

ATTACHMENT J2

Hickam AFB Water Distribution System

Table of Contents

HICKAM AFB WATER DISTRIBUTION SYSTEM..... I

J2 HICKAM AFB WATER DISTRIBUTION SYSTEM..... 1

J2.1 HICKAM AFB OVERVIEW 1

J2.2 WATER DISTRIBUTION SYSTEM DESCRIPTION..... 2

J2.2.1 Water Distribution System Fixed Equipment Inventory..... 2

 J2.2.1.1 Description..... 2

 J2.2.1.2 Inventory..... 4

J2.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools 7

J2.2.3 Water Distribution System Manuals, Drawings, and Records..... 7

J2.3 SPECIFIC SERVICE REQUIREMENTS..... 8

J2.4 CURRENT SERVICE ARRANGEMENT 10

J2.5 SECONDARY METERING 10

J2.5.1 Existing Secondary Meters..... 10

J2.5.2 Required New Secondary Meters 11

J2.6 MONTHLY SUBMITTALS 11

J2.7 WATER CONSERVATION PROJECTS 12

J2.8 SERVICE AREA 12

J2.9 OFF-INSTALLATION SITES 13

J2.9.1 Bellows AFS Overview 13

J2.9.2 Water Distribution System Description 14

 J2.9.2.1 Water Distribution System Fixed Equipment Inventory 14

J2.9.3 Specific Service Requirements..... 16

J2.9.4 Current Service Arrangement..... 16

J2.9.5 Secondary Metering..... 17

 J2.9.5.1 Existing Secondary Meters..... 17

 J2.9.5.2 Required New Secondary Meters..... 17

J2.10 SPECIFIC TRANSITION REQUIREMENTS..... 17

J2.11 GOVERNMENT RECOGNIZED SYSTEM DEFICIENCIES 18

List of Tables

Fixed Inventory, Hickam AFB..... 4

Spare Parts 7

Specialized Vehicles and Tools..... 7

Manuals, Drawings, and Records, Hickam AFB..... 7

Existing Secondary Meters 10

New Secondary Meters,..... 11

Fixed Inventory, Bellows AFS 15

Existing Secondary Meters 17

New Secondary Meters, Bellows AFS 17

Service Connections and Disconnections, Hickam AFB 17

System Deficiencies 18

J2 Hickam AFB Water Distribution System

J2.1 Hickam AFB Overview

Hickam Air Force Base (AFB) is located on the south-central coast of the Island of Oahu, about 2 miles west of the City of Honolulu. The total land area of Hickam AFB (including Fort Kamehameha, acquired from the U.S. Army in 1993) is 2,515.05 acres, and the Base contains approximately 1,238 buildings and other facilities occupying approximately 8,775,824 square feet. The Base population is more than 10,000 during daytime working hours, including approximately 5,000 Air Force and 2,500 Hawaii Air National Guard (HIANG) personnel; many of these personnel and their families also live at the Base.

Hickam AFB is situated immediately south of the Pearl Harbor Naval Reservation, and is bounded on the west by Pearl Harbor and on the south by the Pacific Ocean (Mamala Bay). The Base shares runways and taxiways with Honolulu International Airport (HIA), which is adjacent to the eastern border of the Base. Hickam AFB is situated on a relatively flat expanse of land where elevations range from zero to only 20 feet above mean sea level; most of the Base is at an elevation of approximately 10 feet. Housing, administration, aircraft maintenance and transport facilities, and support facilities have resulted in the intensive development of the Base.

The federal government purchased the property currently occupied by Hickam AFB in 1935; the land was previously used for agriculture and a fish pond. Hickam Field was activated in 1938 and redesignated as Hickam AFB in 1948. Since that time the Base has served as home to the Air Transport Command (ATC) and its successors, the Military Air Transport Service (MATS), the Military Air Command (MAC), and today's Air Mobility Command (AMC). Base operations have supported the movement of troops and materials from the mainland to the Far East, with peaks of activity during World War II and the Korea and Vietnam conflicts.

Hickam AFB is now owned and operated by the 15th Air Wing (AW), whose primary mission is to support Headquarters Pacific Air Forces (PACAF). The Base is home to the HQ PACAF; 715th Air Mobility Operations Group; HIANG's 154th Wing and 201st Combat Communications Group; Air Force Reserves; and the Army Air Force Exchange Service. 15 AW has also supported the Apollo Astronauts in the 1960s and 1970s, the Eniwetok Atoll Radioactive Cleanup Operation from 1977 to 1980, and the National Aeronautical and Space Administration's (NASA's) space shuttle missions in the 1980s.

The land occupied by Hickam AFB will undergo development in the near future. Major changes include the arrival of several C-17 aircraft. New C-17 facilities will include three large-sized hangars, numerous support facilities, and an expansion of the aircraft parking ramp. Other future on-base projects include upgrades and replacements of the electrical distribution system, improvements to Military Family Housing (MFH), a new Joint Mobility Complex, a consolidated munitions facility, a ramp expansion, and several AT/FP upgrades.

J2.2 Water Distribution System Description

J2.2.1 Water Distribution System Fixed Equipment Inventory

The Hickam AFB water distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, 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 distribution 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 water distribution system privatization are:

- U.S. Navy owned piping, valves and meters
- Irrigation systems
- Privatized Capehart and Earhart Housing lines which are less than 6" in diameter including connection to the main.

J2.2.1.1 Description

The water utility system at Hickam AFB was originally constructed in the late 1930's and 1940's, and has since been modified by numerous additions and renewal and replacement projects.

Potable water to Hickam AFB is supplied by the U.S. Navy Public Works Center (PWC), Pearl Harbor. The source of water is groundwater drawn from three Navy-owned water supply facilities: Waiawa, Red Hill, and Halawa. These facilities have a combined capacity of 36 million gallons per day (mgd). The water is chlorinated and fluoridated before being stored and distributed for Navy and Air Force usage at the Pearl Harbor Naval Reservation, Moanalua, Aliamanu, Makalapa, Pearl City, and Hickam AFB.

Water is distributed from the Navy PWC Pearl Harbor water supply facilities to Hickam AFB by 30-inch transmission mains.

There are six metered connections to the Navy PWC potable water system that supply water to the Base's potable water distribution system. Three of the meters are Air Force-owned 18-inch turbine meters with a telescopic register and totalizer, installed in below-grade concrete vaults. The other three meters are Navy owned 12-inch Hershey compound meters that have low-, medium-, and high-flow registers. These meters are installed in belowgrade concrete vaults. A seventh metered connection is Air Force owned, and is exclusively used for irrigation. The meter for irrigation is not included in this Utilities Privatization RFP.

The potable water distribution system also includes one connection to the public water system of the Board of Water Supply of the City and County of Honolulu located near the west end of taxiway "F" and the Hickam AFB property line. This connection formerly provided water to the Fort Kamehameha portion of Hickam AFB, but is now only a backup supply source; it has been valved off and closed.

The Hickam AFB distribution network main piping ranges in size from 4 to 30 inches in diameter, and is constructed of polyvinyl chloride (PVC), cast iron, copper, galvanized steel, and asbestos cement. The water lines are approximately 3 feet below grade. Tracer wire is installed with the PVC pipe. Currently there is no water storage on the Base.

The water utility system at Hickam AFB is classified as a consecutive distribution system connected to the Navy PWC Pearl Harbor's regulated potable water supply. The BioEnvironmental Engineering staff at Hickam AFB monitor the water quality at rotating sampling locations. The water quality at Hickam AFB is in compliance with HDOH standards, and no problems have been identified with the Navy PWC Pearl Harbor's water supply.

Pressure and flow capacities at Hickam AFB are adequate.

The water distribution system inventory has been separated into two sections: Main base and housing. Hickam AFB housing consists of privatized and non-privatized housing. The non-privatized housing is included with the water distribution inventory and consists of all mains and laterals which are associated with the housing up to the point of demarcation which is at the water meter, backflow device, or valve (closest apparatus to the exterior of the structure). If no water meter, backflow device or valve exist, then the point of demarcation is where the service line enters the structure.

The water distribution inventory does not include the inventory for the privatized housing areas: Capehart Housing and Earhart Housing. Therefore all lines which service Capehart and Earhart Housing which are less than 6" in diameter are not included in the system to be privatized.

Both the non-privatized and the privatized housing area's are fed from the Hickam AFB mains and do not receive a separate service connection from the commodity supplier. Of the total inventory being privatized Approximately 44 percent of the water distribution system inventory provides service for non-privatized military housing at Hickam AFB.

J2.2.1.2 Inventory

Table 1 provides a general listing of the major water distribution system fixed assets for the Hickam AFB water distribution system included in the sale.

TABLE 1
Fixed Inventory, Hickam AFB
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
Main Base				
Asbestos Cement Pipe				
	4	1,950	LF	1959
	6	46,850	LF	1959
	8	38,850	LF	1959
	10	1,800	LF	1959
	12	16,200	LF	1959
	18	2,900	LF	1959
Cast Iron Pipe				
	6	1,400	LF	1941
	12	1,650	LF	1941
	30	550	LF	1941
Copper Pipe				
	1	28,920	LF	1941
	2	14,675	LF	1941
	3	21,015	LF	1941
	6	900	LF	1941
Galvanized Steel Pipe				
	2	2,250	LF	1941
PVC Pipe				
	4	2,560	LF	1995
	8	6,755	LF	1995
	12	37,550	LF	1995
	18	5,600	LF	1995
Gate Valves				
	4.0	13	EA	1959
	6.0	90	EA	1959
	8.0	98	EA	1959
	10.0	13	EA	1959

TABLE 1
Fixed Inventory, Hickam AFB
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
	12.0	58	EA	1959
	18.0	8	EA	1959
Fire Hydrants		286	EA	1959
Meters				
Turbine Meters		3	EA	1985
Service Meters		24	EA	1985
Meter Building 210	Approx. 120 S. F.	1	EA	1985
Concrete Vault (size estimated)	6'x6'x6'	3	EA	1985
Housing				
Asbestos Cement Pipe				
	4.0	350	LF	1959
	6.0	28,000	LF	1941
	6.0	23,055	LF	1959
	8.0	21,170	LF	1941
	8.0	2,625	LF	1959
	8.0	15,900	LF	1974
	12.0	1,000	LF	1941
	12.0	6,200	LF	1959
Cast Iron Pipe				
	18.0	1,800	LF	1959
	18.0	1,850	LF	1941
Copper Pipe				
	1.0	4,670	LF	1964
	1.0	3,300	LF	1959
	1.0	1,320	LF	1974
	1.0	8,490	LF	1941
	2.0	2,335	LF	1964
	2.0	3,300	LF	1959
	2.0	3,050	LF	1941

TABLE 1
Fixed Inventory, Hickam AFB
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
	2.5	1,600	LF	1959
	3.0	2,335	LF	1964
Galvanized Steel Pipe				
	2.0	300	LF	1964
	2.0	400	LF	1959
PVC Pipe				
	4.0	40	LF	2000
	6.0	600	LF	1996
	6.0	3,700	LF	2000
	6.0	19,900	LF	1998
	8.0	1,400	LF	1996
	8.0	12,935	LF	2000
	8.0	3,350	LF	1995
	8.0	5,310	LF	1998
	10.0	1,400	LF	1996
	12.0	1,300	LF	1996
	12.0	1,750	LF	1998
Gate Valves				
	4.0	2	EA	1959
	6.0	34	EA	1964
	6.0	67	EA	1959
	8.0	38	EA	1964
	8.0	74	EA	1959
	8.0	10	EA	1970
	12.0	4	EA	1964
	12.0	18	EA	1959
Fire Hydrants				
		62	EA	1964
		36	EA	1959
		20	EA	1974
		50	EA	1941

TABLE 1
Fixed Inventory, Hickam AFB
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
------	------------	----------	------	----------------------------------

Notes:

EA = each

in. = inches

LF = linear feet

PVC = polyvinyl chloride

J2.2.2 Water Distribution 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
Water Distribution System Hickam AFB

Qty	Item	Make/Model	Description	Remarks
There are no spare parts with the system to be privatized.				

TABLE 3
Specialized Vehicles and Tools
Water Distribution System Hickam AFB

Description	Quantity	Location	Maker
Electro Fusion computer	1	Building 4016	Central Plastics
Fusion Machine model 810	1	Straightline Shed	Christie Manufacturing
Guillotine saw	1	Building 4016	Wachs

J2.2.3 Water Distribution 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, Hickam AFB
Water Distribution System

Qty	Item	Description	Remarks
1	Drawings	Base Comprehensive Plan, Water Distributions System (G-tab)	
1	Drawings	Bellows AFS Comprehensive Plan – Water Distribution System	
1	Fire hydrant records	Records on types, maintenance performed and location of hydrants.	Located Building 4016
1	Valves records	Records on maintenance performed and location of valves.	Located Building 4016
1	Backflow Prevention records	Records on types, test results and location	Located Building 4016
1	Pow-R-Drive 2 valve operator Manual	Manual of operation	Located Building 4016
1	Fusion machine model 810 manual	Manual of operation	Located Building 4016
1	Straightline drilling machine manual	Manual of operation	Located Building 4016
1	Subsurface interface radar manual	Manual of operation and software	Located Building 4016

J2.3 Specific Service Requirements

The service requirements for the Hickam AFB water distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Hickam AFB water distribution 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.

1. Contractor will not commence any activities until any required permits are formally approved (e.g., construction), and will immediately notify the Base of any contractor activity that may constitute a permit violation. Contractor will notify the Base and obtain the Base's prior approval for all new, modified, or decommissioned pollution sources or regulated activities on the installation used by contractor or its contractors. Examples include, but are not limited to, well closures, tank removals, and use of temporary sources such as generators.
2. Contractor will provide the Base, in advance and in a timely manner, any information that relates to contractor's activities that might have an impact upon the installation's air conformity status. Contractor will provide the Base with advance notice of any changes in operations or conditions that might result in increased air emissions in sufficient time to allow the Base to obtain any necessary permits, or permit modifications. Contractor will provide a timely and complete response to the Base's requests for information.
3. Contractor will immediately report all hazardous waste or hazardous material releases to the Base. Contractor will fully cooperate with any emergency response in accordance

with the Base's plans and directives. Contractor is responsible for the remediation and disposal of his hazardous wastes and hazardous material releases and the costs associated with such removal.

4. Contractor will participate in exercises conducted by the Base. These will be identified by Hickam AFB.
5. For all fines and penalties for which contractor is determined to be responsible and which are paid directly by the Base, contractor shall promptly transfer funds to the Base for payment of such fines or penalties. Reimbursable, as required, for payment of fines or penalties.
6. Contractor will coordinate and get approval (AF Form 103 Base Civil Engineering Work Clearance Request) from the Base before proceeding with any excavation.
7. Contractor will notify the Base Bioenvironmental Engineering of any water breaks, repairs, or replacement of the water system.
8. Contractor will be responsible for excavation/exposing water breaks near the mains to determine responsibility of repairs.
9. Contractor will notify the Base of any scheduled or unscheduled outages (water) . For scheduled outages the Contractor will notify all affected occupants/users, Civil Engineering and Public Affairs Office prior to proceeding. For unscheduled outages the contractor will provide an operational report in accordance to AFI 10-206/PACAFSUP1 and when practical, notify all affected occupants/users.
10. Contractor will provide alternate water source to affected facilities, if a water outage caused by a failure Contractor's water system distribution system is greater than 8 hours.
11. Contractor will notify the Base (Security Forces, Medical Group, Fire Dept and Civil Engineering) of any road closures.
12. Contractor will be responsible for disconnecting Contractor's utilities for facilities to be demolished and insure no disruption of utilities to other adjacent facilities.
13. The Contractor will CC the base on all correspondence regarding environmental enforcement actions. The Contractor shall provide the Contracting Officer with a copy of any and all testing information and reports related to the water distribution system that are submitted to any agency.
14. Contractor shall contact the owner of the land through which Contractor's utility line passes through to establish an easement or right-of-way for any part of the utility system that is on Non-AF land.
15. Contractor shall furnish information of any undertaking involving ground disturbance or alterations to a building/structure to the Environmental Planning Office (15 CES/CEVP) in order for the Air Force to submit a Section 106 document to the Hawai'i State Historic Preservation Office. If historic resources are identified in the area, the grantee shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity without an archaeological monitor or historic architect to oversee such actions.

Contractor shall pay for all historic preservation compliance issues associated with the undertaking, such as archaeological monitoring.

In the event such items are discovered inadvertently on the Premises without an archaeological monitor, Contractor shall cease its activities at the site (30 days for human remains) and immediately notify the Base Historic Preservation Officer and protect the site and the material from further disturbance until said officer gives clearance to proceed. Any costs resulting from this delay shall be the responsibility of Contractor.

J2.4 Current Service Arrangement

Hickam AFB currently receives potable water (commodity supply) from the U.S. Navy Public Works Center, Pearl Harbor. The Hickam AFB water utilities are currently maintained by the Hickam AFB Utilities Shop and major system upgrades are performed by the Hickam AFB Utilities Shop.

During 2002, the annual water consumption at Hickam AFB was approximately 1,931,345 kGals, with a maximum monthly consumption of 222,980 kGals during the month of October. The lowest monthly consumption for the year was approximately 138,761 kGals in December.

J2.5 Secondary Metering

J2.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3.3 and J2.6 below.

TABLE 5
Existing Secondary Meters
Water Distribution System Hickam AFB

Meter Location	Meter Description (Type)
Building 1265 Credit Union, 2 meters	Compound meter
Building 1257 First Hawaiian Bank, 2 meters	Compound meter
Building 2093 Commissary (rear) A & B, 2 meters	Compound meter
Building 2093 Commissary – Mini Com A, 1 meter	Nutating-disk meter
Building 2093 Commissary (front), 1 meter	Nutating-disk meter
Building 2093 Commissary – Mini Com B, 1 meter	Nutating-disk meter
Building 3568 FAA – Fort Kam, 1 meter	Nutating-disk meter
Building 45 Army ID Lab, 1 meter	Nutating-disk meter
Building 45 Army Mortuary, 1 meter	Nutating-disk meter
Building 601 Hickam Elementary School, 1 meter	Compound meter

TABLE 5
Existing Secondary Meters
Water Distribution System Hickam AFB

Meter Location	Meter Description (Type)
Building 1304 Mokulele School, 1 meter	Nutating-disk meter
Outside Mokulele School, 1 meter	Nutating-disk meter
Building 1725 GSA, 1 meter	Nutating-disk meter
Building 1726 GSA, 1 meter	Nutating-disk meter
Building 559 Clinic , 1 meter	Nutating-disk meter
Building 240 Porter Ave. (roadway) , 1 meter	Nutating-disk meter
Building 210 Fox Blvd. (housing) , 1 meter	Nutating-disk meter
Building 418 Porter Ave., 1 meter	Nutating-disk meter
Building 3589, Snack Bar, EWA, 1 meter	Compound meter
Building 3587, Snack Bar, DH, 1 meter	Compound meter
Building 7474, Lift Station (Earhart Housing), 1 meter	Compound meter
Hickam Meter No. 78-14-105	Turbine meter
Hickam Meter No. 78-18-103	Turbine meter
Hickam Meter No. 78-18-102	Turbine meter

J2.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3.3 and J2.6 below.

TABLE 6
New Secondary Meters,
Water Distribution System Hickam AFB

Meter Location	Meter Description
The government does not require any new secondary meters.	

J2.6 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: 15 CES/CERU
Address: 75 H Street, Hickam AFB, HI 96853-5233
Phone number: (808) 449-2628

2. **Outage Report.** The Contractor's monthly outage report 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: 15 CES/CERU
Address: 75 H Street, Hickam AFB, HI 96853-5233
Phone number: (808) 449-2628

3. **Meter Reading Report.** The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

Name: 15 CES/CERU
Address: 75 H Street, Hickam AFB, HI 96853-5233
Phone number: (808) 449-2628

J2.7 Water Conservation Projects

IAW Paragraph C.3, Utility Service Requirement, the following projects have been implemented by the Government for conservation purposes.

1. Energy Savings Performance Contract implemented water conservation measures including installation of aerators, low-flow showerheads, and low gallons per flush toilets in Quartermaster Buildings and Education Center.

J2.8 Service Area

For Hickam AFB: IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Hickam AFB boundaries.

For Bellows AFS: IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Bellow AFS boundaries and includes utility easements through lands owned by others: the United States Marines, GSA Fee Control lands and the state of Hawaii.

J2.9 Off-Installation Sites

Bellows AFS is included in the sale of the Hickam AFB water distribution system.

J2.9.1 Bellows AFS Overview

Bellows AFS is located on the eastern coast of the Island of Oahu, approximately 30 miles east of Hickam AFS. As of April 1, 2003, the Station occupies 486.54 acres and contains approximately 104 buildings and other facilities with a total of approximately 133,999 square feet. The Station has a year-round staff of approximately 100 (both Air Force personnel and civilians), while up to 6,000 people use the Station for recreational purposes on a daily basis.

Bellows AFS is bordered to the north-northwest by the Keolu Hills, to the south-southwest by the Koolau Mountains, and to the east by Waimanalo Bay (the Pacific Ocean). Much of the Station is relatively flat, at an elevation of 25 feet or less above mean sea level, but the Station's northern and western extents include hills and ridgelines at elevations up to approximately 400 feet above mean sea level.

Bellows AFS was originally established in 1917 as the Waimanalo Military Reservation, and was renamed Bellows Field in 1933. Bellows Field was greatly expanded during World War II, after which it was transferred from the Army to the Air Force and redesignated Bellows AFS. From the late 1940s through the mid-1950s, the installation was used primarily as a military recreation area and for U.S. Marine Corps (USMC) field training exercises. These uses continue to the present. A communications relay complex was constructed in the late 1950s, whereupon the installation was redesignated Bellows AFS and its runways were closed. The operation and maintenance of this communications complex defined the primary mission of Bellows AFS through the mid-1990s, when its functions were transferred to other Air Force and Navy facilities in Hawaii. HIARNG relocated the Hawaii Military Academy from Fort Ruger to Bellows AFS in 1987. They just recently constructed a new facility on the Marine Corps land adjacent to Bellows AFS. Other non-Air Force tenants at the Station include the University of Hawaii (for its atmospheric testing research program) and the National Marine Fisheries Service and Montana State University (which conduct wildlife research).

Bellows AFS is currently operated by 15th Air Wing (AW), Detachment 1, 15th Mission Support Group. The installation is currently used primarily for military training exercises and military and civilian recreation. Nearly two-thirds of the installation is used for military training; USMC units train at Bellows AFS an average of 240 days per year. Bellows AFS also supports training exercises for Army and Navy units, and limited training for the State of Hawaii Department of Public Safety. The northern portion of the Bellows AFS beachfront is designated the "Bellows Recreation Center" and is restricted to use by active duty, reserve, guard, and retired military personnel and DoD civilian employees and their dependents and guests. This area is open throughout the year and is heavily used. The southern beachfront area, designated "Bellows Field Beach Park," is used for military training on weekdays and is open for public use on weekends and holidays. More than 200,000 people use the Bellows AFS beaches each year.

Several new recreational facilities are planned for Bellows AFS during the next 5 years that will increase the total square footage of buildings and other facilities at the Station by approximately 6.0 percent.

J2.9.2 Water Distribution System Description

J2.9.2.1 Water Distribution System Fixed Equipment Inventory

The Bellows AFS water distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system connects to the commodity supplier and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, 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 distribution 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 water distribution system privatization are:

- Interior backflow preventers
- Irrigation systems

J2.9.2.1.1 Description

The original water distribution system at Bellows AFS was constructed in 1941. Additions and renewal and replacement projects have since modified the system. The current system includes two metered connections (6-inch and 12-inch) to mains of the Board of Water Supply of the City and County of Honolulu. The 6-inch connection is kept only as an emergency waterline back-up, therefore, only one metered connection remains active.

The Board of Water Supply currently supplies water to Bellows AFS from groundwater sources.

The water distribution system at Bellows AFS provides water service to approximately 65 buildings. Portions of the main distribution line were replaced in 1994 and 1999, and the work included the new 12-inch connection to the Board of Water Supply's main that replaced the existing 6-inch connection. Distribution pipeline sizes range up to 12 inches in diameter and are constructed of transite and cast iron (the older piping) and PVC (the newer piping). The average burial depth of piping at Bellows AFS is 3 feet below grade. Tracer wire is installed with the PVC pipe.

The water utility system at Bellows AFS is classified as a single service connection to a regulated public utility (the self-regulated Board of Water Supply of the City and County of Honolulu). Therefore, no permit is required for the system, operator certification is not required, and no regulatory issues apply to transfer of the system to a new owner. With

regard to health and safety issues, the water quality of the system is regulated by HDOH's Safe Drinking Water Branch, and BioEnvironmental Engineering staff at Hickam AFB monitor the water quality at rotating sampling locations. The water quality is in compliance with HDOH standards, and no problems have been identified with water in the onsite distribution system or with the water provided by the Board of Water Supply.

J2.9.2.1.2 Inventory

Table 7 provides a general listing of the major water distribution system fixed assets for the Bellows AFS water distribution system included in the sale.

TABLE 7
Fixed Inventory, Bellows AFS
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
PVC Pipe				
	8	2,400	LF	1994
	12	5,000	LF	1999
Ductile Iron Pipe				
	1	630	LF	1941
	2	270	LF	1941
Cast Iron Pipe				
	2	1,300	LF	1941
	2.5	1,230	LF	1941
	3	1,300	LF	1941
	6	10,250	LF	1941
Copper Pipe				
	0.75	600	LF	1941
Transite Pipe				
	4	4,600	LF	1941
	6	3,000	LF	1941
	8	16,050	LF	1941

TABLE 7
Fixed Inventory, Bellows AFS
Water Distribution System

Item	Size (in.)	Quantity	Unit	Approximate Year of Construction
Air Release Valves				
(size estimated based on main)	4	5	EA	1941
	6	15	EA	1941
	8	21	EA	1941
	12	6	EA	1941
Service Valves	2	75	EA	1941
Fire Hydrants		25	EA	1998

Notes:

EA = each

in. = inches

LF = linear feet

PVC = polyvinyl chloride

J2.9.3 Specific Service Requirements

The service requirements for the Bellows AFS water distribution system are as defined in the Section C of the RFP, *Description/Specifications/Work Statement*. The following requirements are specific to the Bellows AFS water distribution 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.

- Specific service requirements are the same as those listed for Hickam AFB Section J2.3.

J2.9.4 Current Service Arrangement

Bellows AFS currently receives potable water (commodity supply) from the Board of Water Supply of the City and County of Honolulu. Water usage at Bellows AFS fluctuates greatly because of the widely varying population at the Station, which ranges from approximately 100 onsite staff to 6,000 recreational users. During 2002, the annual water consumption at Bellows AFS was approximately 27,631 kGals, with a maximum monthly consumption of 3,367 kGals during the month of October. The lowest monthly consumption for the year was approximately 958 kGals in April.

New recreational facilities are planned for Bellows AFS during the next 5 years that will increase the total square footage of buildings and other facilities at the Station by approximately 6.0 percent. However, the current system has adequate capacity to accommodate this future system demand.

J2.9.5 Secondary Metering

J2.9.5.1 Existing Secondary Meters

Table 8 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Sections C.3 of the RFP and J5.6 below.

TABLE 8
Existing Secondary Meters
Water Distribution System

Meter Location	Meter Description (Type)
The government has no secondary meters to transfer with the system.	

J2.9.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 9**. New secondary meters shall be installed IAW Section C.13 of the RFP, *Transition Plan*. After installation, the Contractor shall maintain and read these meters IAW Sections C.3 of the RFP and J5.6 below.

TABLE 9
New Secondary Meters, Bellows AFS
Water Distribution System

Meter Location	Meter Description
The government does not require any new secondary meters.	

J2.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 10** provides a listing of service connections and disconnections required upon transfer.

TABLE 10
Service Connections and Disconnections, Hickam AFB
Water Distribution System

Location	Description
The government does not require any service connections or disconnections during the transition period.	

J2.11 Government Recognized System Deficiencies

Table 11 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Hickam AFB and Bellows AFS water distribution 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 AB.

Note: Further Project information will be in the Utilities Privatization Technical Library.

TABLE 11
System Deficiencies
Water Distribution System Hickam AFB

Project Number	Project Title, Description, and Remarks	Justification, Impact, and Remarks
KNMD 961085	Hickam AFB: M/R Waterlines Ft Kam Rd / Bishop Pt / Vickers/Motor Pool	
	Hickam AFB: Repair 2,853 LF of 12" ACP and 622 LF of 8" waterline from Bldg 1095 to Bldg 3002. Replace waterline along Vickers Ave. and Fort Kamehameha Road near Bishop Point.	Waterline is over 55-yr old and numerous breaks have occurred. This line part of the East loop which transmits water to Ft. Kam hsg, HIANG, and recreation areas on the south side of the base.
KNMD 023002	Hickam AFB: Upgrade Water Distribution System	
	Replace 6,100 LF of 18" CIP main, including branch connections, along Hangar Ave. between meter house #2 (Bldg 210) and B St. and 5,800 LF of 8" ACP main along Vickers, between Fox Blvd. and First St. Consider trenchless technology if economically feasible.	MILCON project to include requirements from O&M projects KNMD 874100, 863104 and 852100 (3 phases for Hangar Ave.) and KNMD01012-1/-2/-3 (3 phases for Vickers).
KNMD 001042	Hickam AFB: Repair Waterline, Ft. Kamehameha/HIANG area	
	Repair 6" main in the Fort Kamehameha / Battery Hawkins / HIANG areas. Repair 10" main along Worchester Ave. from Ft. Kam housing, past Army ID Lab and complete the loop in the HIANG area. Eliminate dead-ends on the mains.	The lines are severely corroded and leaks. Past tie-ins and repairs work on the lines found crumbling pipes. Completing the loop will allow backfeed during pipe breaks and increase fire flow to the area.
KNMD 981063	Hickam AFB: M/R Water/Sewer/Storm System (IDIQ)	

TABLE 11
System Deficiencies
Water Distribution System Hickam AFB

Project Number	Project Title, Description, and Remarks	Justification, Impact, and Remarks
	Provides for repair of sewer, water, and storm drain systems by IDIQ contract.	Sewer and waterlines are old and numerous breaks occur which need to be repaired immediately. The shops have identified several segments needing rehab. Includes pipes, valves, fittings, connections, fire hydrants, thrust blocks, etc. Also includes trenchless technologies.
KNMD 841100	Hickam AFB: Repair Waterline, Halehaka Bridge	
	Repair approximately 600 LF of 8" ACP waterline along Halehaka Bridge including 2 valves and valve boxes.	Waterline is abandoned and dead-ended due to past leaks. The line served as one of the loops that provide water to the airmen dormitory area, bowling center, POL tank farm, and apron fire hydrants. Repair is needed to restore the distribution loop and increase reliability of pressure and fire flow to these areas.
KNMD 907103	Hickam AFB: Construct Waterline Across Taxiway HA	
	Construct waterline across Taxiway HA from fire hydrant no. 268 to no. 176 to connect nose dock area with transient parking area and complete system loop in that section. The looping would increase fire flow pressure and improve water circulation.	This project would complete the water distribution loop in this area and eliminate dead ends at the fire hydrants for aircraft parking area along TW HA. See Potable Water System Study, Feb 1986.
KNMD 918101	Hickam AFB: Construct Waterline, Motor Pool	
	Construct approximately 400 feet of 8 inch waterline in motor pool area to complete the branch loop serving the motor pool and the Fuel System Maintenance Dock (Bldg 3004). The loop will increase fire flows for the fire hydrants protecting the aircraft maint facility.	This project would complete the water distribution loop in this area. See Potable Water System Study, Feb 1986.
KNMD 941031	Hickam AFB: POL Fire Hydrant	Install fire hydrants in POL Area 11.
KNMD 021041	Upgrade Water Distribution System, POL Area 11, HAFB	
	Construct waterline in POL Area 11.	This project would complete the water distribution loop in the area.
KNMD 994005	Hickam AFB: Replace Waterlines and Hydrants, MFH	
	Replace waterlines and fire hydrants in the New Ohana Nui, Fort Kamehameha (8" CIP from WWTP), Onizuka, Old Ohana Nui MFH areas.	Waterlines are old and fire hydrants are leaking. See Analysis of Military Family Housing Infrastructure and Facilities Report.

TABLE 11
System Deficiencies
Water Distribution System Hickam AFB

Project Number	Project Title, Description, and Remarks	Justification, Impact, and Remarks
KNMD 004005	Hickam AFB: Replace Waterlines and Hydrants, MFH	
	Replace waterlines and fire hydrants in the Capehart MFH area. This project accomplishes the work prior to whole house renovation work on the homes.	Waterlines are old and fire hydrants are leaking. See Analysis of Military Family Housing Infrastructure and Facilities Report.
KNMD 014005	Hickam AFB: Repair Waterline and Hydrants, Beard Ave.	
	Repair waterline along Beard Ave.	Waterlines are old and fire hydrants are leaking. See Analysis of Military Family Housing Infrastructure and Facilities Report.
KKNMD 024005	Hickam AFB: Replace Waterlines and Hydrants, MFH	
	Replace waterlines and fire hydrants in the Capehart MFH area.	Waterlines are old and fire hydrants are leaking. See Analysis of Military Family Housing Infrastructure and Facilities Report.
KMND 034005	Hickam AFB: M/R Waterline/Hydrants, MFH	
	Replace waterlines and fire hydrants	
KNMD 044005	Hickam AFB: M/R Waterline/Hydrants, MFH	
	Replace waterlines and fire hydrants	
BFMV 011044	Bellows AFS: Repair Waterline, BAFS	
	Replace approximately 2,500 LF of 8 inch waterline from Tinker Ave. to CE Compound Area.	Numerous waterline breaks have occurred.