



United States
Department of
Agriculture

Natural Resources
Conservation
Service

Internally Prepared Copy

**FINAL
SUPPLEMENTAL
WATERSHED PLAN No. V &
ENVIRONMENTAL ASSESSMENT
For
Rehabilitation of Floodwater Retarding
Structure No. 3C
Of the
EAST FORK ABOVE LAVON WATERSHED
Of the Trinity River Watershed
Collin and Grayson Counties, Texas**

HILL COUNTY

**PREPARED BY:
U.S. Department of Agriculture
Natural Resources Conservation Service**

HILL COUNTY

**In Cooperation With:
Collin County Soil and Water Conservation District
Upper Elm-Red Soil and Water Conservation District
Collin County Commissioners Court
City of McKinney, Texas
Grayson County Commissioners Court
City of Van Alstyne, Texas
City of Anna, Texas**

August 2002

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SUPPLEMENTAL WATERSHED WORK PLAN AGREEMENT NUMBER V

Between the

Collin County Soil and Water Conservation District
Local Organization

Collin County Commissioners Court
Local Organization

City of McKinney
Local Organization

Upper Elm-Red Soil and Water Conservation District
Local Organization

Grayson County Commissioners Court
Local Organization

City of Van Alstyne
Local Organization

City of Anna
Local Organization

(Hereinafter referred to as the Sponsoring Local Organization)

and the

Natural Resources Conservation Service
United States Department of Agriculture
(Hereinafter referred to as the Service)

Whereas, The Watershed Work Plan Agreement for East Fork Above Lavon Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 12th day of September, 1956; and

Whereas, the Supplemental Watershed Work Plan Agreement for East Fork Above Lavon Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 1st day of December 1964; and

Whereas, the Supplemental Watershed Work Plan Agreement No II for East Fork Above Lavon Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 19th day of September, 1972; and

Whereas, the Supplemental Watershed Work Plan Agreement No III for East Fork Above Lavon Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 28th day April, 1977; and

Whereas, the Supplemental Watershed Work Plan Agreement No IV for East Fork Above Lavon Watershed, State of Texas, executed by the Sponsoring Local Organization named therein and the Service, became effective on the 28th day of November, 2001 and

Whereas, in order to carry out the watershed work plan for said watershed, it has become necessary to modify said Watershed Work Plan Agreement, as supplemented; and

Whereas, it has become necessary to modify the Watershed Work Plan agreement, as supplemented to include current requirements for EEO and drug work place enforcement: and

Whereas, it has become necessary to modify said watershed work plan, as supplemented by modifying Floodwater Retarding Structure (FRS) No. 3C to bring it up to current performance and safety standards; and

Whereas, a Supplemental Watershed Work Plan/Environmental Assessment which modifies the Watershed Work Plan as supplemented, for said watershed has been developed through the cooperative efforts of the Sponsoring Local Organization and the Service, which plan is annexed to and made a part of this agreement; and

Now, therefore, the Secretary of Agriculture through the NRCS and the Sponsors hereby agree upon the following modifications of the terms, conditions, and stipulations of said watershed agreement, as supplemented;

(1). Paragraph No. 15 is added to the plan agreement with respect to the Rehabilitation of Floodwater Retarding Structure (FRS) No. 3C:

The percentages of the total rehabilitation costs to be paid by the Sponsoring Local Organization and the Service are as follows:

<u>Rehabilitation of</u>	<u>Sponsors</u>	<u>NRCS</u>	<u>Estimated Total Rehabilitation Costs</u>
FRS No. 3C	35 %	65 %	\$1,215,700

An amount up to the percentage rate specified may be satisfied by the Sponsoring Local Organization for rehabilitation cost of an element such as engineering, real property acquisition or construction. The decision to, and arrangements for, such action will be negotiated between the sponsors and NRCS and will be included in a project agreement executed immediately before implementation. NRCS costs will not exceed 100 percent of the construction cost.

NRCS is responsible for the rehabilitation engineering and project administration costs it incurs. These costs will not be included in the above total costs.

(2). Paragraph No. 16 is added to the plan agreement in accordance with the certification regarding drug-free workplace requirements (7CFR 3017, Subpart F) as follows:

By signing this watershed agreement, the sponsors are providing the certification set out below. If it is later determined that the sponsors knowingly rendered a false certification, or otherwise violated the requirements of the Drug-Free Workplace Act, the NRCS, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.

Controlled substance means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation (21 CFR 1308.11 through 1308.15);

Conviction means a finding of (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

Criminal drug statute means a Federal or non-Federal criminal statute involving the manufacturing, distribution, dispensing, use, or possession of any controlled substance;

Employee means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) all direct charge employees; (ii) all indirect charge employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantees' payroll; or employees of sub recipients or subcontractors in covered workplaces).

Certification:

A. The sponsors certify that they will or will continue to provide a drug-free workplace by:

(1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(2) Establishing an ongoing drug-free awareness program to inform employees about--

(a) The danger of drug abuse in the workplace;

(b) The grantee's policy of maintaining a drug-free workplace;

(c) Any available drug counseling, rehabilitation, and employee assistance programs; and

(d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (1);

(4) Notifying the employee in the statement required by paragraph (1) that, as a condition of employment under the grant, the employee will--

(a) Abide by the terms of the statement; and

(b) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(5) Notifying the NRCS in writing, within ten calendar days after receiving notice under paragraph (4)(b) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(6) Taking one of the following actions, within 30 calendar days of receiving notice under paragraph (4)(b), with respect to any employee who is so convicted--

(a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (1), (2), (3), (4), (5), and (6)

B. The sponsors may provide a list of the site(s) for the performance of work done in connection with a specific project or other agreement.

C. Agencies shall keep the original of all disclosure reports in the official files of the agency.

(3). Paragraph No. 17 is added to the plan agreement in accordance with the certification regarding lobbying (7 CFR 3018) as follows:

(1) The sponsors certify to the best of their knowledge and belief, that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the sponsors, to any person for influencing or attempting to influence an officer or employee of an agency, member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c) The sponsors shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

(2) This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

(4). Paragraph No. 18 is added to the plan agreement in accordance with the certification regarding debarment, suspension, and other responsibility matters - primary covered transactions (7 CFR 3017) as follows:

(1) The sponsors certify to the best of their knowledge and belief, that they and their principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) Where the primary sponsors are unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this agreement.

The Sponsors and NRCS further agree to all other terms, conditions, and stipulations of said watershed agreement not modified herein.

Upper Elm-Red Soil and Water Conservation District
Local Organization

By C. William Hermes

Title Chairman

Date 8/12/2002

The signing of this agreement was authorized by a resolution of the governing body of the Upper Elm-Red Soil and Water Conservation District adopted at a meeting held on 8/12/2002.

Charles Bayu
(Secretary, Local Organization)

Grayson County Commissioners Court
Local Organization

By Horace Groff

Title County Judge

Date 8/12/2002

The signing of this agreement was authorized by a resolution of the governing body of the Grayson County Commissioners Court adopted at a meeting held on 8/12/2002.

Dave Jackson
(Secretary, Local Organization)

City of Van Alstyne, Texas
Local Organization

By Walter R. ...

Title MAYOR PRO-TEM

Date 8-14-02

The signing of this agreement was authorized by a resolution of the governing body of the City of Van Alstyne, Texas adopted at a meeting held on 8/13/2002.

Wayne E. ...
(Secretary, Local Organization)

Collin County Soil and Water Conservation District

Local Organization

By J. E. Lynch

Title Chairman

Date 8-14-02

The signing of this agreement was authorized by a resolution of the governing body of the Collin County Soil and Water Conservation District adopted at a meeting held on 8-14-02.

Bill Whiting
(Secretary, Local Organization)

City of McKinney, Texas

Local Organization

By Lawrence W. Blum

Title City Manager

Date 8-26-02

The signing of this agreement was authorized by a resolution of the governing body of the City of McKinney, Texas adopted at a meeting held on August 20, 2002.

Trinity Spencer
(Secretary, Local Organization)

Collin County Commissioners Court

Local Organization

By Ken Lavin

Title City Judge

Date 9-5-2002

The signing of this agreement was authorized by a resolution of the governing body of the Collin County Commissioners Court adopted at a meeting held on August 29, 2002.

Kimberly M. Sheldon
(Secretary, Local Organization)

City of Anna, Texas
Local Organization

By Ronald R. Ferguson
Title Mayor
Date 8-14-02

The signing of this agreement was authorized by a resolution of the governing body of the City of Anna, Texas adopted at a meeting held on August 13, 2002.

[Signature]
(Secretary, Local Organization)

Natural Resources Conservation Service
United States Department of Agriculture

Approved By [Signature]
Acting NRCS State Conservationist

Date SEP 17 2002

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SUMMARY OF SUPPLEMENTAL PLAN/ENVIRONMENTAL ASSESSMENT

Project name: Rehabilitation of Floodwater Retarding Structure (FRS) No. 3C, East Fork Above Lavon Watershed, Collin County, Texas

Sponsors: Collin County Soil and Water Conservation District, Upper Elm-Red Soil and Water Conservation District, Grayson County Commissioners Court, Collin County Commissioners Court, City of McKinney, City of Anna, and City of Van Alstyne.

Description of recommended plan: The preferred alternative is the Rehabilitation of FRS No. 3C to comply with current performance and safety standards and maintain flood control benefits.

Resource Information:

Size of planning area: 1,312 acres

Prime and important farmland (acres): None

Number of minority farmers: None

Wetlands: 15 acres of open water (Palustrine) wetland (current pool area of FRS No. 3)

Endangered species: None

Cultural resources: None known

Problem identification: Urban development since FRS No. 3C was constructed has resulted in the dam not meeting current dam safety standards. Failure of the dam would result in significant property damage and potential loss of life.

Alternative plans considered: Alternative plans considered were the No Action or Future Without (Controlled Breach of FRS No. 3C), Decommission of FRS No. 3C (Remove the footprint of FRS No. 3C) and Rehabilitation of FRS No. 3C to meet current performance and safety standards.

Brief description of each alternative: The "No Action" (No Federal Involvement) Alternative consisted of making the minimum breach in the dam to reduce the hazard of failure. The stream channel through the sediment pool would be reconnected and exposed areas would be re-vegetated. The City of McKinney would construct a new bridge at Virginia Parkway and do the necessary channel work downstream to stabilize the channel.

The Decommission of the Dam Alternative consisted of removing of the footprint of the dam and restoring natural conditions as much as possible. The dam and principal spillway would be removed. The auxiliary spillway would be filled. The stream channel through the sediment pool would be reconnected. The sediment pool would be shaped and landscaped and re-vegetated. A riparian zone along the stream channel would be restored. The City of McKinney would construct a new bridge at Virginia Parkway and do the necessary channel work downstream to stabilize the channel.

Rehabilitation of the Dam Alternative consists of providing additional principal and auxiliary spillway capacity to meet current performance and safety standards and extend the service life for another 50 years or more to maintain flood control benefits.

Project purpose: Flood Prevention.

Principal project measure: Rehabilitation of FRS No. 3C.

Project costs:	<u>Federal funds</u>	<u>Other Funds</u>	<u>Total</u>
	\$790,205 (65%)	\$425,495 (35%)	\$1,215,700 (100%)

Structural measure: Rehabilitation of FRS No. 3C.

Project benefits: Economic average annual benefits of the project are derived from assuring the continued performance of FRS No. 3C by meeting current performance and safety standards. Benefits are based on continuing protection to the downstream area, maintaining upstream property values, and avoiding projected costs associated with the absence of FRS No. 3C. Total average annual benefits are estimated to be \$155,600, which include updated original downstream benefits (\$12,700), avoiding devaluation of upstream property values (\$84,500), elimination of the need to modify Virginia Parkway (\$25,800), and avoiding modifications to the City of McKinney's floodplain management and storm water management plans (\$32,600).

Other impacts: The aesthetics of the area, the wetland values and the recreational opportunities will be maintained. Current upstream property values will be unaffected. In the absence of FRS No. 3C, nearly 170 properties located upstream would experience reduced values.

Land use changes: There will be no land use changes.

Environmental values changed or lost: No compensatory mitigation is planned. Installation of the preferred alternative will disturb only a minimal amount of woody vegetation. Disturbed areas will be replanted with a mixture of native species including woody species where adapted.

Wetlands: None

Fisheries: None

Cultural Resources: None

Prime farmland: None

SUPPLEMENTAL WATERSHED PLAN No. V & ENVIRONMENTAL ASSESSMENT

INTRODUCTION

The East Fork Above Lavon (EFAL) Watershed Plan was prepared in 1956 under the authority of Public Law 78-534, as amended, and has been modified several times to reflect changing conditions. The Plan, as supplemented, provides for application of conservation practices for watershed protection, flood prevention, municipal water, and water-based recreation. The local sponsors of the watershed project are Collin County Soil and Water Conservation District, Upper Elm-Fork Soil and Water Conservation District, Collin County Commissioners Court, the City of Anna, the City of Van Alstyne, Grayson County Commissioners Court, and the City of McKinney. Federal assistance is being provided by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

The watershed, located in Collin and Grayson Counties, Texas, comprised of 224,935 acres (about 351 square miles) is a sub-watershed of the Trinity River Watershed.

Within the East Fork Above Lavon (EFAL) Watershed major changes in land use from a rural setting to an urban setting has occurred in some parts of the watershed. This land use change has occurred upstream and downstream of Floodwater Retarding Structure (FRS) No. 3C of EFAL Watershed. FRS No. 3C provides flood prevention and other benefits. Because of urbanization, FRS No. 3C does not meet current performance and safety standards.

This Supplemental Watershed Plan and Environmental Assessment is prepared for the rehabilitation of FRS No. 3C. The Small Watershed Rehabilitation Amendments of 2000 (Section 313, Public Law 106-472) provides the authority for rehabilitation.

PURPOSE AND NEED

The purposes of FRS No. 3C rehabilitation are to maintain present level of flood control benefits and comply with the current performance and safety standards. FRS No. 3C was built in 1958 in a rural setting and is now surrounded by urban development. There is a need to protect downstream life, properties and infrastructure, reduce the risk of potential loss of life, maintain property values upstream and maintain the urban storm water management system.

PROJECT SETTING

This Supplemental Plan/Environmental Assessment is made for the watershed upstream of FRS No. 3C and the downstream area affected by a breach of the existing dam (Appendix C). This is the drainage area of an unnamed tributary of Wilson Creek. FRS No. 3C is part of the watershed area of the East Fork Above Lavon Watershed (EFAL). EFAL Watershed is located in the

Trinity River Basin. A description of the East Fork Above Lavon Watershed and the Trinity River Watershed (Authorized by Public Law 78-534, as amended) can be found in the East Fork Above Lavon Watershed Plan dated August 1956 and the Environmental Impact Statement for the Trinity River Watershed, dated July 1979.

The rehabilitation project area has a drainage area of about 1,312 acres. The majority of the area is located within the western city limits of the city of McKinney, Texas, Collin County. All of the 1,312 acres is either urbanized or projected to be urbanized within the near future. Land use is residential, commercial, lakes, park and open areas. Virginia Parkway runs east to west through the area.

Average annual rainfall is slightly less than 35 inches and temperatures range from an average high of 96 degrees Fahrenheit in July to an average low of 34 degrees in January. Elevations range from 450 ft msl (mean sea level) to 700 ft msl.

The watershed of FRS No. 3C lies within the Blackland Prairie Physiographic Area. The topography has moderate relief with well-rounded hills and wide shallow valleys. The stream pattern is well developed. Although generally dendritic, linear segments of channels and valleys occur. Their trends are controlled by fracture directions in the underlying Austin chalk formation. Historic sedimentation rates in the region were high averaging about 1.5 to 2 ac-ft/sq.mi./yr because of agricultural use of the rich blackland soils. Urbanization of the FRS No. 3C watershed will reduce future sedimentation rates to 0.6 ac-ft/sq.mi./yr.

Description of Existing Dam

The Collin County Soil and Water Conservation District built FRS No. 3C with assistance from the Natural Resources Conservation Service (NRCS) as part of the East Fork above Lavon (EFAL) Watershed Project. EFAL Watershed, approved in 1956, provided watershed protection and agricultural flood reduction. The project also provided protection to roads and bridges. There was no planned protection to urban properties. The drainage areas of the floodwater retarding structures were predominantly agriculture (cropland and grassland).

McKinney was a small town with a population of about 10,000 when the original plan was developed. The population of McKinney (present population about 66,000) and the surrounding areas has mushroomed in recent years with continued growth projected. The watershed area of FRS No. 3C is completely developed or projected to be completely developed in the near future.

FRS No. 3C was constructed as a low hazard dam designed to store the sediment expected to accumulate over a 50-year period and provide floodwater storage. Sufficient floodwater detention storage was provided for the auxiliary emergency spillway to have less than a four percent chance (25 year frequency) of functioning in any year.

FRS No. 3C was constructed in 1958 and has a drainage area of 915 acres. It was constructed as an earth fill dam with a vegetated auxiliary spillway. The principal spillway is a 17-inch diameter reinforced concrete pipe with an orifice plate restricting flow to 9 cubic feet per second. The total storage capacity below the elevation of the emergency spillway is 528 acre-feet with 160 acre-feet reserved for sediment accumulation over a 50-year period. The remaining 368

acre-feet was reserved for floodwater detention storage. The maximum height of the dam is 35 feet. The surface area of the sediment pool is about 15 acres.

FRS No. 3C continues to function as planned and is an integral part of the City of McKinney's floodwater management and storm water management plans. Investigations indicate that the dam, including the principal spillway is structurally sound and is being maintained properly. A recent sediment survey, completed in 2001, indicates that there is available sediment storage capacity to store the sediment accumulation for the next 82 years. The City of McKinney has taken a proactive role in controlling development in the area that would be flooded by a dam failure. However the dam does not meet current performance and safety standards for a dam located in an urban area.

Geology

Bedrock at FRS No. 3C consists of rocks of the Austin group. The chalk is moderately soft to moderately hard, very slightly fractured, slight to moderately weathered, and medium to thick bedded. The bedrock contains clay or shale layers inter-bedded with chalk. At shallow depths clay layers underlying fractured chalk may produce localized perched water tables that cause intermittent hillside seeps. An exposure at the outlet of the emergency spillway indicates that residual soils may be thickest in the vicinity of the inside edge of the spillway and the left abutment of the embankment.

Known alluvium at FRS No. 3C consists of silty clay with some sand and gravel. Exposures suggest a complex stratigraphy. A surficial dark brown to black clay of medium to stiff consistency overlies a stiff to very stiff dark brown clay with numerous calcareous concretions. The original geologic investigation suggests the presence of at least two buried channels with alluvial thickness exceeding 20 feet. The composition of the deepest alluvial materials is unknown.

Dam Safety

FRS No. 3C has been identified as a high hazard dam as a result of urban development in the area that will be potentially affected by a breach of the dam and Virginia Parkway, a major transportation route in the City. Breach studies indicate that Virginia Parkway would be overtopped by approximately nine feet if the dam failed, resulting in property and infrastructure damages and potential for loss of life. Portions of Virginia Woods Subdivision would also be inundated. The breach floodwater surface would be 0.4 feet below three of the residences' first floor elevations. Four more residences would have breach flood waters only 0.1 feet below the first floor elevations. Water depths in the back and side yards of these homes could be ten to fifteen feet deep. There would be a potential for property damage and a potential threat to lives of the residents within this area.

Although the structure is presently sound, there is always the risk of failure. The most likely cause of FRS No. 3C failing is by overtopping. Studies indicate there is less than 0.2 percent chance of a storm (500-year frequency) occurring in any year that would cause the dam to overtop. However, in the unlikely event that the structure was overtopped and failed the most serious failure would be a breach in the highest point. The breach is assumed to be as wide as the dam is high (35 feet). This would result in a breach hydrograph that has a peak discharge of 26,000 cubic feet per second (cfs).

Cultural Resources

No prior cultural resources identification activities have taken place in association with the original FRS No. 3C. The dam and reservoir was constructed in 1958, prior to passage and implementation of the National Historic Preservation Act and other historic preservation laws that now require NRCS (formerly the Soil Conservation Service) to consider effects to significant cultural resources.

A search of the Texas Archeological Sites Atlas, completed in February 2002, did not reveal any recorded archeological or historic sites in the vicinity of the dam or reservoir.

As the proposed rehabilitation project is a federally assisted undertaking, NRCS has requested, in a letter dated February 25, 2002, the input of the State Historic Preservation Officer (SHPO) toward meeting its responsibility to consider effects to historic properties that may be affected. NRCS proposes to complete a cultural resources survey on all areas of new disturbance associated with the proposed project. By reply letter dated March 19, 2002, the SHPO concurred in the NRCS proposed approach for cultural resources consideration.

Prime Farmland

There is no prime farmland located in the project area. The Farmland Protection Policy Act of 1981, as amended, states in 7 CFR 658.2 "farmland does not include land already in or committed to urban development or water storage". Inasmuch as all of the project area is committed to urban development or water storage there is no prime farmland located in the project area.

Threatened and Endangered Species

Data provided by the US Fish and Wildlife service indicates that Collin County is within the range of the endangered whooping crane (*Grus Americana*) and the threatened bald eagle (*Haliaeetus leucocephalus*). FRS No. 3C does not provide critical habitat for either of these species.

Wetlands

FRS No. 3C provides about 15 acres of open water (Palustrine) wetland (current pool area of FRS No.3C) that was created by the construction of the site. Emergent and submerged vegetation occurs on and along shorelines in shallow water areas. Aquatic vegetation is limited due to turbidity and emergent shoreline vegetation is controlled to keep shorelines open for aesthetic reasons. This created wetland provides habitat for reptiles and amphibians, waterfowl, and wading birds. Stream channels above and below the site are narrow and limited to flow only during periods of moderate to heavy rainfall.

Status of O&M

Collin County is responsible for the maintenance of FRS No. 3C. The City of McKinney provides assistance in the operation and maintenance. Inspections of the dam indicated that the dam is being operated and maintained properly. The City has been very proactive in restricting

development in the area that would be flooded by a dam failure. The City also is actively working to keep sedimentation and increased flooding from development to a minimum.

FRS No. 3C has become an integral part of the Mallard Lakes Subdivision. The Mallard Lakes Homeowners Association has budgeted about \$6,000 annually for maintenance of the dam, the sediment pool and appurtenances around the lake. The sediment pool has become a focal point of the subdivision for scenic views, wildlife and tranquil walks around the lake.

PROBLEMS AND OPPORTUNITIES

The basic concern is the safety of FRS No. 3C and the potential problems that failure of the dam would cause. The primary objective of the project is to minimize the risk of failure and to assure that the structure will continue to function safely in the future. FRS No. 3C is an integral part of the City's floodplain management and storm water management plans. Loss of FRS No. 3C would require the City to install measures to offset the loss in sediment and floodwater storage capacity.

Although FRS No. 3C is functioning as originally planned and providing downstream flood protection, there is a possibility of the dam failing from overtopping if a storm occurs greater than the structure was constructed to control. If the dam fails, Virginia Parkway, a major traffic thoroughfare, would be overtopped by approximately nine feet at a maximum velocity of 8 feet per second for a duration of four hours. Portions of several residential lots would be flooded ten to fifteen feet. Any vehicles on the parkway would be washed downstream and the road surface would be damaged. Traffic would be disrupted while the Parkway was repaired which would take about 90 days. Approximately 5500 cubic yards of fill material from the dam would be moved downstream clogging stream channels and increasing flooding. Dam failure would result in the loss of the sediment pool 15 acres of open water (Palustrine) wetland that presently provides fish and waterfowl habitat and adds significantly to property values in Mallard Lakes Subdivision. It is estimated that removal of FRS No. 3C would reduce lot values in the subdivision by 10 to 30 percent.

Although there is sufficient capacity in the sediment pool to assure proper functioning of the floodwater retarding structure, sediment accumulation in the sediment pool is a serious concern to the local residents. They are very interested in maintaining normal healthy water levels in the sediment pool and improving its value for fish and wildlife. They would prefer for the water depth to be at least an average of 10 feet.

SCOPE OF ENVIRONMENTAL ASSESSMENT

A process was used to determine the issues significant in defining the problems, and formulating and evaluating alternatives. Scoping included a public meeting, written request for input from state, local and federal agencies, and a coordination meeting with appropriate agencies. A steering committee of sponsors and local citizens was also formed to solicit input.

Table A presents the results of the scoping process.

Table A – Identified Concerns			
Economic, social, environmental, and cultural concerns	Degree of Concern	Degree of Significance to Decision Making	Remarks
Dam Safety	High	High	
Human Health & Safety	High	High	
Flood Damages	High	High	
T&E Species	High	High	No Impact
Cultural Resources	High	High	No Impact
Prime Farm Lands	Low	Low	None Present
Wetlands	High	High	
Air Quality	Low	Low	
Water Quality	Medium	Medium	
Water Quantity	High	High	
Aesthetics	High	Medium	
Sedimentation	High	High	
Land Values	High	High	
Fish Habitat	Medium	Medium	
Wildlife Habitat	Medium	Medium	
Recreation	Medium	Medium	
Floodplain Management Plan	High	High	
Storm Water Management Plan	High	High	

FORMULATION AND COMPARISON OF ALTERNATIVES

Background

The emergency spillway of FRS No. 3C has the capacity to carry the runoff from 58 percent of the probable maximum flood (PMF) without overtopping the dam. FRS No. 3C has been identified as a high hazard dam because of development within the area that will be flooded by a breach of the dam. Virginia Parkway, a major transportation route in the city, is located immediately downstream of the dam. Also, there is a high probability that Virginia Parkway may be widened in the future to accommodate increased traffic.

The City of McKinney has taken a proactive role in developing and implementing a flood plain management plan and a storm water management plan. The plans include:

- Controlling development in the 100-year flood plain.
- Restricting development in the breach area of low hazard floodwater retarding structures.

- Requiring measures to be installed to prevent increases in peak discharges from storm events.
- Controlling pollutants entering the streams.

The City of McKinney considered the effects of the installed floodwater retarding structures in developing their flood plain management and storm water management plans (storm water ordinances). The McKinney Flood Plain Management Study prepared in 1988 by Nathan D. Maier, Consulting Engineers, Inc. describes the importance of the floodwater retarding structures in reducing storm peaks and points out that flood peaks will be increased significantly if the structures failed or were not in place. Flood plain maps were developed considering the floodwater retarding structures in place.

FRS No. 3C has benefited development in the areas upstream by reducing the cost of development (installing measures to prevent increases in downstream peaks). FRS No. 3C has also increased the value of the properties located in the surrounding subdivision by creating a water body and open areas for the residents. Lots located around the sediment pool are valued higher than other lots in the area. A hiking trail has been installed in the detention pool and is available to the residents. Although the pool is not used for fishing or swimming, it provides a pleasing environment as well as habitat for fish and some waterfowl. FRS No. 3C has also reduced downstream peak discharges and flood depths resulting in reduced flood damages.

FORMULATION OF ALTERNATIVES

A wide range of nonstructural and structural measures was considered singly and in combination as alternatives were formulated. Nonstructural measures included flood plain management, liability insurance, zoning, flood warning systems, flood proofing of properties, installation of storm water detention structures and relocation of properties out of the breach area and/or floodplain. Structural measures included removal of sediment accumulation, planned breach of the dam, decommissioning (removal) of FRS No. 3C, adding a larger principal spillway, raising the dam, increasing the capacity of the emergency spillway and channel work. Also consideration was given to installing an additional principal spillway, reinforcing the existing auxiliary spillway, and reinforcing (hardening) the embankment with concrete cellular blocks (TRI-LOCK) so that floodwater flowing over the dam would not cause a breach. A 50-year project life was established as well as a 50-year period of analysis. All alternatives were planned to function for a minimum of 50-years with proper maintenance. Alternatives eligible for financial assistance under Section 313 of Public Law 106-472, "The Small Watershed Rehabilitation Amendments of 2000" and alternatives ineligible for financial assistance were developed. To be eligible for federal assistance, an alternative must meet the requirement as contained in Public Law 106-472.

The Dredging Feasibility Study for Eldorado and Mallard Lakes in McKinney, Texas, dated March 2001, produced by Freese and Nichols Inc., indicated that the sediment pool of FRS No. 3C has 74 acre-feet of sediment storage capacity remaining. The sediment accumulation over the next 50 years is estimated to be 45 acre-feet. This means that the structure has sufficient sediment storage capacity for an additional 82 years. Due to excessive costs (estimated at \$800,000 to \$1,200,000), removal of the sediment was not included as one of the alternative plans. Provisions to remove sufficient sediment from the sediment pool or to incorporate features to maintain a "normal healthy water level in the lake" as requested by the adjacent

homeowners was not included in any of the alternatives. Removal of sediment for this purpose can be accomplished in the future as a non-project features if the homeowners desire.

Channel work was considered as a means to reconnect the stream channel and as a means to stabilize the downstream channel if the dam were removed. Purchasing liability insurance was dropped from consideration. The City of McKinney has already implemented a storm water management plan as well as a flood plain management plan and has restricted development within the breach area. Changes in these plans were incorporated into the alternatives that included removal or breaching of the dam.

It was determined to be impractical to protect, remove or flood proof downstream improvements. There is no viable way to protect Virginia Parkway from significant damage including the possible loss of life from failure of FRS No. 3C. It was determined that the parkway could not be located out of the breach area and it is cost prohibitive to raise the parkway to the needed elevation in conjunction with a multi-lane bridge to pass the breach flow. Therefore, Virginia Parkway had the most influence in the high hazard classification. There are no residences or buildings downstream of the dam that would be flooded if the dam failed from overtopping. The option of hardening the embankment was eliminated because of excessive construction costs and the questionable structural integrity of the dam and auxiliary spillway due to high overtopping velocity.

The "Future Without" or "No Action" alternative serves as a baseline to evaluate the other alternatives. It depicts the most probable future conditions in the absence of a federally assisted project. The Collin County Soil and Water Conservation District is the entity that owns the easements for the dam and is responsible for determining what action to take if the dam is not brought up to current performance and safety standards.

Based on conditions set forth by the "Future Without" baseline, present conditions were developed. The dam does not meet current safety standards for a dam in this location and there is a risk of the dam failing from overtopping. An analysis of the dam indicated that a storm greater than 58 percent of the Probable Maximum Flood (PMF) would overtop the dam. Appendix C shows the area that will be flooded if the dam breached during passage of a storm of this magnitude. Presently the city has restricted development in this area but Virginia Parkway will be overtopped by approximately nine feet and will be severely damaged. Several residential lots will be flooded ten to fifteen feet by the failure. Approximately 5500 cubic yards of fill material from the dam breach will be carried downstream and deposited in the stream channels and floodplains. The lake will be lost and land values around the sediment pool and upstream will be decreased. Recreational opportunities and fish and wildlife habitat will be lost. If the dam fails, the Collin County Soil and Water Conservation District (SWCD) will then be faced with significant liability for the downstream damages as well as detrimental effects to upstream property values. The District considered the following options in deciding the most likely course of action:

- Modify the dam to comply with current safety standards without Federal assistance.
- Take no action and accept the risk of the dam failing sometime in the future.
- Find another sponsor to accept ownership of the dam and the associated risks and responsibilities.
- Breach the dam to eliminate the risk of failure from a catastrophic storm event.

After considering the options, the SWCD decided that their best option in the absence of federal assistance was to breach the dam and eliminate the risk of the damages from a failure. Accepting the risk of the dam failure was deemed unacceptable and no entity was identified which would accept the responsibility of the present dam.

The following is a description of the alternative plans that were developed:

Alternative No. 1 – Future Without or No Action Plan

This alternative consists of making a breach in the dam of sufficient size to safely pass the 100-year flood event. The breach location will necessitate removal of the principal spillway components. The material (about 41,350 cu. yds.) would be placed in the present easement area. Exposed area (about 17.5 acres) would be vegetated for erosion protection. The upstream and downstream channel would be reconnected. No other work would be performed. This action would necessitate the City of McKinney to install a bridge on Virginia Parkway and stabilize the stream channel. The estimated cost of this option is \$1,014,200.

Alternative No. 2 - Decommission FRS No. 3C

This alternative consists of removing the footprint of the dam as much as possible. The principal spillway and the earthen embankment will be removed. Material will be placed in the sediment and detention pools and the emergency spillway. All exposed areas will be vegetated as needed for erosion protection (23.3 acres). Riparian vegetation will be established along the stream (2.7 acres). Channel work including any needed grade stabilization structures will be installed to reconnect the stream channel through the sediment pool. This action would necessitate the City of McKinney to install a bridge on Virginia Parkway and stabilize the stream channel. Estimated cost is \$1,160,400.

Alternative No 3 – Rehabilitation of FRS No. 3C

This alternative consists of modifying the structure to meet current performance and safety standards for a high hazard dam. This requires adding sufficient additional principal spillway and auxiliary spillway capacity to pass the flow from the Probable Maximum Flood. In addition the top of the dam will be raised 1.0 foot. A new trash guard and slide gate will be added to the existing principal spillway. Removal of accumulated sediment is not necessary. Estimated cost is \$1,215,700.

EFFECTS OF ALTERNATIVES

The following is a description of the effects that each alternative will have on the economic, social, environmental, and cultural concerns identified during the scoping process determined to be significant to decision making. The present conditions are also described to provide a better understanding of the effects.

Dam Safety

- Present Conditions – Although the dam is structurally safe, there is a threat of failure from overtopping. A breach study was made to determine the effects of a one time catastrophic breach of the existing dam. The breach of the existing dam was considered to be overtopping of the dam and a breach as wide as the maximum height of the dam. This breach is 35 feet wide and 35 feet high, with a maximum discharge of 26,000 cubic feet per second (cfs). The flow from the breach would overtop Virginia Parkway with approximately nine feet of water at a maximum velocity of 8 feet per second for a duration of four hours. Portions of several residential lots would be flooded ten to fifteen feet.
- Alternative No. 1 - The threat of the dam failing would be removed by breaching the dam thereby eliminating any concern for dam safety.
- Alternative No. 2 - The threat of the dam failing would be removed by decommissioning the dam and removing the footprint. This would eliminate any concern for dam safety.
- Alternative No. 3 - The dam would be brought up to current performance and safety standards and would function as planned into the future. The threat of failure from the PMF storm overtopping the dam would be eliminated.

Human Health & Safety

- Present Conditions –Threat to human life and safety from dam failure. Virginia Parkway would be overtopped by approximately nine feet if the dam breached.
- Alternative No. 1 - No threat from failure. Potential threat from flooding.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 – Reduced threat to human life and safety from a dam failure or flooding.

Flood Damages

- Present Conditions – Protection from events up to and including the 1% chance storm. Criteria for high hazard class indicates significant flood damages from potential breach of dam. In the event of dam failure, flooding would inflict damages to property and infrastructure located downstream from the dam
- Alternative No. 1 - Flood damages to Virginia Parkway and downstream properties on all except small storms. In the absence of the dam, City officials indicated that a new bridge would be constructed along Virginia Parkway in order to alleviate flood damages to the roadway and consequential effects to traffic. Estimated construction cost of the bridge is \$400,000.
- Alternative No. 2 - Same as Alternative No. 1
- Alternative No. 3 - Continued protection from flooding. Threat of a catastrophic breach is diminished. The City would not incur costs of constructing a new bridge on Virginia Parkway.

T&E Species

- Present Conditions - Data provided by the US Fish and Wildlife service indicates that Collin County is within the range of the endangered whooping crane (*Grus Americana*)

and the threatened bald eagle (*Haliaeetus leucocephalus*). FRS No. 3C does not provide critical habitat for any of these species and no impact is projected to occur as a result of either activity associated with the rehabilitation or modification of the site.

- Alternative No. 1 - See above
- Alternative No. 2 - See above
- Alternative No. 3 - See above

Cultural Resources

- Present Conditions – No known cultural resources will be affected.
- Alternative No. 1 – There would be potential to affect cultural resources (should any be present) in areas where earth fill from dam is placed and in area of construction of new bridge.
- Alternative No. 2 – There would be potential to affect cultural resources (should any be present) in previously undisturbed areas where earth fill from dam is placed.
- Alternative No. 3 – NRCS would be responsible for consideration of effects to cultural resources on all areas of new disturbance associated with rehabilitation of FRS No. 3C. Activities for the protection and preservation of historic properties will comply with Section 106 and Section 110 (f) and (k) of the National Historic Preservation Act.

Wetlands

- Present Conditions – FRS No. 3C provides about 15 acres of open water (Palustrine) wetland (current pool area of FRS NO. 3C) that was created by the construction of the site. Emergent and submerged vegetation occurs on and along shorelines in shallow water areas. Aquatic vegetation is limited due to turbidity and emergent shoreline vegetation is controlled to keep shorelines open for aesthetic reasons. This created wetland provides habitat for reptiles and amphibians, waterfowl, and wading birds. Stream channels above and below the site are narrow and limited to flow only during periods of moderate to heavy rainfall. There are no wetlands located below the dam in the project area.
- Alternative No. 1 - Breaching the dam will eliminate the existing 15 surface acres of open water with its associated wetland values.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - Rehabilitation of the dam will retain the existing wetlands and their associated values for the foreseeable future. As the structure ages and sedimentation continues the area covered by water will become shallower and reduced in size. This process may result in an increase in emergent vegetation and increased turbidity levels, as wind action will be more likely to affect bottom sediments. It is anticipated that the homeowner's association will maintain the site in the future to the extent that the open water aspect and its associated wetland values will be retained. No additional wetlands will be created by the rehabilitation of the site.

Air Quality

- Present Conditions- Air Quality in the project area is not projected to be impacted by project actions. No air quality problems have been specifically identified and impacts

will be of a temporary nature associated with earthmoving and other construction activities. Impacts will be minor for all alternatives.

- Alternative No. 1 - Change only during construction activities and until re-vegetated.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - Same as Alternative No. 1.

Water Quality

- Present Conditions – No change in near future
- Alternative No. 1 - Sediment in stream flow will be carried downstream.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 – About 45 acre-feet of sediment will be trapped in the sediment pool during the project life. The required Storm Water Pollution Prevention Plan (SWPPP) will minimize any degradation of water quality during construction.

Water Quantity

- Present Conditions – No change except for reduction in sediment pool volume with time.
- Alternative No. 1 - Flow will move downstream adding to volume and peaks as it moves.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 – Same as Present Condition.

Aesthetics

- Present Conditions – The presence of a 15-acre impoundment and its associated open space devoted to the dam spillway and flowage areas provide a desirable natural area in an urban setting. The increased value of lots, adjacent to and upstream of the lake, indicates that many people find the site to be aesthetically desirable. The plant community associated with the site consists of a diverse mixture of trees, shrubs, grasses and forbs. This plant community in association with the water area attracts birds and other wildlife species, which are viewed by area residents. The area is mowed and maintained by the homeowner's association to provide a clean and attractive environment. Landowners have indicated they wish to retain the natural beauty of the area and desire that any modifications be the minimal possible, which will provide for the future safety of the structure.
- Alternative No. 1 - Breaching the dam would result in the loss of the 15-acre lake and its associated wetlands. The aesthetic value of the site would be reduced. Most residents would consider it unattractive to leave a major portion of the dam. The present pool area would quickly become covered with invading plants of limited aesthetic value. The plant community would change to plants of higher successional value in time.
- Alternative No. 2 - Removes the 15-acre lake and its associated wetlands and replaces it with an upland plant community. The dam, spillway, and pool areas would be restructured to reflect the pre-project condition and reestablished to native adapted species. The plant community would mature in time and provide habitat for birds and other species. Aesthetic values associated with the lake and associated wetlands would be reduced.
- Alternative No. 3 - This alternative would retain the aesthetic values of the lake and associated wetlands for the foreseeable future. About 1.43 acres of wooded upland and

0.54 acres of riparian would be affected by construction activities associated with the rehabilitation of the site. These areas will be reseeded to native species following construction.

Sedimentation

- Present Conditions – No change short term
- Alternative No. 1 - Current sediment will remain in area with re-vegetation. Stream borne sediment will travel downstream.
- Alternative No. 2 - Basically same as Alternative No. 1.
- Alternative No. 3 – No change short term.

Land Values

- Present Conditions – The Mallard Lakes Subdivision is currently composed of 167 lots, of which 26 are located adjacent to the sediment pool. The presence of the sediment pool and associated amenities has been a major factor in the development of the subdivision. The local appraisal and taxing authority records the value of these lots at \$11.6 million, not including the value of buildings on the properties. The lots located around the sediment pool have values ranging from \$60,000 to \$100,000 per lot. Remaining lots within the subdivision are valued from \$30,000 to \$90,000 per lot. Construction of residences within the subdivision is proceeding at a rapid rate. Annual tax revenue currently collected within the subdivision exceeds \$900,000. An undeveloped 13-acre area located south of the emergency spillway is currently for sale. Development of this area is anticipated once the property is sold. Maintenance of upstream property values and consequent annual tax revenue are dependent upon the presence of the dam.
- Alternative No. 1 - There are 26 lots currently valued at \$2 million adjacent to the sediment pool. The removal of the dam would cause the value of these lots to be reduced by 30 percent. In addition, property not adjacent to the pool but located within the subdivision (currently 141 lots valued at \$9.6 million) would experience a 10 percent reduction in value. In the absence of the sediment pool and the consequent devaluation of properties, annual tax revenue would be reduced significantly. The effects to fair market values of residences located on these lots would see a drastic reduction in value in the absence of the dam.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - Upstream property values would be maintained. Additional development within the subdivision would not be deterred because of the uncertain future of the dam.

Fish Habitat

- Present conditions - About 15 acres of fish habitat is provided by the sediment pool. Average depth is approximately five feet with maximum depths of some six to seven feet. The lake retains sufficient water to support a fishery even during drought periods. Water quality appears to be adequate for fish production. A survey of the lake was not conducted to determine species present and condition of the existing population. Floodwater retarding structures were usually stocked with largemouth bass, bluegill sunfish and channel catfish following construction and typically have become populated

with other species such as bullhead catfish, carp, and crappie from upstream ponds and baitfish dumping. The lake has potential for a managed fishery if residents so desire.

- Alternative No. 1 - This alternative would remove the existing fishery and fish habitat.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - This alternative would retain the existing fishery and fish habitat for the immediate future. It is not anticipated that rehabilitation of the dam would require draining the existing sediment pool. In time, the depth and size of the lake will be reduced through the sedimentation processes. As the lake becomes shallower it is expected that turbidity will increase and the lake may become too shallow to support a fishery during drought periods. Removal of sediment by the landowners at some point in the future may occur in order to retain the existing fish and wetland values associated with the lake.

Wildlife Habitat

- Present Conditions – Wildlife habitat associated with the site consists of wooded riparian areas and open grasslands. The wooded areas have developed along and adjacent to stream channels since construction occurred some 40 years ago. Woody vegetation consists primarily of elm, oak, hackberry, Osage orange, willow, ash, cedar, and pecan. The wooded plant community is diverse and has evolved with no grazing by livestock during recent times. This wooded habitat provides habitat for numerous songbirds and small mammals and is especially valued since such habitat is limited in urban areas. Open grassland areas are mowed on a regular basis, which limits species diversity. These areas are composed primarily of short and mid-grasses such as Bermuda grass, Texas winter grass, three awns, tridens and drop seeds. Forbs are primarily annuals. The seeds of grasses and forbs provide a limited food supply for birds and small mammals.
- Alternative No. 1 - This alternative would provide an additional 15 acres of upland wildlife habitat consisting primarily of open grassland habitat when the sediment pool was drained. The quality of this habitat would be limited in its initial stages and would improve as the plant community evolved. Wooded habitat would develop in time on areas adjacent to the stream channel that were left unmowed. The water source for wildlife provided by the 15-acre lake would be removed. About 0.8 acres of existing woody habitat downstream from the dam would be removed to provide for floodwater flow. The channel downstream from the site to Wilson creek might require modification to contain flood flows resulting in removal of additional wooded riparian habitat.
- Alternative No. 2 – This alternative would result in the establishment of about 2.7 acres of wooded riparian habitat and 20.6 acres of open wildlife habitat in the sediment pool area. This alternative would provide an additional 15 acres of upland habitat of better quality than that provided by Alternative No. 1. Other impacts would be similar to Alternative No. 1.
- Alternative No. 3 - This alternative will result in the disturbance of 1.43 acres of wooded upland, 0.54 acres of riparian area habitat and 1.62 acres of open grassland habitat. The removal of vegetation will only be that necessary to allow rehabilitation of the structure. Disturbed areas will be reestablished to adapted native species providing food and cover for wildlife. Woody species will be used where adapted and appropriate.

Recreation

- Present Conditions - The land on which FRS No. 3C is located has been deeded to the Mallard Lakes Homeowners Association. The Association, made up of 167 homeowners, who live in the Mallard Lakes Subdivision, is responsible for maintenance of the grounds surrounding the lake. The Association has posted the lake for no fishing, hunting or swimming. However they have constructed a hiking path on the east side of the sediment pool that is used extensively by the residents. There are no recreation facilities such as picnic tables, boat ramp or sanitary facilities. The primary recreational experience is associated with hiking or walking along the trail. Based on discussions with local residents, about 20 percent of the residents use the hiking trail an average of twice per week. This results in an estimated 8,800 visitor days per year.
- Alternative No. 1 - Loss of the sediment pool will reduce the value of the recreational experience of the residents of Mallard Lakes Subdivision. The value of the reduction of visitor days was not included in the analysis. It was assumed that such value is inherent in the fair market value of the properties within the subdivision.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - The recreational experience will be maintained. Further development within the subdivision will most likely cause an increase in the number of visitor days.

Floodplain Management Plan

- Present Conditions – The City of McKinney flood plain management plan (FMP) would continue to function in concert with the structure.
- Alternative No. 1 – Flood peaks would increase downstream of FRS No. 3C resulting in increased flood depths. The city would enlarge the capacity of the culvert under the parkway to prevent the frequent flooding at an estimated cost of \$400,000. Without the improvement, the Parkway would be flooded by the annual storm event.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - Integrity of the City's FMP will be maintained.

Storm Water Management Plan

- Present Conditions – The City of McKinney storm water management plan has incorporated the effects of the structure. The plan would continue to function as planned.
- Alternative No. 1 - The City would implement measures to partially offset the loss of management provided by the structure. It is estimated that such measures would cost over \$500,000 in order to maintain compliance with the plan.
- Alternative No. 2 - Same as Alternative No. 1.
- Alternative No. 3 - The integrity of the City's plan would be maintained, and additional compliance costs would be avoided.

Table B lists the previously described high and medium concerns identified during the scoping process and an estimate of the remaining concerns if the alternative were implemented:

Table B – Comparison of Remaining Concerns

Concerns	Present Conditions	Alternative No. 1	Alternative No. 2	Alternative No. 3
Dam Safety	High	Low	Low	Low
Life of Structure	High	Low	Low	Low
Human Health & Safety	High	Medium	Medium	Low
Flood Damages	Low	High	High	Low
T&E Species	Low	Low	Low	Low
Cultural Resources	Low	Low	Low	Low
Wetlands	Low	High	High	Low
Air Quality	Low	Low	Low	Low
Water Quality	Medium	Low	Low	Medium
Water Quantity	Medium	Low	Low	Medium
Aesthetics	Medium	High	High	High
Sediment	High	Low	Low	High
Land Values	High	High	High	Medium
Fish Habitat	Medium	Low	Low	Medium
Wildlife Habitat	Low	Low	Low	Low
Recreation	Medium	High	High	Low
Floodplain Management Plan	Medium	High	High	Low
Storm Water Management Plan	Medium	High	High	Medium

COMPARSION OF ALTERNATIVES

Table C compares each of the alternatives.

<i>Table C – Comparison of Alternatives</i>			
EFFECTS	Alternative No. 1	Alternative No. 2	Alternative No. 3
Description	No Action	Decommission FRS 3C	Rehabilitate FRS 3C
Project Investment	\$1,014,200	\$1,160,400	\$1,215,700
Annual Costs	\$65,500	\$74,900	\$80,500
Annual Benefits	\$0	\$0	\$155,600
Net Monetary Benefits	(\$65,500)	(\$74,900)	\$75,100
Water	Loss of sediment pool (15 acres)	Loss of sediment pool (15 acres)	Maintain sediment pool (15 acres)
Land	Minor erosion during construction. 15 acres of open water (Palustrine) wetland (current pool of FRS No. 3C) converted to open area)	Minor erosion during construction. 15 acres of open water (Palustrine) wetland (current pool of FRS No.3C) converted to open area)	Minor erosion during construction. 3.59 acres disturbed during construction.
Air	Minor adverse during construction	Minor adverse during construction	Minor adverse during construction
Plants & Animals	Loss of 15 acres of fish and wildlife habitat	Loss of 15 acres of fish and wildlife habitat	Fish & wildlife habitat maintained
Threatened & Endangered Species	No effect	No effect	No effect
Area Economy	Removal of dam will be negative	Removal of dam will be negative	Economy maintained & enhanced
Human Resources	Reduced threat to loss of life	Reduced threat to loss of life	Threat to loss of life removed
Cultural Resources	No effect	No effect	No effect
Other Social Effects	Loss of 8800 recreation days per year and reduced land values around sediment pool (10 to 30 percent in value)	Loss of 8800 recreation days per year and reduced land values around sediment pool (10 to 30 percent in value)	Land values and recreation opportunities maintained

Table D compares the monetary effects and associated impacts of the alternatives:

Table D Summary of Benefits, East Fork Above Lavon, FRS No. 3C¹					
Item	Alternative No. 1 No Action (Future Without)	Alternative No. 2 Decommission FRS 3C		Alternative No. 3 Rehabilitate FRS 3C	
	Benefits	Benefits	Change in Benefits	Benefits	Change in Benefits
Original Downstream Benefits ²	\$0	\$0	\$0	\$12,700	\$12,700
Property Values (upstream area) ³	\$0	\$0	\$0	\$84,500	\$84,500
Storm Water Mgmt. Plan ⁴	\$0	\$0	\$0	\$32,600	\$32,600
Downstream Infrastructure ⁵	\$0	\$0	\$0	\$25,800	\$25,800
Total	\$0	\$0	\$0	\$155,600	\$155,600

¹ All numbers reflect 2001 average annual dollars.

² Updated using applicable indices.

³ Reflects avoidance of upstream property values devaluation.

⁴ Reflects avoidance of modifying City's Storm Water Management Plan.

⁵ Reflects avoidance of construction costs for a bridge on Virginia Parkway.

RISK & UNCERTAINTY

The areas of risk and uncertainty associated with this project lie with the accuracy of the cost estimates of each of the alternatives, the reliability of assessment of impacts, and computer models used in evaluation and design. The scoping process was used to determine the procedures to be used and the needed reliability. The computer models used in evaluation and design of the modification of the dam are generally accepted computer models for this type of work. The procedures used in developing the detail and cost estimates for each of the alternatives are considered adequate to compare the alternatives and make an assessment of the impacts. There does not appear to be any area that using different procedures or making more intensive studies would have resulted in a different decision.

RATIONALE FOR PLAN SELECTION

For water and related land resources implementation studies, standards and procedures have been established in formulating alternative plans. These standards and procedures are found in "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G)". According to P&G, an alternative that reasonably maximizes net national economic development benefits is to be formulated. This alternative is to be identified as the national economic development (NED) plan. Alternative No. 3 (Rehabilitation of FRS No. 3C) is the NED plan and will increase the nation's economic output. Annual benefits total \$155,600 and annual cost is estimated at \$80,500, resulting in a net benefit of \$75,100. This is a benefit to cost ratio of 1.9:1.0. The existing dam has already provided significant flood protection downstream, as well as enhanced upstream property values.

Alternative plans, including the NED plan, should be formulated in consideration of four criteria or tests: completeness, effectiveness, efficiency, and acceptability. These tests were applied to each of the alternatives. All three alternatives meet the tests of completeness. Alternative Nos. 1 and 2 are not effective in addressing the core problem of removing the safety hazard while assuring that the dam will continue to function into the future. Alternative No. 3 is very effective in reducing the safety hazard and assure continued functioning. Alternative No. 3 is the most efficient way to accomplish the desired objectives of removing the safety hazard and assure continued performance. Alternative Nos. 1 and 2 were not acceptable to the local people because they failed to meet their objectives.

Alternative No. 3 is the preferred alternative. It meets the purpose and need to maintain the present level of flood control benefits, comply with current performance and safety standards, and continues to properly function into the future. It also produces the most net monetary benefits and a sponsor has agreed to underwrite the local share of the costs.

CONSULTATION & PUBLIC PARTICIPATION

At the beginning, the appropriate state and local agencies were informed of the effort and invited to offer input. Several coordination meetings were held with the Texas State Soil and Water Conservation Board and dam safety representatives of the Texas Natural Resource Conservation

Commission. A public meeting was held at the City of McKinney on February 19, 2002 informing the public of the initiation of planning and requesting oral and written input. The notice of the meeting was posted and published in the local newspaper. Representatives of US Army Corps of Engineers, US Fish & Wildlife Service, US Environmental Protection Agency, and the Texas Parks and Wildlife Department participated in a field review of the proposal on March 6, 2002. The Texas Natural Resource Conservation Commission was also invited but did not send a representative. A steering committee made up of representatives of the Sponsors, local homeowners and other interested citizens was organized. Input received from the group was used to scope the environmental assessment, and develop and evaluate alternatives.

Comments on the Draft Supplemental Watershed Plan/Environmental Assessment were requested from the following federal, state, and local agencies and organizations:

Governor - State of Texas
Texas Office of State-Federal Relations (State Single Point of Contact)
Texas State Soil and Water Conservation Board
Texas Natural Resource Conservation Commission
Texas Parks & Wildlife Department
Texas Water Development Board
Texas Agricultural Experiment Station
Texas Historical Commission
US Army Engineer District, Ft. Worth
USDI-Bureau of Reclamation
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
USDA-Forest Service
City of McKinney
Collin County Commissioners Court
Grayson County Commissioners Court
Upper Elm-Red Soil and Water Conservation District
Collin County Soil and Water Conservation District
City of Van Alstyne, Texas
City of Anna, Texas
Bill Whitfield, Steering Committee Member

Discussion and Disposition of comments from letters received on the Draft Supplemental Watershed Plan/Environmental Assessment hereinafter referred to Plan/EA.

Not all agencies and groups requested to comment on the Plan/EA submitted comments. The responding agencies and groups' comments and the disposition of each are as follows:

Texas State and Soil Water Conservation Board

Comment: The Board commented that it is essential to maintain the flood control benefits the

structure currently provides and to comply with current performance and safety standards. They strongly support this project and commend the project sponsors and NRCS for implementing the rehabilitation effort.

Response: Noted

Texas Water Development Board

Comment 1. The TWDB recognized that the proposed project plays an important role in flood control and flood protection to downstream areas at risk.

Response: Noted

Comment 2. The TWDB stated that they supported the proposed project and did not foresee any impacts to any of its flood planning programs in the Upper Trinity River.

Response: Noted

US Department of Interior, Fish and Wildlife Service

Comment 1. The Agency pointed out that during the field review, several options were discussed, including armoring the downstream side with concrete to allow overtopping and the construction of an additional spillway within the armored structure and that in their opinion it would be the least damaging to fish and wildlife interests. They further commented that the draft EA did not provide information justifying why the preferred alternative was selected over the rehabilitation alternative.

Response: The Formulation of Alternatives Section has been modified to describe the option of protecting the dam by armoring the downstream slope. The narrative explains that this option was removed from further consideration after investigations indicated that the construction cost was about 50 percent higher than other alternatives being considered and the preferred alternative could be installed with limited adverse impacts to fish and wildlife resources.

Comment 2. The Agency stated that their review of this and subsequent EA's for rehabilitation projects will be in accordance with the guidelines and directives contained in their Mitigation Policy (Federal Register 46[15]): 7644-7663, January 23, 1981. The Agency indicated that the Plan/EA does not provide sufficient information to make a recommendation for needed mitigation of damages to fish and wildlife resources and they would make detailed recommendations once the additional information requested is provided.

Response: Noted – The Plan/EA has been modified to provide a more detailed description of the impacted area. During construction, efforts will be made to assure that only the minimum high quality vegetation is removed to allow installation of the needed

measures. The U.S. Fish & Wildlife Service will be invited to assist in the development of the final vegetation plan. Areas disturbed by construction will be replanted to species that will improve future habitat. Open grassland areas disturbed during construction that are now considered as low value habitat will be reestablished to vegetation having improved value for wildlife.

Comment 3. The Agency requested that future EA's for dam rehabilitation projects include information regarding all rehabilitation options considered, the exact location of impacts to fish and wildlife resources (in an illustration), the quality of habitat, the quantity of habitat, and a detailed discussion of proposed mitigation.

Response: Noted. Detailed planning is not done for alternatives that are rejected during the early planning efforts because of obvious constraints. Detailed information on the amount and location of wildlife habitat that might be affected by various alternatives can only be obtained in the detailed planning stages. The degree to which wildlife habitat may be affected is an important consideration in planning and may cause an alternative to be rejected or placed in a lower priority during the initial planning stages.

City of McKinney

Comment 1. The City strongly supports the efforts to upgrade the dam for the additional safety of their residents and infrastructure.

Response: Noted

Overview of Comments from Clayton Myhre, Chairman, City of McKinney NRCS Lakes Task Force and Laurie Medeiros, Steering Committee Representative.

The letters of comment indicated strong support for the rehabilitation of Site 3C as well as other floodwater retarding structures in the East Fork above Lavon Watershed Project. However, the letters questioned if the projected sedimentation rate was correct and if adequate consideration had been given to the problems associated with filling of the sediment pool. These problems include reduced property values, loss of recreational values, reduced aesthetics, etc. The commenters stated they desired features be included to assure a healthy water level be maintained in the sediment pool during the entire life of the project. They pointed out several errors in the Plan/EA, such as the size of the sediment pool and drainage area that indicated that sedimentation has accelerated during the last few years.

Response: NRCS wants to make sure that the rehabilitated structure will function as planned over the period of analysis. Corrections made in the size of the sediment pool and drainage area as well as other changes support the conclusions that the projected sediment rates are reasonable and that there is sufficient storage capacity in the sediment pool to assure that the structure will function properly as a floodwater retarding structure, which is its primary purpose, during the 50-year period of analysis. Investigations indicate that there is sufficient capacity in the sediment pool to store the sediment expected to accumulate over about 82 years. This provides a

reasonable factor of safety. The Plan/EA recognizes the impacts of the sediment pool gradually filling with sediment during the period of analysis. Although it would be desirable from the homeowner's perspective to have "a normal healthy water level of 10 feet" in the sediment pool, there is no provision in the rehabilitation program to accomplish this with federal funds.

Clayton Myhre, Chairman, City of McKinney NRCS Lakes Task Force

Comment 1. Page 2 – Resource Information – Size of Planning Area: There is a discrepancy in the size of the planning area. The report states 1,360 acres. The Freese & Nichols report states the basin area is 960 acres, and the downstream planning area is 397 (1,357 acres total). The original basin area is listed as 915 acres, which we don't believe has changed. Assuming the 397 downstream to be accurate, the planning area would be 1,312 Acres, not the 1,360 acres as stated.

Response: Based on review of the data, the drainage area of the planning area was changed to 1,312 acres. The 1,360 acres was taken from the Freese & Nichols Report and was rounded.

Comment 2. Page 2 – Resource Information – Wetlands: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out a 15 acre wetland area. Original NRCS documents list the wetland area at 20 acres. This represents a 25% reduction in wetlands from the original design.

Response: Based on review of the data, the Plan/EA was revised to show the present size of the sediment pool and wetlands to be 15 acres rather than 20 acres. The 20 acres was taken from a land rights map.

Comment 3. This report also does not address the impact that the addition of two smaller adjacent ponds has on the wetland area (middle pond, lower pond.) Briefly, in 1994, when Toll Brothers was developing the adjacent neighborhood, they modified the eastern end of the dam without permission from the NRCS. Legal action was taken against the developer by the NRCS. As part of the settlement of this lawsuit, the channel leading to the lake was widened and two additional ponds were created to compensate for lost flood storage capacity.

Response: Calculations of storage capacity reflect current conditions.

Comment 4. An aerial photograph of the lake and two ponds was obtained from the City of McKinney Engineering Department. A digitizer was used to perform a quantity survey on the wetland areas. The results are as follows:

- The main lake has approximately 14.18 acres of wetland area.

- The upper pond has approximately 2.35 acres of wetland area.
- The lower pond has approximately 1.06 acres of wetland area.
- This represents a total wetland area of 17.59 acres per our analysis.

These figures show that there has been a loss of 5.8 acres of wetlands (29%) from the original design. If the additional ponds are included, there has been a loss of 2.4 acres (12%) from the original design.

The impact that the creation of these two additional ponds has on the basin should be noted in this report. Also, any impact these additional ponds have on the data listed on page 37 should be calculated and noted as such. The reduction in wetland impacts several calculations throughout the report, including fish habitat, sedimentation calculations, etc. The creditability of the report is at issue since incorrect or incomplete data will produce incorrect results.

Response: The Plan/EA has been modified to reflect that the surface area of the sediment pool is 15 acres (rounded). All calculations have been based on this number.

Comment 5. Page 5 – Paragraph 2: Clarify 1,360 Acre drainage area. See Page 2 comment regarding size of planning area.

Response: See response to Comment 1.

Comment 6. Page 5 – Paragraph 2: States that the basin is either urbanized or projected to be urbanized within the near future, and the rate of sedimentation will be reduced to 0.6 ac-ft/sq.mi./yr. We disagree with that assessment. In “The Preserve,” a 93.52-acre tract immediately adjacent to NRCS FRS 3C, only 17 of the available 63 lots are developed. Of the available lots, there are 8 lots, which are immediately adjacent to the lakes, representing approximately 5 acres of undeveloped land immediately adjacent to the shoreline. These 8 lots will accommodate basement-style homes, which require extensive backfilling. It should be noted that this subdivision was given its green tag by the City of McKinney in September 2000. After two years, 73% of the lots (approximately 68-Acres) remain undeveloped. At the current rate of nine or ten homes a year, completion of development in the subdivision could take another four to five years. It should also be noted that the final phase of Mallard Lakes is in the platting stages. This phase represents another 50 to 60 acres of development with approximately ½ of the runoff for this area (30-Acres) will be directed into Lake 3C, and the balance (30-Acres) to Lake 3D. This will impact both lakes for at least another six to eight years. There is also a 13-acre residential development immediately west of the Preserve. There is also a substantial amount of new development underway immediately south within the basins of Lakes 3C (approximately 40 acres) and 3D, in the Winding Creek Subdivision, which will continue to impact sedimentation until its completion. This means that approximately 151 acres or 16.5% of the basin remains to be developed.

Mr. David Craig, of Craig International, a local developer, and a committee member, has toured the basin to assess the current status of build out within the total basin. His assessment places development at about 80-90% of the 915 acres of the lake basin. This leaves approximately 90 to 180-Acres left to be built out, including eight home lots immediately adjacent to the lake. This correlates to the findings above.

With this amount of land left to be developed, the rate of sedimentation will continue at a higher rate for a longer period of time. Especially with lakeside lots yet to be developed. This affects the sediment storage life span, which is used to determine whether or not desiltation of the lake is needed.

Response: The method used sedimentation rates measured in reservoirs from Collin and surrounding counties. Rates were adjusted for changes in land use. A sedimentation chart would be diagrammatic and not indicative of the actual distribution of sediment deposits in the reservoir. Breaking down the long-term rate of sedimentation into time increments over the 50 years will not increase the accuracy of the forecast. It is something like long-term predictions of the weather: predictions of rainfall and average temperature for each of the 50 years will likely be less accurate than predictions of average annual rainfall and temperature for the entire period. The structure is projected to function longer than 50 years with proper operation and maintenance. The sediment pool has the capacity to store the sediment expected to accumulation over about 80 years. The 50 years refers to the time frame that benefits and costs were analyzed and is the minimum period established by policy. A sedimentation chart was not included as the sedimentation rate is an average annual rate over the period of analysis.

Comment 7. Page 5 – Paragraph 4: Clarify rate of ultimate future sedimentation. At what point in time will rate become 0.6 ac-ft/sq.mi./yr.? Is this at full development? What is interim rate, while construction is underway, for disturbing soil? The lake has seen significant sedimentation over the last 2 years. The Freese & Nichols report from 2001 states that the average water depth is 5 ft. On page 5, under “Fish Habitat” the report states that the average water depth is 4 ft., which is a loss of 1 ft. in depth in a year. Put another way, 20 ac-ft of sediment was deposited in the lake in the past year. If this rate of sedimentation is not reduced the lake will quickly fill.

Response: See Comment 6 above. With the correction in surface area of the sediment pool, the average depth is about 5 feet. The Plan/EA has been corrected.

Comment 8. Page 5 – Paragraph 4: The current population count is inaccurate. The population as of January 1 2002 was 66,575. In January 2001 the total population was 58,986. The rate of growth from 2001 to 2002 was 12.9%, representing a total of 7,589 new citizens. The average annual rate of growth since 1990 has been 17.75% (a total increase in population of 45,292 residents.) These numbers clearly state the mushroom effect referred to in the report.

Response: The current population was changed to about 66,000 to reflect the January 1, 2002

data as suggested.

Comment 9. Page 5 – Last Paragraph: Please clarify drainage area. See Page 2 comment regarding size of planning area. Original map says 915. Freese & Nichols states 960 upstream, 397 downstream.

Response: See response to Comment 1.

Comment 10. Page 6 – Paragraph 2: A sediment study, commissioned by the City of McKinney and performed by Freese & Nichols in March 2001, indicated that at the time the basin had available sediment storage capacity to store sediment accumulation for the next 82 years. Please be specific about when the data used to calculate remaining storage was collected.

Response: The date of the study was March 2001 as indicated in the Plan/EA.

Comment 11. Page 7 – Wetlands: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out a 15 acre wetland area. Please confirm which is correct. Believe 14.18 acres is accurate based on digitized takeoff. Clyde Hogue, also calculated current wetlands of the main lake at 14 acres. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS.

Response: See response to Comment 2.

Comment 12. Page 8 – Paragraph 4: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out 15 acre wetland area. Please confirm which is correct. I believe 14.18 acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres.

Response: See response to Comment 2.

Comment 13. Page 8 – Paragraphs 4 & 5: Report states that lot values will be reduced by 10-30% if FRS No. 3C is removed. However, the report fails to address the reduction in lot and property values as the sediment accumulates. The value of lots is related to having a viable lake. If the lake is too shallow it won't support fish and wildlife. The shallow waters will become a breeding ground for mosquitoes, as attested to by FRS5A. There is a definite economic value to maintaining a minimum depth in the lake. The sediment study, commissioned by the City of McKinney, and performed by Freese & Nichols in March 2001, recommended a minimum depth of ten feet for recreation purposes.

Response: In view of the finding that the sediment pool has sufficient capacity to store the projected sediment accumulation for about 82 years, it is reasonable to assume that there will be no significant decline in property values during the 50-year period of analysis.

Comment 14. Page 8 – Paragraph 5: Disagree with portion of statement “Although not a significant problem today.” We believe the sediment accumulation is a very serious concern to the local residents. The lake has seen significant sedimentation over the last 2 years. The Freese & Nichols report from 2001 states that the average water depth is 5 ft. The draft report states that the average water depth is 4 ft., which is a loss of 1 ft. in depth in a year. That is a very significant increase of sedimentation (20 ac-ft.)

Response: The Plan/EA was modified to clearly describe the problems associated with sediment accumulation and the homeowner’s perspective. The surface area of the sediment pool and the average depth has been corrected in the Plan/EA.

Comment 15. Page 9 – Table A: Water quantity is listed as HIGH priority on Identified Concerns Table, as is sedimentation. If these areas are of high concern, why are they not being thoroughly analyzed in this report? Additionally, sedimentation and land values are listed as high degrees of concern. The urbanization of the lake basin merits further study regarding the negative impact increased sedimentation will have on land and property values over the expected 50-year life of the project.

Response: Water quantity was listed as a high concern because of the local homeowners desire to maintain the body of water created by the sediment pool. A review of the EA indicates that this concern has been adequately addressed. Using available information (2001 data) at the time of the economic analysis, the estimate of property values appears reasonable for the scope of this project. Based on recent historical trends within the area, it is estimated that property values will continue to appreciate for the foreseeable future. Also see response to Comment 13.

Comment 16. Page 10 – Paragraph 2: In addition to “Lots located around the sediment pool are valued higher than other lots in the area”, lots with a lake view, but not on the lake also have a higher value. See attached report showing appraised values of lots and homes in Mallard Lakes and The Preserve. Current appraisal data was obtained from the Collin County Central Appraisal District web site. Upon examining the data, there are clearly 3 levels of valuations established: Lakeside, Lakeview, and Interior Lots. A breakdown of values is included on comments for page 16.

Response: There could be three levels of valuations based on the proximity to the sediment pool. However, the evaluation using 2001 data provides an analysis sufficient for the purposes of this project.

Comment 17. Page 10 -- Last Paragraph: There is a discrepancy in the assumptions/calculations made regarding remaining storage capacity. The report uses the Freese & Nichols Dredging Feasibility Study dated March 2001 which states that the average water depth is 5 ft., and that 74-acre-feet of storage remain. The draft report states that now the average water depth is 4 ft., which is a loss of 1 ft in depth in a year. That is a very significant increase of sedimentation (20 ac-ft) in one year. This would appear to only leave 54 years remaining. Based on current rates of erosion and sedimentation, there is significant risk that the storage capacity will not last the 50 year life of the project. This must be properly addressed. A table showing rates of sedimentation over the projected 50 year life span of the upgraded structure should be included as part of this report.

Response: The Plan/EA has been corrected to reflect the current size of the sediment pool. The sedimentation rates are an average annual rate over the period of analysis. The actual rate may vary from year to year. Therefore a table was not included. Also see response to Comment 6.

Comment 18. Page 10- Last Paragraph: The last sentence states that excessive cost is the reason that sedimentation removal is not included in the alternate plans, though no analysis is given. If the F&N report is the basis it should be referenced as such. However, given the rapid accumulation of sedimentation in the last year, indications are that further analysis should be performed.

Response: The report was referenced in the first sentence as suggested. With the corrections in the size of the sediment pool, there is no evidence of rapid sedimentation.

Comment 19. Page 16 – Land Values: Please refer to attached analysis based on Collin County Central Appraisal District assessed values, and plats of both subdivisions.

1. There are 167 lots, not 168 (per CCAD records, 07/02).
2. There are 26 lots adjacent to the sediment pool, and 22 lots that have a lake view.
3. Lots around sediment pool (Lakeside) range in value from \$71,400 - \$144,500. These lots have a total value of \$2,968,700 not the \$2 million as stated.
4. Lots that have a lake view range in value from \$68,850-\$106,600. These lots have a value of \$2,249,190.
5. Remaining interior lots range in value from \$58,950-\$98,400. These lots have a value of \$9,741,120. (Lot values for all properties in the subdivision represent an average of 26% of the total assessed value of each property.)
6. Total annual tax revenue is \$1,422,202, not the \$900,000 as stated.
7. Based on the three distinct lot values, the lake view lots would have a higher loss than interior lots, but a lower loss than the lakeside lots. A 20% reduction would be fair and in line with the property valuations.
8. The economic analysis fails to address the total assessed value of the lot and the home, therefore it is not complete. The current assessed value of all lots and

homes in the Mallard Lakes subdivision is \$49,282,093. The current assessed value of lots only is \$14,959,010. There are improvements totaling \$34,323,083, which should be included in the economic analysis. Any negative impact to the basin will result in a drop in values of lots and improvements.

9. This accurate assessment and tax data dramatically changes the economic analysis. The economic analysis needs to be revised to reflect the current (2002) assessed values from the Collin County Central Appraisal District.

Response: Using available information (2001 data) at the time of the economic analysis, the estimate of property values appears reasonable for the scope of this project. Based on recent historical trends within the area, it is estimated that property values will continue to appreciate for the foreseeable future.

Comment 20. Page 16 – Land Values: Report fails to address negative impact that sedimentation will have on land/home values, tax base, and environment. This section is incomplete without this information.

Response: See responses to previous comments. The Plan/EA recognizes that the sediment pool will gradually fill with sediment and its characteristics will change.

Comment 21. Page 16 – Fish Habitat: The size of the 20 acres does not agree with Appendix E, Table 3 which calls out a 15 acre wetland area. I believe 14.18 acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres. Please confirm which is correct. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS. Please also address the discrepancy between the 4' water depth stated in this report, and the 5' number stated in the Freese and Nichols Dredging Feasibility Study performed in March 2001.

Response: See response to Comment 1.

Comment 22. Page 17 – Recreation: Last sentence has incorrect number of homeowners. There are 167, not 168 as stated.

Response: The number of homeowners was changed to reflect 167.

Comment 23 Page 19 – Table B – Comparison of Remaining Concerns: Alternate No. 3 –
1) Sediment concern is listed as medium. I believe it should be high. Additionally, it should be noted that as time passes, concerns related to sedimentation, will increase.
2) Land value concerns are listed as low. It should be at least medium, because of the inevitable increase in sediment and decrease in the water level, which will have a negative impact on land and home values.

3) Storm Water Management Plan – Upgrading the dam does not impact the City of McKinney Storm Water Management Plan. Therefore, the concern should remain the same as it is today, which is medium.

Response: Changes have been made to the Plan/EA as appropriate.

Comment 24. Page 20 – Table C – Comparison of Alternatives

- 1) Annual Benefits and Net Monetary Benefits need to be updated to reflect revised values, which alter benefits.
- 2) Would like to understand why decommissioning the dam does not reduce the annual benefit of taxes, since values, and therefore taxes would be reduced.
- 3) Water and Plant & Animals – The size of the 20 acres does not agree with Appendix E, Table 3 that calls out a 15-Acre wetland area. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres. Please confirm which is correct. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS.

Response: See response to previous comments.

Comment 25. Page 22 – Paragraph 2: Please provide further explanation regarding decision-making related to cost-benefit ratio. What guidelines are followed for determining net benefit?

Response: “Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies” dated March 10, 1983 guided the economic evaluation. This document contains procedures for use by Federal Agencies in formulating and evaluating alternative plans for water and related land resources implementation studies.

Comment 26. Page 23 – Paragraph 2: The .5 decrease in the elevation of the auxiliary spillway, which is listed at 633.3 in this report, needs further clarification. Original drawings show the spillway elevation at 633.8 (See “Plan of Spillway and Embankment”, NRCS Original Drawing, March, 1958). It appears that the 180-ft. bay of the new spillway design lowers the spillway by .5 feet. Does this lower flood storage capacity?

Response: At the steering committee meeting in April 2002, options were discussed to rehabilitate FRS 3C. Consensus of the steering committee was to minimize any change in flood storage and downstream discharge. The preferred option meets this objective. The flood storage will be slightly reduced, the principal discharge will be increased by adding a 30-inch pipe, duration of flood storage upstream will be reduced, and frequency of flow through the auxiliary spillway will be reduced.

Comment 27. The current NRCS easement line elevation is at 635 msl. This leaves only 1.7 feet difference between the spillway elevation and the easement elevation, not the 2 feet above the measurement of the emergency spillway, as required by State of Texas NRCS standards. It is our understanding that because Texas standards are higher than national standards. A variance must be obtained from the State of Texas NRCS office for this dam design. Shouldn't these important details regarding the required variance be made a part of the public record of this upgrade?

Response: The elevation for which land rights will be required will remain the same for the rehabilitated structure as for the original structure.

Comment 28. Page 27- "List of Preparers" – A list of "other" participants, including Steering Committee Members, should be made a part of this report. NRCS FRS 3C Steering Committee Members and Participants listed on meeting notes from March 14, 2002 and May 9, 2002 meetings should be included in this report, as they were a source of input for decision making.

Response: The input of the Steering Committee has been recorded in the Plan/EA. The Plan/EA was modified to reflect their contributions in the List of Preparers.

Comment 29. Page 28 – References should include "as built" plans from the NRCS for FRS 3C.

Response: The "as built" would not add to the technical quality of the report.

Comment 30. Page 30 – Adjust Appendixes to include Rate of Sedimentation and Steering Committee / Participant Chart.

Response: The suggested sedimentation chart was not included for reasons specified in response to previous comments. The participation of the Steering Committee was acknowledged.

Comment 31. Page 34 – A note should be included in this map that the channels do not exist, and will not be constructed.

Response: The stream channel improvement is still officially included in the watershed plan but it is anticipated that it will not be constructed.

Comment 32. Page 37 – Please address the following items, which may be incorrect:

Total Capacity: This 74 year number should be updated to reflect sediment measurements as of the date of this report. As much as 20 acre-feet may have entered the lake (based on comparison of Freese & Nichols numbers from March

2001, and numbers listed in this report) over the past 16 months.

Sediment Pool: Listed as 15 Acres, 20 acres listed on original documents. Believe 14.18 acres is accurate based on digitized takeoff. Clyde Hogue, also calculated current wetlands of main lake at 14 acres. Would be 17.59 acres if ponds added in 1994 by developer were included. The addition of these ponds impacts the wetland area.

Floodwater Retarding Pool: Is this number impacted by the .5 ft reduction of the 180 ft. spillway in the new design?

Response: See response to previous comments. With these changes, the estimate of remaining sediment storage capacity is accurate.

Comment 33. A table should be added to show the sediment level increase by year, or by five-year increments, over the 50 year life expectancy of the dam.

Response: See response to Comment 6.

Comment 34. Please explain calculations for sedimentation rates.

Response: See response to Comment 6.

Comment 35. If 3-C were in "regular" program versus the "pilot" program, would there be a better chance for sediment removal? Report states reasons are "economic". Since more funding is becoming available, can these funds be used for sediment removal once this project has been completed, or is this our "one shot" within a 50-year timeframe?

Response: The fact that FRS No. 3C is the first structure in Texas being considered for rehabilitation had no bearing on the decision not to remove any of the sediment. Increased funding for rehabilitation program would not change the recommendation. NRCS policy requires that sufficient sediment storage volume be available to assure proper functioning of the floodwater retarding structure for a minimum of 50 years. Studies indicate that No. 3C has adequate capacity to function as a floodwater retarding structure for about 80 years without removal of any sediment. This fact along with the significant cost associated with sediment removal would indicate that sediment removal for the purpose of rehabilitation of the floodwater retarding structure is not warranted.

Comment 36. Finally, this report must clearly state that calculations for the sediment basin are being made without consideration for normal, healthy water levels in the lake.

Response: A statement was added to the Formulation of Alternatives Section that provisions to remove sufficient sediment volume from the sediment pool and or incorporate features to maintain a "normal healthy water level in the lake" as requested by the adjacent homeowners was not included in any of the alternatives. Removal of the sediment can be accomplished by the homeowners in the future as a non-project feature if the homeowners desire.

Comment 37. I'm available, along with other committee members, to meet and discuss these findings, with you. If you have any questions, please contact me.

Response: Noted.

Laurie Medeiros - Steering Committee Representative, Mallard Lakes

Comment 1. On page 8 of the report it is stated, "Although not a significant problem today, sediment accumulation in the sediment pool is a serious concern to the local residents. They are very interested in prolonging the life of the sediment pool and improving its value for fish and wildlife. They would prefer for the water to be at least an average of 10 feet."

Response: The Plan/EA was modified to clearly describe the problems associated with sediment accumulation and the homeowner's perspective.

Comment 2. Although we are concerned about maintaining the quality of the lake for fish and wildlife, our primary concern is the certain negative economic impact on property values which will occur as sediment accumulates and the water level in the lake decreases.

Response: Noted.

Comment 3. We fully understand the NRCS position regarding sediment removal. We'd like to submit, however, that while the NRCS lakes in our city continue to perform the functions they were designed and constructed for in the 1950's, the setting in which they perform those functions has changed dramatically. There is now a great aesthetic value attached to the lakes as the direct result of high-end residential development, which has occurred around them. Healthy water levels are needed to continue to support increasing property values and tax revenue for the City of McKinney, McKinney Independent School District, and Collin County.

Response: Noted.

Comment 4. We submit that the change from an agricultural setting to a residential setting around NRCS lakes requires a new approach regarding measurement of the available sediment storage within the basin. Calculations must include normal, healthy water levels, for the duration of the life of the upgraded dam. Furthermore, this should apply to all NRCS dams and lakes nationally as they become urbanized; which changes the setting, usage, and expectations of the lakes adjacent to NRCS dams.

Response: Noted.

Comment 5. The Draft Supplemental Watershed Plan and Environmental Assessment is clearly a report based on the economic benefits which will result by upgrading NRCS FRS 3C. It seems inconsistent to thoroughly analyze the positive impacts of upgrading the dam, while failing to analyze the negative economic impact that will result as the basin fills with sediment, and water levels decrease. The lake was approximately 25 feet deep, when built in 1958. The Freese & Nichols Dredging Feasibility Study performed in March of 2001 states the average depth of the lake as being 5 feet. This report states that the lake now has an average depth of 4 feet. This represents a one-foot decrease in depth over a period of one year. The dramatic reduction in the water depth of this lake must be properly addressed.

Response: Noted. The Plan/EA recognizes the impacts of the sediment pool filling with sediment during the period of analysis. With the correction in the surface area of the sediment pool and the average depth, there is no dramatic reduction in depth.

Comment 6. Residents of Mallard Lakes are pleased that the dam was accepted into the NRCS Pilot Program, and that the new design will meet high hazard standards. The safety of the dam has always been our greatest priority. We understand the importance of staying on schedule as we move through this project. It is our understanding the permitting process for desiltation takes time, and does not "fit" into the timetable required by the pilot program. Regardless of schedule, if some restoration of water depth is not done in conjunction with the dam upgrade, or in the near future, it is clear that within a relatively short period of time, we will face declining property values. Additionally we will suffer the loss of use of the lake for recreation, fish and wildlife habitat, and all benefits associated with the natural beauty it provides.

Response: Noted. Based on the available data, it is projected that there is sufficient capacity to store the projected accumulation of sediment for about 82 years that is significantly longer than the 50-year period of analysis.

Comment 7. We request that our concerns regarding the negative economic impact on property values as a result of increasing sedimentation of the lake be evaluated at greater length, and that the concerns outlined in this letter be made a part of the public input record within the Draft Supplemental Watershed Plan and Environmental Assessment.

Response: The letter has been included in the Plan/EA. The Environmental Assessment recognizes that the "lake" will change as the sediment pool fills with sediment and the water is displaced. It is projected that the sediment pool has enough capacity to store the estimated accumulation of sediment for about 82 years. Using available information (2001 data) at the time of the economic analysis, the estimate of property values appears reasonable for the scope of this project. Based on recent historical trends within the area, it is estimated that property values will continue to appreciate for the foreseeable future.

Comment 8. We request that information be included in this report which states that the current guidelines for calculating sediment storage within a basin do not allow for a normal, healthy, water levels.

Response: The current guidelines provide for providing sediment storage capacity to assure the proper functioning of the floodwater retarding structure. Storage of water in the sediment pool until it is displaced by sediment is optional. It is permissible for sponsors to include additional storage capacity for other purposes if they desire and the capacity is available or to periodically remove accumulated sediment. However no Federal cost sharing is available through the rehabilitation program for these other purposes.

Comment 9. We request that the NRCS reconsider their current policy for calculating sediment storage within a basin without consideration for a normal, healthy, water levels in the adjacent lake. Healthy water levels should be calculated to last the 50 years of the life of the dam. The setting has changed; the standard should be adjusted accordingly. The basin cannot be accurately represented as "healthy" without a normal, healthy water level.

Response: See comments above.

Comment 10. We would like more specific information regarding the rate of sedimentation, and how sedimentation will impact the water levels in the lake over the 50-year period of the expected life of the dam. Please include a sedimentation chart as part of this report, and explain the process used to determine the sedimentation rate. Include accurate information regarding the anticipated accumulation of sediment over the 50-year life of the upgraded dam.

Response: See response to Comment 6 of Clayton Myhre's letter. FRS No. 3C is projected to function longer than 50 years with proper operation and maintenance. The sediment pool has the capacity to store the sediment expected to accumulation over about 80 years. The 50 years refers to the time frame that benefits and costs were analyzed and is the minimum period established by policy. A sedimentation chart was not included. The sedimentation rate is an average annual rate over the period of analysis. The actual rate may vary from year to year.

Comment 11. We would like to know what assistance would be available for sediment removal in the future, if your agency denies our request to remove sediment. Are there any other sources of funding available through other agencies? Can you help us obtain these funds?

Response: NRCS's rehabilitation program only provides financial assistance to remove accumulated sediment if it is determined that sediment storage capacity is not adequate to assure that the structure would function properly during the period of analysis. . In the case of the FRS No. 3C, there is sufficient storage capacity for this purpose. NRCS knows of no other Federal program that provides financial assistance to remove accumulated sediment for the purpose of increasing the depth of the sediment pool

Comment 12. Additionally, there are a number of discrepancies contained in this report that are outlined in an analysis forwarded to you by Clayton Myhre, Chairman of the City of McKinney NRCS Lakes Task Force, of which I am also a participant. The City of McKinney NRCS Lakes Task Force feels it is imperative that the Supplemental Watershed Plan and Environmental Impact Statement for this project is a thorough, accurate reflection of the current environmental and economic issues related to the basin of NRCS FRS 3-C.

Response: Noted. The discrepancies were addressed.

Comment 13. I'd like to once again thank you and your agency for your work and dedication to the upgrading of NRCS FRS 3C. I am available to discuss any of the issues related to this project with you at your convenience. We are proud to have this important project as part of our community, and are dedicated to its well-being.

Response: Noted.

RECOMMENDED PLAN

Alternative No. 3 is the preferred alternative. The dam will be modified to meet current performance and safety standards for a high hazard dam. The modification will consist of installing an additional 30-inch diameter principal spillway, widening the present auxiliary spillway from 100 feet to 280 feet, and raising the top of dam by about 1.0 foot. The auxiliary spillway will be divided into two sections. One will be 100 feet wide and one will be 180 feet wide. An earth dike will divide them. The 180-foot wide bay of the auxiliary spillway will be protected with 1.5 feet thick reinforced concrete with a crest at elevation 633.3ft msl. A roller compacted concrete (RCC) wall will be constructed at the west end of the dam to separate the spillway from the dam. At the downstream end of the exit channel where the grade drops off

into a side tributary, a stepped RCC wall will be constructed. The 100-foot bay will be vegetated. The crest elevation of the 100-foot bay will be 0.8 feet higher than the 180-foot bay. The area upstream of the auxiliary spillway will be selectively cleared of undergrowth and trees to improve the hydraulics of the auxiliary spillway (1.23 acres). Construction activities will result in the disturbance of approximately 0.2 acre of wooded upland, 0.54 acres of riparian area, and 1.62 acres of open grassland. The removal of vegetation will only be that necessary to allow rehabilitation of the structure. Disturbed areas will be reestablished to adapted native species providing food and cover for wildlife. Woody species will be used where adapted and appropriate

The top of dam will be raised one foot using earth fill by "capping" and will be vegetated. The footprint and slopes of the existing dam will not be affected by the addition of this cap. The additional principal spillway will consist of a 30-inch diameter reinforced concrete pipe with a hooded inlet. The crest will be at the same elevation as the existing principal spillway. An impact basin will be installed at the end to dissipate energy. The additional principal spillway will be located close to the existing principal spillway and will empty into the stream immediately downstream of the dam. All disturbed areas will be vegetated. A new trash guard and slide gate will be installed on the existing principal spillway.

COMPLIANCE WITH LOCAL, STATE, AND FEDERAL LAWS

All applicable local, state, and federal laws will be complied with in the installation of this project. Construction activities will require a Storm Water Pollution Prevention Plan (SWPPP). The Corps of Engineers has indicated that the project will require authorization under Section 404 of Clean Water Act, and that the project likely falls within the scope of an existing nationwide permit (NWP#3 Maintenance).

Planning activities for the protection and preservation of historic properties will comply with Section 106 and Section 110 (f) and (k) of the National Historic Preservation Act. NRCS responsibilities for compliance will be met by processes consistent with the Advisory Council on Historic Preservation regulations (36 CFR 800). Identified cultural resources will be evaluated for National Register of Historic Places (NRHP) eligibility in consultation with the State Historic Preservation Officer (SHPO). The NRCS will consult the SHPO and Advisory Council on Historic Preservation to determine a mutually agreeable course of action in the event that properties determined eligible for the NRHP would be adversely affected by the proposed project. The NRCS will take action to protect or recover, or both, any historic properties discovered during construction.

OPERATION AND MAINTENANCE

The project will be operated and maintained by the sponsoring local organizations. The Collin County Commissioners Court has the prime responsibilities for maintenance of FRS No. 3C. The City has agreed to assist in the maintenance. O&M activities include but are not limited to inspections, maintenance and repairs of the principal spillways, dam, vegetation and the auxiliary spillway. It is estimated that O&M activities will amount to about \$2,000 per year.

CONTROLS ON DOWNSTREAM DEVELOPMENT

The City of McKinney has a plan in place to control downstream development. They presently prevent development in the breach area of the existing dam. They also have an ongoing floodplain management plan which controls development in the floodplain.

FINANCING ARRANGEMENTS

The installation of the project will be financed jointly by the City of McKinney and NRCS. NRCS will use funds appropriated for this purpose. The City of McKinney has approved a bond issue for its share of the costs. The percentages of the installation costs including construction, engineering, project administration, and land rights to be paid by the Sponsoring Local Organization and the NRCS are as follows:

	<u>Sponsors</u>	<u>NRCS</u>	<u>Estimated Total Rehabilitation Costs</u>
Rehabilitation of FRS No. 3C	35 %	65 %	\$1,215,700

An amount up to the percentage rate specified may be satisfied by the Sponsoring Local Organization for cost of an element such as engineering, real property acquisition or construction. The decision to, and arrangements for, such action will be negotiated between the sponsors and NRCS and will be included in a project agreement executed immediately before implementation. NRCS costs will not exceed 100 percent of the construction cost.

Table E shows the Estimated Total Cost Distribution for the Project.

Table E – Estimated Total Rehabilitation Cost Distribution
FRS NO. 3C
Dollars ¹

Item	Installation Costs, Rehabilitation Funds (Federal Funds)				Installation Costs, Other Funds (Nonfederal Funds) ²						Total Rehabilitation Costs
	Construction	Engineering ³	Project Administration ³	Total Federal Funds	Construction	Engineering	Land Rights	Planning	Project Administration ⁴	Total Other Funds	
Structural Measures Rehabilitation of FRS No. 3C	\$ 790,205			\$ 790,205	\$ 82,915	\$ 186,260		\$ 121,320	\$ 35,000	\$ 425,495	\$ 1,215,700

¹ Price Base: 2001

² Other Funds include in-kind contributions

³ Federal costs for engineering and project administration are not included in Total Rehabilitation Cost.

⁴ Includes City's in-kind contribution of planning, contracting, and project administration.

LIST OF PREPARERS

Name & Present Title	Education	Experience (Years)
Allan Colwick, P.E., R.P.L.S., Watershed Specialist - Wilson & Company	B.S. Agricultural Engineer.	42
William Erion, P.E., Partner, Civil Engineer - M&E Consultants	M.S. Civil Engr.	37
Frank Sprague, Biologist - Wilson & Company	B.S. Wildlife Management	35
Calvin Sanders, Cultural Resources Specialist - NRCS	M.A. Anthropology	21
Charles Baird, P.E., Watershed Specialist - Wilson & Company	B.S. Agricultural Engineering	36
James Featherston, Agricultural Economist - NRCS	M.S. Agricultural Economics	25
Dave Petefish, Geologist - NRCS	M.S. Geology	29
David Strakos, Civil Engineering Technician - NRCS	High School Diploma	24
James Hailey, P.E. Assist. State Conservationist - NRCS	M.S. Agricultural Engineering	33
James Neighbors, Resource Conservationist - NRCS	M.S. Range Management	34
Pete Waldo, Geologist - NRCS	Ph.D. Mathematical Sciences	29
Ronnie Skala, P.E. Hydraulic Engineer - NRCS	B.S. Agricultural Engineering	23
Sam Stewart, Resource Conservationist - NRCS	B.S. Agriculture	33
Clyde Hogue, Resource Conservationist - NRCS	M.S. Agricultural Sciences	22
Charles Easterling, P.E., Director of Water Resources - Wilson & Company	M.S., Civil Engineering	27
Bonnie Simmons, Admin. Assistant - Wilson & Co.	A.A. Business Admin,	16
J.M. "Mike" Woodson, P.E., Watershed Specialist - Wilson & Company	B.S., Civil Engineering	40

In addition to the above named preparers, we would like to acknowledge the contributions of Freese & Nichols, Britain & Crawford, and Trinity Testing for their technical input into this project. We would also like to acknowledge the input of the Steering Committee for their valuable input into the planning of the project.

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REFERENCES

1. Freese & Nichols, Inc., July 1, 1999. The City of McKinney Storm Water Ordinance.
2. Freese & Nichols, Inc., July 1999. Hydrology and Hydraulic Study of NRCS Lake 3C, City of McKinney, Texas.
3. Freese & Nichols, Inc., March 2001. Dredging Feasibility Study for Eldorado and Mallard Lakes in McKinney, Texas.
4. Nathan D. Maier Consulting Engineers, Inc., May 1988. McKinney Floodplain Management Study, City of McKinney, Texas.
5. Texas Archeological Sites Atlas, February 2002.
6. USDA Soil Conservation Service, August 1956. Work Plan, East Fork above Lavon Watershed of the Trinity River Watershed, Collin and Grayson Counties, Texas.
7. USDA Soil Conservation Service, July 1979. Work Plan, East Fork above Lavon Watershed of the Trinity River Watershed, Collin and Grayson Counties, Texas.

APPENDIXES

- APPENDIX A:** **Comment Letters Received on the Supplemental Plan/Environmental Assessment**
- APPENDIX B:** **Vicinity Map**
- APPENDIX C:** **Breach Inundation Map**
- APPENDIX D:** **Project Map**
- APPENDIX E:** **Table 1 – ESTIMATED INSTALLATION COST**
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APPENDIX A

Comment Letters Received on the Supplemental Plan/Environmental Assessment



CITY OF MCKINNEY OFFICE OF THE MAYOR

August 6, 2002

Mr. James Halley
USDA-NRCS
101 South Main Street
Temple, TX 76501-7602

Re: Rehabilitation of FRS 3C EFAL
Support of Draft Plan Supplement and Environmental Assessment

Dear Mr. Hailey:

We have received the NRCS FRS 3C EFAL Draft Plan Supplement and Environmental assessment. The City of McKinney strongly supports the efforts of the USDA/NRCS to upgrade the dam for the additional safety of our residents and infrastructure.

Please do not hesitate to contact me at (972)547-7507 or our Director of Engineering, Jack E. Carr, PE at (972)547-7421 if we may assist you in any way.

Sincerely,

Don Dozier
Mayor, City of McKinney



Texas State Soil & Water Conservation Board

24 Jul 02

FILE COPY

Tomas M. Dominguez, Acting State Conservationist
USDA Natural Resources Conservation Service
101 South Main
Temple, Texas 76501-7602

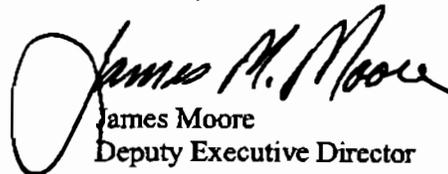
Re: Site 3C East Fork Above Lavon

Dear Mr. Dominquez:

We have reviewed the Draft Plan Supplement and Environmental Assessment on the proposed rehabilitation of Floodwater Retarding Structure No. 3C of the East Fork Above Lavon Watershed of the Trinity River, Collin County, Texas.

This project is essential to maintain the flood control benefits the structure currently provides and to comply with current performance and safety standards. We strongly support this project and commend the project sponsors and NRCS for implementing this rehabilitation effort.

Sincerely,


James Moore
Deputy Executive Director

JUL 25 2002



TEXAS WATER DEVELOPMENT BOARD



Wales H. Madden, Jr., *Chairman*
William W. Meadows, *Member*
Dario Vidal Guerra, Jr., *Member*

J. Kevin Ward
Executive Administrator

Jack Hunt, *Vice Chairman*
Thomas Weir Labatt III, *Member*
E. O. Fred Pittman, *Member*

July 30, 2002

FILE COPY

Mr. Tomas M. Dominguez
Acting State Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
101 South Main
Temple, Texas 76501-7602

Re: Proposed Rehabilitation of Floodwater Retarding Structure No. 3C

Dear Mr. Dominguez:

Thank you for providing the Texas Water Development Board (TWDB) with a copy of the "Draft Supplemental Watershed Plan No. V & Environmental Assessment for Rehabilitation of Floodwater Retarding Structure No. 3C of the East Fork above Lavon Watershed in Collin and Grayson Counties, Texas." The TWDB recognizes that the proposed project plays an important role in flood control and flood protection to downstream areas at risk.

Our staff have reviewed the above referenced document and based on information provided in the report, we do not foresee any impacts to TWDB related flood planning studies currently on-going or recently completed. There are no TWDB or FEMA funded flood control planning studies currently being performed in the subject area. There are, however, several studies being performed in the watershed of upper Trinity River in Tarrant County, but none in the area which may be impacted by the referenced project.

In general, the TWDB supports the proposed project, and we foresee no impacts to any of our flood planning programs in the upper Trinity River. We wish you success in completing this important flood control project.

Sincerely,

J. Kevin Ward
Executive Administrator

AUG 02 2002

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FILE COPY



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
WinSystems Center Building
711 Stadium Drive, Suite 252
Arlington, Texas 76011

July 16, 2002

Mr. Tomas M. Dominguez
Acting State Conservationist
USDA Natural Resources Conservation Service
101 South Main
Temple, Texas 76501-7602

Dear Mr. Dominguez:

This letter consists of our review and comments regarding the Draft Plan Supplement and Environmental Assessment (EA) on the proposed rehabilitation of Floodwater Retarding Structure (FRS) No. 3C of the East Fork Above Lavon Watershed of the Trinity River, Collin County, Texas. According to the EA and information obtained by a member of my staff at a field review of the site on March 6, 2002, the project would involve the renovation of the present structure to meet present safety and performance standards and other requirements to extend the service life of the structure.

This project is part of the Small Watershed Rehabilitation Amendments of 2000 (Section 313, PL 106-472). This legislation authorized the Natural Resources Conservation Service (NRCS) to work with local communities and watershed sponsors to rehabilitate aging watershed dams built under Public Law 78-534, Public Law 83-566, and Pilot Watershed programs. The Sponsors for the proposed project are: the Upper Elm-Red Soil and Water Conservation District, Collin County Soil and Water Conservation District, Collin County Commissioners Court, Grayson County Commissioners Court, City of McKinney, City of Van Alstyne, and the City of Anna.

Based on the information provided at the field review, alternatives available to the sponsors with federal assistance included:

- 1) No Action (Future without the project)
- 2) Decommission (Removal of dam footprint with stream segment connection and sediment stabilization)
- 3) Rehabilitation of Dam (Includes the following options)
 - a. Widen emergency spillway with new principal spillway.
 - b. Structural emergency roller compacted concrete (RCC) spillway with new principal spillway.

- c. Allow overtopping of dam with downstream dam armoring.
- d. Classification change of dam from class a to class b hazard.

4) National Economic Development Plan (NED) Alternative.

NRCS staff indicated during the field review the preferred alternative for FRS No. 3C, potentially, could consist of the rehabilitation of the dam by armoring the downstream side with concrete to allow overtopping and the construction of an additional spillway within the armored structure (alternative 3c listed above). In a letter from this office dated April 5, 2002, it was our opinion this alternative would be the least damaging to fish and wildlife resources. We believed this alternative would renovate the dam while avoiding most, if not all, impacts to the high quality riparian/bottomland hardwoods associated with the existing principal and emergency spillways.

According to the EA, the preferred alternative would be to modify the dam to meet current performance and safety standards for a high hazard dam. The modification would consist of installing an additional 30-inch diameter principal spillway, widening the present auxiliary spillway from 100 to 280 feet, and raising the top of the dam by approximately one foot. The auxiliary spillway would be divided into two sections. One would be 180 feet wide and one would be 100 feet wide. An earthen dike would divide them. The 180-foot wide section would be protected with 1.5 feet thick reinforced concrete with a crest at elevation 633.3 ft msl. A RCC spillway would be constructed at the west end of the dam to separate the spillway from the dam. At the downstream end of the exit channel where the grade drops off into a side tributary, a stepped RCC wall would be constructed. The 100-foot wide section would be vegetated. The preferred alternative is the NED alternative plan. Based on this information, the preferred alternative would be alternative 3b (as listed above) rather than 3c. It was our understanding that all of the alternatives listed above would receive full consideration during the development of the Supplemental Plan and Environmental Assessment (EA). However, the draft EA does not provide any information justifying why alternative 3b was selected over the other rehabilitation alternatives.

As proposed, the preferred alternative would require the area upstream of the auxiliary spillway to be selectively cleared of undergrowth and trees in order to improve the hydraulics of the structure. Construction activities would result in the elimination of approximately 1.5 acres of woody vegetation associated with the riparian corridor of the side tributary and the disturbance of 3.9 acres of open grasslands. The removal of vegetation would only be the amount necessary to allow rehabilitation of the structure. Disturbed areas would be reestablished to adapted native species providing food and cover for wildlife. Trees and shrubs would be planted where adapted and appropriate. Through previous coordination, we recommended every effort be made to mitigate (i.e., avoid, minimize, and compensate) for any potential impacts to fish and wildlife resources.

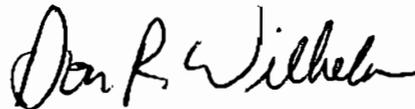
Our review of this and subsequent EA's for rehabilitation projects, will be in accordance with the guidelines and directives contained in our Mitigation Policy (Federal Register 46[15]: 7644-7663, January 23, 1981). Our recommendations are based on the information provided in the EA regarding the value and relative abundance of the affected habitat to fish and wildlife resources. However, the

EA does not provide information with respect to the location of proposed impacts on the project site or the quality of the habitat proposed to be impacted. During the field visit, my staff biologist observed a high quality riparian corridor comprised of a diverse community of trees and shrubs including hard-mast producers such as chinkapin oak, red oak, pecan, and black walnut with one exception being a relatively small segment of the side tributary nearest the existing auxiliary spillway. The vegetation in this area was indicative of a low quality disturbed site (e.g., dominated by black willow). The open grasslands on site have been maintained and were of low quality to wildlife.

Unfortunately, we are unable to provide specific recommendations concerning the mitigation of impacts without information on the exact location and quality of the habitat affected by the proposed project. If the proposed impacts are located solely within the low quality disturbed segment of the riparian corridor, we would suggest a much lower compensation ratio than if portions of the high quality riparian corridor were included in the impact zone. Detailed recommendations regarding the mitigation of impacts to fish and wildlife resources will be offered once the additional information requested is provided. Furthermore, we request future EA's for dam rehabilitation projects include information regarding all rehabilitation alternatives considered, the exact location of impacts to fish and wildlife habitat (in an illustration), the quality of habitat, the quantity of habitat, and a detailed discussion of any proposed compensation.

We appreciate the opportunity to provide comments regarding fish and wildlife conservation during the planning of the rehabilitation of FRS No. 3C. If you have any questions regarding our comments concerning this project, please feel free to contact Mike Armstrong of my staff at the letterhead address or telephone (817) 277-1100.

Sincerely,



for Thomas J. Cloud, Jr.
Field Supervisor

cc: Regulatory Branch, U.S. Army COE, Fort Worth, TX (Attn: Presley Hatcher)
Resource Protection Division, TPWD, Austin, TX (Attn: Tom Heger)
Marine & Wetlands Section, U.S. EPA, Dallas, TX (Attn: Norm Sears)
Section 401 Coordinator, TNRCC, Austin, TX (MC-150)



CITY OF MCKINNEY OFFICE OF THE MAYOR

August 6, 2002

Mr. James Hailey
USDA-NRCS
101 South Main Street
Temple, TX 76501-7602

Re: Rehabilitation of FRS 3C EFAL
Support of Draft Plan Supplement and Environmental Assessment

Dear Mr. Hailey:

We have received the NRCS FRS 3C EFAL Draft Plan Supplement and Environmental assessment. The City of McKinney strongly supports the efforts of the USDA/NRCS to upgrade the dam for the additional safety of our residents and infrastructure.

Please do not hesitate to contact me at (972)547-7507 or our Director of Engineering, Jack E. Carr, PE at (972)547-7421 if we may assist you in any way.

Sincerely,

Don Dozier
Mayor, City of McKinney

FILE COPY

July 11, 2002

Mr. James Neighbors
Mr. Tomas Dominguez
Resource Conservationist
USDA / NRCS
101 South Main
Temple, TX 76501-7602

RE: Review of June 2002 Draft Supplemental Watershed Plan No. V & Environmental Assessment for NRCS FRS 3C of the East Fork Above Lavon Watershed

Dear Mr. Neighbors and Mr. Dominguez:

Please accept the following comments and observations regarding the Draft Supplemental Watershed Plan and Environmental Assessment for NRCS FRS 3C:

Page 2 – Resource Information – Size of Planning Area: There is a discrepancy in the size of the planning area. The report states 1360 acres. The Freese & Nichols report states the basin area is 960 acres, and the downstream planning area is 397 acres (1357 acres total). The original basin area is listed as 915 acres, which we don't believe has changed. Assuming the 397 downstream to be accurate, the planning area would be 1,312 Acres, not the 1360 acres as stated.

Page 2 – Resource Information – Wetlands: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out a 15 Acre wetland area. Original NRCS documents list the wetland area at 20 acres. This represents a 25% reduction in wetlands from the original design.

This report also does not address the impact that the addition of two smaller adjacent ponds has on the wetland area. (middle pond, lower pond) Briefly, in 1994, when Toll Brothers was developing the adjacent neighborhood, they modified the eastern end of the dam without permission from the NRCS. Legal action was taken against the developer by the NRCS. As part of the settlement of this lawsuit, the channel leading to the lake was widened and two additional ponds were created to compensate for lost flood storage capacity.

An aerial photograph of the lake and two ponds was obtained from the City of McKinney Engineering Department. A digitizer was used to perform a quantity survey on the wetland areas. The results are as follows:

- The main lake has approximately 14.18 acres of wetland area
- The upper pond has approximately 2.35 acres of wetland area
- The lower pond has approximately 1.06 acres of wetland area
- This represents a total wetland area of 17.59 acres per our analysis

These figures show that there has been a loss of 5.8 acres of wetlands (29%) from the original design. If the additional ponds are included, there has been a loss of 2.4 acres (12%) from the original design.

JUL 15 2002

Review Comments
Draft Supplemental Watershed Plan No. V and Environmental Assessment
for Rehab of FRC No. 3C, EFAL

The impact that the creation of these two additional ponds has on the basin should be noted in this report. Also, any impact these additional ponds have on the data listed on page 37 should be calculated and noted as such. The reduction in wetland impacts several calculations throughout the report, including fish habit, sedimentation calculations, etc. The creditability of the report is at issue since incorrect or incomplete data will produce incorrect results.

Page 5 – Paragraph 2: Clarify 1,360 Acre drainage area. See Page 2 comment regarding size of planning area.

Page 5 - Paragraph 2 - States that the basin is either urbanized or projected to be urbanized within the near future, and the rate of sedimentation will be reduced to 0.6 ac-ft/sq.mi./yr. We disagree with that assessment.

In "The Preserve", a 93.52-acre tract immediately adjacent to NRCS FRS 3C, only 17 of the available 63 lots are developed. Of the available lots, there are 8 lots which are immediately adjacent to the lakes, representing approximately 5 acres of undeveloped land immediately adjacent to the shoreline. These 8 lots will accommodate basement-style homes, which require extensive backfilling. It should be noted that this subdivision was given its green tag by the City of McKinney in September 2000. After two years, 73% of the lots (approximately 68-Acres) remain undeveloped. At the current rate of nine or ten homes a year, completion of development in this subdivision could take another four to five years. It should also be noted that the final phase of Mallard Lakes is in the platting stages. This phase represents another 50 to 60 acres of development with approximately 1/2 of the runoff for this area (30-Acres) will be directed into Lake 3C, and the balance (30-Acres) to Lake 3D. This will impact both lakes for at least another six to eight years. There is also a 13-acre residential development immediately west of the Preserve. There is also a substantial amount of new development underway immediately south within the basins of Lakes 3C (approximately 40 acres) and 3D, in the Winding Creek Subdivision, which will continue to impact sedimentation until it's completion. This means that approximately 151 acres or 16.5% of the basin remains to be developed.

Mr. David Craig, of Craig International, a local developer, and a committee member, has toured the basin to assess the current status of build out within the total basin. His assessment places development at about 80-90% of the 915 acres of the lake basin. This leaves approximately 90 to 180-Acres left to be built out, including eight home lots immediately adjacent to the lake. This correlates to the findings above.

With this amount of land left to be developed, the rate of sedimentation will continue at a higher rate for a longer period of time. Especially with lakeside lots yet to be developed. This affects the sediment storage life span, which is used to determine whether or not desiltation of the lake is needed.

Page 5 – Paragraph 4: Clarify rate of ultimate future sedimentation. At what point in time will rate become 0.6 ac-ft/sq.mi./yr.? Is this at full development? What is interim rate, while construction is underway, disturbing soil? The lake has seen significant sedimentation over the last 2 years. The Freese & Nichols report from 2001 states that the average water depth is 5 ft. On page 5, under "Fish Habitat": the report states that the average water depth is 4 ft., which is a loss of 1 ft in depth in a year. Put another way, 20 ac-ft of sediment was deposited in the lake in the past year. If this rate of sedimentation is not reduced, the lake will quickly fill.

Review Comments
Draft Supplemental Watershed Plan No. V and Environmental Assessment
for Rehab of FRC No. 3C, EFAL

Page 5 – Paragraph 4: The current population count is inaccurate. The population as of Jan 1, 2002 was 66,575. In January 2001 the total population was 58,986. The rate of growth from 2001 to 2002 was 12.9%, representing a total of 7,589 new citizens. The average annual rate of growth since 1990 has been 17.75% (a total increase in population of 45,292 residents). These numbers clearly state the mushroom effect referred to in the report.

Page 5 – Last Paragraph: - Please Clarify drainage area. See Page 2 comment regarding size of planning area. Original map says 915. Freese & Nichols states 960 upstream, 397 downstream.

Page 6 – Paragraph 2 – A sediment study, commissioned by the City of McKinney, and performed by Freese & Nichols in March 2001, indicated that at the time the basin had available sediment storage capacity to store sediment accumulation for the next 82 years. Please be specific about when the data used to calculate remaining sediment storage was collected.

Page 7 – Wetlands: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out a 15 Acre wetland area. Please confirm which is correct. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue, also calculated current wetlands of main lake at 14 acres. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS.

Page 8 – Paragraph 4: The size of the wetlands (20 acres) does not agree with Appendix E, Table 3 which calls out a 15 Acre wetland area. Please confirm which is correct. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres.

Page 8 – Paragraphs 4 & 5: Report states that lot values will be reduced by 10-30% if FRS No. 3 C is removed. However the report fails to address the reduction in lot and property values as the sediment accumulates. The value of lots is related to having a viable lake. If the lake is too shallow it won't support fish and wildlife. The shallow waters will become a breeding ground for mosquitoes, as attested to by FRS 5A. There is a definite economic value to maintaining a minimum depth in the lake. The sediment study, commissioned by the City of McKinney, and performed by Freese & Nichols in March 2001, recommended a minimum depth of ten feet for recreational purposes.

Page 8 – Paragraph 5: Disagree with portion of statement "Although not a significant problem today". We believe the sediment accumulation is a very serious concern to the local residents. The lake has seen significant sedimentation over the last 2 years. The Freese & Nichols report from 2001 states that the average water depth is 5 ft. The draft report states that the average water depth is 4 ft., which is a loss of 1 ft in depth in a year. That is a very significant increase of sedimentation (20 ac-ft).

Page 9 – Table A: Water quantity is listed as HIGH priority on Identified Concerns Table, as is sedimentation. If these areas are of high concern, why are they not being thoroughly analyzed in this report? Additionally, sedimentation and land values are listed at high degrees of concern. The urbanization of the lake basin merits further study regarding the negative impact increased sedimentation will have on land and property values over the expected 50-year life of the project.

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Page 10 – Paragraph 2: In addition to "Lots located around the sediment pool are valued higher than other lots in the area", lots with a lake view but not on the lake also have a higher value. See attached report showing appraised values of lots and homes in Mallard Lakes and The Preserve. Current appraisal data was obtained from the Collin County Central Appraisal District web site. Upon examining the data, there are clearly 3 level of valuations established: Lakeside, Lakeview, and Interior Lots. A breakdown of values is included on comments for page 16

Page 10 – Last Paragraph: There is a discrepancy in the assumptions/calculations made regarding remaining storage capacity. The report uses the Freese & Nichols Dredging Feasibility Study dated March 2001 which states that the average water depth is 5 ft., and that 74-acre-feet of storage remain. The draft report states that now the average water depth is 4 ft., which is a loss of 1 ft in depth in a year. That is a very significant increase of sedimentation (20 ac-ft) in one year. This would appear to only leave 54 years remaining. Based on current rates of erosion and sedimentation, there is significant risk that the storage capacity will not last the 50 year life of the project. This must be properly addressed. A table showing rates of sedimentation over the projected 50 year life span of the upgraded structure should be included as part of this report.

Page 10 – Last Paragraph: The last sentence states that excessive cost is the reason that sediment removal is not included in the alternate plans, though no analysis is given. If the F&N report is the basis it should be referenced as such. However, given the rapid accumulation of sedimentation in the last year, indications are that further analysis should be performed.

Page 16 - Land Values: Please refer to attached analysis based on Collin County Central Appraisal District assessed values, and plats of both subdivisions.

- 1) There are 167 lots, not 168. (per CCAD records, 7/02).
- 2) There are 26 lots adjacent to the sediment pool, and 22 lots that have a lake view.
- 3) Lots around sediment pool (Lakeside) range in value from \$71,400 - \$144,500. These lots have a total value of \$2,968,700, not the \$2 million as stated.
- 4) Lots that have a lake view range in value from \$68,850 - \$106,600. These lots have a value of \$2,249,190.
- 5) Remaining interior lots range in value form \$58,950 - \$98,400. These lots have a value of \$9,741,120. (Lot values for all properties in the subdivision represent an average of 26% of the total assessed value of each property.)
- 6) Total annual tax revenue is \$1,422,202, not the \$900,000 as stated.
- 7) Based on the three distinct lot values, the lake view lots would have a higher loss than interior lots, but a lower loss than the lakeside lots. A 20% reduction would be fair and in line with the property valuations.
- 8) The economic analysis fails to address the total assessed value of the lot and the home, therefore it is not complete. The current assessed value of all lots and homes in the Mallard Lakes subdivision is \$49,282,093. The current assessed value of lots only is \$14,959,010. There are improvements totaling \$34,323,083, which should be included in the economic analysis. Any negative impact to the basin will result in a drop in values of lots and improvements.

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- 9) This accurate assessment and tax data dramatically changes the economic analysis. The economic analysis needs to be revised to reflect the current (2002) assessed values from the Collin County Central Appraisal District.

Page 16 - Land Values. Report fails to address negative impact that sedimentation will have on land / home values, tax base, and environment. This section is incomplete without this information.

Page 16 – Fish Habitat: The size of the 20 acres does not agree with Appendix E, Table 3 which calls out a 15 Acre wetland area. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres. Please confirm which is correct. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS. Please also address the discrepancy between the 4' water depth stated in this report, and the 5' number stated in the Freese and Nichols Dredging Feasibility Study performed in March 2001.

Page 17 – Recreation: Last sentence has incorrect number of homeowners. There are 167, not 168 as stated.

Page 19 - Table B - Comparison of Remaining Concerns: Alternate No. 3 –

- 1) Sediment concern is listed as medium, believe it should be high. Additionally, it should be noted that as time passes, concerns related to sedimentation will increase.
- 2) Land Values concern is listed as low. It should be at least medium, because of the inevitable increase in sediment and decrease in the water level, which will have a negative impact on land and home values.
- 3) Storm Water Management Plan – Upgrading the dam does not impact the City of McKinney Storm Water Management Plan. Therefore, the concern should remain the same as it is today, which is medium.

Page 20 - Table C - Comparison of Alternatives

- 1) Annual Benefits and Net Monetary Benefits need to be updated to reflect revised lot values, which alter benefits.
- 2) Would like to understand why decommissioning the dam does not reduce the annual benefit of taxes, since values, and therefore taxes would be reduced.
- 3) Water and Plant & Animals - The size of the 20 acres does not agree with Appendix E, Table 3 that calls out a 15 Acre wetland area. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue also calculated current wetlands of main lake at 14 acres. Please confirm which is correct. Please see also comments regarding page 2, addressing addition of wetlands by developer as required by NRCS.

Page 22 – Paragraph 2 – Please provide further explanation regarding decision-making related to cost-benefit ratio. What guidelines are followed for determining net benefit?

Page 23 – Paragraph 2 – The .5 decrease in the elevation of the auxiliary spillway, which is listed at 633.3 in this report, needs further clarification. Original drawings show the spillway elevation at 633.8. (See “Plan of Spillway and Embankment”, NRCS Original Drawing, March, 1958) It appears that the 180-ft. bay of the new spillway design lowers the spillway by .5 feet. Does this lower flood storage capacity?

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The current NRCS easement line elevation is at 635 msl. This leaves only 1.7 feet difference between the spillway elevation and the easement elevation, not the 2 feet above the measurement of the emergency spillway, as required by State of Texas NRCS standards. It is our understanding that because Texas standards are higher than national standards; a variance must be obtained from the State of Texas NRCS office for this dam design. Shouldn't these important details regarding the required variance be made a part of the public record of this upgrade?

Page 27 – “List of Preparers” – A list of “other” participants, including Steering Committee members, should be made a part of this report. NRCS FRS 3C Steering Committee Members and Participants listed on meeting notes from March 14, 2002 and May 9, 2002 meetings should be included in this report, as they were a source of input for decision making.

Page 28 – References should include “as built” plans from the NRCS for FRS 3C.

Page 30 – Adjust Appendixes to include Rate of Sedimentation Chart and Steering Committee / Participant Chart.

Page 34 – A note should be included on this map that the channels do not exist, and will not be constructed.

Page 37 – Please address the following items, which may be incorrect.

Total Capacity – This 74 year number should be updated to reflect sediment measurements as of the date of this report. As much as 20 acre-feet may have entered the lake (based on comparison of Freese & Nichols numbers from March 2001, and numbers listed in this report) over the past 16 months.

Sediment Pool – Listed as 15 Acres, 20 Acres listed on original documents. Believe 14.18 Acres is accurate based on digitized takeoff. Clyde Hogue, also calculated current wetlands of main lake at 14 acres. Would be 17.59 Acres if ponds added in 1994 by developer are included. The addition of these ponds impacts the wetland area.

Floodwater Retarding Pool; - is this number impacted by the .5 ft reduction of the 180 ft. spillway in the new design?

OTHER

A table should be added to show the sediment level increase by year, or by five-year increments, over the 50-year life expectancy of the dam.

Please explain calculations for sedimentation rates.

If 3-C were in “regular” program versus the “pilot” program, would there be a better chance for sediment removal? Report states reasons are “economic”. Since more funding is becoming

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available, can these funds be used for sediment removal once this project has been completed, or is this our "one shot" within a 50-year timeframe?

Finally, this report must clearly state that calculations for the sediment basin are being made without consideration for normal, healthy water levels in the lake.

I'm available, along with other committee members, to meet and discuss these findings with you. If you have any questions, please contact me.

Thank you for the opportunity to provide input on this important project.

Regards,



Clayton Myhre
Chairman, City of McKinney NRCS Lakes Task Force
Cell Phone 214-912-1786
clayton.myhre@hillwood.com or
cmyhre782@attbi.com

Attachments: Mallard Lakes/Preserve 2002 Property Values
McKinney 2002 Population Data
McKinney 1990-2000 Census Data

Mallard Lakes and The Preserve - Current 2002 Assessed Valuations per Collin County Central Appraisal District

	The Preserve		Mallard Lakes		Total	
	Assessed Value	Total Lot Value	Assessed Value	Total Lot Value	Assessed Value	Total Lot Value
Lakeside Lots	\$ 2,526,397	\$ 1,123,700	\$ 7,051,129	\$ 1,845,000	\$ 9,577,526	\$ 2,968,700
Lakeview Lots	\$ 986,264	\$ 614,295	\$ 5,356,010	\$ 1,834,895	\$ 6,342,274	\$ 2,249,190
Interior Lots	\$ 7,971,656	\$ 3,443,520	\$ 25,390,637	\$ 6,297,600	\$ 33,362,293	\$ 9,741,120
Total	\$ 11,484,317	\$ 5,181,515	\$ 37,797,776	\$ 9,777,495	\$ 49,282,093	\$ 14,959,010

USED 2002 rate; major tax increase announced for MISD

Tax Rates - (per \$100)

	2002	2001
City	\$ 0.598	\$ 0.598
County	\$ 0.250	\$ 0.250
CCCC (Comm Coll)	\$ 0.093	\$ 0.093
MISD (School District)	\$ 1.945	\$ 1.765
Total	\$ 2.886	\$ 2.726

major increase just announced

	Taxes		Percentage Devaluation if Dam Removed	Annual Taxes Lost	
	Total Tax per Assessed Value	Total Tax per Lot Value		Total Tax per Assessed Value	Total Tax per Lot Value
Lakeside Lots	\$ 276,392	\$ 85,672	-30%	\$ (82,918)	\$ (25,702)
Lakeview Lots	\$ 183,028	\$ 64,908	-20%	\$ (36,606)	\$ (12,982)
Interior Lots	\$ 962,782	\$ 281,113	-10%	\$ (96,278)	\$ (28,111)
Total	\$ 1,422,202	\$ 431,693		\$ (215,801)	\$ (66,794)

Mallard Lakes and The Preserve - Lakeside Lots

Total Lakeside Lots per Site Plans		Avg. Price	Total Lot Value
11	Preserve	\$ 2,526,397	\$ 1,123,700
15	Mallard Lakes	\$ 7,051,129	\$ 1,845,000
26	Total Lakeside Lots	\$ 9,577,526	\$ 2,968,700
25	Lots per draft report		
1	Delta		

1	The Preserve	501	ROUEN DR	\$ 626,811	\$ 144,500	Y			
2	The Preserve	505	ROUEN DR	\$ 640,199	\$ 144,500	Y			
3	The Preserve	709	ROUEN DR	\$ 569,187	\$ 144,500	Y			
Completed Homes - Total				\$ 1,836,197	\$ 433,500				
Completed Homes - Average				\$ 612,066	\$ 144,500				

19	The Preserve	409	ROUEN DR	\$ 101,150	\$ 101,150	Y			Y
20	The Preserve	605	ROUEN DR	\$ 71,400	\$ 71,400	Y			Y

Empty Lots - Total		\$ 172,550	\$ 172,550
Empty Lots - Average		\$ 86,275	\$ 86,275

Total 5 Lots		\$ 2,008,747	\$ 606,050
Average per 5 known lots		\$ 401,749	\$ 121,210

Extrapolate for other 6 empty lots		\$ 517,650	\$ 517,650
Empty Lots - Average		\$ 86,275	\$ 86,275

Total 11 Lots		\$ 2,526,397	\$ 1,123,700
Average per 11 lots		\$ 229,672	\$ 102,155

4	Mallard Lakes	300	WOOD DUCK LN	\$ 541,682	\$ 123,000	Y			
5	Mallard Lakes	306	WOOD DUCK LN	\$ 660,043	\$ 123,000	Y			
6	Mallard Lakes	310	WOOD DUCK LN	\$ 418,325	\$ 123,000	Y			
7	Mallard Lakes	314	WOOD DUCK LN	\$ 522,897	\$ 123,000	Y			
8	Mallard Lakes	400	WOOD DUCK LN	\$ 482,551	\$ 123,000	Y			
9	Mallard Lakes	406	WOOD DUCK LN	\$ 582,397	\$ 123,000	Y			
10	Mallard Lakes	410	WOOD DUCK LN	\$ 496,847	\$ 123,000	Y			
11	Mallard Lakes	500	WOOD DUCK LN	\$ 447,231	\$ 123,000	Y			
12	Mallard Lakes	506	WOOD DUCK LN	\$ 386,358	\$ 123,000	Y			
13	Mallard Lakes	600	WOOD DUCK LN	\$ 415,768	\$ 123,000	Y			
14	Mallard Lakes	606	WOOD DUCK LN	\$ 412,155	\$ 123,000	Y			
15	Mallard Lakes	610	WOOD DUCK LN	\$ 428,353	\$ 123,000	Y			
16	Mallard Lakes	700	WOOD DUCK LN	\$ 427,093	\$ 123,000	Y			
17	Mallard Lakes	706	WOOD DUCK LN	\$ 416,743	\$ 123,000	Y			
18	Mallard Lakes	710	WOOD DUCK LN	\$ 412,688	\$ 123,000	Y			

15	Total All Completed Mallard Lake Lakeside Homes	\$ 7,051,129	\$ 1,845,000	15	0	0	0
Average Price Completed Lakeside Homes - Mallard		\$ 470,075	\$ 123,000	26.2%			

Subdivision	Street No.	Street Name	Assessed Value	Lot Value	Lot Status				
					Lakeside	Lakeview	Partially Complete	Empty Lot	
1	The Preserve	501	ROUEN DR	\$ 626,811	\$ 144,500	Y			
2	The Preserve	505	ROUEN DR	\$ 640,199	\$ 144,500	Y			
3	The Preserve	709	ROUEN DR	\$ 569,187	\$ 144,500	Y			
4	Mallard Lakes	300	WOOD DUCK LN	\$ 541,682	\$ 123,000	Y			
5	Mallard Lakes	306	WOOD DUCK LN	\$ 660,043	\$ 123,000	Y			
6	Mallard Lakes	310	WOOD DUCK LN	\$ 418,325	\$ 123,000	Y			
7	Mallard Lakes	314	WOOD DUCK LN	\$ 522,897	\$ 123,000	Y			
8	Mallard Lakes	400	WOOD DUCK LN	\$ 482,551	\$ 123,000	Y			
9	Mallard Lakes	406	WOOD DUCK LN	\$ 582,397	\$ 123,000	Y			
10	Mallard Lakes	410	WOOD DUCK LN	\$ 496,847	\$ 123,000	Y			
11	Mallard Lakes	500	WOOD DUCK LN	\$ 447,231	\$ 123,000	Y			

Mallard Lakes and The Preserve - Lakeside Lots

12	Mallard Lakes	506	WOOD DUCK LN	\$ 386,358	\$ 123,000	Y			
13	Mallard Lakes	600	WOOD DUCK LN	\$ 415,768	\$ 123,000	Y			
14	Mallard Lakes	606	WOOD DUCK LN	\$ 412,155	\$ 123,000	Y			
15	Mallard Lakes	610	WOOD DUCK LN	\$ 428,353	\$ 123,000	Y			
16	Mallard Lakes	700	WOOD DUCK LN	\$ 427,093	\$ 123,000	Y			
17	Mallard Lakes	708	WOOD DUCK LN	\$ 416,743	\$ 123,000	Y			
18	Mallard Lakes	710	WOOD DUCK LN	\$ 412,686	\$ 123,000	Y			
16 Total All Completed Lakeside Homes				\$ 6,867,326	\$ 2,278,500	18	0	0	0
Average Price Completed Lakeside Homes				\$ 493,740	\$ 126,583	25.6%			

19	The Preserve	409	RDUEN DR	\$ 101,150	\$ 101,150	Y			Y
20	The Preserve	605	ROUEN DR	\$ 71,400	\$ 71,400	Y			Y
2			Empty Lots - Total	\$ 172,550	\$ 172,550				
			Empty Lots - Average	\$ 86,275	\$ 86,275				

Mallard Lakes and The Preserve - Lakeview Lots

Total Lakeview Lots per Site Plans		Avg. Price	Total Lot Value
8	Preserve	\$ 986,264	\$ 614,295
14	Mallard Lakes	\$ 5,356,010	\$ 1,634,895
22	Total Lakeside Lots	\$ 6,342,274	\$ 2,248,190
0	Lots per draft report		
22	Delta		

2	The Preserve	4601	SCDTER LN	\$ 409,716	\$ 117,045		Y		
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number of lots	1	Completed Homes & Lots - Total	\$ 409,716	\$ 117,045
		Completed Homes & Lots - Averad	\$ 408,716	\$ 117,045

17	The Preserve	4704	GOLDENEYES LN	\$ 148,148	\$ 88,850		Y	Y	
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number of lots	1	Partially Copmpleted Lots - Total	\$ 148,148	\$ 88,850
		Partially Completed Lots - Average	\$ 148,148	\$ 88,850

1	The Preserve	605	ROUEN DR	\$ 71,400	\$ 71,400		Y		Y
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number of lots	1	Empty Lots - Total	\$ 71,400	\$ 71,400
		Empty Lots - Average	\$ 71,400	\$ 71,400

Total 3 Lots	\$ 629,264	\$ 257,295
Average per 3 known lots	\$ 209,755	\$ 85,765

number of lots	5	Extrapolate for other empty lots	\$ 357,000	\$ 357,000
		Empty Lots - Average	\$ 71,400	\$ 71,400

number of lots	8	Total 11 Lots	\$ 986,264	\$ 614,295
		Average per 11 lots	\$ 123,283	\$ 76,787

3	Mallard Lakes	305	WOOD DUCK LN	\$ 351,494	\$ 82,000		Y		
4	Mallard Lakes	401	WOOD DUCK LN	\$ 386,648	\$ 98,400		Y		
5	Mallard Lakes	407	WOOD DUCK LN	\$ 311,788	\$ 98,400		Y		
8	Mallard Lakes	411	WOOD DUCK LN	\$ 378,478	\$ 98,400		Y		
7	Mallard Lakes	501	WOOD DUCK LN	\$ 366,694	\$ 98,400		Y		
8	Mallard Lakes	507	WOOD DUCK LN	\$ 387,717	\$ 98,400		Y		
8	Mallard Lakes	601	WOOD DUCK LN	\$ 370,979	\$ 98,400		Y		
10	Mallard Lakes	607	WOOD DUCK LN	\$ 435,098	\$ 98,400		Y		
11	Mallard Lakes	811	WOOD DUCK LN	\$ 441,009	\$ 98,400		Y		
12	Mallard Lakes	701	WOOD DUCK LN	\$ 395,040	\$ 88,400		Y		
13	Mallard Lakes	707	WOOD DUCK LN	\$ 352,096	\$ 88,400		Y		
14	Mallard Lakes	711	WOOD DUCK LN	\$ 371,883	\$ 98,400		Y		
15	Mallard Lakes	714	WOOD DUCK LN	\$ 343,345	\$ 106,600		Y		
16	Mallard Lakes	715	WOOD DUCK LN	\$ 453,741	\$ 106,600		Y		

14	Lots on Tax Rolls	SUBTOTAL Lakeview MALLARD LAKES		\$ 5,356,010	\$ 1,377,600	0	14	0	0
				\$ 382,572	\$ 98,400	25.7%			

Subdivision	Street		Assessed Value	Lot Value	Lot Status				
	No.	Street Name			Lakeside	Lakeview	Partially Complete	Empty Lot	
1	The Preserve	605	ROUEN DR	\$ 71,400	\$ 71,400		Y		Y
2	The Preserve	4601	SCDTER LN	\$ 409,716	\$ 117,045		Y		
3	Mallard Lakes	305	WOOD DUCK LN	\$ 351,494	\$ 82,000		Y		
4	Mallard Lakes	401	WOOD DUCK LN	\$ 386,648	\$ 98,400		Y		
5	Mallard Lakes	407	WOOD DUCK LN	\$ 311,788	\$ 98,400		Y		
6	Mallard Lakes	411	WOOD DUCK LN	\$ 378,478	\$ 98,400		Y		
7	Mallard Lakes	501	WOOD DUCK LN	\$ 366,694	\$ 98,400		Y		

Mallard Lakes and The Preserve - Lakeview Lots

8	Mallard Lakes	507	WOOD DUCK LN	\$ 397,717	\$ 98,400		Y		
9	Mallard Lakes	601	WOOD DUCK LN	\$ 370,979	\$ 98,400		Y		
10	Mallard Lakes	807	WOOD DUCK LN	\$ 435,098	\$ 98,400		Y		
11	Mallard Lakes	611	WOOD DUCK LN	\$ 441,009	\$ 98,400		Y		
12	Mallard Lakes	701	WOOD DUCK LN	\$ 395,040	\$ 98,400		Y		
13	Mallard Lakes	707	WOOD DUCK LN	\$ 352,098	\$ 98,400		Y		
14	Mallard Lakes	711	WOOD DUCK LN	\$ 371,883	\$ 98,400		Y		
15	Mallard Lakes	714	WOOD DUCK LN	\$ 343,345	\$ 106,600		Y		
16	Mallard Lakes	715	WOOD DUCK LN	\$ 453,741	\$ 106,600		Y		
17	The Preserve	4704	GOLDENEYES LN	\$ 148,148	\$ 68,850		Y	Y	
17	Lots on Tax Rolls	SUBTOTAL MALLARD LAKES		\$ 5,985,274	\$ 1,634,895	.0	17	1	1
				\$ 352,075	\$ 96,170	27.3%			

Mallard Lakes and The Preserve - Interior Lots

Total Interior Lots per Site Plans		Avg. Price	Total Lot Value
44	Preserve	\$ 7,871,656	\$ 3,443,520
75	Mallard Lakes	\$ 25,390,637	\$ 8,297,600
119	Total Interior Lots	\$ 33,362,293	\$ 9,741,120
143	Lots per draft report		
-24	Delta - didn't account for lakeview lots, end missed 1 lakeside lot, 1 lot has dual owners		

Lot #	Subdivision	Address	Assessed Value	Lot Value				
60	The Preserve	4700 CANVASBACK BLVD	\$ 463,801	\$ 102,000				
61	The Preserve	4701 CANVASBACK BLVD	\$ 382,173	\$ 85,000				
62	The Preserve	4705 CANVASBACK BLVD	\$ 374,781	\$ 102,000				
63	The Preserve	4712 CANVASBACK BLVD	\$ 383,865	\$ 102,000				
64	The Preserve	4717 CANVASBACK BLVD	\$ 416,673	\$ 102,000				
87	The Preserve	4709 GOLDENEYES LN	\$ 434,740	\$ 102,000				
88	The Preserve	4818 GOLDENEYES LN	\$ 433,005	\$ 85,000				
119	The Preserve	700 ROUEN DR	\$ 424,769	\$ 85,000				
120	The Preserve	4700 SCOTER LN	\$ 391,371	\$ 102,000				
121	The Preserve	4708 SCOTER LN	\$ 434,839	\$ 85,000				
122	The Preserve	4800 SCOTER LN	\$ 394,320	\$ 85,000				
123	The Preserve	4804 SCOTER LN	\$ 493,766	\$ 102,000				
124	The Preserve	4805 SCOTER LN	\$ 400,516	\$ 85,000				

number of lots	13	Completed Homes & Lots - Total	\$ 5,428,619	\$ 1,224,000
		Completed Homes & Lots - Average	\$ 417,586	\$ 94,154

4T	The Preserve	4708 CANVASBACK BLVD	\$ 224,998	\$ 82,620			Y	
48	The Preserve	4716 CANVASBACK BLVD	\$ 283,138	\$ 102,000			Y	
49	The Preserve	4708 GOLDENEYES LN	\$ 59,500	\$ 59,500			Y	
50	The Preserve	4809 GOLDENEYES LN	\$ 71,400	\$ 71,400			Y	
53	The Preserve	4612 SCOTER LN	\$ 71,400	\$ 71,400			Y	
54	The Preserve	4704 SCOTER LN	\$ 59,500	\$ 59,500			Y	
55	The Preserve	4705 SCOTER LN	\$ 59,500	\$ 59,500			Y	

number of lots	7	Partially Completed Lots - Total	\$ 829,437	\$ 505,820
		Partially Completed Lots - Average	\$ 118,491	\$ 72,274

37	The Preserve	4704 CANVASBACK BLVD	\$ 71,400	\$ 71,400				Y
38	The Preserve	4709 CANVASBACK BLVD	\$ 71,400	\$ 71,400				Y

number of lots	2	Empty Lots - Total	\$ 142,800	\$ 142,800
		Empty Lots - Average	\$ 71,400	\$ 71,400

number of lots	22	Total Lots	\$ 8,400,856	\$ 1,872,720
		Average per 3 known lots	\$ 280,948	\$ 85,124

number of lots	22	Extrapolate for other empty lots	\$ 1,570,800	\$ 1,570,800
		Empty Lots - Average	\$ 71,400	\$ 71,400

number of lots	44	Total All Interior Lots	\$ 7,971,656	\$ 3,443,520
		Average per Interior lots	\$ 181,174	\$ 78,282

Subdivision	Street No.	Street Name	Assessed Value	Lot Value	Lakeside	Lakeview	Partially Complete	Empty Lot
56	Mallard Lakes	4100 CANVASBACK BLVD	\$ 345,464	\$ 82,000				
57	Mallard Lakes	4106 CANVASBACK BLVD	\$ 352,624	\$ 82,000				
58	Mallard Lakes	4110 CANVASBACK BLVD	\$ 381,968	\$ 82,000				
59	Mallard Lakes	4210 CANVASBACK BLVD	\$ 379,077	\$ 82,000				
65	Mallard Lakes	3900 EIDER DR	\$ 336,444	\$ 98,400				
66	Mallard Lakes	3901 EIDER DR	\$ 325,990	\$ 82,000				
67	Mallard Lakes	3906 EIDER DR	\$ 339,339	\$ 98,400				

Mallard Lakes and The Preserve - Interior Lots

68	Mallard Lakes	3907	EIDER DR	\$	315,608	\$	82,000				
69	Mallard Lakes	3910	EIDER DR	\$	351,791	\$	82,000				
70	Mallard Lakes	4000	EIDER DR	\$	384,728	\$	82,000				
71	Mallard Lakes	4001	EIDER DR	\$	363,183	\$	82,000				
72	Mallard Lakes	4006	EIDER DR	\$	373,802	\$	82,000				
73	Mallard Lakes	4007	EIDER DR	\$	369,381	\$	82,000				
74	Mallard Lakes	4106	EIDER DR	\$	339,656	\$	82,000				
75	Mallard Lakes	4110	EIDER DR	\$	511,510	\$	82,000				
76	Mallard Lakes	4200	EIDER DR	\$	342,010	\$	82,000				
77	Mallard Lakes	4201	EIDER DR	\$	437,465	\$	98,400				
78	Mallard Lakes	4206	EIDER DR	\$	509,662	\$	82,000				
79	Mallard Lakes	4207	EIDER DR	\$	359,332	\$	82,000				
80	Mallard Lakes	201	GADWALL CT	\$	313,929	\$	82,000				
81	Mallard Lakes	206	GADWALL CT	\$	466,613	\$	82,000				
82	Mallard Lakes	207	GADWALL CT	\$	360,145	\$	82,000				
83	Mallard Lakes	210	GADWALL CT	\$	432,587	\$	82,000				
84	Mallard Lakes	211	GADWALL CT	\$	301,350	\$	82,000				
85	Mallard Lakes	214	GADWALL CT	\$	442,033	\$	98,400				
86	Mallard Lakes	215	GADWALL CT	\$	412,292	\$	98,400				
89	Mallard Lakes	201	MALLARD LAKES DR	\$	288,533	\$	82,000				
90	Mallard Lakes	207	MALLARD LAKES DR	\$	363,081	\$	82,000				
91	Mallard Lakes	215	MALLARD LAKES DR	\$	322,755	\$	82,000				
92	Mallard Lakes	201	PINTAIL DR	\$	370,795	\$	82,000				
93	Mallard Lakes	206	PINTAIL DR	\$	323,971	\$	82,000				
94	Mallard Lakes	207	PINTAIL DR	\$	371,830	\$	82,000				
95	Mallard Lakes	210	PINTAIL DR	\$	355,999	\$	82,000				
96	Mallard Lakes	214	PINTAIL DR	\$	352,536	\$	82,000				
97	Mallard Lakes	215	PINTAIL DR	\$	355,457	\$	82,000				
98	Mallard Lakes	218	PINTAIL DR	\$	393,113	\$	82,000				
99	Mallard Lakes	301	PINTAIL DR	\$	279,296	\$	82,000				
100	Mallard Lakes	306	PINTAIL DR	\$	358,170	\$	82,000				
101	Mallard Lakes	307	PINTAIL DR	\$	366,221	\$	82,000				
102	Mallard Lakes	310	PINTAIL DR	\$	298,079	\$	82,000				
103	Mallard Lakes	311	PINTAIL DR	\$	335,392	\$	82,000				
104	Mallard Lakes	315	PINTAIL DR	\$	474,083	\$	98,400				
105	Mallard Lakes	319	PINTAIL DR	\$	418,790	\$	98,400				
106	Mallard Lakes	400	PINTAIL DR	\$	359,847	\$	82,000				
107	Mallard Lakes	401	PINTAIL DR	\$	326,712	\$	82,000				
108	Mallard Lakes	406	PINTAIL DR	\$	357,308	\$	82,000				
109	Mallard Lakes	407	PINTAIL DR	\$	413,139	\$	82,000				
110	Mallard Lakes	410	PINTAIL DR	\$	373,164	\$	82,000				
111	Mallard Lakes	400	REDHEAD CT	\$	341,722	\$	82,000				
112	Mallard Lakes	401	REDHEAD CT	\$	336,884	\$	82,000				
113	Mallard Lakes	406	REDHEAD CT	\$	396,034	\$	82,000				
114	Mallard Lakes	407	REDHEAD CT	\$	366,765	\$	82,000				
115	Mallard Lakes	410	REDHEAD CT	\$	356,019	\$	82,000				
118	Mallard Lakes	411	REDHEAD CT	\$	329,628	\$	82,000				
117	Mallard Lakes	414	REDHEAD CT	\$	413,190	\$	82,000				
118	Mallard Lakes	415	REDHEAD CT	\$	348,905	\$	82,000				
125	Mallard Lakes	4100	WIDGEON CT	\$	295,388	\$	82,000				
126	Mallard Lakes	4101	WIDGEON CT	\$	304,379	\$	82,000				
127	Mallard Lakes	4106	WIDGEON CT	\$	377,580	\$	82,000				
128	Mallard Lakes	4107	WIDGEON CT	\$	345,087	\$	82,000				
128	Mallard Lakes	4110	WIDGEON CT	\$	451,530	\$	82,000				
130	Mallard Lakes	4111	WIDGEON CT	\$	370,882	\$	82,000				
131	Mallard Lakes	4206	WIDGEON CT	\$	379,879	\$	98,400				
132	Mallard Lakes	4209	WIDGEON CT	\$	333,494	\$	82,000				
133	Mallard Lakes	4210	WIDGEON CT	\$	528,720	\$	98,400				
	number of lots	65	Completed Homes & Lots - Total	\$	23,998,340	\$	5,477,600				
			Completed Homes & Lots - Average	\$	1,846,026	\$	421,354				

Mallard Lakes and The Preserve - Interior Lots

Lot 4110 Elder has 2 50% Owners - Each owner listed on Tax Rolls; therefore there are 105 homeowners, but only 104 lots.

44	Mallard Lakes	4114	CANVASBACK BLVD	\$	167,827	\$	82,000			Y	
45	Mallard Lakes	4200	CANVASBACK BLVD	\$	196,065	\$	82,000			Y	
46	Mallard Lakes	4206	CANVASBACK BLVD	\$	206,113	\$	82,000			Y	
51	Mallard Lakes	200	PINTAIL DR	\$	224,965	\$	82,000			Y	
52	Mallard Lakes	211	PINTAIL DR	\$	187,327	\$	82,000			Y	
	number of lots	5	Partially Completed Lots - Total	\$	982,297	\$	410,000				
			Partially Completed Lots - Average	\$	196,459	\$	82,000				
39	Mallard Lakes	4010	EIDER DR	\$	82,000	\$	82,000				Y
40	Mallard Lakes	4100	EIDER DR	\$	82,000	\$	82,000				Y
41	Mallard Lakes	200	GADWALL CT	\$	82,000	\$	82,000				Y
42	Mallard Lakes	211	MALLARD LAKES DR	\$	82,000	\$	82,000				Y
43	Mallard Lakes	4200	WIDGEON C7	\$	82,000	\$	82,000				Y
	number of lots	5	Empty Lots - Total	\$	410,000	\$	410,000				
			Empty Lots - Average	\$	82,000	\$	82,000				
	number of lots	75	Total Lots	\$	25,390,837	\$	6,297,600				
			Average per known lots	\$	1,154,120	\$	286,255				
	number of lots	0	Extrapolate for other empty lots	\$	-	\$	-				
	assumed empty		Empty Lots - Average	\$	-	\$	-				
	number of lots	75	Total All Interior Lots	\$	25,390,837	\$	6,297,600				
			Average per Interior lots	\$	577,060	\$	143,127				

Subdivision	Street		Assessed	Lot	Empty		Partially	
	No.	Street Name	Value	Value	Lakeside	Lakeview	Lot	Complete
1	Mallard Lakes	4100	CANVASBACK BLVD	\$ 345,464	\$ 82,000			
2	Mallard Lakes	4106	CANVASBACK BLVD	\$ 352,624	\$ 82,000			
3	Mallard Lakes	4110	CANVASBACK BLVD	\$ 381,968	\$ 82,000			
4	Mallard Lakes	4114	CANVASBACK BLVD	\$ 167,827	\$ 82,000			Y
5	Mallard Lakes	4200	CANVASBACK BLVD	\$ 196,065	\$ 82,000			Y
6	Mallard Lakes	4206	CANVASBACK BLVD	\$ 206,113	\$ 82,000			Y
7	Mallard Lakes	4210	CANVASBACK BLVD	\$ 379,077	\$ 82,000			
8	Mallard Lakes	3900	EIDER DR	\$ 336,444	\$ 98,400			
9	Mallard Lakes	3901	EIDER DR	\$ 325,990	\$ 82,000			
10	Mallard Lakes	3906	EIDER DR	\$ 339,339	\$ 98,400			
11	Mallard Lakes	3907	EIDER DR	\$ 315,608	\$ 82,000			
12	Mallard Lakes	3910	EIDER DR	\$ 351,791	\$ 82,000			
13	Mallard Lakes	4000	EIDER DR	\$ 384,726	\$ 82,000			
14	Mallard Lakes	4001	EIDER DR	\$ 363,183	\$ 82,000			
15	Mallard Lakes	4006	EIDER DR	\$ 373,802	\$ 82,000			
16	Mallard Lakes	4007	EIDER DR	\$ 389,381	\$ 82,000			
17	Mallard Lakes	4010	EIDER DR	\$ 82,000	\$ 82,000		Y	
18	Mallard Lakes	4100	EIDER DR	\$ 82,000	\$ 82,000		Y	
19	Mallard Lakes	4106	EIDER DR	\$ 339,656	\$ 82,000			
20	Mallard Lakes	4110	EIDER DR	\$ 511,510	\$ 82,000			
21	Mallard Lakes	4200	EIDER DR	\$ 342,010	\$ 82,000			
22	Mallard Lakes	4201	EIDER DR	\$ 437,465	\$ 88,400			
23	Mallard Lakes	4206	EIDER DR	\$ 509,662	\$ 82,000			
24	Mallard Lakes	4207	EIDER DR	\$ 358,332	\$ 92,000			
25	Mallard Lakes	200	GADWALL CT	\$ 82,000	\$ 82,000		Y	
26	Mallard Lakes	201	GADWALL CT	\$ 313,929	\$ 82,000			
27	Mallard Lakes	206	GADWALL CT	\$ 468,813	\$ 82,000			
28	Mallard Lakes	207	GADWALL CT	\$ 360,145	\$ 82,000			
29	Mallard Lakes	210	GADWALL CT	\$ 432,567	\$ 82,000			
30	Mallard Lakes	211	GADWALL CT	\$ 301,350	\$ 82,000			
31	Mallard Lakes	214	GADWALL CT	\$ 442,033	\$ 98,400			
32	Mallard Lakes	215	GADWALL CT	\$ 412,292	\$ 98,400			
33	Mallard Lakes	201	MALLARD LAKES DR	\$ 288,533	\$ 82,000			
34	Mallard Lakes	207	MALLARD LAKES DR	\$ 363,081	\$ 82,000			
35	Mallard Lakes	211	MALLARD LAKES DR	\$ 82,000	\$ 82,000		Y	
36	Mallard Lakes	215	MALLARD LAKES DR	\$ 322,755	\$ 82,000			
37	Mallard Lakes	200	PINTAIL DR	\$ 224,965	\$ 82,000			Y
38	Mallard Lakes	201	PINTAIL DR	\$ 370,795	\$ 82,000			
39	Mallard Lakes	206	PINTAIL DR	\$ 323,971	\$ 82,000			
40	Mallard Lakes	207	PINTAIL DR	\$ 371,830	\$ 82,000			
41	Mallard Lakes	210	PINTAIL DR	\$ 355,999	\$ 82,000			
42	Mallard Lakes	211	PINTAIL DR	\$ 187,327	\$ 82,000			Y
43	Mallard Lakes	214	PINTAIL DR	\$ 352,538	\$ 82,000			
44	Mallard Lakes	215	PINTAIL DR	\$ 355,457	\$ 82,000			
45	Mallard Lakes	218	PINTAIL DR	\$ 393,113	\$ 82,000			
46	Mallard Lakes	301	PINTAIL DR	\$ 279,296	\$ 82,000			
47	Mallard Lakes	308	PINTAIL DR	\$ 358,170	\$ 82,000			
48	Mallard Lakes	307	PINTAIL DR	\$ 366,221	\$ 82,000			
49	Mallard Lakes	310	PINTAIL DR	\$ 298,079	\$ 82,000			
50	Mallard Lakes	311	PINTAIL DR	\$ 335,382	\$ 82,000			
51	Mallard Lakes	315	PINTAIL DR	\$ 474,093	\$ 98,400			
52	Mallard Lakes	319	PINTAIL DR	\$ 416,790	\$ 98,400			
53	Mallard Lakes	400	PINTAIL DR	\$ 359,847	\$ 82,000			
54	Mallard Lakes	401	PINTAIL DR	\$ 326,712	\$ 82,000			
55	Mallard Lakes	406	PINTAIL DR	\$ 357,308	\$ 82,000			
56	Mallard Lakes	407	PINTAIL DR	\$ 413,139	\$ 82,000			
57	Mallard Lakes	410	PINTAIL DR	\$ 373,164	\$ 82,000			
58	Mallard Lakes	400	REDHEAD CT	\$ 341,722	\$ 82,000			
59	Mallard Lakes	401	REDHEAD CT	\$ 336,884	\$ 82,000			
60	Mallard Lakes	406	REDHEAD CT	\$ 396,034	\$ 82,000			
61	Mallard Lakes	407	REDHEAD CT	\$ 366,785	\$ 82,000			

Subdivision	Street		Assessed Value	Lot Value	Empty / Partially Complete				
	No.	Street Name			Lakeside	Lakeview	Lot	Partially Complete	
62	Mallard Lakes	410	REDHEAD CT	\$ 356,019	\$ 82,000				
63	Mallard Lakes	411	REDHEAD CT	\$ 329,628	\$ 82,000				
64	Mallard Lakes	414	REDHEAD CT	\$ 413,190	\$ 82,000				
85	Mallard Lakes	415	REDHEAD CT	\$ 346,905	\$ 82,000				
88	Mallard Lakes	4100	WIDGEON CT	\$ 295,388	\$ 82,000				
87	Mallard Lakes	4101	WIDGEON CT	\$ 304,379	\$ 82,000				
68	Mallard Lakes	4106	WIDGEON CT	\$ 377,580	\$ 82,000				
69	Mallard Lakes	4107	WIDGEON CT	\$ 345,087	\$ 82,000				
70	Mallard Lakes	4110	WIDGEON CT	\$ 451,530	\$ 82,000				
71	Mallard Lakes	4111	WIDGEON CT	\$ 370,892	\$ 82,000				
72	Mallard Lakes	4200	WIDGEON CT	\$ 82,000	\$ 82,000			Y	
73	Mallard Lakes	4206	WIDGEON CT	\$ 379,879	\$ 98,400				
74	Mallard Lakes	4209	WIDGEON CT	\$ 333,494	\$ 82,000				
75	Mallard Lakes	4210	WIDGEON CT	\$ 528,720	\$ 98,400				
76	Mallard Lakes	300	WOOD DUCK LN	\$ 541,682	\$ 123,000	Y			
77	Mallard Lakes	305	WOOD DUCK LN	\$ 351,494	\$ 82,000		Y		
78	Mallard Lakes	306	WOOD DUCK LN	\$ 660,043	\$ 123,000	Y			
79	Mallard Lakes	310	WOOD DUCK LN	\$ 418,325	\$ 123,000	Y			
80	Mallard Lakes	314	WOOD DUCK LN	\$ 522,897	\$ 123,000	Y			
81	Mallard Lakes	400	WOOD DUCK LN	\$ 482,551	\$ 123,000	Y			
82	Mallard Lakes	401	WOOD DUCK LN	\$ 386,648	\$ 98,400		Y		
83	Mallard Lakes	406	WOOD DUCK LN	\$ 582,397	\$ 123,000	Y			
84	Mallard Lakes	407	WOOD DUCK LN	\$ 311,788	\$ 98,400		Y		
85	Mallard Lakes	410	WOOD DUCK LN	\$ 496,847	\$ 123,000	Y			
88	Mallard Lakes	411	WOOD DUCK LN	\$ 378,478	\$ 98,400		Y		
87	Mallard Lakes	500	WOOD DUCK LN	\$ 447,231	\$ 123,000	Y			
88	Mallard Lakes	501	WOOD DUCK LN	\$ 366,694	\$ 98,400		Y		
89	Mallard Lakes	506	WOOD DUCK LN	\$ 386,358	\$ 123,000	Y			
80	Mallard Lakes	507	WOOD DUCK LN	\$ 397,717	\$ 98,400		Y		
81	Mallard Lakes	600	WOOD DUCK LN	\$ 415,788	\$ 123,000	Y			
82	Mallard Lakes	601	WOOD DUCK LN	\$ 370,879	\$ 98,400		Y		
93	Mallard Lakes	606	WOOD DUCK LN	\$ 412,155	\$ 123,000	Y			
94	Mallard Lakes	607	WOOD DUCK LN	\$ 435,098	\$ 98,400		Y		
95	Mallard Lakes	610	WOOD DUCK LN	\$ 426,353	\$ 123,000	Y			
96	Mallard Lakes	611	WOOD DUCK LN	\$ 441,009	\$ 98,400		Y		
97	Mallard Lakes	700	WOOD DUCK LN	\$ 427,093	\$ 123,000	Y			
98	Mallard Lakes	701	WOOD DUCK LN	\$ 395,040	\$ 98,400		Y		
99	Mallard Lakes	706	WOOD DUCK LN	\$ 416,743	\$ 123,000	Y			
100	Mallard Lakes	707	WOOD DUCK LN	\$ 352,096	\$ 98,400		Y		
101	Mallard Lakes	710	WOOD DUCK LN	\$ 412,686	\$ 123,000	Y			
102	Mallard Lakes	711	WOOD DUCK LN	\$ 371,883	\$ 98,400		Y		
103	Mallard Lakes	714	WOOD DUCK LN	\$ 343,345	\$ 106,600		Y		
104	Mallard Lakes	715	WOOD DUCK LN	\$ 453,741	\$ 106,600		Y		

104	Lots on Tax Rolls	SUBTOTAL MALLARD LAKES	\$ 37,797,776	\$ 8,520,200	15	14	5	5
105	Lots on Plat		\$ 363,440	\$ 81,540	25.2%			

(1) Delta

1	The Preserve	4700	CANVASBACK BLVD	\$ 463,801	\$ 102,000				
2	The Preserve	4701	CANVASBACK BLVD	\$ 382,173	\$ 85,000				
3	The Preserve	4704	CANVASBACK BLVD	\$ 71,400	\$ 71,400			Y	
4	The Preserve	4705	CANVASBACK BLVD	\$ 374,781	\$ 102,000				
5	The Preserve	4708	CANVASBACK BLVD	\$ 224,998	\$ 82,620				Y
6	The Preserve	4709	CANVASBACK BLVD	\$ 71,400	\$ 71,400			Y	
7	The Preserve	4712	CANVASBACK BLVD	\$ 383,865	\$ 102,000				
8	The Preserve	4716	CANVASBACK BLVD	\$ 283,138	\$ 102,000				Y
9	The Preserve	4717	CANVASBACK BLVD	\$ 418,673	\$ 102,000				
10	The Preserve	4704	GOLDENEYES LN	\$ 148,148	\$ 68,850		Y	Y	
11	The Preserve	4706	GOLDENEYES LN	\$ 58,500	\$ 59,500				Y
12	The Preserve	4709	GOLDENEYES LN	\$ 434,740	\$ 102,000				
13	The Preserve	4809	GOLDENEYES LN	\$ 71,400	\$ 71,400				Y

Subdivision	Street		Assessed	Lot	Lakeside	Lakeview	Empty	Partially
	No.	Street Name	Value	Value			Lot	Complete
14 The Preserve	4816	GOLDENEYES LN	\$ 433,005	\$ 85,000				
15 The Preserve	409	ROUEN DR	\$ 101,150	\$ 101,150	Y			Y
16 The Preserve	501	ROUEN DR	\$ 828,811	\$ 144,500	Y			
17 The Preserve	505	ROUEN DR	\$ 640,199	\$ 144,500	Y			
18 The Preserve	605	ROUEN DR	\$ 71,400	\$ 71,400		Y		Y
19 The Preserve	700	ROUEN DR	\$ 424,769	\$ 85,000				
20 The Preserve	709	ROUEN DR	\$ 569,187	\$ 144,500	Y			
21 The Preserve	4601	SCOTER LN	\$ 409,716	\$ 117,045		Y		
22 The Preserve	4612	SCOTER LN	\$ 71,400	\$ 71,400				Y
23 The Preserve	4700	SCOTER LN	\$ 391,371	\$ 102,000				
24 The Preserve	4704	SCOTER LN	\$ 59,500	\$ 59,500				Y
25 The Preserve	4705	SCOTER LN	\$ 59,500	\$ 59,500				Y
26 The Preserve	4709	SCOTER LN	\$ 434,839	\$ 85,000				
27 The Preserve	4800	SCOTER LN	\$ 394,320	\$ 85,000				
28 The Preserve	4804	SCOTER LN	\$ 493,786	\$ 102,000				
29 The Preserve	4805	SCOTER LN	\$ 400,516	\$ 85,000				

29 Lots on Tax Rolls	SUBTOTAL The Preserve	\$ 8,967,467	\$ 2,864,665	4	3	3	9
63 Lots on Plat	Average Assessed - The Preserve	\$ 309,223	\$ 91,885	29.7%			
(34) Delta				11	8		
				ON LAKE	VIEWS		

133 Total Lots on Tax Rolls	Total Mallard Lakes & The Preserve	\$ 46,765,243	\$ 12,184,865	26.1%
168 Lots on Plat	Avg Assessed - Mallard & Preserve	\$ 351,818	\$ 91,816	26.1%
(35) Delta				

CITY OF MCKINNEY: JANUARY 1, 2002 POPULATION ESTIMATE

Dwelling Unit Type	Estimated Units	Estimated Occupancy Rate	Estimated Occupied Dwelling Units	Estimated Persons per Dwelling Unit	Estimated Population (Est. Occupied Dwelling Units x Est. Persons per Dwelling Unit)
Single family	18,378	96.5%	17,735	3.0	53,204
Multi-family	5,369	90.0%	4,832	2.3	11,114
Mobile Home	408	84.0%	343	2.7	926
Estimated Population in Group Quarters on January 1, 2002:					1331
Total Estimated City of McKinney Population on January 1, 2002:					66,575

Estimated population increase from the 2001 City of McKinney estimated population of 58,986: 7,589 (12.9%).

Estimated population increase from the 1990 Census population of 21,283: 45,292 (213%).

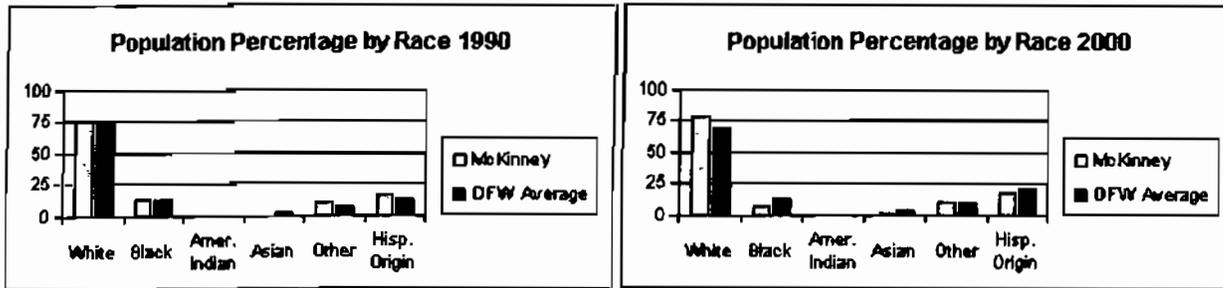


City of McKinney

Total Population by Race and Hispanic Origin

	1990		2000		Change 1990-2000	
	Persons	% of Total	Persons	% of Total	Change	% Change
Total Population by Race (Hispanics included in all races)	21,283		54,369		33,086	155.5%
White	16,152	75.9%	42,628	78.4%	26,476	163.9%
Black	2,742	12.9%	3,913	7.2%	1,171	42.7%
American Indian	111	0.5%	293	0.5%	182	164.0%
Asian or Pacific Islander	111	0.5%	846	1.6%	735	662.2%
Other Race**	2,167	10.2%	5,562	10.2%	3,395	156.7%
Two or More Races*	N/A	N/A	1,127	2.1%	N/A	N/A
		100%		100%		
Hispanic Origin (Any Race)	3,598	16.9%	9,876	18.2%	6,278	174.5%

[Click here for breakdown of races by Hispanic and Non-Hispanic origin](#)



* The 2000 Census provides a new category for persons who are of more than one race. Direct comparisons to 1990 may not be exact.
 ** Other contains all additional categories not listed in the above groups.
 # DFW refers to the 16-County North Central Texas Region

Laurie Medeiros
711 Wood Duck Court
Mckinney, TX 75070

FILE COPY

July 11, 2002

Mr. Tomas Dominquez
Resource Conservationist
USDA / NRCS
101 South Main
Temple, TX 76501-7602

Dear Mr. Dominguez;

Mr. Bill Whitfield forwarded a copy of the Draft Supplemental Watershed Plan and Environmental Assessment for NRCS FRS 3-C to me recently. I have had an opportunity to review it, and would like to bring to your attention the concerns of property owners in the Mallard Lakes subdivision, which surrounds NRCS FRS 3C.

On page 8 of the report it is stated, "Although not a significant problem today, sediment accumulation in the sediment pool is a serious concern to the local residents. They are very interested in prolonging the life of the sediment pool and improving its value for fish and wildlife. They would prefer for the water to be at least an average of 10 feet."

Although we are concerned about maintaining the quality of the lake for fish and wildlife, our primary concern is the certain negative economic impact on property values which will occur as sediment accumulates and the water level in the lake decreases.

We fully understand the NRCS position regarding sediment removal. We'd like to submit, however, that while the NRCS lakes in our city continue to perform the functions they were designed and constructed for in the 1950's, the setting in which they perform those functions has changed dramatically. There is now a great aesthetic value attached to the lakes as the direct result of high-end residential development, which has occurred around them. Healthy water levels are needed to continue to support increasing property values and tax revenue for the City of Mckinney, MISD, and Collin County.

We submit that the change from an agricultural setting to a residential setting around NRCS lakes requires a new approach regarding measurement of the available sediment storage within the basin. Calculations must include normal, healthy water levels, for the duration of the life of the upgraded dam. Furthermore, this should apply to all NRCS dams and lakes nationally as they become urbanized; which changes the setting, usage, and expectations of the lakes adjacent to NRCS dams.

The Draft Supplemental Watershed Plan and Environmental Assessment is clearly a report based on the economic benefits which will result by upgrading NRCS FRS 3C. It seems inconsistent to

JUL 15 2002

thoroughly analyze the positive impacts of upgrading the dam, while failing to analyze the negative economic impact that will result as the basin fills with sediment, and water levels decrease. The lake was approximately 25 feet deep, when built in 1958. The Freese & Nichols Dredging Feasibility Study performed in March of 2001 states the average depth of the lake as being 5 feet. This report states that the lake now has an average depth of 4 feet. This represents a one-foot decrease in depth over a period of one year. The dramatic reduction in the water depth of this lake must be properly addressed.

Residents of Mallard Lakes are pleased that the dam was accepted into the NRCS Pilot Program, and that the new design will meet high hazard standards. The safety of the dam has always been our greatest priority. We understand the importance of staying on schedule as we move through this project. It is our understanding the permitting process for desiltation takes time, and does not "fit" into the timetable required by the pilot program. Regardless of schedule, if some restoration of water depth is not done in conjunction with the dam upgrade, or in the near future, it is clear that within a relatively short period of time, we will face declining property values. Additionally we will suffer the loss of use of the lake for recreation, fish and wildlife habitat, and all benefits associated with the natural beauty it provides.

Therefore, we ask for your assistance in addressing the following items:

- ◆ We request that our concerns regarding the negative economic impact on property values as a result of increasing sedimentation of the lake be evaluated at greater length, and that the concerns outlined in this letter be made a part of the public input record within the Draft Supplemental Watershed Plan and Environmental Assessment.
- ◆ We request that information be included in this report which states that the current guidelines for calculating sediment storage within a basin do not allow for a normal, healthy, water levels.
- ◆ We request that the NRCS reconsider their current policy for calculating sediment storage within a basin without consideration for a normal, healthy, water levels in the adjacent lake. Healthy water levels should be calculated to last the 50 years of the life of the dam. The setting has changed; the standard should be adjusted accordingly. The basin cannot be accurately represented as "healthy" without a normal, healthy water level.
- ◆ We would like more specific information regarding the rate of sedimentation, and how sedimentation will impact the water levels in the lake over the 50-year period of the project's life. Please include a sedimentation chart as part of this report, and explain the process used to determine the sedimentation rate. Include accurate information regarding the anticipated accumulation of sediment over the 50 year life of the upgraded dam.
- ◆ We would like to know what assistance would be available for sediment removal in the future, if your agency denies our request to remove sediment. Are there any other sources of funding available through other agencies? Can you help us obtain these funds?

Additionally, there are a number of discrepancies contained in this report that are outlined in an analysis forwarded to you by Clayton Myhre, Chairman of the City of McKinney NRCS Lakes Task Force, of which I am also a participant. The City of McKinney NRCS Lakes Task Force feels it is imperative that the Supplemental Watershed Plan and Environmental Impact Statement for this project is a thorough, accurate reflection of the current environmental and economic issues related to the basin of NRCS FRS 3-C.

I'd like to once again thank you and your agency for your work and dedication to the upgrading of NRCS FRS 3C. I am available to discuss any of the issues related to this project with you at your convenience. We are proud to have this important project as part of our community, and are dedicated to its well being.

Sincerely,



Laurie Medeiros
Steering Committee Representative, Mallard Lakes

Email : mlmedeiros@attbi.com
Home phone: (972) 529-1139
Mobil phone: (214) 908-6331

Cc: Clyde Hogue, NRCS
Clayton Myhre, Chariman, NRCS Lakes Task Force, City of McKinney
Mr. James Neighbors, Resource Conservationist, NRCS
Bill Whitfield, Steering Committee Member
Mallard Lakes Homeowners

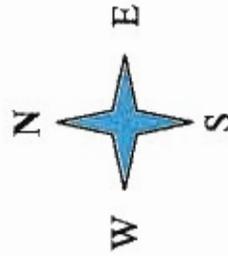
APPENDIX B

Vicinity Map



Vicinity Map

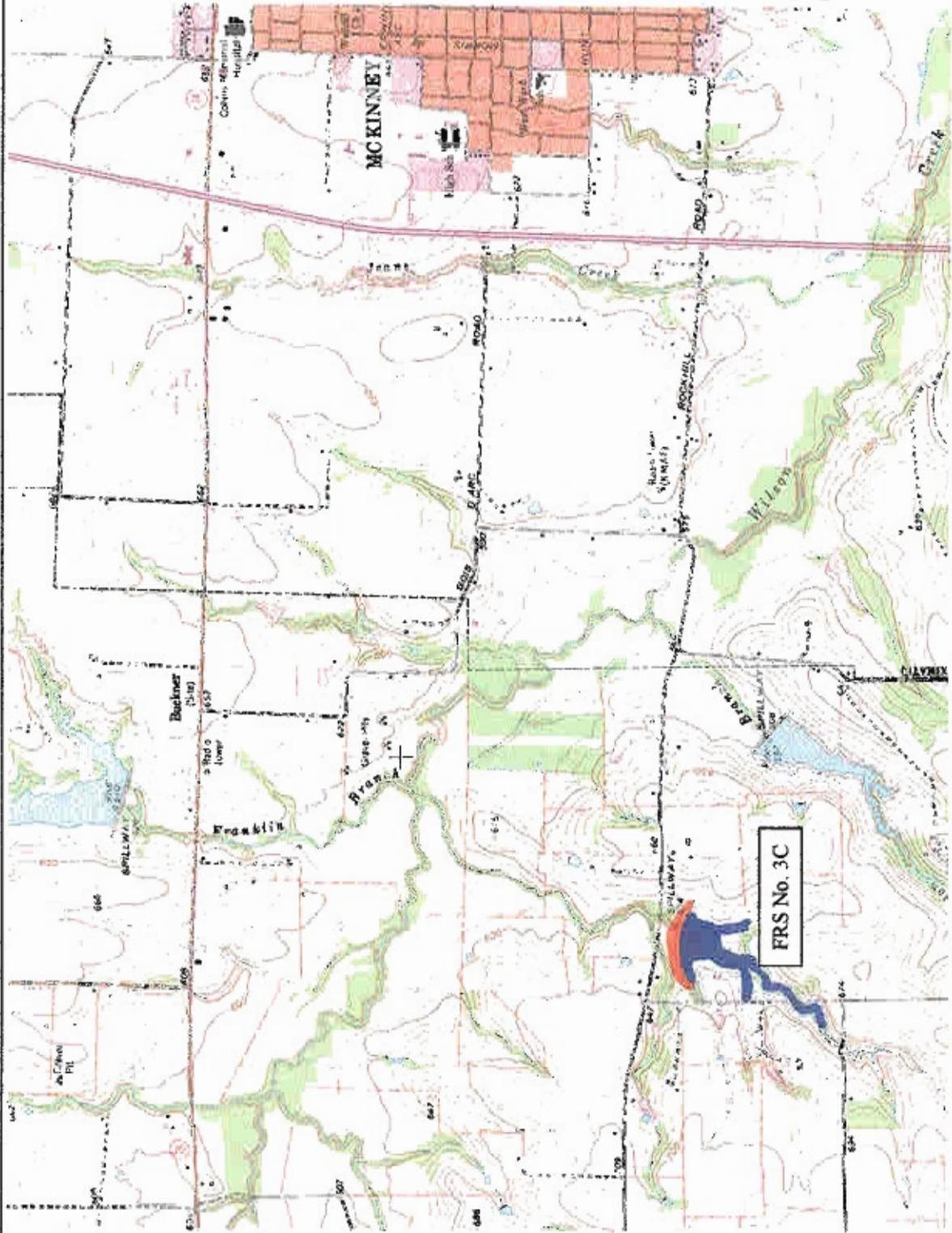
East Fork Above Lavon Watershed
of the
Trinity River Watershed
FRS No. 3C
Collin County, Texas



Approx. Scale 1" = 0.5 miles



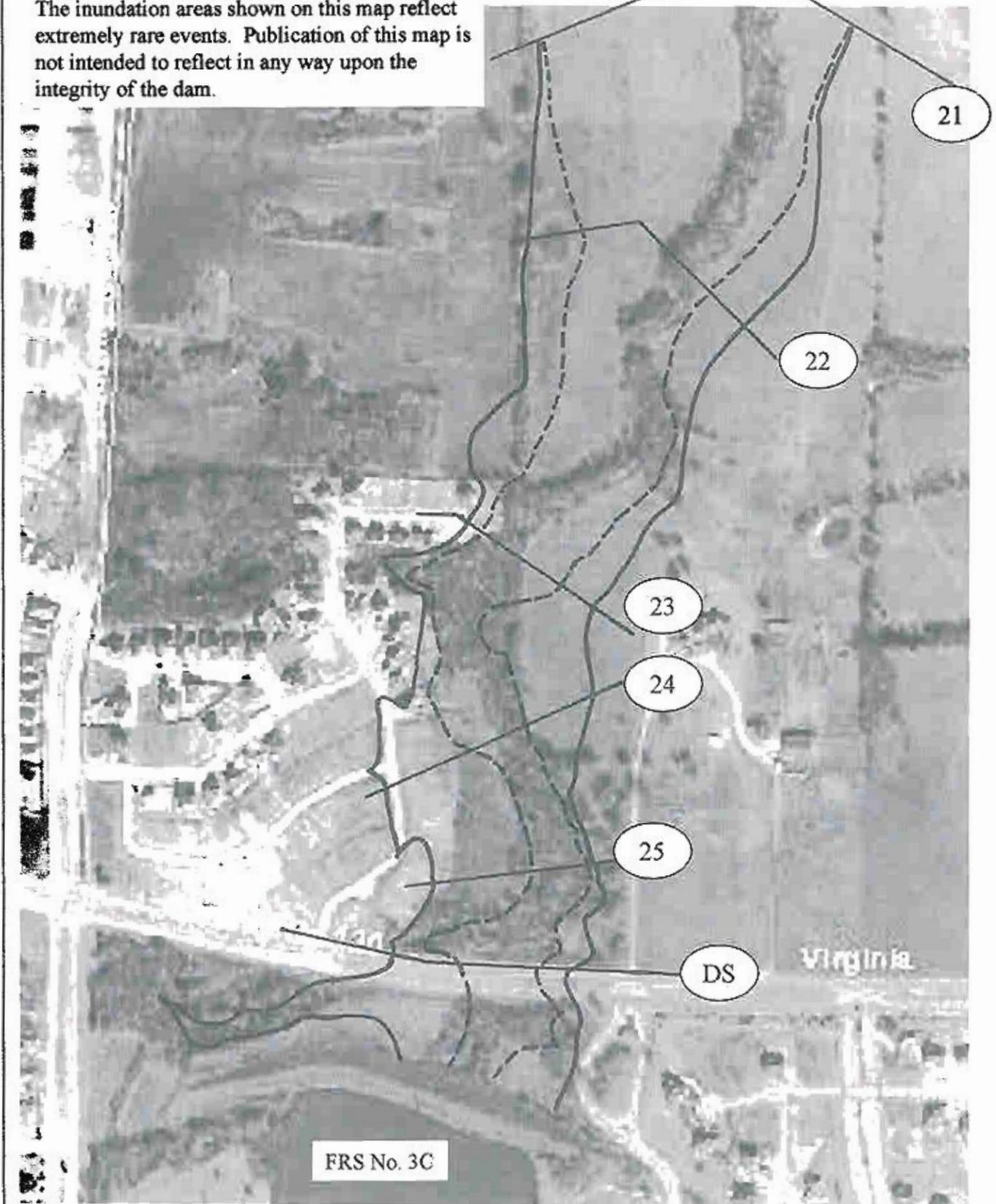
May 2002



APPENDIX C

Breach Inundation Map

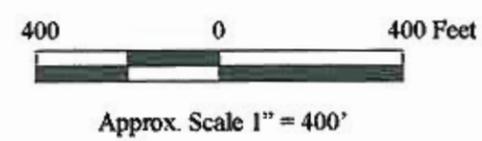
Note:
The inundation areas shown on this map reflect extremely rare events. Publication of this map is not intended to reflect in any way upon the integrity of the dam.



FRS No. 3C

LEGEND

- Valley Section
- Breach Flood
- - - 100 Year Floodplain (without project)



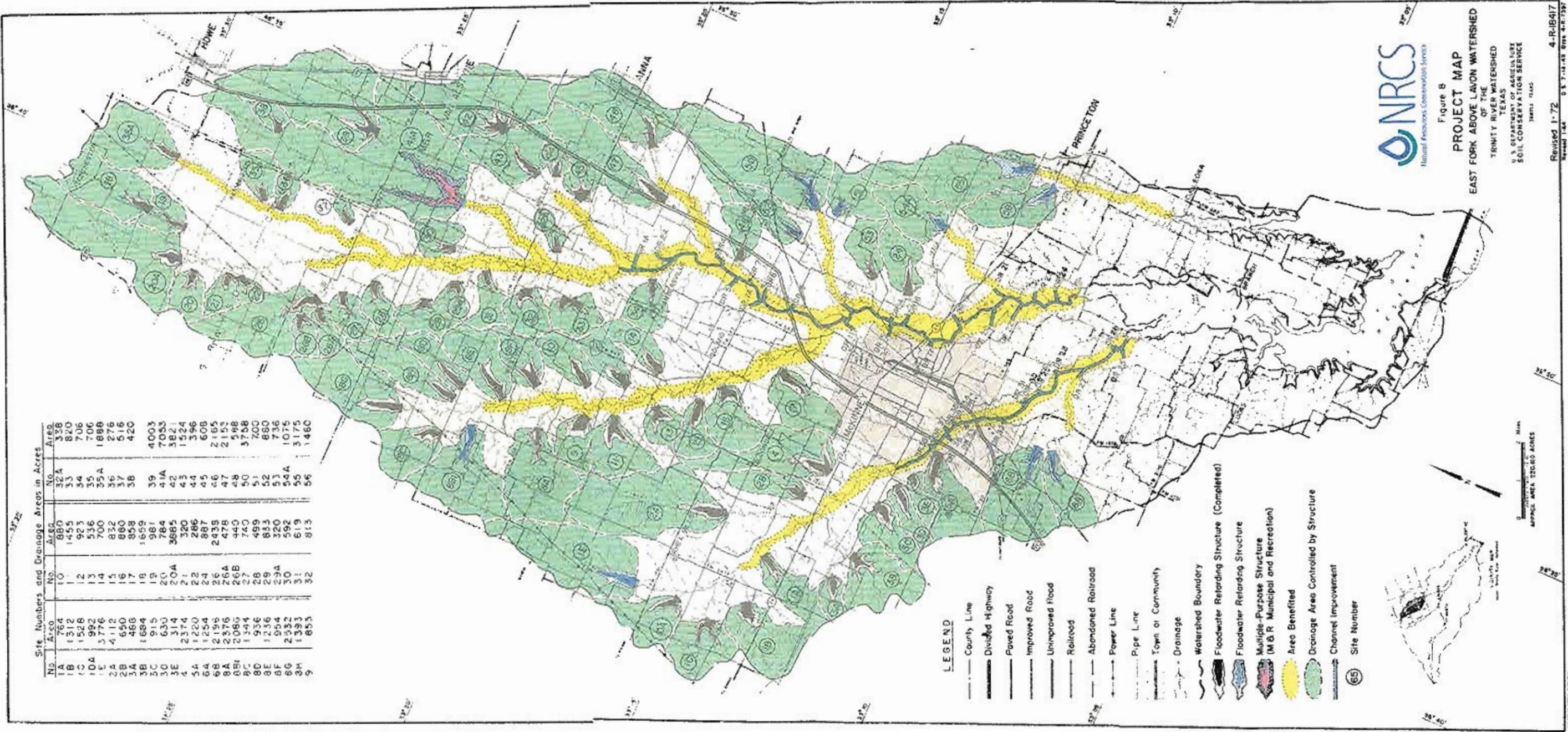
**East Fork Above Lavon Watershed
of the
Trinity River Watershed
FRS No. 3C
Collin County, Texas**

Breach Inundation Map

Maximum Water Surface Elevations (Breach) At Valley Sections	
Valley Section	Elevation – ft. MSL
21	582.97
22	590.75
23	598.75
24	606.79
25	609.62
DS – Virginia Parkway	611.09
FRS Site 3C	615.23

APPENDIX D

Project Map



APPENDIX E

TABLE 1 - ESTIMATED INSTALLATION COST
FRS No. 3C
East Fork Above Lavon Watershed, Texas
(Trinity River Watershed)
(Dollars)¹

Installation Cost Item	Unit	Number	Estimated cost (dollars)¹		
			Federal Funds	Other Funds	Total
Rehabilitation of FRS NO.3C	No	1	\$790,205	\$425,495	\$1,215,700
Total Project			\$790,205	\$425,495	\$1,215,700

¹/ 2001 Prices.

APPENDIX E

TABLE 2 -- ESTIMATED COST DISTRIBUTION -- STRUCTURAL AND NON-STRUCTURAL MEASURES

FRS No. 3C

East Fork Above Lavon Watershed, Texas

(Trinity River Watershed)

(Dollars) ^{1/}

	Installation Cost -- Federal Funds				Installation Cost -- Other Funds					Total Rehabilitation Cost				
	Construction	Engineering ^{2/}	Real Prop. Rights	Relocation Payments	Project Admin ^{2/}	Total Federal Funds	Construction	Engineering /Planning	Real Prop. Rights		Water Rights	Relocation Payments	Project Admin	Total Other
Rehabilitation of FRS No. 3C	\$790,205					\$790,205	\$82,915	\$307,580				\$35,000	\$425,495	\$1,215,700
Grand Total	\$790,205					\$790,205	\$82,915	\$307,580				\$35,000	\$425,495	\$1,215,700

^{1/} Price Base: 2001

^{2/} Federal costs for engineering services and project administration are not included in Total Rehabilitation Costs.

APPENDIX E
TABLE 3, STRUCTURAL DATA -
DAMS WITH PLANNED STORAGE CAPACITY
East Fork Above Lavon Watershed, Texas
(Trinity River Watershed)

Item	Unit	FIS No. 3C
Class of structure		high
Seismic zone		1
Uncontrolled drainage area	mi ²	1.43
Runoff Curve Number (1-day) (AMC II)		79
Time of concentration (T _c)	hrs	0.76
Elevation top of dam	ft	639.3
Elevation crest low stage inlets	ft	621.1
Maximum height of dam	ft	44.5
Volume of fill	yd ³	--
Total capacity (emergency spillway crest)	ac-ft	479
Sediment submerged	ac-ft	74
Sediment (50-year)	ac-ft	45
Floodwater retarding	ac-ft	405
Surface area		
Sediment pool	acres	15
Floodwater retarding pool	acres	45
Principal spillway		
Rainfall volume (1-day)	in	9.6
Rainfall volume (10-day)	in	16.0
Runoff volume (10-day)	in	10.75
Conduits		
Existing	type	concrete
Diameter	in	17
Capacity	ft ³ /s	12.5
New	type	concrete
Diameter	in	30
Capacity	ft ³ /s	130
Emergency spillways		
Roller compacted concrete		
Elevation crest	ft	633.3
Bottom width	ft	180
Exit slope	%	8
Frequency of operation	% chance	1.3
Vegetated		
Elevation crest	ft	634.1
Bottom width	ft	100
Exit slope	%	8
Frequency of operation	% chance	1.0
Emergency spillway hydrograph		
Rainfall volume	in	12.9
Runoff volume	in	10.18
Storm duration	hrs	6
Velocity of flow (V _s)	ft/s	2.2
Maximum reservoir water surface elevation	ft	633.3
Freeboard hydrograph		
Rainfall volume	in	30
Runoff volume	in	27.03
Storm duration	hrs	6
Maximum reservoir water surface elevation	ft	639.3
Discharge per ft of width (Q _s /b)	ac-ft	4.2
Storage capacity equivalents		
Sediment volume	in	0.9
Floodwater retarding volume	in	5.3

APPENDIX E

TABLE 4 - ANNUAL COSTS
FRS No. 3C
East Fork Above Lavon Watershed, Texas
(Trinity River Watershed)
(Dollars) ^{1/}

Evaluation Unit	----- Project Outlays -----		Total
	Amortization of Rehabilitation Cost ^{2/}	Operation, Maintenance and Replacement Cost	
FRS No. 3C	\$78,500	\$2,000	\$80,500
Grand Total	\$78,500	\$2,000	\$80,500

1/ Price base 2001

2/ Amortized for 50 years at 6.125 percent

APPENDIX E

**Table 5 - Estimated Average Annual Flood
Damage Reduction Benefits
East Fork Above Lavon Watershed, Texas
(Trinity River Watershed)
(Dollars) ¹**

Item	Estimated Average Annual Benefits ²
Floodwater	
Crop and Pasture	\$4,200
Other Agricultural	\$2,400
Nonagricultural (Road and Bridge)	\$3,400
Subtotal	\$10,000
Sediment	
Overbank Deposition	\$500
Erosion	
Flood Plain Scour	\$200
TOTAL	\$10,700

¹ Price Base: 2001 prices.

² Original downstream benefits updated using applicable indices.

APPENDIX E

**Table 6 - Comparison of Benefits and Costs for Structural Measures
East Fork Above Lavon Watershed, Texas
(Trinity River Watershed)
(Dollars)**

Item	Average Annual Benefits ¹					Average Annual Cost ³	Benefit/Cost Ratio
	Damage ² Reduction	More Intensive and Changed Land Use	Avoidance of Upstream Property Values Devaluation	Avoidance of Modifications to Storm Water Management Plan	Avoidance of Modifications to Downstream Infrastructure		
Rehabilitation of Floodwater Retarding Structure No. 3C	\$10,700	\$2,000	\$84,500	\$32,600	\$25,800	\$155,600	1.9:1

¹ Price Base: 2001 prices.

² From Table 5.

³ From Table 4.