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**Contract Awarded by the Water and Sewer Authority
Was Poorly Monitored and Managed**

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EXECUTIVE SUMMARY

PURPOSE

Pursuant to Section 455 of Pub.L.No. 93-198¹ and a request from Council Chairman Linda W. Cropp, the District of Columbia Auditor examined the management of and performance under a contract awarded by the District of Columbia Water and Sewer Authority (WASA) to United Metering, Inc. (UMI). The contract required UMI to test, calibrate, repair, and replace cold water meters 3 inches and larger, and train WASA's meter testing personnel. The Auditor also examined a subsequent task order awarded by WASA to O'Brien & Gere Engineers, Inc. (OBG) for consultant services to "assist with the large meter inspection project."

CONCLUSION

The Auditor found that WASA officials failed to adequately monitor performance under the contract awarded to UMI to test, calibrate, repair, and replace cold water meters 3 inches and larger. Despite the fact that the contract awarded to UMI specified that WASA would inspect both UMI's completed work or work in progress and would appoint an inspector for purposes of quality control checks throughout the duration of the contract, the Auditor found no evidence that WASA performed any discernible monitoring of the UMI contract. Instead, WASA issued a task order to OBG to perform work that WASA had already paid UMI to perform.

The failure to monitor UMI's performance resulted in WASA officials not ensuring that UMI satisfactorily met all of the contract terms, conditions, and requirements and determining that the work performed by UMI was of an acceptable quality. WASA's lack of monitoring efforts resulted in an inefficient use of WASA resources which included the following: (1) payment of approximately \$488,000 to OBG for services that WASA had already paid UMI \$347,445 to perform; and (2) payments to OBG for services that could have been performed by WASA's Meter Operations Division (MOD) staff.

The failure of WASA officials to monitor UMI's performance resulted in WASA not receiving all of the services UMI was to provide under the contract. The WASA/UMI contract specified that UMI would guarantee and warrant its work for one year from the date of WASA's

¹See the District of Columbia Home Rule Act, as amended, Pub.L.No. 93-198, Section 455 (b), D.C. Code, 2001 Ed. §1-204.55(b).

acceptance of each UMI completed test, repair, and installation. Yet, WASA officials did not implement the appropriate measures to enforce this provision of the contract. WASA officials did not investigate or otherwise determine whether UMI was responsible for re-testing or repairing meters which OBG and WASA's MOD staff found to be deficient within one year of work UMI performed on the same meters. As a result, WASA's MOD staff may have repaired meters that UMI was paid to repair.

UMI did not data log the quantity of meters which the contract required. Data logging meters was an important function for determining the appropriate size meter to be installed. UMI's failure to perform this important function may have resulted in WASA purchasing and installing meters that are not the appropriate size. According to the American Water Works Association (AWWA), installing meters that are not appropriately sized would be unnecessarily expensive to the purchaser, heavy to handle, and less accurate under overall usage conditions. The Auditor notes that WASA awarded a contract to UMI to replace all meters in November 2001-just five months after the testing, repair and replacement contract ended.

The Auditor also found that UMI obtained approximately 20 meters from WASA's inventory that were not installed, returned to WASA, or otherwise accounted for by UMI. The Auditor estimated that the replacement of the 20 meters would cost WASA approximately \$40,000.

Finally, the Auditor found that the contract WASA awarded UMI duplicated the responsibilities of WASA's MOD. Although the contract was not awarded as a privatization contract it appeared to take the course of a privatization or contracting out. WASA's procurement regulations did not contain rules and regulations for privatizing or contracting out services performed in-house.

The Auditor notes that WASA's poor contract administration and monitoring discussed in this audit may be a reflection of similar conditions that exist in other contracts which WASA manages.

FINDINGS

1. WASA officials failed to monitor UMI's performance.

- a. The services OBG was contracted to perform duplicated some of the services that WASA paid UMI to perform.
 - b. Employees of WASA's MOD could have performed the services that OBG was paid to perform.
2. WASA officials failed to enforce UMI's one year guarantee and warranty under the contract.
3. WASA officials did not verify whether employees used by UMI were thoroughly experienced or qualified.
4. UMI did not test and data log the number of meters required by the contract.
5. UMI may not have maximized revenue from meter repairs.
6. WASA's contract with UMI duplicated duties of WASA's MOD.
7. UMI training provided to WASA's MOD staff did not result in staff certifications.
8. All meters UMI obtained from WASA were not installed and UMI did not account for them.

RECOMMENDATIONS

1. WASA's Contracting Officer and Technical Representative must ensure that all contracts awarded by WASA are properly monitored and contractors are held accountable for work performed. All monitoring efforts must be properly documented.
2. WASA's Procurement Manager refrain from awarding more than one contract with essentially the same scope of services unless a valid justification for duplication is set forth in a written Determination and Findings Statement.
3. Within 90 days of the date of this report, WASA's CFO and Customer Service Manager for the MOD review completed work orders for repairs made on the same meters by WASA and UMI to determine if the repairs made by WASA staff were within the one-year guarantee and warranty period and duplicated repairs made by UMI. Where appropriate, WASA's CFO should require UMI to refund amounts it received for faulty repairs that were again repaired by WASA staff.

4. WASA's contracting officer and technical representative should ensure that contractors adhere to all contract provisions. When contract provisions require the contractor to use thoroughly experienced workers, the contracting officer and technical representative must develop a process to ensure that this provision is met.
5. WASA's contracting officer and technical representative must monitor all contracts awarded by WASA to ensure that the contractor complies with all contract requirements.
6. WASA's Procurement Manager develop and implement rules and regulations for contracting out services or activities performed by WASA employees and privatizing day-to-day operations of the Blue Plains Wastewater Treatment plant. These regulations should address the displacement of employees as well as procedures for determining and documenting projected cost savings and increased efficiencies that should be achieved through contracting out or privatization.
7. WASA's customer service manager for MOD should ensure that each WASA employee trained by UMI receives the appropriate certification.
8. WASA's CFO and Customer Service Manager of MOD review inventory records and invoices submitted by UMI to ensure that UMI installed all of the meters obtained from WASA's inventory. If all of the meters were not installed, WASA officials must ensure that the meters were either returned to WASA or that UMI paid WASA for the meters.
9. WASA's CFO determine whether UMI representatives adequately reimbursed WASA for 39 meters obtained from WASA's inventory and apparently installed at various locations in the D.C. WASA service area.

PURPOSE

Pursuant to Section 455 of Pub.L.No. 93-198² and a request from Council Chairman Linda W. Cropp, the District of Columbia Auditor examined the management of and performance under a contract awarded by the District of Columbia Water and Sewer Authority (WASA) to United Metering, Inc. (UMI). The contract required UMI to test, calibrate, repair, and replace cold water meters 3 inches and larger, and train WASA's meter testing personnel. The Auditor also examined a subsequent task order awarded by WASA to O'Brien & Gere Engineers, Inc. (OBG) for consultant services to "assist with the large meter inspection project."

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of the audit were to determine:

1. whether the contractors complied with the terms and conditions of the contract and task order;
2. whether WASA officials adequately monitored performance under the contract and task order and ensured compliance with the terms set forth in these documents;
3. the actual services provided by the contractors; and
4. the outcome of services provided by the contractors.

The scope of the examination included: (1) a review of the contract awarded to UMI in May 2000 and the task order awarded to OBG in July 2001; and (2) an analysis of the services provided by these contractors. The review covered the period between May 30, 2000 through February 28, 2003.

In conducting the audit, the audit team reviewed relevant documents and data related to the contract and task order in addition to data related to the testing, repair, and installation of large meters (3 inches or larger) from May 30, 2000 through February 28, 2003. Documents reviewed included, but were not limited to, work/service orders, reports submitted to WASA by UMI and OBG, data concerning fees WASA billed to customers, contractor invoices, and contract files. The audit team interviewed representatives from WASA including, but not limited to, the Chief Financial Officer (CFO), Customer Service officials, Meter Operations Division (MOD) employees, and WASA's procurement staff.

² See the District of Columbia Home Rule Act, as amended, Pub.L.No. 93-198, Section 455 (b), D.C. Code, 2001 Ed. §1-204.55(b).

The audit team also interviewed officials of the American Water Works Association (AWWA) regarding industry practices and standards, and retail suppliers of water meters regarding the cost of various types of water meters.

The audit was performed in accordance with generally accepted governmental auditing standards and included such tests of the accounting records as were deemed necessary under the circumstances.

BACKGROUND

In May 2000, WASA officials awarded a contract competitively to UMI to test, calibrate, repair, and replace water meters 3 inches or larger throughout the District of Columbia. According to the contract's scope of work, the primary work to be performed by UMI was to furnish all labor and materials, when authorized, necessary for testing, calibrating, repairing, and replacing cold water meters 3 inches and larger at various locations throughout the WASA service area and to train WASA's meter testing personnel.

The initial contract term was for a period of 10 months from May 30, 2000 to March 30, 2001. The contract was a fixed price requirements contract³ and the estimated total amount of the contract for the base period (May 30, 2000 to March 30, 2001) was \$3,229,215. The contract included an option to extend the term of the contract for two one-year periods at an estimated price of \$3,326,091 for option year one, and \$3,425,874 for option year two. The estimated total value of the contract was \$9,981,180, including the 10-month base period and two option years. The contract also stipulated a unit price to be paid to UMI for each meter replacement, repair, account analysis, site visit, meter flow accuracy test, and meter sizing test completed by UMI. The contract price included \$622,493 for miscellaneous overhead in the base year, \$638,208 for option year one, and \$659,738 for option year two. In each year, miscellaneous overhead represented approximately 24% of the estimated annual contract price. UMI was to invoice WASA on a monthly basis for actual work performed.

³Neither WASA's procurement regulations nor the D.C. procurement regulations defines a fixed price requirements contract, however both contain a definition of a fixed price contract. WASA's procurement regulations state that a fixed price contract is: "a contract that provides for a firm price or firm fixed unit cost for specified quantities subject to any contractual conditions allowing price adjustment, under which the contractor bears the full responsibility for profit or loss." According to a WASA official, the fixed price requirements contract specifies a fixed price to be paid per unit or for a specified quantity supplied by the contractor while the quantity provided may vary and will depend on the orders placed with the contractor.

In March 2001, WASA officials modified⁴ the UMI contract to extend the performance period for an additional three months from March 31, 2001 through June 30, 2001. The modification did not change the base year contract price. The audit team notes that WASA never exercised the two options to renew the contract.

At the conclusion of the audit team's field work, actual payments made by WASA to UMI for meter testing, calibration, repair, and installation totaled \$2,850,058.

⁴WASA's procurement regulations state that a contract modification is a written change in the terms and conditions of a contract.

FINDINGS

WASA OFFICIALS FAILED TO MONITOR UMI's PERFORMANCE

The Auditor found that WASA officials did not monitor UMI's performance under the large meter testing, repair and installation contract. WASA officials should have properly and timely monitored UMI's performance to ensure that: (1) contract terms, conditions and requirements were satisfactorily met; (2) the work performed by UMI was of acceptable quality; and (3) that UMI, rather than WASA staff, corrected all work which UMI unsatisfactorily completed or did not complete in accordance with contract terms. The contract awarded by WASA to UMI contained specific language regarding WASA's responsibilities to review UMI's work. Sections 1.4.6, 2.6.1 and 2.6.2 specifically stipulated, in relevant fact, that:

Section 1.4.6: Meter Operations Division will appoint an inspector(s) to work in conjunction with the meter installation crews of the Contractor for purposes of quality control checks throughout the duration of the contract. The Contractor shall provide quality control inspection services for daily and weekly work locations of each crew assigned to the contract.

Section 2.6.1: WASA will inspect both the completed or work in progress and if found unsatisfactory, and/or not in compliance with the provisions of the contract [sic]. The Director DWMB or Manager, Meter Operations Division may, through the Contracting Officer, issue a written notice to the contractor informing of unsatisfactory work. The Contractor will have ten (10) days to cure the unsatisfactory condition at the Contractor's expense. If this [sic] not done to the WASA satisfaction, payment equal to the value of the work in question shall be withheld from any monies due the Contractor and the D.C. Water and Sewer Authority may cancel the contract and reward [sic] to another source and may recover excess cost from the previous Contractor with whom the contract was canceled.

Section 2.6.2: WASA reserves the right to perform random re-testing of up to 2% of any meter worked on (repaired, recalibrated, tested or replaced) by the contractor. . . . If 5% or more of all meters re-tested per month do not agree within +/-2% of the original test, payment to the Contractor for work on these meters will be withheld and the Contractor will be required to re-test/repair to standard.

Further Section 2.3.1 of the contract stipulated the following:

All hardware, flanges, test spools, fittings, gaskets, plumbing fittings, nuts, bolts, reducers or any other components as listed in the specifications supplied by the Contractor shall be new construction and shall conform to all requirements as recommended by the American Water Works Association (AWWA) for this type of work. Should the D.C. Water and Sewer Authority inspect the settings and find any components which are used, defective and not meeting AWWA or the WASA standards, or are of poor quality these will be repaired by the Contractor at no additional cost to WASA. The D.C. Water and Sewer Authority, shall not pay for the items installed and/or delivered to D.C. Water and Sewer Authority, which are not in accordance with the specifications. The contractor shall receive no payment for work performed, nor for hardware, materials, equipment or components requiring removal as a result of a failed inspection.

In addition to ensuring that the above tasks were performed, WASA officials should have also adopted and adhered to a quality assurance mandate similar to that adopted by the District Government which states that. . . “the contracting officer shall ensure that the supplies, services, or construction procured under each District contract conform to quality and quantity requirements of the contract, including inspection, acceptance, warranty, and any other measures associated with quality assurance.” The District’s Office of Contracting and Procurement states that a quality assurance plan should include surveillance methods such as: (1) pre-planned inspections, (2) validation of complaints, (3) random unscheduled inspections, (4) site visits, and (5) customer service surveys. Additionally, findings should be documented for follow-up with the contractor. WASA did not use these or any similar methods to monitor the services procured under the UMI contract.

The audit team found that WASA officials did not inspect UMI’s completed work or work in progress, did not randomly re-test any meters repaired, recalibrated, tested or replaced by UMI, and did not appoint an inspector to work in conjunction with UMI’s meter installation crews for purposes of quality control checks. WASA officials could not document that they systematically and timely examined UMI’s work to ensure that WASA received the quantity and quality of services that it paid UMI to perform. WASA also should have established an effective process of monitoring UMI’s performance, and addressing any problems noted. WASA should have notified UMI about areas of contract non-compliance as well as the corrective actions UMI was to perform. Resolution

of issues of non-compliance should have been fully documented. This process could have provided evidence that UMI fulfilled all requirements of the contract before invoices were approved for payment. For example, as discussed in a later section of this report, the Auditor found that UMI failed to data log the number of meters which the contract required. Timely and effective monitoring of UMI's work during the contract period could have allowed WASA to identify this area of non-compliance and would have provided an opportunity for WASA officials to direct UMI to data log the appropriate number of meters. Also, OBG expressed a concern that UMI did not repair the worst performing meters. Again, timely and effective monitoring during the contract period would have provided WASA an opportunity to address this concern to UMI and UMI could have taken the appropriate corrective actions.

According to Article 9 of the contract, WASA's Manager of the MOD was designated the technical representative responsible for daily coordination of operating procedures between WASA and UMI and for monitoring contract compliance. Further, the Director of WASA's Department of Water Measurement and Billing was the designated contract administrator responsible for overall administration of the contract. The audit team was unable to interview either the technical representative or the contract administrator although they possessed important information about UMI's day-to-day contract activities. These two employees left after the contract ended and were unavailable at the time of our field work.

The audit team did interview WASA's Customer Service Manager for the MOD who assumed the responsibilities of the Manager of the MOD and WASA's CFO who was the audit team's designated contact person for the audit. These individuals were interviewed regarding their knowledge of WASA's monitoring efforts and findings. Neither official was able to provide any documents, reports, or other evidence that designated WASA representatives monitored UMI's performance throughout the contract period to ensure that all work was completed according to applicable industry standards or the terms of the contract. WASA officials could not provide any evidence that UMI performed daily or weekly quality control inspection services. If performed, quality control reports were not prepared to document the findings made or actions taken as a result of quality control checks. Further, WASA officials could not provide copies of any written notices sent to UMI officials informing them of unsatisfactory work performance.

The audit team found only two specific instances in which UMI gave a total of \$509 in credits to WASA as a result of deficiencies noted in UMI's performance. The \$509 in credits were made on a June 2001 invoice. A \$105 adjustment was made for a property at which no meter was

found and a \$404 adjustment was made for a location where a bypass was open.

As a result of the lack of adequate and systematic monitoring during the contract period, WASA could not be assured that the work performed by UMI complied with certain contract terms and conditions or that the work completed by UMI was of acceptable quality.

According to WASA officials, OBG served as the monitoring function for the UMI contract. However, the audit team found that OBG could not have performed a monitoring function because WASA issued the task order to OBG after UMI's contract had ended. The task order was effective July 13, 2001-two weeks after UMI's contract ended. WASA issued the task order pursuant to WASA's GSA contract dated August 2000. Further, OBG did not verify and validate UMI's work. According to information contained in its report, OBG primarily conducted a physical inspection of meters and collected and analyzed data. OBG did not ensure that UMI complied with all terms, conditions and requirements of the contract, and did not evaluate UMI's work to determine that it was properly performed. OBG did not verify that UMI properly tested, repaired, installed or data logged meters. OBG reported that it conducted an inspection of meters, and collected information such as the meter size and type, building and meter location, and meter readings. OBG did not perform any of the following: 1) re-test meters previously tested by UMI; 2) inspect UMI's work in progress; or 3) work in conjunction with UMI's meter installation crews for purposes of quality control checks throughout the duration of the contract. In order to adequately validate and verify UMI's work, these tasks, at a minimum, should have been performed.

If WASA officials intended OBG to verify and validate UMI's work, the scope of work in the task order did not direct OBG to perform the necessary task to accomplish this objective. The purpose of the task order awarded to OBG, as specified in the scope of work, was to:

physically visit and inspect each of the 3,200 large meters. Verify existence and condition of meters; location of meters (i.e. physical location of meter, service address and customer street address), use of property; meter serial number, manufacturer and size; testing date; position of bypass on meter; other data identified during the course of the study. Compare this data with data contained in WASA's customer service and billing records. Investigate observed or learned changes in usage patterns. Identify previously unrecorded or additional meters. Identify discrepancies in billing history and meter reading.

The Services OBG Was Contracted to Perform Duplicated Some of the Services That WASA Paid UMI to Perform

Based on the audit team's review, WASA paid a total of \$488,000 over fiscal years 2001 and 2002 for services rendered by OBG that duplicated, in large part, the tasks that WASA had already paid UMI at least \$347,445 to perform. As discussed earlier in this report, OBG was to physically visit and inspect each meter verifying existence and location of each meter as well as changes in usage patterns. WASA's contract with UMI also specified that UMI was to verify existing meters and record selected information. UMI's contract specifically stated the following:

The Contractor will be required to verify the existing meter listing (3" and larger) and locate whatever others may not be listed . . . The contractor shall conduct a review of all subject meter records to determine which meters may be inoperable, registering inaccurately according to industry and WASA's standards . . .

The Contractor shall furnish a written report for each meter tested, repaired/replaced, or serviced to the Manager, Meter Operations Division. The report shall include the following information: a) location of meter (property address); b) manufacturer; c) meter number; d) size; e) meter reading (reading shall be reported for meter installed and for the meter removed); f) type of meter; g) method of test and calibration; h) accuracy of meter before and after repairs; i) if repairs were necessary; j) itemized list of parts required to facilitate repair; k) model number of ECR/T; l) location of touch pad; m) meter age; and n) type of meter.

Further, the contract WASA awarded to UMI specified that 100% of all meters 3 inches and larger were to be site visited and their accounts analyzed. The information OBG was paid to collect and analyze could have been collected and analyzed by UMI during its site visits and account analysis. Appropriate WASA officials should have adequately monitored the UMI contract to ensure that UMI performed according to contract terms, including conducting site visits and analyzing accounts. WASA paid UMI at least \$337,518 for 3,309 site visits and an additional \$9,927 for account analysis for a total of \$347,445.

WASA's decision to pay two different contractors to perform many of the same services was an inefficient and uneconomical use of monetary resources.

Employees of WASA's MOD Could Have Performed the Services That OBG Was Paid to Perform

WASA's MOD employees assisted OBG personnel in conducting its physical inspection of meters. According to OBG's report, field investigations were conducted by two-person teams which included a WASA employee and an OBG contractor. According to the July 13, 2001 task order issued to OBG for the meter inspection project, OBG's personnel was to be billed to WASA at the blended hourly rate of \$95. Additionally, out-of-pocket expenses (comprised primarily of local travel, printing and other minor expenses) would be billed at actual cost, with no markup. WASA did not provide a written determination and findings to justify why WASA employees could not have performed the services without OBG's assistance. According to the audit team's review of the scope of work for the OBG task order, the services OBG was to perform did not appear to be complex or beyond the capabilities of WASA's MOD staff. Therefore, WASA's MOD employees could have performed the services that OBG was paid at least \$488,000 to perform.

Lack of Adequate Monitoring Resulted in WASA Not Paying UMI According to Contract Specifications During the Contract Period

UMI did not bill WASA according to the contract specifications. According to the contract, UMI was to bill WASA a fixed unit price for each type of service UMI provided. The unit price was specified in the contract. For example, for each three-inch turbine meter UMI repaired, it was to bill WASA \$399. However, the audit team found that UMI billed WASA a separate unit price for labor and another price for parts used in each repair. The audit team found that, for each three-inch turbine meter repaired, UMI actually billed \$219⁵ or \$231 for labor plus an additional amount for parts. WASA's files did not contain any information regarding how UMI determined the amount it billed WASA for labor. In some instances the total amount UMI billed for labor plus parts for a three-inch turbine meter exceeded \$399 while in other instances the amount billed was less than \$399. Three examples of amounts UMI billed include \$940.10, \$1,263.81 and \$333.55.

The audit team also found that, for the months of April through June 2001, UMI billed and WASA paid for services based on the unit prices specified in the contract for option year one instead

⁵From the inception of the contract through March 2001, UMI billed \$219 for labor costs to repair to a three inch turbine meter. From April 2001 through June 2001, UMI billed \$231 for labor cost to repair a three inch turbine meter.

of prices in effect during the base year. WASA's meter repair and installation contract with UMI ended March 30, 2001. WASA officials did not exercise the option. Instead, it modified the contract by extending it an additional three months, effective March 31, 2001. Despite the fact that the contract price was not to change, UMI billed WASA for services at the higher option year one contract price.

The audit team informed WASA's CFO that WASA had not paid UMI's monthly invoices according to the contract terms. WASA then reduced UMI's final invoice payment by \$205,000 to account for the discrepancy. However, the audit team notes that WASA's failure to adequately review UMI's invoices before payment and ensure that billings were in compliance with the contract terms resulted in WASA initially paying UMI incorrectly.

RECOMMENDATIONS

1. WASA's Contracting Officer and Technical Representative must ensure that all contracts awarded by WASA are properly monitored and contractors are held accountable for work performed. All monitoring efforts must be properly documented.
2. WASA's Procurement Manager refrain from awarding more than one contract with essentially the same scope of services unless a valid justification for duplication is set forth in a written Determination and Findings Statement.

WASA OFFICIALS FAILED TO ENFORCE UMI'S ONE YEAR GUARANTEE AND WARRANTY UNDER THE CONTRACT

The large meter testing, repair and installation contract WASA awarded to UMI stipulated that "the Contractor shall guarantee and warrant its work for one (1) year from the date of acceptance of each completed test, repair, and installation." However, the audit team found that WASA officials did not implement the appropriate measures to enforce this provision of the contract. For example, the contract failed to specify the methodology WASA would use to determine when tests, repairs, and installations completed by UMI were considered accepted. Further, WASA did not specify the dates on which the one-year guarantee and warranty period began and ended. Further, the contract failed to specify what actions would be taken if UMI's repairs, tests, or installations were found to be faulty within the guarantee and warranty period. WASA officials could not document that they

conducted tests necessary to determine if any meter tests or repairs that were made by WASA employees after UMI completed its work should have been covered by UMI's guarantee and warranty. WASA's failure to implement measures to enforce UMI's guarantee and warranty may have resulted in WASA not receiving the benefits it should have received from this contract provision.

In order to determine if WASA employees repaired meters that should have been covered by UMI's guarantee and warranty, the audit team reviewed the results of field tests conducted by WASA's MOD for the period June 2001 through January 16, 2003⁶. The audit team found that some meters that had previously been tested, repaired, or installed by UMI were later field tested by WASA employees. Based on the results of the field tests, WASA employees repaired those meters which they determined were in need of repair. The audit team attempted to determine if any of the repairs made by WASA were performed within the one year guarantee and warranty period. In the absence of WASA developing any criteria and implementing procedures for the guarantee and warranty period, the audit team, in conducting its analysis, used the date on which WASA approved UMI invoices as WASA's "acceptance" date. For those instances in which the audit team could not determine the date when WASA approved a related invoice, the audit team used the date that UMI completed the repair, test, or installation as WASA's "acceptance" date.

The audit team's review revealed that 114, or 13%, of the 899 meters which had been previously repaired by UMI were later repaired by WASA employees. Also, 44 of the 114 meters were repaired within one year of the acceptance date. WASA officials could not document that they performed a similar review to determine if any repairs, tests or installations performed by UMI were later found to be defective and should have been covered by UMI's guarantee and warranty.

As a result of WASA's failure to implement procedures and enforce the one year guarantee and warranty provision of UMI's contract, WASA could not be assured that UMI was held accountable for any work it performed that was determined to be defective or incomplete. WASA officials did not determine whether UMI should have repaired some meters a second time and/or provided WASA a credit for meters that had to be repaired again by WASA employees. The Auditor believes that, at a minimum, UMI should have been required to correct any work found to be faulty

⁶Due to limitations in WASA's legacy work order system, the audit team could not be assured that all work orders for work performed by WASA staff prior to June 2001 on meters previously handled by UMI were identified and provided to the audit team. According to WASA representatives, WASA's legacy system (the system in use prior to June 2001) was primarily used as a billing system and may not have maintained an accurate record of completed work orders. Therefore, there may have been additional work orders which were not available for the audit team's review for meters repaired by WASA staff prior to June 2001 which had also been repaired by UMI.

or incomplete or to refund any payments it received for faulty work it performed.

The audit team also found that an additional 70 meters were repaired by WASA staff between 13 and 22 months after the date the meters were accepted by WASA. Although these meters were not repaired within the one-year guarantee and warranty period, as defined by the audit team, WASA did not review repair data to determine whether repairs made by WASA staff resulted from faulty repairs or faulty parts used by UMI.

The Auditor also found that WASA did not determine if broken meters identified by OBG during its inspections were covered by UMI's guarantee and warranty. During its physical inspection of meters, OBG identified 71 meters in which: (1) meter readings did not change over a period of time; (2) readings were very low; and (3) meters appeared to be broken. OBG also identified 218 meters where the bypass line⁷ around the meter was not sealed. OBG found that UMI had previously repaired 8, or 11%, of the 71 problem meters identified by OBG. Also, UMI had previously inspected and tested 24, or 43%, of the 71 meters. For the 24 meters UMI inspected and tested, 6, or 21%, tested accurately, and 18, or 62%, did not test accurately, reporting either too low or too high. The Auditor found that UMI did not repair the 18 meters although their tests found that the meters did not pass the accuracy test. These meters were still in need of repair when OBG performed its physical inspection. If WASA had monitored UMI's performance during the contract period, WASA could have determined if UMI should have repaired the meters that did not test accurately.

Despite the fact that UMI guaranteed and warranted its work for one year, WASA officials did not investigate or otherwise determine whether UMI had any responsibility to re-test or re-repair the 71 meters identified by OBG. In order to enforce the guarantee and warranty provision of the contract, WASA should have reviewed OBG's findings and directed UMI to take the appropriate corrective actions.

RECOMMENDATION

Within 90 days of the date of this report, WASA's CFO and Customer Service Manager for the MOD review completed work orders for repairs made on the same

⁷ According to a WASA official, the bypass is a pipe that goes around a meter that allows water to flow to the property that will not be registered by the water meter. The bypass should be sealed so that all water used at the property will be registered.

meters by WASA and UMI to determine if the repairs made by WASA staff were within the one-year guarantee and warranty period and duplicated repairs made by UMI. Where appropriate, WASA's CFO should require UMI to refund amounts it received for faulty repairs that were again repaired by WASA staff.

WASA OFFICIALS DID NOT VERIFY WHETHER EMPLOYEES USED BY UMI WERE THOROUGHLY EXPERIENCED OR QUALIFIED

The UMI contract specified that all installation work was to be of the highest industry standards and the installation of water meters and appurtenances was to be performed by "employees thoroughly experienced in such work." The audit team found that WASA officials failed to ensure UMI's compliance with this contract requirement. WASA officials could not document that they reviewed the qualifications of individuals hired by UMI or in any other way assured themselves that UMI's employees possessed the qualifications and experience necessary to properly perform the installation work specified in the contract. The contract specifically stated that all installation work was to be performed by experienced workers. Accountable WASA officials should have established procedures to determine that UMI's testing and repair work was also performed by thoroughly experienced workers.

In the absence of documentation from WASA officials evidencing that they determined that work was performed by thoroughly experienced UMI staff, the audit team requested documents directly from UMI regarding the qualifications of employees assigned to perform work under the WASA/UMI contract. In response, UMI submitted a copy of an unsigned letter from the vice president and general manager of UMI addressed to WASA's Director of Procurement which included copies of resumes for six individuals. According to the unsigned letter, the six individuals were professional meter technicians who were New York City certified meter installers. Further, according to the letter, UMI intended to draw from the six individuals to "create a strike force to get quick results for WASA while hiring and training local people to build a local workforce."

According to information supplied by UMI, only two of the six individuals initially identified to work on the project actually worked on the project. Also according to UMI, by the time the project started, the remaining individuals had been reassigned and UMI used substitutes. UMI stated that the substitutes were also experienced and highly qualified but did not provide resumes or in any other way document the qualifications and experience of the substitute workers. The Auditor requested UMI to provide copies of job descriptions and announcements used to recruit individuals

hired to work on the contract. UMI was also asked to identify personnel hired from the Washington, D.C./Metropolitan area and to describe training provided to individuals who worked on the contract. UMI failed to provide the information requested by the Auditor. WASA officials also could not provide any of the requested information. WASA officials did not determine that individuals hired by UMI (locally or the six individuals) were qualified and thoroughly experienced to perform the services required under the contract. Therefore, there was no assurance that UMI employees who performed work under the contract possessed the qualifications and experience equivalent or superior to those possessed by WASA's employees and necessary to competently perform the work required by the contract.

RECOMMENDATION

WASA's contracting officer and technical representative should ensure that contractors adhere to all contract provisions. When contract provisions require the contractor to use thoroughly experienced workers, the contracting officer and technical representative must develop a process to ensure that this provision is met.

UMI DID NOT TEST AND DATA LOG THE NUMBER OF METERS REQUIRED BY THE CONTRACT

The audit team found that UMI tested fewer meters than required by the contract, and also data logged⁸ a smaller percentage of accounts than the quantity specified in the contract. According to the scope of work set forth in Article I of the contract, UMI was to test 100% of all meters 3 inches and larger and was to data log 30% of all accounts. WASA estimated that 3,500 meters would be tested and 1,050 meters would be data logged. However, according to reports provided by UMI, WASA only identified 3,324 meters for testing. UMI indicated that its employees were denied access to 15 of the meters because they were located in buildings such as the Pentagon and White House. Therefore, UMI conducted site visits of only 3,309 accounts, or 15 less than the 3,324 identified by WASA. Through site visits, UMI indicated that they could confirm only 2,705 valid accounts. According to UMI, the remaining 604 accounts were duplicates, abandoned, or could not be located.

⁸ According to a review of reports prepared by UMI and discussions with representatives of UMI, data logging is a technique that measures the flow profile through a meter and determines the appropriate size and type of meter. Also referred to as a meter sizing test.

Based on the availability of 2,705 meters, UMI should have data logged at least 812, or 30%, of the 2,705 meters and should have tested all 2,705 meters. According to the audit team's review of UMI invoices, only 259, rather than 812, meters were actually data logged, which represented approximately 9.6% of the 2,705 meters, and 20.4% less than the 30% specified in the contract. UMI tested a total of 2,474 meters, which represented 91% of the 2,705 meters and 9% fewer than the 100% specified in the contract. UMI reported that it did not test all meters for various reasons including that some meters did not have test plugs and they lacked access to other meters. WASA officials could not document that they verified UMI's justification for not testing all meters.

The data logging of meters was an important contract specification. According to WASA officials, as well as information provided in a report prepared by UMI, one of the primary reasons WASA awarded the testing, repair and installation contract was to lay the groundwork for WASA's Automatic Meter Reading (AMR) contract. The purpose of the AMR contract, which was also awarded to UMI, was to remove existing water meters in the District of Columbia and install new meters and meter transmission units. Information obtained from data logging the meters was to be used in determining the appropriate meter size to be installed at each property. The importance of installing the appropriate size meters is discussed in the AWWA's manual of water supply practices. For example, the manual indicated that if a larger sized meter is installed when a smaller size is appropriate, the use of the larger sized meter would be unnecessarily expensive to the purchaser, heavy to handle, and less accurate under overall usage conditions.

WASA officials did not modify its contract with UMI to reduce the percentage of meters to be data logged and tested. In the absence of an approved contract modification, UMI should have tested 100% of all meters and data logged 30% of all meters as specified in the contract in order to ensure that information necessary to obtain the appropriate size meters was available to WASA officials. UMI was paid based on work actually performed rather than the quantity specified in the contract. As a result of UMI's failure to data log the required number of meters, WASA actually paid UMI less than would have been paid if services had been rendered pursuant to the contract. Although WASA paid UMI less than it would have paid if UMI had data logged the quantity specified in the contract, UMI's failure to data log the required number of meters could result in WASA purchasing and installing meters that are not the appropriate size. As stated previously, data logging meters was important in determining the proper size of meters to be installed. Any meter installed which was inappropriately sized would be inefficient and uneconomical as it may not accurately measure customers' water usage and result in inaccurate water bills.

According to a report prepared by UMI, one reason for data logging a lesser number of meters was inaccuracies found in the meters that were tested. According to UMI, data logging an inaccurate meter would not yield accurate meter sizing information. The Auditor notes, however, that UMI repaired at least 899 meters, yet the 259 meters data logged were 640 less than the number of meters repaired by UMI. If UMI had, at a minimum, data logged the meters that it repaired, it could have achieved the 30% required by the contract.

Although the contract did not specify a definite quantity of meters that UMI was to repair, an estimated quantity was specified. According to the contract, WASA estimated that 140 meters were to be repaired. However, the audit team found that UMI repaired 899 meters, which represented 542% more than the 140 estimated in the contract. WASA paid UMI \$608,000 more than it would have paid as a result of UMI repairing 759 more meters. Although overall contract payments to UMI did not exceed the estimated price of the contract, it appears that the amount paid could have been even less if the contractor had complied with this provision of the contract. According to UMI, the number of repairs exceeded the quantity estimated because of the low overall accuracy of meters and the expectation that repairs would generate additional revenue. However, according to a report prepared by OBG, UMI did not repair meters which, when tested, appeared to perform the worst. The report also indicated that approximately 30% of the meters UMI repaired appeared to test less accurately after repair than before.

RECOMMENDATION

WASA's contracting officer and technical representative must monitor all contracts awarded by WASA to ensure that the contractor complies with all contract requirements.

UMI MAY NOT HAVE MAXIMIZED REVENUE FROM METER REPAIRS

According to a report prepared by UMI, a secondary purpose of the large meter repair/installation contract was to derive additional revenue by repairing or replacing meters that were significantly under-performing. In other words, in order for WASA to derive additional revenue and achieve the greatest benefit by repairing or replacing meters, UMI was to repair or replace the worst performing meters first. WASA officials could not document that they evaluated the procedures used by UMI in selecting which meters to repair or replace. According to a report

prepared by OBG, WASA requested OBG to review UMI's database to confirm WASA's perception that the 900 worst performing meters had been repaired. OBG reported that actual repairs completed by UMI were fairly evenly distributed across the range of "lost consumption" rather than concentrated in those meters with the highest apparent losses, as was expected. Further, the OBG report indicated that of the 100 worst performing meters, only 37 were repaired. Therefore, some meters tested that appeared to register the flow of water inaccurately may not have been repaired or replaced by UMI. This may have allowed revenue losses to continue as a result of water consumption not captured and billed by WASA or may have resulted in customers paying water bills that were too high.

Daily Average Consumption (DAC)⁹ Increased for Approximately 50% of the Meters Repaired by UMI

According to WASA officials and reports from UMI, another purpose of the services performed by UMI was to decrease the amount of "lost revenue" from meters that did not accurately measure water consumption. WASA officials expected that if meters were repaired, water consumption would be accurately measured and would result in increased revenue. However, based on the audit team's review of the DAC registered by meters before and after repairs made by UMI, the audit team found that:

- the DAC increased for approximately 445, or 50%, of 894¹⁰ meters;
- the DAC decreased for approximately 272, or 30%, of 894 meters;
- the DAC for 174, or 19%, of the meters was not calculated because there were no "actual" meter readings or an inadequate number of actual meter readings either before or after repairs were made by UMI; and
- the DAC remained unchanged for three, or .34%, of meters.

The audit team inquired of WASA officials whether meters repaired or replaced by UMI

⁹ According to WASA officials, the DAC is derived by determining the total units of water used before or after consumption, and dividing this amount by the number of days in the respective periods.

¹⁰ The report provided to the audit team by WASA which reported the DAC for meters repaired by UMI included 894 meters. The June 2001 invoice submitted by UMI reported that UMI repaired 899 meters. WASA did not provide DAC for five of the 899 meters.

resulted in increased revenue to WASA. In response to the Auditor's inquiry, WASA officials provided information based on the DAC for 693 of the 899 meters repaired by UMI. WASA's analysis did not use consumption data from the same period as the audit team used in its analysis. According to WASA's analysis, the DAC increased by 2078.3 Ccf¹¹ for the 693 meters, and the DAC for the remaining meters was not included in the analysis because these meters lacked actual meter reading data before and after repairs. For these meters, WASA billed customers based on estimated rather than actual consumption. Using rates in effect during each year included in the analysis, WASA calculated that revenue increased \$10,008,727, or 16.9%, for 693 meters.

The audit team notes that the analysis provided by WASA does not show conclusively that any gain in WASA's revenue is based solely or substantially on the work performed by UMI. Increased consumption could result from several factors including the number of days included in the calculation as well as the time of the year when the DAC was determined. The Auditor found that the following factors could have affected WASA's results:

- actual meter readings for each meter used in the analysis were not taken at the same time of the year. This may distort the results because water consumption is not the same throughout the year. For example, consumption may be higher in the spring and summer than in the fall and winter.
- WASA's analysis did not compare the DAC for the same period of time before the repairs were made to the DAC for the same period after repairs were made. For example, the DAC before repairs may have been calculated during the winter months while the DAC after repairs may have been calculated during the summer months when consumption normally increases.

Additionally, the audit team found that OBG indicated in a report to WASA officials that: "Of the 921¹² repaired meters, (or over a third) were retested and found to have worse accuracy after the repair than before."

¹¹Ccf represents one hundred cubic feet. Some meters measure cubic feet of water through the meter while other meters measure gallons. Both are volume measurements.

¹²While the OBG report discusses repairs of 921 meters, the invoices submitted by UMI indicates that 899 meters were repaired.

WASA's CONTRACT WITH UMI DUPLICATED DUTIES OF WASA's MOD

The scope of work stipulated in the contract awarded to UMI appeared to duplicate the responsibilities of WASA's MOD. According to WASA's fiscal year 2002 operating and capital budget, dated February 1, 2001, the function of the MOD is to "process work orders and provide research when needed, install and test meters, and to repair meters." The scope of work in UMI's contract also included testing, repairing, and installing water meters. According to the Determination and Findings Statement prepared for the UMI contract, the justification for awarding the contract stated that "the tasks involved are highly technical and complex, and are beyond the capabilities of the WASA's staff given the available time and resources."

WASA's contract to test, repair and replace meters was not awarded as a privatization contract. However, based on the services to be provided by UMI, the contract appears to be a privatization. Privatization occurs when the government enters into an agreement with a private sector firm, nonprofit, or other external entity to provide goods and services to or on behalf of government that were provided by government employees. In this instance, testing, repairing, and replacing meters were functions performed by WASA's MOD staff at the time UMI was awarded the contract to perform the same services.

According to D.C. Code, 2001 Ed., §34-2202.03 (10), the District of Columbia Water and Sewer Authority shall possess the following powers:

To enter into contracts with the District, the United States, Maryland, or Virginia, or their political subdivisions, other public entities, or private entities for goods and services as needed to achieve its purposes; *provided, that prior to the Authority contracting out to a private entity, a service or activity performed by employees of the Authority, through established standards developed by rules and regulations, the Authority shall establish that the contracting out will achieve increased efficiencies and cost savings to the Authority; . . .* [Auditor's Emphasis]

WASA's procurement official confirmed that WASA had not developed any rules and regulations for contracting out or awarding privatization contracts. Specifically, it failed to establish standards for determining and demonstrating that contracting out would achieve: (1) increased efficiencies, and (2) cost savings to the Authority. Despite the fact that rules and regulations had not

been developed, WASA awarded a contract to UMI which duplicated the services performed by WASA employees. The decision to contract out services performed by WASA employees to UMI failed to establish that contracting out testing, repair, and installation of water meters would achieve increased efficiencies and cost savings to the Authority. It appears that this contract could have provided a basis for WASA officials later justifying the elimination of the MOD and the use of contractors to deliver services provided by employees of this division.

As previously stated, the audit team found that WASA officials failed to document the expected increased efficiencies and cost savings to WASA as a result of the contract. Further, the Determination and Findings Statement indicated that the work was contracted out because the tasks were beyond the capabilities of WASA's staff given the available time and resources. This was not a valid justification under Section 34-2202.03 (10) of the D.C. Code for contracting out these services.

RECOMMENDATION

WASA's Procurement Manager develop and implement rules and regulations for contracting out services or activities performed by WASA employees and privatizing day-to-day operations of the Blue Plains Wastewater Treatment plant. These regulations should address the displacement of employees as well as procedures for determining and documenting projected cost savings and increased efficiencies that should be achieved through contracting out or privatization.

UMI TRAINING PROVIDED TO WASA'S MOD STAFF DID NOT RESULT IN STAFF CERTIFICATION

According to UMI's contract, extensive training in calibrating, testing, and repairing all size meters using state of the art equipment was to be provided to the staff of the MOD. The contract stipulated that "training provided must allow WASA's meter division meter testing personnel to be certified in their field either at the conclusion or during training." This provision of the contract did not provide any additional explanation regarding the specific type of certifiable standards the staff was expected to meet as a result of contractor provided training, or whether the certification was to be a national, state, or local certification.

According to UMI's closing report to WASA, training provided to WASA staff consisted of the following three parts: 1) theoretical review of meter principals [sic], in a classroom environment; 2) hands-on training and observation in WASA's meter shop; and 3) field training accompanied by UMI testers and supervisors. According to UMI's report, the training included instruction on the purposes of different types of meters, step-by-step discussion of UMI meter testing procedures, and hands-on training using WASA and UMI equipment and procedures.

Based on interviews with the staff of the MOD who attended the training, as well as UMI personnel, no official certification was provided during or at the conclusion of the training. While WASA officials contend that the training was necessary for the staff, WASA staff who attended the training indicated that the instructor did not provide any new procedures or information that would be helpful or useful to them in performing their duties and responsibilities. According to staff interviewed, they have many years of experience in testing and repairing meters and were already aware of the information presented in the training.

UMI's closing report on the large meter testing and repair contract stated that UMI found "DC WASA employees to be knowledgeable in meter testing and repair." They further stated that they would provide each participant with a certificate of recognition. The report did not contain any information regarding the issuance to the MOD staff of an official proficiency certification in their field.

RECOMMENDATION

WASA's customer service manager for MOD should ensure that each WASA employee trained by UMI receives the appropriate certification.

ALL METERS UMI OBTAINED FROM WASA WERE NOT INSTALLED AND UMI DID NOT ACCOUNT FOR THEM

According to the terms of the UMI contract, and based on interviews with WASA and UMI representatives, UMI was responsible for providing all labor and materials necessary for replacement of water meters 3 inches and larger at various locations throughout the WASA service area. Based on the audit team's review of WASA-Form 82, "District of Columbia Water and Sewer Authority

Issue Ticket Non-Accountable Personal Property” (issue ticket)¹³ as well as invoices submitted by UMI to WASA, UMI obtained some meters directly from WASA’s inventory. Although the contract specified that UMI was responsible for providing all materials, UMI invoices and related documents do not clearly indicate that WASA was reimbursed for all meters UMI obtained from WASA’s inventory or that UMI returned any unused meters to WASA.

Based on the audit team’s review of copies of issue tickets, a total of 61 meters from WASA’s inventory was issued to UMI. According to the Auditor’s analysis, only 41 of the 61 meters UMI obtained from WASA’s inventory were installed, or otherwise accounted for. Therefore, it appears that UMI was issued 20 meters from WASA’s inventory in excess of the number of meters installed or accounted for. Although the information provided on several of the issue tickets indicated that the meters issued were new, none of the tickets contained the unit cost or the total value of the meters. The audit team calculated the approximate value of the meters based on meter prices provided by a local vendor. According to the audit team’s calculation, WASA officials would incur a cost of approximately \$40,000 to replace the 20 meters issued to UMI that were not used or accounted for. However, WASA’s accounting records left unanswered the question of whether UMI paid WASA for the meters it obtained from WASA’s inventory either by reducing invoice amounts to reflect the value of the meters or by paying WASA directly.

According to WASA representatives, whenever meters or parts were obtained from WASA’s inventory, an issue ticket was to be completed and signed by the individual(s) receiving the meter or part. WASA representatives provided the audit team with xeroxed copies of 94 issue tickets for inventory items issued to UMI. The quality of some of the copies was so poor that the audit team could not read some information entered on the tickets. However, the dates on issue tickets that could be read ranged from July 18, 2000 through November 19, 2001.

A review of the issue tickets indicated the absence of some critical information that should have been recorded on the issue tickets. The tickets were stamped with a number but the audit team could not determine whether the tickets were pre-numbered or whether a number was stamped on tickets as they were issued. The audit team noted that all of the numbers did not have the same print which indicates that they may not have been pre-numbered. The failure to use pre-numbered tickets indicates a lack of effective internal control over WASA’s inventory. Without pre-numbering, issue

¹³ Issue tickets were forms to be completed each time parts or meters were issued from WASA’s inventory.

tickets could be prepared randomly with no assurance that WASA staff accounted for each item issued from inventory. Pre-numbered tickets could have been useful in accounting for all items and tickets issued. Further, the issue tickets provided for the audit team's review did not include all of the numbers in sequential order and the missing numbers were not accounted for. Therefore, the audit team could not be assured that the copies of issue tickets provided for this review represented all of the meters and parts that had been issued to UMI from WASA's inventory.

RECOMMENDATIONS

1. WASA's CFO and Customer Service Manager of MOD review inventory records and invoices submitted by UMI to ensure that UMI installed all of the meters obtained from WASA's inventory. If all of the meters were not installed, WASA officials must ensure that the meters were either returned to WASA or that UMI paid WASA for the meters.
2. WASA's CFO determine whether UMI representatives adequately reimbursed WASA for 39 meters obtained from WASA's inventory and apparently installed at various locations in the D.C. WASA service area.

CONCLUSION

The Auditor found that WASA officials failed to adequately monitor performance under the contract awarded to UMI to test, calibrate, repair, and replace cold water meters 3 inches and larger. Despite the fact that the contract awarded to UMI specified that WASA would inspect both UMI's completed work or work in progress and would appoint an inspector for purposes of quality control checks throughout the duration of the contract, the Auditor found no evidence that WASA performed any discernible monitoring of the UMI contract. Instead, WASA issued a task order to OBG to perform work that WASA had already paid UMI to perform.

The failure to monitor UMI's performance resulted in WASA officials not ensuring that UMI satisfactorily met all of the contract terms, conditions, and requirements and determining that the work performed by UMI was of an acceptable quality. WASA's lack of monitoring efforts resulted in an inefficient use of WASA resources which included the following: (1) payment of approximately \$488,000 to OBG for services that WASA had already paid UMI \$347,445 to perform; and (2) payments to OBG for services that could have been performed by WASA's Meter Operations Division (MOD) staff.

The failure of WASA officials to monitor UMI's performance resulted in WASA not receiving all of the services UMI was to provide under the contract. The WASA/UMI contract specified that UMI would guarantee and warrant its work for one year from the date of WASA's acceptance of each UMI completed test, repair, and installation. Yet, WASA officials did not implement the appropriate measures to enforce this provision of the contract. WASA officials did not investigate or otherwise determine whether UMI was responsible for re-testing or repairing meters which OBG and WASA's MOD staff found to be deficient within one year of work UMI performed on the same meters. As a result, WASA's MOD staff may have repaired meters that UMI was paid to repair.

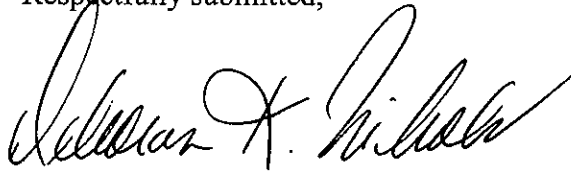
UMI did not data log the quantity of meters which the contract required. Data logging meters was an important function for determining the appropriate size meter to be installed. UMI's failure to perform this important function may have resulted in WASA purchasing and installing meters that are not the appropriate size. According to the American Water Works Association (AWWA), installing meters that are not appropriately sized would be unnecessarily expensive to the purchaser, heavy to handle, and less accurate under overall usage conditions. The Auditor notes that WASA awarded a contract to UMI to replace all meters in November 2001-just five months after the testing, repair and replacement contract ended.

The Auditor also found that UMI obtained approximately 20 meters from WASA's inventory that were not installed, returned to WASA, or otherwise accounted for by UMI. The Auditor estimated that the replacement of the 20 meters would cost WASA approximately \$40,000.

Finally, the Auditor found that the contract WASA awarded UMI duplicated the responsibilities of WASA's MOD. Although the contract was not awarded as a privatization contract it appeared to take the course of a privatization or contracting out. WASA's procurement regulations did not contain rules and regulations for privatizing or contracting out services performed in-house.

The Auditor notes that WASA's poor contract administration and monitoring discussed in this audit may be a reflection of similar conditions that exist in other contracts which WASA manages.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Deborah K. Nichols". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

Deborah K. Nichols

District of Columbia Auditor

AGENCY COMMENTS

AGENCY COMMENTS

On April 27, 2004, the Office of the District of Columbia Auditor submitted this report in draft to the Chairperson of the Board of Directors, the General Manager, and Chief Financial Officer of WASA for review and comment. An exit conference was held with WASA's General Manager and Chief Financial Officer on May 5, 2004. On June 15, 2004, after additional data collection and evaluation efforts, the draft report was re-submitted for further review and comment.

Written comments and numerous exhibits were received from WASA's General Manager on July 1, 2004. Where appropriate, changes were made to the final report to reflect the comments received. The comments are appended to this final report. Exhibits submitted with the comments were too voluminous to append to the final report, but are available for review, upon request, in the Office of the District of Columbia Auditor.

WASA's written comments contained significant misleading or incorrect statements. Further, most of the comments submitted by WASA were not relevant to the scope of the current audit and failed to adequately address the audit's findings and recommendations. For example, WASA provided comments related to its automated meter reading (AMR) system and customer service responsiveness and billing. Neither of these areas were included in the scope of the Auditor's present review or resulting report.



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

5000 OVERLOOK AVENUE, S.W., WASHINGTON, D.C. 20032

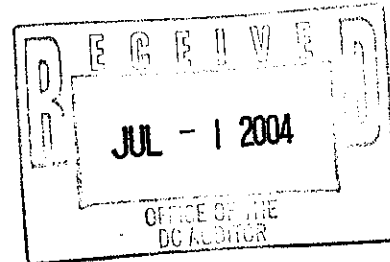
OFFICE OF THE GENERAL MANAGER

TEL: 202-787-2609

FAX: 202-787-2333

June 30, 2004

Deborah K. Nichols
District of Columbia Auditor
Office of the District of Columbia Auditor
717 14th Street N.W. Suite 900
Washington, DC 20005



Dear Ms. Nichols:

The District of Columbia Water and Sewer Authority (WASA) submits its responses to the second draft report issued by your office on June 15, 2004 entitled, "Review of the Management and Performance Under a Contract Awarded by the District of Columbia Water and Sewer Authority to United Metering Inc." Your Office issued the first draft on April 27, 2004. Our subsequent meeting held on May 5 to discuss the audit findings did not result in material changes being made to the content of the second draft report.

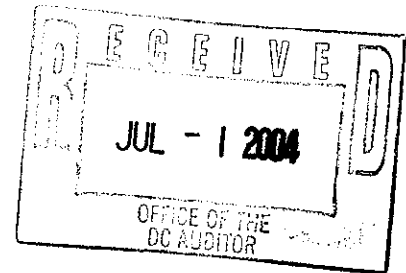
WASA understands that it has received for review from your office the document that the Office of the District of Columbia Auditor will release as final with no material changes made subsequent to our review. It is important that that the final report will not introduce new material or conclusions to which WASA has had no opportunity to respond.

Further, since we have differing opinions regarding some of the content of this report, WASA requests that our responses, enclosed with this transmittal letter, be included in their entirety in your final report. We request and welcome the opportunity to comment further should your final report materially change from this second draft.

Sincerely,

Jerry N. Johnson
General Manager

Enclosures



District of Columbia Water and Sewer Authority

Response To

The District of Columbia Auditor's Draft Report Entitled

*"Review Of The Management And Performance Under A Contract Awarded By
The District of Columbia Water And Sewer Authority To United Metering"*

EXECUTIVE SUMMARY

The District of Columbia Auditor recently completed a two-plus year review of the District of Columbia Water and Sewer Authority's (WASA) handling of contracts awarded to United Metering, Inc. (UMI) and other vendors related to surveying, testing, repairing, and installing water meters in the District. The work performed under these contracts formed the basis for the major modernization of WASA's meter program and infrastructure. While still ongoing, this program has significantly improved customer service and increased revenue by recording consumption more accurately, and by providing data that has assisted WASA in responding to customer inquiries more timely.

During the protracted review, WASA fully cooperated in the audit process, voluntarily providing the auditing team with open access to all its managers and staff, billing and inventory systems and documents, as requested by the Auditor and her representatives.

After this extensive review, the Auditor found only minor management issues in a contract with UMI for a 10-month period from May 30, 2000, to March 30, 2001, which WASA had already identified and addressed prior to the Auditor's investigation. The Auditor reports several other conclusions for which WASA has been provided no supporting data or other documentation by the Auditor, and to which WASA, therefore, cannot agree.

Although there were several expected benefits, the UMI contract for meter repair and testing studied by the Auditor had two major objectives: (1) WASA wanted to more accurately bill customers and project revenue by modernizing its meter technology, and (2) WASA wanted to obtain a baseline of information to be used later in the AMR upgrade process. These objectives of the contract were fully met.

As a result, WASA has dramatically improved customer service to the residents of the District of Columbia and increased revenues by \$10 million. In addition, WASA and UMI have been highly commended by industry experts for their ongoing work with meter replacements.

Background

Prior to WASA's creation as an independent authority in 1997, the organization's customer service delivery was severely deficient (when compared to other utilities locally and nationally) in the percentage of estimated meter readings, the accuracy of meter readings, and the cost to read meters. Revenue could not be accurately projected because of the lack of reliable and accurate water usage information. There was not an effective meter maintenance program and no large meter testing and repair program in place.

One of WASA's initial actions was to implement a new, more experienced senior customer service management team. This new management team was directly responsible for addressing all of the day-to-day customer service issues facing the department, under the executive leadership of WASA's General Manager and Chief Financial Officer.

In 1998, Thompson, Cobb, Bazilio & Associates, PC (TCBA) was hired by WASA, to conduct a comprehensive review of the Department of Water Measurement and Billing to make recommendations for reengineering operations and improving organizational structure. WASA's management team has systematically addressed the problems outlined in TCBA's final report. The internal improvement plan has placed major emphasis on staff training and investments in modern technology.

The Auditor identified a few problems, which WASA recognized and has already addressed.

WASA recognizes that the contract with UMI in 2000 could have, and should have, been handled better. The Authority acknowledges that:

- The day-to-day oversight and management of the large meter testing and repair contract could have been stronger. As a result, a strong project management team was established for the AMR project, although this fact is not mentioned in the audit report.
- The 20-missing meters cited in the Auditor's report are worth \$23,500. WASA will seek reimbursement from UMI for the value of the missing meters.

Furthermore, WASA, before the issuance of this report, had taken the following actions to correct these issues.

- The two employees responsible for managing this contract were disciplined through WASA's performance management process directly relating to their poor performance in regards to this issue.
- At WASA's request, the D.C. Inspector General (IG) completed two related reports on the accuracy of WASA's new meters and automated metering system (AMR) system, as well as a review of WASA's customer service responsiveness and billings. The IG concluded that WASA's bills are accurate; its meters and AMR system accurately measure consumption; and uncovered several minor customer responsiveness issues that have since been fully addressed. The IG's reports serve as further validation of the overall effectiveness of WASA's customer service initiatives.

In addition, WASA further agrees to undertake the following to comply with the Auditor's recommendations:

- Obtain actual meter readings on meters that were estimated after UMI's repairs.
- Amend its procurement procedures to add a specific reference to the "contracting out" provision promulgated in Article 55 of the Master Agreement.
- Ensure that employees trained under the UMI contract receive certificates indicating the training and number of hours they participated in.

WASA believes the Auditor's remaining conclusions are not adequately supported by the available data or documentation.

Each of the 12 findings issued by the Auditor and detailed in the response below appears to be based on a misinterpretation of contract terms, data analysis, or procurement regulations.

The extended length of the review by the Auditor, 26 months, in some instances provides a dated snap shot of operational activities in the past. The report, therefore, does not reflect either changes that are simply the result of the passage of time or improvements in relevant WASA operations. For example, one of the Auditor's findings indicates that lack of adequate contract monitoring resulted in WASA not paying UMI according to contract terms. In fact, WASA's CFO started a review of payments to the firm in advance of the audit, and notified the Auditor's representative of this activity. Upon completion of the WASA review all of the issues noted by the Auditor in this report had been addressed.

In general, this relatively small UMI contract had two primary objectives. First, WASA wanted to more accurately bill customers and project revenue by modernizing its meter technology. Secondly, the Authority wanted to obtain baseline of information to be used later in the AMR upgrade process. Clearly, the contract achieved both major objectives, achieving significant results and improvements, including:

- The plan to modernize the District's aged metering infrastructure, including the large meter testing and repair contract, dramatically improved customer services.
- The large meter testing and repair contract, the subject of this report, yielded over \$10 million of well-documented increases in revenues.
- The conditions described by the Auditor in her report have been fully addressed and are in no way representative of WASA's current customer service operations.

- Meter operations employees were trained to install, use, and diagnose issues with the new AMR technology. With the need for manual meter reading eliminated, job descriptions were revised to reflect the new work realignments. These new positions were filled entirely by existing, retrained WASA employees, so there has been ***no reduction in workforce*** associated with the new technology.
- In four years, WASA has significantly improved its meter operations. WASA is proud to say that its current meter operations division is using state-of-the-art technology and all staff is trained to install, repair and test meters equipped with AMR technology.
- Delinquent customer receivables declined from \$31.4 million when WASA was created, to their current level of \$17 million. This is a direct result of the improved collections and billing initiatives protocol, which includes more systematic field service collections and conversion from quarterly to monthly billing.
- Supporting WASA's obligation to ensure that it accurately bills customers for actual services provided helps ensure that each ratepayer pays his fair share of the costs of delivering services to our customers.

Conclusion

Of the approximately \$40 million in contracts scrutinized regarding water meter operations, the Auditor focused on problems that occurred several years ago on the relatively small (\$3.2 million) contract for the repair and testing of large water meters. WASA recognized the problems, dealt with them swiftly and took steps to significantly improve its systems to avoid similar problems in the future. The Authority takes its commitment to its customers seriously. By improving employee training and modernizing technology, WASA has dramatically improved customer service.

In addition, WASA continues to work with UMI and is pleased with the company's performance on a separate contract signed in late 2002 to replace all WASA meters and install AMR. While the Auditor also reviewed this contract, she has not identified any findings or issued any report on that situation to date.

Not only is WASA pleased with UMI's work on the AMR project, in addition, WASA and UMI have been highly commended by industry experts for their ongoing work with meter replacements which have increased efficiency, provided more accurate customer billing information, and more timely and responsive customer service to the residents of the District of Columbia.

SUMMARY

This report is WASA's response to a draft audit report by the District of Columbia Auditor, dated June 15, 2004, concerning the review of management and performance under a contract for \$3,229,215 awarded by the District of Columbia Water and Sewer Authority (WASA) to United Metering, Inc. (UMI).

District of Columbia Auditor, Deborah K. Nichols, informed WASA of a pending audit in a letter dated April 23, 2002. The stated purpose of the audit was to review contracts awarded to United Metering, Inc. and other vendors related to surveying, testing, repairing, and installing water meters in the District of Columbia.

An auditor arrived at WASA on May 16, 2002 to begin an audit of three contracts:

- The Water Meter Testing Calibration and Repair/Replacement Contract, number WAS-20110AA-GI
- The AMR/Meter Replacement Contract, number WAS-2038-AA-AB
- O'Brien and Gere, a General Services Administration Contract, number GS-10F-0322K.

WASA provided the Audit team access to employees, internal documents and system applications over the two-year audit engagement. WASA used consultant services and internal staff to respond to the many information requests because much of the data was not stored electronically as WASA transitioned to a new customer information system (CIS). We estimated that over 50,000 records were reproduced and access was given to over 250,000 paper records. The Auditor was provided access to WASA's legacy computer system and the new Customer Information System (CIS) throughout the entire audit period. WASA also provided systems training to the Audit staff so they could obtain information directly, without the data first passing through WASA's employees. WASA also developed custom data files containing over one million records to support this initiative.

WASA generally disagrees with the Auditor's conclusions that are not supported by a review of the record. For example, the auditor implies that the work was not performed in accordance with the contract terms; however, the audit team did not inspect a single meter installation to validate this assertion.

WASA complied fully with all contract requirements, which is not evident in this report. The report also fails to acknowledge many of the positive contract benefits, for example:

- The large meter testing and repair contract yielded over \$10 million of well-documented increases in revenues. This was one of two primary contract objectives.
- This contract established baseline information on large meters, a precursor to the AMR project. This information was a direct source of "right sizing" information in the AMR project, the second key contract objective.

In addition, the conditions described by the Auditor do not reflect WASA's current customer service operations. The extended length of the review by the Auditor, 26 months, in some instances provides a dated snap shot of operational activities in the past. The report, therefore, does not reflect either changes that are simply the result of the passage of time or improvements in relevant WASA operations.

WASA agrees with two Audit conclusions and agreed to perform some additional follow up action on some related issues. These include:

- The day-to-day oversight and management of the large meter testing and repair contract could have been stronger. This is why a strong project management team was established for the AMR project, although not mentioned in this report.
- The report identified 20 meters that cannot be located worth \$23,500. WASA will seek reimbursement from UMI for the value of the missing meters.

In addition, WASA agrees to:

- Obtain actual meter readings on meters that were estimated after UMI's repairs
- Amend its procurement rules to add a specific reference to the "contracting out provision promulgated in Article 55 of the Master Agreement.
- Ensure that employees trained under this contract receive certificates indicating the training and number of hours they participated in.

WASA notes the second contract with United Metering for \$36,299,490, signed in late 2002 to replace all of its meters and install an automated metering system (AMR), was also a subject of the Auditor's review. To date the Auditor has not identified any findings or issued any report for that contract.

WASA's Comprehensive Customer Service Improvement Plan

The large meter testing and repair contract, the subject of an over two year audit by the District of Columbia Auditor, was one of several key initiatives required to modernize the District's aged metering infrastructure and significantly improve customer services.

Prior to WASA's creation as an independent authority in FY 1997, the organization's customer service delivery was severely limited compared to other utilities. Meter reading costs were high while performance was low. Meter reading and meter accuracy were problematic and impacted revenue projections. There was no meter maintenance program and no large meter testing and repair program.

WASA's initial action was to put in place a new and experienced senior customer service management team, with a new director and five managers over each key area: billing, collections, meter reading, meter operations, and customer communications. This new management team was directly responsible for addressing daily customer service issues under the executive leadership of WASA's General Manager and Chief Financial Officer.

WASA contracted with Thompson, Cobb, Bazilio & Associates, PC (TCBA) to conduct a comprehensive review of WASA's Department of Water Measurement and Billing and to make recommendations for reengineering operations and improving organizational structure. TCBA rendered a report dated January 15, 1999, detailing the poor state of customer service operations identifying 23 major problems:

Revenue Collection – the ability to collect revenue is impaired

- An unreasonable length of time exists between scheduled meter readings and actual billing
- Many active accounts are not billed
- Manual processes are performed that should either be automated or not performed
- There are no pro-active collections activities
- No effective process exists for the collection of delinquent accounts for four or more units

Customer Service – is neither prompt nor effective

- Management and supervision are inadequate
- Staff performance varies widely
- The level of the customer service branch functionality is low
- Quality levels are lower than those of other utilities

- Customers are "handed off" from one unit to others
- Accounts are not processed in a timely manner
- Some functions are duplicated
- There are unnecessary steps, customer inconvenience, and lengthy delays in establishing new accounts and discontinuing service
- Customer orientation is deficient
- The Water Billing System (WBS), as currently configured, is inadequate as an effective tool for the staff of the phone center and other staff who require customer information
- Policies and procedures are inconsistent, incomplete, and not documented
- Hours of service are limited
- There is limited ability to provide service in the native languages of major ethnic groups populating the District
- Far too much correspondence work is performed

Cost of Services - are higher than other comparable utilities

- WASA's meter reading cost far exceeds the cost of other utilities
- The installation and testing branches within the water meter and measurement division are overstaffed based on the functions they should perform
- Some necessary meter operation functions are not performed, while other functions that do not belong within a meter operation are performed
- Some functions performed are either unnecessary or can be scaled back

WASA began to systematically address the problems outlined in the TCBA report in FY 1997 and accelerated its efforts when the review was completed. Many problems were resolved concurrently.

As outlined in the TCBA report, WASA implemented a comprehensive internal improvement plan for the Customer Service Department. The internal improvement plan placed major emphasis on training and investing in modern technology. This included implementation of a new customer information and billing system, the large meter testing and repair program, and the installation of automated meters throughout the system. These major efforts were initiated concurrently.

Many of the meters that WASA inherited from its predecessor agency (the District of Columbia Water and Sewer Utility Administration) were 30 years or older and there was no evidence of a formal comprehensive large meter testing and repair program. Damaged and inaccurate metering was the root cause of many customer service problems. Additionally, maintenance of these meters

was even more problematic because WASA did not own any of the commercial meters, a unique situation in the water industry.

The lack of a formal large meter testing and repair program can result in a 5 to 20 percent loss in revenue to a water utility. Since large meter accounts represent about 3 percent of the total meters but account for almost 50 percent of WASA's \$195 million of retail billings. WASA decided to 1) evaluate the condition of the large meters; 2) repair as many as possible; 3) acquire new test equipment and meter parts inventory and 4) retrain its staff to then maintain these meters on an annual basis, rather than once every 20 or 30 years or longer.

To fully address all metering deficiencies, WASA was also engaged in the planning for a comprehensive meter replacement and automation program, AMR. However, WASA knew that the AMR program would take at least two years to begin implementation because of the extensive scope and complexity of the project. Residential meters were targeted as the first phase of the program because they were the source of the largest number of customer issues and complaints. They were also in relatively better condition than the commercial meters, especially the largest commercial meters, and were easier to replace, giving the biggest customer service 'bang for the buck'. With this AMR plan, WASA knew that commercial meter replacement could not start for at least three years after the beginning of the large meter testing and repair contract. The large meter testing and repair project was a good interim measure to quickly address some major metering issues.

Outcomes of the Customer Service Improvement Plan

WASA's large meter testing and repair contract has either directly or indirectly been responsible for some significant results and improvements:

- WASA maximized its revenues largely due to the large meter testing and repair project. The project achieved its objectives by realizing more than \$10 million of increased revenues and by establishing baseline information on many of our large meters for use in the AMR project. WASA has also benefited through staff training and the purchase of meter testing equipment.
- Prior to the large meter testing and repair contract, WASA did not have a meter test facility or a meter-testing program. Guidelines published by the American Water Works Association (AWWA) recommend annual testing of meters three inches or larger, and more frequent testing of meters six inches and larger. Therefore, at the end of the large meter testing and repair project, WASA purchased a new meter test bench and now uses it on a daily basis to test meters.

- Prior to January 2003, WASA did not own commercial meters. Repair or replacement of commercial meters was often delayed because many meters were not readily accessible. The District of Columbia Municipal Regulations were amended in January 2003 to give WASA ownership of commercial meters, which contributed to the success of the AMR project.
- A parallel component of the large meter testing and repair contract was retraining staff to carry on the day-to-day meter operations program. Staff generally did not have the skills needed to test and repair large meters, and WASA did not have the equipment needed to test meters. Adequate inventory of parts and replacement meters did not exist. All of these facts were evident in 1997 and 1998 and were regularly reported to the management team by employees.
- WASA's training program was continued from the large meter repair project into the AMR project that is currently being completed by WASA. Meter operations employees were trained in installing, using, and diagnosing issues with the new AMR technology. With the need for manual meter reading eliminated, job descriptions were revised to reflect the new work processes. These new positions were filled entirely by existing, retrained WASA employees, so there has been no reduction in force associated with the new technology. In four years, WASA completely reengineered meter operations. WASA is proud to say that its current meter operations division is using state of the art technology and all staff is trained to install, repair and test meters that are equipped with AMR technology. WASA is an industry leader in fixed network wireless AMR technology for water meters.
- In June 2001, WASA's new Customer Information System came on line with a meter sampling function to generate periodic meter testing schedules, a key component in a formal large meter testing and repair program.

The other elements of WASA's customer service improvement plan, building on the large meter testing and repair program, have been equally successful.

DC Inspector General Endorses WASA's Metering Program

At WASA's request, the DC Inspector General (IG) completed two related reports. The first report dated December 23, 2003 was on the accuracy of WASA's new meters and AMR system. A second report, dated June 1, 2004, was a review of WASA's customer billings and its customer service responsiveness. The IG concluded that WASA's bills are accurate and its meters and AMR system accurately measure consumption. The IG found several minor customer responsiveness issues that have been fully addressed. The IG's reports serve as further validation of the overall effectiveness of WASA's

customer service initiatives including the achievement of performance goals under earlier contracts reviewed by the Auditor:

Other achievements include the following:

- WASA's Call Center responsiveness has improved and a performance standard has been established to provide faster response. As a result, billing complaints have also been substantially reduced. For example, in 2000, we received 4,152 "high bill" complaints as contrasted with 2003, when we received 1,929 complaints. So far in 2004 we received 490 complaints. This is a direct result of the new metering technology and significantly upgraded staff capabilities.
- WASA's state-of-the-art Customer Information System implemented in June 2001, offers more payment options than any other gas, water, or electric utility. The combination of our website and our customer billing and information system have given customers many features including: enhanced billing information and payment options; on-line account information; payment via electronic funds transfer and credit/debit cards; and budget billing.
- WASA's AMR system has proven to be a very successful resolution of several major customer service deficiencies and financial issues stemming from the District's aging metering system. This new system relies on cellular technology to transmit water consumption data to WASA. AMR provides accurate and actual meter readings – there are virtually no more estimated meter readings with AMR.
- WASA was able to move from quarterly to monthly billings for residential accounts in 2003 because of the timeliness of data transfer. WASA provides much improved service to our customers by identifying potential internal plumbing problems and finding solutions more quickly. Monthly billing has also improved cash flow by reducing customer receivable balances due to the shorter billing cycle.
- WASA's collections efforts were greatly impacted by the results of two projects: large meter testing and repair followed by AMR. Delinquent customer receivables declined from \$31.4 million when WASA was created to their current level of \$17 million. This is a result of improved collections actions and billing initiatives including more systematic field service collections and conversion from quarterly to monthly billing.

- Online data is now available to customers allowing customers to track daily usage. Commercial customers can use this information as a key part of their water conservation programs.
- Our consolidated command center, which has centralized the function of three departments into the Customer Service Department, offers a single point of contact for customers and ensures more prompt follow up and resolution of each customer request.

WASA's Response to Specific Audit Findings

The following section of this report details WASA's responses to each of the Auditor's findings and conclusions. Refer to Exhibit 1 for the entire Auditor's report.

Background Section (Audit Report, pp. 2 – 3)

WASA Response: There are several clarifications needed in the Background section of the report.

The Auditor questions the type of contract awarded to UMI, and in later comments draws several conclusions that are based on the type of contract issued, which was an Indefinite Quantity Indefinite Delivery contract. The contract was for an initial 10-month term, with two annual renewal options. As noted by the Auditor, the renewal options were never exercised, in accordance with WASA's initial plan. Total spending under the contract was \$2.8 million with a "not-to-exceed contract amount of \$3.2 million.

An indefinite delivery indefinite quantity (IDIQ) contract is allowed by WASA's procurement regulations. Work, as authorized, was to be paid at the fixed unit prices in the contract. The quantities of work in the contract were estimated amounts only and WASA was not contractually obligated to do specific amounts of work. In return for the lack of commitment by WASA to procure any specific amount of work, UMI proposed, and WASA agreed, to a \$622,493 fixed fee for each year, to be paid regardless of the quantity of work performed. This was to provide UMI some compensation for mobilizing its workforce, vehicles, and equipment, etc., even if no work were performed. During contract negotiations UMI also priced out work under an option that did not have any fixed fee and the total contract amount for the same quantity of work was the same under either option.

The Auditor incorrectly implies that WASA is subject to the District of Columbia Government procurement regulations. WASA's enabling legislation, approved by the D.C. City Council and Mayor, exempts WASA from the D.C. Government procurement regulations.

FINDING 1: WASA officials failed to monitor UMI's performance. (Audit Report pp. 4 – 7)

WASA RESPONSE: WASA monitored UMI's performance. WASA complied with all contract terms and ensured the work performed by UMI was of acceptable quality and in accordance with the contract terms.

WASA has not seen, and the Auditor has not shown WASA, any documentation that supports the Auditor's statement that "... as a result of the lack of adequate

and systematic monitoring during the contract period, WASA could not be assured that the work performed by UMI complied with certain contract terms and conditions or that the work completed by UMI was of acceptably quality."

The Customer Service Manager for meter operations received weekly status reports from UMI during this project. WASA believes these reports are evidence of consistent monitoring of the project.

The O'Brien and Gere (OBG) contract was initiated to, among other things, review much of the work performed by UMI and determine if the work WASA paid for was actually performed. As noted later, OBG did not find any issues with the quality of UMI's work.

The Auditor comments that Meter Operations Division staff field-tested some meters that UMI repaired or installed. Approximately six months into the large meter testing and repair project, WASA staff, accompanied by UMI, inspected the repairs and retested meters. Most field visits by our own employees were to either 1) perform the inspection functions required by the contract, or 2) follow up on meter issues as reported to them by the customer billing exception process. Staff was field-testing as part of its inspections of UMI's work, not due to a lack of contract compliance on UMI's part.

The records do not reflect any issues reported by employees relative to the quality of work performed by UMI. Employees made general comments about the quality of work but no employee ever followed up on management's request to provide specific names and addresses of customer locations for follow up where unsatisfactory work was performed.

In some cases, the meter tests showed the meter to be inaccurate after a UMI *repair*. This finding is not proof of poor workmanship by UMI, as it is normal for large meters to become inaccurate within a year after being repaired. This is the reason for the AWWA industry practice to test and recalibrate large meters on an annual basis.

The Auditor states that WASA officials did not provide copies of written notices informing UMI of unsatisfactory work performance. WASA is not aware and the Auditor provided no evidence of unsatisfactory work performance by UMI. Consequently, there is no basis for the Auditor to conclude that WASA did not provide appropriate documentation to the contractor.

The Auditor found that "...UMI failed to data log the number of meters which the contract required..." and that this was "...an area of noncompliance..." with the contract. As explained below, the contract did not require WASA to data log a specific number of meters, so this was not an area of noncompliance. See Finding 7 for a further explanation of why fewer meters were data logged and more meters were repaired, than were estimated when the contract was signed.

The management of the contract by senior managers should have been more aggressive and effective. The issues raised by the Auditor were explained to the Auditor's representative in the initial meeting in May 2002, and have been completely resolved. WASA acknowledges that its day-to-day oversight and management of the large meter testing and repair contract could have been stronger. WASA disagrees with the conclusion that these deficiencies led to the results cited in this comment, and the Auditor has not provided any evidence to support her conclusions.

The Auditor states that the two primary senior managers responsible for this contract were unavailable to interview. WASA gave the Auditor home phone numbers for both of the former employees and has been in contact with them on occasion during this audit. It appears the Auditor chose not to contact them.

WASA believes that, although there were areas where the management of the project could have been stronger, the large meter testing and repair project met WASA's objectives for entering into the contract and therefore was a success.

The Auditor's comments about the OBG contract are addressed in findings 2 and 3.

FINDING 2: The Services OBG Was Contracted to Perform Duplicated Some of the Services That WASA Paid UMI to Perform. (Audit Report pp. 8– 9)

WASA RESPONSE: The auditor's observation does not support this finding. The OBG contract was an independent verification and validation contract, similar to a construction management contract. These types of contracts are typical for construction projects and information technology projects. WASA engages an independent third party as construction manager for most of its capital construction projects.

The primary role of OBG was to supplement the project management activities of in-house staff and help ensure that the prime contractor met contractual requirements. These roles were not a duplication of UMI's work. The cost of construction management contracts generally is approximately 15 percent. The OBG contract costs were approximately 15 percent of the amount paid to UMI.

Additionally, OBG was hired to validate questionable meter readings obtained by WASA's employees and verify locations as employees had raised this as an issue with UMI's work. Management was concerned that large-metered accounts, some of which were repaired by UMI, continued to have consumption estimated for long periods of time by WASA employees. The estimated reads caused customer concerns and made it impossible to determine the effectiveness of the UMI repairs. WASA's meter operations employees claimed

difficulty in gaining access to the large meters. OBG was able to obtain meter readings from virtually all locations that WASA employees could not access.

At the request of the WASA CFO, OBG also reviewed UMI's database related to meter tests and repairs to validate the methodology used by UMI to repair meters.

FINDING 3: Employees of WASA's MOD Could Have Performed Services That OBG Was Paid to Perform. (Audit Report p. 9)

WASA RESPONSE: WASA disagrees with the Auditor's conclusions.

As noted under Finding 2, a major issue that continued to occur after UMI tested and repaired meters was the inability of WASA's employees to obtain actual meter readings due to access issues.

OBG was able to gain access to almost every location, and provided WASA management with an independent review of UMI's work performance and the condition of each site visited. OBG's work product was also used during the to support the successful AMR project.

FINDING 4: Lack of Adequate Monitoring Resulted in WASA Not Paying UMI According to Contract Specifications During the Contract Period. (Audit Report pp. 9 – 10)

WASA RESPONSE: WASA paid UMI according to contract terms.

The final project invoice was received well before the Auditor initiated her audit of the project. WASA's CFO had already started his own investigation of payments to the firm and notified the Auditor's representative of this activity, and of many of his specific findings, at the first meeting with her on May 16, 2002.

During his review, the CFO determined that UMI had billed the first year's fixed fee over a 10-month period and, based on a three-month extension to the contract, billed an additional three months of fixed fee. He determined that only one additional month of fixed fee was due, and payment was not made for the additional billing. A review of other payments showed that UMI had been paid for labor and parts at rates that were less than the contract rates in many cases; appropriate adjustments were made as the contract was closed out. Upon completion of the contract payment review, WASA was assured that all payments were made strictly in conformance with the contract. There was no UMI benefit, nor penalty to WASA, when the final contract payment was made. All of the issues noted by the Auditor were appropriately addressed with WASA's contract closeout payment to UMI June 27, 2003. The Auditor received a copy of this final payment documentation well before she completed her audit.

WASA could not recalculate and reduce the overhead payments, as the Auditor concludes should have been done. This overhead payment was negotiated as a fixed annual payment amount so that WASA would have the flexibility to schedule as much or as little work as it deemed appropriate, based on its findings as work under the contract progressed. If work was more difficult to complete than anticipated, and less work was available, WASA did not have to pay the entire contract amount. In return, UMI received some compensation for a portion of its costs for mobilizing its workforce and procuring equipment and vehicles without being guaranteed any work in return.

With respect to UMI's reimbursements to WASA for meters and parts, WASA has reviewed its payments for meters and parts and notes that it was credited by UMI at a higher rate for WASA's parts and meters used by UMI than WASA paid for the meters and parts.

WASA's CFO made several written requests to the D.C. Auditor, Exhibit 2 in addition to several phone requests, for additional adjustments that might have been produced by her review of contract payments, prior to WASA finalizing the closeout invoice amount. After a year passed, with no response from the Auditor, WASA's CFO indicated in writing that he could no longer withhold the final payment to UMI. WASA's CFO paid the contractor based solely on WASA's internal review. The Auditor has provided no additional information about any improper or incorrect payments under the contract and the finding may be in error. WASA will adjust the UMI invoices if the Auditor provides valid information regarding incorrect payments.

FINDING 5: WASA Officials Failed To Enforce UMI's One Year Guarantee and Warranty. (Audit Report pp. 10 – 13)

WASA RESPONSE: WASA disagrees with the Auditor's conclusions.

The Auditor has not provided WASA any documentation on which it based its conclusion. The Auditor's recommendation is for WASA to perform another audit following the 26-month review performed by the Auditor to determine if the Auditor's suspicions are accurate.

WASA notes that the Auditor's representatives have stated that they did not visit any meter locations and thus have no knowledge of whether UMI repairs were actually performed. The sole evidence cited by the Auditor is that meters tested and repaired by UMI were later tested by WASA staff and found to be inaccurate. This is not evidence that UMI's work was unsatisfactory. As previously explained, large meters routinely slow down within a year after being repaired because sediment and debris can enter the meter chamber and damage the gears. This is the reason for the water industry "best practice" of testing and recalibrating/repairing large meters at least annually. It is entirely plausible that these meters had been properly repaired and needed recalibration or additional

repairs due to existing field conditions. This was a primary reason for engaging OBG to independently visit each site where UMI had tested and/or repaired meters and verify that the work billed by UMI had actually been performed. OBG did not find any instances where UMI's workmanship was deficient.

As noted in Finding 1, WASA acknowledges that its day-to-day management and documentation of oversight of the project could have been better. However, WASA has done extensive work to review the work performed by UMI, as has the Auditor and, like the Auditor, has not yet found any instances of deficient performance by UMI.

Finally, the review recommended by the Auditor, to be performed within 90 days, would not yield the result that is suggested. The warranty by UMI is for its workmanship; it is not a warranty of accuracy. As previously explained, large meters routinely lose accuracy very quickly, which is why they should be tested and recalibrated at least annually. The evidence cited by the Auditor is meaningless for determining if UMI's work was satisfactory. WASA believes its independent verification work, performed by OBG, was the most appropriate way to perform this kind of review.

FINDING 6: WASA officials did not verify whether employees used by UMI were thoroughly experienced or qualified. (Audit Report pp. 13 – 14)

WASA RESPONSE: It is not standard practice to review resumes of contracted employees, or to interview such employees if the firm is determined to be qualified to perform the work.

In the process of selecting UMI for this contract, WASA reviewed resumes and interviewed the key personnel on the project. As stated in the contract, key personnel cannot be replaced without WASA's approval. However, it is the responsibility of the contractor to ensure the experience and qualification of lower level personnel. This is the same procedure followed on all WASA contract awards.

Additionally, on June 24, 2003, the United States Conference of Mayors acknowledged Mayor Anthony Williams and UMI for their innovative employment efforts on this contract. (See Exhibit 3) UMI, on their own initiative, contacted the District of Columbia Government, and ultimately partnered with WASA and Davis Memorial Goodwill Industries to train and employ local workers for this project. The partnership resulted in a workforce equipped with the skills and training necessary to work for UMI as meter technicians.

WASA believes that UMI fulfilled its contractual obligations to ensure highly qualified individuals were placed on this project. According to Larry Edwards, Vice President and General Manager of United Metering, "UMI focused their search for candidates within the metropolitan Washington, D.C. region. All

candidates were thoroughly interviewed by UMI with specific emphasis on obtaining staff with experience in water utility, plumbing, building maintenance and other crafts."

After selecting contractual staff, UMI provided comprehensive classroom and hands-on field training. When UMI evaluated candidates as capable of performing the contract work, those individuals were offered permanent contractual positions.

FINDING 7: UMI did not test and data log the number of meters required by the contract. (Audit Report pp. 14 –16)

WASA RESPONSE: WASA disagrees with this finding because it conflicts with industry standards.

The AWWA guidelines, Catalog M-22, Sizing Water Service Lines and Meters, states that to accurately data log a meter for meter sizing purposes, the meter must first be accurate. We know that only 453 meters of the 2,474 tested met the AWWA minimum threshold of 95 percent accuracy. Additionally, one was a fire service meter and 30 others were repaired near the end of the contract expiration period and must be removed from the eligible meter population. As such, there were not 812 meters to data log based on AWWA standards.

WASA wanted to data log more meters but the system was in worse condition than was projected when the contract was signed. As the Auditor states, WASA did not pay for the meters that were not data logged. Therefore, there is no contract compliance issue.

During data logging, a flow recorder measures the water flow in the high, medium and low ranges of a meter. The flow recorder results are used to right size the meter. However, if the meter is not registering correctly it has to be repaired prior to data logging. A flow meter cannot determine accuracy. If a meter is under-registering then the data recorder would return the wrong results and a meter would be incorrectly downsized. This would lead to low-pressure problems for the customer, which the Auditor failed to mention.

WASA agrees with the Auditor's statement "UMI was paid based on work actually performed rather than the quantity specified in the contract. As a result of UMI's failure to data log the required number of meters, WASA actually paid UMI less than would have been paid if services had been rendered pursuant to the contract." WASA also agrees that UMI repaired more meters than the contract specified. We believe these are acknowledgements of the success of this contract. Our belief is that customers, like WASA, want to have an accurate meter, which is the reason more meters were repaired than initially planned for. Since fewer meters were able to be data logged, due to higher inaccuracy rates

than were initially planned, more meters were repaired, and the total amount paid was substantially less than anticipated.

Lastly, the 899 meters repaired have generated at least \$10 million of well-documented revenue increases. If WASA had data logged more meters and repaired less, it would be generating fewer revenues with no corresponding additional benefit.

FINDING 8: UMI may not have maximized revenue from repairs. (Audit Report p. 17)

WASA RESPONSE: WASA disagrees with the Auditor's finding that we may not have maximized revenue from repairs.

Based on WASA's analysis, which was reviewed by the Auditor, the meters that were repaired by UMI have already yielded at least \$10,008,727, a 16.9 percent increase in billings for the 693 meters with actual meter readings before, during, and after the repair date.

In March 2002, OBG reported that the meters repaired were evenly distributed across the system rather than the worst meters. However, the contract did not require UMI to maximize revenue nor to focus only on specific accounts. The intent was to inspect each site, perform meter tests and repair the worst performing meters. All of these various types of work (inspections, tests, repairs) on meters were being done in parallel to ensure the maximum results within the time constraints of this contract. It was impossible to know if ultimately the worst meters were being addressed while the program was ongoing.

The condition of ancillary equipment connecting to some of the meters was in such poor condition that repairing the meter would not have produced the desired effect on revenues. Exhibit 4 shows the condition of some of the large meters in the system that had suffered from lack of maintenance for years. This neglect was attributable to customer ownership of large commercial meters and the complete lack of any D.C. Government program to either enforce maintenance by the owners or to maintain the meters themselves and bill the owners for the repairs. Because of the large number of meters needing repair, staff chose to have UMI fix smaller but easier to repair meters in order to maximize revenues from repairs. WASA believes it achieved this goal.

FINDING 9: Daily Average Consumption (DAC) increased for approximately 50 percent of the meters repaired by UMI. (Audit Report pp. 17 – 19)

WASA RESPONSE: WASA does not understand the Auditor's comments about DAC.

WASA believes accuracy is the only relevant issue, not whether DAC increased or decreased. WASA expected revenue increases as a result of the large meter testing and repair contract, and it has documented at least \$10 million of additional revenues from the repaired meters.

On an individual meter basis, usage may increase or decrease for various reasons, as noted by the Auditor: changes in facilities, water conservation efforts, etc. Therefore, if the meter is accurate and usage declines, then the meter repair was effective, something our customers would agree with.

WASA disagrees with the Auditor's comments about its analysis and stands by our conclusion that revenues have increased by at least \$10 million since the repairs were completed, or by 350 percent more than the entire value of the contract. It makes no difference if the number of meter readings is different for each meter. As long as a beginning and ending reading is available, the usage for the same total period of time would always be identical to that obtained if more interim meter readings were available. Additionally, having different periods of actual usage for each meter cancels out much of the impact of each of the variables noted by the Auditor. The result is that the meter repair is the most likely reason for the over \$10 million of increased meter billings.

WASA will review the detailed UMI test results as recommended by the Auditor to determine if further action is warranted.

FINDING 10: WASA's Contract Awarded to UMI Duplicated Duties of WASA's MOD. (Audit Report pp. 19 – 20)

WASA RESPONSE: This finding is in error because the Auditor failed to examine WASA procedures for privatization developed and contractually agreed upon with WASA's labor unions.

WASA fully complied with those procedures before going forward with the UMI contract, thereby satisfying both the contractual and statutory requirements for privatization well before the award and performance of the UMI contract.

Contrary to the Auditor's findings, WASA has developed a detailed set of rules and procedures applicable to "privatizing" or contracting-out work performed by WASA's unionized staff. WASA's compliance with the statutory requirements of DC Code Section 34-2202.03 (10) can be found in both the current Master

Agreement on Compensation and Working Conditions between WASA and AFGE Locals 631,872, 2553, AFSCME Local 2091 and NAGE Local R3-06, executed October 4, 2001 ("Master Agreement II"), and the predecessor Master Agreement between WASA and the same bargaining units, executed June 4, 1998 ("Master Agreement I"). Master Agreement I and Master Agreement II address privatization in their contract articles, entitled "Contracting Out," Articles 49 and 55, respectively (Exhibit 5).

Under these provisions, WASA's rules for contracting-out services or activities performed by WASA employees are detailed and specific. These contract provisions meet the statutory standard by addressing the requirement for WASA to establish that the contracting out: (i) will achieve increased efficiencies and cost savings, and (ii) that if any Authority employees are displaced, the contractor shall offer a right-of-first-refusal to employment by the contractor at market rates. The contract also prohibits the supervision of WASA workers by contractors.

Compliance with the Master Agreements requires consultation with the affected union regarding any adverse impact on its membership prior to the issuance of the invitation to bid. In the case of the UMI project, WASA's consultations, including meetings and written correspondence, with AFGE Local 872, the union representing the affected MOD workers, started in 1999 well before the May, 2000 award of the UMI contract. A summary of the initial notice to the Union is found in a July 16, 1999 letter from Rhoberta Piper, Acting Director of WASA's Water Measurement and Billing Department, to Jocelyn Johnson, President of AFGE Local 872 (Exhibit 6). Ms. Piper's letter to Local 872 addresses the issues of (1) the expected financial savings, (2) the impact and effect on unit employees, including any anticipated job loss, (3) the actual and potential skills of the employees currently doing the work, (4) the equipment, facilities and/or machinery needed for the work; and (5) the likelihood that the work would be long-term or recurring and other factors. Following up on the correspondence, the MOD Manager, Ms Piper and those reporting directly to her held a series of "impact bargaining" and informational meetings with the Union and affected employees to respond to their questions and to update the initial July 16 notice.

The change out of the meters undertaken with the UMI contract was the precursor of the integrated program to implement the automation of WASA meter reading processes. By adopting this integrated approach, WASA sought to maximize the potential for increased efficiency, as well as to realize savings in time and costs. In a follow-up March 20, 2000 letter to Local 872's President, Ms. Piper offered a detailed report on WASA's compliance with the privatization rules in full compliance with Article 49 of the Master Agreement (Exhibit 7). Again, as the AMR project proceeded, WASA's management addressed the privatization concerns of employees and their union in the early stages of its consideration of the UMI procurements.

In summary, WASA has developed and implemented rules for contracting out services or activities performed by WASA employees in full compliance with the Master Agreement with its unions. These contract rules fully address the issues related to the displacement of employees and, by practice, require that WASA determine and document cost savings and projected efficiencies from the privatized service. WASA fully complied with these provisions in the course of the UMI procurement under Article 49 of Master Agreement I.

Article 55 of Master Agreement II succeeds Article 49 to continue WASA rules for compliance with the privatization provisions of its charter. Therefore, WASA believes that its implementation of Article 55 fully satisfies the recommendation that WASA develop and implement rules. For absolute clarity, WASA will seek to amend its procurement rules to add a specific reference to the "contracting out" provision promulgated in Article 55 of Master Agreement I.

FINDING 11: UMI's Training Provided to WASA's MOD Staff Did Not Result In Staff Certification (Audit Report pp. 21 – 22)

WASA RESPONSE: WASA staff was trained to test and repair meters under this contract and a new test facility was installed at WASA to allow for internal meter repairs.

The Auditor questioned certification of employees; however, there is no industry certification for meter operations work that WASA is aware of. All employees were trained in accordance with the contract terms. The contract's certification requirement was a generic requirement to ensure that WASA personnel could perform at the level normally expected in the industry. UMI certified to WASA that our staff had met this goal, which WASA believes fulfilled the contract terms.

WASA agrees that individual certificates were not presented to employees; while we do not believe this is required in order to meet the terms or intent of the contract, WASA will provide such certifications to all employees.

WASA does not understand the relevance of the Auditor's statement that employees believed that they were already familiar with the material presented in the UMI training course. WASA's internal improvement plans and training programs are comprehensive and include basic training, ongoing training and refresher courses. Management received numerous complaints in 1997 and 1998 from meter operations employees that they had not received any training for years, and lacked the equipment, tools, vehicles, etc., needed to perform their jobs. Staff training was put into the contract because employees identified this as a need. The fact that some employees believed that they were well trained and others in the same work unit believed they were not trained tends to confirm that a comprehensive training program for the meter operations employees was

necessary. WASA will always retain its management right and obligation to decide on the appropriate level of training for its employees.

FINDING 12: All meters UMI obtained from WASA did not appear to have been installed and UMI did not account for them. (Audit Report pp. 22 – 23)

WASA RESPONSE: A total of 61 meters were issued to UMI; 20 meters were not installed nor are they in WASA's meter inventory. WASA will obtain a credit from UMI for the actual cost paid for these 20 meters totaling \$23,500.

WASA's current meter inventory system tracks the life cycle of a meter from purchase through installation. All meters installed in the AMR project are entered into the AMR project database. Files are exchanged between CIS and the AMR database to ensure that every meter installed has an associated customer account record. The databases are synchronized on a regular basis to identify any data issues that could result in missing meters. WASA's current process provides very strong internal controls over its meter operations and inventory, and resolves any issues that may have previously existed.