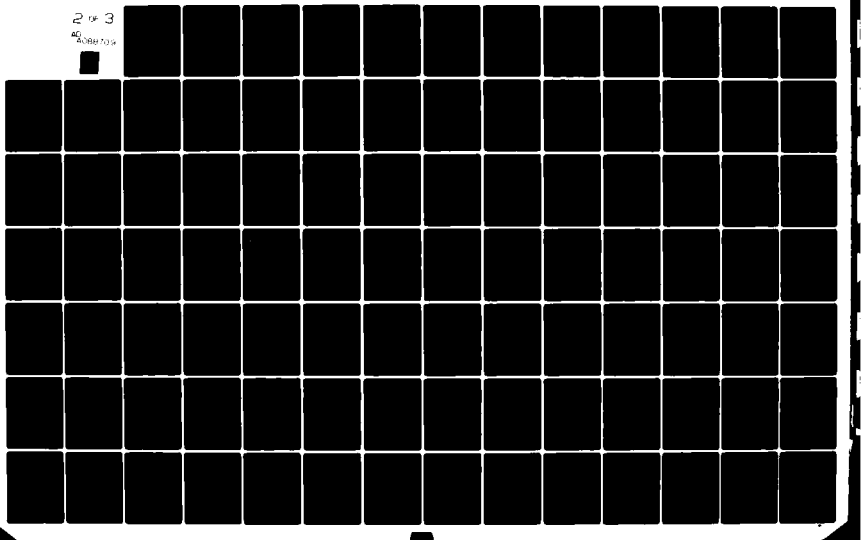

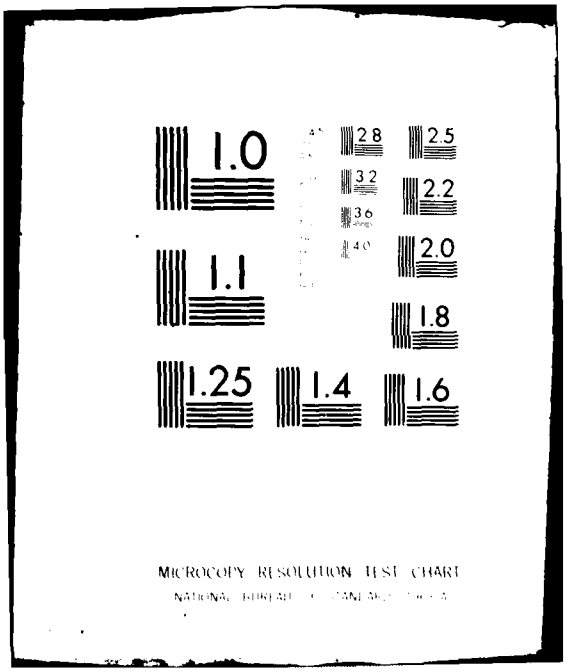
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water needs through use of the Navasota River have not been clearly arrayed over an appropriate time frame. Any decision concerning issuance of the permit should ascertain that the points raised above are fully addressed in the environmental impact statement.

Page 29, paragraph 6.14--The Corps of Engineers states that mitigation could be recommended "if it were determined that unavoidable losses would occur to the habitat of a species considered rare, endangered, or threatened with extinction, and if this loss were considered to be significant." This interpretation of the mitigation concept assumes that habitat considered essential or determined critical for threatened or endangered species can be mitigated. Such a concept of mitigation is not consistent with the spirit and intent of the Fish and Wildlife Coordination Act. This act recognizes the serious impact of water development on wildlife resources and established a national policy that fish and wildlife conservation is to receive equal consideration in water resource development. It does not specify that the project must only involve threatened or endangered species before the impacts could be considered significant. Therefore, this paragraph should be revised to more accurately describe the rationale behind the mitigation concept for it is not consistent with the application of this act to other water resources development projects.

Concur. This paragraph was revised and states that a conditional permit may be granted if it is determined by the Corps of Engineers that mitigation is required to reduce environmental losses.

In any large water development project, a loss of habitat is unavoidable; however, through the inclusion of mitigative measures, Sterling C. Robertson Dam and Limestone Lake can be developed with minimal losses to fish and wildlife resources. Based on project evaluation by the Fish and Wildlife Service, the Department of the Interior recommended such mitigative measures in its report dated February 2, 1976. These measures were recommended not to prevent construction of the project but as compensation for unavoidable losses. To be complete, this statement should recognize these losses to wildlife resources and objectively array the alternative measures that could be used to minimize these losses.

IX-19

COORDINATION

Attached Correspondence--It is noted in attached correspondence that the project area includes 9,300 acres of seasonally flooded wetlands (Department of the Interior, Fish and Wildlife Service, letter of February 2, 1976, p. 2, par. 3). It would be advisable to mention specifically the loss of this acreage in the summary and other appropriate sections of the environmental statement.

This has been mentioned in the appropriate sections.

APPENDIX

Page A-3--Item k lists three selective withdrawal inlets. Page A-7 and plate A-2 (and also the Fish and Wildlife Service letter) show four selective withdrawal inlets. This apparent discrepancy should be clarified.

A total of four are available; the fourth in question is a low-flow outlet which can be used in conjunction with the three bypass outlets. Additional discussions on low-flow augmentation have been included in Sections I & IV.

Page A-4--The table of data indicates that the maximum height of the embankment will be 65 feet rather than the 72 feet stated on line 9 of Earthen Dam.

Both measurements are correct, and the 72 foot figure is the maximum distance from the top of the dam to the thalweg.

Page A-4--More specific information concerning quantities of material for the earthen dam would be helpful.

Approximately 6.5 million cubic yards of fill material is required.

Page A-5--Concerning the spillway, can specific quantities be listed? Where will excavation material from the approach and pilot channels be placed? (In spoil bank? In embankment?)

Estimated excavation for spillway is 500,000 cubic yards. All excavated material from the spillway that is not suitable material for the embankment will be utilized in the downstream stabilizing berm. There is no spoil bank as such.

Page A-7, plate A-2--This plate would be more meaningful if it included additional information such as maximum water surface elevation, slopes, heights, top width, and cutoff trench dimensions.

Page A-11, A-4--There is no mention of the number of acres to be acquired for the project.

These figures, approximately 15,000 acres in fee and 6,000 acres in easement, have been included in Section I.

Page A-12, third paragraph--The meaning of the following guideline which is stated to have been adopted by the Board of Directors of the Brazos River Authority on June 19, 1975, should be clarified:

> If the effects of such sluffing or erosion are expected to extend beyond the limits of the areas described in the above paragraph will be delineated by lines established a sufficient horizontal distance back from the 363-foot contour to encompass the areas which may be subject to such sluffing or erosion.

This paragraph was clarified and it should have read as follows: If the effects of such sluffing or erosion are expected to extend beyond the limits of the areas described in the above paragraph, the limits of the "restricted building areas" described in the above paragraph will be delineated by lines established a sufficient horizontal distance back from the 363-foot contour to encompass the areas which may be subject to such sluffing or erosion.

Page B-1 to B-13--Surface-water quality should include an appropriate statement on sediment characteristics on streams draining the area above the impoundment in order to adequately evaluate any adverse effects that may result from excessive siltation of the lake due to heavy rainfall and runoff.

Sedimentation rates were determined from Bulletin 5912 prepared by the Soil Conservation Service for the Texas Board of Water Engineers. Curves showing the relation of average annual rate of sediment production to drainage area size were utilized for various land resource types to determine annual sediment production for the drainage area above the dam site. A fifty-year sediment allowance of 14,500 acre-feet, reflecting anticipated year 2030 conditions, was distributed in the reservoir.

Page B-1, B-1.a.--A decrease of 25 percent below the average weighted value of 89 would seem to result in a reading of 67 rather than 22. The change alters the comparisons noted with Tables 4 and 5. (The standard quoted from EPA is correctly quoted.)

The correct figure is 22.5 mg/l (greater than 25 percent of 89 mg/l).

Page B-1, B-1.b.--It would be appropriate to show the relation between the boron units used here and the different boron units used in Table 5.

One millogram is equal to one thousand micrograms.

Page B-5, Table B-4--The table should indicate which standards are minimum allowances rather than maximum allowances.

Page B-11, B-4--Six of the water quality parameters are exceeded most of the time. Five other parameters are often exceeded. There should be more explanation of why the water quality is described as good.

A revision of this discussion has been included in Section II to help explain the existing water quality conditions.

Page F-2, F-3--Appendix F-3 contains a brief reference to what may be a significant impact in the statement that "Shoreline erosion by wind-driven waves, in addition to the erodibility of sandy and shaly clay materials in other areas, is expected to contribute to the general turbidity of the lake water." It is suggested that this potential impact be mentioned in the summary and other appropriate sections of the environmental statement, in view of the fact that Limestone Lake will have a 130-mile shoreline and will be underlain largely by the readily-eroded Calvert Bluff formation composed mainly of unconsolidated shaly clay and sand.

This impact has been included in the appropriate sections of the E.S.

We believe attention to the above comments will clarify the findings and conclusions set forth in the draft environmental statement.

Sincerely yours,

Willard Lewis
Special Assistant to the Secretary

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
826 FEDERAL OFFICE BUILDING
AUSTIN, TEXAS 78701

May 17, 1976

IN REPLY REFER TO

06-48.10B

Draft Environmental Statement
Sterling C. Robertson Dam and
Limestone Lake on the Navasota River

Mr. Gordon A. Walhood
Chief, Engineering Division
Fort Worth District, Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102
Attention: SWFED-PR

Dear Mr. Walhood:

We have reviewed the subject statement and offer the following comments. The roads that will be affected by the impoundment are not adequately discussed. This discussion should include, but not be limited to, the locations, designs, nature of the action to be taken and any alternatives that were considered.

Sincerely yours,

John J. Conrado
Division Administrator

Corps of Engineers Response:

Where facilities such as roads, bridges, power lines, telephone lines, etc. are adversely affected by the project, the Brazos River Authority will try to arrange modifications, adjustments or relocations which will maintain the existing pattern and standards to the extent feasible and practicable with a minimum of inconvenience to the user of that facility.

ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1600 PATTERSON, SUITE 1100
DALLAS, TEXAS 75201

OFFICE OF THE
REGIONAL ADMINISTRATOR

June 17, 1976

Colonel Joe H. Sheard
District Engineer
U. S. Department of the Army
Fort Worth District, Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

We have reviewed the Draft Environmental Impact Statement for Sterling C. Robertson Dam and Limestone Lake. The proposed project calls for the construction of a dam on the Navasota River in Robertson and Leon Counties at river mile 124.5. The purpose of the project is to supply water for municipal, industrial and irrigation use in the local area and in areas downstream in the Brazos Basin and adjoining coastal areas.

We offer the following comments for your consideration in developing the Final Environmental Impact Statement:

1. Associated with the project is the necessity to raise and provide bridges for state and county roadways. Three pipelines and two electric power lines will also require relocation. The final statement should discuss the precautionary methods to be used to ensure that these relocations will have minimal environmental effects.

2. The final statement should more adequately discuss the methods to be used to control erosion during construction. On page A-5 it is stated that in order to prevent erosion the top of the berm will be sprigged and seeded; however, another consideration might be the use of sediment pools. Also, any potentially toxic or hazardous materials to be used should be identified, along with plans to be implemented should spills occur.

3. It is stated on page A-4 that office and maintenance facilities will be constructed at the reservoir site. A discussion detailing the sewage treatment process which will be used for clarifying wastes generated from project office buildings should be included in the final statement.

IX-23

Corps of Engineers Response:

Where such facilities are adversely affected by the project, the Brazos River Authority will try to arrange modifications, adjustments or relocations which will maintain the existing pattern and standards to the extent feasible and practicable. This work will thus be accomplished by those who are most knowledgeable of the regulatory requirements applicable to that particular work and with a minimum of inconvenience to the users of that facility.

Generally accepted engineering and construction methods are being observed, and to date the occurence of erosion appears to be minimal. Sprigging and seeding, and placement of cement slope protection, will be performed at appropriate times to provide permanent erosion control. The only potentially toxic or hazardous materials contemplated to be present on the project either during or after construction are the fuels and lubricants required for vehicle and construction equipment operation. Present storage sites are upland areas so located to preclude the loss into free waters of any spills even in periods of heavy rainfall. Permanent fuel storage facilities will be similarly located and will, in addition, be buried.

Design of the office and maintenance facilities is now in progress, and it is contemplated that the liquid wastes generated from that area will be disposed of by the use of septic tanks and subsurface drainage fields. Any such facilities will be in full compliance with the requirements of appropriate regulatory agencies. Solid wastes generated at the administrative site will be burned in small quantities and/or disposed of at local sanitary landfills.

4. The statement indicates there will be land use changes induced by the completion of this project. The final statement should discuss the potential impacts of secondary growth on the land, air and water resources of the project area. We suggest that the Corps' role in land use planning be outlined in the final statement. The Corps should participate with the official responsible in developing this plan for the project area. Such a plan could help mitigate the potentially adverse secondary impacts that may be generated by the project.

5. Apparently, the primary purpose of this project is to provide makeup cooling water for proposed power plants which will burn locally mined lignite. Initially, two 1,500 MW units are planned, which will require 25,000 acre feet out of an available 70,000 acre feet. It appears that most of the excess would be used for additional power plants (Section XI, Brazos River Authority's letter of March 26, 1976). Since the major use of the water from Lake Limestone is to provide makeup cooling water for these and other power plants, the statement should address the impacts of these power generating activities on the area's resources.

At this point we have no objection to the issuance of the 404 permit; however, the two power plants currently being planned, Twin Oak and Oak Knoll, will be new sources for the purposes of Section 511, Public Law 92-500. The issuance of NPDES permits for these facilities would likely require an EIS to be prepared by our Agency, and it should be noted that our consideration of alternatives under the NEPA process would not be limited by the existence of an already issued 404 permit.

These comments classify your Draft Environmental Impact Statement as LO-2. Specifically, we have no objections to the project; however, we are requesting additional information be provided concerning possible secondary impacts of the proposed project. The classification and the date of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions, under Section 309 of the Clean Air Act.

Definitions of the categories are provided on the attachment. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and on the adequacy of the impact statement at the draft stage, whenever possible.

We appreciate the opportunity to review the Draft Environmental Impact Statement and we would be happy to discuss our comments with you.

The roles of the various agencies of the State of Texas as they pertain to land use planning are discussed in Section III.

The purpose of the project is to conserve and develop the water resources of the upper Navasota River in order to provide dependable water supplies to meet municipal, domestic, industrial and agricultural needs in the area of the upper Navasota watershed and in the lower Brazos Basin and adjoining coastal areas downstream of the project. Based on contracts already made and on additional requests received, it is expected that all the avialable water supplies from Lake Limestone will be committed before construction is completed. Southwest Research Institute (1975) conducted a detailed environmental assessment of the impacts resulting from planned construction and operation of these two power generating facilities on the environment.

Please send us two copies of the Final Environmental Impact Statement at the same time it is sent to the Council on Environmental Quality.

Sincerely yours,

John C. White

John C. White
Regional Administrator

Enclosure

OFFICE OF THE GOVERNOR

DOLPH BRISCOE
GOVERNOR

July 1, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

In accordance with the National Environmental Policy Act of 1969, and the Texas' Policy for the Environment, the draft environmental statement for the Sterling C. Robertson Dam and Lake Limestone on the Navasota River, Texas, has been reviewed by the Budget and Planning Office and interested or affected State agencies.

The comments of the review participants are enclosed and should be considered in their entirety. The following is a brief summary of their major comments:

1. The Texas Water Development Board stated that the project is urgently required for municipal and industrial water supply purposes. They concluded that the draft environmental impact statement adequately addresses the impacts of this project, but stated that regulations should be developed for private sewage facilities around the lake.

2. The Texas Parks and Wildlife Department stated that partial, if not full mitigation should be explored. The Department outlined potential mitigation features, other than land acquisition, which they had discussed with the Brazos River Authority and expressed their expectation that these features may be incorporated into the project. The Texas Parks and Wildlife Department also discussed additional prospects for enhancing the recreational aspects of this project, including a Land and Water Conservation Fund project proposed by the Brazos River Authority, to the extent feasible, providing public access to the downstream area, and full consideration of the recreational needs and available facilities outlined in the Texas Outdoor Recreation Plan and other Department publications. In addition, the Department made suggestions to clarify and expand the discussion in the draft document concerning the purposes of the project and the long term effects on wildlife displaced by inundation of their habitat.

EXECUTIVE OFFICE BUILDING • 411 WEST 13TH STREET • AUSTIN, TEXAS 78701

Note: Letters from State Agencies follow this cover letter from the Office of the Governor. The Corps of Engineers Response is included on each State Agency letter, if required.

3. The Texas Water Rights Commission noted that their previous permitting action and comments had been incorporated into the draft environmental impact statement. They commented that this statement adequately reflects the basic engineering and economic soundness of this project; therefore, they did not believe that further justification for approval of the permit application is required. They emphasized that any delays imposed in construction would be contrary to the public interest.

4. The Brazos River Authority emphasized that the authorization for the construction of this project was based upon procedures in which all concerned had adequate opportunity to present their views. Therefore, the Brazos River Authority urged that the permit be issued at the earliest practicable date to preclude interruption in the construction of this project.

5. The Texas Department of Health Resources concurred in the implementation of the project and commented on the need for regulating waste water and solid waste disposal in areas adjacent to the reservoir. They also stated that an insect monitoring and control program is warranted.

6. The Texas Water Quality Board concurred that the project would not adversely affect the water quality as expressed previously in their certification letter of November 13, 1975.

7. In addition to their concurrence, the Texas Air Control Board provided corrections to data in the draft document.

The Texas Forest Service, the Texas Department of Agriculture, the Texas Industrial Commission, the Brazos Valley Development Council, and the Bureau of Economic Geology concurred in the implementation of this project.

The complete comments of the reviewing agencies are provided to assist your planning effort. It is believed that these comments will strengthen the assessment of the effects of this project, including the impact on the wildlife in the existing riverine habitat. Recognizing that this project was duly authorized by the Texas Water Rights Commission, and a certification that the water quality of the stream is not expected to be impaired has been issued by the Texas Water Quality Board, it appears that it would be in the public interest for the construction of this project to continue during the processing of the permit application and the environmental impact statement. This action will avoid delays which would increase costs and possibly jeopardize the planned water supply, a substantial portion of which is committed for the operation of electric power plants which are being developed to utilize abundant indigenous supplies of lignite.

It is recognized that providing wildlife habitat mitigation at this advanced stage of project development may be difficult. The Texas Parks and Wildlife Department is continuing to examine the matter of mitigation for loss of wildlife habitat which has been introduced by the U. S. Fish and Wildlife Service. The Department has consulted with regional representatives of the U. S. Fish and Wildlife Service who have indicated a willingness to seek a mutually acceptable resolution to mitigate the loss of wildlife habitat. A continuing, earnest effort will be made to reach a conclusion that will best serve the long and short range needs and interests of the people of the State of Texas.

If this Office can be of further assistance, please contact us.

Sincerely,

Charles D. Travis, Director
Budget and Planning Office

Enclosures

BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE P. O. BOX 7555 TELEPHONE AREA CODE 817 776-1441
WACO, TEXAS 76710

May 3, 1976

Mr. H. Anthony Breard, Coordinator
Natural Resources Section
Budget and Planning Office
Office of the Governor
Executive Office Building
411 West 13th Street
Austin, Texas 78701

RECEIVED
MAY 4 1976
Budget/Planning

Dear Mr. Breard:

IX-29

In response to your memorandum of April 23, there is enclosed herewith a copy of our letter commenting on the draft environmental statement on the Brazos River Authority's Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas (Leon, Limestone and Robertson Counties).

Also enclosed is a copy of the "Agency Review Transmittal Sheet" which we have filled out in accordance with your memorandum of April 23.

We would like to request again that the Governor take advantage of this opportunity to express the position of the State of Texas with regard to the Brazos River Authority's application for this Section 404 permit. It is suggested that something along the following lines would be helpful in clarifying the confusion created by comments previously submitted to the Corps of Engineers by letter from the Governor's Office dated March 25:

> "The Sterling C. Robertson Dam and Lake Limestone project has been under construction by the Brazos River Authority, a governmental agency of the State of Texas, since July of 1975 in accordance with a permit issued by the Texas Water Rights Commission in October of 1974. This permit was issued after public notice to all concerned and after a public hearing at which all concerned were given the opportunity to present their views. This important water resource development project has the full approval of the State of Texas. It is urgently needed as an element of the Brazos River Authority's basin-wide system of water conservation and water supply lakes.

It is needed especially to provide a dependable water supply for cooling of electric power generating facilities to be built in the upper Navasota watershed for the purpose of utilizing that area's abundant deposits of lignite as a source of fuel to help alleviate the country's energy shortage.

"It is requested that the required Section 404 permit for this project be issued at the earliest practicable date so that there will be no delay in completing the construction of this urgently-needed project."

If we may provide any additional information or assistance, please let me know.

Sincerely,

WALTER J. WELLS
General Manager

WJW:gls
Encl.

TEXAS
PARKS AND WILDLIFE DEPARTMENT

CLAYTON T. GARRISON
EXECUTIVE DIRECTOR

JOHN H. REAGAN BUILDING
AUSTIN, TEXAS 78701

June 2, 1976

Mr. H. Anthony Breard, Coordinator
Natural Resources Section
Governor's Budget and Planning Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

Dear Mr. Breard:

The Texas Parks and Wildlife Department has reviewed the Draft Environmental Statement: Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas. This Department has commented on a water rights application and an application for a Section 404 permit for this project. Also, we have transmitted several recommendations directly to the Brazos River Authority, the project sponsor. We do not feel it is necessary to repeat in detail our previous comments since the Corps of Engineers is well aware of our recommendations on fish and wildlife mitigation features. However, there are several corrections in the draft environmental statement that we suggest.

We feel the discussion of mitigation lands on page 29 is inadequate and fails to demonstrate compliance with the Fish and Wildlife Coordination Act. The equal consideration for wildlife provisions of this Act do not apply solely to endangered species. We are aware of extenuating circumstances which may result in considerable difficulties for the Brazos River Authority should they be required to obtain lands to mitigate the full loss of 14,000 acres of terrestrial wildlife habitat. However, these circumstances do not diminish the loss of wildlife habitat, and at least partial, if not full, mitigation should be explored.

We wish to amend incorrect statements concerning mitigation which are contained in two letters appended to the draft environmental statement. A letter by the Texas Environmental Coalition dated March 15, 1976 and a letter from the Environmental Action Council of Brazos County dated March 18, 1976 demonstrate that some confusion exists regarding positions taken on the Section 404 permit application by the U. S. Fish and Wildlife Service and the Texas Parks and Wildlife Department. The U. S. Fish and Wildlife Service recommended that

Corps of Engineers Response:

Concur. A more complete discussion on this subject has been included in the final statement. See Sections VI and IX.

the permit be denied unless certain conditions including acquisition of 15,800 acres of wildlife habitat were acquired for mitigation. This Department did not make any recommendations concerning denial of the permit nor did we concur in such recommendations.

* Some of the mitigation features other than acquisition of land that we have recommended are fisherman access to the dam and tailrace, boat ramps, shoreline access for fishermen, nursery ponds, continuous flow water release, multi-level discharge structure, and leaving standing timber in the lake for fish habitat. We are working closely with the Brazos River Authority on this matter and expect many of these features to be incorporated in the project.

Statements on pages 21 and 25 imply that wildlife on the project area can relocate to adjacent habitat. While inundation may actually kill few animals, the long term effect will be a total loss of the populations of animals not suited to the new reservoir environment. This loss is expected because the adjacent habitat is thought to be at carrying capacity. In the case of waterfowl (page 22), the benefits of increased water surface area may be offset by the loss of acorn production.

The bird list (Table C-4) omits many of the summer residents of the project area. The only warbler listed, the Myrtle Warbler, is a winter migrant. Additional information on birds occurring in the Navasota River Basin can be found in the Final Report Environmental Studies: Lower Navasota River by Texas A&M Research Foundation under contract to the Little Rock District, Corps of Engineers.

The purposes for Lake Limestone are stated to be for existing and anticipated water needs for municipal, industrial, and irrigation purposes (page 1, paragraph 1.02). A decline in human population is indicated for the tri-county area of the project (page 14, paragraph 2.68). It appears, therefore, that water from the project would be used to satisfy needs outside the area as well as within the area. Further, it is indicated (page 21, paragraph 4.18) that as a result of the project an increase in human population, land values, and development will occur in the immediate area. It is suggested that in order to enable a more accurate understanding of the impact from and purposes for the project, the areas to be served outside the local area and anticipated percentages of Lake Limestone water to be utilized locally and elsewhere should be cited. Also, it is suggested that the purpose of stimulating growth and development in the area of the project should be listed with those purposes cited on page 1.

Among the land uses for Leon, Limestone, and Robertson Counties (page 14, paragraphs 2.64-2.67), hunting should be listed. The area is one of the State's prime deer hunting locations and leasing for hunting is a significant land use activity.

Concur. A revision was made as follows: Most terrestrial species within the conservation pool will be lost due to inundation of habitat or displacement. This loss is expected because adjacent habitat is at carrying capacity. The second sentence was revised as follows: The populations of animals will either make adjustments to the displacement or suffer eventual loss due to the lack in carrying capacity of the remaining habitat. Regarding waterfowl, the following sentence was included: Waterfowl hunting will be available but some benefits may be offset by the loss of acorn production.

Additional bird species recorded during a 6-month survey (TAMU, 1973) not included in Table C-4 are pied billed grebe, common egret, black-crowned night heron, yellow-crowned night heron, wood ibis, bluewinged teal, wood duck, broad winged hawk, Swainson's hawk, sandhill crane, American coot, Franklin's gull, barred owl, ruby throated hummingbird, pileated woodpecker, great crested flycatcher, least flycatcher, eastern wood peewee, brown creeper, Carolina wren, wood thrush, hermit thrush, white eyed vireo, yellow throated vireo, red eyed vireo, Philadelphia vireo, black and white warbler, prothonotary warbler, Nashville warbler, parula warbler, blackthroated green warbler, blackburnian warbler, yellow-throated warbler, chestnut sided warbler, prairie warbler, northern waterthrush, yellow-breasted chat, yellow throat, Wilson's warbler, American redstart, yellow-headed blackbird, orchard oriole, Baltimore oriole, great-tailed grackle, summer tanager, rose breasted grosbeak, blue grosbeak, indigo bunting, and painted bunting.

A revision of this paragraph has been included to lend a better understanding of Lake Limestone water to be utilized locally and elsewhere in the Brazos River Basin. These purposes also apply to those cited for page 1, for which a similar revision has been included.

Concur. The following sentence was included under Land Use: Leon, Limestone, and Robertson Counties are in one of the States prime deer hunting locations, and leasing for hunting is a significant land use activity.

A Land and Water Conservation Fund project submitted by the Brazos River Authority was approved by the Texas Parks and Wildlife Commission on March 19, 1976. On April 12, 1976, the project was forwarded to the Bureau of Outdoor Recreation for review. The project, if approved by the Bureau of Outdoor Recreation, would enable the Brazos River Authority to acquire four parcels of land (three sites in Limestone County and one site in Leon County), none of which is expected to exceed a maximum of 40 acres in size, with the acreage of all four areas expected to total less than 125 acres. Site surveys and on-the-ground inspections of the proposed areas have not yet been accomplished. The actual location and configuration of each site will be determined on the basis of such surveys and inspections and on the basis of negotiations with the present owners of the land.

Paragraph 4.11 states that "An additional 1,000 acres will be lost as a result of dam and spillway construction and public use and access requirements." The statement is misleading in that paragraph 1.05 states "The necessity of excluding public access to the dam and areas immediately downstream for safety reasons will be taken into consideration in acquiring the land." It is recommended that the statement in paragraph 4.11 be qualified so that public access and use be better qualified and defined.

Concur. Public use and access requirements was removed from this sentence. Approximately one-half mile of the Navasota will be acquired below the dam, to which no public access will be provided as part of the proposed action.

Paragraph 4.28 states that "The Navasota River is not heavily fished but the construction of Sterling C. Robertson Dam and the subsequent low-flow water releases will result in a river fishery which is more productive than presently exists." Improving the river fishery would certainly be beneficial; however, the subject document states in paragraph 1.05 that the public will be excluded from the downstream areas, which will make it difficult to utilize the benefits made available. It is recommended that the Brazos River Authority reconsider the situation and strive to make the downstream fishery available to the public. Also, the Navasota River ecosystem derives much of its energy inflow during overbank flooding, therefore, all aspects of the impoundment will not be beneficial to the river fishery.

Eventhough there is no flood storage in Lake Limestone, the larger peak flood crests will be reduced by the dam. However, the majority of flood waters will go over the spillway, and should provide a sufficient amount of overbank flooding to the river ecosystem below the proposed project.

With respect to waterways and waterway recreation (canoeing, kayaking, rafting), the proposed reservoir site is located on the upper section of the Navasota River which characteristically has low or no flow at normal water levels. Consequently, this river segment receives little or no use from waterway recreationists, except possibly during short periods when higher water levels exist. This condition is pointed out in "An Analysis of Texas Waterways, A Report on the Physical Characteristics of Rivers, Streams, and Bayous in Texas" (a xeroxed copy of relevant sections of this report can be found in Attachment A). Primarily due to the limited water flows, this river section was not identified as having the potential for inclusion in a statewide system of waterways in "Texas Waterways, A Feasibility Report on a System of Wild, Scenic and Recreational Waterways in Texas."

A revision of the paragraph covering the Impact on Recreation includes this aspect for waterway recreationists.

In Appendix A-7, the subject document indicates that low flows up to 6 cfs will be allowed to pass through the dam; low flows greater than 6 cfs will be passed through to serve superior downstream water rights; and when low flow falls below

2 cfs, a minimum of 2 cfs will be passed through the dam. Flows of 2 cfs to 6 cfs are normally too low to provide waterway recreation opportunities. However, during those periods when flows greater than 6 cfs are being released, a quality recreational waterway of approximately 10 miles in length from the dam to State Highway 7 crossing could be provided.

With respect to trails, the proposed project would have no effect upon any existing trails which have potential for inclusion in a statewide trails system, as identified in "Texas Trailways, A Feasibility Report on a System of Trails in Texas" (a xeroxed copy of relevant sections of the report can be found in Attachment A). However, the proposed reservoir would possibly impact an area which has potential for trail development, that area being the Navasota River from the Limestone-Robertson County Line to the Brazos River. During the compilation of the "Texas Trailways" report, the Brazos Valley Development Council was contacted to identify areas within their boundaries which contain high quality resources that could support trail development. They responded by referring to their Recreation and Open Space Plan where the Navasota River was identified as a desirable open space corridor.

A revision of the paragraph covering the Impact on Recreation includes this aspect of possible effects on an area with potential trail development.

Paragraph 2.31 states "Recreation opportunities and facilities in the area of the proposed Lake Limestone are limited." The Texas Outdoor Recreation Plan (TORP) presents an inventory of existing parks and recreation lands in the rural areas of Regions 20 and 21 (for more detail, see Attachment B). The table presented below illustrates the number of parks reported in 1973 by administration and breaks out total recreation acreage as well as developed and undeveloped acreage. Based on supply information reported in 1973, and presented in the table below, the river authorities (Brazos and Trinity River Authorities) operating in Regions 20 and 21 (see TORP analytical planning region map in Attachment C) were not providing any parks or recreational lands for public use.

This paragraph has been revised in accordance with the cited reference.

Existing Parks and Recreation Lands in the Rural Areas of Regions 21 and 20 by Administration

Region 21

Existing Areas	Federal	State		Local	Private	Total
	COE[1]	TPWD[2]	RA[3]			
Number of Parks	6	3	0	5	8	22
Total Parks and Recreation Land Acres	1,935	1,011	0	255	343	3,544
Developed Land	323	156	0	9	236	724
Undeveloped Land	1,612	855	0	246	107	2,820

Region 20

Existing Areas	Federal				Local	Private	Total
	COE 1/	TPWD 2/	RA 3/	WD 4/			
Number of Parks	21	6	0	1	21	46	85
Total Parks and Recreation Land Acres	6,298	3,950	0	1,246	1,250	5,082	17,820
Developed Land	1,897	1,844	0	1,240	942	1,217	7,140
Undeveloped Land	4,401	2,106	0	0	308	3,865	10,680

1/ Corps of Engineers
2/ Texas Parks and Wildlife Department
3/ River Authorities
4/ Water Districts

The TORP also presents findings which indicate that there is a need for a wide range of recreation opportunities in the project area. Presented below is a table which illustrates the combined needs and recommended allocation of responsibility assigned to river authorities for developed recreation lands and selected recreational facilities in the rural areas of TORP analytical planning Regions 20 and 21. The requirements assigned to the river authorities are not to be interpreted as a strict rule for designing a particular type of facility or park site. The degree of development could range from intensely developed to simple designated areas.

Recommended Allocation of Responsibility
To 1980 for Lands and Selected Recreation Facilities
In the Rural Areas of Regions 20 and 21 1/

	1980 Combined Rural Resource Requirements	Responsibility Assigned To River Authorities
Developed Recreation Lands	6,104 acres	1,100 acres
Campsites	1,940 sites	507 sites
Picnic Tables	4,035 tables	942 tables
Boat Ramps	298 ramps	33 ramps
Fishing Piers, Barges & Marinas	2,672 linear yards	581 linear yards
Designated Freshwater Swimming Area	266 acres	82 acres
Combined Trails 2/	79 miles	8 miles

1/ For recommended allocation of responsibility assigned to river authorities by region, See Attachment B.

2/ Includes walking, hiking, and nature study trails.

Extracts from our studies are provided in Attachments A, B, and C to clarify our responses and to provide some detail on our findings that there is a need for additional recreation opportunities in the project area and that the Navasota River is an outstanding resource. Full advantage should be taken of the resources which would be made available should Limestone Lake become a reality. In our opinion, recreationists visiting the proposed Brazos River Authority park sites at Limestone Lake may have to cope with crowded conditions. The Authority might also possibly expect the public to begin requesting additional areas and facilities as soon as the reservoir is opened.

We appreciate the opportunity to review this document.

Sincerely,

CLAYTON T. GARRISON
Executive Director

CTG:[illegible]:pm

Attachments

TEXAS WATER DEVELOPMENT BOARD

JAMES M. ROSE
Executive Director

P.O. BOX 13087
CAPITOL STATION
AUSTIN, TEXAS 78711

AREA CODE 512
475-3187
1700 NORTH CONGRESS AVENUE

May 14, 1976

In reply refer to
TWDBP-O

RECEIVED

Mr. Charles D. Travis, Director
Governor's Budget and Planning Division
Executive Office Building
411 West 13th Street
Austin, Texas 78701

Attn: Mr. H. Anthony Breard

Re: Draft Environmental Statement: Sterling C. Robertson Dam and Lake Limestone on the Navasota River, Texas (Leon, Limestone, and Robertson Counties), prepared by U.S. Army Corps of Engineers District, Fort Worth, Texas.

IX-37

Dear Mr. Travis:

Our staff has reviewed the above-cited Draft Environmental Statement and offers the following comments and suggestions for your consideration.

Sterling C. Robertson Dam and Lake Limestone on the Navasota River is an urgently-needed project for municipal and industrial water supply purposes. Water supplies allocated for industrial purposes, under provisions of the permit issued by the Texas Water Rights Commission, are needed for steam electric power plant cooling purposes at the Oak Knoll and Twin Oak plants to be located on Steele Creek and Duck Creek, respectively. Construction and construction-related activities at these sites are already underway, with the Twin Oak plant scheduled to be in full operation by 1981. In our opinion, it is indeed unfortunate that this reservoir project, which is in the construction stage, must be subjected to the Corps' recently-promulgated Section 404 rules and regulations and companion guidelines established by the Environmental Protection Agency.

Corps of Engineers Response:

In comments submitted by the U.S. Fish and Wildlife Service, which were coordinated with the Texas Parks and Wildlife Department, neither determined that "unavoidable habitat losses" would occur nor that these losses would be significant. This would indicate there is no justification for the Corps of Engineers to even consider denying the requested permit under provisions of Section 404. Further, we do not concur with the U.S. Fish and Wildlife Service recommendation that the reservoir be "filled incrementally."

The remaining recommendations submitted by the U.S. Fish and Wildlife Service are, in our opinion, reasonable measures for reducing any adverse environmental impacts of the project. In our opinion, these recommendations can be implemented by establishing appropriate reservoir operational procedures.

We are encouraged by the projected beneficial effects of Lake Limestone on ground-water availability in the immediate vicinity of the reservoir. The present quality of ground water warrants protection especially since it is interrelated with the lake. In light of this interrelationship between ground and surface water, we recommend that the Brazos River Authority coordinate with the Texas Water Quality Board with regard to developing private sewage facility regulations around Lake Limestone.

Concur. The BRA will cooperate fully with the Texas Water Quality Board in this regard to insure the quality of ground and surface water and prevent pollution sources.

When the reservoir is completed, subdivision of private lands surrounding the reservoir will most probably take place, along with the construction of week-end and permanent residences which will rely upon septic systems for sewage disposal and probably individual wells for water supply. Therefore, we recommend the early establishment (ideally prior to completion of lake construction) of private sewage facility regulations that include a "restricted zone" designed to prevent pollution sources in the flood easement lands between the normal pool elevation (363 ft. msl) and the emergency spillway crest elevation (369.6 ft. msl).

In summary, we feel that the draft environmental impact statement adequately addresses the adverse and beneficial impacts of the Lake Limestone project. Additionally, material in the statement provides insight into economic considerations relative to the project. Further, regardless of Federal rules, regulations, and guidelines issued pursuant to Section 404 of P.L. 92-500, or agreements between federal agencies relative to Section 404 permit procedures, Lake Limestone is not a federal project and no federal funds are involved in construction and operation of the project. Therefore, it is our position that the Corps of Engineers is not required to adhere to the U.S. Fish and Wildlife Service recommendations relative to mitigation in consideration of the Section 404 permit application.

Thank you for the opportunity to review this statement.

Sincerely,

James M. Rose

TEXAS WATER RIGHTS COMMISSION

STEPHEN F. AUSTIN STATE OFFICE BUILDING

May 11, 1976

Mr. Charles D. Travis, Director
Governor's Budget and Planning Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

RECEIVED
MAY 12 1976
Budget/Planning

Attention: Mr. Albert D. Schutz

Re: U.S. Corps of Engineers, Fort Worth District -- Draft Environmental Statement -- Sterling C. Robertson Dam and Limestone Lake, Navasota River, Texas, in Leon, Limestone, and Robertson Counties, Texas. (April 1976.)

IX-40

Dear Mr. Travis:

In reply to the request in your letter of April 23, 1976, and also, the request in letter of April 16, 1976, from the Fort Worth District, the Commission staff has reviewed the referenced Draft Environmental Statement (DES), prepared by the Fort Worth District incident to their action on the application of the Brazos River Authority for a permit under Section 404 of Public Law 92-500.

The Commission staff presents the following comments for your consideration:

1. The Fort Worth District properly has incorporated and evaluated in the DES the following formal, relevant action documents of the Texas Water Rights Commission:

   a. Texas Water Rights Commission Permit No. 2950, granted to the Brazos River Authority on July 29, 1974. (See Appendix A-7, pages A-14 through A-17, inclusive, DES.)

   b. Texas Water Rights Commission letter of January 6, 1976, to the Director, Division of Planning Coordination, Office of the Governor of Texas, furnishing comments and recommendations in response to the Fort Worth District Public Notice No. W-N-443-41-PERMIT-141, dated December 3, 1975 (See Section IX (COCRDINATION), after page 32, DES).

2. The staff has no new substantive justification to present at this time, and concludes that, in fact, no additional justification appears to be necessary because the referenced DES reflects the basic engineering and economic soundness of the referenced construction project, which already is underway.

3. The Commission staff cannot conceive of any reasonable alternative course of action to recommend which would justify the abandonment of the referenced project, on which $25,778,000 already has been expended or committed. The net loss of $16,771,500, indicated in the cost analysis on page 27, DES, appears to be understated. Actually, we believe that the monetary loss would be much greater from a long-term point of view, considering more realistically the potential long-term capital gains, such as appreciation of land values, and increased value of the real cost of water. The DES has confirmed the economic, technical, social, and environmental viability of the referenced project, and therefore, any administrative delays encumbering this project would be extremely contrary to the best public interest, both from the State and National viewpoints.

We appreciated the opportunity to participate in the project formulation process, and to review the referenced document and the related papers. All planners concerned should be commended for the outstanding reference report which was prepared under severe time limitations, and in an atmosphere of great change in National policy. Please do not hesitate to call on us for further assistance. If you have any questions, notify Dr. Alfred J. D'Arezzo, Analyst for Environment and Interagency Coordination, (Phone: 512-475-2678).

Very truly yours,

TEXAS WATER RIGHTS COMMISSION

RES-AJD:11

Robert E. Schneider
Executive Director

TEXAS AIR CONTROL BOARD

PHONE 512/451-5711
8520 SHOAL CREEK BOULEVARD
AUSTIN, TEXAS - 78758

CHARLES R. BARDEN, P. E.
EXECUTIVE DIRECTOR

JOHN L. BLAIR, Chairman
WILLIAM N. ALLAN
JOE C. BRIDGEFARMER, P.E.
FRED HARTMAN

CHARLES R. JAYNES
D. JACK KILIAN, M.D.
WILLIAM D. PARISH
E. W. ROBINSON, P.E.
WILLIE L. ULICH, Ph.D., P.E.

April 29, 1976

Mr. John W. Janak, Assistant Chief
Intergovernmental Coordination
Budget and Planning Office
Governor's Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

Re: Draft Environmental Impact Statement: Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas (Leon, Limestone and Robertson Counties)

Dear Mr. Janak:

We have reviewed the above cited document and have the following comments. On page H-3, the standards for CO should be reversed with the one hour standard at 35 ppm and the eight hour standard at 9 ppm. This same correction should be noted on page H-2. At this time there is no 24 hour or Annual Secondary Standard for SO_2.

Thank you for the review opportunity. If we can assist further, please contact me.

Sincerely yours,

Bill Stewart, P.E.
Deputy Director
Control and Prevention

cc: Mr. Eugene Fulton, Regional Supervisor, Waco

Corps of Engineers Response:

It should be noted that these times were reversed in the draft, and the correct periods of measurements for CO should have been 1 hr - 35 ppm and 8 hr - 9 ppm. In addition, the correction that there is no 24 hour or Annual Secondary Standard for SO_2 at this time is also noted.

Texas Antiquities Committee
Box 12276, Capitol Station, Austin, Texas 78711

19 October 1976

Dr. David Dibble
Texas Archeological Survey
Balcones Research Center
Austin, Texas 78756

Dear Dave:

This will acknowledge receipt of ten copies of archeological report Upper Navasota Reservoir: Archeological Test Excavations at the Barkley and Louie Sadler Sites. This report fulfills the requirements of Permit No. 76.

Sincerely,

Alton K. Briggs
Archeologist
Cultural Resource Management

/vk

Texas Department of Health Resources

Fratis L. Duff, M.D., Dr.P.H.
Director
Raymond T. Moore, M.D.
Deputy Director

1100 West 49th Street
Austin, Texas 78756
(512) 454-3781

May 11, 1976

RECEIVED
MAY 14 1976
Budget/Planning

Mr. Charles D. Travis, Director
Governor's Budget and Planning Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

ATTENTION: John Janak, Assistant Chief
Intergovernmental Coordination

SUBJECT: Draft Environmental Impact Statement
Sterling C. Robertson Dam and Limestone
Lake on the Navasota River, Texas
(Leon, Limestone, and Robertson Counties)

Dear Mr. Travis:

The "Draft Environmental Impact Statement, Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas (Leon, Limestone and Robertson Counties)," which was transmitted to me by a letter from Mr. H. Anthony Breard of your office dated April 23, 1976, has been reviewed for its public and environmental health implications.

Although, initially, the reservoir will serve as a source of industrial water supply, it is quite likely that, in the future, municipalities will wish to use the reservoir as a source of raw domestic water supply. Every effort should be made to insure protection of water quality. In this regard, consideration should be given at this time to promulgating regulations to control wastewater disposal in areas adjacent to the reservoir.

A program of insect monitoring and control in the reservoir is warranted, and proper means of disposal of wastewater and solid wastes at the proposed designated recreational sites should be provided by the time the reservoir project is completed.

We appreciate the opportunity to review and comment on this project.

Sincerely,

Fratis L. Duff, M.D.
Director

IX-43

Corps of Engineers Response:

Sewage disposal facilities will be based upon the best available, practical, and economical treatment disposal system that meets Federal, State, and local regulatory requirements. Close and continuing coordination will be maintained at all levels having special interest in health and sanitation. Since the majority of lands around the lake will be privately owned, an insect monitoring and control program would be impracticle, although it may be warranted.

TEXAS WATER QUALITY BOARD

1700 NORTH CONGRESS AVE
P.O. BOX 13246 CAPITOL STATION 78711
AUSTIN, TEXAS

(512) 475-2651

RECEIVED
MAY 11 1976
Budget/Planning

May 7, 1976

Re: Draft Environmental Impact Statement for Sterling C. Robertson Dam and Limestone Lake

IX-44

Mr. Charles D. Travis, Director
Governor's Budget and Planning Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

Dear Mr. Travis:

The staff of the Texas Water Quality Board has reviewed the draft environmental statement for the Sterling C. Robertson Dam and Limestone Lake concurs with draft statement that the water quality in the area is not expected to be impaired after the construction of the project. In fact, on November 13, 1975 the Texas Water Quality Board issued the certification letter on the project, which certifies that the Water Quality Standards of the stream are not expected to be impaired under the provisions of the certification.

We appreciate the opportunity to review this project. If we can be of further assistance, please let us know.

Very truly yours,

Emory G. Long, Director
Administrative Operations

cc: Col. Walter Wells, SWA
TWQB District 3

TEXAS STATE SOIL AND WATER CONSERVATION BOARD
1018 First National Building
Temple, Texas 76501
AREA CODE 817, 773-2250

May 10, 1976

RECEIVED
MAY 20 1976
Budget/Planning

Mr. H. Anthony Breard, Coordinator
Natural Resources Section
Budget and Planning Office
411 West 13th Street
Austin, Texas 78701

IX-45

Dear Mr. Breard:

We have received a copy of the Draft Environmental Impact Statement for the Sterling C. Robertson Dam and Limestone Lake on the Navasota River in Leon, Limestone, and Robertson Counties.

We offer no comment on this draft statement.

Sincerely yours,

Harvey Davis

Harvey Davis
Executive Director

HD/lc

BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE P. O. BOX 7555 TELEPHONE AREA CODE 817 776-1441
WACO, TEXAS 76710

May 3, 1976

District Engineer
Ft. Worth District
Corps of Engineers
P.O. Box 17300
Ft. Worth, Texas 76102

Dear Sir:

We have received the Draft Environmental Statement, Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas, dated April 19, 1976, and offer the following comments:

1. The last sentence of subsection 1.01 on page 1 of the draft states, "As a part of its responsibility to protect water quality, the Corps of Engineers' Section 404 permit program has thus been extended to many areas that have never been regulated before.". Taken in context as a part of the environmental statement on the Sterling C. Robertson Dam and Lake Limestone project, this sentence suggests that there has been no regulation of the Navasota River prior to the Corps of Engineers' Section 404 permit program. This is not correct as regards the Navasota River nor, in fact, other Texas water bodies. The Navasota River, as well as all other water bodies in the State of Texas, are now, and have been for many years, subject to regulation by agencies of the State of Texas under Texas law, and the Brazos River Authority, in the development of the Lake Limestone project, has proceeded in full compliance with State laws and the regulations of the agencies administering these laws. The statement could be revised to correctly reflect the situation with regard to the Navasota River by expanding it to read, "As a part of its responsibility to protect water quality, the Corps of Engineers' Section 404 permit program has thus been extended to many areas that have never before been subjected to Federal regulation for this type of non-Federal project.".

This sentence has been revised as indicated.

2. The second sentence of subsection 1.08 on page 3 of the draft begins, "The project will be financed ----", which wording suggests that financial commitments for the project have not yet been made. This is not the case, and we believe it is important to recognize that a very significant financial commitment to the project was made prior to the time that the Corps of Engineers' current regulations implementing Section 404 of P.L. 92-500, which extends Federal regulation of this type of non-Federal project to the portion of the Navasota River on which the Sterling C. Robertson

District Engineer-Ft. Worth District - cont'd.

Dam is being constructed, were adopted. This matter could be clarified by changing the wording of the second sentence of subsection 1.08 to read, "The project is being financed----", and by adding to this subsection the sentence, "The initial issue of bonds to finance the project, in the amount of $30,000,000, was sold by the Authority on June 19, 1975.".

3. There was an error in the SUMMARY OF ESTIMATED FINANCIAL LOSS forwarded to you as Attachment 1 of our letter of March 26, 1976, which is reproduced and bound in the Statement. The total cost should be shown in this summary as $25,788,000; the rest of the figures in the summary are correct. A corrected SUMMARY OF ESTIMATED FINANCIAL LOSS is enclosed herewith.

4. In subsection 6.02, the cost of "Penalties paid for materials in process", should be $893,000 rather than $892,000, as shown. The second sentence of subsection 6.02 should read, "The total net cost of project abandonment as of 1 July 1976 would therefore be $18,110,000 ($25,788,000 - $7,678,000).".

5. The 8th sentence of subsection b. of section A-2. on page A-4 should be changed to read, "The service road will consist of a single course asphalt surface treatment on a 6-inch compacted gravel base.".

6. No mention is made of some of the important low flow outlet facilities that will be incorporated in the service spillway and will permit selective releases of water from different elevations between the lake bottom and the lake surface. This omission could be corrected by adding the following paragraph to subsection c. of section A-2:

> "In order to permit releases of water through the dam from different selected levels in the lake, the following facilities will be provided: in the left end pier of the service spillway, a 10-inch valved pipe with gated intakes at depths of 12, 24 and 37.5 feet below the normal maximum lake surface at elevation 363 feet msl; in the right end pier of the service spillway, two 36-inch valved pipes with gated intakes at depths of 12, 25 and 37.5 feet below elevation 363 feet msl."

7. Attached are xerox copies of pages 16, 19, 25, 27 and D-5 on which we have indicated corrections of typographical errors.

The Brazos River Authority sincerely appreciates the opportunity to review and comment on this draft environmental statement. Please call on us for any needed additional information or assistance.

Sincerely,

WALTER J. WELLS
General Manager

WJW:bb
Encl.

IX-47

These changes have been made as noted.

This figure for the total cost has been reflected in the financial losses resulting from possible denial of the permit in Section VI.

These changes have been made in this paragraph in Section VI.

This revision is noted. The sentence in the draft statement said that the service road will consist of a 6-inch gravel base course surface. The revised sentence includes that it will also have a single course asphalt surface treatment on the 6-inch compacted gravel base.

This paragraph, as revised, has been incorporated in the project description in Section I.

These typographical errors were corrected on the appropriate pages in the final statement.

SOUTHERN METHODIST UNIVERSITY

ARCHAEOLOGY RESEARCH PROGRAM
Department of Anthropology
DALLAS, TEXAS 75275

May 20, 1976

Mr. Gordon A. Walhood, P.E.
Chief, Engineering Division
Department of the Army
Fort Worth District, Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Walhood:

We have reviewed the Draft EIS for the proposed Sterling Robertson Dam and Limestone Lake. While we heartily endorse the subsurface evaluation of cultural deposits at 16 of 48 endangered sites, it is not clear how the sites were selected or whether the sample will constitute an adequate evaluation of the archaeology. Using information provided from the field reports, it is obvious that two major factors: landform and time are of concern in evaluating the local archaeology. With regard to these factors it appears that the sites selected for testing are biased towards bottomland sites (see attached table).

IX-48

Based on the available information we would recommend that more consideration be given to sites in the terrace-slope and uplands landform areas. This might increase the number of sites in need of testing but in many areas within Texas there is evidence that surface remains present an unrepresentative picture. Therefore testing is an important part of site evaluation prior to the development of a comprehensive mitigation plan.

Sincerely,

S. Alan Skinner, Director
Archaeology Research Program

SAS/mjj

Attachment:

Corps of Engineers Response:

Concur. These recommendations will be given full consideration before final plans for future investigations are made.

LANDFORMS

TIME	Upland	Terrace-Slope	Bottomlands
Post Archaic and Mixed Archaic			5 / 5
Archaic	1 / 1		2 / 2
Undetermined Age	2 / 9	1 / 20	5 / 11

Number above slash represents number of sites recommended for testing, number below represents total number of sites in lake area.

HOTCOG

HEART OF TEXAS COUNCIL OF GOVERNMENTS
110 SOUTH TWELVETH STREET • WACO, TEXAS 76701 • 756-6631

03/AB/dc
03300
April 30, 1976

Colonel Joe H. Sheard, District Engineer
U.S. Army Engineer District
P.O. Box 17300
Fort Worth, Texas 76102

Subj: Draft Environmental Impact Statement: Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas (Leon, Limestone, and Robertson Counties)

Ref: (a) United States Department of the Interior/Fish and Wildlife Service letter; February 2, 1976

Encl: (1) HOTCOG Statement; April 21, 1976

Dear Col. Sheard:

After thorough review of the above Draft Environmental Impact Statement we find that it is a complete, adequate and comprehensive review of potential environmental effects resulting from this project. Further we feel that the environmental measures proposed by the Brazos River Authority are more than adequate, ecologically as well as economically, to mitigate the temporary environmental disruption caused by the completion of this project.

In Reference (a), there are three proposals offered by the Fish and Wildlife Service as contingencies for their approval of this project. While the Council feels that these proposals have been adequately addressed by the Brazos River Authority, the Executive Committee of the Heart of Texas Council of Governments felt that it was its duty to likewise address these issues. Their response is attached as Enclosure (1).

In summary the Council believes that, barring unforeseen circumstances, the potential direct benefits of assured water supply and new energy development far outweigh the loss and/or commitment of resources. The Council concurs with the implementation of this project and believes it should be undertaken as soon as possible.

If we can be of further assistance in this matter, please contact us at your earliest convenience.

Sincerely,

H.A. Davis
Executive Director

cc: Mr. Walter J. Wells, Brazos River Authority
Mr. H. Anthony Breard, Office of the Governor

IX-30

GREATER FORT WORTH SIERRA CLUB
P.O. BOX 1057
Fort Worth, Texas 76101
June 11, 1976

Col. Joe E. Sheard, District Engineer
Corps of Engineers, U.S. Army
P.O. Box 17300
Fort Worth, Texas 76102

Dear Col. Sheard:

I appreciate the opportunity to comment on the Draft Environmental Statement for the Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas. These comments are made on behalf of the membership of the Greater Fort Worth Group of the Sierra Club.

We have several important concerns regarding the impact of this project, foremost of which is the lack of a suggested plan to mitigate wildlife losses. We are particularly disturbed by this in view of the fact that the U.S. Fish and Wildlife Service has requested that the Section 404 permit request for this project be denied unless 15,800 acres of mitigation land is acquired. The Fish and Wildlife Service made this request under the authority of the Fish and Wildlife Coordination Act. As we understand it, this Act provides for land acquisition to mitigate wildlife losses at Federally constructed, licensed, or permitted water development projects with such lands being purchased at project expense.

This project will inundate 14,200 acres of wildlife habitat and additional thousands of acres will be lost as a result of dam and spillway construction, recreational development, and secondary development around the project. On page 9, paragraph 2.32, it is stated that "Although hunting is popular (in the project area) it is limited by an absence of public land." On page 26, paragraph 5.11 it is stated that "hunting is now the principal form of outdoor recreation in this area." Wildlife resources belong to the people of the State and the loss of well over 15,000 acres is indeed significant. The provision of 14,200 acres of fish habitat and flat water recreation in no way compensates for the loss by inundation of 14,200 land acres no matter how serious the "void" of fishing and flat water recreational opportunities in this sparsely populated rural area. Provision of a wildlife mitigation area would provide some compensation for lost wildlife habitat and hunting opportunity and it would provide a public use natural area for all citizens.

On page 21, paragraph 4.14, it is stated that "Most terrestrial species will be forced to shift their ranges in accordance with changing water levels." This statement misrepresents the true impact of the project on wildlife. Wildlife species do not exist in the absence of habitat. When suitable wildlife habitat is lost, wildlife suffers a proportional loss depending upon the quality of the habitat.

Aquatic impact will result in the elimination of about 15 river miles of the Navasota River. This represents about 10 percent of the total distance of natural flowing river. The impact of altered downstream flow is not adequately assessed. Natural flowing streams and their adjacent riparian and bottomland

IX-51

Corps of Engineers Response:

Mitigation lands can be purchased for Federal projects only to the extent specifically authorized by Congress, and there is no authority for Federal government purchase of mitigation lands at non-Federal projects.

Concur. This adverse impact has been included in the subject paragraph.

A table was included in Section IV, Impact on Navasota Basin, which addresses other planned projects and accumulative effects.

habitat are becoming an increasingly scarce resource in Texas. As more and more such areas are lost, remaining areas become increasingly more valuable. Although such losses will undoubtedly continue to occur, they should not go uncompensated.

The Draft EIS does not adequately address the need for the impoundment of 217,494 acre-feet of water in this area. On page 1, it is stated that:

> "The purpose of the project is to supply water for municipal, industrial, and irrigation use by entities or persons who have contracted, or will contract, with the Brazos River Authority. Water from the lake would first be used to meet local water needs in the Navasota watershed. Local industrial requirements are estimated to be about 25,000 acre-feet per annum initially, with possible future increases."

On page A-13, it is stated that:

> "While there are no immediate local demands for municipal water supplies from Lake Limestone, such needs may develop as the present limited supplies are used up. There will also probably be local needs for additional industrial water for use in the further generation of electric energy utilizing area lignite deposits."

Exactly where the water is needed, by whom it is needed, and when it will be needed should be addressed in more specific detail.

The statement does discuss the impact of secondary development to a limited extent, but does not address the impact of the two planned electric generating plants to be constructed by Texas Utilities Services, Inc. and the lignite coal mining operation which are apparently integral parts of the Lake Limestone Project. This impact should be discussed.

In view of the loss of the public's wildlife resources and the impact on the aquatic habitat which will occur as a result of this project, we urge the Corps of Engineers to grant a Section 404 permit only on the condition that project impacts are mitigated according to the recommendations of the U.S. Fish and Wildlife Service.

We appreciate the opportunity to offer our comments and will appreciate receiving a copy of the Final EIS.

Youre truly,

Ken Spencer

Ken Spencer,
Chairman

cc:
Walter Wells, General Manager, Brazos River Authority
Regional Director, U.S. Fish and Wildlife Service
Field Supervisor, U.S. Fish and Wildlife Service
Richard Evans, President, Lone Star Chapter Sierra Club
Howard Saxion, Conservation Chairman, Lone Star Chapter Sierra Club
Clayton T. Garrison, Executive Director, Texas Parks and Wildlife Department

Future needs are reflected in Section I, Purpose of the Project.

General impacts regarding these proposed facilities have been included. However, detailed analyses of the impacts are not included since this is considered to be beyond the scope of this statement. Southwest Research Institute (1975) conducted a detailed environmental assessment of the impacts resulting from these two facilities. This assessment is available for study at the Fort Worth District Office, Corps of Engineers.

Wildlife Management Institute

709 Wire Building, 1000 Vermont Ave., N.W., Washington, D.C. 20005 • 202/347-1774

DAVID A. POOLE
President

L. E. JAHN
Vice-President

J. L. WILLIAMSON
Secretary

WM N. CARNELSON
Board Chairman

Southwestern Representative
Chester A. McConnell
Route 6, Naples Road
Lawrenceburg, Tennessee 38464

May 5, 1976

Colonel Joe H. Sheard, District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Attn: Mr. Gordon Walhood
Chief, Engineering Div.

Dear Colonel Sheard:

The Wildlife Management Institute appreciates the opportunity to offer comments on the Draft Environmental Statement (DES) for the Sterling C. Robertson Dam and Limestone Lake project on the Navasota River, Texas.

The construction agency for the project is the Brazos River Authority (BRA), a duly constituted state agency. We understand that the BRA has made application to the U. S. Army Corps of Engineers for a construction permit under Section 404 of Public Law 92-500 because the Navasota River is a principal tributary to a navigable stream and will come under the jurisdiction of the Corps on 25 July 1976. Project cost of approximately $50,000,000 are to be financed by BRA and no state or federal monies will be involved. However tax exempt bonds are being used by this public agency to finance the project. Also the Corps prepared the DES with information furnished in part by the BRA.

IX-53

We feel that the DES is not adequate in that it does not consider all environmental impacts of the project nor the full scope of the projects. These omissions will be identified throughout this letter. Due to a combination of short term, long term and cumulative effects of the project we request that the permit be denied until a detailed study of all project effects are better understood. The entire water resource situation in the state of Texas needs to be evaluated thoroughly by a multidisciplinary team prior to construction of the numerous planned reservoirs.

Water supply for municipal, industrial and irrigation uses by entities or persons who have contracted or will contract with the BRA is the stated purpose of the project. The reservoir at normal pool will impound 217,496 acre-feet of water. The only claimed present need for use of the water is 25,000 acre-feet per year to be used as make up water for cooling ponds at two planned electric generating plants to be constructed by Texas Utilities Services, Inc. Each of these two planned generating facilities will also construct reservoirs having a combined total surface area of

Corps of Engineers Response:

5,110 acres and will impound 63,237 acre-feet of water. Since these two facilities as well as the lignite coal mining operation appear to be integral parts of the project, the DES should also cover their impacts.

Are the projected water needs based on realistic needs or are they based on the hopes of some that if you develop a large source of water this will encourage massive development and human population increases in the area ? It is difficult to comprehend the need for this project in the "basically rural" three county area which has had a population decline since 1930, presently has a population of only 41,244 persons (1970), and where the population is expected to continue to decline without the project. It defies reasonable logic to encourage people to move to a potentially water deficient area to fulfill the economic dreams of a few.

Appendix A-5 (page A-13) of the DES includes some revealing information on area water needs. The DES states:

> While there are no immediate local demands for municipal water supplies from Lake Limestone, such needs may develop as the present limited supplies are used up. There will also probably be local needs for additional industrial water for use in the future generation of electric energy utilizing area lignite deposits. (Underlining added.)

The effects of this project on the fresh water inflow to the estuaries along the Gulf of Mexico are not even considered in the DES. Limestone Lake will impound 217,494 acre-feet of water at normal pool. The estimated annual runoff at the dam site is only 201,450 acre-feet which is less that the capacity of the normal pool. What effect will the projected use of water from the lake have on releases to downstream areas? Also what will be the consequences during years of low rainfall and minimum annual runoff such as during 1963 when only 4,861 acre-feet was available at the dam site ? If the projected or hoped for increased needs of industrial, municipal and agricultural water are realized and conditions similar to those in 1963 occur, will water be allowed to flow downstream to the estuaries ? Such questions must be considered.

The cumulative effects of Limestone Lake and all other reservoirs planned for the Navasota River Basin should be considered. This would include Millican Reservoir, Navasota No. 2, Twin Oak Lake, Oak Knoll Lake as well as Limestone Lake. According to the Texas Water Plan (1968) there are 34 major reservoirs existing or under construction in the Brazos River Basin (includes Navasota River) and eight additional reservoirs are authorized or proposed for development. Although it is not within the scope of the DES being considered, some responsible agency should evaluate the cumulative effects of these projects. The most productive fish and wildlife habitats as well as other river bottom natural resources are being severely effect d.

A total of 15,200 acres of terrestrial wildlife habitat will

Additional needs have been included in Section I, Purpose of the Project. Based on contracts already made and on additional requests received, it is expected that all the available water supplies from Lake Limestone will be committed before construction is completed. Southwest Research Institute (1975) conducted a detailed environmental assessment of the impacts resulting from the planned construction and operation of these two power generating facilities on the environment.
This assessment is available for study at the Fort Worth District Office, Corps of Engineers.

A table was included in Section IV, Impacts on Navasota Basin, which addresses other planned projects and accumulative effects.

be destroyed by Limestone Lake and dam. Principal habitat types are bottomland forest and cleared bottom lands. Approximately 9,300 acres of seasonally flooded wetlands (Type 1) and 700 acres of wooded swamp (Type V11) are included. In addition 15 miles of Navasota River will be inundated. The project area is very valuable wildlife habitat for numerous game and nongame species. The DES pointed out that hunting is presently the principal form of recreation in the area. The project would certainly eliminate much excellent area for hunting purposes.

Indirect affects of the project on wildlife habitat will probably become a problem in the lake vicinity. The DES recognizes that the human population will increase and future public and private development around the project and in downstream areas is expected, if the project is completed. We certainly agree with the DES statements which claim "if no public recreation lands are set aside at the reservoir site, it is safe to anticipate changes in open spaces and woodland that now exist by the year 2020 . Encroachment on bottomlands can be anticipated with a substantial loss in wooded cover as the land is converted to grazing. Currently the land is overgrazed".

If the decision is made to grant a permit for the project it should be done only under conditions that reduce or mitigate environmental losses. This includes all wildlife and not just those considered rare, endangered, or threatened as mentioned by the Corps in the DES (page 29, Section 6.14). We understand that the U. S. Fish and Wildlife Service has recommended that the permit be denied unless (1) 15,800 acres are purchased in fee title adjacent to the lake, and be developed as a public wildlife management area; (2) the lake shall be filled incrementally to meet short term demands for water ; and (3) the project shall be operated to provide low volume downstream releases rather than short term high volume releases.

The tremendous loss of valuable wildlife habitat certainly cannot be replaced but it can be mitigated. The Fish and Wildlife Service recommendation should be considered minimal mitigation if the permit is granted. This would at least provide for a public hunting area and possibly curtail development adjacent to the entire lake shore.

We understand the Brazos River Authority is opposed to the mitigation features recommended by the Fish and Wildlife Service. Their stated reasons are that they have no statutory authority or source of funds to acquire land for wildlife mitigation. Also the Authority claims that the 15,800 acres of mitigation lands would cost approximately $8,000,000 and cause consumers to have to pay higher utility bills in order to provide habitat for wildlife. Since economics seems to be the name of the game, this sum sure seems a small price to pay for a project estimated to boost the local economy by a minimum estimated amount of $646,000,000 over the next 40 years. Other problems could be solved.

Purchase of the 15,800 acres for mitigation would also improve

Hunting has been included and impacted as a significant land use.

the desirability of the area for those persons expected to move to the vicinity. Public hunting areas have been proven to increase the economic status of areas lacking in this type of outdoor recreation. Properly operated public hunting areas will more than pay for themselves in time in addition to having other values such as watershed benefits.

The wildlife resource and the major stream to be impacted both belong to the public. We trust that the Corps will exercise its authority in this matter to protect our valuable natural resources for all people and not just for those whose concerns are limited to narrow fields of interest.

Sincerely,

Chester A. McConnell

Chester A. McConnell
Southcentral Representative

9.11 **Responses to Mitigation.** Letters received during formal coordination of the draft environmental statement concerning the mitigation recommendation made by the US Fish & Wildlife Service are displayed on pages IX-58 through IX-133. These letters are included here because the Fish and Wildlife recommendation was a part of the draft statement. Table IX-2 lists respondents and the location of their text.

Table IX-2
RESPONSES TO MITIGATION

IN REPLY REFER TO:

HP

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

February 2, 1976

District Engineer
Corps of Engineers, U. S. Army
Post Office Box 17300
Fort Worth, Texas 76102

Dear Sir:

By Public Notice W-N-443-41-Permit-141, dated December 3, 1975, you advised this office of an application by the Brazos River Authority for a Section 404 Department of the Army permit to construct the Sterling C. Robertson Dam and Limestone Reservoir at river mile 124.5 on the Navasota River in Leon and Robertson Countries, Texas. The purpose of the project is to provide municipal, industrial, and agricultural water supply.

The revised Department of the Interior Manual Instructions (503 DM 1), dated August 3, 1973, assign responsibility for Department of the Interior coordination and review of Department of the Army permit applications to the U. S. Fish and Wildlife Service. In accordance with these instructions, we submit the following Departmental comments on the permit application.

This report was prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). It has been coordinated with representatives of the Texas Parks and Wildlife Department.

Project plans include an 8,000-foot earthen dam and a concrete reenforced spillway section with five 40- by 28-foot tainter gates. The dam will be equipped with multi-level lowflow outlets at elevations 322.0, 325.5, 339.0, and 352.0. The streambed elevation at the proposed dam site is 320 feet.

The impoundment will inundate 15 miles of the Navasota River. At conservation pool, elevation 363, the reservoir will have 14,200 surface acres and a capacity of 217,494 acre-feet. The dam and spillway will occupy 1000 acres. All low flows up to 6 cubic feet per second (cfs) will pass through the dam. Flows of less than 2 cfs will be supplemented by making releases of 2 cfs until such time as low flow ceases.

All lands to be inundated by the conservation pool will be purchased in fee title or flowage easement, depending upon owner preference. Lands above this elevation will remain in private ownership. However, five areas are proposed for purchase to provide public access to the reservoir.

The project lies in the upper reach of the Navasota River in the Post Oak Savannah Land Resource Area. Principal habitat types are bottomland forests and cleared bottomlands. The major woody species in the bottomland forests are pecan, post oak, water oak, willow oak, overcup oak, honey locust, hackberry, cedar elm, deciduous holly, yaupon, green brier, grapes, dewberry, possumhaw, and swamp privet. Major forbs are giant ragweed, smartweed, dock, croton, and sedge. Some common grass species in the bottomland forests are bermuda grass, Panicum species, Paspalum species, and bluestem. The cleared bottomlands are vegetated predominantly with grasses and forbs with a few scattered trees and shrubs.

Within the bottomland forests and cleared bottomlands there are approximately 9,300 acres of seasonally flooded wetlands (Type I) and 700 acres of wooded swamps (Type VII). These wetland types are described in the Wetlands of the United States, U.S. Department of the Interior, Fish and Wildlife Circular 39.

Based upon seasonal flooding and the economic returns of additional clearing, it was assumed that all bottomland has been cleared that is practical to clear. Therefore, land use changes over the 100-year project evaluation period would be insignificant.

The area of project influence for aquatic life extends approximately 140 miles from the headwaters of the proposed impoundment to the mouth of the Navasota River. The river within the project area is a meandering turbid stream about 20 feet wide, interlaced with fallen trees but with little aquatic vegetation. The average flow for a nine-year period of record is 177 cfs, however no flow was record d during certain periods in 1967, 1969, 1971 and 1972. There are about 30 ponds within the project area averaging approxiately one acre each. Most of the ponds are located near the elevation contour of the proposed conservation pool in the transition zone between upland and bottomland.

The project area is inhabited by numerous species of wildlife. Representative mammals include white-tailed deer, coyote, bobcat, raccoon, opossum, cottontail, and armadillo. The area's avifauna is characterized by numerous songbirds in addition to mallards, wood ducks, mourning doves, turkey vultures and great blue herons. The amphibian and reptilian population includes snakes (including cottonmouths), salamanders, sliders, and treefrogs. A significant

amount of hunting occurs in the project area as evidenced by numerous hunting and fishing camps.

The lake and dam will inundate or otherwise result in the destruction of 15,200 acres of wildlife habitat. Since the project is not designed to provide flood control, the effect on the wildlife habitat in the downstream floodplain should be minimal. The lake will provide some wintering resting habitat for waterfowl and because of the plans for leaving standing timber in certain areas of the reservoir, it will provide favorable habitat, at least for a few years, for wading birds and fur animals.

Fish inhabiting the project area waters are typical warmwater species including gizzard shad, gar, shiners, suckers, buffalo, catfish, crappie, freshwater drum, largemouth bass, and various sunfish. Fishing in the Navasota River is light and because of the lack of public access, angling activity is restricted primarily to landowners and their guests.

The upper end of the proposed reservoir will be shallow and provide spawning areas for certain fish species. Typical warmwater species such as largemouth bass, bluegill, channel catfish and carp are expected to inhabit the lake. With adequate public access to the lake, it would probably receive a moderate amount of fisherman use; however, much of the fishing on the reservoir will represent transfer use from other nearby reservoirs which currently provide adequate angling opportunities.

Since streamflow below 2 cfs will be supplemented by reservoir releases, the fishery habitat below the dam should be improved because of the increased stability. However, because of limited access, use of the stream is anticipated to remain the same as without the project.

An analysis of the project impact on fish and wildlife resources was conducted using a modification of the Ecological Planning and Evaluation Procedures in accordance with the Principles and Standards for Planning Water and Related Land Resources. The principal habitat types were evaluated and rated according to the importance of each type for fish and wildlife, thereby providing a unit measure of habitat loss and corresponding mitigation needs for cleared bottomland and bottomland hardwood forest. This analysis indicated that mitigation of project-induced habitat losses would require the acquisition and management of two areas having a total acreage of 15,800, as illustrated on Plate 1. These acreages would provide replacement for project losses of cleared bottomland. It would also provide partial compensation for the loss of bottomland forest.

This reservoir will be capable of producing a firm yield of 70,000 acre-feet of water annually for municipal, agricultural, and industrial purposes. Initially, local industrial needs will require about 25,000 acre-feet annually. Then the need for water will increase for future industrial, municipal, and agricultural purposes. Therefore, the possibility exists for incrementally filling the lake based upon short-term projections of demands. This mode of operation would decrease the annualized habitat losses and possibly offset losses of bottomland forest which would not be fully compensated by the proposed land acquisition.

The project should be operated to allow for a gradual increase in downstream flows as opposed to high volume short term releases. This measure, along with the guaranteed low-flow, would provide for the maintenance of a higher quality downstream fishery, and result in increased stream stability.

In view of the expected project-induced losses to fish and wildlife resources and their associated habitat, the Department of the Interior recommends that the permit be denied unless the following modifications are included as conditions of the permit:

1. Acquire 15,800 acres of land in fee title, adjacent to the project area as shown on the attached plate. These mitigation areas shall be made available through suitable agreements to the Texas Parks and Wildlife Department for administration as wildlife management areas.

2. The lake shall be filled incrementally to meet short-term projections of water demands.

3. The project shall be operated to provide low volume downstream releases rather than short term high volume releases.

Sincerely yours,

Acting Regional Director
U. S. Department of the
Interior Coordinator

Enclosure

cc: w/enc.
Executive Director, Texas Parks and Wildlife Dept., Austin, Texas
Commissioner, General Land Office, Austin, Texas
Regional Director, Bureau of Outdoor Recreation, Albuquerque, N. Mex.
Regional Administrator, Environmental Protection Agency, Dallas, Texas
Field Supervisor, FWS, Div. of Ecological Services, Fort Worth, Texas

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Ecological Services
9A33 Fritz Lanham Building
819 Taylor Street
Fort Worth, Texas 76102

May 26, 1976

Col. Joe H. Sheard, District Engineer
Corps of Engineers, U. S. Army
P. O. Box 17300
Fort Worth, Tx. 76102

Dear Col. Sheard:

On February 2, 1976, the U. S. Fish and Wildlife Service, serving as the Department of Interior Coordinator, commented on an application by the Brazos River Authority for a permit under Section 404 of the Federal Water Pollution Control Act Amendments of 1972 for Lake Limestone. This project is now under construction on the Navasota River near Groesbeck, Texas. Under the authority and directives of the Fish and Wildlife Coordination Act, the Service made several recommendations, including a provision that 15,800 acres of wildlife conservation lands be acquired at project expense to compensate for unavoidable wildlife resource losses. This recommendation has been questioned and criticised by a number of individuals and organizations. We believe that much of this criticism stems from a lack of understanding of the Service's involvement and statutory authority in water resource planning and development.

Important decisions must be made in all water development projects including Lake Limestone. In order to make sound decisions that truly reflect the broad public interest, we firmly believe that it is essential that public officials and the people they represent are presented with factual material on which to base these decisions and that no information pertinent to the decision making process is withheld. We are providing the enclosed FACT SHEET in order to clarify our involvement and to correct some of the misinformation and distorted "factual" information now in circulation regarding the Lake Limestone project. Your consideration of this information will be appreciated.

For additional information, the Fort Worth Field Office of the Fish and Wildlife Service may be contacted at the above address, telephone (817) 334-2961.

Sincerely yours,

Robert Misso

Robert Misso
Acting Field Supervisor

LAKE LIMESTONE FACT SHEET

The U. S. Fish and Wildlife Service is recommending that a 15,800-acre wildlife conservation area be acquired as an integral part of the Lake Limestone project now under construction near Groesbeck on the Navasota River in Leon, Limestone, and Robertson Counties, Texas. Commenting on an application by the Brazos River Authority for a permit under Section 404 of the Federal Water Pollution Control Act Amendments of 1972, the Service made the recommendation under the authority and directives of the Fish and Wildlife Coordination Act. This Act recognizes the serious impact of water development upon wildlife resources and has established a National policy that wildlife conservation is to receive equal consideration in Federally constructed, licensed, or permitted water resource development projects.

In any large water development project, such as Lake Limestone, a significant loss of wildlife resources is unavoidable. The acquisition of habitat as compensation in some degree for unavoidable losses is the primary method of insuring that the conservation of wildlife resources and the public's enjoyment of these resources become meaningful parts of water development projects. This concept of compensating losses is an integral part of the Fish and Wildlife Coordination Act.

There is currently much misinformation as well as distorted "factual" information in circulation regarding the involvement of the Fish and Wildlife Service at the Lake Limestone project. We hope the following will clarify our position on some of the more controversial and confusing points.

1. The Fish and Wildlife Service is seeking to prevent the construction of Lake Limestone! FALSE!!

   Our recommended denial of the permit was not unconditional. An effort on our part to prevent the construction of the reservoir would not be in the broad public interest; however, neither is the uncompensated destruction of the State's wildlife resources in the broad public interest. The concept of compensating the loss of wildlife resources resulting from water development has been declared to be in the public interest by virtue of Congress passing the Fish and Wildlife Coordination Act. In the face of large scale development, the acquisition of wildlife habitat, even if the habitat is on private land, is necessary if losses of wildlife resources are to be partially compensated.

2. The acquisition of wildlife conservation lands will add exhorbitant costs to the project! FALSE!!

   According to the Brazos River Authority the recommended 15,800 acres of wildlife lands will cost about $8 million. The reservoir itself has been quoted as being a $50 million project. A minimum of three separate power plants are to become an integral part of project operation with one plant previously listed as requiring an initial $225 million investment. Additionally, coal leasing, mining, and transporting costs will require the investment of several hundred million dollars. Using $1 billion as a very conservative estimate of the total investment related to this project, the $8 million for wildlife lands is comparable to buying a $32 tire for a $4,000 automobile.

3. The acquisition of 15,800 additional acres will have an adverse effect on the local economy, tax base, and utility rates! FALSE!!

   The wildlife area will attract people from throughout the State, bringing income into the area through increased sales of recreational equipment and other commodities, personal services, and lodging. The reservoir project and related energy development have been credited with the creation of $800 million in jobs and services for the area over the next forty years. The wildlife area will complement this projected stimulus to the local economy and tax base. Purchase of the $8 million wildlife area will have a negligible effect on utility rates.

4. If wildlife agencies want wildlife conservation areas to compensate for wildlife losses at large reservoirs, they should acquire them at their own expense! FALSE!!

   This line of reasoning is in direct conflict with the Fish and Wildlife Coordination Act which provides that the cost of land acquired to compensate wildlife losses at water development projects shall constitute an integral part of the overall cost of such projects. Wildlife resources, as a matter of law, are common property resources belonging to the general public and managed as a trust responsibility by fish and wildlife agencies. It would be just as inappropriate to ask fish and wildlife agencies to use their own funds to compensate losses to wildlife resources in their trust as it would be to ask AT&T to compensate losses sustained to their communication lines by a Federal or State constructed reservoir. Large scale water development projects that do not recognize the need for compensating the destruction of the public's wildlife resources are not truly in the broad public interest.

5. The proposed wildlife conservation area is unnecessary because wildlife losses will be insignificant and any losses that do occur will be compensated by the benefits of the improved habitat provided around the reservoir. As water levels rise in the reservoir, most wildlife species will be displaced and will relocate on lands adjacent to the reservoir! FALSE!!

   Wildlife populations require suitable habitat and each habitat type is limited as to the number of animals it can support, just as a 100-acre pasture is limited in the number of cattle it can support. The reservoir will not cause wildlife to concentrate on adjacent areas. The simple fact is, when the habitat is lost, the wildlife it supports is lost.

   Unless specifically managed for wildlife, habitat around the reservoir will not be improved. To the contrary, the secondary development and intensified human activity which will occur around the reservoir will further reduce wildlife populations.

6. The proposed wildlife conservation area will be an inviolate preserve for wildlife and public access will be restricted! FALSE!!

   The resource conservation area will be open to public use and will provide present and future generations a valuable place for such wildlife-related activities as nature study, photography, hiking, hunting, and field trials.

It will serve as an outdoor classroom and will be a focal point for resource conservation studies at all levels within our educational system. Our primary objectives are to optimize wildlife diversity and productivity and public enjoyment of these resources.

7. The acquired lands will be taken out of agricultural production! FALSE!!

   Grazing and sharecropping will generally be included in management plans for the wildlife area.

8. The Fish and Wildlife Service's recommended 15,800-acre wildlife conservation area is just one more example of a Federal land grab! RIDICULOUS!!!

   These wildlife lands will be dedicated to the perpetuation of the public wildlife heritage. Control will be available to the Texas Parks and Wildlife Department. A river authority, city, or conservation organization could also oversee these lands. Optimum public use will be guaranteed.

For additional or more detailed information, contact:

Fish and Wildlife Service
Rm. 9A33, 819 Taylor Street
Fort Worth, Texas 76102

Phone: (817) 334-2961

BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE P. O. BOX 7555 TELEPHONE AREA CODE 817 776-14
WACO, TEXAS 76710

March 19, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

Thank you for the 6 February 1976 letter from Mr. Hassel L. Holder, Acting Chief, Operations Division, forwarding for our consideration a copy of a letter dated February 2, 1976, from Mr. R. F. Stephens, Acting Regional Director, U.S. Department of Interior Coordinator, Albuquerque, New Mexico, concerning the application by the Brazos River Authority for a Section 404 Department of the Army permit for its Sterling C. Robertson Dam and Lake Limestone project.

In his above-referenced letter, Mr. Stephens says ". . . the Department of the Interior recommends that the permit be denied unless the following modifications are included as conditions of the permit:

"1. Acquire 15,800 acres of land in fee title, adjacent to the project area as shown on the attached plate. These mitigation areas shall be made available through suitable agreements to the Texas Parks and Wildlife Department for administration as wildlife management areas.

"2. The lake shall be filled incrementally to meet short-term projections of water demands.

"3. The project shall be operated to provide low volume downstream releases."

The Brazos River Authority's comments on these recommendations are presented in the following paragraphs.

A. Recommendation 2 - Incremental (or staged) filling of the Lake.

1. From discussions with representatives of the Fish and Wildlife Service in Fort Worth on March 8, 1976, we understand that the principal reasons for this recommendation would be to postpone as lo

as possible inundation of land which could provide wildlife habitat and to provide for progressive inundation of vegetation over a long period of years so as to prolong the enhanced fishing conditions existing in the lake in the early years following first impoundment of water. In cases where it is determined, in light of all the considerations involved, to be in the best public interest to provide for incremental filling of the lake, the Brazos River Authority has no objection to doing so. However, it is felt that, in the case of Lake Limestone, the considerations summarized below make it undesirable and impracticable to fill the lake incrementally as recommended.

2. Based on inquiries received to date and on contract negotiations already under way, it is anticipated that most of the dependable water supply yield of Lake Limestone will be committed to meeting immediate needs a short time after the project goes into operation. Since filling of lake storage space should be commenced at least five years in advance of anticipated need in order to assure availability of water when needed, there will be little opportunity for possible staged filling of the reservoir over a long period of time.

3. Under the terms of the permit for Lake Limestone issued by the Texas Water Rights Commission, which has responsibility under Texas law for administration of the waters of the State, the lake is to be operated as an element of an integrated basin-wide water supply system consisting of a number of lakes on the Brazos River and its tributaries which are owned by the Authority or in which the Authority controls the storage space devoted to water conservation. Under system operation, all of the lakes are operated not only to meet water needs in the area of each individual lake but to help meet water needs in the entire Brazos Basin and adjoining coastal areas downstream of the lakes. The water supply available from existing lakes in the system is already essentially committed, and water to meet additional needs must be supplied from projects now under construction or planned for future construction. Any of the dependable water supply yield of Lake Limestone that can be made available for system use can be called on to help meet such needs wherever they develop throughout the area served by the system, since system loads can be shifted to Lake Limestone from other lakes in the system and thus free up previously committed water in those lakes as necessary to meet developing needs that can be met only from those lakes. However, since there is no way of reliably forecasting every such specific need five years in advance, Lake Limestone must be completely filled initially and kept as nearly full as practicable if it is to function most effectively as an element of the basin-wide water supply system.

4. Since plans for Lake Limestone (which received all the Federal, State and local governmental approvals required prior to initiation of construction in July 1975) contemplate filling the

entire lake as rapidly as possible, the Authority has assured landowners who will have remainders of land along the lakeshore that they will have the full benefits of lakefront property when the lake is completed. Based on this understanding, numerous landowners have voluntarily sold to the Authority portions of their land needed for Lake Limestone, and forcing a change now in the approved plans for filling the lake would result in a breach of faith with such landowners.

5. Staged filling would also result in significant increases in the cost of land still to be acquired for the project. Landowners' remainders after takings for the project are enhanced in value by the fact that such remainders become lakefront property, and this enhancement offsets the damages which the landowners could otherwise claim on account of severance of their remaining property into two or more parcels, deprivation of access, and other adverse effects. Staged filling of the lake would result in indefinite postponement of the time when such remainders become lakefront property and would substantially reduce the enhancement in value available to offset damages to remainders.

6. For all of these reasons, the Brazos River Authority respectfully requests that the Section 404 permit for Lake Limestone not require staged or incremental filling of the lake as recommended in Mr. Stephens' letter.

B. Recommendation 3 - Low-volume releases.

1. The Brazos River Authority recognizes the desirability of making releases of water from Lake Limestone in such a manner as to provide as nearly as practicable a continuous flow at a constant rate in the Navasota River downstream, which we understand to be the intent of Recommendation 3. Therefore, whenever releases of water are made through the dam, whether for the purpose of passing through high flows or for the purpose of supplying water at locations downstream of the dam, such releases will be made at as moderate and as constant a rate as practicable. Six separate controlled outlets through the dam, ranging in size from 10-inch pipe to 8-foot by 5-foot rectangular conduits, are provided to afford complete flexibility for this purpose.

2. In this connection, it should be noted that the Brazos River Authority is most desirous of maximizing the recreational and fish and wildlife benefits of Lake Limestone, even though representatives of the Fish and Wildlife Service have stated (at the March 8 meeting in Fort Worth) that such benefits would not serve to mitigate wildlife losses resulting from inundation of the land covered by the lake. In addition to making low-flow releases as prescribed in the permit for the project issued by the Texas Water Rights Commission and making other releases as described above, the Authority plans to

acquire up to 150 acres of land in five different areas around the lake for the purpose of providing public access to the lake for public recreational use. The Authority will extend its full cooperation to the Texas Parks and Wildlife Department in joint efforts to achieve the greatest practicable benefits from public use of the lake for fishing, hunting, boating and other outdoor recreational activities. Such cooperative efforts on two other Authority lakes already in operation have produced highly beneficial results, including the provision of a 1600-acre State park and a State fish hatchery at Possum Kingdom Lake and the provision of boat-launching ramps, sanitation facilities, camping areas, picnic tables and various other facilities at both lakes, most of which facilities are operated and maintained by the Authority at no charge to the people using them. The Authority has enjoyed an excellent working relationship with the Texas Parks and Wildlife Department in these joint undertakings and looks forward to continuing its cooperative efforts with the Department at Lake Limestone.

C. Recommendation 1 - Acquire 15,800 acres of land for wildlife mitigation.

1. Effects on people. All of the 15,000 acres of land being acquired in fee by the Brazos River Authority for the Sterling C. Robertson Dam and Lake Limestone project is in private ownership. None of the land serves as a wildlife preserve or wildlife management area. However, there is native wildlife on much of the privately-owned land being acquired for this water conservation project, and some of the land is used for private hunting by the landowners and by others under arrangements with the landowners. According to Mr. Stephens' letter, the wildlife being displaced by Lake Limestone includes white-tailed deer, coyote, bobcat, raccoon, opossum, cottontail, armadillo, songbirds, mallards, wood ducks, mourning doves, turkey vultures, great blue herons, snakes (including cottonmouths), salamanders, sliders and treefrogs. In order to mitigate the loss of habitat for this wildlife resulting from conversion of 15,000 acres of privately-owned farm and ranch land to lake land, Mr. Stephens' letter recommends that 15,800 additional acres of farm and ranch land be removed from private ownership and converted to public wildlife management areas. Apparently it is intended that the Texas Parks and Wildlife Department would manage these 15,800 acres of land after conversion to public ownership so as to support the amount of wildlife formerly supported by approximately twice that amount of land in private ownership. This may be very desirable from the point of view of the wildlife involved, but consideration must be given to the effects on people as well as on wildlife. A fundamental question to be considered is whether it is in the best public interest to dispossess people from 15,800 acres of privately-owned farm and ranch land for the purpose of sustaining the wildlife that must be displaced from the 15,000 acres of privately-owned farm and ranch land which is required for Lake Limestone. The following comments are offered for

your consideration in determining whether it is in the best public interest to require the expenditure of public funds for this purpose.

2. Brazos River Authority lacks necessary statutory authority to acquire land for wildlife mitigation. The Brazos River Authority is a governmental agency established by the laws of Texas. Its money is public money. Its Board of Directors can spend such money only for the accomplishment of the public purposes for which it was established. (See Art. 8280-101, Vernon's Annotated Texas Civil Statutes.) Purchase of land to be transferred to another public agency for use as a game preserve or wildlife management area is not one of these purposes. Before any of the Authority's funds could be used for such a purpose, very careful consideration would have to be given as to whether such use would be considered a misappropriation of public monies, just as use of appropriated Federal funds for a purpose, however beneficial to the public, different from that for which they were appropriated is misappropriation. Regardless of the legal propriety or impropriety of the recommended action, the Brazos River Authority does not have the power of eminent domain to acquire land for such purposes. (See Brazos River Authority v. Harmon, 178 SW 2nd 281.) Without the power to condemn, it would be useless for the Authority to undertake to purchase all of the immense blocks of land designated in Mr. Stephens' letter, even if the Authority could legally do so and if sufficient money could be made available for that purpose.

3. Brazos River Authority has no source of funds for acquisition of wildlife mitigation land. The Brazos River Authority, though a governmental agency of the State of Texas, receives no tax money for construction, operation and maintenance of its water projects. The costs of such projects are borne entirely by municipal, industrial and agricultural water users. Lake Limestone is being financed initially with payments to be made for water under a contract with Texas Utilities Generating Company as agent for Texas Power & Light Company, Dallas Power & Light Company and Texas Electric Service Company. These utility companies serve an area comprising about one-third of the State of Texas containing approximately one-third of the State's population, including the cities of Dallas, Fort Worth and Waco. They will use water to be supplied from Lake Limestone under said contract in connection with the production of thermal-electric energy utilizing heretofore unexploited lignite deposits as a source of fuel. No provision was made in the contract for money to finance the cost of acquisition of wildlife habitat. Even if the contract could be amended to provide such money, it would be an injustice to the consumers served by the utility companies to do so. The cost of water to be supplied under the contract will be a cost of the generation of electric energy which must be passed along as part of the utility rates charged to consumers served by the utility companies, including the poor as well as the rich. Based on our experience in acquiring land for Lake Limestone, it is estimated that, even if full

powers of eminent domain were available, the cost of acquiring the 15,800 acres of land recommended in Mr. Stephens' letter would be in excess of $8,000,000.00, and it probably would be greatly in excess of that amount. The consumers who would pay this cost cannot be consulted about whether they want to pay higher utility bills in order to provide a habitat for wildlife. Therefore making them pay this added cost would, in effect, constitute a regressive tax imposed upon people who have had no representation in its imposition. As will be discussed below, it should be recognized that Mr. Stephens recommendations are made under regulations which preclude his consideration of factors other than the effect of the project on fish and wildlife. Thus, they are made without consideration of the effect on consumers' electric bills or upon the lives of the people who would be dispossessed from their land or upon local governments whose tax base would be eroded by removal of land from tax rolls or upon others who would be adversely affected. In these circumstances, the imposition of the costly requirement suggested by Mr. Stephens, simply because he is a Federal official authorized to make such a suggestion, would be a manifest injustice to the consumers served by the utility companies.

Other users of water from Lake Limestone would also have to pay significantly higher charges to help pay the added millions of dollars of costs that would be imposed for provision of wildlife management areas.

For the reasons stated above, imposition of the requirement that the Authority acquire 15,800 acres of land for wildlife management areas would be tantamount to denial of the permit, because the Authority cannot legally, practically, or morally meet the requirement.

Denial of the permit would not be in the public interest and could cause severe and irreparable public harm.

This water resource conservation project is urgently needed to provide a dependable source of water supply to help meet the needs of the people of Texas, especially the need for water to permit utilization of lignite deposits as an urgently-needed source of fuel to help alleviate the country's energy shortage.

Construction of Sterling C. Robertson Dam and Lake Limestone was initiated by the Brazos River Authority in July 1975 in full compliance with all Federal, State and local laws, regulations and requirements. Lake Limestone has the approval of all the State and local governmental entities concerned and of the people in the general area of the project.

Construction, operation and maintenance of Lake Limestone will not violate any provisions of the Federal Water Pollution Control Act, as amended, and there is no reasonable and justifiable basis for denying the Brazos River Authority's application for a Federal permit under Section 404 of the Act.

In this connection, it is respectfully submitted that the Corps of Engineers does not, in fact, have statutory authority under Section 404 of Public Law 92-500 to deny the Brazos River Authority a permit on the basis of Mr. Stephens' recommendation that the permit be denied unless the Authority agrees to acquire 15,800 acres of land and make it available to the Texas Parks and Wildlife Department for administration as wildlife management areas. Establishment of wildlife management areas as he recommends is not a water pollution control measure, and using that as a basis for denying a permit for "discharge of dredged and fill material" under Section 404 of the Water Pollution Control Act, as amended, would be stretching the intent of Section 404 (and, indeed, the intent of the entire Act) far beyond any reasonably conceivable interpretation of the law.

With the foregoing in mind, it is useful to review the stated position of the Department of the Interior's Fish and Wildlife Service as to its role in the review of applications such as that of the Brazos River Authority. This position is set forth in 40 Fed. Reg. P. 55810, wherein the Service responded to comments on proposed guidelines which it had published for use by employees in performance of their review functions (which guidelines were adopted at the time when the response to comments was published). The response related to the section concerning excavation of fill material. The Service said:

> Concerns were raised that these sections preclude the consideration and balancing of project costs and benefits, and thus do not comply with the terms of the National Environmental Policy Act. To clarify this matter, the Service's role is to evaluate and comment on the effects of a proposal on fish and wildlife resources. It is the function of the regulatory agency rather than the Fish and Wildlife Service to balance all factors, including anticipated costs and benefits, and decide which type of activity will be permitted. (Underlining added.)

Thus, the Fish and Wildlife Service itself recognizes that its recommendations are deliberately made without regard for anything other than the effects on fish and wildlife resources and that it is your function, not theirs, to "balance all factors." In effect, what you have to balance is the public good and the public harm which will result from your stopping a project started by a governmental agency of the State of Texas in complete compliance with State and Federal laws on which millions of dollars have already been spent, and which will serve pressing public needs. The choice is not between the project with the recommended wildlife areas and the project without such areas. It is between the project complete and the project stopped in the middle of construction.

We therefore respectfully request that the Corps of Engineers not follow the recommendation in Mr. Stephens' letter of February 2, 1976. with regard to denying the Brazos River Authority's application for a Federal permit under Section 404 of PL 92-500 to "discharge fill material" in the Navasota River as necessary in construction of the Sterling C. Robertson Dam.

Sincerely yours,

WALTER J. WELLS
General Manager

WJW:gls
cc: Mr. R. F. Stephens, Acting Regional Director, U.S. Department of the Interior Coordinator, Fish and Wildlife Service, Albuquerque, N.M.
Executive Director, Texas Parks and Wildlife Department, Austin, Texas
Commissioner, General Land Office, Austin, Texas
Regional Director, Bureau of Outdoor Recreation, Albuquerque, N.M.
Regional Administrator, Environmental Protection Agency, Dallas, Texas
Field Supervisor, FWS, Div. of Ecological Services, Fort Worth, Texas
Director, Division of Planning Coordination, Office of the Governor of Texas
Chairman, Texas Water Rights Commission
Executive Director, Texas Water Development Board
Executive Director, Texas Water Quality Board

DOLPH BRISCOE
GOVERNOR

OFFICE OF THE GOVERNOR
STATE CAPITOL
AUSTIN, TEXAS 78711

August 4, 1976

Colonel Joe H. Sheard, District Engineer
Fort Worth District
U.S. Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

I am responding to your request for a statement which presents the State of Texas' position concerning the issuance, denial, or modification of the permit application of the Brazos River Authority for construction of the Sterling C. Robertson Dam and Lake Limestone, a locally funded project.

The Brazos River Authority initiated the project in 1973, and submitted an application for a permit from the Texas Water Rights Commission in March, 1974. All parties concerned were given the opportunity to review the plans for the project and submit comments through public hearing for consideration by the Water Rights Commission. Subsequently, the Water Rights Commission issued a permit which authorized the construction of the dam and specified the water rights for the reservoir. Revenue bonds to finance this project were sold and the project was placed under construction in July, 1975. At that time, the project was in compliance with existing State and federal requirements, and all permits, licenses and approval established under public laws had been obtained by the Brazos River Authority.

After construction of this locally supported project had been initiated, a federal regulation was implemented which required a federal permit under Section 404 of the Water Pollution Control Act Amendment of 1972. The Brazos River Authority submitted an application for the Section 404 permit from the Corps of Engineers, who subsequently issued a Public Notice in December, 1975, concerning the application. Based upon responsibilities specified in the U.S. Fish and Wildlife Coordination Act, the U.S. Fish and Wildlife Service recommended denial of the permit unless the permit was modified to include specific measures to mitigate the loss of wildlife habitat caused by the project.

The consideration of wildlife habitat mitigation at this stage of project development is extremely difficult, but the principle is not lost. The Texas Parks and Wildlife Department has consulted with regional representatives in the U.S. Fish and Wildlife Service who have

indicated a willingness to seek a mutually acceptable resolution to mitigate the loss of wildlife habitat. The Brazos River Authority has expressed willingness to explore any possibilities for actions to mitigate wildlife losses, provided such actions are capable of implementation. Discussions and activities along these lines will be continued and a concerted effort will be made to reach a conclusion that will best serve the interests of the people of the State of Texas.

My Budget and Planning Office coordinated the review of both the Public Notice for the Section 404 permit application and the environmental impact statement with interested and affected Texas State agencies. The comments of these reviewing agencies indicated a general support for the project and none of the agencies opposed the project.

Therefore, it is the opinion of the State that this water resource development project is needed and is in the public interest. In view of the necessary water resources to be provided by this project, and in view of the sincere efforts to be continued toward mitigating the loss of wildlife habitat, the position of the State of Texas is that the project should be permitted and completed without delay.

If I, or my Budget and Planning Office, can be of further service, please contact us.

Sincerely,

Dolph Briscoe
Governor of Texas

STATE OF TEXAS
OFFICE OF THE GOVERNOR
AUSTIN

DOLPH BRISCOE
GOVERNOR

August 10, 1976

Colonel Joe H. Sheard, District Engineer
Fort Worth District
U. S. Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

Reference is made to my letter of August 4, 1976 concerning the State of Texas position with regard to issuance of a Sect. 404 permit for construction of the Sterling C. Robertson Dam and Lake Limestone project.

I want to make it very clear that it is my position as Governor and it is the position of the State of Texas that this urgently needed water supply project should be carried to completion at the earliest possible date and that a Federal Sect. 404 permit should be issued immediately without any delay for further mitigation discussions and/or evaluations.

This important water resource development project has the full approval of the State of Texas. It is urgently needed as an element of the Brazos River Authority's basin-wide system of water conservation and water supply lakes. It is needed especially to provide a dependable water supply for cooling of electric power generating facilities to be built in the upper Navasota watershed for the purpose of utilizing that area's abundant deposits of lignite as a source of fuel to help alleviate the country's energy shortage.

Sincerely,

Dolph Briscoe
Governor of Texas

DB/gtr

EMMETT H. WHITEHEAD
DISTRICT 18
BOX 478
RUSK, TEXAS 75785

The State of Texas
House of Representatives
Austin, Texas

COMMITTEES:
HEALTH AND WELFARE
Vice Chairman, Appropriative Matt
AGRICULTURE AND LIVESTOCK

May 3, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

This letter is to support the position taken by the Groesbeck Chamber of Commerce mailed you April 23.

I serve Leon and Limestone counties and can assure you that taking 15,800 acres of land from these counties would create undue hardship.

The Sterling C. Robertson Dam and Lake Limestone project will prove a great benefit to the entire state of Texas.

Your consideration of the Groesbeck Chamber of Commerce position will be greatly appreciated.

Sincerely,

Emmett H. Whitehead

EHW:aw
File

Congress of the United States

House of Representatives

Washington, D.C. 20515

April 29, 1976

Honorable Emmett H. Whitehead
Texas State Representative
District 15
Box 475
Rusk, Texas 75785

Dear Emmett:

Thank you for your letter regarding the Sterling C. Robertson Dam and Limestone Lake Project.

I share your concern in this matter and am enclosing for your information a copy of the letter I sent to the Corps of Engineers about this project.

If I can be of further assistance, please let me know.

Sincerely,

Charlie

Charles Wilson

CW:lmt
Enclosure

State of Texas

COUNTY OF LEON

Centerville, Texas 75833

April 16, 1976

Colonel Joe H. Sheard
Fort Worth District
Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

In our letter to you on December 30, 1975, we expressed our feeling and support of the Corps of Engineers Permit to the Brazos River Authority for construction of the Sterling C. Robertson Dam and Lake Limestone. We are shocked and disappointed at the protest of the U. S. Fish and Wildlife Service. We feel their request for the 15,800 acres of additional land for a wildlife management area is unreasonable and unneeded.

We feel the completion of the lake and the two proposed generating plants will be one of the greatest things ever to happen to our part of Texas. It will furnish some jobs, recreation and develop our extensive lignite deposits in the three county area. There is a great need for this project and we sincerely hope that the Brazos River Authority will receive this permit to enable them to complete the Sterling C. Robertson Dam and Lake Limestone.

Yours truly,

COMMISSIONERS' COURT OF LEON COUNTY

James O. Hill

James O. Hill, County Judge

JOH:b

City of Jewett

INCORPORATED SEPT. 1, 1890

JEWETT, TEXAS

April 21, 1976

Colonel Joe H. Sheard
Department Of The Army
Fort Worth District, Corps Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

We expressed our feeling and support of the Corps Of Engineers Permit to the Brazos River Authority for construction of the Sterling C.Robertson Dam and Lake Limestone, in a letter to you on January 12, 1976, we are very disappointed at the protest of the U. S. Fish and Wildlife Service. We feel that their request for additional acreage of land for a wildlife management area is unreasonable and unneeded.

We feel that the completion of the two proposed generating plants and the lake will be one of the greatest things that could happen in our area. It would furnish new jobs, recreation and develop our extensive lignite deposits in the three county area. There is a great need for this project and we sincerely hope that the Brazos River Authority will receive this permit to enable them to complete the Sterling C. Robertson Dam and Lake Limestone.

Sincerely,

SAM A. WINGFIELD, MAYOR

ROBERT M. CHRISTIAN, COUNCILMAN

KENNETH TURNER, COUNCILMAN

JOE H. HOLMES, COUNCILMAN

JAMES H. GRAYSON, COUNCILMAN

MRS CARL PENCE, COUNCILWOMAN

CITY OF JEWETT
P.O. BOX 188
JEWETT, TEXAS 75846

CITY OF CENTERVILLE

P. O. BOX 273 PHONE 536-2515

CENTERVILLE, TEXAS 75833

April 23, 1976

NITA CARRIGAN
ITY SECRETARY

Colonel Joe H. Sheard
Fort Worth District
Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

We wish to support the Corps of Engineers Permit to the Brazos River Authority for construction of the Sterling C. Robertson Dam and Lake Limestone.

We feel that the two proposed generating plants and a lake would greatly stimulate the economy in this area by creating jobs, making available recreation and the development of our natural resources over a three County area of this State. We feel this project is greatly needed for this area and sincerely hope a permit will be received by the Brazos River Authority to enable the completion of Lake Limestone and the Sterling C. Robertson Dam.

We are very disappointed and disgusted at the protest of the U. S. Fish and Wildlife Service in their request for an additional 15,800 acres of land for a wildlife management area. We think this is unreasonable and ridiculous.

Sincerely yours,

THE CITY COUNCIL

Bill Bitner, Mayor

BB:ac

CITY OF MARQUEZ
Marquez, Texas 77865
April 21, 1976

Colonel Joe H. Sheard,
Fort Worth District,
Corps of Engineers,
Fort Worth, Texas

Dear Colonel Sheard:

I have been informed of the request made by the U. S. Fish and Wildlife Service that a permit not be issued for the construction of the Sterling C. Robertson Dam and Limestone Lake.

The citizens of Marquez and vicinity are very much in favor of the Dam and Lake. The project makes possible the use of lignite coal of this area in the generation of electricity by plants in the area. These projects and related industry provide employment for a financially depressed region. The Lake Limestone will provide recreational facilities which will also be of economic aid to the area.

We feel that the request by the U. S. Fish and wildlife Service that 15,800 acres of additional land for wildlife managment is not necessary. Such a move would displace ranchers with their cattle which would offset any value to be derived from the Dam and Lake. The wildlife displaced by the Lake would no doubt simply migrate out into the surrounding areas and not be destroyed.

We urge that the Permit to the Brazos River Authority be issued.

Sincerely,

Howard Mann ~~Mayor~~ Ald.

John A. Hazid, Ald.

John Schmidt, Ald.

Ralph McAdoo Ald.

V. W. Scoggins, ~~Ald~~ Mayor

City of Calvert

Calvert, Texas

April 29, 1976

Colonel John H. Sheard
District Engineer
Fort Worth District Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

By Resolution enacted January 7, 1976, you have been made aware of this City Council's interest in and support of the Sterling C. Robertson Dam and Lake Limestone project. That resolution urged that the permit applied for by Brazos River Authority for constriction of the dam be issued.

We have been following with a great deal of interest the progress of this work and that of the electric power plants which water from Lake Limestone will make possible. To the economically depressed area of Leon, Robertson, and Limestone Counties, this work holds more promise for economic benefit than anything which has happened in this area for many years.

Needless to say, we were shocked to learn that the U.S. Fish and Wildlife Service has requested that the requested permit be denied unless Brazos River Authority agrees to purchase an additional 15,800 acres purly for Wildlife management use. Since this area proposed would be removed from agricultural production and from the tax rolls of the State, Counties and Schools without contributing any economic benefit, this seems like a riduculous proposal to people who are forced to be more concerned with making a living than for the comfort and safety of skunks, snakes and treefrogs.

You are therefore again urged to take appropriate actions to assure that the permit requested by Brazos River Authority be issued at the earliest possible time so that completion of the dam and lake will not be delayed.

Yours truly,

Cooper Wiese, Mayor

CW/n

enc.

Honorable Dolph Briscoe
Governor, State of Texas
State Capitol
Austin, Texas 78711

Honorable John G. Tower
U. S. Senator
Senate Office Building
Washington, D. C. 20510

Honorable Lloyd Bentsen
U. S. Senator
Senate Office Building
Washington, D. C. 20510

Honorable Olin E. Teague
U. S. Congressman
2311 Rayburn House Office Bldg.
Washington, D. C. 20515

Honorable Charles Wilson
U. S. Congressman
1504 Longworth House Office Bldg.
Washington, D. C. 20515

Honorable William T. (Bill) Moore
State Senator
P. O. Box 3697
Bryan, Texas 77801

Honorable Ron Clower
State Senator
1212 San Jacinto
Dallas, Texas 75202

Honorable Bill Presnal
State Representative
Route 1, Box 74
Bryan, Texas 77801

Honorable Emmett H. Whitehead
State Representative
904 N. Bonner
Rusk, Texas 75785

City of Calvert

Calvert, Texas

January 7, 1976

RESOLUTION

WHEREAS, the Brazos River Authority, a governmental agency of the State of Texas, is now constructing the Sterling C. Robertson Dam to create Lake Limestone on the Navasota River in Robertson, Leon and Limestone Counties, Texas and

WHEREAS, supplies of water will be available from Lake Limestone for use in the development of energy resources and for other beneficial purposes in the local area and in other areas of the Brazos Basin; and

WHEREAS, some of the water supply that will be available from Lake Limestone is urgently needed to make possible the utilization of a presently unused resource, lignite, to generate electrical energy and help alleviate the current and anticipated energy shortage being experienced by the State and the Nation; and

WHEREAS, Lake Limestone and the facilities to which it will supply water initially will create up to 1,000 temporary jobs during the five-year construction period and up to 400 permanent jobs thereafter; and

WHEREAS, the economy of the area will be improved and revenues to local units of government substantially increased as a results of the general enhancement of values and the addition of significant taxable assets in the local area; and

WHEREAS, the waters of Lake Limestone will be open to the public, thus providing water-oriented recreation to thousands of people annually in an area previously held in private ownership; and

WHEREAS, the Brazos River Authority is now required under regulations promulgated to enforce Section 404 of Public Law 92-500 to obtain a Federal Government permit for Sterling C. Robertson Dam from the Corps of Engineers;

NOW THEREFORE, be it resolved by the City Council of the City of Calvert, Texas that the Corps of Engineers if urged to find that the project is in the public interest and to issue a permit to Brazos River Authority for Sterling C. Robertson Dam under Section 404 of Public Law 92-500.

Cooper Wiess, Mayor, City of Calvert

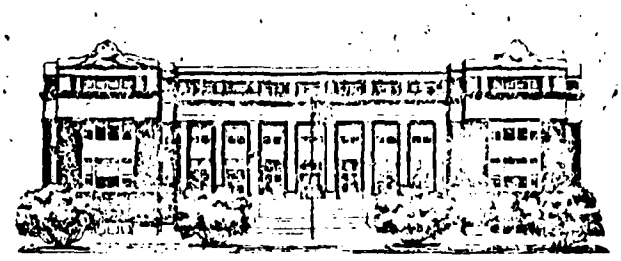
John W. Anderson

John B. Griffin

Robert Comfort

B. F. Hickman

Office of
CALVIN HARDISON
County Judge



STATE OF TEXAS
Limestone County
GROESBECK, TEXAS
76642

April 20, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

It has been brought to the attention of the Limestone County Commissioners Court that the U. S. Department of Interior has requested that the permit of Brazos River Authority to construct the Sterling C. Robertson Dam and Lake Limestone be turned down unless an additional 15,800 acres of land is purchase for the purpose of a wildlife management area.

The Limestone County Commissioners Court is opposed to this request, and enclosed you will find a certified copy of a resolution passed by this court on April 12, 1976 in regard to this matter.

Very truly yours,

Calvin Hardison

CALVIN HARDISON, County Judge
Limestone County, Texas

CH:br

Enclosure

cc: Walter J. Wells, General Manager, Brazos River Authority
R. F. Stephens, Acting Director, U. S. Department of the Interior, Albuquerque, New Mexico 87103

COMMISSIONER'S COURT

BE IT REMEMBERED THAT ON THE 12th day of April, 1976, there came on and was held a REGULAR MEETING of the Commissioner's Court with the Honorable Calvin Hardison, County Judge presiding and with Commissioner's Ray Sealy, Floyd Lowry, Guy Durham, Elijah Black and County Clerk Dena Pruitt, all present when the following orders were passed to-wit:

MOTION by Durham, seconded by Lowry, to accept the following resolution:

WHEREAS, the Commissioner's Court of Limestone County, Texas, oppose that Brazos River Authority or any other Agency purchase 15,800 acres or any other amount of land in Limestone County for the purpose of a Wildlife Refuge.

BE IT FURTHER RESOLVED, that the Limestone County Commissioner's Court believe the citizens of this County should be considered in this matter befo any consideration be given any Wildlife Refuge. Vote being unanimous.

The above minutes read and approved.

Calvin Hardison
County Judge

ATTEST: DENA PRUITT, County Clerk
Limestone County, Texas
Deputy

THE STATE OF TEXAS
COUNTY OF LIMESTONE

I, DENA PRUITT, County Clerk in and for the County Court of Limestone County, Texas do hereby certify that the above and foregoing is a true and correct copy of the Order passed by the Commissioner's Court of Limestone County, Texas in a REGULAR MEETING held on April 12, 1976, as same appears of record in Volume Q, Page 17 of the Commissioner's Court Minutes of Limestone County, Texas.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, at Groesbeck, Texas, this 19th day of April, A. D. 1976.

DENA PRUITT, County Clerk
Limestone County, Texas

By Barbara S. Hendrick Deputy

R. W. OLIVER, JR.
Mayor

MRS. MARTHA TILLEY
City Secretary

CITY OF GROESBECK

GROESBECK, TEXAS 76642

May 12, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

On May 11, 1976, the City Council of the City of Groesbeck unanimously reaffirmed their support of the construction of Lake Limestone and the two proposed power plants. They also unanimously opposed the additional acquisition of 15,800 acres of land for use as a wildlife sanctuary. The Council feels that this is an unnecessary expenditure and cannot be justified in that it will remove an additional area from the tax rolls of the County and school district without an accompanying increase in land values.

Sincerely,

CITY OF GROESBECK

R. W. Oliver, Jr.
Mayor

cc. Brazos River Authority, Waco, Texas
Senator Lloyd M. Bentsen, Washington, D. C.
Senator John G. Tower, Washington, D. C.
Congressman Olin E. Teague, Washington, D. C.
Senator Ron Clower, Garland, Texas
Representative Emmett H. Whitehead, Rusk, Texas

SOUTH LIMESTONE HOSPITAL DISTRICT
P. O. BOX 436
GROESBECK, TEXAS 76642

May 11, 1976

Col Joe H. Sheard
District Engineer
P. O. Box 17300
Fort Worth, Texas 76102

Re: Lake Limestone
Additional 15,800 Acres

Dear Col Sheard:

The South Limestone Hospital District wishes to go on record as opposing the Wildlife Preserve Proposal. Our Hospital District is suffering tax loss with the Lake and the additional 15,800 acres would be disasterous; unless, the U S Fish and Wildlife Service can include us in their Preservation Budget. We are interested in Human Life and its preservations. We could sure use those extra dollars in pursueing our goal.

Since you have such support from environmental groups, can't the groups give up their land and homes in their areas for such a noble cause, save the Wildlife instead of the needs of the Human Element should be a good motto for them.

Thank you for listening to our objections.

Yours truly,

Tyrus A. Bordelon

South Limestone Hospital District
Tyrus A. Bordelon, Administrator

cc: Representative Olin Teague
Senator Lloyd Bensen
Senator John Tower
State Representative Emmett Whitehead
State Senator Ron Clower
Chamber of Commerce Groesbeck, Texas

GROESBECK INDEPENDENT SCHOOL DISTRICT
P. O. BOX 559
GROESBECK, TEXAS 76642

OFFICE OF THE
SUPERINTENDENT

May 11, 1976

Colonel Joe H. Sheard
U. S. Corps of Engineers
Ft. Worth District
P. O. Box 17300
Ft. Worth, Texas 76102

Dear Colonel Sheard:

The Board of Trustees of the Groesbeck Independent School District instructed me to write you telling you of their opposition to the 15,800 acres of land being set aside as a game preserve in connection with Lake Limestone.

It is their feeling that the additional loss of tax revenue which this would entail would work many hardships on the other tax payers of our school district.

Sincerely yours,

E. S. Ellis, Jr.
Superintendent

ESE:rp

Chamber of Commerce
Groesbeck, Texas 76642

April 23, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

The Groesbeck Chamber of Commerce strongly urges you to grant the Brazos River Authority a Section 404 permit for its Sterling C. Robertson Dam and Lake Limestone project, without the 15,800 acres of land for a game preserve, for the following reasons:

1. All of the 15,800 acres of land is privately owned land and is used for farming, ranching and recreation. The people are giving us enough of their land for the lake itself. They surely do not want to have to give up additional land for a game preserve. If over 30,000 acres of land is taken out of private ownership, where would the sellers be able to purchase additional land in the area for reinvestment? If they couldn't, then federal taxes would place a severe hardship on them.

2. The local governments and school district will lose 14,200 acres of land from the tax rolls for the lake. However, development around the lake and the generating plants should overcome the initial loss. But, if 15,800 acres of additional land is taken off the local tax rolls and replaced by a public owned, tax-exempt game preserve, our taxes would have to be raised to an unbearable amount.

3. It is very doubtful that a wildlife preserve is needed in this area to compensate for the land to be "lost" for Lake Limestone. There are a few deer in the area, along with rabbits, snakes, and turkey vultures, etc. The lake will just force them to be more concentrated in the surrounding areas. These adverse effects should be more than compensated for by the lake, which will provide a great habitat for various types of fish and wildlife and will be open to the public for free use.

4. The Lake Limestone project is being financed entirely by revenue bonds, which are to be repaid by three utility companies. If the Brazos River Authority is required to purchase the additional land, at cost of more than $8,000,000, the consumers will have to pay an even higher electric rate.

5. People are more important than animals and this should be considered when you review the Brazos River Authority's application for a Section 404 permit.

For the above reasons, a wildlife preserve is not needed in this area, and we urge you to grant the permit without it.

When Brazos River Authority started construction of Sterling C. Robertson Dam, they had every permit and approval that was required. Later, a Federal judge made an absurd interpretation ruling that streams finally running into a navigable stream are under Corps of Engineers authority. Thus, Brazos River Authority has to get a Section 404 permit or stop construction and lose more than $18 million. That's like telling a married, pregnant woman she has to get a permit to have another baby.

Limestone, Robertson, and Leon counties are all economically depressed areas. We finally have the chance of a lifetime and this all could be lost because of a game preserve. The economic impact of Lake Limestone, the two generating plants, and the lignite mining operations will probably be more than a billion dollars for these three counties over the next forty years.

We hereby, ask you to think of the people in this area and the opportunities we have in the future. We desperately need Lake Limestone for economic and growth purposes and urge you to grant the Brazos River Authority a Section 404 permit without the game preserve.

Sincerely yours,

Gary Vogel

Gary Vogel
President

GV:bl

cc: Secretary of the Interior Kleppe
U.S. Representative Olin Teague
U.S. Senator Lloyd Bentsen
U.S. Senator John Towers
State Representative Emmett Whitehead
State Senator Ron Clower
Col. Walter J. Wells, General Manager
Brazos River Authority, Waco, Texas.
Executive Director, Texas Parks and Wildlife Department,
Austin, Texas.

Chamber of Commerce

Groesbeck, Texas 76642

Resolution Adopted by Chamber of Commerce, Groesbeck,Texas
May 13, 1976

Whereas, Lake Limestone, an impoundment, which will be created in Limestone, Leon and Robertson counties, by the Sterling C. Robertson Dam on the Navasota River, will furnish water supplies to meet municipal, industrial and agricultural needs, as they develop in the local area and in other areas of the Brazos Basin, and;

Whereas, the U. S. Department of Interior Coordinator, Albuquerque, New Mexico has recommended that the Brazos River Authority request for a Section 404 Department of the Army permit be denied unless the Brazos River Authority agree, among other things, to purchase an additional 15,800 acres of land in fee title adjacent to the project area and make it available through the Texas Parks and Wildlife management areas, and;

Whereas, all Federal, State, and local governmental approvals required prior to initiation of construction in July, 1975 were received by the Brazos River Authority and;

Whereas, a conservative estimate of direct loss of public funds in excess of $18,000,000. would result if construction of the dam is stopped at this time, and;

Whereas, private owners would be dispossed of 15,800 acres of land which would be lost from agricultural production, and;

Whereas, the local governments and school districts would lose the tax income from the land, and there would be no compensanting source of replacement of such funds, and ;

Whereas, the terraine, forests and natural vegetation in the area immediately surrounding Lake Limestone would serve as an excellent natural habitat for local wildlife if left in private ownership,and;

Whereas, the loss to the local economy through payrolls, recreationa activities, mining of lignite coal and royalties for same is incalculable, and;

Whereas, the value of the electrical energy to the local, state, and national economy which would be generated as a result of the Lake Limestone project, and which will be lost if the requested Section 404 Department of Army Permit is denied, is incalculable, and;

Whereas, the development of projects such as Lake Limestone and the lignite mining is in accord with National policy as expressed by the President to make the United States independent of foreign oil production, and;

BE IT RESOLVED that the Groesbeck Chamer of Commerce express its deep gratitute to the U. S. Corps of Engineers for the encouragement it has given to the development and sonservation of the water resources in

several areas of Texas and for the encouragement and consideration now being given to the development and conservation of the water resources of Limestone, Leon and Robertson counties, and;

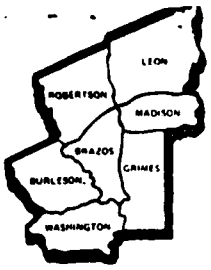
BE IT ALSO RESOLVED that appreciation be expressed to the Brazos River Authority for its willingness to develop and conserve these resouces at no expense to any entity of government and at no expense to the taxpayers, and;

BE IT FURTHER RESOLVED that appreciation be expressed to both the U. S. Corps of Engineers and the Brazos River Authority for providing in Lake Limestone an outstanding facility that will insure an abundant water supply for the domestic needs of this area and for badly needed industrial development, and in addition , a splendid facility for recreational purposes, ideally located to serve the populations of the metropolitan centers of Texas, and;

BE IT ALSO RESOLVED that the Chamber of Commerce of Groesbeck, Texas , on behalf of itself and the almost unanimous citizenship of this area vigorously protest and fervently appeal against the acceptance of spurious, unreasonable demands by the Department of Interior that are utterly impossible of fulfillment and based wholly upon premises that have no foundation in trust or in fact and we urge the U. S. Corps of Enginerrs to issue a Section 404 Department of the Army permit to the Brazos River Authority for the construction of Sterling C. Robertson Dam and Lake Limestone.

Grady B. Rasco

Grady B. Rasco, Secretary



BRAZOS VALLEY DEVELOPMENT COUNCIL
P. O. DRAWER 4128 • BRYAN, TEXAS 77801

May 10, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

The Brazos Valley Development Council, a Regional Planning Commission and Economic Development District, serving Brazos, Burleson, Grimes, Leon, Madison, Robertson and Washington Counties, respectfully urges you to grant the Brazos River Authority a Section 404 permit for its Sterling C. Robertson Dam and Lake Limestone project without providing the 15,800 acres of land for a game preserve as recommended by the Department of Interior.

Leon and Robertson Counties are designated Area-Redevelopment Area Counties by the Economic Development Administration; and since 1967, the Brazos Valley Development Council has developed plans and initiated economic development projects through local elected officials and leaders in these counties. The creation of Lake Limestone, the generating plants, and the lignite utilization will create an economic impact undreamed of in these counties we serve.

The Brazos River Authority had every approval and permit required when construction was started, thus the Executive Committee of the Brazos Valley Development Council urges you to think of the future of these counties and their people and grant the BRA a Section 404 permit without the establishment of a game preserve.

{Continued}

Your consideration of this request will be appreciated.

Very truly yours,

F. L. Thompson

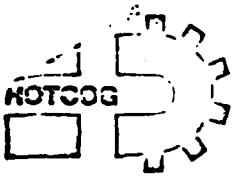
F. L. Thompson
Chairman of the Board

FLT:mfs

cc: U. S. Senator Lloyd Bentsen
U. S. Senator John Tower
U. S. Representative Olin Teague
U. S. Representative Charles Wilson
Col. Walter Wells, General Manager, BRA
Gen. James Rose, Executive Director, Texas Water Development Board
Mr. Clayton T. Garrison, Executive Director, Texas Parks & Wildlife Department

HEART OF TEXAS COUNCIL OF GOVERNMENTS
110 SOUTH TWELVETH STREET • WACO TEXAS 76701 • [illegible]

03/AB/dc
03300
April 30, 1976



HEART OF TEXAS COUNCIL OF GOVERNMENTS
110 SOUTH TWELVETH STREET • WACO, TEXAS 76701 • 756 0331

April 21, 1976

STATEMENT OF THE HEART OF TEXAS COUNCIL OF GOVERNMENTS
TO THE DISTRICT ENGINEER, CORPS OF ENGINEERS, U.S. ARMY,
FORT WORTH, TEXAS REGARDING U.S. FISH AND WILDLIFE SERVICE
RECOMMENDATION THAT CORPS OF ENGINEERS DENY BRAZOS RIVER
AUTHORITY'S APPLICATION FOR FEDERAL SECTION 404
PERMIT FOR LAKE LIMESTONE

The Heart of Texas Council of Governments was organized May 16, 1966, pursuant to Article 1011m, Texas Revised Civil Statutes, as amended, and is recognized by the Office of the Governor, State of Texas, as Sub-State Planning Region No. 11. It is charged with performing regional planning as defined by statute for the geographic area comprised of the Counties of Bosque, Falls, Freestone, Hill, Limestone, and McLennan, Texas. The Regional Planning Council also serves as the official advisory and coordinating agency for investigations and studies for improvement of government and services in the region; in addition it serves as the official Sub-State Clearinghouse for review of federally assisted projects and continuously disseminates information regarding comprehensive plans and programs for the improvement of the region; and it promotes general public support for such plans and programs as the Regional Council may endorse.

The Board of Directors, comprised of 100 percent elected officials representative of the six county region, respectfully requests that the Corps of Engineers place the recommendations of the Department of Interior in the proper prospective, and that the recommendations not be considered when acting upon this permit.

Of the wildlife to be displaced by the construction of the inundation from the Sterling C. Robinson Dam, none are endangered species, nor are the areas to be impacted of ecological singularity. Other such habitats are to be found in close proximity and the displaced animals can relocate in them, thus "enriching" those areas.

Land aquisition for the provision of such areas is not a feasible alternative, not only because of economic and legal considerations, but also from an ecological standpoint. The displaced animals are not sedentary and any effects of wildlife management would be minimal. The taking of land out of agri-production at a time when the national and international food situation is deteriorating would have severe impact on human ecological conditions.

Any delay or halting of this project would have serious impact on the human condition, environmentally as well as economically. This is a time of increasing loss of subsurface water supplies, which this project will replace. This project will meet energy demands of our region by the development of domestic energy supplies, which development requires this water.

(Enclosure 1)

HEART OF TEXAS COUNCIL OF GOVERNMENTS
110 SOUTH TWELVETH STREET • WACO, TEXAS 76701 • 817/756-7822

03/AB/dc
03300
April 30, 1976

For the reasons stated above, the Heart of Texas Council of Governments requests that the Corps of Engineers approve the construction permit for the Sterling C. Robertson Dam.

Respectfully submitted by the

HEART OF TEXAS COUNCIL OF GOVERNMENTS

By: C.K. Word

C.K. Word, Jr., President
County Judge, Bosque

ATTEST: Bob L. Thomas

Bob L. Thomas, Secretary/Treasurer
County Judge, McLennan County

OLETHA MEANING TEXAS

FRANK and MARGARET CONNELL
RT. 3, BOX 57A, THORNTON, TEXAS 76687
817/729-5625—GROESBECK

BILL and LIBBY FREEMAN
RT. 3, BOX 57B, THORNTON, TEXAS 76687
817/729-3706—GROESBECK

WEAVER and PHYLLISS CONNELL
RT. 3, BOX 57A, THORNTON, TEXAS 76687
817/729-3760—GROESBECK

April 26, 1976

Colonel Joe H. Shear, District Engineer
U. S. Army Corps of Engineers
Box 17300
Fort Worth, Texas 76102

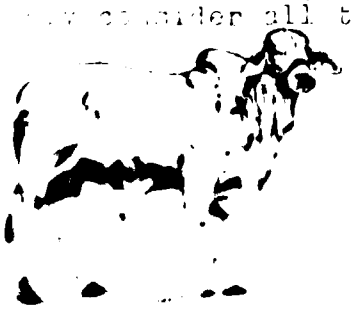
Dear Colonel Shear,

I am writing to you in regard to the proposed attachment of 15,800 acres, surrounding Lake Limestone on the Navasota River, by the U.S. Fish and Wildlife Service.

It is my understanding the Corps did not want, in fact tried to keep from having to accept, the despicable task of removing these people from their land. Yet, I also understand that the final decesion must come from you.

I would remind you of 1)the tax base that will be lost to a rural county, school district, and hospital district that have no industry to take up the slack; 2)the almost $300,000 in agricultural income, mostly cattle, that will be lost when the land is taken out of production. You are aware, I am sure, that the economists of Texas A & M state that this money turns at least 7 times before it finally stabilizes, and that each turn furnishes IRS with money to send on to Washington to keep the wheels of government turning; 3)the gross UNFAIRNESS of it all. Most of these landowners ancestors come here during the days of the Republic of Texas and sweated and fought the Comanches to preserve the land for their posterity. Can't you just see them spinning in their graves at the very thought of the proposed used of this land.

I know you have a tough job and that you will [illegible] you think best, but I do pray [illegible] consider all these things I



F C Connell

OLETHA RANCH TEXAS

FRANK and MARGARET CONNELL
RT. 3, BOX 57A, THORNTON, TEXAS 76687
817/729-5625—GROESBECK

BILL and LIBBY FREEMAN
RT. 3, BOX 57B, THORNTON, TEXAS 76687
817/729-3706—GROESBECK

WEAVER and PHYLLISS CONNELL
RT. 3, BOX 57A, THORNTON, TEXAS 76687
817/729-3760—GROESBECK

April 21, 1976

Col. Joe H. Sheard, District Engineer
P. O. Box 17300
Ft. Worth, Texas 76102

Dear Col. Sheard,

My husband and I would like to make our position known on the proposed U.S. Fish and Wildlife Reserve in Limestone County.

1. It will take away many a cow and crop from our county's economy.

2. It would take away much money from our schools, our county hospital, and the county overall by loss of property taxes.

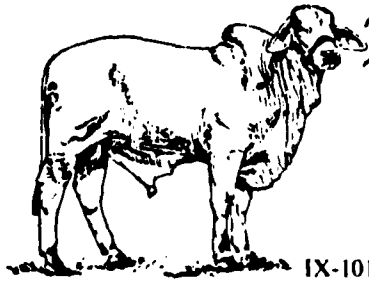
3. And finally, the people of Limestone County have been harassed enough. If the government has its way the county will be made up of lakes and wildlife reserves. It is socialistic, communistic, and we just plain don't like it.

Thank you for your time and attention.

Sincerely,

Mr & Mrs Bill Freeman

Mr. and Mrs. Bill Freeman



IX-101

GROESBECK INSURANCE AGENCY
P. O. Box 557
GROESBECK, TEXAS 76642

Phone 729-3403

DATE April 29 1976

SUBJECT Lake Limestone Project
Groesbeck, Texas

:ol. Joe H. Sheard
)ist Engineer
'. O. Box 17300
't. Worth , Texas 76102

:ol. Joe H. Sheard
)ear Sir;
: would like to express my feelings about the Wildlife Dept. asking for a Game preserve

ıround Lake Limestone.

ie feel here that this is just another expence we can't afford, as this will be another 'ax program, and will be a Disservice instead of a service to our people, we need to have ndustry here and with the Water supply that Lake Limestone will afford , we feel t will be beneficial to our County, and I would like to go record as opposed to their equest and feel they are out of line in asking for us to do this.

'e will appreciate your help on this in anyway you can,as we feel this will be a big tep forward in our County tb have Lake Limestone completed with out interference from he wildlife Dept. Thank You.

Yours Truely,

SIGNED Ernest R. Sheard

☐ PLEASE REPLY ☐ NO REPLY NECESSARY

Col. Joe H. Sheard
District Engineer
P. O. Box 17300
Fort Worth, Texas 76102

April 30, 1976

Dear Sir:

I am protesting as a land owner and resident of Limestone County, the proposal by the U. S. Fish & Wildlife Commission that B. R. A. purchase 15,000 acres as a game reserve, on the following basis:

1. The wild animals can range on my land as well as government land.
2. This area of the state is not over populated with wildlife in the first place.
3. The creation of this lake is assential for cooling water for the lignite generating plants to be built in this area, creating much needed jobs for residents of this area.

Sincerely,

Rosetta Chrisley

Rosetta Chrisley
Rt. 2 Box 142 A
Groesbeck, Texas 76642

Col. Joe H. Sheard
District Engineer
P. O. Box 17300
Fort Worth, Texas 76102

April 30, 1976

Dear Sir:

I am protesting as a land owner and resident of Limestone County, to the rediculeus proposal by the U. S. Fish & Wildlife Commission that B.R.A. purchase 15,000 additional acres as a game reserve, on the following basis:

1. The wild animals can range on my land as well as government land.
2. This area of the state is not over populated with wildlife in the first place.
3. The creation of this lake is assentialto the area as cooling water for lignite electric generating plants ~~XXXXXXXXXX~~ to be built in this area, which would create much needed jobs for the people of this area, and would also create a huge body of water for marine life.

Sincerely.

Tom H. Chrisley Jr.

Tom H. Chrisley, Jr.
RT. 2 Box 142 A
Groesbeck, Texas 76642

May 4, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

My family and I are displaced land owners of Lake Limestone, the project being constructed on the Navasota River in Limestone, Leon and Robertson counties. We objected to the building of the lake because we would lose land owned by our family for many years, land that we use in earning our living as we are ranchers and livestock producers. This loss of land will affect our living if we cannot replace the land. We face many other problems due to the loss of our land, such as tax consequences and the expense of relocation.

The proposed wildlife management area being require of the Brazos River Authority as a requirement for granting a Federal permit will take a great deal more of our land. We would be faced with an additional problem of replacement or of selling out and having to change our way of making a living. Losing our land to the lake is injury enough, without having to add this much more.

In addition, the ad valorem taxes on the local level will have to go up to offset the loss by setting aside this much land for wildlife. My wife and I are at the age we cannot get out and earn more money to pay the extra burden that will be added to us. We will have to dip a little deeper into our living as will others. The wildlife area will not be a benefit to our children, it will not bring in any money to the community, and it will not replace any hunting that my family is losing on land taken by the lake.

A large number of the animals you want to make a home for are trouble anyway. They create problems for the livestock producer, and it is difficult to understand that you want to put us out as food producer. to make a home for animals that are a detriment presently. We believe there are better ways of managing wildlife than confiscation of land.

We strongly urge you to waive this requirement. If we are going to have the lake, we need to be able to develop it to the fullest. The loss of the cattle income from this proposed wildlife land will affect the entire economy of our area.

My family and I are very opposed to the taking of our land for a wildlife management area. You could never pay us enough for what we'd lose and give up.

Sincerely yours,

J. F. Jackson

cc: Mr. R. F. Stephens, Acting Regional Director, U. S. Department of the Interior Coordinator, Fish and Wildlife Service, Albuquerque, N.M.

Representative Emmett H. Whitehead
Box 475, Rusk, Texas 75785

Senator Ron Clower, State Senator
Capitol Station, Austin, Texas 78767

Senator Lloyd Bentson
United States Senate, Washington, D. C. 20510

Senator John Tower
United States Senate, Washington, D. C. 20510

Representative Olin E. Teague
House of Representatives
Washington, D.C., 20510

Walter J. Wells, General Manager
Brazos River Authority
P. O. Box 7555, Waco, Texas 76710

IMAGENE WHITE
309 W. Trinity
Groesbeck, Texas - 76642

May 4, 1976

Colonel Joe H. Sheard
District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

My family and I are displaced land owners of Lake Limestone, the project being constructed on the Navasota River in Limestone, Leon and Robertson Counties. We objected to the building of the lake because we would lose land owned by our family for many years, land that we use in earning our living as we are ranchers and livestock producers. This loss of land will affect our living if we cannot replace the land. We face many other problems due to the loss of our land, such as tax consequences and the expense of relocation.

The proposed wildlife management area being required of the Brazos River Authority as a requirement for granting a Federal permit will take a great deal more of our land. We would be faced with an additional problem of replacement or of selling out and having to change our way of making a living. Losing our land to the lake is injury enough, without having to add this much more.

In addition, the ad valorem taxes on the local level will have to go up to offset the loss by setting aside this much land for wildlife. My mother is at the age she cannot get out and earn more money to pay the extra burden that will be added to her. She will have to dip a little deeper into her living as will all of us. The wildlife area will not be a benefit to our children, it will not bring in any money to the community, and it will not replace any hunting that my family is losing on land taken by the lake.

A large number of the animals you want to make a home for are troubl anyway. They create problems for the livestock producer, and it is difficult to understand that you want to put us out as food producer to make a home for animals that are a detriment presently. We believe there are better ways of managing wildlife than confiscation of land.

We strongly urge you to waive this requirement. If we are going to have the lake, we need to be able to develop it to the fullest. The loss of the cattle income from this proposed wildlife land will affect the entire economy of our area.

My family and I are very opposed to the taking of our land for a wildlife management area. You could never pay us enough for what we'd lose and give up.

Sincerely yours,

Imagene White

Imagene White

cc: Mr. R. F. Stephens, Acting Regional Director, U. S. Department of the Interior Coordinator, Fish and Wildlife Service, Albuquerque, N.M.

Representative Emmett H. Whitehead, Box 475, Rusk, Texas 75785

Senator Ron Clower, State Senator Capitol Station, Austin, Texas 78767

Senator Lloyd Bentson United States Senate, Washington, D.C. 20510

Senator John Tower United States Senate, Washington, D.C. 20510

Representative Olin E. Teague House of Representatives Washington, D.C., 20510

Walter J. Wells, General Manager Brazos River Authority P. O. Box 7555, Waco, Texas 76710

5-10-76
Rt 3, Box 79
Thornton, Texas
76687

Col. Joe W. Sheard
District Engineer
P.O. Box 17300
Ft. Worth, Texas 76102

Dear Sir:

We are writing concerning the takeover of the additional 15,800 acres of land surrounding the new Lake Limestone. In the first place I just wonder if the people in Washington who are pushing this realize that the lake has taken 15,000 (approx.) and another 12,000 + would be taking more than 30,000 acres in the Counties of Limestone, Leon and Robertson. Can you imagine what that will do to the economy? Jes, think how many families will be displaced and without jobs.

I cannot believe that the wildlife will suffer because of the lake. In fact, there isn't that much wildlife here. Where we saw 5 doe last year we are only seeing 2 now. And as far as the Government doing a better job of taking care of the

land we consider that a big mistake. Cattle raisers are doing a good job with land. We have to, as that is our only source of income. What can we people in our 60's expect to do except move into town and crowd the towns and the welfare programs further.

Washington says that we need more recreation areas. There's enough park land in East Texas alone to camp a lot of people if it were only used. For seven years we have gone back and forth to Nacogdoches (our daughter went to S.F.A. Univ.) and we seldom saw anyone going in or out on the roads in the Davy Crockett Parks area.

Preserving wildlife is fine but how about food for our people. If all our land is saved for wildlife and recreation who will feed our people?

Perhaps we can't do any good but at least we can say we tried. Thank you.

Sincerely
A R Watts
Mabel B. Watts

935 Belvedere
Beaumont, Texas 77706
May 12, 1976

Col. Joe H. Sheard
District Engineer
P. O. Box 17300
Fort Worth, Texas 76102

Col Sheard:

This letter is being written to protest the ridiculous request that has been made by the Federal Game and Fish Commission requesting that the B.R.A. buy an additional 15,000 acres of land for a game reserve for snakes, etc. before the Authority receives permission to create Lake Limestone. This condemnation of our land has been imposed upon the landowners of Limestone County against their wishes without any alternatives. Now they wish to condem additional acreage again against our wishes and probably at below appraised value. We are protesting this action most vigorously.

Yours truly,

L. Don Battle

MAY 12, 1976

COL. JOE H. SHEARD
DISTRICT ENGINEER
P. O. BOX 17300
FORT WORTH, TEXAS 76102

COL. SHEARD:

THIS LETTER IS BEING WRITTEN TO PROTEST THE RIDICULOUS REQUEST THAT HAS BEEN MADE BY THE FEDERAL GAME AND FISH COMMISSION REQUESTING THAT THE B.R.A. BUY AN ADDITIONAL 15,000 ACRES OF LAND FOR A GAME RESERVE FOR SNAKES, ETC. BEFORE THE AUTHORITY RECEIVES PERMISSION TO CREATE LAKE LIMESTONE. THIS CONDEMNATION OF OUR LAND HAS BEEN IMPOSED UPON THE LANDOWNERS OF LIMESTONE COUNTY AGAINST THEIR WISHES WITHOUT ANY ALTERNATIVES. NOW THEY WISH TO CONDEM ADDITIONAL ACREAGE AGAIN AGAINST OUR WISHES AND PROBABLY AT BELOW APPRAISED VALUE. WE ARE PROTESTING THIS ACTION MOST VIGOROUSLY.

YOURS TRULY,

Doug Battle

MAY 12, 1976

COL. JOE H. SHEARD
DISTRICT ENGINEER
P. O. BOX 17300
FORT WORTH, TEXAS 76102

COL. SHEARD:

THIS LETTER IS BEING WRITTEN TO PROTEST THE RIDICULOUS REQUEST THAT HAS BEEN MADE BY THE FEDERAL GAME AND FISH COMMISSION REQUESTING THAT THE B.R.A. BUY AN ADDITIONAL 15,000 ACRES OF LAND FOR A GAME RESERVE FOR SNAKES, ETC. BEFORE THE AUTHORITY RECEIVES PERMISSION TO CREATE LAKE LIMESTONE. THIS CONDEMNATION OF OUR LAND HAS BEEN IMPOSED UPON THE LANDOWNERS OF LIMESTONE COUNTY AGAINST THEIR WISHES WITHOUT ANY ALTERNATIVES. NOW THEY WISH TO CONDEM ADDITIONAL ACREAGE AGAIN AGAINST OUR WISHES AND PROBABLY AT BELOW APPRAISED VALUE. WE ARE PROTESTING THIS ACTION MOST VIGOROUSLY.

YOURS TRULY,

Tracy B Bates

AD-A088 709 ARMY ENGINEER DISTRICT FORT WORTH TEX F/G 8/8
STERLING C. ROBERTSON DAM AND LIMESTONE LAKE ON THE NAVASOTA RI--ETC(U)
OCT 76

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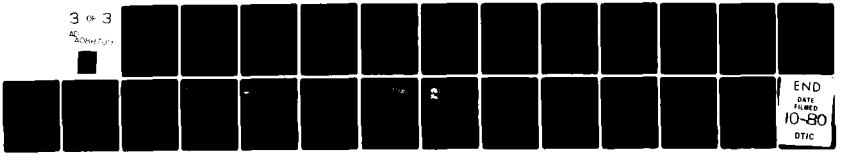

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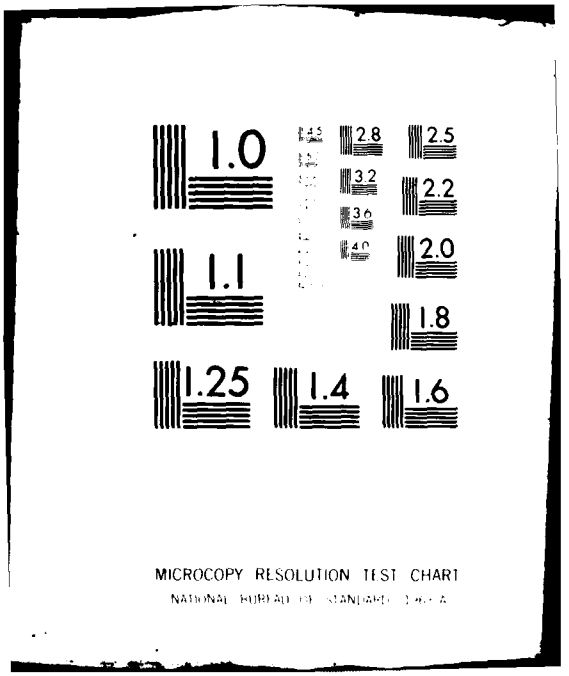
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May 12, 1976

Col. Joe H. Sheard
District Engineer
P. O. Box 17300
Fort Worth, Texas 76102

Col. Sheard:

This letter is being written to protest the ridiculous request that has been made by the Federal Game and Fish Commission requesting that the B.R.A. buy an additional 15,000 acres of land for a game reserve for snakes, etc. before the Authority receives permission to create Lake Limestone. This condemnation of our land has been imposed upon the landowners of Limestone County against their wishes without any alternatives. Now they wish to condem additional acreage again against our wishes and probably at below appraised value. We are protesting this action most vigorously.

Yours truly,

Lisa Battle

MAY 12, 1976

COL. JOE H. SHEARD
DISTRICT ENGINEER
P. O. BOX 17300
FORT WORTH, TEXAS 76102

COL. SHEARD:

THIS LETTER IS BEING WRITTEN TO PROTEST THE RIDICULOUS REQUEST THAT HAS BEEN MADE BY THE FEDERAL GAME AND FISH COMMISSION REQUESTING THAT THE B.R.A. BUY AN ADDITIONAL 15,000 ACRES OF LAND FOR A GAME RESERVE FOR SNAKES, ETC. BEFORE THE AUTHORITY RECEIVES PERMISSION TO CREATE LAKE LIMESTONE. THIS CONDEMNATION OF OUR LAND HAS BEEN IMPOSED UPON THE LANDOWNERS OF LIMESTONE COUNTY AGAINST THEIR WISHES WITHOUT ANY ALTERNATIVES. NOW THEY WISH TO CONDEMN ADDITIONAL ACREAGE AGAIN AGAINST OUR WISHES AND PROBABLY AT BELOW APPRAISED VALUE. WE ARE PROTESTING THIS ACTION MOST VIGOROUSLY.

YOURS TRULY,

Janie Baille

MAY 12, 1970

COL. JOE H. SHEARD
DISTRICT ENGINEER
P. O. BOX 17300
FORT WORTH, TEXAS 76102

COL. SHEARD:

THIS LETTER IS BEING WRITTEN TO PROTEST THE RIDICULOUS REQUEST THAT HAS BEEN MADE BY THE FEDERAL GAME AND FISH COMMISSION REQUESTING THAT THE B.R.A. BUY AN ADDITIONAL 15,000 ACRES OF LAND FOR A GAME RESERVE FOR SNAKES, ETC. BEFORE THE AUTHORITY RECEIVED PERMISSION TO CREATE LAKE LIMESTONE. THIS CONDEMNATION OF OUR LAND HAS BEEN IMPOSED UPON THE LANDOWNERS OF LIMESTONE COUNTY AGAINST THEIR WISHES WITHOUT ANY ALTERNATIVES. NOW THEY WISH TO CONDEM ADDITIONAL ACREAGE AGAIN AGAINST OUR WISHES AND PROBABLY AT BELOW APPRAISED VALUE. WE ARE PROTESTING THIS ACTION MOST VIGOROUSLY.

YOURS TRULY,

Lewis D. Battle

Farm address - Box 105.
Thornton Texas

May 4, 1976

District Engineer
Fort Worth District
U. S. Army Corps of Engineers
P. O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

We, the undersigned persons, are landowners in the proposed wildlife management area being requested as a requirement to issue a Federal permit for the building of Lake Limestone in Limestone, Leon, and Robertson counties. We are opposed to the taking of our land for this purpose, and urge that this requirement be waived. This will cause us to lose land it will be difficult to replace, if possible. The economic loss will reflect in all areas of business in the counties. The taxes will have to go up to off set the loss of income from this land. The wildlife will not provide additional income, nor will the management area provide recreation being taken by the building of the lake such as hunting, and it will even reduce the recreation on the proposed lake. Some of the animals being salvaged are not generally beneficial to the area, for example the coyote, and may bring more troubles to livestock producers than good. We are a ranching area, and this would bring about an undue contest for replacement of land that would simply eliminate some people from the area or cause them to move out of the county. This places animal life superior and above human life. We urge you to dismiss this requirement.

Respectfully submitted, the following undersigned:

Imagene White

J. F. Jackson

Kimbell Hughes

Helen White

Mrs. Helma Lupus Lawrence

Dennis J. Walker

Vestle Wilson

David Hughes

TO WHOM IT MAY CONCERN:

We the undersigned citizens of Limestone County take this means of expressing opposition to the proposal of the Game and Fish Commission that 15,000 acres of Limestone land be purchased and set aside as a game preserve under the contention that the creation of Lake Limestone will be detrimental to the wildlife of eastern Limestone County.

We point out that eastern Limestone County, western Leon County, and northern Robertson County formerly were cotton country, practically all in cultivation, atwhich time the.e was very little wildlife in the area. During the past 25 years, cotton and other row crops have been completely abandoned in this area. As a consequence the area has turned back to grassland, trees and shrubbery, offering ideal habitat for wildlife. Lake Limestone instead of denying refuge for wildlife will in our opinion greatly enhance it by offering an abundant water supply and the kind of habitat that grows in the vicinity of a large lake.

Jack R. Hawkins
Eulala Hawkins
Tom Hawkins
J. O. (O'Neal) Fair
Mrs. Arlie Dailey
Arlie Dailey
Bobby Reed
L. Walker
Dala
W. C. Reed
Doris W. Coldiron
Jimmy Cothran
Howard S. Langford
Loyd Robinson
D. White
Lo Peveham.

Jim H. Walker
K. W. Stone
L. C. Miller
F. P. Ludlow
B W Thompson
W C Thompson
J. E. Oakes
Elex Oakes
Ruby Nell Hitt
Grace Little
E. H. Williams
Chester Sanders
Myrtle Sanders
J. B. Moore

June 1-76

Col. Joe H. Sheard

Dear Sir

This Letter is in regards to the Federal Game + Fish commission. That The Brazos River Authority be required to by 15,800 Acres of land for game preserve. Before the Authority, can go on with Lake Limestone with the construction of Sterling Robertson Dam near Marquez.

I dont know where this is going to end. The Goverment going in taking the people's land. To do what they want to with it.

I would like to know how you are to keep the game + wild life on it. It wont stay on it. It would just as it now, They go where they wont to. You are not going to keep Deer wolves Possums Skunks + coons down there.

Sincerely

Mrs O.C. Vest

Otha C Vest

Mrs J.H. Vest

Thornton Tex
June 1, 1974

Fort Worth District Engineer,
U. S. army corps of Enginner,
Col Jol H. Shea;

Dear Sir;

We wish to state that we are Highly in favor of U. S Fish + Wild life Service establishing a Fish + Game Preserve on and around Lake Limestone Reservoir.

The Publick is paying for the Lake Limestone Reservoir and The lake should be surrounded by a road with the property between the road and lake open to the public.

Some individuals wish to have this lake front for their Private Promotion at the cost of the General Public who Pay the taxes for such necessary reservoirs.

No. Park will be close enough for accessment

eservoirs.

This lake will be closer enough for accessment
om Dallas, Fort Worth, and even Houston; as well
s all the communities in this circled area, and all
ese People wish to have an opportunity to enjoy fish
? imestone.

Please give your consideration to all the people
stead of a few individuals, and help us get establish
U.S. Fish + Wildlife Game Preserve at and around Fish
? imestone.

Thanks for your Service

The H.N. Stacy Family

Route 3 Box 36

Thornton, Tex 76687

'S. If you have time
ease Reply.

Thanks.

113 Meadow Lane
Groesbeck, Texas 76642

June 5, 1976

Colonel Joe H. Sheard
District Engineer
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

As you are aware the Brazos River Authority is constructing a 14,200 lake on the Navasota River (Lake Limestone). This lake will cover 293 acres of land belonging to my mother and I; land that has been in our family for generations. Though I would never have sold an acre except for an unprecedented emergency, I did not fight the building of this lake as I truly can see the need for water and power.

BUT, now an effort is under way to take ever acre we have left up there for a wildlife refuge for "racoons, armadillos, snakes, etc.". Colonel, I've always considered myself an advocate of conservation of our places of natural beauty and of our wildlife but this is the most absurd and ridiculous thing I have ever heard of. It seems that there are a small group of people in our great nation who have nothing do come up with unreal recommendations such as this. Please be advised that I (and every person I have talked with!) oppose this proposal 100%! Hopefully, you will help us defeat this unjust and totally unreal proposal.

Sincerely,

Troy M. Thomason

P.S. Tomorrow, June 6th, brings back memories of 32 years ago. Our Anti-Aircraft Battalion---the 552nd---landed on Utah Beach on D+8, June 14th, and guarded the first American airstrip located 1 mile from the French town of Ste-Mere Eglise. Several members of our 552nd Veterans Association and wives took a "sentimental journey" back to Europe last summer and were wonderfully received by ALL the people where we were at in training, combat and army of occupation!

414 E. Yeagua St.
Groesbeck, Texas 76642
June 5, 1976

Col. Joe W. Shear, Dist. Engineer
U.S. Army Corps of Engineers
P.O. Box 17300
Ft. Worth, Texas 76102

Dear Sir:

Having been a lifelong Citizen of Limestone County and having been born and reared in the Last Prairie Community, I would personally like to take this opportunity to voice my opposition to the utterly ridiculous proposal of the Dept. of Interior to purchase 15,800 acres for a game preserve.

The lives of several hundred life-long tax-paying citizens should not be totally disrupted because of some Crazy notion of some one who lives 100 miles away and probably has never viewed the area.

2ly, the people of Limestone County

are not some markers on a map, but are people who have worked our entire lives to build the farms we have.

The land has also desperately needed mineral resources that could not be tapped if the area was a game preserve.

In Conclusion, I would like to add that the area on both sides of the proposed Lake will sufficiently support any additional wild life in its natural environment that were displaced by the water.

Thank you

Mrs. Vernon Watson

8721 Lanell Lane
Houston, Texas 77055
June 10, 1976

Col. Joe H. Shear
District Engineer
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Col. Shear:

I am writing you in regards to the new Lake Limestone and the proposed takeover of an additional 15,800 acres of land that surrounds the new lake for the creation of a wildlife reserve.

I have interest in land on Texas Farmroad 164 adjacent to the new Lake Limestone in Limestone County, Texas, and I am opposed to the takeover of the additional 15,800 acres for the wildlife reserve. I feel it is unnecessary to create a special reserve because a good environment is already provided for the wildlife in the area by the farmers and homesteaders.

I would appreciate your opposing the creation of such reserve by the takeover of the additional 15,800 acres of land needed.

Sincerely yours,

Robert C. Thompson

Robert C. Thompson

RCT/lt

8721 Lanell Lane
Houston, Texas 77055
June 10, 1976

Col. Joe H. Shear
District Engineer
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Col. Shear:

I have interest in land on Texas Farmroad 164 adjacent to the new Lake Limestone in Limestone County, Texas. I am protesting, and am opposed to the proposed takeover of an additional 15,800 acres of land that surrounds the new lake for the creation of a Wildlife Reserve.

I feel that the farmers and homesteaders in the area provide a good environment for the wildlife in the area, and that it is unnecessary for a special reserve to be provided, at least no 15,800 acres of a reserve.

I would appreciate your support im opposing the takeover of the additional 15,800 acres of land for the creation of such reserve. Thank you.

Sincerely yours,

Letha Thompson

Letha Thompson

WATSON & KENNEDY
ATTORNEYS-AT-LAW
820 LAKE AIR DRIVE
WACO, TEXAS 76710

MURRAY WATSON
KEITH W. KENNEDY
RICHARD V. McCALL

P. O. BOX 80
AREA CODE 8
772-7800

April 26, 1976

U. S. Army Corp of Engineers
819 Taylor Street
Fort Worth, Texas

Re: Brazos River Authority - Application for Permit
for Lake Limestone

Dear Sirs:

It has been brought to my attention by the news media that the pending application of the Brazos River Authority filed with your office for the obtaining of a Federal Permit as required under Section 404 of P. L. 92-500 has met opposition from the United States Fish and Wildlife Service.

Having served in the State Legislature for some sixteen (16) years, representing the Central Texas area which includes Limestone County and being a property owner in Limestone County and a tax payer in this state, I would like to voice my vigorous opposition to the request made by the U.S. Fish and Wildlife Service requiring the Brazos River Authority to acquire an additional 15,800 acres of land in addition to the 15,000 acres required for the reservoir.

If we are to have an orderly development of our natural resources and impounding of water, generating of electrical power, we must be in a position to do so at a reasonable cost. The proposed request by the U.S. Fish and Wildlife Service is preposterous in that it would increase of the cost of the project to the point that it would be completely unfeasible. The same people who have encouraged the U.S. Fish and Wildlife Service to propose this would be the very first ones who would stand on their rights and claim that the cost of water and the cost of electrical power is too high if the entities working on this joint project had to bear this additional cost which would have to be passed on to the consumer.

I sincerely urge you to deny the request made through the protest of the U.S. Fish and Wildlife Service and grant the application for permit as filed by the Brazos River Authority.

Respectfully submitted,

WATSON & KENNEDY

Murray Watson, Jr.
Attorney at Law

MW/cp

Sierra Club LONE STAR CHAPTER

...TO EXPLORE, ENJOY, AND PROTECT THE NATION'S SCENIC RESOURCES...

May 27,1976

4625 Cedar Springs Rd.
Apt. 103
Dallas, Texas 75219

Mr. Gordon A. Walhood, P.E.
Chief, Engineering Division
Fort Worth Office
U.S. Army Corps of Engineers
P.O.Box 17300
Fort Worth, Texas 75219

Dear Sir,

Thank you for the opportunity to comment on the Draft Environmental Statement regarding the permit application by the Brazos River Authority,Texas for the Sterling C. Robertson Dam and Lake Limestone on the Navasota River, Texas.

The fact that approximately $10,692,000 would have spent by July 1976 by the Brazos River Authority is not justification that the project should proceed to completion without adequate provisions to mitigate negative environmental impact. In Texas, there is an increasing reduction of natural and free flowing river and stream systems. The Lone Star Chapter of the Sierra Club is very concerned with this trend. Further, we are concerned with the loss of aquatic and riparian wildlife habitat as well as non-consumtive recreational opportunities.

The proposed project has been estimated to cause the permanent loss of 15,800 acres of bottomland and riparian wildlife habitat, We view this as a serious negative impact on the environment.

We endorse the recommendations by the U.S. Fish and Wildlife Service. The permit request by the applicant should be denied unless the applicant provides mitigation for wildlife habitat destruction. 15,800 acres of land would mitigate wildlife habitat destruction. Further, such costs should be included as costs of the project. Incremental filling of the reservoir should be required as well as low volume releases from the reservoir rather than short term high volume releases.

Sincerely,

Howard Saxion

Howard Saxion, Chairman
Inland Conservation Comm.

cc. U.S. Fish and Wildlife Service
Fort Worth Regional Office

Mr. Richard Evans-Chairman
Lone Star Chapter

TEXAS COMMITTEE ON NATURAL RESOURCES
4144 COCHRAN CHAPEL ROAD
DALLAS, TEXAS 75209
(214) 352-8370

June 8,1976

Mr. Gordon A. Walhood, P.E.
Chief, Engineering Division
Fort Worth District Office
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Mr. Walhood,

Thank you for the opportunity to comment on the Draft Environmental Statement regarding the permit application by the Brazos River Authority, Texas. Permit application, under section 404 of P.L. 92-500, would allow the discharge of dredged and fill materials from Sterling C. Robertson Dam and Lake Limestone.

In the study undertaken by the U.S. Fish and Wildlife Service (USFWS), it was ascertained that approximately 15,800 acres of bottomland hardwoods and wildlife habitat would be destroyed by the construction of Lake Limestone. To mitigate the loss of wildlife habitat, USFWS has recommended the acquisition of 15,800 acres of land at project expense. Further, to lessen negative impacts on wildlife, USFWS has also recommended incremental filling of the reservoir and long term low volume releases of water rather than short term high volume releases.

The Texas Committee on Natural Resources endorses the recommendations of USFWS. Permit should be denied the applicant unless the recommendations by USFWS are instituted.

Sincerely,

Edward C. Fritz

Edward C. Fritz-
Chairman

ECF:hs

National Wildlife Federation

12 16TH ST., N.W., WASHINGTON, D.C. 20036 Phone: 202—797-6800

May 24, 1976

Col. Joe H. Sheard, District Engineer
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102

Dear Colonel Sheard:

The National Wildlife Federation appreciates the opportunity to comment on the Draft Environmental Statement for the Sterling C. Robertson Dam and Limestone Lake on the Navasota River, Texas.

As indicated in the Environmental Impact Statement, the proposed Limestone Lake would require the inundation of approximately 14,200 acres of terrestrial wildlife habitat, and the alteration of additional habitat along the shoreline. The Statement documents the importance of this habitat to both consumptive and non-consumptive recreational users of wildlife resources. Nevertheless the project description makes no mention of any mitigation measures to be implemented, even though the report of the U.S. Fish and Wildlife Service recommended such mitigation.

The National Wildlife Federation concurs with the U.S. Fish and Wildlife Service in recommending termination of the Sterling C. Robertson Dam and Limestone Lake project unless an adequate mitigation area be dedicated and the lake filled incrementally. The permit to be issued under the provisions of Section 404 of Public Law 92-500 should clearly require the mitigation recommendations of the U.S. Fish and Wildlife Service.

Sincerely,

Michael E. Berger

MICHAEL E. BERGER
Conservation Liaison

MEB:sp

cc: Cecil Reid- Sportsmen's Clubs of Texas
Robert E. Apple, NWF Reg. Exec.
Robert J. Misso, Jr.

Texas Environmental Coalition

306 W. 29TH ST., AUSTIN, TEXAS 78705
(512) 474-6046

March 15, 1976

District Engineer
U.S. Army Corps of Engineers
P.O. Box 73000
Fort Worth, Texas 76102

Dear Sir:

It is our understanding that the Corps of Engineers in the Fort Worth District is considering an application under Section 404 for the construction of a large reservoir on the Upper Navasota River by the Brazos River Authority. It is also our information that the present plan for the so-called Limestone Reservoir makes no provisions to compensate for the loss of wildlife habitat entailed by the proposed construction.

We are further informed that the U.S. Fish and Wildlife Service, in concordance with the Texas Parks and Wildlife Department, has recommended to you that the permit be denied unless (1) a modified plan include an adequate mitigation area of some 16,000 acres, as required by the Fish and Wildlife Coordination Act, (2) the lake be filled in stages and (3) the project will not involve high volume releases.

We strongly endorse the position of the U.S. Fish and Wildlife Service, and urge you to act affirmatively upon their recommendation, particularly the first one.

We would also take this opportunity to inquire, whether in this specific instance, the Corps of Engineers is required to file an environmental impact statement and, if so, whether this statement must be distributed to interested parties. We wish to go on record at this time as requesting all information, that is available to the public, for our perusal.

For your information, the Texas Environmental Coalition is a state wide coordinating group with various organizations as members. The latter include not only the usual environmental groups but a variety of professional organizations such as the State Bar Association, the Texas Medical Association, and others interested in the conservation of our natural resources and the wellbeing of Texas citizens.

Thank you for your cooperation,

Sincerely,

Richard W. Tims

Richard Tims, President

CC: Texas Parks & Wildlife Dept.
U.S. Fish & Wildlife Service

ENVIRONMENTAL ACTION COUNCIL
of BRAZOS COUNTY

College Station TX 77840

P.O. Box 785

March 18, 1976

District Engineer
Corps of Engineers US Army
P. O. Box 17300
Fort Worth, Texas 76102

Re: Limestone dam and reservoir

Dear Sir:

On February 13, 1976, Cornelius van Bavel sent you a letter concerning his committee's endorsement of the Texas Parks and Wildlife Department's recommendations on the so called Limestone dam and reservoir on the Navasota River. These recommendations essentially were that a permit should be denied until adequate mitigation area be dedicated and that the lake be filled in stages.

This matter was discussed at a recent membership meeting of the Environmental Action Council and we voted to support Mr. van Bavel's committee on Water Resources in their recommendations.

I would also like to take this opportunity to ask if the Corps of Engineers is required to file an Environmental Impact Study on this project. If so, we would very much appreciate a copy.

Sincerely yours,

Susan Mellor
President, Environmental Action
Council of Brazos County

LITERATURE CITED

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BRAZOS RIVER AUTHORITY. 1974a. Upper Navasota Dam and Reservoir on the Navasota River, Brazos River Basin, Robertson, Leon and Limestone Counties, Texas. Prepared by URS/Forrest and Cotton, Inc. 31p. plus appendixes.

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_____. 1975. Water Quality Management Plan for the Brazos Basin. Prepared for the Texas Water Quality Board by the Brazos River Authority, Waco, Tex.

_____. 1976. Personal Communication, Mr. Carson Hoge.

BRAZOS VALLEY DEVELOPMENT COUNCIL. 1975. BVDC Comprehensive Planning, Regional Planning Report No. 6; Bryan, Tex.

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TABLE A-1

SURFACE WATER QUALITY
SAMPLE STATION ABOVE PROPOSED IMPOUNDMENT

Parameter mg/l unless noted	High	Average[2]	Low	Most Stringent Standard	No. Samples (1 Per Month)	Detection Limit
Alkalinity	211	190	169	[1]	2	
Ammonia	*	*	*	0.02	10	1.0 mg/l
Bio. Oxy. Demand	3.0	2.1	1.2	0.5	2	
Boron	4.2	1.2	*	1.0	12	0.100 mg/l
Chloride	600	191	18.5	100	12	
Dissolved Oxygen (Minimum)	10.6	8.0	5.8	5.0	12	
Fecal Coliforms[3] (No/100 ml)	1200	160	15	200	12	1/100 ml
Iron	0.36	0.06	*	0.3	11	0.001 mg/l
Mercury	0.110	0.01	*	0.002	12	0.0005 mg/l
Nitrate	3.80	0.82	*	10.0	5	0.100 mg/l
Oil & Grease	4.18	1.75	*	Virtually None	12	0.100 mg/l
pH[3] (Accepted Range)	8.8	7.6	5.0	6.5 - 8.5	12	
Phenols	0.070	0.017	0.002	0.001	12	0.001 mg/l
Phosphorous	0.190	0.145	0.100	0.1	2	
Phosphate	25	17.5	10		2	
Sulfate	12.8	7.78	2.6	50	12	
Suspended Solids	250	89	13.5	80	12	1.0 mg/l
Tot. Dissol. Solids	2600	837	148	400	12	
Vanadium	<0.400		<0.350	0.1	2	

Data Source: SWRI (1975)

[1] Not more than 25% decrease from natural conditions.
* Less than detection limit.
[2] Values below detection limit averaged as one half of the detection limit.
[3] Average is geometric mean.

TABLE A-2

SURFACE WATER QUALITY
SAMPLE STATION BELOW PROPOSED IMPOUNDMENT

Parameter mg/l unless noted	High	Average 2/	Low	Most Stringent Standard	No. Samples (1 Per Month)	Detection Limit
Alkalinity	-	-	-	1/	0	
Ammonia	*	*	*	0.02	10	0.05 mg/l
Bio. Oxy. Demand	-	-	-	0.5	0	
Boron	4.60	1.70	0.79	1.0	12	0.100 mg/l
Chloride	569	169	26.0	100	7	
Dissolved Oxygen (Minimum)	12.5	8.05	6.2	5.0	12	
Fecal Coliforms 3/ (No/100ml)	100	70	*	200	12	1/100 ml
Iron	0.950	0.16	*	0.3	7	0.001 mg/l
Mercury	*	*	*	0.002	7	0.0005 mg/l
Nitrate	-	-	-	10.0	0	
Oil & Grease	8.1	2.93	*	Virtually None	7	0.1 mg/l
pH 3/ (Accepted Range)	8.1	7.3	5.5	6.5 - 8.5	12	
Phenols	0.053	0.0149	*	0.001	7	0.001 mg/l
Phosphate	-	-	-		0	
Phosphorous	-	-	-	0.1	0	
Sulfate	11	6.56	2.2	50	7	
Suspended Solids	126	67	31	80	7	1.0 mg/l
Tot. Dissol. Solids	2400	711	122	400	7	
Vanadium	-	-	-	0.1	0	

Data source: SWRI (1975)
1/ Not more than 25% decrease from natural conditions.
* Less than detection limit.
- Not analyzed.
2/ Values below detection limit averaged as one half of the detection limit.
3/ Average is geometric mean.