**ATTACHMENT J4 (REVISED UNDER AMENDMENT 0014)**

# Fort Hood Wastewater System

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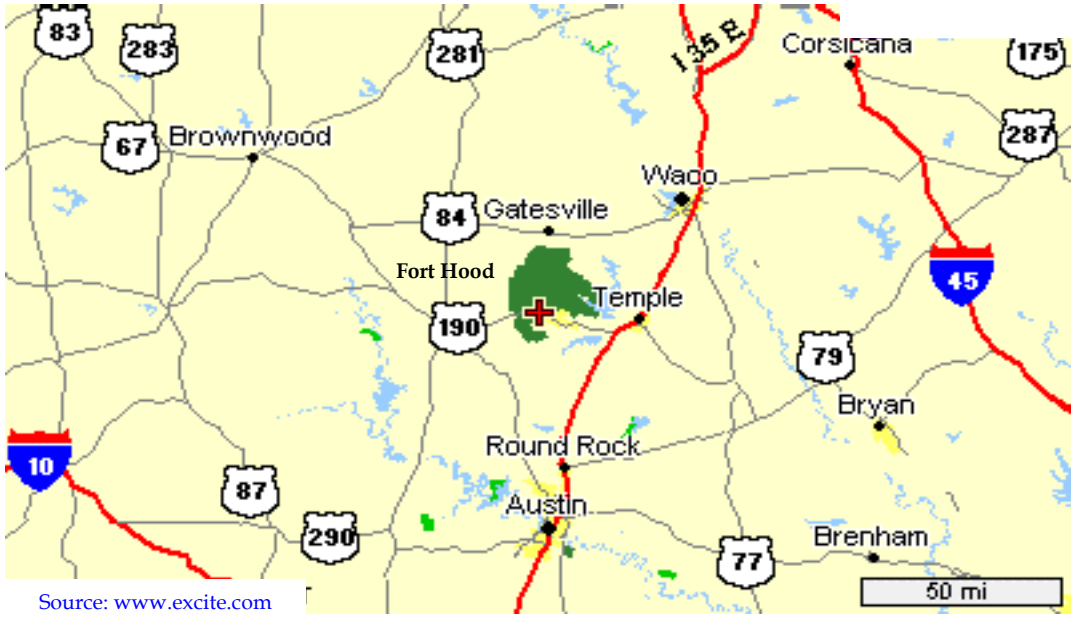
# J4 Fort Hood Wastewater System

## J4.1 Fort Hood Overview

Fort Hood is located in central Texas, approximately 65 miles north of Austin and approximately 20 miles west of Interstate Highway 35 along U.S. Highway 190. **Figure 1** shows Fort Hood's location in central Texas. The Post covers approximately 339 square miles, straddling Coryell and Bell counties and abutted to the east by the City of Killeen, Texas and to the west by the City of Copperas Cove, Texas.

**FIGURE 1**
Fort Hood, Texas
*Wastewater Collection and Treatment System, Fort Hood, Texas*

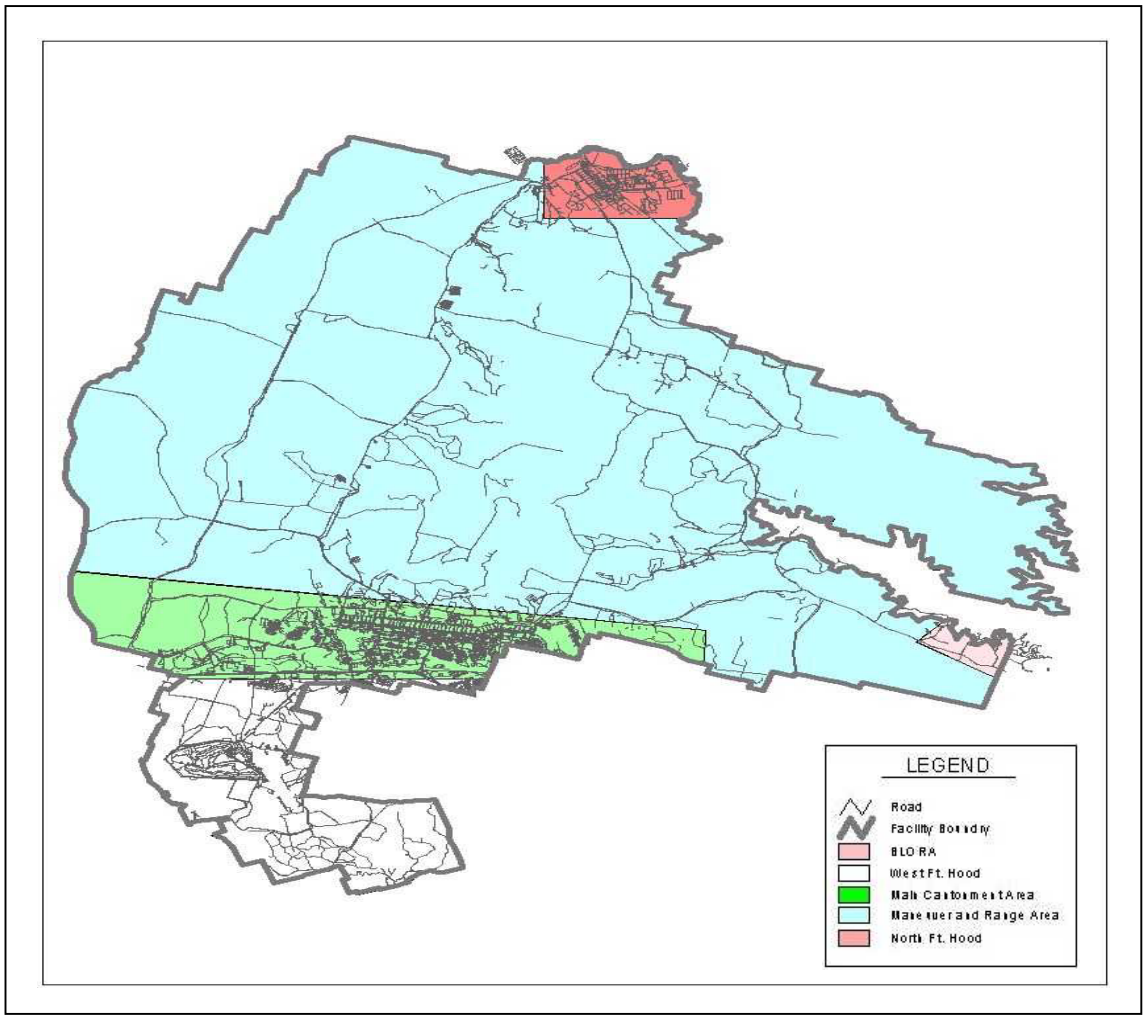



Fort Hood consists of the Main Cantonment area, West Fort Hood, North Fort Hood, maneuver and live-training areas (the Ranges), and the Belton Lake Outdoor Recreation Area (BLORA). These areas are depicted in **Figure 2**. The Main Cantonment area represents the original site for South Camp Hood. The site was originally selected in 1941 and construction started 1942. Construction of North Camp Hood, which is now known as North Fort Hood, started shortly thereafter and approximately 17 miles to the north. South Camp Hood was designated as Fort Hood in 1951. Approximately 244 square miles of land between North Fort Hood and the Main Cantonment area is used for maneuvers and live

fire exercises. Fort Hood has two active airfields: Hood Army Airfield and Robert Gray Airfield. Hood Army Airfield is located on the eastern edge of the Cantonment area and Robert Gray Airfield is located on West Fort Hood. BLORA is located on the eastern most portion of Fort Hood.

Fort Hood's primary mission is to prepare both active and reserve military components for deployment and execution of military and domestic missions worldwide. The Post is distinctive in that it is the only military installation in the United States capable of stationing and training two armored divisions. A major element of Fort Hood's mission is derived from its extensive training areas. The maneuver and training areas within the Ranges are used to simulate battlefield conditions and support infantry, armor, artillery, and air training operations.

**FIGURE 2**
Major Areas of Fort Hood, Texas
*Wastewater Collection and Treatment System, Fort Hood, Texas*



# J4.2 Wastewater System Description

## J4.2.1 Wastewater System Fixed Equipment Inventory

The Fort Hood wastewater system consists of all appurtenances physically connected to the collection system from the point of demarcation defined by the Right of Way. The system may include, but is not limited to, pipelines, manholes, lift stations, valves, controls, treatment plants, and meters. The actual inventory of items sold will be conveyed to the Contractor using the Bill of Sale shown in Attachment J42 to the RFP at the time the system is transferred.

The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The description and inventory were developed based on best available data.

The Offeror shall base its proposal on site inspections, information in the technical library, and other pertinent information, as well as the following description and inventory. If after award the Offeror identifies additional inventory not listed in section J1.2.1.3, the Offeror may submit to the Contracting Officer a request for an equitable adjustment. If the Offeror determines that the inventory listed in section J1.2.1.3 is overstated, the Offeror shall report the extent of the overstatement to the Contracting Officer, who will determine an equitable adjustment.

### J4.2.1.1 Description

The wastewater collection and treatment system at Fort Hood treats wastewater from administrative, industrial, and residential facilities on the Main Cantonment area, West Fort Hood, North Fort Hood, and BLORA. The system serves approximately 3,459 facilities on the Main Cantonment area, 83 facilities on West Fort Hood, 110 facilities on North Fort Hood, and two facilities at BLORA.

Fort Hood's wastewater collection and treatment system consists of wastewater treatment facilities, wastewater lift/pump stations, collection mains, valves, valve boxes, service laterals, manholes, cleanouts, and meters. Construction of the wastewater collection and treatment infrastructure began in the early 1940s and has been upgraded and expanded regularly to handle system demands. Cathodic protection system components, including anodeless risers and test stations, are considered part of the wastewater collection and treatment system although they are not specifically called out in the utility system inventory presented below.

Specifically excluded from privatization of the wastewater collection and treatment system are:

- Stormwater systems
- Oil/water separators
- Grease traps

The Fort Hood wastewater collection and treatment system is physically separated into three separate systems. One system serves the Main Cantonment area and West Fort Hood, the second serves North Fort Hood, and the third serves BLORA.

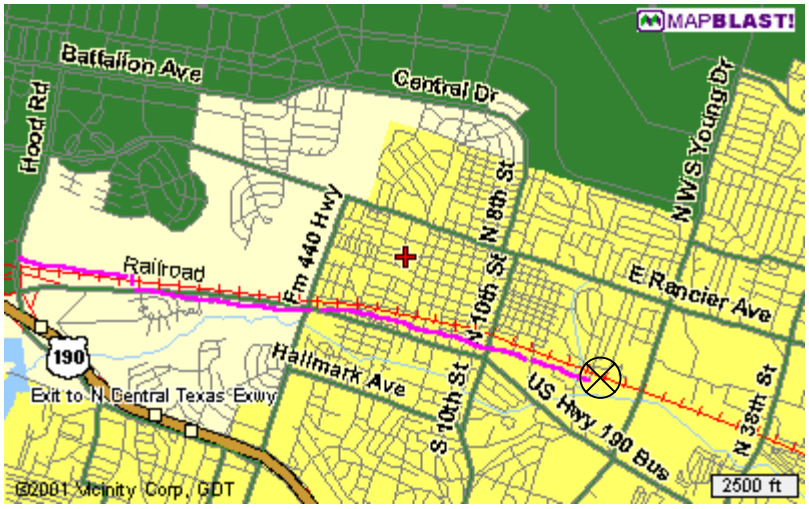
#### J4.2.1.1.1 Main Cantonment Area and West Fort Hood

The system that serves the Main Cantonment area and West Fort Hood does not include any treatment facilities. Wastewater is collected and discharged to the Belton County Water Control and Improvement District (BCWCID) No. 1 sanitary wastewater treatment system.

There are two points of demarcation for components of the wastewater collection system that emanates from the Main Cantonment area and West Fort Hood. Three separate meters south of Walker Village at the Post boundary represent the first point of demarcation. One meter is located approximately one-half mile southeast of Walker Village along Warrior Way. This meter measures flow from wastewater generated in the Hood Army Airfield area. The other two meters are also located along Warrior Way at the south end of Walton Walker Drive and Gray Drive respectively.

The second point of demarcation is located off-Post. The wastewater line exits the Post near the intersection of Fort Hood St. and Business Route 190. There are two meters at this location. This is the metering point for wastewater discharged through this line to the BCWCID facility. The line proceeds off-post in an easterly direction for approximately 2 miles in an easement from the City of Killeen that runs either along a railroad (Burlington Northern Santa Fe railroad) or generally parallel to the railroad line. The wastewater line terminates in a junction box located in a field just east of the intersection of Avenue G and Patton Dr. The wastewater line is shown as a purple line running along the railroad line in **Figure 3**. Point where the wastewater line crosses from the north side of the railroad line to the south side of the line is approximated, as is the location of the junction box, which is represented in **Figure 3** by a crossed circle at the end of the wastewater line.

**FIGURE 3**
Approximate Location of Off-Post Wastewater Line and Point of Demarcation
*Wastewater Collection and Treatment System, Fort Hood, Texas*




### J4.2.1.1.2 North Fort Hood

A treatment plant at North Fort Hood consisting of a facultative lagoon and chlorine contact basin treats wastewater collected from facilities on North Fort Hood. The treatment facility consists of two lagoons, connected in series, each with a surface area of approximately 6 acres. Each lagoon is approximately 750 feet long, 350 feet wide, and 3.5 feet deep, and the combined volume of the lagoons is approximately 13.2 million gallons, or 65,000 cubic yards. The system includes all appurtenances up to the outfall where treated wastewater is discharged into Leon River.

### J4.2.1.1.2 BLORA

A 60,000-gallon-per-day (gpd) activated sludge package plant treats sanitary wastewater from the recreation area and discharges treated wastewater into a ditch that discharges into Nolan Creek, which terminates into Belton Lake. The point of demarcation for the BLORA system is the outfall where treated wastewater is discharged into the drainage ditch. Wastewater is discharged IAW NPDES permit TX0002313.

### J4.2.1.2 Points of Demarcation

The Fort Hood wastewater collection and treatment system being studied consists of all components from the point where wastewater is collected from individual facilities to the point where the Post discharges wastewater to BCWCID, the Leon River or the drainage ditch for BLORA. The point of demarcation for each end user is defined as the point or component on the collection system where ownership changes from building owner to the utility owner. In most cases the point of demarcation is the first upstream component (i.e., cleanout, valve, etc.) of the system located outside of the facility footprint. **Table 1** identifies the type of service and general location of the point of demarcation with respect to each building served by the collection system.

**TABLE 1**
Wastewater Collection and Treatment System Points of Demarcation
*Wastewater Collection and Treatment System, Fort Hood, Texas*

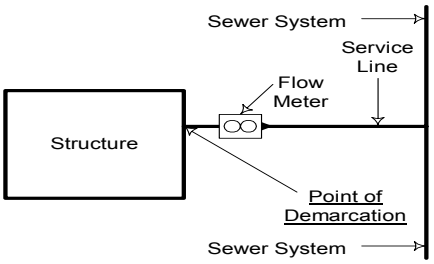
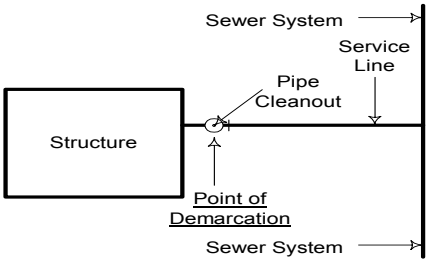
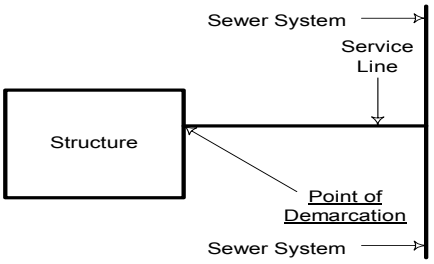
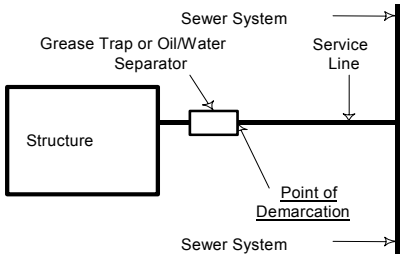
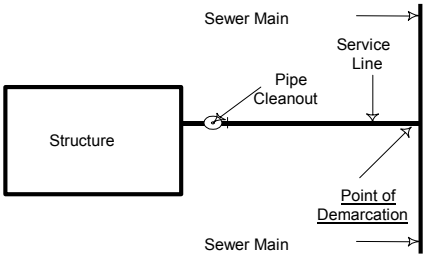
| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|---|
| Point where the service line exits the structure<br><br>*Note: A new cleanout device should be installed within 25' of building during any stoppage or maintenance action. The upstream side of the cleanout device will then become the new point of demarcation.* | Non-residential service. Wastewater system flow meter is located on the service line exiting the structure. |  |
| Point of demarcation is the upstream side of the cleanout device. | Non-residential service. No flow meter exists and a wastewater system cleanout is located within 25 feet of the building perimeter on the service line exiting the structure. |  |
| Point where the service line exits the structure<br><br>*Note: A new cleanout device should be installed within 25' of building during any stoppage or maintenance action. The upstream side of the cleanout device will then become the new point of demarcation.* | Non-residential service. No flow meter or cleanout exists within 25 feet of the building perimeter on the service line exiting the structure. |  |
| Point of demarcation is the downstream side of grease trap or oil/water separator.<br><br>*Note: This point of demarcation does not apply to grease traps or oil/water separators included as a part of the wastewater system inventory (connected to lift/pump stations).* | Non-residential service. Grease trap or oil/water separator. |  |
| Point of demarcation is the point where the service line connects to the sewer main.<br><br>*Note: Point of demarcation for residential services is complimentary to the point of demarcation established by Fort Hood Family Housing initiative. All components of the wastewater collection and treatment system not included as a part of the residence are* | Residential service. |  |

**TABLE 1**
Wastewater Collection and Treatment System Points of Demarcation
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|---|
| *included with wastewater collection and treatment system included for privatization.* | | |

Note:
All wastewater meters, including instrumentation, wiring, etc., will be transferred with the wastewater collection and treatment system to the Contractor.

### J4.2.1.3 Inventory

The wastewater collection system piping consists of approximately 181 miles of buried piping ranging in size from 4-inch service laterals to 30-inch main lines. There are 38 wastewater pump/lift stations to collect and transfer wastewater to treatment facilities. Other components include manholes, valves, cleanouts, and meters. Detailed inventories of the wastewater collection system piping, lift/pump stations, other system components, and wastewater treatment facilities are shown in **Tables 2, 3, 4,** and **5** respectively.

**TABLE 2**
Wastewater Collection Piping Summary
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| | | Approximate Year of Construction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Material** | **Size** | **1945** | **1955** | **1965** | **1975** | **1985** | **1995** | **2000** | **Total** |
| | | Values reported are total linear feet | | | | | | | |
| C-900 | 6 in. | 0 | 0 | 0 | 0 | 0 | 5,595 | 0 | 5,595 |
| | 8 in. | 0 | 0 | 0 | 0 | 0 | 3,471 | 0 | 3,471 |
| C-900 Total | | 0 | 0 | 0 | 0 | 0 | 9,066 | 0 | 9,066 |
| CI | 4 in. | 0 | 0 | 0 | 1,914 | 0 | 0 | 0 | 1,914 |
| | 6 in. | 393 | 0 | 696 | 0 | 0 | 490 | | 1,579 |
| | 8 in. | 0 | 417 | 0 | 5,849 | 0 | 0 | 0 | 6,266 |
| | 10 in. | 0 | 0 | 0 | 10,370 | 0 | 0 | 0 | 10,370 |
| | 12 in. | 0 | 704 | 0 | 1,315 | 0 | 0 | 0 | 2,019 |
| CI Total | | 393 | 1,121 | 696 | 19,448 | | 490 | | 22,148 |
| CONCRETE | 4 in. | 16,095 | 11,912 | 14,566 | 6,078 | 3,212 | 0 | 52 | 51,915 |

**TABLE 2**
Wastewater Collection Piping Summary
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| | | Approximate Year of Construction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Material** | **Size** | **1945** | **1955** | **1965** | **1975** | **1985** | **1995** | **2000** | **Total** |
| | | Values reported are total linear feet | | | | | | | |
| | 6 in. | 14,047 | 13,681 | 15,440 | 4,500 | 3,459 | 37 | 0 | 51,164 |
| | 8 in. | 57,131 | 56,438 | 63,674 | 12,720 | 9,002 | 83 | 369 | 199,417 |
| | 10 in. | 16,798 | 5,447 | 10,736 | 12,838 | 82 | 0 | 0 | 45,901 |
| | 12 in. | 15,120 | 4,780 | 1,897 | 11,223 | 7,411 | 869 | 0 | 41,300 |
| | 15 in. | 0 | 0 | 2,401 | 1,855 | 0 | 0 | 0 | 4,256 |
| | 18 in. | 2,165 | 0 | 1,916 | 3,667 | 0 | 0 | 0 | 7,748 |
| | 21 in. | 3,629 | 4,199 | 3,154 | 0 | 0 | 0 | 0 | 10,982 |
| | 24 in. | 2,882 | 4,891 | 0 | 4,502 | 0 | 0 | 0 | 12,275 |
| | 27 in. | 0 | 427 | 0 | 4,059 | 0 | 0 | 0 | 4,486 |
| | 30 in. | 10,560 | 0 | 0 | 0 | 4,365 | 1,944 | 0 | 16,869 |
| CONCRETE Total | | 138,427 | 101,773 | 113,784 | 61,441 | 27,532 | 2,932 | 421 | 446,310 |
| PVC | 2 in. | 0 | 0 | 0 | 5,291 | 627 | 2,507 | 0 | 8,425 |
| | 3 in. | 0 | 0 | 0 | 4,556 | 1,312 | 1,616 | 0 | 7,484 |
| | 4 in. | 0 | 0 | 0 | 9,848 | 14,831 | 12,062 | 241 | 36,982 |
| | 5 in. | 0 | 0 | 0 | 0 | 481 | 0 | 0 | 481 |
| | 6 in. | 0 | 0 | 0 | 73,885 | 38,509 | 63,727 | 1,772 | 177,893 |
| | 8 in. | 0 | 0 | 0 | 32,931 | 33,419 | 64,063 | 1,025 | 131,438 |
| | 10 in. | 0 | 0 | 0 | 6,588 | 8,271 | 1,985 | 0 | 16,844 |
| | 12 in. | 0 | 0 | 0 | 8,296 | 14,399 | 13,524 | 702 | 36,921 |
| | 14 in. | 0 | 0 | 0 | 0 | 0 | 5,501 | 0 | 5,501 |
| | 15 in. | 0 | 0 | 0 | 260 | 0 | 3,012 | 0 | 3,272 |
| | 18 in. | 0 | 0 | 0 | 773 | 0 | 602 | 0 | 1,375 |
| PVC Total | | | | | 142,428 | 111,848 | 168,599 | 3,740 | 426,615 |
| VC | 4 in. | 2,418 | 6,952 | 1,769 | 306 | 275 | 0 | 0 | 11,720 |
| | 6 in. | 1,167 | 2,469 | 440 | 928 | 312 | 0 | 0 | 5,316 |
| | 8 in. | 7,860 | 2,823 | 9,467 | 562 | 128 | 0 | 0 | 20,840 |
| | 10 in. | 1,958 | 625 | 1,007 | 95 | 0 | 0 | 0 | 3,685 |
| | 12 in. | 4,926 | 304 | 0 | 0 | 0 | 0 | 0 | 5,230 |
| | 18 in. | 1,743 | 1,557 | 0 | 0 | 0 | 0 | 0 | 3,300 |

**TABLE 2**
Wastewater Collection Piping Summary
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| | | Approximate Year of Construction | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Material** | **Size** | **1945** | **1955** | **1965** | **1975** | **1985** | **1995** | **2000** | **Total** |
| | | Values reported are total linear feet | | | | | | | |
| | 21 in. | 0 | 0 | 0 | 997 | 0 | 0 | 0 | 997 |
| VC Total | | 20,071 | 14,729 | 12,683 | 2,888 | 715 | 0 | 0 | 51,086 |
| Grand Total | | 158,890 | 117,623 | 127,162 | 226,206 | 140,096 | 181,088 | 4,160 | 955,225 |

**TABLE 3**
Wastewater Collection and Treatment System Pump/Lift Stations
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Lift Station/Pumps | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| Lift Station 13083 | Wetwell Only, Concrete | 1 | Ea | 1996 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1996 |
| Lift Station 1972 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 3 HP | Mechanical | 2 | Ea | 1986 |
| Lift Station 26015 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1986 |
| Lift Station 44014 | Wetwell, Concrete | 1 | Ea | 1988 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1988 |
| Lift Station 6949 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 1 HP | Mechanical | 2 | Ea | 1986 |
| Lift Station 22023 | Wetwell Only, Concrete | 1 | Ea | 1994 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1994 |
| 51 lf Fencing | Fencing | 51 | Lf | 1994 |
| Lift Station 32031 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 7.5 HP | Mechanical | 2 | Ea | 1986 |
| 51 lf Fencing | Fencing | 51 | Lf | 1986 |
| Lift Station 30045 | Wetwell Only, Concrete | 1 | Ea | 1996 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1996 |
| 57 lf Fencing | Fencing | 57 | Lf | 1996 |
| Lift Station 11037 | Wetwell Only, Concrete | 1 | Ea | 1993 |

**TABLE 3**
Wastewater Collection and Treatment System Pump/Lift Stations
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Lift Station/Pumps | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| 2 pumps @ 2 HP | Mechanical | 2 | Ea | 1993 |
| 72 lf Fencing | Fencing | 72 | Lf | 1993 |
| Lift Station 88016 | Wetwell Only, Concrete | 1 | Ea | 1988 |
| 2 pumps @ 20 HP | Mechanical | 2 | Ea | 1988 |
| 91 lf Fencing | Fencing | 91 | Lf | 1988 |
| Lift Station 90106 | Wetwell Only, Concrete | 1 | Ea | 1988 |
| 2 pumps @ 2 HP | Mechanical | 2 | Ea | 1988 |
| 5 KW generator | Mechanical | 1 | Ea | 1988 |
| 96 lf Fencing | Fencing | 96 | Lf | 1988 |
| Lift Station 48512 | Wetwell Only, Concrete | 1 | Ea | 1995 |
| 2 pumps @ 20 HP | Mechanical | 2 | Ea | 1995 |
| 50 KW generator | Mechanical | 1 | Ea | 1995 |
| 101 lf Fencing | Fencing | 101 | Lf | 1995 |
| Lift Station 721 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1986 |
| 111 lf Fencing | Fencing | 111 | Lf | 1986 |
| Lift Station 90110 | Wetwell Only, Concrete | 1 | Ea | 1986 |
| 2 pumps @ 14.8 HP | Mechanical | 2 | Ea | 1986 |
| 30 KW generator | Mechanical | 1 | Ea | 1986 |
| 240 lf Fencing | Fencing | 240 | Lf | 1986 |
| Lift Station 4115 | Wetwell Only, Concrete | 1 | Ea | 1942 |
| 2 pumps @ 3 HP | Mechanical | 2 | Ea | 1991 |
| 80 sf bldg., Cinderblock | Building | 80 | Sf | 1976 |
| 72 lf Fencing | Fencing | 72 | Lf | 1976 |
| Lift Station 9534 | Wetwell Only, Concrete | 1 | Ea | 1956 |
| 1 pumps @ 5 HP | Mechanical | 1 | Ea | 1991 |
| 160 sf bldg., Cinderblock | Building | 160 | Sf | 1956 |
| Lift Station 93040 | Wetwell Only, Concrete | 1 | Ea | 2002 |
| 2 pumps @ 250 HP | Mechanical | 3 | Ea | 2002 |
| 2 pumps @ 50 HP | Mechanical | 3 | Ea | 2002 |
| 2 pumps @ 5 HP, grinders | Mechanical | 3 | Ea | 2002 |
| 500 KW generator (est.) | Mechanical | 1 | Ea | 2002 |

**TABLE 3**
Wastewater Collection and Treatment System Pump/Lift Stations
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Lift Station/Pumps | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| Electric Controls | Controls | 1 | Ea | 2002 |
| 192 sf 2-story bldg., cinderblock | Building | 192 | Sf | 1973 |
| 64 sf bldg., storage | Building | 64 | Sf | 1973 |
| 60 sf metal skid bldg. | Building | 60 | Sf | 2002 |
| 1,000 lf Fencing | Fencing | 1,000 | Lf | 2002 |
| Site work, 2 acres + berm w/ concrete riprap | Berm @ 7,466 CY | 7,466 | CY | 2002 |
| Lift Station 51400 | Wetwell Only, Concrete | 1 | Ea | 1974 |
| 3 pumps @ 5 HP | Mechanical | 3 | Ea | 1991 |
| 275 KW generator | Mechanical | 1 | Ea | 1974 |
| 200 sf bldg., Cinderblock | Building | 200 | Sf | 1974 |
| Lift Station 41012 | Wetwell Only, Concrete | 1 | Ea | 1968 |
| 3 pumps @ 20 HP | Mechanical | 3 | Ea | 1991 |
| 130 KW generator | Mechanical | 1 | Ea | 1986 |
| 40 sf bldg., Fiberglass | Building | 40 | Sf | 1968 |
| 98 lf Fencing | Fencing | 98 | Lf | 1968 |
| Lift Station 38020 | Wetwell Only, Concrete | 1 | Ea | 1977 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| 40 sf bldg., Fiberglass | Building | 40 | Sf | 1977 |
| 120 lf Fencing | Fencing | 120 | Lf | 1977 |
| Lift Station 20122 | Wetwell Only, FRP | 1 | Ea | 1982 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1982 |
| Lift Station 20141 | Wetwell Only, FRP | 1 | Ea | 1977 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| Lift Station 50002 | Wetwell Only, FRP | 1 | Ea | 1997 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1997 |
| Lift Station 50007 | Wetwell Only, FRP | 1 | Ea | 1998 |
| 2 pumps @ 2 HP | Mechanical | 2 | Ea | 1998 |
| Lift Station 52387 | Wetwell Only, FRP | 1 | Ea | 1994 |
| 2 pumps @ 2 HP | Mechanical | 2 | Ea | 1994 |
| Lift Station 52941 | Wetwell Only, FRP | 1 | Ea | 1997 |
| 2 pumps @ 1 HP | Mechanical | 2 | Ea | 1997 |
| Lift Station 20151 | Wetwell Only, FRP | 1 | Ea | 1977 |

**TABLE 3**
Wastewater Collection and Treatment System Pump/Lift Stations
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Lift Station/Pumps | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| 45 lf Fencing | Fencing | 45 | Lf | 1977 |
| Lift Station 7087 | Wetwell Only, FRP | 1 | Ea | 1995 |
| 2 pumps @ 2 HP | Mechanical | 2 | Ea | 1995 |
| 45 lf Fencing | Fencing | 45 | Lf | 1995 |
| Lift Station 20148 | Wetwell Only, FRP | 1 | Ea | 1977 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| 68 lf Fencing | Fencing | 68 | Lf | 1977 |
| Lift Station 53905 | Wetwell Only, FRP | 1 | Ea | 2000 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 2000 |
| 80 lf Fencing | Fencing | 80 | Lf | 2000 |
| Lift Station 20131 | Wetwell Only, FRP | 1 | Ea | 1982 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1982 |
| 118 lf Fencing | Fencing | 118 | Lf | 1982 |
| Lift Station 88018 | Wetwell Only, FRP | 1 | Ea | 1993 |
| 2 pumps @ 1.5 HP | Mechanical | 2 | Ea | 1993 |
| 118 lf Fencing | Fencing | 118 | Lf | 1993 |
| Lift Station 20143 | Wetwell Only, Steel | 1 | Ea | 1977 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| Lift Station 7036 | Wetwell Only, Steel | 1 | Ea | 1987 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1987 |
| 55 lf Fencing | Fencing | 55 | Lf | 1987 |
| Lift Station 90049 | Wetwell Only, Steel | 1 | Ea | 1963 |
| 2 pumps @ 5 HP | Mechanical | 2 | Ea | 1991 |
| 576 sf bldg., Cinderblock | Building | 576 | Sf | 1963 |
| Lift Station 52380 | Wetwell/Drywell, Concrete | 1 | Ea | 1976 |
| 3 pumps @ 15 HP | Mechanical | 3 | Ea | 1991 |
| 105 KW generator | Mechanical | 1 | Ea | 1976 |
| 200 lf Fencing | Fencing | 200 | Lf | 1976 |
| Lift Station 8001 | Wetwell/Drywell, Concrete | 1 | Ea | 1956 |
| 3 pumps @ 10 HP | Mechanical | 3 | Ea | 1991 |
| 130 KW generator | Mechanical | 1 | Ea | 1986 |

**TABLE 3**
Wastewater Collection and Treatment System Pump/Lift Stations
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Lift Station/Pumps | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| 80 sf bldg., Cinderblock | Building | 80 | Sf | 1956 |
| 170 lf Fencing | Fencing | 170 | Lf | 1956 |
| Lift Station 90070 | Wetwell/Drywell, Steel | 1 | Ea | 1987 |
| 2 pumps @ 20 HP | Mechanical | 2 | Ea | 1987 |

**TABLE 4**
Wastewater Collection and Treatment Component Summary
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Component | Size | 1945 | 1955 | 1965 | 1975 | 1985 | 1995 | 2000 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Wastewater Meter | Structure | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| | Piping and Controls | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| BRICK Manhole | Standard | 408 | 331 | 397 | 0 | 0 | 0 | 0 | 1,136 |
| CONCRETE Manhole | Standard | 0 | 0 | 0 | 624 | 387 | 460 | 27 | 1,498 |
| PRESSRELIEF Valve | 6 in. | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| GATE Valve | 4 in. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | 6 in. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | 8 in. | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 8 |
| | 10 in. | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| | 12 in. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| GATE Valve Total | | 0 | 0 | 0 | 2 | 6 | 5 | 0 | 13 |
| Cleanout | 4 in. | 25 | 123 | 146 | 200 | 158 | 63 | 0 | 715 |
| | 6 in. | 24 | 41 | 34 | 82 | 66 | 122 | 3 | 372 |
| | 8 in. | 9 | 7 | 11 | 18 | 11 | 6 | 1 | 63 |
| | 10 in. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Cleanout Total | | 59 | 171 | 191 | 301 | 235 | 191 | 4 | 1,152 |

**TABLE 5**
Wastewater Treatment Facilities

*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Facility | Component | Quantity | Unit | Year |
|---|---|---|---|---|
| **NFH Wastewater Treatment Plant** | Sludge Lagoons | 65,000 | CY | 1976 |
| 5 pumps @ 3 HP | Mechanical | 5 | Ea | 1991 |
| Chlorinating System | Mechanical | 1 | Ea | 1991 |
| 256 sf bldg., steel | Building | 2 | Ea | 1976 |
| | | | | |
| **BLORA Wastewater Treatment Plant** | Package Plant | 60,000 | Gpd | 2001 |
| 2 pumps @ 10 HP | Mechanical | 2 | Ea | 2001 |
| 30 kW generator | Mechanical | 1 | Ea | 2001 |
| Chlorinating system | Mechanical | 1 | Ea | 2001 |
| 128 sf bldg., Cinderblock | Building | 128 | Sf | 2001 |
| 192 lf Fencing | Fencing | 192 | Lf | 2001 |

## J4.2.2 Wastewater System Non-Fixed Equipment and Specialized Tools

**Table 6** lists other ancillary equipment (spare parts), and **Table 7** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

**TABLE 6**
Spare Parts
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Qty | Item | Make/Model | Description | Remarks |
|---|---|---|---|---|
| No spare parts are included with the Fort Hood Wastewater Collection and Treatment System. | | | | |

**TABLE 7**
Specialized Vehicles and Tools
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Qty | Item | Make/Model | Description | Remarks |
|---|---|---|---|---|
| No specialized tools or vehicles are included with the Fort Hood Wastewater Collection and Treatment System. | | | | |

### J4.2.3 Wastewater System Manuals, Drawings, and Records

**Table 8** lists the manuals, drawings, and records that will be transferred with the system.

**TABLE 8**
Manuals, Drawings, and Records
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Qty | Item | Description | Remarks |
|---|---|---|---|
| 1 | Drawing | CAD Drawing | Hard Copy |
| 1 | Electronic | CAD Drawing | Electronic Copy |
| 1 | Electronic Database | GIS Database | Electronic Copy |
| 2 | O&M Manuals | Manuals for O&M of system components | Hard Copy |
| 4 | Reports | System Analysis/Performance Reports | Hard Copy |
| 2 | Reports | Utility Studies | Hard Copy |
| 2 | Reports | Discharge Reports | Hard Copy |

Note: Manuals, drawings, records, and reports included with the Fort Hood Wastewater Collection and Treatment System are included in the Bidders' Library

## J4.3 Specific Service Requirements

The service requirements for the Fort Hood wastewater system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Fort Hood wastewater system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- Non-Government Installed Utilities Infrastructure. Prior to, during, and after award of this contract, the Residential Commercial Initiative Limited Partnership (Fort Hood Family Housing - FHFH) may cause new installation of utilities infrastructure from the existing Utility Systems to the Points of Demarcation of newly constructed housing units. The Contractor shall purchase this new construction, known as "Partnership Utility System Facilities" from FHFH as directed by the Contracting Officer. After purchase, the Contractor shall then own, operate, expand, upgrade, maintain, repair and replace the newly purchased infrastructure and serve the new housing areas to standards established by this contract. The Contractor shall purchase the fully completed Partnership Utility System Facilities and shall purchase the FHFH-contracted infrastructure following its construction and connection to the Contractor-owned system. Contractor shall complete payment for purchased infrastructure within 60 days of written notice by the FHFH Partnership. The purchase and transfer of such property shall be per formal written agreement between the Contractor and FHFH. The Contractor shall take all necessary steps to transfer warranties obtained by the FHFH Partnership with respect to the Partnership Utility System Facilities; to the extent such warranties are assignable to the Contractor.

- Digging Permits. Contractor shall provide all digging permits which may impact on the integrity of his Utility Systems and the safety of the requestors. Contractor shall routinely accept and promptly process digging permit requests from Government work force; military units; FHFH partnership; maintenance, construction, and Army operations contractors; cable and phone maintenance and installation companies; fence rental companies; individual residents, and additional entities as identified by Contracting Officer to have a valid need for a digging permit. Contractor shall identify methodology of accepting, processing, approving, and listing reason(s) for disapproval.
- The Contractor shall obtain digging permits directly from the Fort Hood Department of Public Works (DPW) for utilities owned by the Government before any drilling, digging, or excavation is undertaken. Provide a completed form FHT 420-X10, Coordination for Land Excavation, to the DPW building 4612, Fort Hood, Texas for each permit. Allow 14 days for Government review of digging permit requests. A digging permit for a specified area of excavation expires 30 days after the issue date; Contractor must re-apply for a new permit to perform excavation in the area if the excavation was not started within the 30-day period. Permits will identify all underground utilities within 1,500 mm (5 feet) of the designated area. Contractor shall be responsible for all repairs, costs, and damages due to excavation.
- The Contractor shall coordinate with and obtain written approval from Fort Hood Range Control prior to performing any maintenance, repairs, construction, or other work on the wastewater collection and treatment system in the Ranges (all areas managed and controlled by Fort Hood Range control).
- The wastewater treatment and collection system shall be sampled and tested daily in accordance with (IAW) Fort Hood's wastewater discharge permits. Wastewater testing reports are to be prepared and submitted IAW TNRCC guidelines. The Contractor shall provide the Contracting Officer with a copy of any and all testing information and reports submitted to the TNRCC. The Contractor shall propose a report format and frequency to be accepted by the Contracting Officer.
- The Contractor shall own, operate, and maintain emergency generators that serve the Contractor's infrastructure and facilities.
- The Contractor shall own, maintain and operate cathodic protection systems for the wastewater treatment facilities and lift station and other applicable metal components of the wastewater collection and treatment system.
- Cost Allocation and Sales Rate Construction. In the proposal, the Contractor shall identify methodology for allocating appropriate cost associated with distinct services among customers (i.e. residential, federal and non-federal). At a minimum, this allocation shall distinguish between shared and non-shared infrastructure (residential versus all other) and any extension or modernization of an individual customer's service point beyond a normal economic standard. The proposed system of accounts shall be made available in electronic format as directed by the Contracting Officer. The Contractor shall populate the sales rate forms provided by the Government.
- The Contractor shall enter into a Memorandum of Understanding (MOU) with the Fort Hood Fire Department for fire protection of all facilities included in the purchase of the

utility. The MOU shall be completed during the transition period and a copy provided to the Contracting Officer.

- The Contractor shall abide by Fort Hood fire protection requirements. The utility system purchased by the Contractor may include facilities. These facilities may or may not include fire alarm systems. Where required by federal, state or local regulation, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.
- The Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the wastewater collection and treatment system being privatized. For example, electricity is needed to operate lift station pumps. Supporting utilities are defined as the supply of electricity, natural gas, water, or wastewater collection and any infrastructure or materials necessary to connect to the supply of electricity, natural gas, water, or wastewater collection. The Contractor shall coordinate with Fort Hood DPW and the Contracting Officer for any supporting utilities to be provided by the Government.
- IAW Paragraph C.9.8, *Exercises and Crisis Situations Requiring Utility Support*, the Contractor shall provide support as directed by the Fort Hood DPW or equivalent agency for exercises and crisis situations.

## J4.4 Current Service Arrangement

Fort Hood's wastewater collection and treatment system consists of three separate systems (one for the Main Cantonment area and West Fort Hood, one for North Fort Hood and one for BLORA). The system that serves the Main Cantonment area and West Fort Hood does not include any treatment facilities. Wastewater is collected and discharged to the BCWCID No. 1 sanitary wastewater treatment system. The system that serves North Fort Hood includes a treatment plant consisting of a facultative lagoon and a chlorine contact basin. Treated wastewater from this system is discharged into the Leon River under National Pollutant Discharge Elimination System (NPDES) permit TX0063606. The BLORA system serves BLORA consists of a 60,000 gallon per day (gpd) activated sludge package plant. It discharges treated wastewater into Nolan Creek under NPDES permit TX0002313.

## J4.5 Secondary Metering

Between the point of delivery and the end user points of demarcation, the Contractor shall own all existing meters and shall install additional meters at new and upgraded locations as directed by the Contracting Officer. Contractor shall install or cause to have installed utility meters as requested by the Contracting Officer to include accessories that will ensure compatibility with the current Automatic Metering Reading (AMR) system (i.e., Meter Interface Unit, electronic pulse equipment, retrofit kits, etc.). Contractor shall be responsible for all associated metering devices (such as CTs, PTs, wiring, and volt-amp displays). Some existing and future meters (including AMR interface) may be located inside facilities including motor control centers. The AMR will privatized in conjunction with the Fort Hood electric system, not in conjunction with the gas, water, or wastewater systems. The

successful offeror for the Fort Hood electric system will operate, maintain and repair the AMR system IAW manufacturer recommendations and/or maintenance schedule.

## J4.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   *Name:* DIRECTORATE OF PUBLIC WORKS
   ATTN (Barry Barnett- Contracting Command)
   III CORPS AND FORT HOOD
   *Address:* 4612 ENGINEER DRIVE, ROOM 76
   FORT HOOD TEXAS 76544-5028
   *Phone number:* (254) 287-3054

2. Outage Report. The Contractor's monthly outage report (blockage and overflow information) will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   *Name:* DIRECTORATE OF PUBLIC WORKS
   ATTN (Bobby Lynn- DPW)
   III CORPS AND FORT HOOD
   *Address:* 77TH AND WAREHOUSE AVE., BLDG. 4219
   FORT HOOD TEXAS 76544-5028
   *Phone number:* (254) 287-3054

## J4.7 Infiltration and Inflow (I&I) Projects

IAW Paragraph C.3.4, Energy and Water Efficiency and Conservation, the following projects have been implemented by the Government for managing and monitoring I&I.

- None

## J4.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Fort Hood boundaries and include the Main Cantonment Area, West Fort Hood, North Fort Hood, the Ranges, and BLORA.

## J4.9 Off-Installation Sites

No off-installation sites are included in the privatization of the Fort Hood wastewater system.

# J4.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 9** provides a list of service connections and disconnections required upon transfer.

**TABLE 9**
Service Connections and Disconnections
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| Location | Description |
|---|---|
| There are no service connections or disconnections required upon transfer of the Fort Hood Wastewater Collection and Treatment System | |

# J4.11 Government Recognized System Deficiencies

**Table 10** provides a list of Government recognized deficiencies. The deficiencies listed may be physical deficiencies, functional deficiencies, or operational in nature. If the utility system is sold, the Government will not accomplish a remedy for the recognized deficiencies listed. The Offeror shall make a determination as to its actual need to accomplish and the timing of any and all such deficiency remedies.

Physical and functional deficiencies may require capital to be invested in the system. If any deficiency remedy requires a capital upgrade project, the capital upgrade project shall be proposed according to the following:

- Capital upgrade projects required to bring the system to standard shall be proposed under Schedule L-3.
- Capital upgrade projects required to replace system components shall be proposed in the first years of Schedule L-2 and the cost factored into Schedule L-1 for Renewals and replacements as part of CLIN AA.
- Transition costs shall be proposed as a one-time cost and shall be treated similar to a capital project and included in Schedule L-3.
- Improvements proposed in the operational component of the work shall be included in Schedule L-1 as part of CLIN AA.

**TABLE 10**
Wastewater System Deficiencies
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| System Component | Deficiency Description | Type of Project |
|---|---|---|

**TABLE 10**
Wastewater System Deficiencies
*Wastewater Collection and Treatment System, Fort Hood, Texas*

| System Component | Deficiency Description | Type of Project |
|---|---|---|
| Collection System Components [a] | Some components of the collection piping are beyond their projected useful life. Replacement of system components that are beyond their useful lives and are not performing as designed should be made. | Renewals and Replacement |
| 57104 - Wastewater treatment plant – facultative lagoon with chlorine contact basin | 1. Three inoperative aerators.<br>2. Insufficient depth caused by excessive sludge deposition.<br>3. Corroded/inoperative aerator controls. | Capital Upgrade |
| SCADA System | 1. System ineffective and out-of-date.<br>2. Instrumentation at data points requires upgrade.<br>3. Computer hardware/software upgrade is required. | Capital Upgrade |

Notes:
[a] The study of the wastewater collection system was limited to the physical condition of the piping system. Review of its hydraulic adequacy was not investigated beyond comments offered by system operators and maintenance staff. The wastewater collection system study sponsored by the US Army Corps of Engineers may identify piping shortfalls that will require significant capital to remedy. It may also identify that the system can be made more efficient by eliminating selected lift stations by making changes in the piping system. Readers of this report are strongly encouraged to review the results of the US Army Corps of Engineers work in order to fully understand conditions affecting the wastewater collection system at Fort Hood.