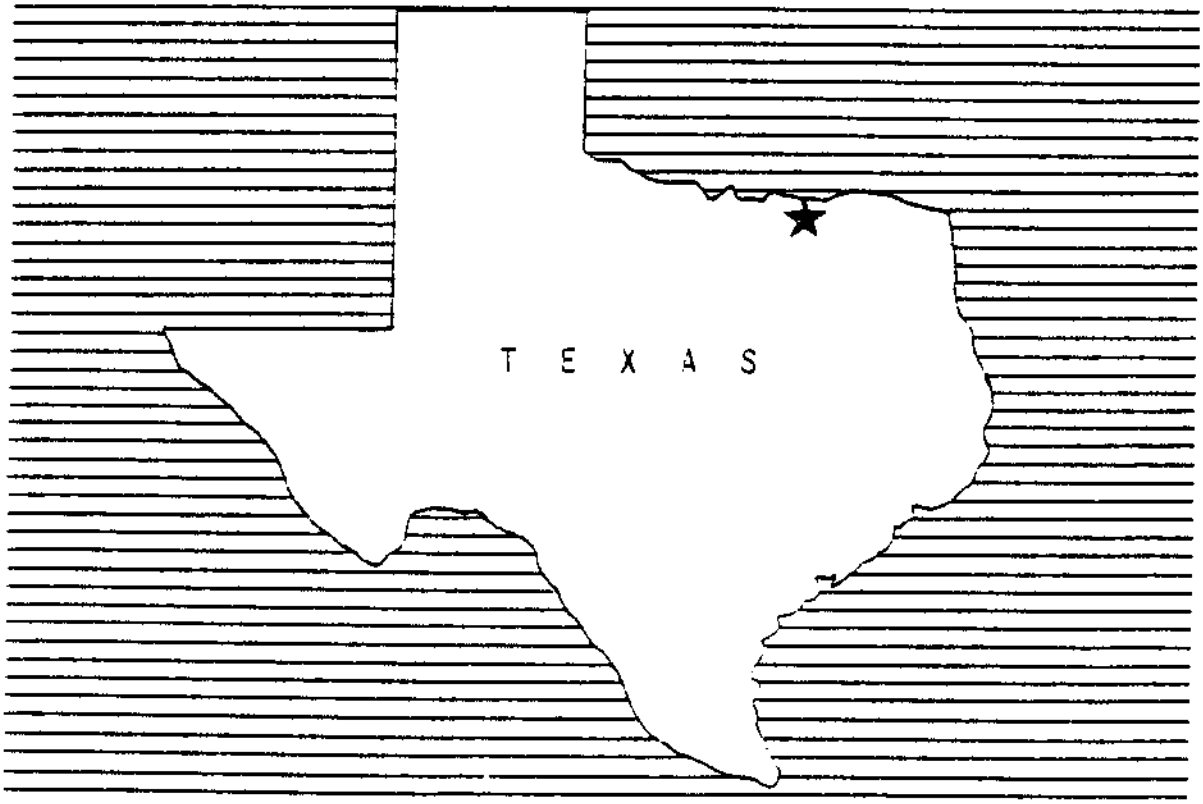
FINAL ENVIRONMENTAL IMPACT STATEMENT

CHOCTAW CREEK WATERSHED

GRAYSON COUNTY, TEXAS



June 1986

FINAL
ENVIRONMENTAL IMPACT STATEMENT
CHOCTAW CREEK WATERSHED

Grayson County, Texas

This document has been prepared by the USDA, Soil Conservation Service, to assess the impacts associated with installation of 14 floodwater retarding structures and 1 multiple-purpose structure with recreational facilities in the Choctaw Creek Watershed. These are the measures remaining to be installed that have not been previously addressed by environmental documents. Seven floodwater retarding structures not yet installed have been covered in previously prepared and filed environmental documents. The plan for this project was developed in 1965 and approved for operations October 12, 1966, under authority of Public Law 566, 83rd Congress, Stat. 666, as amended. Since approval for operations, 17 floodwater retarding structures, 2 grade stabilization structures, and 1 multiple-purpose structure with recreational facilities have been installed. In addition, funds have been provided for acceleration of application of conservation treatment on the land. The significant environmental impacts of the remaining measures consist of a reduction of flooding of agricultural land, protection of and a slight increase in prime farmland soils, and the destruction of 346 acres of riparian woody wildlife habitat. The economic benefits from these remaining measures exceed the cost.

The local sponsors for the project are the Choctaw Creek Water Improvement District, the Upper Elm-Red Soil and Water Conservation District, the Grayson County Commissioners Court, the city of Denison, and the city of Sherman.

Prepared in accordance with Section 102(2)(c) of
the National Environmental Policy Act of 1969,
Public Law 91-190, as amended (42 USC 4321 et seq.)
by the U. S. Department of Agriculture, Soil
Conservation Service.

FINAL ENVIRONMENTAL IMPACT STATEMENT
CHOCTAW CREEK WATERSHED
Grayson County, Texas

SUMMARY

A request by the local sponsors for the Choctaw Creek Watershed project to move forward with the installation of the remaining planned measures necessitated preparation of this environmental document. These remaining measures that lack environmental documentation consist of the installation of 14 floodwater retarding structures and 1 multiple-purpose structure with associated recreational facilities.

Sponsors

The local sponsors for the project are the Choctaw Watershed Water Improvement District, the Upper Elm-Red Soil and Water Conservation District, the Grayson County Commissioners Court, the city of Denison, and the city of Sherman.

Project Background

The project for Choctaw Creek Watershed was planned in 1965 under authority of the Watershed Protection and Flood Prevention Act, Public Law 83-566, as amended, and was approved for operations October 12, 1966. To date 17 of 38 planned floodwater retarding structures and 1 of 2 planned multiple-purpose structures have been installed. Environmental documents have been prepared and filed on 7 of the 21 floodwater retarding structures which have not yet been constructed.

Project Purpose

The purposes of the project were to provide accelerated technical assistance for protection of watershed resources; provide flood protection for 10,100 acres of agricultural flood plain and 700 acres of urban flood plain; provide storage for municipal, industrial, and irrigation water; and provide public recreation. The plan has been revised to delete storage for municipal, industrial, and irrigation water.

Watershed Resources

The watershed comprises 168,000 acres in Grayson County. Approximately 10,600 acres is agricultural flood plain and 700 acres is partially developed urban flood plain on Post Oak and Sand Creeks. The agricultural flood plain includes 4,200 acres of prime farmland soils and most of the remaining 6,400 acres could be prime except for frequency of flooding. Portions of the 700 acres of urban flood plain have been built up but development of remaining open areas has been prevented by flood plain zoning restrictions.

Land use in the watershed is cropland, 40,000 acres; grassland, 93,000 acres; and miscellaneous uses, 35,000 acres. Land ownership is private except for limited public ownership of parks, roads, schools, etc.

There are minor wetland resources in the area that are limited to riparian vegetation along the streams and associated with ponds and small lakes. The watershed is in the flyway of two endangered species, the bald eagle and the whooping crane, but there is no critical habitat designated for these species. Cultural resources are limited mainly to historic sites in existing developed areas.

Alternatives

Alternatives for this authorized and operational project are limited to stopping all further actions for installation of the remaining planned measures and to the action of continuing with completion of the project. Stopping further actions on installation of remaining measures would avoid destruction of 346 acres of high quality riparian habitat and 295 acres of other lower quality terrestrial habitat. It would forego flood protection for about 8,800 acres of agricultural flood plain land. The action of completing the installation of remaining measures along with the measures already installed or covered by previously filed environmental documents would provide flood protection to 10,100 acres of agricultural flood plain and the 700 acres of urban flood plain.

Project Costs and Benefits

The estimated cost for installation of the remaining structural measures is $10,428,210 of which $9,033,080 are Federal funds and $1,395,130 are non-Federal funds (1985 Prices).

The ratio of average annual benefits to the average annual cost for the total project is 2.4:1.0.

Project Impacts

Installation of the remaining measures will provide flood protection to 8,800 acres of the 10,100 acres of agricultural land that are protected by the total project. This area includes protection to about 3,700 acres of prime farmland soils downstream from the structural measures. The measures will directly involve 210 acres of prime farmland soils and infrequently inundate another 540 acres. Reduction in frequency of flooding will increase the prime farmland soils acreage on the flood plain by 1,700 acres.

Construction of the structures will result in the destruction of 346 acres of riparian hardwoods and 14 acres of other hardwoods habitat, 112 acres of open rangeland habitat, and 89 acres of cropland habitat. This loss of habitat values will be mitigated by special plantings on 25 acres around the structural measures and on 75 acres of other land. Water bodies created by impoundments in the sediment pool and borrow areas will create up to 479 acres of fisheries habitat and associated wetland.

TABLE OF CONTENTS

PURPOSE AND NEED FOR ACTION

The sponsors for the Choctaw Creek Watershed, Grayson County, Texas, have expressed their desire to complete installation of the remaining measures in the plan. These remaining measures consist of 14 floodwater retarding structures (Nos. 1 Rev., 2A, 3, 4 Rev., 5, 7, 18, 22, 24, 30 Rev., 35 Rev., 36, 37 Rev., and 41) and 1 multiple-purpose structure (No. 38) with recreational facilities.

In response to this request the Soil Conservation Service made an environmental evaluation and determined that an environmental impact statement (EIS) should be prepared for installation of the remaining measures. A Notice of Intent to Prepare an EIS was published October 26, 1984, and a Public Meeting (Scoping) was held on November 15, 1984, in order to determine public environmental concerns.

Background Information

The plan for Choctaw Creek Watershed was developed in 1965 and approved October 12, 1966. Authority for the project is under the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress, 68 Stat. 666), as amended. The purposes of the original plan were to accelerate the application of needed conservation land treatment for watershed protection; the installation of structural measures and channel modification work for flood protection on 10,800 acres of agricultural and urban built-up flood plain land; the provision of storage of water for municipal, industrial, recreational, and irrigation uses; and the development of recreational facilities. The plan has been modified to delete storage of water for irrigation, municipal, and industrial uses and to delete the channel modification work. The plan, as modified, provides for the completion of installation of 38 floodwater retarding structures, 2 multiple-purpose structures with recreational facilities, and 2 grade stabilization structures. It also provides assistance for accelerated application of conservation land treatment.

To date, 17 floodwater retarding structures (Nos. 12, 14, 15, 16, 17, 20, 21, 23, 25, 26, 27, 29, 32, 33, 34A, 39 and 40), 1 multiple-purpose structure (No. 10A) with recreational facilities, and 2 grade stabilization structures (Nos. 101 and 102) have been installed and slightly over 80 percent of the accelerated application of conservation land treatment has been achieved. Environmental documents have been prepared and filed for another 7 floodwater retarding structures (Nos. 8A, 9, 11, 13A, 19, 28 and 31) located in independent segments of the watershed. Presently these measures are in various stages of preparation for installation.

The following tabulation shows the demographic data for Grayson County and is representative of the watershed (U.S. Department of Commerce, 1980):

Grayson County, Texas	1980	1970	Percent Change
Persons	89,796	83,225	7.9
Housing Units	39,483	31,617	24.9
Race: White	82,078	--	--
Black	6,312	--	--
Am. Indian	629	--	--
Asian	185	--	--
Other	592	--	--
Spanish Origin	1,349	--	--

The climate is warm, temperate, subtropical, and humid with average rainfall about 39 inches. A growing season length of 204 days with a daily minimum temperature higher than 32°F has a probability of occurrence 9 years in 10 (USDA, 1980).

The topography is gently to moderately rolling. Areas of steep slopes generally occur along the south side of Choctaw Creek and along the tributaries that enter from the south side. Elevations above mean sea level range from 480 feet near the Red River to 900 feet in the headwaters.

The area is underlain by soft shale, moderately hard limestone, and poorly cemented sandstone of the Cretaceous System. The sandstone occurs across the nothern part of the watershed. The shale underlines a narrow east-west belt across the central portion. The moderately hard limestone occurs across the southern portion. A sizeable area of Quaternary terrace occurs near the Red River and Recent alluvium occurs along Choctaw Creek and the larger tributaries (Bureau of Economic Geology, 1967).

Clayey soils of the Blackland Prairie Major Land Resource Area cover about 75 percent of the watershed. Sandy soils of the Cross Timbers Major Land Resource Area cover much of the remaining northern part. The flood plain soils have developed mainly from clayey materials derived from the upland Blackland Prairie soils. Approximately 35 percent of the watershed is composed of soils which can be classified as prime farmland soils (Soil Survey of Grayson County, Texas).

The native vegetation on the clayey soils consisted primarily of the tall grass prairie and associated forbs. The sandy soils supported an open savannah of post oak and tall grasses. The flood plain supported a tall grass vegetation with riparian hardwoods along the stream banks.

The present land use in the watershed is as follows:

38 contain more than sufficient capacity for storage of submerged sediment.

The remaining structures addressed in this EIS will control runoff from 40,016 acres of the watershed. This acreage when added to the acreage controlled by those structures already installed and those covered in previously prepared environmental documents will result in a total of 72,327 acres or 43 percent of the watershed controlled.

A total of 20,097 acre-feet of capacity for the retardation of floodwater will be provided by these remaining structures. Another 5,837 acre-feet of capacity has been allocated for the accumulation of sediment over a 100-year period. The principal spillway crest of all floodwater retarding structures except No. 37 (Lake Loy) and multiple-purpose structure No. 38 (Lake Waterloo) will be set at the capacity of the 100-year sediment volume predicted to be deposited as submerged sediment. Principal spillways at No. 37 (Lake Loy) and No. 38 (Lake Waterloo) will be set at the present elevation of the water surface. These lakes have a total capacity of 813 acre-feet at present and will have an estimated accumulation of 136 acre-feet of submerged sediment. The other structures with more than 200 acre-feet of submerged sediment will be ported at the 200 acre-feet capacity. This capacity includes the borrow area to be excavated for the embankments. The principal spillways will be the drop inlet type with cantilever outlets. The inlets will be ungated to operate automatically and will have features to release the impounded water if necessary.

The embankments, emergency spillways, and adjoining work areas for construction equipment will require up to 270 acres of land. The sediment pools will require 383 acres and the detention pools another 1,504 acres. The 44 acres of surface water at structure No. 37 (Lake Loy) and 52 acres at multiple-purpose structure No. 38 (Lake Waterloo) will be drained prior to construction and then allowed to refill after installation of the structures. Multiple-purpose structure No. 38 and the associated recreational facilities will be installed at existing Lake Waterloo within 140 acres of parkland owned by the city of Denison.

Embankment materials for the structures are to be obtained from areas of the sediment pools that are to be below the elevation of the lowest ungated outlet. Materials excavated from the emergency spillways will also be utilized. Most of the materials obtained from the pool areas and the emergency spillways will be clayey. The foundations will be compressible with bedrock consisting of soft shale and chalky marl at all structures except for poorly cemented sandstone at Nos. 37 and 38. The existing impoundments will be drained prior to construction to permit drying of the work areas.

The potential hazard determinations for the structural measures show that structural failure would be limited to damage of county roads, agricultural land, some farm buildings below seven structures; to possible damage of isolated homes, main highways and railroads or cause interruption of use or service of utilities below eight structures. Two of these sites will need to be checked closely in the future for further

Planting on the 75 acres of native meadow at Lake Randall will begin when installation of the structural measures is started. The vegetation is to be established in strips comprised of 34 acres of native grasses and forbs, 31 acres of woody vegetation for brushy grassland, and 3 acres of hardwoods. Hardwood plants such as pecan, adapted species of oak, and plum are to be established on the 15 acres behind the dams as construction is completed. The 10 acres at structure No. 35 will be planted to brushy grassland after the dam is constructed. All plantings will be protected from grazing, mowing, farming, and fruit harvesting.

Existing trees and woody vegetation around the dam and emergency spillway are to be preserved for visual values as well as wildlife.

Installation of Measures

Construction of the measures will be carried out under contract requirements which set forth strict guidelines for protection from soil erosion and water and air pollution. The equipment used in construction will conform to SCS Construction Safety Standards and Interpretations. Necessary sanitary facilities and waste disposal facilities will be located away from sites which might contribute to possible pollution of live streams, springs, or wells. Conformance to requirements for environmental control will be monitored by a construction inspector who will be onsite during all periods of construction operation.

Efforts will be made to avoid creating conditions which will increase populations of vectors which affect public health conditions.

Prevention and control measures will be implemented, if needed, in cooperation with appropriate Federal, State, and local health agencies to suppress proliferation of vectors such as aquatic insects, terrestrial anthropods, rodents, etc., that could occur during installation of the project measures.

Landrights

The sponsors will acquire all needed landrights by easement or by purchase as necessary to install the measures and for subsequent operation and management. They will provide for changes in location or modifications of utility lines, roads, structures, etc., and obtain all necessary permits.

The sponsors have the right of eminent domain under applicable state law and have the financial resources to fulfill their responsibilities.

Apparent relocations of persons and businesses or farm operations will be necessary at six of the structures. A total of seven families, two farm operations and movement of the contents of four barns will be involved. These relocations and any other relocations of persons, businesses, or farm operations that may become necessary, will be carried out under the provisions of Public Law 91-646, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The relocations will be cost-shared at the rate of 44.07 percent for SCS and 55.93 percent for the sponsors.

Costs

The estimated costs for installation of the remaining project measures that have not been covered by an environmental document are presented in the following tabulation:

Installation Cost Item	Estimated Cost (Dollars) - 1985 Price Base		
	Federal	Non-Federal	Total
Structural Measures, Recreational Facilities, and Mitigation (Total)	$9,033,080	$1,395,130	$10,428,210

The estimated average annual cost of operations and maintenance of the remaining project measures is $11,280.

Project Costs and Benefits

The estimated installation cost for the project is $13,014,860. Average annual cost of the project at the authorized interest rate is $447,740. Total average annual benefits were calculated to be $1,072,100. The ratio of average annual benefits to average annual cost for the total project is 2.4:1.0.

The estimated installation cost for measures which are not installed is $10,428,210. Average annual cost of the project at the current interest rate is $913,920. Average annual benefits were calculated to be $904,180. The ratio of average annual benefits to average annual cost for the remaining measures at the current interest rate is 0.99:1.0.

Average annual cost for the total project at the current interest rate is $1,140,370. Total average annual benefits are $1,072,100. The ratio of average annual benefits to average annual cost for the total project is 0.94:1.0.

The authorized interest rate calculations were used in the EIS in accordance with congressional directions to all agencies involved in water resouce project evaluation.

Operation and Maintenance

The remaining project measures to be installed will be operated and maintained (O&M) by the sponsors. The city of Denison will be responsible for O&M on multiple-purpose structure No. 38 and the recreational facilities. The Choctaw Watershed Water Improvement District and Grayson County Commissioners Court will be responsible for O&M at the other structures and for the land for mitigation of wildlife habitat. The SCS will participate in O&M only to the extent of furnishing technical assistance to aid in inspections and technical guidance and information necessary for the O&M program.

A specific Operation and Maintenance Agreement will be prepared for each measure and will be executed prior to SCS furnishing financial

remaining planned measures with appropriate modifications for environmental concerns. The ongoing conservation programs and project measures covered by environmental documents filed previously are not covered by these actions.

Alternative 1 - Stop Further Action

The alternative of stopping all further action for installation of the remaining project measures and deleting them from the project plan would avoid the identified adverse impacts. The destruction of 346 acres of riparian woody vegetation with high wildlife habitat value would be avoided. Similarily the interruptions of existing wildlife travelways would not occur and 662 acres of land, including 210 acres of prime farmland soils, would not be committed to dams and sediment pools. In addition, the irretrievable commitment of labor, materials, energy, and capital expenditures for construction and the operation, maintenance, and replacement of short-lived project elements would be avoided.

This stop of action would forego the opportunity to provide flood protection through reductions in frequency and depth of flooding on 8,800 acres of agricultural flood plain land. This flood plain area includes 3,700 acres of prime farmland soils. It would also forego the opportunity to provide assistance for recreational facilities at Lake Waterloo.

Alternative 2 - Install Remaining Planned Measures

Installation of the remaining planned project measures is the alternative desired by the local sponsors of the project. This action would result in the unavoidable destruction of 346 acres of riparian hardwoods wildlife habitat and 254 acres of other habitat. This also interrupts the continuity of wildlife travelways associated with the woody habitat. These measures will also commit 210 acres of prime farmland soils to the dams and sediment pools and commit another 540 acres to infrequent inundations in the detention pools. It will result in the irretrievable and irreversible commitment of labor, materials, energy, and capital expenditures for construction and for the operation and replacement of short-lived project elements.

This action will provide flood protection through reduction in frequency and depth of flooding on 8,800 acres of agricultural flood plain. This will also provide flood protection to about 3,700 acres of prime farmland soils in the 8,800 acres of flood plain and reduce the frequency of flooding sufficiently to increase the area classified as prime farmland soils by 1,700 acres. Recreational facilities associated with the multiple-purpose structure will provide an estimated 121,900 recreational use days.

AFFECTED ENVIRONMENT AND CONSEQUENCES

Resource conditions and the effects of the proposed action are presented in this section. Appropriate resource baseline data has been included to establish needed perspective.

The major habitat types identified in the watershed are:

Cropland - Areas being cultivated and planted to annual crops. Major crops planted in the watershed are small grains, forage, and grain sorghum.

Improved grassland - A monoculture habitat type which is normally intensively managed to maximize vegetative growth for either haying or livestock grazing. Principal grass species is Coastal bermudagrass.

Open Native Grassland - Areas comprised primarily of herbaceous vegetation with 10 percent or less woody canopy. Principal species are silver bluestem, little bluestem, windmillgrass, texas wintergrass, vetch, bermudagrass, johnsongrass, and buffalograss. Also various species of dropseed, lovegrass, clovers, and winter annuals of grasses and forbs occur here. Woody species include honeylocust, eastern red cedar, osageorange, hackberry, and elm.

Mixed Hardwoods - This habitat includes a variety of hardwood species. The dominant overstory species are cedar elm, american elm, hackberry, green ash, and pecan. Other species include cottonwood, blackwillow, post oak, osageorange-orange, locust, and several species of red §oak. The understory includes coralberry, greenbriar, hawthorn, alabama supplejack, bumelia and boxelder. Ground cover is comprised of sedges, wildrye, broadleaf uniola, and winter annuals.

Brushy Native Grassland - This habitat type is similar to open native grassland with the exception of woody vegetation which is greater than 10 percent. The dominant woody species is winged elm. Other woody species include hackberry, eastern red cedar, and osage-orange. Plant species in the ground story are texas wintergrass, clover, wildrye, various species of dropseed, lovegrasses, and forbs.

Elm Pecan - This habitat type is comprised primarily of cedar elm and pecan. Other species present are hackberry, willow, and cottonwood. The understory has been cleared of woody vegetation. The ground cover is comprised of bermuda, clover, sedges, wildrye, and violets.

Cedar - Eastern red cedar is the principal species in this habitat type. Some other species that may occur are cedar elm, hackberry, osageorange, and locust. Very little vegetation occurs in the understory. Greenbriar, coralberry, and sedges are present in limited numbers.

Water - This habitat type includes water impoundments ranging in size from farm ponds to small lakes.

Numerous species of wildlife occur in the watershed, most of which are associated with an openland habitat with woody vegetation being limited.

Major game species found in the watershed are mourning dove, bobwhite quail, and waterfowl. Some white-tailed deer may occur where sufficient cover exists.

The installation of the 14 floodwater retarding structures and the multiple-purpose structure will involve 2,095 acres. The habitat types affected by these structures are shown in Table 1.

The acreage in the dam and spillway for each structure will be cleared, if needed, and altered during construction. After construction, this area will be vegetated to herbaceous vegetation, primarily bermudagrass for erosion control. This will cause a loss of 43 acres of cropland, 35 acres of pastureland, 80 acres of open native grassland, 94 acres of woody habitat, one acre of water and six acres of miscellaneous uses. The 35 acres presently in pastureland will be temporarily displaced. After the dams and spillways are revegetated, this area will be classified as pastureland.

The area in the sediment pool below the lowest ungated outlet will be inundated. This will cause a loss of 383 acres of terrestrial habitat. The 96 acres of water in the two existing reservoirs that are to be modified will be temporarily drained until after the dams are reconstructed.

The 1,357 acres in the detention pools will be periodically inundated for brief periods when the structures function as they are designed. The habitat type within this area should not be altered.

Threatened and Endangered Species

Two species designated by the U.S. Fish and Wildlife Service as being endangered may occur in the watershed. These are the bald eagle (Haliaeetus leucocephalus) and the whooping crane (Grus americana). Both of these species are migratory. The bald eagle migrates south from its northern range to Lake Texoma to winter. Lake Texoma is located just north of the watershed. The whooping crane may migrate through the watershed to and from its winter range at the Aransas Wildlife Refuge. There is no critical habitat for these species present in the watershed.

The installation of the remaining project measures will not have any effect on these species or any other known threatened or endangered species of flora or fauna. Consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act of 1973 (Public Law 93-205, as amended) has been completed.

Wetlands

Wetlands in the watershed are limited to seasonally flooded hardwood basins or flats and inland fresh marshes or open water. Seasonally flooded hardwood basins or flats, Type 1, as defined by U.S. Fish and Wildlife Service, 1971 publication, circular 39, occur along Choctaw Creek, Cedar Creek, Post Oak Creek, and Mill Creek.

Inland fresh marshes or open water may include Type 3 (inland shallow fresh marshes), Type 4 (inland deep fresh marshes), and Type 5 (inland open fresh water). These wetland types occur in some farm ponds as well as along fringe area of reservoirs.

The installation of the 14 floodwater retarding structures and 1 multiple-purpose structure will not affect any existing wetlands. When these structures are completed, wetlands may occur in the shallow water areas of the 383 additional surface acres of the sediment pools. The

The project action of accelerating the application of conservation treatment on severely eroding and gullied formerly cultivated lands has reduced erosion on these areas by about 80 percent. Establishment of perennial vegetation on frequently flooded, scoured lands has reduced scour erosion problems by about 50 percent. Natural vegetation and vegetative treatment has helped stabilize streambank erosion and associated valley trenching on lower Choctaw Creek. This stream erosion which began at the Red River more than 30 years ago has become increasingly less severe as it has moved progressively upstream to the vicinity of U.S. Highway 69 on the mainstream of Choctaw Creek. This channel enlargement has removed the sediment deposits which clogged the old stream and provides good capacity for carrying the flows of the smaller frequent floods. Active streambank erosion remains a problem in some of the sharper bends. The overall erosion problems and sediment load carried by streams of the watershed have been moderated. Remaining erosion problems tend to be isolated rather than widespread. Installation of the structural measures will have some moderate effects in trapping of sediment from upstream sources and in reducing the erosive energy of floodwater flows downstream.

Water Quality

Flow conditions in the streams of the watershed under natural conditions are intermittent. At the present time, year-round base flow is maintained in the mainstem of Choctaw Creek and in Iron Ore Creek by effluent releases from the waste water treatment plants at Sherman and at Denison respectively. The flow from Choctaw Creek and its tributaries enters the Red River, Segment 0202, downstream from Lake Texoma. There are no significant water quality problems in this segment of the Red River according to the Texas Department of Water Resources (1982).

The waste water treatment plant at Sherman treats both industrial and domestic waste loads. The Denison plant on Iron Ore Creek is one of three city plants in Segment 0202 and it treats domestic waste loads only. Average daily flow is slightly over 6 million gallons for the Sherman plant and slightly over 1 million gallons for the Denison plant. Waste treatment is achieved by a trickling filter type system at Sherman and oxidation ditch system at Denison. Because of low priority in water quality problems, no waste assimilation modeling studies have been made on the streams below these plants. Future urban growth is expected to increase waste loading at both plants with the sources of waste not expected to change greatly from present respective sources. Modifications have been carried out recently to handle treatment needs for Sherman and will need to be made at the Denison plant as future growth continues.

The runoff into the streams and existing impoundments in the watershed is subject to possible nonsource pollutants from urban and suburban developments and from some agricultural activities. No visible evidence of problems of surface water pollution have been exhibited by any of the existing impoundments. These impoundments include Lakes Loy and Waterloo, multiple-purpose structure No. 10A, and the sediment pools of 17 operational floodwater retarding structures. The drainage area of

evaluation of detailed sedimentation surveys that had been made on five SCS floodwater retarding structures and three Corps of Engineers reservoirs found that "...the reservoirs reduce sediment flow downstream by an amount somewhat commensurate with the proportion of the tributary area regulated." (Beard, 1979). The structures will also effect a reduction in the amount of water from a runoff event that will flow out-of-bank across the agricultural flood plain lands and will increase and also prolong the flow from these events within streambanks.

Archeological and Historic Resources

The watershed contains numerous known and recognized historic sites. Approximately 35 historic sites, properties, cemeteries, etc., recognized by the Grayson County Historical Survey Committee are located within the watershed. Two properties listed on the National Register of Historic Places are located within the city of Denison. None of these properties occur within any of the areas that will be involved by the structural measures.

Reconnaissance archeological surveys have been made on 1,770 acres of land involved in structural measures that have been installed or have been covered in previous environmental documents. The surveys found evidence of only one small site which did not contain any significant properties.

No cultural resources were found on 192 acres of land that are to be involved by multiple-purpose structure No. 38 (Lake Waterloo). Surveys on lands that are to be involved in the other remaining project measures have not been completed. This includes 697 acres that are to be involved by the dams, impoundments and adjacent work areas or on another 1,445 acres that will be involved by infrequent inundations for short durations within the detention pool areas.

In accordance with Programmatic Memorandum of Agreement with the Advisory Council on Historic Preservation for protecting archeologic and historic properties, the SCS will implement the procedures contained in the proposed final regulations (7 CFR 656), SCS Policy and Procedures for Protecting Archeologic and Historic Properties (Cultural Resources), as published in the SCS General Manual, Title 420, Part 401.

Economic and Social

There are approximately 100 landowners and land users of the agricultural flood plain in the Choctaw Creek Watershed. Similarily, there are a large number of property owners who reside and work in various business enterprises located on the urban flood plain of Post Oak and Sand Creeks within the city of Sherman. The measures already installed and measures covered by previous National Environmental Policy Act documents which are in various stages of preparation for installation provide varying levels of protection to certain portions of the agricultural flood plain and to all of the urban flood plain in the city of Sherman.

of undeveloped, wooded steeply sloping land as "one of the city's most valuable land assets" (Carter and Burgess, Inc., 1984).

The placement of the community recreation facility near Lake Waterloo, and in the vicinity of the recreational facilities that are to be provided by the multiple-purpose structure No. 38, will serve to further enhance the recreational aspects of Lake Waterloo. The community center would serve as a nucleus for the outdoor recreational facilities.

Some of the Texoma Region's additional needed recreational facilities will be supplied by the measures that are to be installed at multiple-purpose structure No. 38. This project-sponsored action will provide 40 concrete picnic tables with associated grills or fireplaces, 240 square-feet of restrooms, a one-lane boat ramp, 850 feet of access roads, 13,200 feet of trails, 50 parking spaces for cars, 10 parking spaces for trailers, and provisions for landscaping. These facilities will be coordinated with the city of Denison's plans for their community center. The project-sponsored measures are expected to provide an estimated 121,900 visitor days of recreation.

Visual Resource

The visual resources of the watershed are characterized by gently rolling lines of the horizon and generally low vertical lines locally. A segment of a low, gently rounded hill occurs on the northern watershed divide west of Denison. Steeply sloping, low scarps occur along the southern side of the broad nearly level flood plain of Choctaw Creek. Short vertical accent is provided by corridors of woody vegetation of uniform height which occur along the streams, isolated wooded patches, and property line fence rows. Manmade features associated with the urban complex of Denison and Sherman dominate the landscape across the central part. Scattered suburban and farm developments occur throughout the area.

The 14 floodwater retarding structures are located mainly in rural areas of mixed open grassland and cropland with corridors of woody vegetation. Multiple-purpose structure No. 38 at Lake Waterloo and floodwater retarding structure No. 37, at Lake Loy, are located in existing pool areas that are accessible and highly visible to the general public. Careful consideration of the existing trees and woods for installation of these modified structures will retain the quality of the visual resource at these sites. The other structures are located in rural areas. All except three of the structures will be visible to the rural population. The visual resource at these sites may be enhanced by the bodies of water in the sediment pools, deteriorated in some instances by the embankment and emergency spillway, and unchanged in other instances. Preservation of existing trees and woods, where possible, and plantings for wildlife habitat mitigation will reduce overall impact on the visual resource.

Evaluation of the landscape architecture of the structure sites disclosed two sites with high priority, six sites with medium priority and seven with low priority. Landscape architectural consideration will

was accomplished through an orderly process consisting of application for assistance by the sponsors, field examinations, public hearings, public meetings during the planning process, and a field level review of the completed plan. The project plan was approved for operations October 12, 1966.

Environmental documents were prepared for independent portions of the watershed including Post Oak, Cedar, and Mill Creek tributaries. A negative declaration was filed on May 20, 1975, for seven floodwater retarding structures on the Post Oak and Cedar Creek segments. A negative declaration was also filed May 27, 1976, for seven floodwater retarding structures on the Mill Creek segment.

The environmental evaluation of the possible impacts from installation of the remaining project measures on fish and wildlife resources was coordinated with biologists from the U. S. Fish and Wildlife Service and the Texas Parks and Wildlife Department. Needed habitat mitigation features were developed jointly by the biologists to resolve these concerns.

Consultation of the National Register of Historic Places and with the Grayson County Historical Survey Committee was made to assure that no historic sites listed will be affected.

The State Historic Preservation Office was consulted previously concerning archeologic resources and concurrence with archeologic surveys which were made at multiple-purpose structure No. 38. Further work at the structural measures will be made in accordance with counterpart final rule "SCS Policy and Procedures for Protecting Archeological and Historic Properties" (7 CFR 656) published in the SCS General Manual, Title 420, Part 401.

Consultation with the U.S. Fish and Wildlife Service was carried out on threatened and endangered species. There were no findings of impacts to critical habitat on any listed or proposed species. A Notice of Intent to Prepare an EIS was published on October 26, 1984, and a Public Meeting (Scoping) was held in Sherman, Texas, November 15, 1984. Notices of the meeting were mailed to 95 addresses. Notices were also printed in two newspapers covering the watershed and announcements were given over the local radio stations.

A total of 33 individuals attended the public meeting. The meeting was also covered by reporters from the local newspaper and from the radio and local TV station. Two registrants gave statements at the meeting and one statement was received by mail. Several responses to the Notice of Intent to Prepare an EIS were received from Federal, State, and local agencies and individuals.

The two respondents at the public meeting provided statements of support for the project action. One respondent reported on actions taken by the city of Oenison to provide availability of 76 acres of land for wildlife habitat mitigation. The respondee by mail expressed concerns about the destruction of riparian woods by the structural measures, the disruption of wildlife travel lanes by the action, and the overall incompatibility

DISCUSSION AND DISPOSITION OF EACH COMMENT ON DRAFT ENVIRONMENTAL IMPACT STATEMENT

Comments on the Draft EIS were requested from the following Federal, State, and local agencies and organizations:

Federal

Department of the Army
Department of Commerce
Oepartment of Health and Human Resources
Department of Education
Department of the Interior
Advisory Council on Historic Preservation
Environmental Protection Agency
Federal Power Commission
Office of Equal Opportunity, USDA
U.S. Coast Guard

State and Local

Office of the Governor (Budget and Planning Office and State Clearinghouse)
Red River Authority of Texas
Texoma Regional Planning Commission

Other

Environmental Defense Fund
Friends of the Earth
National Audubon Society
Natural Resource Defense Council
National Wildlife Federation
Texas Committee on Natural Resources
Wildlife Management Institute

The following agencies and organizations submitted comments on the draft environmental impact statement:

Federal

Department of the Army
Department of Housing and Urban Development
Department of the Interior
Environmental Protection Agency
Fish and Wildlife Service, USDI

State and Local

Office of the Governor
Texas Historical Commission
Texas Parks and Wildlife Department
Texas Water Commission
Texas Water Development Board
Texas State Soil and Water Conservation Board

budgetary constraints discourage the preparation and printing of materials that could possibly be omitted from the EIS.

Department of the Interior

Comment: The Department stated that concerns regarding fish and wildlife resources have been considered and that mitigation measures should adequately offset projected impacts.

Response: Noted.

U.S. Environmental Protection Agency

Comment: The Agency commented that it believed that early determination of the need for a Section 404 discharge permit for the project measures should be made in order to minimize future delays during the permitting process. It was requested that further coordination with the Corps of Engineers be made to clarify applicability of 404 jurisdiction.

Response: The Corps of Engineers was contacted concerning Section 404 applicability (see Department of the Army Comment and Response). A review of floodwater retarding structures in various watersheds including Choctaw Creek watershed was made April 9 and 10, 1986. This review determined that these measures fall within the scope of a nationwide permit.

Comment: The Agency classified the Draft EIS as Lack of Objections (LD) and stated that this classification would be published in the Federal Register.

Response: Noted.

USDI, Fish and Wildlife Service

Comment: The Service commented that previous Fish and Wildlife Service input regarding fish and wildlife resources has been considered in project designs and that the proposed mitigation measures should adequately offset the projected impacts.

Response: Noted.

Office of the Governor

Comment: The Office stated that the DEIS was found to be consistent with policies and objectives as they related to water conservation, flood control, soil erosion control, and water quality protection.

Response: Noted.

Texas Water Development Board

Comment: The Board stated that it concurs with the findings and

completion of the remaining measures and urge expedient implementation of the plan.

Response: Noted.

BIBLIOGRAPHY

Beard, Leo R., 1979, Sediment Effects of Headwater Reservoirs, Trinity River Watershed, Center for Research in Water Resources, Technical Report CRWR-163, the University of Texas, Austin, Texas.

Beard, Leo R. and Moore, Walter L., 1976, Downstream Effects of Floodwater Retarding Structures, Center for Research in Water Resources, Technical Report CRWR-132, the University of Texas, Austin, Texas.

Bureau of Economic Geology, the University of Texas. 1967. Geologic Atlas of Texas, Sherman Sheet. Austin, Texas. October 1967.

Carter and Burgess, Inc., Engineers and Planners. 1984. Waterloo Lake Park Master Plan, City of Denison. Dallas, Texas. August 24, 1984.

Moore, Walter L. and Guo, Hong-Yaun, 1979, Water-Yield Effects of Headwater Reservoirs, Trinity River, Texas, Center for Research in Water Resources, Technical Report CRWR-169, the University of Texas, Austin, Texas.

U.S. Department of Commerce, Bureau of Census. 1980 Census of Population and Housing.

U.S. Department of Agriculture, Soil Conservation Service. 1980. Soil Survey of Grayson County, Texas. February 1980.

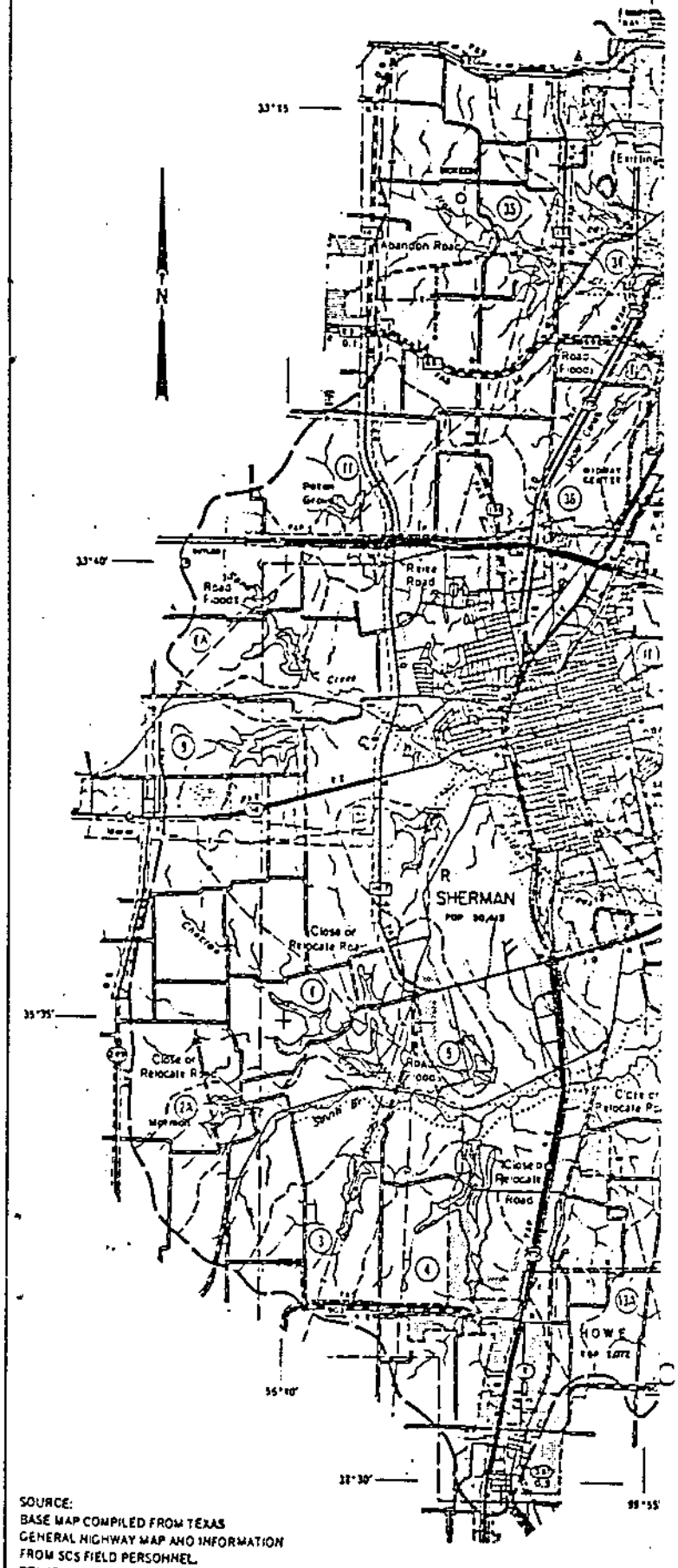
Texas Department of Water Resources, 1982, The State of Texas Water Quality Inventory, 6th Edition.

Texas Parks and Wildlife Department, 1985 Texas Outdoor Recreation Plan, Comprehensive Planning Branch, Parks Division, Austin, Texas, 1985.

INDEX

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE



LEGEND

- US HIGHWAY
- STATE HIGHWAY
- COUNTY HIGHWAY
- DIVIDED ROAD
- PAVED ROAD
- IMPROVED ROAD
- DIRT ROAD
- RAILROAD
- CITY LIMITS
- CEMETERY
- HOUSE
- T — POWER LINE
- P — PIPELINE
- DRAINAGE
- WATERSHED BOUNDARY
- FLOODWATER RETARDING STRUCTURE
- MULTIPLE PURPOSE STRUCTURE R RECREATION
- DRAINAGE AREA CONTROLLED BY STRUCTURE
- AREA BENEFITED
- GRADE STABILIZATION STRUCTURE
- SITE NUMBER
- GRADE STABILIZATION STRUCTURE NUMBER

APPENDIX A

PROJECT MAP

CHOCTAW CREEK WATERSHED

GRAYSON COUNTY, TEXAS

0 1 2 3 4 5
MILES

0 1 2 3 4 5
KILOMETERS

SOURCE:
BASE MAP COMPILED FROM TEXAS GENERAL HIGHWAY MAP AND INFORMATION FROM SCS FIELD PERSONNEL.
POLYCONIC PROJECTION.

DECEMBER 1985 4-R-20,892
DECEMBER 1981 BASE 4-R-39584

APPENDIX B

Letters of Comment Received

on the

Draft Environmental Impact Statement

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO ATTENTION OF

APR 2 1986

Planning
Environmental Resources

Mr. O. Dale Fischgrabe
Acting State Conservationist
Soil Conservation Service
101 South Main
Temple, TX 76501-7682

Dear Mr. Fischgrabe:

We have reviewed the Draft Environmental Impact Statement (DEIS) for Choctaw Creek Watershed, that was enclosed with your letter dated February 13, 1986.

The DEIS does not contain enough information for us to determine the combined release rates of all proposed and completed structures. Care should be taken to assure that the combined flood control releases do not increase the duration of flooding on low-lying areas.

Dredged or fill material placed into streams within the Choctaw Creek watershed is subject to regulation under Section 404 of the Clean Water Act (33 U.S.C. 1344). A nationwide permit is available that covers minor discharges above the headwaters where the loss or adverse modification is less than 1 acre of water of the United States. Our Regulatory Functions Section needs additional information from your office to determine if this project falls within the scope of the nationwide permit or if an individual Section 404 permit is required. To provide this information, please contact Mr. D. G. Ringeisen, P.E., Regulatory Functions Section, Post Office Box 61, Tulsa, Oklahoma, 74121-0061, (918) 581-7261.

We appreciate the opportunity to comment on this statement.

Sincerely,

G. David Stula
for Robert D. Brown, P.E.
Chief, Planning Division

We appreciate the opportunity to review the subject Draft EIS. If we can be of assistance relative to the above, please call us at 817/885-5853.

Sincerely,

I. J. Ramsbottom
Regional Environmental Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
INTERFIRST TWO BUILDING, 1201 ELM STREET
DALLAS, TEXAS 75270

APR 02 1986

Mr. O. Dale Fischgrabe
State Conservationist
USDA Soil Conservation Service
101 South Main
Temple, Texas 76501-7682

Dear Mr. Fischgrabe:

We have completed our review of your Draft Watershed Plan and Environmental Impact Statement (EIS) for the Choctaw Creek Watershed, Grayson County, Texas. The EIS evaluates the impacts associated with the installation of 14 remaining floodwater retarding structures and one multiple-purpose structure with recreational facilities in Choctaw Creek Watershed.

The following comment is offered for consideration:

Page 31 of the Draft EIS states that no wetlands will be impacted by the proposed action; however, page 14 indicates that the sponsor may need to obtain a Section 404 permit. In an effort to strengthen and confirm this impact assessment, we ask that the appropriate District of the U.S. Army Corps of Engineers be contacted to determine the need for a Section 404 discharge permit for any portion of the proposed project. We realize that a completed Section 404 permit application is not required at this planning stage; however, we believe early clarification and identification of jurisdictional wetlands and the associated project impacts will minimize the possibility of future delays during the permitting process. If a permit is required, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the Clean Water Act. Our evaluation would focus on the maintenance of water quality and the protection of wetland, fishery and wildlife resources. The Corps' response to this request should be included in the Final Statement.

We classify your Draft EIS as Lack of Objections (LO). We have no objection to your proposed action as discussed in the Draft EIS. However, we are requesting further coordination with the Corps of Engineers to clarify applicability of 404 jurisdiction.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
9A33 Fritz Lanham Building
819 Taylor Street
Fort Worth, Texas 76102

April 1, 1986

Mr. O. Dale Fischgrabe
Acting State Conservationist
Soil Conservation Service
101 S. Main
Temple, Texas 76501

Dear Mr. Fischgrabe:

Thank you for the opportunity to review the Draft Environmental Impact Statement (EIS) for Choctaw Creek Watershed in Grayson County, Texas.

Our review of the EIS indicates that previous FWS input regarding fish and wildlife resources has been considered in the design of your project. Mitigation measures proposed should adequately offset the projected impacts.

Thank you for the opportunity to comment.

Sincerely,

for David A. Cuntz

Jerome L. Johnson
Field Supervisor

cc:
Regional Director, FWS, Albuquerque, NM (AHR)
Executive Director, TPWD, Austin, TX

The Governor's Office finds this proposed DEIS to be consistent with policies and objectives as they relate to water conservation, flood control, soil erosion control, and water quality protection. We appreciate the opportunity to review this document for more effective coordination among state and regional agencies. If we can be of further assistance, please contact this office.

Sincerely,

Hershel S. Meriwether II

Hershel S. Meriwether II
Associate Deputy Assistant for Programs

HSM/wt

Enclosures (2)

cc: Mr. James K. Brite, Jr.
Upper Elm-Red SWCD
P.O. Box 1477
Bowie, Texas 76230

CURTIS TUNNELL
EXECUTIVE DIRECTOR

TEXAS HISTORICAL COMMISSION

P.O. BOX 12276
AUSTIN, TEXAS 78711
(512) 475-3092

Survey and Report Guidelines

The survey should consist of detailed surface examination, augmented by subsurface probes, in order to identify sites. Controlled collections of both surface and subsurface cultural material should be made in order to provide data necessary for adequate assessment. All sites identified must receive trinomial designations and should be assessed according to the criteria for eligibility to the National Register of Historic Places as outlined in 36CFR60.4 All work performed shall be in conformance with the Council of Texas Archeologists (CTA) guidelines for field investigations and reporting.

Many projects for which the State Historic Preservation Officer requires surveys are small. Often a letter report can adequately describe the results. Certain elements should be included, however, in any report in order to expedite the review process. The following elements, which incorporate items outlined in the Report Guidelines defined by the CTA, should be addressed in all reports:

1. A clear map of the surveyed area. A good map can increase our information about a particular location as well as ensure that the area surveyed is the same for which the survey was requested. Marking on a portion of a 7.5. U.S.G.S. topographic map provides an ideal example.

2. A description of the project area in terms of topography, soils, and vegetation.

3. A description of the method of survey, including information such as; how many people on the crew, amount of acreage surveyed, and time required to complete survey. A description of any testing procedures including the number, location, depth, content and spacing of shovel testing.

4. A description, evaluation, and map of the resources found. If none were found, please provide your opinion on why nothing was encountered --erosion, agriculture, lack of exploitable environment, etc.

5. Photographs and UTM locations for all structures on the property, whether or not they are to be demolished.

6. The contractual arrangements for the survey. What federal and/or state agencies, local governments, or private companies are involved, and in what way?

State Historic Preservation
Officer
TEXAS HISTORICAL COMMISSION

TEXAS WATER COMMISSION

April 2, 1986

Mr. Robert E. McPherson
Governor's Office of Budget and Planning
P. O. Box 13561
Austin, Texas 78711

Dear Mr. McPherson:

Re: Draft Environmental Impact Statement
Choctaw Creek Watershed
U. S. Department of Agriculture
Soil Conservation Service
EIS #TX-86-03-04-0010-50

The Commission staff has reviewed the referenced EIS and offers the following comment:

> The project will include the construction of 13 earthen dams and the modification of two existing dams at Waterloo Lake and Loy Lake. The existing dams are classified as high hazard because of residential areas downstream of them. It is recommended that all 15 dams be designed in accordance with their hazard classifications as specified by current TWC criteria.

Very truly yours,

Larry R. Soward

Larry R. Soward
Executive Director

TEXAS STATE SOIL AND WATER CONSERVATION BOARD

311 North 5th
P. O. Box 658
Temple, Texas 76503
Area Code 817, 773-2250

April 4, 1986

Mr. O. Dale Fischgrabe
Acting State Conservationist
Soil Conservation Service
101 South Main
Temple, TX 76501-7682

Dear Dale:

We have reviewed the draft Environmental Impact Statement for the Choctaw Creek Watershed Project in Grayson County.

Our involvement with the sponsors and the Soil Conservation Service staff working on the project leads us to believe that the objectives of the sponsors will best be met by the implementation of the remaining measures. We urge that all associated with the project from this point forward seek expedient implementation of the plan.

Thank you for the opportunity to review this document.

Sincerely yours,

Harvey Davis
Executive Director

HO/vd