ATTACHMENT J3

Otis ANGB Wastewater System

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J3 Otis ANGB Wastewater System

J3.1 Otis ANGB Overview

Otis ANGB occupies a large portion of the Massachusetts Military Reservation (MMR) on upper Cape Cod that is leased from the Commonwealth of Massachusetts. The MMR also includes Cape Cod AS, other military facilities, and parts of the towns of Bourne, Falmouth, Mashpee, and Sandwich. The MMR occupies approximately 20,000 acres, has approximately 600 facility and other facilities totaling approximately 4,750,000 square feet, and has an on-Base population of approximately 1,988 weekday workers, 2,436 weekend workers and 1,800 housing residents.

The Commonwealth of Massachusetts began acquiring the MMR in 1935 and established Camp Edwards in 1940 as an Army National Guard training site. The airfield at Camp Edwards was completed in 1938 and was acquired by the Air Force in 1948. In 1953, the majority of facilities on the installation were transferred to the Air Force, with Camp Edwards being reduced to a small area in the northern corner of what was then Otis Air Force Base. The Base was officially de-activated in 1973, and control was passed to the 102nd Fighter Interceptor Wing. At the same time, the 26 Aviation Battalion and the Army Aviation Support Facility of the Massachusetts Army National Guard moved to Otis. Three major tenants, the Army National Guard, the Air National Guard, and the Coast Guard, occupy the Base today.

Projected future mission requirements have necessitated the renovation or demolition of older facilities at the Base. The Otis ANGB Capital Improvements Program (CIP) emphasizes consolidating existing facilities and maximizing their utilization as much as possible. Key projects are planned for Otis ANGB over the next 5 years that will increase the total square footage of buildings and facilities on Base by approximately 2 percent per year.

J3.2 Wastewater System Description

J3.2.1 Wastewater System Fixed Equipment Inventory

The Otis ANGB 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 plant, infiltration beds, composting facility, and meters. The actual inventory of items sold will be in the bill of sale 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 system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the wastewater system privatization are:

- Grease traps, oil water separators and storm drain systems
- Composted sludge

J3.2.1.1 Description

The wastewater utility system at Otis ANGB provides wastewater collection, onsite treatment, and onsite disposal of treated wastewater and sludge for Base facilities. Treated wastewater from the onsite wastewater treatment plant is disposed of in infiltration beds. The Base's disposal of wastewater in the onsite infiltration beds is permitted by the Massachusetts Department of Environmental Protection (DEP) in accordance with Permit No. SE #1-41 issued in 1993 for the Base's wastewater discharge facilities. This permit lists the allowable concentrations of treated wastewater constituents for disposal and limits the discharge volume of treated water to 0.36 million gallons per day (mgd). The sludge produced at the wastewater treatment plant is composted and disposed of onsite as a soil amendment. The composted sludge is permitted for use as a soil amendment in the DEP's September 8, 1998, permit issued to the Base (Compost Approval of Suitability, BRPWP29, Wastewater Treatment Plant Residuals, Sludge Composting Facility, Otis ANGB, Transmittal No. 102387). The permit approves the composted sludge as a Type 1 classification, which allows the compost to be used as a general soil amendment only on the MMR.

In the future the Otis ANGB wastewater system will receive wastewater from the newly constructed county jail, it will add a flow of 60,000 gallons per day.

The description of the Otis ANGB facilities provided below is divided into three parts: the wastewater treatment facility, the gravity sewer collection piping, and the wastewater pump stations.

The Base's wastewater is treated in a wastewater treatment plant that was completed in 1996. The plant design capacity is 0.43 mgd. The wastewater treatment plant is monitored by a new (2001) supervisory control and data acquisition (SCADA) system. The treatment processes include mechanical screening, grit removal, carousel oxidation ditches for aeration and nitrification, anoxic tanks for denitrification, final clarifiers, and final effluent sodium hypochlorite disinfection. The processes that manage solids generated from the wastewater treatment processes are aerated sludge holding tanks, dewatering by belt filter press, and static pile composting of dewatered solids. Composted solids are used as a soil amendment in on-Base landscaping. Final treated effluent is pumped through a 10.5-mile pipeline to infiltration beds located on the north side of the MMR. The infiltration system consist of four infiltration beds that cover approximately 6 acres, and seven groundwater monitoring wells (three pairs down gradient, one up gradient). Other treatment facilities include: the main treatment building that houses offices, a laboratory, a computerized SCADA system, the belt filter press, and maintenance facilities; a 250-kilowatt (kW) natural gas emergency generator; and the emergency generator/pump station building.

The sanitary wastewater collection system includes three main pump stations that serve sewer mains, and eight small lift stations that serve specific facilities. The three main pump stations (the Family Housing Unit No. 1 [Facility 7310], Beacon [Facility 7307], and Central

Heating sewage pump stations [Facility 7161]) were constructed as part of the new wastewater treatment plant project and were put into service in 1996. These three pump stations are of the same general design and size, varying only in pumping capacity. Each includes a wet well, a three-level precast concrete pump house, two dry well pumps, a 30-kW natural gas emergency generator, flowmeter, and associated mechanical and electrical equipment. The Family Housing Unit No. 1 station contains two 250-gpm, 7.5-hp pumps; the Beacon station contains two 680-gpm, 20-horsepower (hp) pumps; and the Central Heating station contains two 350-gpm 7.5-hp pumps. These pump stations are monitored by the SCADA system.

The small lift station systems (identified as Rocket Storage [Facility 7120] , Munitions Storage Area [Facility 7181], Alert Hangar Facility [Facility 7175], and Bomarc station, Coast Guard [Facility 3171], Chiefs Club [Facility 5214], Golf Course [Facility 3352] and Air Station [Facility 5202]) serve the associated facilities and discharge into the nearby sewer main. These stations are typical packaged, small submersible sewage lift stations that pump small sewage flows from the facilities they serve.

The wastewater collection system consists of ductile iron, cast iron, asbestos cement and vitrified clay piping and manholes. The average burial depth for buried infrastructure is five feet below ground surface. Approximately 5 percent of the collection system is underneath paved surfaces. The collection piping system was designed to serve a Base population of approximately 80,000 personnel.

J3.2.1.2 Inventory

Table 1 provides a general listing of the major wastewater system fixed assets for the Otis ANGB wastewater system included in the sale.

TABLE 1
Fixed Inventory
Sanitary Wastewater System Otis ANGB

Item	Size	Quantity	Unit	Approximate Year of Construction
	Main Base			
Piping				
Ductile iron pipe	12-in.	55,280	LF	1996
Cast iron pipe	12-in.	1,295	LF	1993
Asbestos cement pipe	4-in.	1,820	LF	1964
	6-in.	9,980	LF	1964
	8-in.	6,060	LF	1964
	10-in.	5,400	LF	1964
	12-in.	4,190	LF	1964
Vitrified clay pipe	4-in.	4,816	LF	1952
	6-in.	19,265	LF	1952
	8-in.	43,625	LF	1952
	10-in.	17,460	LF	1952
	12-in.	7,345	LF	1952

TABLE 1
Fixed Inventory
Sanitary Wastewater System Otis ANGB

Item	Size	Quantity	Unit	Approximate Year of Construction
	15-in.	16,780	LF	1952
	16-in.	5,400	LF	1952
	18-in.	9,330	LF	1952
	24-in.	3,080	LF	1952
Standard sanitary sewer manhole		462	EA	1956
Wastewater treatment facility				
Building		1	EA	1996
Structures		1	EA	1996
Process equipment		1	EA	1996
SCADA system		1	EA	2001
Lift/Pump Station				
Sewage Lift Station Beacon – Facility 7307				
Pumps, piping, controls, electrical	Large	1	EA	1996
Lift station wet well	Large	1	EA	1996
Lift station building: concrete block	Large	1	EA	1996
Sewage Lift Station Central Heating – Facility 7161				
Pumps, piping, controls, electrical	Large	1	EA	1996
Lift station wet well	Large	1	EA	1996
Lift station building: concrete block	Large	1	EA	1996
Sewage Lift Station Facility 7120				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well	Small	1	EA	1952
Sewage Lift Station – Munitions Storage Facility 7181				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well	Small	1	EA	1952
Sewage Lift Station – Alert Hangar Facility 7175				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well, excavation, backfill and concrete	Small	1	EA	1952
Sewage Lift Station – Bomarc				
Pumps, Piping, Controls, Electrical	Small	1	EA	1952
Lift Station Wet Well	Small	1	EA	1952
Sewage Lift Station Coast Guard Facility 3171				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well	Small	1	EA	1952

TABLE 1
Fixed Inventory
Sanitary Wastewater System Otis ANGB

Item	Size	Quantity	Unit	Approximate Year of Construction
Sewage Lift Station – Chiefs Club Facility 5214				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well	Small	1	EA	1952
Sewage Lift Station – Golf Course Facility 3352				
Pumps, piping, controls, electrical	Small	1	EA	1952
Lift station wet well, excavation, backfill and concrete	Small	1	EA	1952
Sewage Lift Station – Air Station Facility 5202				
Pumps, Piping, Controls, Electrical	Small	1	EA	1952
Lift Station Wet Well	Small	1	EA	1952
Infiltration System				
Infiltration Beds, including 20” sand, piping and splash pad	1.5 acres	4	EA	1993
Concrete splitter box	12’x12’x14’	1	EA	1993
Gate Valve	10”	4	EA	1993
Monitoring Wells		7	EA	1990
ANGB – Coast Guard Facilities				
Vitrified Clay Pipe	6-in.	4,020	LF	1964
Standard Sanitary Sewer Manhole	48-in.-diameter	14	EA	1964
ANGB – Coast Guard Housing				
Vitrified clay pipe	6-in.	19,230	LF	1960
	8-in.	5,985	LF	1960
	10-in.	6,165	LF	1960
	12-in.	2,900	LF	1960
Standard Sanitary Sewer Manhole	48-in.-diameter	14	EA	1960
Lift/Pump Station				
Sewage Lift Station Family Housing – Facility 7310				
Pumps, piping, controls, electrical	Large	1	EA	1996
Lift station wet well, excavation, backfill and concrete	Large	1	EA	1996
Lift station building: concrete block	Large	1	EA	1996

Notes: =

EA = each
in. = inch
LF = linear feet
mgd = million gallons per day

J3.2.2 Wastewater System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** 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 2
Spare Parts
Sanitary Wastewater System Otis ANGB

Qty	Description	Location	Maker
There are no spare parts included with the system to be privatized.			

TABLE 3
Specialized Vehicles and Tools
Sanitary Wastewater System Otis ANGB

Qty	Description	Location	Maker
There are no specialized vehicles or tools included with the system to be privatized.			

J3.2.3 Wastewater System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Sanitary Wastewater System Otis ANGB

Qty	Item	Description	Remarks
1	Set	G-tab Wastewater System Drawings	
		Manuals, Drawings, and Records	Stored in the Wastewater Treatment Plant

J3.3 Specific Service Requirements

The service requirements for the Otis ANGB wastewater system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Otis ANGB 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.

- The Contractor shall enter into a Memorandum of Understanding with the Otis ANGB Fire Department for fire protection of all facilities (waste water treatment plant and lift stations) included in the purchase of the utility. The Memorandum of Understanding shall be completed during the transition period and a copy provided to the Contracting officer.
- The Contractor shall abide by Otis ANGB fire protection requirements. The utility system purchased by the Contractor may include facilities (waste water treatment plant and lift stations) . These facilities may or may not include fire alarm systems. Where required by federal, state or local regulations, 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.
- Contractor shall notify CE and EMO of any hazardous material brought onto the MMR. Contractor must have an EPA manifest number prior to transporting any hazardous waste onto the MMR.
- Contractor shall abide by all MMR Cultural Resource Area Performance Standards and Environmental Performance Implementation Cantonment Area Standards.

J3.4 Current Service Arrangement

Otis ANGB currently provides its own wastewater collection and treatment services, using an on-Base treatment system. Wastewater flow at Otis ANGB in 2002 was approximately 60,301,285 gallons, with a peak monthly volume of 5,967,390 gallons in June. During 2002, the average daily wastewater discharge was 165,209 gallons per day and the peak daily discharge was 319,000 gallons per day. The discharge system is near capacity regarding the discharge flow permit condition.

The wastewater utility system at Otis ANGB is permitted by the Massachusetts DEP in conformance with the water pollution control regulations in the Code of Massachusetts Regulations (primarily 314 CMR). DEP has indicated that the transfer of ownership of the wastewater utility system would require the new owner to submit a letter to the DEP requesting approval of the new owner and the transfer of the existing permit to the new owner. The DEP also indicated that responding to an ownership transfer request would take approximately 1 month.

J3.5 Secondary Metering

There are currently no requirements for secondary metering of wastewater included in this contract. Any future wastewater secondary metering requested by the Government will be IAW Section C.3, *Future Secondary Meters*.

J3.6 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: 102nd CES/CD
   Address: Otis ANGB
   971 South Outer Road, Box 22
   Otis ANGB, MA 02542-5028

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: 102nd CES/CD
   Address: Otis ANGB
   971 South Outer Road, Box 22
   Otis ANGB, MA 02542-5028

3. Infiltration and Inflow Report. The I & I report will consist of a comparison of water production and wastewater collection. If required by Paragraph C.3, the Contractor shall submit an Infiltration and Inflow report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: 102nd CES/CD
   Address: Otis ANGB
   971 South Outer Road, Box 22
   Otis ANGB, MA 02542-5028

J3.7 Infiltration and Inflow (I&I) Projects

IAW Paragraph C.3, Utility Service Requirement, the following projects have been implemented by the Government for managing and monitoring I&I.

- There are no Infiltration and Inflow projects that are associated with the system to be privatized.

J3.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the MMR boundaries.

J3.9 Off-Installation Sites

No off-installation sites are included in the sale of the Otis ANGB wastewater system.

J3.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 5** provides a listing of service connections and disconnections required upon transfer.

TABLE 5
Service Connections and Disconnections
Sanitary Wastewater System Otis ANGB

Location	Description
There are no service connections or disconnections for the system to be privatized.	

J3.11 Government Recognized System Deficiencies

Table 6 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Otis ANGB wastewater system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AC.

TABLE 6
System Improvement Projects
Sanitary Wastewater System Otis ANGB

Project Location	Project Description
There are no government-recognized system deficiencies associated with the system to be privatized.	