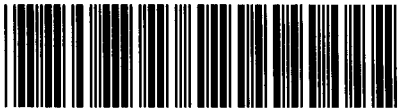

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Item Number: 11

Addendum StartPage: 0

PRELIMINARY ENGINEERING REPORT
FOR
TAMINA COMMUINITY SANITARY SEWER PROJECT

Old Tamina Water Supply Corp.
P.O.Box 7402
The Woodlands, TX 77387

Prepared by by:

PTI, INCORPORATED
ENGINEERS, ARCHITECTS, PLANNERS
2925 Briarpark Drive, Suite 950
Houston, Texas 77042
713/266-6145 FAX: 713/974-4812

February 15, 2011

PTI, INC.

Engineers / Architects
Construction Managers

PTI, INC.
2925 Briarpark Drive
Suite 950
Houston, Texas 77042
T 713.266.6145
F 713.974.4812
www.pti-engineers.com

February 17, 2011

Ms. Monica Pierre
Area Specialist
USDA
2 Financial Plaza, Suite 745m
Huntsville, Texas 77340

Re: Tamina Preliminary Engineering Report:

Dear Ms. Pierre:

Attached with this letter are three copies of Preliminary Engineering Report prepared by PTI, Inc. for your review. This is the only outstanding requirement requested by USDA regarding the financial assistance requested by Old Tamina Water Supply Corporation.

Please review and communicate any comments you may have regarding the Preliminary Engineering Report. If you have any questions regarding the Preliminary Engineering Report, please let me know or call me at (713) 266-6145.

Sincerely;
PTI, Inc.

Dr. Frank C. Mbachu, P.E., DEE
Project Manager

Cc: Mr. James Leveston, President (Old Tamina Water Supply Corporation)
Mr. David L. Collins, President (PTI, Inc.)

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PRELIMINARY ENGINEERING REPORT
TAMINA COMMUINITY
SANITARY SEWER PROJECT

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Old Tamina Water Supply Corporation
Sanitary Systems Project

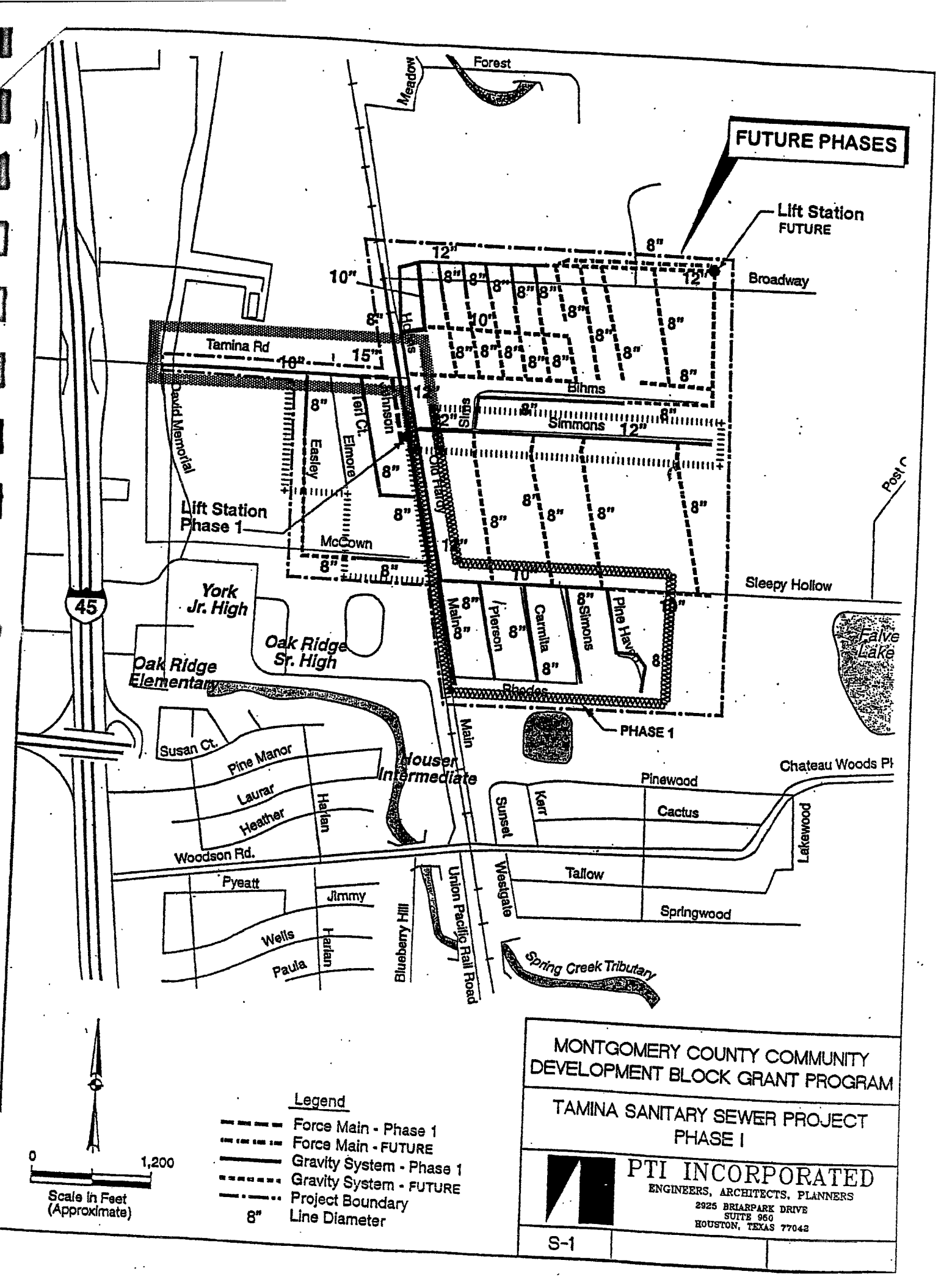
I. General

The proposed project consists of installation of the Sanitary Sewer System in Tamina starting with the Southeast Segment of Tamina. Tamina Community is not served with Sanitary Sewer System but receives water from the Community of Chateau Woods. The water lines within the Tamina Community are considered substandard. The sanitary sewer systems consist of private septic tanks or direct discharge into the environment. This project addresses the national objective of improving and expanding infrastructure in the unincorporated area of the County without sanitary sewer facility. The goal and objective of project is to construct sewer improvements for low income area on southeast and west segment of Tamina.

The project will serve approximately 650 residents of Community of Tamina. Tamina Community has proposed a phased plan to implement the installation of Sanitary Sewer in entire the Tamina Community. Phase I area is designated as shown in drawing S-1. Phase 1 project includes a lift station that will be located on Main with a force main across the rail road track due west and discharges to a manhole that will convey the wastewater to City of Shenandoah Wastewater Treatment Plant. Phase II is to cover the west side of Tamina while the northeast section of Tamina is designed for future and may be covered in one or two phases depending on the availability of fund.

Most of the citizens of Tamina live below the poverty level. The community has adequate water service and no wastewater services at all. Some of the residents appear to be transient residents living in the substandard houses and some without utility service. Some of the residents in Tamina are unemployed with no regular income and are living below the national poverty level.

Tamina Community application for the project in the amount of $1,839,438.20 will provide a sanitary sewer system that will discharge into City of Shenandoah Wastewater Treatment Plant this will contribute to improved standard of living within the Community of Tamina.



MONTGOMERY COUNTY COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

TAMINA SANITARY SEWER PROJECT
PHASE I

PTI INCORPORATED
ENGINEERS, ARCHITECTS, PLANNERS
2925 BRIARPARK DRIVE
SUITE 960
HOUSTON, TEXAS 77042

S-1

II. Project Planning Area

A. Location

The Tamina Community is located north of the City of Oaks Ridge North, south of the City of Conroe and east of interstate Highway 45 in southern Montgomery County, Texas. Tamina Community contains approximately 540 areas of land with approximately 249 existing single family residential connections. Tamina Water Supply Corporation was incorporated on July 2, 1971 and operates pursuant to Chapter 67 of the Texas Water Code as amended and other applicable laws of the State of Texas.

B. Environmental Resources Present

The environmental resource present is as documented in the environmental report for water and wastewater projects. There is really no environmental concerns as the project will be constructed within the Right of Way of existing roadways.

C. Growth Areas and Population Trends

The proposed projects will directly impact approximately 249 existing single family residential connections. Based on information from the Preliminary Engineering Feasibility Report prepared by Jones and Carter, Inc., the existing population was estimated to be approximately 650 people. Tamina community is expected to grow at growth rate of two-percent (2%) per year. Sanitary Sewer System consists of private septic tanks, or direct discharge into the environment. Large majority of the private septic systems within the area are failing.

The proposed project meet USDA requirements for funding because most of the residents in Phase I project area live below the poverty level. The ideas of providing Sanitary Sewer Services have been fully explored but the anticipated plan of building the system in phases until it is completed is the most cost effective method of achieving the stated objectives.

The continued use and degradation of existing septic tanks in Tamina community including Phase I area will lead to inability to maintain adequate health and welfare of the community. The attached cost estimated shows the detail listing of quantities of proposed work. The installation will be implemented with proper pipe embedment to assure quality of construction.

The project cost estimate as attached was produced by PTI, Inc. a civil consulting engineering firm that specializes in water and wastewater systems. Phase I project has a substantial cost because it requires that the lift station be built to make the first phases operational. Other phases could be added at more reasonable cost or as fund availability

detects. It is expected that the sewer lines will be constructed within the right of ways of the roadway. The site plan is shown on the attached drawing S-1 with phase I, phase II and future phase boundary delineated.

The cost estimate was established with consideration to TCEQ requirements and other governmental regulations and guidelines affecting sanitary sewer installations.

PTI, Inc.

TAMINA SANITARY SEWER PROJECT PHASE I
MONTGOMERY COUNTY, TEXAS

SCHEDULE OF UNIT PRICE WORK

BASE UNIT PRICES FOR:

Item No.	Item Description	Unit	Unit Quantity	Unit Price In Figures	Total In Figures
	GENERAL ITEMS				
1	Mobilization *(The entire Job, 4% Total Cost)*	LS	1	$27,000.00	$27,000.00
2	Traffic Control System	LS	1	$6,000.00	$6,000.00
3	Flagmen	HRS	100	$26.00	$2,600.00
4	Storm Water Pollution Prevention Systems	LS	1	$3,000.00	$3,000.00
5	Reinforced Filter Fabric Fence	LF	100	$5.00	$500.00
	General Subtotal				**$39,100.00**
	PAVING ITEMS				
6	Saw Cut Asphalt or Concrete Pavement	LF	1,500	$3.00	$4,500.00
7	Remove Existing Asphalt Pavement with or without Curb, All Thickness	SY	650	$10.00	$6,500.00
8	8" Crushed Concrete Base (for Gravel Road)	SY	3,000	$15.00	$45,000.00
9	6" Crushed Concrete Base (for Asphalt Road)	SY	650	$12.00	$7,800.00
10	2" Type "D" Hot Mix Asphalt Concrete (HMAC)	TON	68	$150.00	$10,200.00
11	Re-grading Existing Roadside Ditch, All Depths	LF	3,500	$5.00	$17,500.00
12	Sodding	SY	800	$5.00	$4,000.00
13	Hydromulch Seeding	AC	1	$2,000.00	$1,000.00
	Paving Subtotal				**$96,500.00**
	SANITARY SEWER ITEMS				
14	Trench System	LF	11,670	$2.00	$23,340.00
15	4' Dia. Sanitary Sewer Manhole - All Depths	EA	23	$2,800.00	$64,400.00
16	15" Sanitary Sewer - All Depths	LF	3,120	$70.00	$218,400.00
17	8" Sanitary Sewer, All Depths	LF	9,840	$45.00	$442,800.00
18	10" Sanitary Sewer, All Depths	LF	3,360	$55.00	$184,800.00

TAMINA SANITARY SEWER PROJECT PHASE I
MONTGOMERY COUNTY, TEXAS

BASE UNIT PRICES FOR:

Item No.	Item Description	Unit	Unit Quantity	Unit Price In Figures	Total In Figures
19	12" Sanitary Sewer, All Depths	LF	2,160	$65.00	$140,400.00
20	Sanitary Sewer Lift Station	EA	1	$100,000.00	$100,000.00
21	6" Sanitary Sewer Force Main	LF	960	$35.00	$33,600.00
	Sanitary Sewer Subtotal				**$1,207,740.00**
	EXTRA WORK ITEMS				
22	Special Hand Excavation	CY	50	$100.00	$5,000.00
23	Extra Cement Stabilized Sand	TON	100	$40.00	$4,000.00
	Extra Items Subtotal				**$9,000.00**

GENERAL ITEMS	$39,100.00
PAVING ITEMS	$96,500.00
SANITARY SEWER ITEMS	$1,207,740.00
EXTRA WORK ITEMS	$9,000.00
SUB-TOTAL	$1,352,340.00
CONTINGENCIES (10%)	$135,234.00
ENGINEERING FEE (Design & Construction Management) (13%)	$175,804.20
TOPOGRAPHIC SURVEY 17280 lf @ $4.5/lf	$77,760.00
GEOTECHNICAL ENGINEERING: 25 Bore Locations at $2,000/Bore Hole	$50,000.00
INSPECTION SERVICES (24 hrs per week for 7 months)	$48,300.00
TOTAL	**$1,839,438.20**

(281) 367-4480 — Mark Bosman = Purchasing Agent

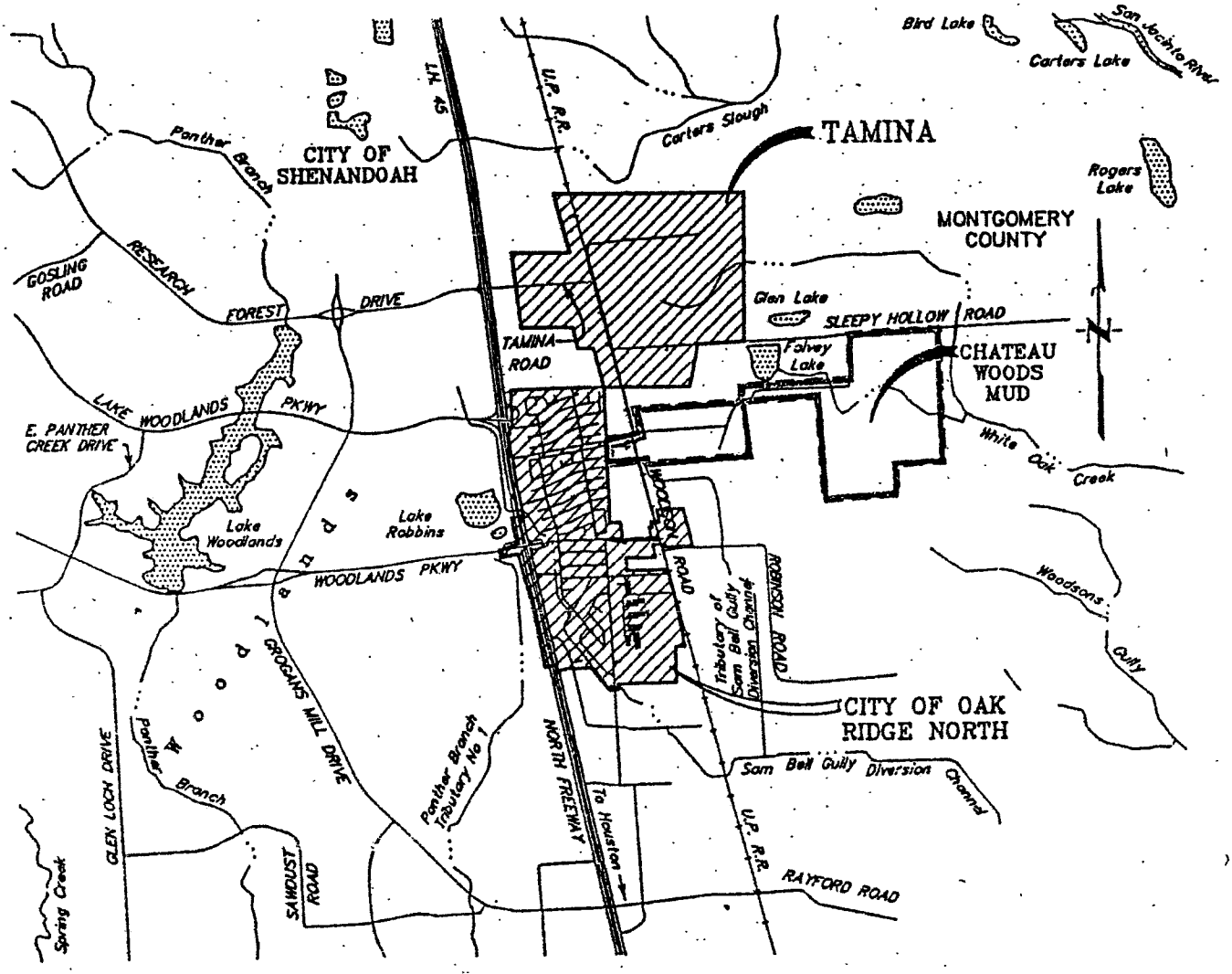
PRELIMINARY ENGINEERING FEASIBILITY REPORT

FOR

TAMINA WATER AND SEWER PROJECT

IN

MONTGOMERY COUNTY, TEXAS



SEPTEMBER 2003

JONES & CARTER, INC.
Consulting Engineers
6335 Gulfton, Suite 100 Houston, Texas 77081
(713) 777-5337

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PLATES

APPENDICES

Plates Included in Wetlands Report (Appendix B)

1. Site Vicinity Map
2. Proposed Facilities
3. FEMA Floodplains
4. USGS Topographic Map
5. National Wetlands Inventory Map
6. Soil Survey Map

I. DESCRIPTION OF THE PROBLEM

A. Purpose and Need for the Proposed Project

The purpose of this project is to construct water lines and sanitary sewer lines to the community of Tamina. It is anticipated that the funding source for this project may include funds from the U.S. Department of Housing and Urban Development (HUD), and possibly funding from other state and local agencies such as the Texas Water Development Board (TWDB). The Tamina community is located in southern Montgomery County about eight (8) miles south of the City of Conroe (Plate 1). The community lies east of I-45 directly across from The Woodlands and Shenandoah, and is bounded on the south by the city of Oak Ridge North and Chateau Woods. This unincorporated community has existed since the Civil War and was populated by freed slaves that worked in several plantations located in the area. It was known formerly as "Taminy" and it included the majority of land holdings that now define the South Montgomery County area. The community has been diminishing over the past forty (40) years, one parcel at a time. Private developers have bought the land from the original landowners and created The Woodlands, Shenandoah and Oak Ridge North.

The current Tamina water system was built in the 1960s by the Rural Development Administration and consists of 2-inch through 6-inch schedule 26 PVC waterlines. During that period, the streets were not paved and the rights-of-way widths were not accurately recorded. Repairs therefore, have been extensive and expensive because waterline locations have ended up under paved surfaces. Furthermore, there are no known engineering drawings illustrating the location and depths of the lines. Several families living on Broadway do not have water system access, as connection to the water lines was not offered to every household. These homes depend on water wells even though they are adjacent to an oil field.

Water has been provided to the community by the Chateau Woods Municipal Utility District (MUD) at an approximate cost of $35-50 per month. There are no fire hydrants in the community and no sanitary sewers. Each residence and industrial location handles its own wastewater requirements either by septic system or by discharging directly into the environment. This results in numerous locations for possible contamination from the direct discharges or if the systems are not maintained.

A number of private wells also serve a limited number of the households. It is unknown if the water from various private water wells are in violation of the federal and/or state water quality standards.

B. Map of the current facilities planning area Section

The location of the proposed water and sanitary sewer lines are shown on the attached map (Plate 2). Also shown on the map is the location of the proposed lift station.

II. ENVIRONMENTAL SETTING

A. Existing Environment

1. Geological Elements

The Tamina community is located on the Tamina 7.5 U.S. Geological Service (USGS) minute quadrangle (1961, Photorevised 1979). A copy of the portion of the quadrangle map is included as Plate 3. The land generally slopes toward the northeast toward the West Fork of the San Jacinto River. The lowest elevations are about 120 feet above mean sea level (MSL) near Forest Lane in the extreme northern part of the study area. The highest elevations are about 145 feet MSL in the far southwestern part of the study area.

A review of the Bureau of Economic Geology 1992 Geologic Atlas of Texas, Beaumont Sheet, indicates the Lissie Formation and the Beaumont Formation underlie the Tamina area. Both formations are considered Pleistocene in age with the Lissie being slightly older. The Pleistocene Epoch began about 2.5 million years ago ending with the last retreating glaciers about 10,000 years ago.

The Lissie Formation consists of clays, silts, sands, and gravels. The Beaumont Formation also consists primarily of clays, silts and sands, with a higher percentage of clays than the Lissie. Both formations were deposited in fluvial (river derived) environments during the late Pleistocene by the ancestor of the San Jacinto River.

A review of the Soil Survey of Montgomery County, 1972 (Plate 4) indicates six soil types have been mapped by the Natural Resource Conservation Service (formerly known as the Soil Conservation Service). The six soil types represent the following soil series:

- Albany Series – Albany fine sand – (Ab): The Albany series consists of nearly level and gently sloping, deep, somewhat poorly drained soils that are sandy to a depth of 40 to 60 inches.

- Leefield Series – Leefield loamy fine sand (Le): The Leefield series consists of nearly level, deep, somewhat poorly drained, soils that are sandy to a depth of 20 to 40 inches.

- Sorter Series – Sorter silt loam (So): The Sorter series consists of nearly level, deep, poorly drained, loamy soils that have a high silt content.

- Tuckerman Series – Tuckerman loam, heavy substratum (Tk): The Tuckerman series consists of level, deep, poorly drained, loamy soils that have mottled clayey lower layers.

- Waller Series – Waller loam (Wa): The Waller series consists of level, deep, poorly drained, loamy soils that have mottled lower layers.

- Wicksburg Series – Wicksburg loamy fine sand, one to five percent slopes (WkC): The Wicksburg series consists of gently sloping to rolling, deep, well-drained soil that are sandy to a depth of 20 to 37 inches and have clayey lower layers.

There are limited amounts of land used for agricultural. No prime agricultural land is present in the Tamina community.

The water and sewer lines would be installed across every soil series and both geologic formations discussed above. The proposed lift station would be located on Albany series soils and on the Beaumont Formation.

2. Hydrological elements

All roads in the study area are drained by roadside ditches. In the northern part of the area, mostly near Forest Lane, runoff drains into Carter's Slough which joins the West Fork of the San Jacinto river about 2.5 miles northeast of Tamina. The remaining area is drained by an unnamed tributary of White Oak Creek that joins the West Fork of the San Jacinto River about three miles east-southeast of Tamina.

The local groundwater quality varies depending primarily on depth to the aquifer that the well is tapped and the condition of the well and distribution network. There are no known adverse groundwater quality issues in the Tamina Community.

Groundwater is not generally available for all residents of Tamina. While some residences do have water wells, many do not. The nearby South Montgomery County MUD and the Chateau Woods MUD have adequate supply of groundwater.

According to the Texas Commission on Environmental Quality (TCEQ), [formerly known as the Texas Natural Resource Conservation Commission (TNRCC)] draft 2002 List of Impaired Waters (June 13, 2002), the West Fork of the San Jacinto River from near the I-45 bridge to about 10 miles downstream is considered impaired Category 4d. Category 4d are those water bodies that are undergoing water quality standards review to determine if the existing uses and criteria are attainable. Bacteria are the nature of the impairments. While there is no direct contact with the West Fork of the San Jacinto River, both Carter's Slough and White Oak Creek drain into the river and Tamina is located in the watersheds. As currently proposed, the project should not have any impact on any water rights, inter-basin transfers or related issues.

The residents of the Tamina community derive their water from several sources. Along Forest Lane, in the northern part of the study area, residents have water wells. Water wells are scattered throughout the community but not all residents have access to well water. Other residents obtain their water from old water lines that tap into the Chateau Wood MUD. This distribution system is located in the southern part of the community that is located adjacent to Chateau Woods. Other households in the Tamina community derive their water from truck deliveries.

Water Well Information

State of Texas records indicate that there are approximately 44 registered water wells in the general area of the Tamina Community. A copy of the report listing the wells by well number and a map showing the location of the wells is included in Appendix A.

Table 1: List of State of Texas Water Wells, Tamina and Immediate Vicinity.

Well Number (60-53-___)	Total Depth (in feet)	Year Drilled	Latest Information (Year)	Water Level Depth (feet)	Production In Gallons Per Minute (gpm)
501	1720	1904	1904	33	7-5
503	1800	1902	1902	130	N/A
502	1800	1906	1906	N/A	N/A
504	35	Pre-1931	1966	33	N/A
507	60	Pre-1966	1966	31	N/A
508	250	1964	1966	34	N/A
509	40	Pre-1966	1966	28	N/A
513	228	1972	1972	46	60
514	1317	1984	1987	217	700
5A(1)	No Records Available from State of Texas				
5A(2)	250	1966	1966	46	450
5A(3)	265	1971	1971	62	N/A
5B(1)	236	1978	1978	82	70
5B(2)	206	1968	1968	60	20
5G(1)	292	1970	1970	63	N/A
5G(2)	258	1968	1968	51	6
5P(1)	283	1971	1971	32	N/A
5P(2)	238	1969	1969	37	N/A
5P(3)	253	1973	1973	41	40
5P(4)	222	1969	1969	28	N/A
5P(5)	258	1974	1974	43	42
5P(6)	303	1974	1974	70	N/A
5P(7)	254	1971	1971	31	N/A
5P(8)	200	1979	1979	55	25
5S(1)	218	1979	1979	76	N/A
5S(2)	195	1978	1978	74	N/A
5S(3)	243	1976	1976	53	20
5S(4)	280	1976	1976	56	N/A
5S(5)	292	1970	1970	69	N/A
5S(6)	213	1984	1984	103	15
5T(1)	260	1970	1970	54	N/A
5T(2)	236	1972	1972	37	60
5T(3)	256	1970	1970	59	N/A
5U	264	1970	1970	32	15
5W(1)	222	1970	1970	36	N/A
5W(2)	227	1978	1978	20	N/A
5HH(1)	217	1980	1980	92	40
5HH(2)	185	1982	1982	70	N/A
5HH(3)	268	1976	1976	48	33
5QQ	251	1981	1981	92	N/A
5RR	281	1982	1982	80	25
5WW	155	1985	1985	30	N/A
5(1)	1330	1985	1985	80	75

Of the total water wells found, 32 water wells appear to lie within the Tamina community. Wells designated as "Located Water Wells" tend to be more accurately located than those designated "Plotted Water Wells".

Of the nine (9) "located" water wells found in the area, three (3) are shown to be within the boundaries of the community as shown on the water well location map to be within the boundary of the Tamina community. Of the 34 "plotted" water wells found in the area, 29 are shown to be within the boundary of the community. The water well location map is included in Appendix A.

Most of these wells were drilled from the late 1960's to the mid-1980's to depths ranging from 150 to 300 feet. Where production information is known, the wells reported rates ranging from less than 10 to about 40 gallons per minute. It is not known how many of these wells are still in service. A copy of the water well search report from Atlas Environmental

Groundwater quality from these shallow aquifers is shown on the state reports to range from fair (with high pH) to "good". Outside of local tanks near the various wells there are no large storage tanks to hold water and there is no engineered distribution system from these wells. Therefore, the storage and delivery capacities of the various water wells and related components are unknown.

3. Floodplains and Wetlands

According to the Federal Emergency Management Agency (FEMA) maps available portions of Forest Lane in the northern part the area are located within the 100-year floodplain. No other 100-year floodplains are shown on the FEMA maps. A copy of the FEMA map is included as a plate in the Wetlands Determination Report in Appendix B. These floodplains are located adjacent a rural road setting and form the uppermost reaches of the floodplain associated with Carter's Slough. Land use within this floodplain includes vacant wooded lots, an industrial site along the south side of Forest Lane, and rural homesteads that have pastures for livestock.

A review of National Wetlands Inventory (NWI) maps indicated wetlands areas along portions of Broadway, Simmons, and Bhims roads. A preliminary wetland determination was conducted on those sections. The preliminary wetlands report provided routine wetland determination data forms along with plates that show the location of the wetlands, floodplains and soil types in the area. The wetlands report concluded that, based on the encountered wetlands and the nature of the proposed construction, the project should qualify for a Nationwide 12 (NW12) permit. A copy of the preliminary wetlands report was submitted to the U.S. Army Corps of Engineers (USACE) and is included in Appendix B.

The USACE conducted a site visit on December 11, 2002. The USACE stated in correspondence dated January 21, 2002 that, based on the site visit and information submitted, the proposed utility line route would cross into jurisdictional waters of the U. S. The USACE further stated that is possible that the project would likely qualify for a NW12 permit that authorizes the construction of utility lines through wetlands. A wetland delineation report along with detailed constructions plans would be required prior to the USACE making a final determination on permit requirements. In the event constructions plans could be modified to

avoid wetland areas, a permit would not be needed. A copy of the USACE correspondence, dated January 21, 2003 is included with the preliminary wetlands determination report in Appendix B.

4. Coastal Zones

The Tamina community is not located within or near a coastal zone as defined by the Coastal Zone Management Act of 1972, as amended, and the Coastal Zone Protection Act of 1996.

5. Climatic elements

The southern Montgomery County climate is subtropical humid, with warm summers and mild winters. The average annual relative humidity is 73 percent, and the average rainfall is 47.44 inches. The average annual temperature is 68 degrees Fahrenheit (° F). Temperatures in January range from an average low of 39° F to an average high of 61° F and in July range from 72° F to 95° F. The growing season averages 270 days per year, with the last freeze in early March. The first freeze occurs in late November (The Texas State Historical Association, 2001, NOAA, 2002).

Based on 32 years of weather data from Houston Intercontinental Airport, which is approximately 12 miles south-southeast of Tamina, the average wind speed in the area is 7.7 miles per hour (mph) and generally from the south (NOAA, 1998).

Montgomery County is located in the Houston-Galveston Area metropolitan area. According to the Air Quality Reference Guide for the Houston Galveston Area Council (HGAC) (2002):

> "The eight-county Houston-Galveston area currently fails to meet the National Ambient Air Quality Standards (NAAQS) for the criteria pollutant ozone. The majority of area air quality efforts in this region are, therefore, focused on (1) obtaining a better understanding and measuring of the area's ozone levels and its precursors, and (2) identifying and implementing effective ozone reduction control strategies."

The HGAC report also states:

> "The federal standard for ozone is a one-hour average concentration of 0.12 parts per million (ppm). To meet the standard, this one-hour average concentration cannot be exceeded at any one monitor in the area on more than three days over a three-year period."

The Montgomery County air monitoring station, located in Conroe, exceeded the federal standard in 2001 on two days. As a comparison, Harris County exceeded the same standards in that year on 29 days. The months that ozone standards are more commonly exceeded are June through September.

Other NAAQS discussed in the report include Particulate Matter, Carbon Monoxide, Sulfur Dioxide, Nitrogen Dioxide, Lead, and Air Toxics. Currently, the Houston-Galveston area is in

attainment for these standards. However, data are still be collected and evaluated and some data are incomplete.

6. Biological elements

According to the Vegetation Types of Texas the Tamina community is located is the Physiognomic Region known as the Pine-Hardwood Forest (Texas Parks and Wildlife Map, 1984). This type of forest is commonly deciduous with evergreen trees dominant; mostly greater than 30 feet tall with closed crowns or nearly so (71 to 100 percent canopy cover); midstory generally apparent except in managed monoculture.

Typical tree and plant species within the project area include: Shortleaf pine, water oak, white oak, southern red oak, winged elm, beech, blackgum, magnolia, American beautyberry, American hornbeam, flowering dogwood, yaupon, hawthorn, supplejack, Virginia creeper, wax myrtle, red bay, sassafras, southern arrowwood, poison oak, greenbriar, and blackberry.

Wildlife species in Montgomery County include eastern gray and fox squirrels, various species of bats and skunks, and small herbivores such as gophers, mice, rabbits, and armadillos, as well as raccoons, white-tailed deer, opossum, bobcat, coyote, and red and gray fox. Reptiles include alligators, frogs, toads, and numerous species of snake such as the poisonous copperhead, cottonmouth, coral snakes, and rattlesnake. A wide variety of birds such as mockingbirds, cardinals, doves, quail, blue jays, and roadrunners are also native to the area (The Texas State Historical Association, 2001).

Table 2 lists the state and federal threatened (T) and endangered (E) species indigenous to Montgomery County as well as Species of Concern (SOC). Field surveys and available records show no evidence of or suitable habitat for any of these species within the project area. The U.S. Fish and Wildlife Service (USFWS) Clear Lake Ecological Services Field Office in Houston was contacted via letter (Appendix C) to inquire if any listed species of plants or animals might be impacted by the project. The field office indicated in correspondence dated May 21, 2002 that "a review of U.S. Fish and Wildlife Service files an your project information indicate that no federally listed or proposed threatened or endangered species are likely to occur at the project site" and "the project is not located within officially designation critical habitat."

Table 2: State and Federal Threatened and Endangered Species of Montgomery County:

Common Name	Scientific Name	State Status	Federal Status
FISHES			
Creek Chubsucker	*Erimyzon oblongus*	T	
Paddlefish	*Polyodon spathula*	T	
BIRDS			
American Peregrine Falcon	*Falco peregrinus anatum*	E	
Arctic Peregrine Falcon	*Falco peregrinus tundrius*	T	
Bachman's Sparrow	*Aimophila aestivalis*	T	

Common Name	Scientific Name	State Status	Federal Status
Bald Eagle	*Haliaeetus leucocephalus*	T	T
Henslow's Sparrow	*Ammondramus henslowii*	SOC	
Red-cockaded Woodpecker	*Picoides borealis*	E	E
White-faced Ibis	*Plegadis chihi*	T	
Wood Stork	*Mycteria americana*	T	
MAMMALS			
Plains Spotted Skunk	*Spilogale putorius interrupta*	SOC	
Rafinesque's Big-Eared Bat	*Corynorhinus rafinesquii*	T	
Southeastern Myotis	*Myotis austroriparius*	SOC	
REPTILES			
Alligator Snapping Turtle	*Macroclemys temminckii*	T	
Louisiana Pine Snake	*Pituophis melanoleucus ruthveni*	T	
Texas Garter Snake	*Thamnophis sirtalis annectens*	SOC	
Texas Horned Lizard	*Phrynosoma cornutum*	T	
Timber/Canebrake Rattlesnake	*Crotalus horridus*	T	

The proposed project area does not occur within the habitats of the threatened or endangered species. Additionally, no state or national parks, forests, wildlife refuges, wild or scenic rivers, natural areas, or similar preserves are located in the study area of Tamina.

7. Cultural resources

The Texas Historical Commission (THC) Atlas of Texas Historical Sites for Montgomery County reports no historic sites located within the Tamina Community (THC, 2002). Among the sites that are shown on the Atlas include: Historic County Courthouses, National Register Properties, Historical Markers, Museums, Sawmills, and Neighborhood Surveys.

THC records for archeological sites are not available to the public, therefore, a request a THC records review for the presence of historical and/or archeological sites located in the Tamina Community was made. According to the THC, no records of archeological sites were found. A copy of the request and response letter is included in Appendix D.

Additionally, a cultural resources inventory of Montgomery County was prepared for the HGAC (Beasley, 1981). This report did not identify any historical structures located within the Tamina Community. The report determined the nearest historical structures listed were a residence along Needham Road and a residence along Robinson Road. Both of these sites are located over one mile from the Tamina Community.

A site reconnaissance in the Tamina Community was conducted, and historical topographic maps and air photographs were reviewed to ascertain if historical properties were present within the

Tamina Community. Main Street, north of Broadway and Forest Lane is shown to be undeveloped on the 1961 Tamina 7.5 minute quadrangle. In addition, Simmons and Bihms Roads were not shown on the 1961 map. Other roads that are present today are shown on the 1961 map.

Historical air photos from 1958, 1968, 1979, 1984, and 1996 were obtained from Atlas Environmental Research, Inc. (Atlas). Brief descriptions of observations are summarized below:

1958. Residential development is visible along Tamina Road, Sleepy Hollow and the streets feeding into these roads (Easley, Elmore, Terry, Johnson off of Tamina Road, and Pierson, Carmita, Simons, and Pine Haven off of Sleepy Hollow). Residential development is also visible along Broadway and Hollins. Most if not all residences are visible near the roadway are within 100 feet of the roads.

1968. Bihms and Simmons Roads show evidence of commercial and residential development in this photograph. Main Street appears to extend north to Forest Lane. No industrial sites are visible near Broadway.

1979. All the roads that are present today are visible in this photograph. Industrial development associated with the Bullet Concrete Materials plant at the northeast corner of Main and Broadway is visible. Wetlands identified in the wetlands study are visible along portions of Broadway, Simmons and Bihms in this photograph.

1984. The study area appears largely unchanged from the previous photograph. Wetlands areas appear less inundated than in the previous photograph and some fill is visible along the south side of Broadway.

1996. The area appears as it does today in this photograph. Additional industrial development is visible along both sides of Broadway, east of Main.

During a site reconnaissance, many residential structures in the area appeared to be over 50 years old. These homes are located along portions of Tamina Road, Main, Broadway, Johnson Lane, Terry, Easley, Sleepy Hollow, Pierson, Carmita, Simons, and Pine Haven. The condition of these residences appeared to range from good to very poor. The typical older home appeared to be in fair condition.

8. Economic conditions

According to the U.S. Department of Housing and Urban Development (HUD), the Tamina community is confined to a small geographical area consisting mainly of very low-to-low income residents. For Montgomery County in fiscal year 2002, the median family income is $59,600. For four-person households, extremely low income is defined as 30 percent of the median family income of $59,600 or $17,900. In the very low-income category, it is 50 percent of $59,000. The table below lists the various incomes amounts, by number of people per household for one, two, three, four, and five persons:

able 3. Income Levels as a Percent of Median Income for Montgomery County.

	One Person	Two Persons	Three Persons	Four Persons	Five Persons
Extremely Low Income (30% of median)	$12,500	$14,300	$16,100	$17,900	$19,300
Very Low Income (50% of median)	$20,850	$23,850	$26,800	$29,800	$32,200
Low-Moderate Income (80% of median)	$33,400	$38,150	$42,900	$47,700	$51,500

Tamina is one of several African-American "pocket of poverty" communities scattered throughout the county (HUD's 1998 Consolidated Plan for Montgomery County, Texas). The community's population is difficult to assess because it lies within two Census Tract 902.01 and Census Tract 902.13. However, it is estimated that 150 homes and 445 people live in Tamina (South Montgomery County, 1997). A high demographic cohort for this population consists of elderly households with minor dependents. For the most part they are grandparents raising grandchildren by adult children that may or may not live in the same home. HUD has identified African-American elderly head of households as the lowest income group in the county. Non-minority households within the project area are found scattered north and east of the Tamina community.

9. Land use

There is no zoning or official planning within the Tamina Community. Industrial development has taken place generally in the northern part of the community along portions of Broadway, Bihms, Simmons, and to a lesser extent, Forest Lane. There are seven churches, one cemetery, nine industrial sites, and eight facilities that have either commercial or community services. The table below lists the non-residential land use within the study area. The approximate location of the facilities listed is shown on Plate 5.

Table 4. Summary of Land Use, Tamina Community

Site ID	Name	Address/Location	Land Use
1	Knee's Automotive	8933 Tamina	Auto repair shop
2	Christian Tabernacle Church	9258 Tamina	Church
3	Lone Star Baptist Church	SE Corner of Main and Hollis	Church
4	Tamina Community Center	18955 Main	Community center/food bank/social services
5	Falvey Memorial Baptist Church	9530 Broadway	Church
6	Geosouthern Energy	9708 Broadway	Oil field drilling company

Site ID	Name	Address/Location	Land Use
7	Bullet Cement & Gravel	9393 Broadway	Concrete, gravel and related building materials
8	Resource Logistics International	18490 Main	Trucking and Distribution Company
9	Industrial Site	100 Forest Lane	Steel fabrication
10	Commercial	Main near Tamina	Auto repair shop, unnamed
11	Revelation Baptist Church	19257 Main	Church
12	King Solomon's Tree Service	9661 Bhims	Tree removal, cutting, mulching
12.1	Unnamed	Along south side of Bhims Road	Tree Mulching
13	Jones Memorial Church of God in Christ	Main near Tamina	Church
14	B's Day Home for Children	Main near Tamina	One story frame building used for day care.
15	Tamina Church of Christ	Main south of Sleepy Hollow	Church
16	Tamina Community Park, Pct 3	East side of Main between Sleepy Hollow and Rhodes	Park with ball fields, playground, community room, parking lot, picnic facilities, and an open air pavilion with a roof.
17	Oak Ridge Substation - Entergy/Gulf States Utilities	SE Corner of Main and Rhodes	Electric substation
18	Water Well Site	NE Corner of Main and Rhodes	Water well, tank, and small cinderblock building
19	Tamina Country Kitchen	Southeast corner of Sleepy Hollow and Pierson	Closed
20	Full Gospel Holiness Outreach Center	2057 Sleepy Hollow @ Pine Haven	Church
21	Charlie's Air Conditioning and Heating	North side of Sleepy Hollow, east of Pine Haven	Commercial business
22	Jack Gordon & Sons Air Conditioning and Heating	North side of Sleepy Hollow, east of Pine Haven	Commercial business
23	Unnamed	SW corner of Sleepy Hollow and Carmita	Trucking and Hauling

Site ID	Name	Address/Location	Land Use
24	Tamina Cemetery	East end of dirt road between Broadway and Simmons	Cemetery

The facilities listed above are generally located away from the roadways where the water lines and sewer lines are proposed for installation. Activities associated with a tree cutting service were observed along portions of Bhims Road very near the street right of way (Site ID 12.1). Photographs of selected sites are included in Appendix E.

10. Noise

Ambient noise in the Tamina community is typical of a quiet urban area that usually averages around 50 decibels (the equivalent of a the sound a dishwasher makes when one is standing in another room). Light automobile and truck traffic occurs daily usually during daylight hours. Noise associated with traffic, however, is never constant and may vary due to the changing number, type and speed of vehicles. Occasional trains pass through the along the Union Pacific railroad line that runs north and south along Main Street in the eastern portion of the study area. Train noise can reach as high as 100 decibels near the tracks, but this noise is usually of short duration, and short-term.

11. Site Assessment

Regulated Sites. An environmental records database was reviewed to identify any known registered environmental sites within the community (Atlas Environmental Research Inc., 2002). The data base search parameters were based on ASTM E-1527-00. One site was found, Bullet Concrete Materials, Inc., located at 9393 Broadway, is listed on the TNRCC's (now called the TCEQ) Petroleum Storage Tank (PST) database as having one underground storage tank that stores diesel fuel. The records show that the site appears to comply with current TNRCC rules and regulations. A copy of the records search and map is included in Appendix F.

Observations. Several areas of potential environmental contamination were observed on various lots and parcels. Trash dumping, abandoned vehicles, municipal type waste, and equipment also were observed along the north side of Bihms near tree mulching activities. Abandoned cars and equipment were observed at the northwest corner of McCown and Johnson Lane.

A former dumpsite, known as the Isaiah Thomas site, was located south of Broadway, northeast of the Taminy Cemetery. This illegal dumpsite was cleaned up in 2001 by parties associated with the dumping (Conroe Courier, 2001).

The potential for encountering contamination during construction and operation of proposed in soils is limited to very shallow soils near sites of trash dumping. The concentrations of any contaminates should be no different from typical concentrations that are found in most urban areas.

12. Other Programs and Projects

As of the date of this document, no other projects or programs are known of in the Tamina community that may affect this project.

B. Summary of Future Environment Without Project

Geological elements. Implementing this project would not impact area geology based on the known geological elements found in the community.

Hydrological elements. Shallow groundwater tables, where water wells provide service to the local area, may decline as more demand is placed upon area aquifers. Water quality in these aquifers may also decline due to direct discharges or the continued use of septic systems that leak. Surface water quality also may continue to decline in quality because of unregulated discharges.

Floodplains and Wetlands. Without this project, unregulated development may continue causing additional degradation of the wetlands located along portions of Broadway, Simmons, and Bihms. Both the quality and size of the wetlands may be impacted, decreasing their function and values.

Coastal zones. This project is not located within a Coastal Zone area and therefore, no impact to coastal zones would result if the proposed project is implemented.

Climatic elements. Air quality in the Tamina area may decline if more industrial development, rather than residential development occurs in the area. Emissions and dust created by industrial land use would likely continue if the project were not implemented.

Biological elements. Some species that rely on the presence of wetlands may be impacted in the future as the water quality in area wetlands continues to decline because of wastewater discharges and uncontrolled filling.

Cultural resources. Lack of infrastructure for repairs and maintenance may promote many of the older homes in the area to fall into greater disrepair should this project not be implemented.

Economic. The Tamina Community, without this project, would be bypassed by development that could improve the quality of life in the community. Income levels would likely remain stagnant because there would be little incentive to construct new facilities such as shopping centers, housing, and related transportation services facilities.

Land Use. Land use would continue to be a mixture of industrial sites surrounding homes. Some industrial sites may expand to undeveloped areas thereby limiting residential and commercial development.

Hazardous Wastes. Vacant lots would not likely be developed without this project. The continuation of dumping on vacant lots would be influenced by lack of development in the area.

III. EVALUATION OF PROJECT ALTERNATIVES

A. Alternatives and Reasons for Acceptance or Rejection

There are limited alternatives to the water supply problem in the Tamina Community. The alternatives that were considered were assessed based on constructability, primary and secondary environmental impacts, and costs.

No Build Alternative. Residents of Tamina would continue to have inadequate water and sewer services under the no build alternative. The tax base would continue to erode and growth and prosperity would suffer as a result of the lack of sufficient infrastructure. The quality of the environment, particularly the wetlands, also would continue to decline as the potential for contamination, particularly from the existing septic systems, could impact the environment.

Water and Sewer Lines as Proposed. The project as proposed would employ conventional engineering and construction techniques. These techniques include a combination of open cut in areas where traffic and sensitive habitats are not present and tunneling techniques in areas where these concerns exist. As designed, the project can be built within existing roadways and right-of-ways and connected into nearby City of Oak Ridge North water and sewer mains. Minor disruption during construction for a short duration is anticipated along Main Street and Sleepy Hollow. North of Tamina Road, Main Street is the only access in and out of the area via roadway. Alternate routes are available for Main Street South of Tamina Road. Sleepy Hollow's alternate route passes through neighborhoods in Chateau Woods.

Residents and other end users would need to secure funds to tie into water and sewer lines. Grants are available for these type of funds. Future development may occur in areas where water and sewer are now available. This would create a need to improve roads and mobility in the area. As planned, the current project is the most cost effective approach to bringing water and sewer service to the Tamina Community.

Creation of Separate MUD. The creation of a separate MUD to design, build and operate a water and sanitary system would not be a practical alternative for a number of reasons. Among the reasons are the costs, the lack of a public service infrastructure to manage and maintain the district, the land requirements, and the fact that excess capacity exists in the City of Oak Ridge North to handle the demands of the residents of Tamina.

Alternative Line Locations, Sources and Treatment. Alternative line locations, sources and treatment may not be practical as tying into the City of Oak Ridge North water and sewer lines that already has the excess capacity. Tying into the City of Shenandoah would require pipelines crossing I-45. Construction of alternative pipeline routes within the community would require additional land acquisition and may displace some people or businesses. Outside of land and right-of-way acquisition, the cost would be approximately the same as the proposed project.

B. Floodplain Policy (Floodplain and/or Wetland Management Notice)

The presence of wetlands and/or 100-year floodplain were noted in this study along four streets where water and sewer lines are proposed. The floodplain is located along a sparsely developed

section of Forest Lane in the portion that runs east-west. Lack of development in this area is a likely result of periodic flooding. The three wetland areas identified in this study are located along Broadway, Simmons, and Bhims. Although FEMA maps did not indicate that the area where the wetlands were identified are located within floodplains, these areas may flood as well.

The floodplain and wetlands areas are located in an area where only water lines and sewer lines would be located. These lines would likely be collector lines and therefore would be less than 12 inches in diameter for the sewer lines and less than 8 inches for the water lines. Construction methods such as tunneling would be employed where possible to minimize impacts to wetlands and floodplains. Sewer junction boxes and manhole locations would be designed to avoid construction within the wetlands. Where open cut excavations are planned TCEQ-recommended Best Management Practices (BMP's) under the Individual 401 Certifications for Nationwide Permits would be employed. Additional consultation with the USACE may be required during the final design period to obtain the Nationwide Permit. The lift station would not be located within a floodplain or a wetland. A Floodplain and Wetland Management Notice would be issued.

Care must also be taken to control any new development in floodplains, which construction of a centralized sewer system could potentially encourage. Texas Parks and Wildlife Department grant monies may be available for recreational development of the wetlands, which would discourage residential or commercial development in these areas.

Conditions that would need to be met when pursuing this type of grant assistance includes: 1) agreement not to treat any wastewater generated by new development located in floodplains/wetlands in the project area; 2) adoption and enforcement of suitable ordinances for effective administration of this restriction; and, 3) the ability to seek enforcement of the restriction through the courts. These type of restrictions are typical for the Environmental Protection Agency (EPA) and may apply to this area.

Wetlands Notice. Assuming an NW12 permit is granted from the USACE, a Wetland Management Notice would be distributed to the U.S. Fish and Wildlife Service, TCEQ, Texas Water Development Board (TWDB), FEMA, and Montgomery County officials.

IV. PROJECT DESCRIPTION

A. Project description

Treatment process (es) proposed

The wastewater from the Tamina area would be treated by the Southern Montgomery County Wastewater Treatment Facility. The Southern Montgomery County MUD's facility is a 2.0 million gallon/day (mgd) permitted plant. The current average daily flow is 1.0 mgd. Therefore, there is capacity available for the Tamina project. The City of Oak Ridge North uses 0.5 mgd of the Southern MUD WWTP plant capacity.

The City of Oak Ridge North has two (2) water wells. One produces 800 gpm and the other produces 1,156 gpm. There are two (2) ground storage tanks (GST) with 750,000 gallons of capacity and two (2) hydropneumatic tanks with 30,000 gallons of capacity.

Water quality parameters.

The TCEQ permit number for the Southern Montgomery County MUD is 11001-001. Below is a summary of various parameters:

Average Daily flow	2.0 mgd
Peak 2 Hour Flow	6.0 mgd
Biochemical Oxygen Demand (BOD)	10 mg/l
Total Suspended Solids (TSS)	15 mg/l
Chlorination	1.0 mg/l
Nitrogen	3 mg/l
Dissolved Oxygen (D.O.)	4.0 mg/l
Dechlorination	0.1 mg/l

Project elements and funding sources.

Texas Water Development Board's Clean Water State Revolving Fund would contribute $2,040,000; the EPA would contribute $250,000; and, $1,000,000 would come from the Community Development Block Grant (CDBG) fund.

Treatment facilities.

No treatment facilities currently exist and none are planned for the Tamina area. All pretreatment of water would be conducted at the City of Oak Ridge North water plants. All of the wastewater from Tamina would be pumped to the Southern Montgomery County MUD wastewater treatment facility.

Land required.

Land acquisition would be required at the southeast corner of Main and Simmons for the sanitary sewer lift station (Plate 2).

Method(s) of sludge disposal and disposal site(s)

Sludge disposal would be wet-hauled to a permitted facility.

B. Proposed linework.

The location of the proposed line work is shown on Plate 2. In general, all line work is planned for the street right of way and no easements are planned to be taken.

C. Map of proposed project elements

The proposed sewer and water line locations are shown on Plate 2. The location of the proposed lift station site is shown at the southeast corner of Main and Simmons. The two City of Oak Ridge North water wells and the location of the water plant are also shown on Plate 3. The South Montgomery County MUD WWTP is located about two (2) miles south of the area near Rayford Road.

D. Total estimated project cost and financing sources

The total estimated project cost is $3,350,000. Of this total amount about $3,290,000 would come from the TWDB revolving funds, HUD, and the EPA. The remaining $60,000 would be funded through a variety of sources including private funds, and municipal funds.

V. ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

A. Primary Impacts

1. Short Term Impacts

No alterations to land forms, streams and natural drainage patterns would occur.

Watercourses would be affected minimally by siltation and sedimentation. The runoff from the proposed project would not result in exceeding ambient water quality criteria of affect in-stream uses. Because more than one acre would be disturbed, this project meets the criteria for the Environmental Protection Agency (EPA)'s National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activity. A Notice of Intent would have to be filed with the EPA prior to construction. Additionally, a Storm Water Pollution Prevention Plan (SW3P) would be provided for this project. The SW3P would include temporary predictable erosion and sedimentation control procedures to be used as directed by the Engineer in response to changing field conditions and by the Contractor for construction activities within the right of way. Where appropriate, these temporary erosion and sedimentation-control structures would be in place before initiation of work and would be maintained throughout the project. The Contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in staging and construction areas. All materials being removed and/or disposed of by the Contractor would be done in accordance with State and Federal laws and by approval of the Project Engineer. The use of erosion control BMPs, as defined by the TCEQ and including limiting the time disturbed ground is exposed to rainfall and runoff water and diverting runoff from areas subjective to erosion, would be used to minimize soil erosion.

Vegetative cover would only be disturbed in the areas necessary to excavate. Areas of vegetation disturbed during construction would be replanted to reduce long-term production of dust and soil erosion.

Turf and topsoil from areas cleared for construction would be removed off-site following construction and would be disposed of in a landfill or other permitted form of disposal. Excess vegetation spoil from these areas would be disposed of through burning, or if that is not permissible, through disposal in a landfill or other permitted means of disposal.

The Tamina community proposed the project as part of the public hearing process in the 1998 Montgomery County 5-Year Consolidated Plan. Residents have organized community partnerships since then in order to develop the project's feasibility studies and management requirements. No controversy is anticipated for the land acquisition portion of the project. The sewer lift station site at the southeast corner of Main and Simmons would be purchased as part of the proposed project; however, no landowner would be displaced as a result of the purchase of this property.

Proposed construction could potentially impact wetlands. If wetlands are impacted, a USACE wetlands permit would be required.

The construction, maintenance, and operation of this proposed facility would be consistent with the State Implementation Plan as prepared by the TCEQ (Appendix G). The proposed project does not represent a "major construction activity" as defined in 50 CFR 402.02. Furthermore, the proposed action does not include stationary sources that require a permit. The construction phase of the project will be of short duration. The control of particulate mater emanating from various construction activities will be in accordance with TCEQ regulations. Periodic wetting would control dust at the construction site during extremely dry conditions. Any vegetation disturbed during construction would be replanted to reduce the long-term potential for dust.

The potential noise levels during operation should be minimal due to facility design for facilities of this type. Noise levels during the construction phase would be controlled by using equipment that meets Occupational Safety and Health Administration (OSHA) standards and by scheduling construction and the use of equipment during the daylight hours. Blasting would not be part of the construction process for the proposed project.

Disruption to traffic along Sleepy Hollow Drive, which is a main road within the Tamina community, would temporarily occur as a result of project construction. Currently, heavy trucks from several industrial zones use this road to access I-45. A truck-only route to I-45 has been proposed by the residents of Tamina to limit the disruption of traffic. Alternatively, traffic control measures should mitigate disruption of traffic during construction.

2. Long Term Impacts

A review of THC Atlas of Texas Historical Sites for Montgomery County revealed no historic or archeological sites located within the Tamina Community (THC, 2002). A copy of the THC review request and response letter is included in Appendix D.

A cultural resources inventory was prepared for the HGAC for Montgomery County (Beasley, 1981). This report did not identify any historical structures that were located within the Tamina Community. The nearest historical structures listed were a residence along Needham Road and a residence along Robinson Road. Both of these sites are located over one mile from the Tamina Community.

According to the FEMA maps available for the area, Forest Lane in the northern part the study area is located within the 100-year floodplain. These floodplains are located adjacent a rural road setting and form the uppermost reaches of the floodplain associated with Carter's Slough. Land use within this floodplain includes vacant wooded lots, an industrial site along the south side of Forest Lane, and rural homesteads that have pastures for livestock. No other 100-year floodplains are shown on the FEMA maps. A copy of the FEMA map is included as a plate in our Wetlands Determination Report in Appendix B.

Wetlands were identified along portions of Broadway, Simmons, and Bhims roads. Therefore, a preliminary wetland determination was conducted on those sections. A copy of the wetlands report was submitted to the USACE and is included within the wetlands report in Appendix B. Routine wetland determination data forms, plates that show the location of the wetlands,

floodplains and soil types in the area are also included in the report. The proposed project would likely qualify for an USACE NW12 permit.

The wetlands within the project area could be developed to introduce a trail network that would link these areas with the existing, multipurpose Tamina Park. Funds for this purpose could be requested from Texas Parks and Wildlife, which assisted the community in 1995 with a grant to upgrade the existing park.

The Tamina community is not located within or near a coastal zone as defined by the Coastal Zone Management Act of 1972, as amended, and the Coastal Zone Protection Act of 1996. The project does not lie within a county bordering the Gulf of Mexico and it is considered highly unlikely that any adverse impacts to coastal resources or the Gulf of Mexico would result from the project.

The proposed project is not located within a U.S. EPA-designated sole source aquifer watershed area. The storm water runoff from the proposed project could potentially affect ambient water quality criteria of affect in-stream uses unless best management practices are implemented.

Periodic wetting of the construction site would control dust during extremely dry conditions. Any vegetation disturbed during construction would be replanted to reduce long-term soil erosion. Soil erosion due to excavation, removal of existing pavement, and grating is not expected to be a major problem with the proposed project. The use of BMPs, as defined by the TCEQ, including limiting the time disturbed ground is exposed to rainfall and runoff water and diverting runoff from areas subjective to erosion, would be used to minimize soil erosion.

The USFWS Clear Lake Ecological Services Field Office in Houston was contacted via letter (Appendix C) to inquire if any listed species of plants or animals might be impacted by the proposed project. The field office indicated in correspondence dated May 21, 2002 "a review of U.S. Fish and Wildlife Service files and your project information indicate that no federally listed or proposed threatened or endangered species are likely to occur at the project site" and "the project is not located within officially designation critical habitat."

The proposed project location is not located within one mile of a listed Wild and Scenic River. Therefore, the project would have no effects on the natural, free flowing or scenic qualities of a river in the National Wild and Scenic Rivers system.

The use of construction equipment associated with the proposed project would have a minimal short-term effect on the air quality. All equipment would be properly maintained to insure lowest possible emissions. All equipment would be within the EPA and OSHA requirements for vehicular emissions. The construction site would use periodic wetting methods during extremely dry conditions to control dust disturbance. Areas of vegetation disturbed during construction would be replanted to reduce long-term production of dust. The proposed water and sewer lines would be buried and routine maintenance and good operating procedures would be used to maintain the lift stations in order to avoid impact to ambient air quality.

Land use within the project area consists of a mixture of residential and industrial sections with a scattering of churches and small businesses. The proposed project site does not include prime or unique farmland, or other farmland of statewide or local importance as identified by the NRCS.

The proposed project does not involve the development of noise sensitive uses as the water and sewer lines will be buried in the ground. Noise levels and odors during operation should be minimal due to facility design for facilities of this type. Noise created during the construction phase would be mitigated by using equipment that meets OSHA standards and by scheduling construction and the use of equipment during daylight hours.

The proposed project would not be located near any facilities that use above-ground explosives, or flammable fuels or chemicals. Safety precautions would be taken to control access to the facilities during construction by prompt back-filling of pipeline trenches, and by temporary barricades, warning lights and posted speed limits.

The proposed project location does not appear to be impacted by hazardous materials, contamination, toxic chemicals, gasses or radioactive substances which could affect the health or safety of residents or conflict with the intended use of the proposed project site. However, several areas of potential environmental contamination were observed on various adjacent lots and parcels. Trash dumping and abandoned vehicles and equipment also were observed along the north side of Bihms near tree mulching activities. Abandoned cars and mechanical equipment was observed at the northwest corner of McCown and Johnson Lane. The potential for encountering contamination during construction and operation of proposed in soils would be limited to very shallow soils near sites of trash dumping. The concentrations of any contaminates should be no different from typical concentrations that are found in most urban areas. The former dumpsites and illegal landfills that were located south of Broadway (Isaiah Thomas site) should not be an environmental concern because the site has been cleaned up by the responsible parties.

Some of the residential sections of Tamina contain dilapidated housing structures and mobile homes with abandoned cars in their yards. Other sections contain well-maintained, one or two-story homes that have been upgraded. In the early 1990s, eleven (11) elderly, low-income households with substandard homes were assisted through a state housing rehabilitation grant. The proposed project would benefit all homeowners by providing the infrastructure necessary to upgrade their homes. Many homeowners have indicated a willingness to remodel their homes or rebuild entirely. In this regard, those with low income may qualify to receive housing grants that could assist them with costs to bring both their plumbing and electrical connections to code. The proposed site location is suitable for its proposed use and would not be adversely impacted by environmental conditions.

The proposed project would cause minimal visual impact during construction. After construction was complete, the project would not interfere with or obstruct scenic views since the proposed infrastructure would be underground.

Insect nuisances as a result of the proposed project are unlikely. If insect nuisance becomes a problem during construction, then necessary insect control measures would be implemented in compliance with state, local and federal regulations.

The proposed project is expected to utilize minimal energy consumption and chemicals during operation and treatment processes. Energy consumption during construction would include the fuel used to operate construction equipment. Routine maintenance and good operating procedures would be used to improve equipment efficiency and minimize fuel consumption. Chemicals would be involved in the treatment processes of water and wastewater as a result of the proposed project. Chemicals would be stored and maintained properly and spill prevention and containment measure would be practiced to minimize spills and chemical release.

B. Secondary Impacts

1. Impacts of future development on land use

South Montgomery County has experienced a very high rate of residential and commercial development in the past thirty (30) years. Assessed land value ten (10) years ago was approximately $500 million, while presently it approaches the $4 billion range. The residents of Tamina however, have not been able to share in this economic growth because they lack the basic infrastructure for development. The proposed project would be able to give the community the opportunity to create new residential areas that could attract moderate-income homebuyers. Housing for the elderly and affordable multifamily units also could be built since there are large tracts of land available within the project area. Additionally, new commercial properties could afford residents the opportunity to have their own small businesses especially for individuals living in Tamina that currently receive Federal assistance. Small business loans through HUD could be offered to these individuals.

2. Effects on Air Quality

The proposed project would have minimal effects on air quality. All construction equipment would be properly maintained to insure lowest possible emissions. All equipment would be within the EPA and OSHA requirements for vehicular emissions. The construction site would use periodic wetting during extremely dry conditions to control dust disturbance. Areas of vegetation disturbed during construction would be replanted to reduce soil erosion.

3. Effects to water quality due to land use changes

Removal of existing septic systems from service that could potentially impact groundwater supplies would improve water quality. New municipal water systems would meet drinking water requirements and access to the municipal water supply would be made available to the community at large.

4. Effects on public services

The proposed project would affect the projected demand on public services, such as water supply and future wastewater treatment needs by improving the current water and wastewater

availability. Currently, the community relies on water wells and poor water and septic systems. The proposed project would provide municipal water and wastewater services to the entire community. Solid waste disposal facilities would not be affected by the proposed project.

5. Economic impacts

An increase residential and commercial development activity previously referred to could potentially lower the future monthly costs associated with the project. Currently, some residents pay $35-50 per month for water service only. Future costs would be in line with this amount or would be lower if more residential and commercial connections are created. In this respect, it would be fundamental to the community and entire project area to proactively seek additional users. The overall economic impact therefore, is anticipated to be a positive one for the Tamina community primarily and the project area secondarily.

6. Conformance or conflict with land use planning

Anticipated land use and economic implications resulting from the implementation of the proposed project would conform with the type of growth desired by area residents. The Tamina community put the proposed project forth in 1998 as part of the public hearing process for the Montgomery County 5-Year Consolidated Plan. Residents have organized community partnerships since then in order to develop the project's feasibility studies and management requirements. The community is in favor of the proposed project.

7. Impacts of development on environmentally sensitive areas

The proposed project would not adversely impact environmentally sensitive areas, including floodplains, wetlands, threatened or endangered species, critical habitats, or culturally sensitive areas. According to the FEMA maps available for the area, portions of Forest Lane in the northern part the study area are within the 100-year floodplain. No other 100-year floodplains are shown on the FEMA maps. A copy of the FEMA map is included as a plate in the Wetlands Determination Report in Appendix B. Wetlands were identified along portions of Broadway, Simmons, and Bhims roads. The areas of wetlands and the nature of the construction indicate that the project should qualify for an USACE NW12 permit. The presence of wetlands within the project area could present an opportunity to introduce a recreational trail network that would link wetland areas with the existing, multipurpose Tamina Park.

VI. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED SHOULD THE PROJECT BE IMPLEMENTED

1. Short Term

Disruption to traffic during construction along Main, Sleepy Hollow Drive, and Tamina Road, which are main roads within the Tamina community, would be a short-term adverse impact from the project that could not be avoided. Currently, heavy trucks from several industrial zones use this road to access I-45. A truck-only route to I-45 has been proposed by the residence of Tamina to limit the disruption of traffic due to the trucking.

Another short-term adverse impact from the project would be disruption in water service while the project is being built. This impact may affect elderly residents and young children the most since they are two predominant population groups in Tamina. Adequate public information regarding exact time and length of disruption would be essential.

An economic impact resulting from the project would be the financial requirement of each household to pay for water and sewer hookups from their residence to the to the street locations. The majority of homeowners in Tamina are low-income and may find it difficult to underwrite these costs. Assistance from non-profit organizations to defray installation cost may be available for any household that cannot pay.

Other short-term impacts would include interference with or obstruction of scenic views during construction, as well as the noise levels, odors, and safety concerns generated by construction. The proposed project would minimally interfere with or obstruct scenic views during construction. After construction is complete, the project would not interfere with or obstruct scenic views since the proposed infrastructure would be underground. The potential noise levels and odors during operation should be minimal due to facility design for facilities of this type. Noise during the construction phase would by limited by using equipment that meets OSHA standards and by scheduling construction and the use of equipment during the daylight hours. Safety precautions such as by prompt back-filling of pipeline trenches, temporary barricades, warning lights and posted speed limits would be taken to control access to the facilities during construction.

2. Long-term

More vehicle circulation would occur within the Tamina community since water and wastewater infrastructure would promote residential and commercial development. At that time, the county would need to evaluate new road construction to alleviate the truck traffic originating from several industrial plants within the project area. The residents have discussed with the county the possibility of a truck-only route to I-45.

The area is projected to experience developmental expansion and population growth as a result of the proposed project. Developmental expansion and population growth would increase the traffic on the existing roads. The current road structure would become insufficient and existing roads would need to be expanded and improved to meet demand.

VII. SHORT-TERM USES OF ENVIRONMENT & MAINTENANCE & ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed project would affect the short-term and long-term future of water supply and wastewater treatment needs by improving the existing systems and capacity. Currently, the community relies on water wells and septic systems. The proposed project would provide municipal water and wastewater systems to the community at-large. There would be a small unavoidable disruption in water supply during the construction of the project; however, the long-term benefits would be improved water quality and availability and wastewater services.

VIII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES TO THE PROPOSED PROJECT

Land resources, water resources, materials and recreation and open space would not be irretrievably committed or irreversibly constrained as a result of the project. The proposed project would instead, open avenues to provide community access to area resources such as wetlands. The presence of wetlands within the project area would present an opportunity to develop a recreational trail network that would link wetland areas with the existing, multipurpose Tamina Park. Funds from Texas Parks and Wildlife such as those granted to the community in 1995 to upgrade the existing park could be requested for this purpose.

IX. PUBLIC PARTICIPATION AND COORDINATION

The draft EA will be made available to the public for review. Receipt of comments a public hearing will be solicited and relevant comments will be incorporated into the document.

X. DETERMINATION OF ASSESSMENT

Decision and Finding

The proposed action addressed in the Environmental Assessment (EA) is the construction of new water and sanitary sewer lines to provide municipal services to the community of Tamina. The Tamina community currently has no sewer system and the water system, built in the 1960s by the Rural Development Administration, is inadequate to service the community. Additionally, not all households are connected to the existing water system. The households and some businesses in the Tamina community depend on private water wells and septic systems. It is likely that the private water well are not up to drinking water standards. New waterlines would replace the existing system and be available to all residents. A sanitary sewer lift station is also planned as part of the project.

A finding of no significant impact (FONSI) for this project is recommended based upon the result of environmental impact analysis and in-depth alternative development and evaluation, which is described in this EA. The EA also determined that the proposed action would not incur significant impacts on the environment, therefore providing sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required.

This EA will be available for public and agency review in April 2003 and a public meeting will be held at that time to solicit any comments on the findings presented in the document. Any reasonable and applicable comments received will be incorporated into the final draft of this EA. The final EA will be submitted to appropriate agencies for concurrence of a FONSI.

Alternatives Considered

There are limited alternatives to the water supply problem in the Tamina Community. The alternatives that were considered were assessed based on the criteria of constructability, primary and secondary environmental impacts, and costs.

No Build Alternative. Under the no build alternative, the residents of Tamina would continue to have inadequate water and sewer services. The tax base would continue to erode and growth and prosperity would suffer as a result of the lack of sufficient infrastructure. The quality of the environment, particularly the wetlands, also would continue to decline as the potential for contamination, particularly from the septic systems and illegal dumping could contaminate the environment.

Water and Sewer Lines as Proposed. Implementation of the proposed project would improve the quality of life for the residents and provide the infrastructure that could potentially promote development and increase the tax base. No impact to existing land use would occur as a result of this alternative. No long-term or adverse impact to air quality, water quality or community cohesiveness would occur as a result of this alternative. Minor disruption to traffic during construction may occur, but this would short-term. As designed, the project could be built within existing roadways and right-of-ways and connected to nearby City of Oak Ridge North water and sewer mains. Construction methods such as tunneling would be employed where possible to

minimize impacts to wetlands and floodplains and provide access to property during construction. Coordination with the USACE would be employed and permit requirements would be implemented if wetlands could not be avoided.

Creation of Separate MUD. The creation of a separate MUD to design, build and operate a water and sanitary system would not be a practical alternative for a number of reasons. Among the reasons are the costs, the lack of a public service infrastructure to manage and maintain the district, land requirements and the fact that excess capacity exists in the City of Oak Ridge North to handle the demands of the residents of Tamina.

Alternative Line Locations, Sources and Treatment. Alternative line locations, sources and treatment may not be practical as tying into the City of Oak Ridge North water and sewer lines that already has the excess capacity. Tying into the City of Shenandoah would require pipelines crossing I-45 that would be a major undertaking. Construction of alternative pipeline routes within the community would require additional land acquisition and may displace some people or businesses. Outside of land and right-of-way acquisition, the cost would be approximately the same as the proposed project.

Measures to Minimize Harm

All practicable measures to minimize environmental harm have been incorporated into this proposed project. These measures include:

Selecting the build Alternative and developing the project such that its design will reduce, to the extent possible, adverse impacts to the residents, businesses, and historic sites.

A review of National Wetlands Inventory (NWI) maps indicated wetlands areas along portions of Broadway, Simmons, and Bhims roads. A preliminary wetland determination was conducted on those sections. The USACE conducted a site visit on December 11, 2002. The USACE stated in correspondence dated January 21, 2002 that, based on the site visit and information submitted, the proposed utility line route would cross into jurisdictional waters of the U. S. The USACE further stated that is possible that the project would likely qualify for a Nationwide 12 permit which authorizes the construction of utility lines through wetlands. A wetland delineation report along with detailed constructions plans would be required prior to the USACE making a final determination on permit requirements. In the event constructions plans could be modified to avoid wetland areas, a permit would not be needed.

Where appropriate, these temporary erosion and sedimentation-control structures would be in place before initiation of work and would be maintained throughout the project. The Contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in staging areas. All materials being removed and/or disposed of by the Contractor would be done in accordance with State and Federal laws and by approval of the Project Engineer. The use of erosion control BMPs, as defined by the TCEQ and including limiting the time disturbed ground is exposed to rainfall and runoff water and diverting runoff from areas subjective to erosion, would be used to minimize soil erosion.

Detailed explanations of these measures are in the applicable sections of the EA.

XI. REFERENCES

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NOAA. Climatic Wind Data for the United States, November, 1998.

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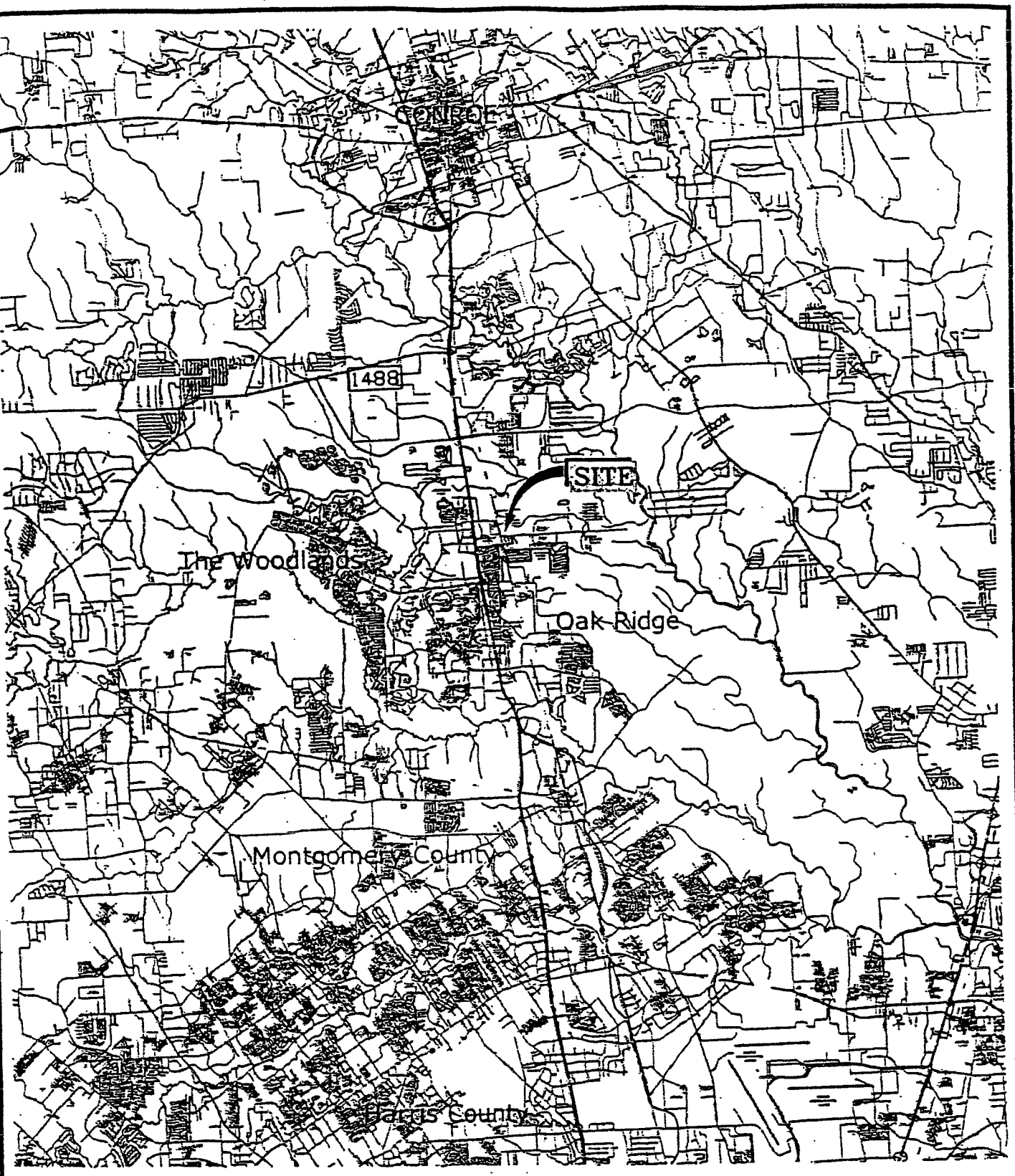
The Handbook of Texas Online (Montgomery County). The Texas State Historical Association, 1997-2001, Last Updated: July 23, 2001.

Webre, Jim. *Illegal Landfill Finally Being Cleared.* Conroe Courier, December 31, 2001.

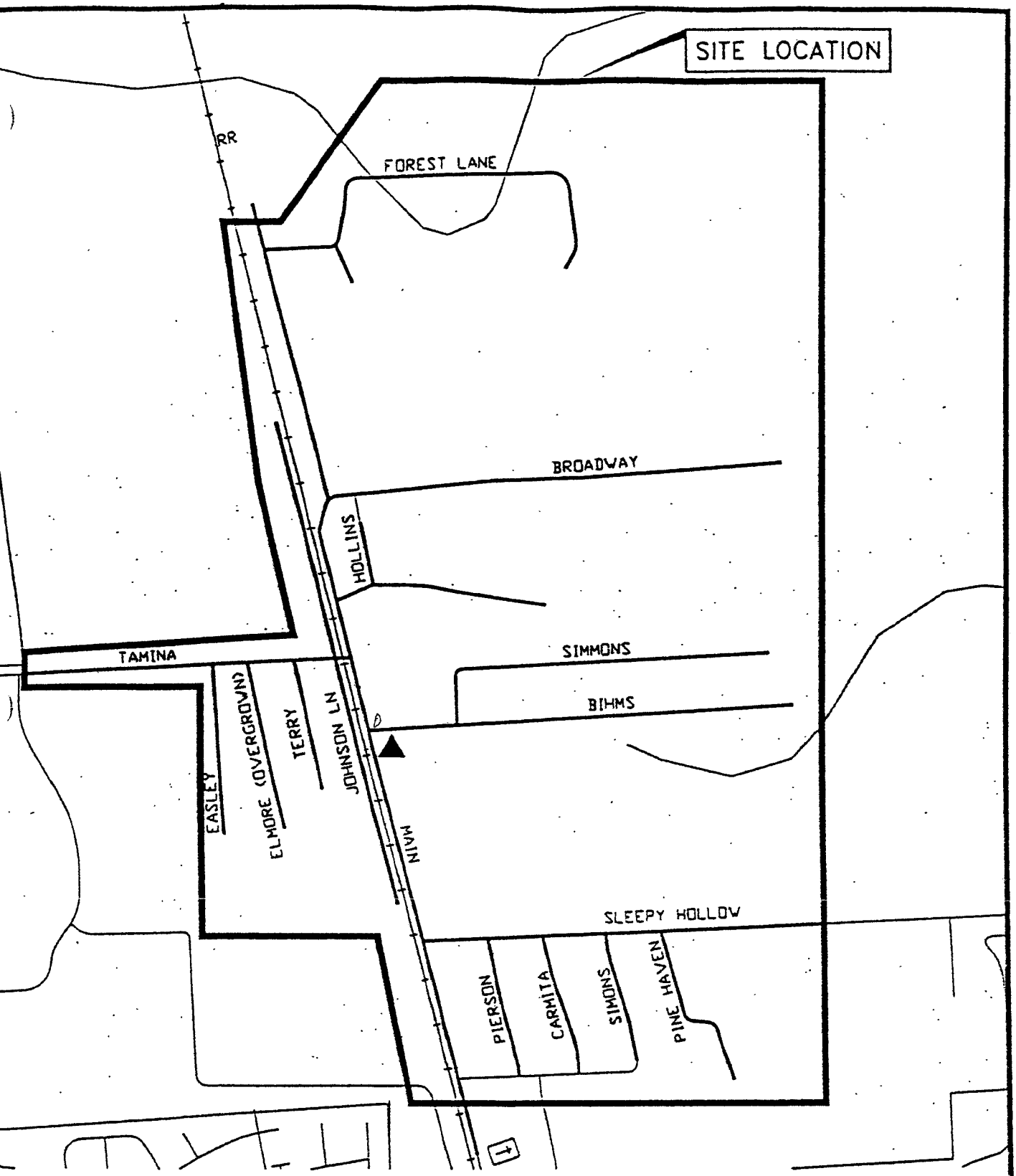
PLATES



N

SITE VICINITY MAP

SCALE: NTS	APPROVED BY: JLH	PREPARED BY: ES
DATE: 10-14-02		
PROJECT NO.: 02-112EA-0	DRAWING NO.: PLATE 1	



LEGEND:

WATER & SEWER LINE ROUTES

PROPOSED SANITARY SEWER LIFT STATION

NOTE: FACILITY LOCATIONS SHOWN ARE APPROXIMATE

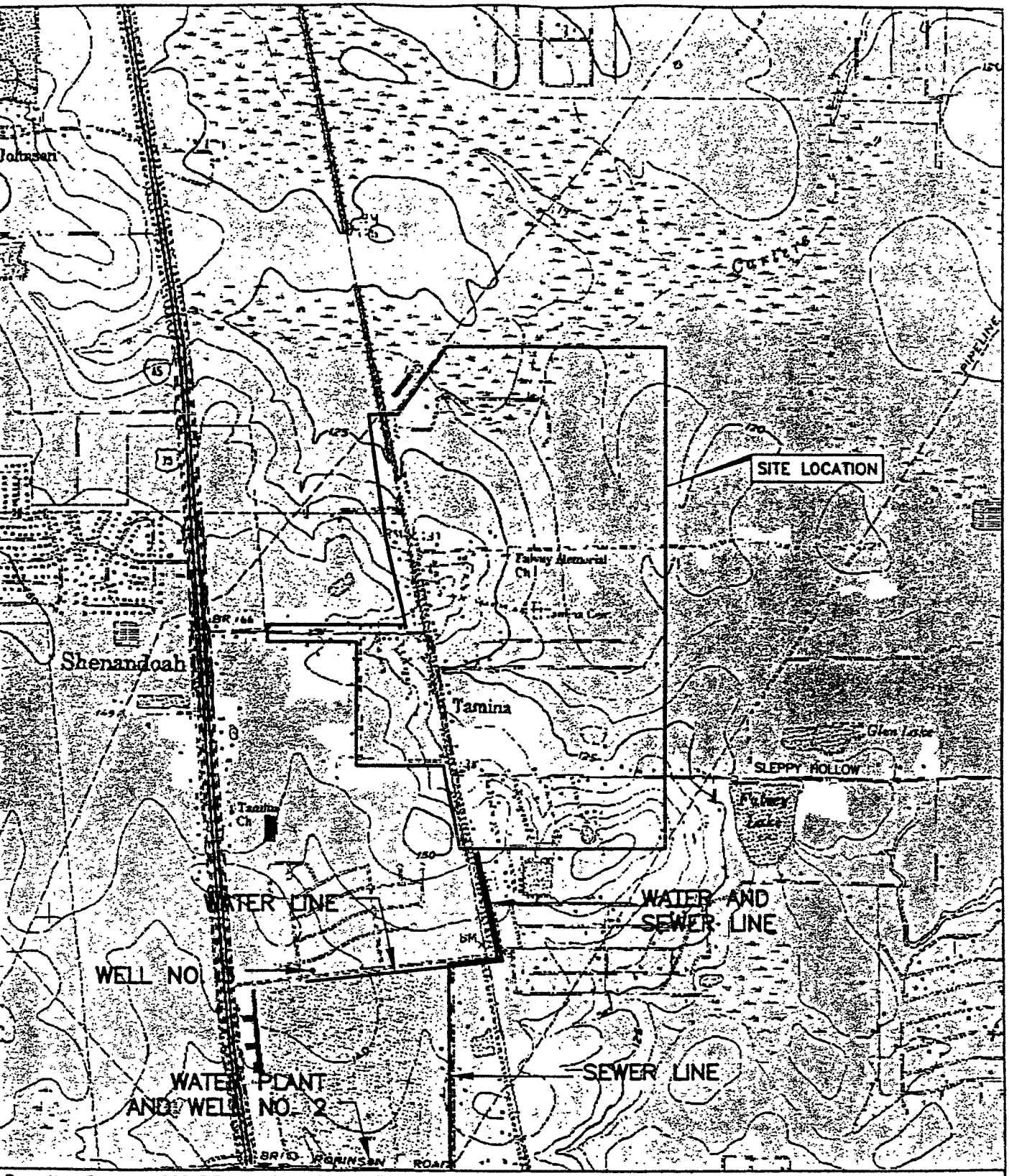
N

0 1000 2000

SCALE IN FEET

PROPOSED FACILITIES LOCATION MAP
TAMINA COMMUNITY

SCALE: 1"=1000'	APPROVED BY: EZ	PREPARED BY: ES
DATE: 5-3-02		
PROJECT NO.: 02-112EA-0	DRAWING NO.: PLATE 2	



Base Map Source: USGS 7.5 Min. Quad Sheet TAMINA, TEXAS, 1961. (PHOTO REVISED 1979)

N

0 2000
FEET

QUADRANGLE LOCATION

SITE LOCATION MAP/USGS TOPOGRAPHIC MAP
TAMINA COMMUNITY

SCALE: 1"=2000'	DRAWN BY: PLB	PROJ. CHK:	APPRV. BY:
DATE: 04-13-02			
PROJECT NO.: 02-112EA-0	DRAWING NO.: 112001	PLATE 3	

FROM SOIL SURVEY OF MONTGOMERY CO., TEXAS 1972, SHEET 65

N

0 1,800' 3,200'

SCALE IN FEET

NRCS SOIL SURVEY MAP TAMINA COMMUNITY		
SCALE: 1"= 1,800'	APPROVED BY: EZ	PREPARED BY: ES
DATE: 8-6-02		
PROJECT NO.: 02-112EA-0	DRAWING NO.: PLATE 4	

APPENDIX A

STATE WATER WELLS LIST AND MAP