CITY OF ATLANTA

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April 30, 2009

Honorable Mayor and Members of the City Council:

We contracted with KPMG to conduct this performance review of the Department of Watershed Management. The City Council passed resolution 08-R-1014 May 19, 2008, requesting the audit in conjunction with considering the department's proposed water and sewer rates. The Council adopted the proposed rate increases in ordinance 08-O-0744, as amended by full Council, June 19, 2008. The ordinance approved a 27.5% increase effective July 1, 2008, through June 30, 2008, for domestic, commercial and other users of the city's water and sewer systems. The ordinance further approved 12.5% annual increases in each of the following two years (through June 30, 2011) and a 12% increase in the final year of the four-year plan (through June 30, 2012), contingent upon the audit being released to the City Council by March 31, 2009. The Mayor approved the ordinance June 24, 2008. Ordinance 09-O-0482 extended the audit deadline to April 30, 2009.

KPMG conducted its work from December 2008 through April 2009, in accordance with Consulting Standards issued by the American Institute of Certified Public Accountants (AICPA). These standards are appropriate for CPA firms that develop findings, conclusions, and recommendations based on a scope of work determined by the client, in this case the City Auditor's Office, which is independent of the Department of Watershed Management. Similar to *Government Auditing Standards*, the AICPA Standards for Consulting Services require practitioners to undertake only professional services for which they are competent; exercise due professional care in conducting the work; adequately plan and supervise the work; and obtain sufficient, relevant data to provide a reasonable basis for conclusions and recommendations.

Methods included:

- Interviewing Department of Watershed Management staff and consultants and other city staff.
- Reviewing previous audit work and other studies.
- Reviewing and analyzing operational and financial data including department policies and procedures manuals, organization charts, DWM's strategic plan, inter-jurisdictional agreements, fee schedules, monthly aged receivables reports, bond rating reports, revenue reports by type of customer, fund account structure and current balances, billing adjustments, budget documents, audited financial statements, and the city's cost allocation plan.

- Reviewing the capital improvement process including budgeting, scheduling, design, procurement, contract administration, payment applications, value engineering and evaluation, change orders, use of contingencies, retainage, and materials management.
- Selecting a judgmental sample of nine construction projects for detailed file review to assess compliance with processes.
- Surveying employees to ask about perceived department strengths and areas for improvement.
- Reviewing rate model revenue and expenditure forecasting and assumptions and analyzing the effect of changing certain assumptions to better reflect historical data and changed market conditions.

KPMG leveraged its extensive public sector experience in reviewing utility operations and construction management to assess the Department of Watershed Management's organizational structure, financial management, capital and construction management, and operations. The report makes 73 recommendations to address potential risks and improve management and oversight. The recommendations are summarized in Appendix A of the report on page 119.

Findings and recommendations include the following:

- Analysis of assumptions underlying Watershed's rate model suggests that the four-year plan the department proposed in April 2008, which the Council approved in June 2008, would likely generate revenue beyond what the department needs to fund operations, meet bond requirements, and meet its consent decree obligations. The model assumed higher rates of operational and capital spending than the department has historically achieved. Further, the department cut its operating expenses in mid-fiscal year 2009 in response to an expected revenue shortfall due to drought-related water use restrictions, and recently reduced and revised its capital plan in response to tightening credit in the financial market. KPMG estimates that with more realistic spending assumptions, the approved rate increases could generate net revenue of $232 million by the end of 2012. The department had projected it would maintain reserves of two months operating revenue – about $54 million.

  To further test the sensitivity of the rate model, KPMG calculated two different rate increase scenarios – a 10% increase in each of the next three fiscal years and an 8% increase in each of the next three fiscal years. In each case, additional revenue, combined with accumulated net revenues from 2009, appeared to be sufficient to cover revised estimated costs and meet minimum debt service coverage requirements. The analysis illustrates the importance of reviewing and testing key assumptions used in the model before rates are adopted.

  KPMG outlines four options for the City Council to consider regarding the use of any accumulated net revenue, summarized in Exhibit 5.22 on page 46. Each option has benefits and costs, and the options are not mutually exclusive.

  - **Establish a rate stabilization fund.** This option mitigates rate spikes by providing a way to cover unexpected financial demands. Bond holders and rating agencies tend to view such funds favorably. However, the city would need to create the new fund, establish policies and procedures for its use, and amend the Master Bond Ordinance.

- **Increase capital investment using pay-as-you-go-capital financing.** This option reduces debt service costs, which represent nearly one-third of the department's annual costs now. Debt service will increase as a proportion of the budget under planned long-term debt issuances. The department's rate package projected no new pay-as-you-go projects, which is an unusual practice and concerned the city's former finance director. On the other hand, pay as you go financing requires current rate payers to pay for long-term assets up front and the city's rate burden is high. KPMG's updated analysis of the top 15 cities in a 2007 Black & Veatch survey of water/sewer rates found that Atlanta has the second highest water/sewer rates in the country in 2009 – even with a dedicated sales tax and before the additional rate increases are applied.

- **Reduce outstanding debt.** This option could reduce debt burden and debt service costs, and increase capacity of future borrowing. However, the city may incur penalties and costs to call bonds. Any decision to prematurely retire existing debt should include a legal opinion from the Bond Counsel and ensure that the benefits to the customers outweigh the costs.

- **Adjust scheduled rates.** The city could adjust rates approved for the next three fiscal years. This option could provide current rate payers some relief and preserve capacity for future rate increases. However, it could increase financial risk if revenues are not sufficient and existing bond holders and rating agencies may view a rate reduction negatively.

The department strongly disagrees with the audit's financial analysis and states that "the full analysis indicates that Net Revenues will be significantly lower than the audit suggests." The department has recently revised a number of its assumptions to reflect current economic and credit conditions, which may affect net revenue projections for the current four-year rate package. The revised rate model was not available for KPMG review. The new assumptions should be evaluated before conclusions are drawn about the availability of additional net revenue.

The City Council should weigh the options above to make decisions regarding accumulated net revenue that balance the financial impact on rate payers and the financial stability desired by the bond market. The report also recommends that the city's Finance Department and other stakeholders review rate model assumptions, inputs, and outputs. Watershed staff should be more skilled in the rate model process to improve transparency and reduce the department's dependence on external consultants for management and operation of the model.

- Several aspects of the department's $4.1 billion capital program, notably construction management, generally appear to be effective. In other respects, Watershed's management of its capital program is decentralized compared to industry best practices, and its data systems lack integration, requiring multiple inputs of the same data. Ineffective transitions, from design to procurement to construction, present schedule and cost risks. For example, project managers in facilities design were not consistently preparing construction cost estimates at 30%, 60%, and 100% design phases. These estimates are necessary to have a full understanding of the project costs before going out to bid, allow opportunity to make changes to reduce costs while it is still feasible, budget increases, and understand the reasons for the increases. Project managers in

construction management were not consistently performing constructability and operability reviews during the final design phase due to scheduling, resource, and coordination constraints. The department's Bureau of Engineering Services' Project Management Manual does not address the timing of these reviews. The report recommends the bureau develop a standard process for the construction management project manager to conduct a constructability and operability review when design is approximately 60% complete.

The bureau relies on allowances to manage contract changes. The bureau's Project Management Manual does not provide guidance for developing project contingencies or allowances during budgeting. Among the contracts that KPMG reviewed, allowances varied from 4.0% to 52.8% of the original contract award (see Exhibit 6.2 on page 73). The bureau believes that the amounts of contingencies were appropriate for the specific projects, which involved design for certain scope items or work not published in the bid documents for security reasons. However, some of the allowances were used in ways not consistent with their stated purpose. For example, the "unforeseen work elements" allowance is intended to cover unanticipated project costs. KPMG's review of the West Tunnel CSO Project found that the allowance was used for trucks, computers and site visit costs – with a 5% contractor's markup. The report recommends the bureau revise allowance procedures to include an allowance line item of "Owner Allowances" to track use of project funds for routine city costs such as trailers, computers, and office supplies.

Reliance on a single individual and on consultants also poses risk. The bureau is updating its Project Management Manual, which will help mitigate this risk. The report makes a number of recommendations to formalize and document procedures in the manual, and to ensure that staff is trained in, and follows, the procedures. The report also recommends the bureau consider changes to strengthen project management, including:

- Developing an internal project controls group to manage budget, schedule, and scope changes. The group should include a full-time scheduler and cost-estimator.
- Developing a formal risk assessment and analysis process to help identify risks to the overall capital program and ongoing capital budgets. Risk assessment tools should be used to identify, evaluate the potential impacts, monitor, communicate and report on project risks. The tools should also aid in developing contingency and allowance budgets based on project risks.

- With its $7.2 million enQuesta implementation and $35 million meter replacement project nearing completion, Watershed continues to rely on estimated water use for billing. The department billed accounts based on estimated use more than 110,000 times in calendar year 2008, representing almost 10% of its billings. As of February 2009, more than 1,300 meters had not been read at all during the previous 12 months; more than 600 meters had not been read during the previous 24 months. These include standard meters, which must be read manually, and meters with automatic meter reading (AMR) technology (see Exhibit 7.1 on page 91).

  Meter problems can continue month-to-month because billing staff does not consistently create work orders when meter readings are not obtained and the department has decided not to repair traditional meters that are scheduled for replacement. Further, the work order system is partially paper-based, which can delay the process. Customer service inspectors prepare manual work orders that must be delivered to data entry personnel for input into enQuesta. The department's

monthly AMR conversion report for February 2009 identified 2,326 malfunctioning AMR meters. This finding is consistent with my office's 2007 performance audit of the automated meter reading program, in which we identified maintenance and repair of new and retrofitted meters as an ongoing risk. We recommended the department develop a maintenance plan that includes site surveys or similar ways to identify problems that are not detected by AMR technology, such as leaks and broken lids. The KPMG report recommends that staff generate and prioritize work orders when consecutive monthly estimates occur. The department should also confirm that newly installed, malfunctioning AMR meters are repaired or replaced timely. These steps should reduce the frequency of billing based on estimated consumption.

Although enQuesta calculates a consumption estimate for accounts without a meter read for the billing cycle, Watershed billing staff can override the computed value to enter a "forced usage estimate." The department has no written policy on forced usage estimates and management carries out little review of staff edits to accounts. Staff applied forced usage estimates more than 11,000 times in calendar year 2008, with the number increasing in the last few months of the year (see Exhibit 7.2 on page 92). The report recommends the department develop a policy on applying consumption estimates to accounts and that management should review billing staff's changes to consumption. Additionally, the department has not aligned user access and permission rights in enQuesta to staff functions and does not regularly evaluate these rights. Staff can view personally identifiable information and modify rate categories associated with an account. The department is subject to a new federal law related to identity theft prevention. The report recommends the department restrict access and permission levels in enQuesta consistent with job function and take steps to ensure compliance with federal regulations. My office has prepared a separate memo to the Commissioner on the results of our system security review.

- The department's water loss, last estimated in 2007, is high. Water loss is a key efficiency indicator for water treatment and distribution. Exhibit 7.9 on page 108 shows the department's estimate of lost water in 2007 as 26% of water supplied. The department's reliance on estimated consumption calls the reliability of the water loss statistic into question. The report recommends the department establish a strategic initiative to reduce and monitor water loss on an ongoing basis.

- The department's accounts receivable (A/R) balance increased from $71.8 million as of July 30, 2008, to $81.0 million as of November 30, 2008. Exhibit 7.3 on page 95 categorizes A/R balances by customer type, account type, and number of days outstanding. About $51.8 million of the A/R balance is delinquent residential and commercial water and sewer accounts, with the bulk – 72% – more than 120 days past due. The report makes recommendations to standardize and speed collection efforts and recommends the department seek additional guidance from the City Council and Department of Law to develop and document procedures for analyzing and writing off bad debts.

  The department's monthly report of accounts in dispute for February 2009 identified more than $12.5 million in disputed bills, up from $8.6 million in August 2008. Exhibit 7.6 on page 99 shows the amount of disputed revenue over the past few months. About 7% of the disputes were more than six months old and the department had no method for prioritizing dispute resolution efforts. Watershed formed a dispute resolution team in October 2008 and the team was still

developing its procedures as KPMG completed its work. The report recommends that the department document and enforce formal policies to address the number, volume, and frequency of allowable disputed charges and to prioritize resolution efforts.

- The department's procedures for processing customer refunds appear to conflict with current city code and may conflict with state law regarding disposition of unclaimed property. City code was amended in January 2008 to require refunds of deposits within 60 days of an account being closed, after any unpaid balances are satisfied. The department's practice is to initiate refunds at the customer's request. Further, the code requires refunds of deposits after five years of uninterrupted service. During the enQuesta implementation, the department refunded deposits for accounts older than 5 years, but reset the deposit date to January 2007 for all other accounts. As a result, refunds can be delayed for up to 59 months on some accounts. As of February 2009, nearly 29,000 customer accounts had outstanding credit balances totaling about $4 million. Exhibit 7.8 on page 106 shows the distribution of accounts with refunds due. The report recommends the department refund deposits within 60 days of account closing and track customer deposit dates by when service was begun rather than the enQuesta transition date. The department should also seek legal advice on the disposition of unclaimed property.

- The report identifies additional revenue opportunities that could reduce the burden on current rate payers by assessing fees to those who benefit from the system and recovering costs from those who have taken advantage of the system through late payments, damage or illegal consumption. Some of these fees are already authorized under city code. For example, city code authorizes a late fee of $5 or 5%, whichever is greater. The department has applied the late fee of 5% regardless of amount. Watershed billed more than $4.3 million in late fees in calendar year 2008 and more than 82% of the assessed fees were less than $5. Watershed is not charging customers for damages to water meters, as authorized by code. Other organizations also collect impact fees and stormwater fees. The report recommends the department charge fees as allowed by code, request changes to city code to permit charging penalties for illegal consumption, consider a fee-based stormwater use charge, and work with the Department of Law to assess the feasibility of implementing an impact fee for new water and sewer connections.

- Three of the department's six agreements for water services to inter-jurisdictional customers are expired; these are listed in Exhibit 7.12 on page 112. The agreements do not include provisions for delinquent payment penalties, charges for meter repairs, or key performance indicators. The department also relies on estimated consumption to bill inter-jurisdictional accounts; 13 of 30 metered water accounts in other jurisdictions were billed based on estimated consumption for three or more months in 2008. While the department's six agreements with other jurisdictions for wastewater services are all current, the bills do not include indirect and other support costs. The report recommends the department centralize management and reporting of inter-jurisdictional accounts to create more accountability. The report also recommends renegotiating wastewater agreements to adequately recover costs of services.

- KPMG identified organizational and administrative issues that could limit the department's effectiveness or increase costs.
    - Compared to industry leading practices, the department's organizational structure places too many direct reports under the commissioner. Also, the organizational structure does

not consistently align with functions, and some functions – human resources, procurement, compliance monitoring – are decentralized throughout the department. Exhibit 4.0 on page 20 illustrates the department's current organizational structure. The report recommends the department reorganize to reduce span of control at the top, better align functions, and streamline processes. An example is provided in Exhibit 4.1 on page 22.

- Like other city departments, Watershed is having difficulty processing payments timely in Oracle. As of January 2009, the department had 174 invoices on hold, with an average hold time of 194 days. Invoices can be on hold for several reasons, only two of which are wholly under the department's control – if the goods and services are not recorded as received within Oracle and if a direct pay invoice isn't approved. The city's Finance Department is considering system changes to address the other reasons. The report recommends the department's Bureau of Financial Administration monitor the Invoices on Hold report and work with the Finance Department to facilitate more timely payment. The bureau should also increase coordination among bureaus that receive goods to ensure receipts are entered into the system timely.

- Inventory of fixed assets is not timely and the department does not retain adequate documentation of the procurement of fixed assets. The city's audited financial statements for fiscal year 2008 noted that Watershed understated its capital assets by $807 million and overstated accumulated depreciation by $285 million in fiscal year 2007. The report recommends that the department's Bureau of Financial Administration scan receiving information to maintain documentation of fixed asset purchases.

- The city's fiscal year 2007 cost allocation plan may not accurately capture costs. The bases for cost allocations do not consistently correlate to benefits Watershed receives, and Watershed may not be receiving credit for the 68 positions it funds in other city departments. The report recommends that the department and the city work together to more clearly define the roles and responsibilities of positions funded by Watershed and to review the approaches used to allocate indirect costs. My office has undertaken a performance audit of the city's cost allocation process that we expect to complete early in the next fiscal year.

- Lengthy procurement processes may increase Watershed's costs. Procurement duties are shared between the city's Department of Procurement and Watershed's Bureau of Management. It appears that there is inconsistent coordination between these two groups and duplicative review that could cause delay. Electronic signature routing – used by other departments – could also speed contract execution. The report recommends clarifying departmental responsibilities for procurement, standardizing review of bid packages, and implementing electronic signature approvals.

- Finally, KPMG noted several of Watershed's accomplishments since the department was created seven years ago. These include the initiation of a strategic planning and performance improvement process; strengthening its financial planning, management, and controls; and completing consent decree requirements to date largely on time and on budget. In addition,

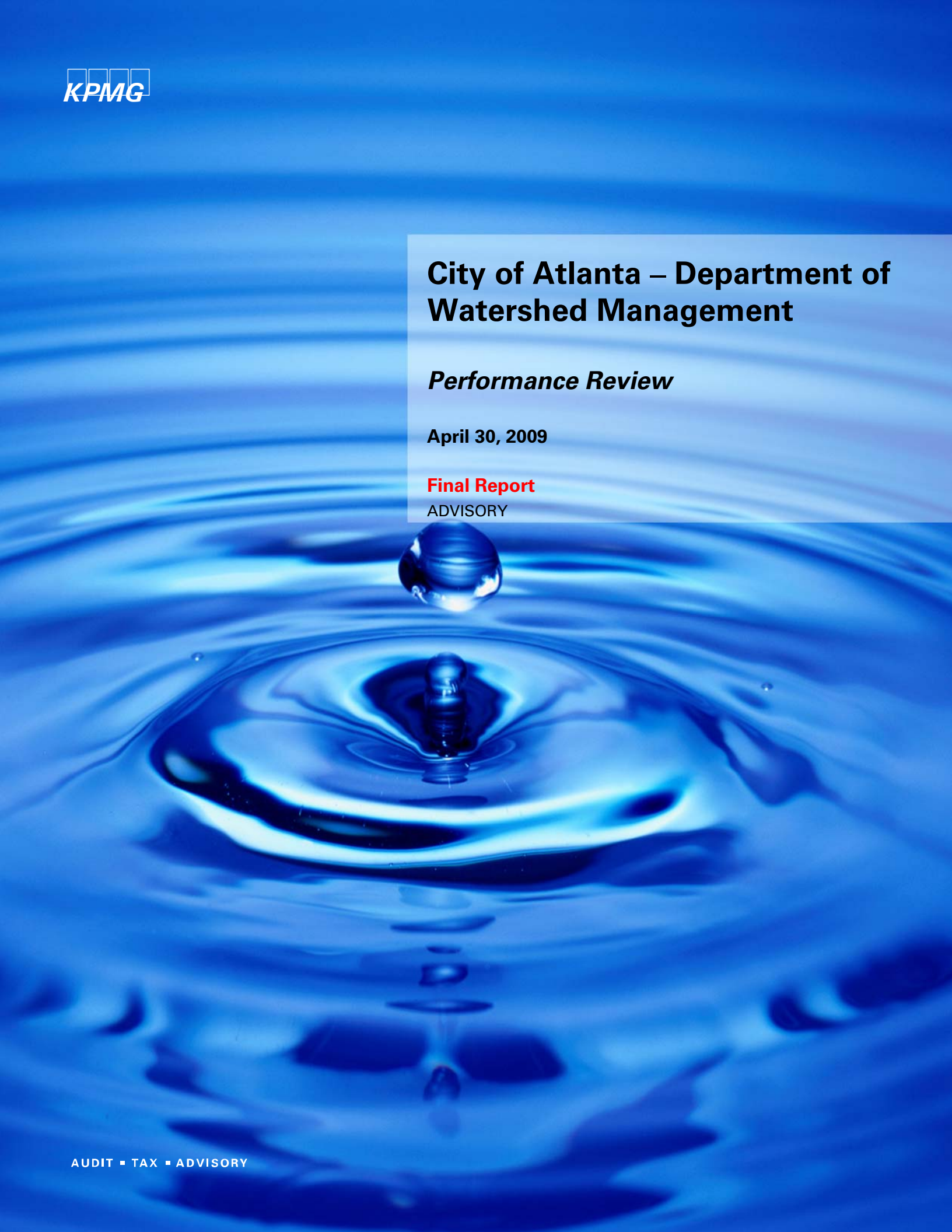
the department has been recognized by its industry peers for leadership in water conservation education, call center customer service, wastewater reclamation operations, and drinking water treatment operations. These achievements and others are all the more noteworthy in the context of the challenges the department continues to face and the magnitude of its undertaking.

KPMG provided a copy of the draft report to Watershed management on April 10, 2009, and conducted briefings and discussions with the commissioner and senior management the following week. The department agreed or partially agreed with 69 recommendations, and some changes are already underway. The department disagrees with four of the recommendations. The commissioner's response is attached at the back of the report.

We appreciate the cooperation of the Department of Watershed Management and its consultants in completing this review. We recognize that the scope and timing of the review placed demands on the staff. The department faces many challenges stemming from the consent decree, drought, and lack of system investment in prior decades. We hope that the thoughtful recommendations made in this report help the department to meet those challenges and look forward to continuing a productive working relationship.

Sincerely,

Leslie E. Ward, City Auditor



KPMG

City of Atlanta – Department of Watershed Management

Performance Review

April 30, 2009

Final Report

ADVISORY

AUDIT ▪ TAX ▪ ADVISORY

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1. Introduction

This report presents the results of KPMG LLP's (KPMG) performance review of the City of Atlanta (City) Department of Watershed Management (DWM). KPMG conducted this performance review under the Consulting Standards issued by the American Institute of Certified Public Accountants (AICPA). Members of the project team included KPMG Advisory professionals and subcontractors Public Works Solutions and PJC Group.

In 2008, DWM proposed and City Council approved a four-year rate increase program to provide additional funding for DWM's capital program and operations as follows:

EXHIBIT 1.0:

Fiscal Year	Rate Increase
2009	27.5%
2010	12.5%
2011	12.5%
2012	12.0%

Source: DWM Website, http://www.atlantawatershed.org/custsrv/water_and_sewer_rates.htm

As part of the ordinance approving new rates, the City Council requested the City Auditor's Office to oversee an audit of DWM. City Council also added an amendment to the resolution stipulating that the rate increases for fiscal years 2010 through 2012 will be effective conditional upon completion of the audit. The City Auditor's Office contracted with KPMG to conduct a performance review of DWM. KPMG performed the following tasks as part of the scope of work for the DWM performance review:

- Assessed DWM's Financial Management;
- Assessed DWM's Capital Program and Construction Project Management; and
- Assessed the Efficiency and Effectiveness in Key Operational Areas of DWM.

The performance review was conducted during the period of December 9, 2008 through April 30, 2009. Our methodology for developing this report focuses on the identification of issues through research, interviews, and analysis. Our observations and recommendations are presented to facilitate discussion of management options.

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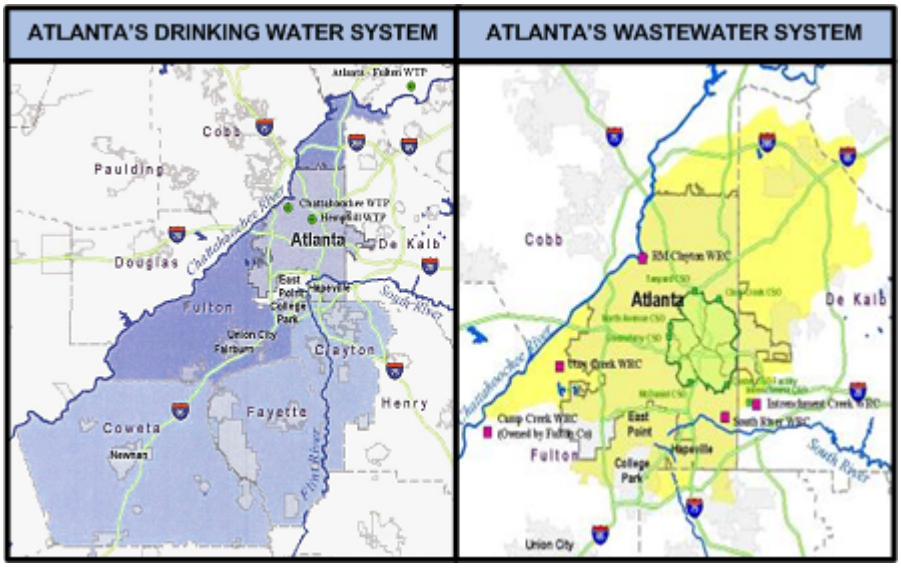
2. Background

A. Overview of the Department of Watershed Management

In 2002, the City of Atlanta (City) created the Department of Watershed Management (DWM) to consolidate the drinking water, wastewater and stormwater functions that were previously organized in different divisions within the City. DWM provides a range of retail and wholesale water and wastewater services to over one million people. DWM also provides watershed protection and conservation outreach within the region. The City is geographically located where the natural environmental conditions and recent droughts have made managing water supply and water quality difficult. Atlanta's drinking water and wastewater systems were initially constructed in the 1880's and have many of the issues and problems associated with older, metropolitan systems. These issues have been exacerbated by under investment in the systems over several decades DWM is responsible for constructing facilities, managing operations and providing quality services under these conditions while accommodating the region's growth. Exhibit 2.0 depicts the DWM current drinking and wastewater system service areas.

EXHIBIT 2.0:



Source: DWM Presentation to KPMG

The City's principal water source is Lake Lanier that feeds the Chattahoochee River. Northern Georgia is in a long-term and sustained drought that began in 2006 and has lake levels down by an estimated 13 feet from normal levels. The low lake levels and limited rainfall have caused the City to impose water use restrictions on its customers and led to increased water rates designed to encourage water conservation. As a result, annual billed water volume declined 9% in 2008, and billed sewer volume declined 12%.

Exhibit 2.1 presents summary operational statistics for DWM.

EXHIBIT 2.1:

Department Statistics		
Statistic	**Drinking Water**	**Wastewater**
Number of Retail Customers	144,000	80,900
Wholesale Customers	Cities: Fairburn, Hapeville and Union City Counties: Coweta, Clayton and Fayette	Cities: East Point, College Park and Hapeville Counties: Dekalb, Fulton and Clayton
Treatment Plants Operated	3	3
Miles of Pipe and Water Mains	2,400	1,600
Treatment Capacity	246 million gallons per day	184 million gallons per day
Average Demand or Flow	102 million gallons per day	113 million gallons per day

Source: DWM Presentation to KPMG and 2008 Financial Statements

The historic, combined sewer-stormwater system and the relatively low capacity of the Chattahoochee River greatly impact the City's wastewater and stormwater situation. Over time the City has made limited capital investment resulting in an aging distribution system that has required larger than normal investment in pipe, valve, and meter infrastructure. Pollution from stormwater and wastewater discharges led to two federal Consent Decrees in 1998 and 1999 that generated the development of a capital improvement program of approximately $4.2 billion for improvements to its wastewater system. The situation is further complicated by the fact that Atlanta has a combined sewer system in the City's downtown that is not located on a water body. Therefore the Combined Sewer Overflow (CSO) technical solutions are more complicated and expensive. In 2002, the City established the Clean Water Atlanta Program to implement a comprehensive and long-term plan to improve water quality in Atlanta. The plan provides for increased capital programs and improvements to the operation of the City's drinking and wastewater systems to compensate for historic deferred system investment in infrastructure and maintenance. The City's resulting capital program is a multi-billion dollar investment in infrastructure to both meet the legal requirements of the Consent Decrees and to meet needed demands to modernize its system. The City has used the Clean Water Atlanta Program to enable it to meet the Consent Decree deadlines. In the fall of 2007, the City completed capital projects, including the West Area Tunnel, and met the deadline for compliance with the First Consent Decree. The compliance deadline for the Second Consent Decree (also known as the First Amended Consent Decree) is 2014.

The City outsourced the operation of its drinking water program to a private vendor (United Water) in 1999. A series of contractual and billing issues led the City to cancel the contract with United Water and assume operational control over the drinking water program in 2003.

The Consent Decrees and the privatized drinking water operation created significant issues for the City. When Mayor Shirley Franklin took office in January 2002 there was no financial plan or management team for the

wastewater Consent Decree program and significant issues were surfacing with the United Water contract. DWM was formed in September 2002 to address these and other water utility issues.

The drinking water system returned to the City under DWM in April 2003. There were less than a dozen city employees in the drinking water operation at that time. The water utility situation in the Spring of 2003 included these complicating factors:

- DWM was a new, six-month old organization;
- An early Consent Decree project was behind schedule and out of compliance;
- There was no financial plan or financial resources to fund the multi-billion compliance and infrastructure programs;
- Non-compliance with the consent decree capacity requirements would trigger a moratorium on sewer connections;
- The drinking water system was in poor repair with publicly documented issues in leak repairs, boiled water advisories, meters that were either broken or beyond their useful service life, and main breaks; and
- The billing and collection system was out-dated.

DWM established a series of programmatic responses to these challenges:

- Financial Program including the development of a financial and capital improvement plan as well as a revenue requirement analysis. This resulted in a multiple month, public process to pass a 5-year rate increase package and the implementation through state legislation and a public referendum of a dedicated one-cent sales tax;
- Revenue Program including the procurement and installation of a new Customer Information (billing) System (CIS), new collection policy and procedures and a reorganization of billing and collections staff;
- Customer Service Program focusing on identifying and meeting customer service expectations including the development of a new call center and customer service staff;
- Operating System Performance Program consisting a systematic review of drinking water and wastewater performance metrics, policies and procedures and an implementation plan for improvements in performance and reliability;

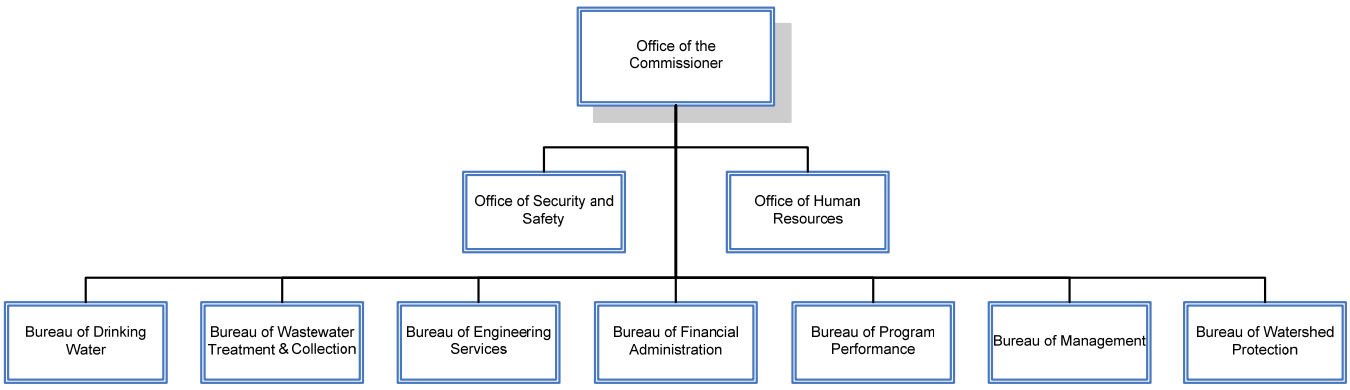
- Water Loss Program including the sequential evaluation and implementation of projects for meter leaks, service leaks, valve and hydrant testing and repair, leak detection and water main leak repair; and

- Consent Decree Program consisting of an integrated compliance, engineering, construction, monitoring and reporting system for the wastewater Consent Decrees.

B. Organization and Bureau Functions

Exhibit 2.2 shows the DWM organization structure.

EXHIBIT 2.2:



Source: DWM Website, www.atlantawatershed.org

DWM consists of three offices (each with an Office Director) and seven bureaus (each with a Deputy Commissioner). The key functions of each office and bureau are described below.

The Office of the Commissioner provides strategic planning and oversight for the overall department. The Commissioner oversees the two offices and seven bureaus.

The Office of Security and Safety is responsible for protecting the drinking water source, treatment, storage, distribution, reclamation facilities, and for providing a secure and safe working environment for DWM employees. The Office of Security and Safety also plans for emergency responses to industrial accidents, man-made and natural catastrophes, including contamination and attack.

The Office of Human Resources is responsible for managing labor and employee relations, employee coaching, performance management, training, supporting the Civil Services Board, and handling employee grievances. The Office of Human Resources serves as a liaison between the City Department of Human Resources and DWM.

The Bureau of Drinking Water (BDW) oversees the drinking water system, serving approximately 150,000 residential, commercial, and industrial customers in an area of approximately 650 square miles, including the City of Atlanta and most of Fulton County. The City maintains three water treatment plants and three initial pumping stations; one of each is jointly owned with Fulton County. The City sells water wholesale to three counties and three cities in the Atlanta metropolitan area. The Bureau of Drinking Water is currently implementing an automated meter reading program, providing for regular testing and repair of large meters, and expanding water service repairs, with the goal of improving service delivery and billing accuracy.

The Bureau of Wastewater Treatment and Collection (WWTC) is responsible for the management, operation and maintenance of the City's three wastewater treatment plants, four combined sewer overflow treatment facilities, 16 pump stations and more than 1,500 miles of sanitary and combined sewers. The service area covers approximately 225 square miles, of which 54% is within Atlanta city limits. The City currently treats wastewater under long-term contracts for other jurisdictions in the area, including three cities and parts of three counties. WWTC's responsibilities also include meeting National Pollutant Discharge Elimination System permit requirements, compliance with Consent Decrees, and other state and federal environmental mandates.

The Bureau of Engineering Services (BES) is responsible for management of DWM's capital improvement program, including design and construction projects to comply with the City's Consent Decrees, Administrative Orders, and other improvements to the City's water and sewer systems. The Bureau of Engineering Services provides design, consultant, and project management services and is responsible for controlling construction costs and quality. The Bureau provides internal technology support services (computer hardware, software, web-based applications) and interacts with the City's Information Technology personnel. The Bureau also is responsible for computer-aided design (CAD) functions, water and sewer hydraulic modeling, and the implementation of DWM's geographic information systems (GIS).

The Bureau of Financial Administration (BFA) provides centralized financial and administrative support to DWM. The Bureau of Financial Administration is responsible for preparing, evaluating and monitoring the Department's budget, including monthly reporting on actual-to-budgeted revenues and expenses. The Bureau provides support for the DWM's capital financing program, including coordination with the City's Finance Department for issuance of revenue bonds, tax-exempt commercial paper, and loans from the Georgia Environmental Facilities Authority (GEFA). In addition, the Bureau of Financial Administration conducts various financial, operational, regulatory, and compliance reviews for DWM and is responsible for daily accounts payable, accounts receivable, and monitoring the overall financial condition of DWM.

The Bureau of Program Performance (BPP) oversees DWM's billing and collection systems, meter reading, change management and strategic planning initiatives, and other customer service functions. These customer service functions include the operation of the Customer Call Center, the daily usage of the billing and customer information system, and water conservation outreach efforts.

The Bureau of Management (BM) is responsible for DWM's procurement and contracting activities, legislative process, and inter-jurisdictional relationships with the city and county governments to which DWM provides water and sewer services. In addition, the Bureau oversees DWM public outreach, public participation programs, external communications, and media relations.

The Bureau of Watershed Protection (BWP) oversees the City's compliance with Consent Decree requirements, National Pollutant Discharge Elimination System (NPDES) permits and other environmental laws related to greenway acquisition, stormwater management, erosion control and site development plan review, and wastewater discharge permits for grease management and industrial pretreatment. In addition, this Bureau is responsible for monitoring discharges from the City's inter-jurisdictional wastewater customers, monitoring water quality in the City's streams, watershed protection planning and the development of a stormwater utility.

C. Current Operating and Financial Environment

The City and DWM have made major efforts to address the infrastructure improvement needs over the past several years. DWM is in the process of a comprehensive reconstruction of the City's water and sewer infrastructure through the Clean Water Atlanta Program. DWM's February 2009 Capital Improvement Program Reporting (CIPR) shows that approximately $3.8 billion has been spent or committed to the program. DWM is in the process of making significant improvements to the drinking water treatment and distribution systems including a large scale meter replacement program. Between FY2009 and FY2018, DWM is planning to finance and construct more than $2 billion of compliance driven and other priority capital projects. The scale of the capital program has resulted in planned annual capital spending totaling nearly double the annual water and sewer operating revenue. Capital funding comes from both net operating revenues and from debt financing. Because a significant portion of the capital program relies on the capital debt markets, it is important for the city to operate in a prudent and fiscally responsible manner so it can continue to access the capital markets it is relying on to meet the Consent Decrees.

Over the past several years, the City increased water and sewer rates to enable it to fund the major capital improvements and improve its financial position. Between 2004 and 2008, the City increased those water and sewer rates by approximately 70%. In addition to increasing user fees, the City implemented a voter-approved 1% Municipal Option Sales Tax (MOST) to help fund its operations and capital program in 2004. Annually, MOST generates more than $120 million. City voters elected to renew the MOST in 2008 for an additional four-year period. In 2008, DWM proposed and City Council approved a four-year rate increase program to provide additional funding for the capital program as follows:

EXHIBIT 2.3:

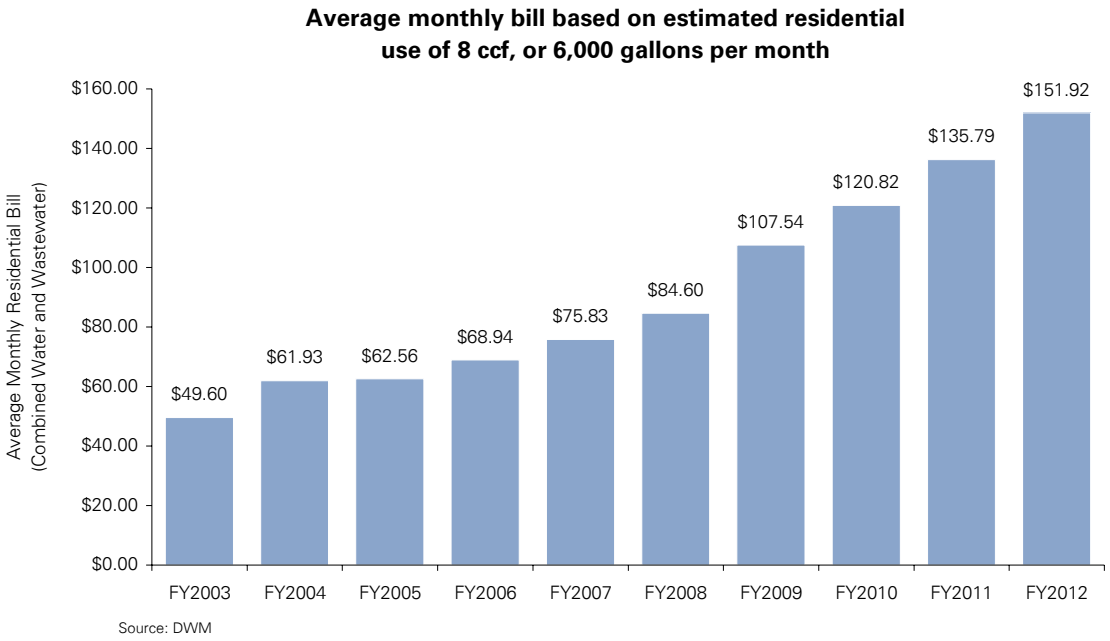
Fiscal Year	Rate Increase
2009	27.5%
2010	12.5%
2011	12.5%
2012	12.0%

Source: DWM Website, http://www.atlantawatershed.org/custsrv/water_and_sewer_rates.htm

The increase in FY2009 was greater than the subsequent years to compensate for reduced consumption resulting from conservation efforts. Over the past two years, retail water customers have reduced consumption by 22%.

DWM estimates the average monthly residential bill based on 6,000 gallons per month consumption. The FY2009 average residential bill for water and sewer services is approximately $108. The trend from 2003 to current and projection from 2010 to 2012 is presented in Exhibit 2.4.

EXHIBIT 2.4:



A 2007 Black and Veatch water and sewer rate survey of the 50 largest U.S. cities ranked the City of Atlanta the 3rd highest after Seattle (1st) and San Francisco (2nd) for total monthly combined water and wastewater bill for small customers. In the same survey, the City ranked the highest for total monthly water and wastewater bill for commercial customers. KPMG updated the results of this survey for FY2009 data and Atlanta ranked the 2nd highest for water and sewer rates. See Exhibit 5.7 for additional details.

D. Project Objectives and Scope

In 2008, the City adopted a new rate program. As part of the resolution approving new rates, the City Council requested the City Auditor's Office to oversee an audit of DWM. The Council also added an amendment to the legislation adopting new water and sewer rates and stipulating that the rate increases for fiscal years 2010 through 2012 will be effective conditional upon completion of the audit. The City Auditor's Office contracted with KPMG to conduct a performance review of DWM that includes assessments of DWM's financial management, capital program, and key operations.

KPMG performed the following tasks as part of the scope of work for the DWM performance review:

Assess DWM's Financial Management (Section 5 of report). This task included assessing DWM's financial management system and oversight, potential risks, and potential effects to DWM stakeholders and customers. Specific financial and cash management processes and controls were assessed in addition to future financial planning and strategy methods. Focus areas include financial controls, financing methods and schedules, use of funds and cash flow, financial planning and assumptions for rate projections.

Assess DWM's Capital Program and Construction Project Management (Section 6 of report). This task included assessing the effectiveness and appropriateness of DWM's capital improvement program and construction project management policies and procedures. Functional areas covered include capital procurement practices; contract administration and closeout; project costs and change orders; contracting methods, terms, and risks; as well as program management roles, responsibilities, and staffing levels. In addition, the planning, scheduling, prioritization and reporting of projects to meet compliance and other deadlines are addressed.

Assess the Efficiency and Effectiveness in Key Operational Areas of DWM (Sections 4 and 7 of report). This task included assessing the efficiency and effectiveness in key DWM operational areas such as Billings, Collections, Customer Service, and Procurement. Additional Organizational and Support Service functions were also included. The assessment focuses on productivity, efficiency, effectiveness and outcomes of the operational areas as well as the associated levels of internal controls within the Department. KPMG reviewed key DWM operational areas and compared to industry benchmarks and comparable water and sewer utilities. The assessment of key operational areas includes recommendations for potential cost savings and opportunities for revenue enhancement.

3. Accomplishments

Significant DWM accomplishments were identified through KPMG analysis and documentation provided by DWM. The accomplishments identified on the following pages help contribute to increases in efficiency and effectiveness within DWM.

Strategic Initiatives

In 2005, DWM developed a Strategic Planning and Performance Improvement process to develop DWM's vision, mission, and values statements as well as to identify strategic initiatives across the organization. DWM identified the following strategic "imperatives" to focus efforts for performance improvement:

- Improve Customer Service;
- Improve Financial Planning and Performance;
- Optimize Operating Systems and Business Processes; and
- Improve Work Environment and Staff Opportunities.

DWM identified 24 current projects that support the 4 strategic imperatives listed above. DWM continues to focus efforts on performance improvement and has begun efforts to monitor these improvements. Sample operational and efficiency accomplishments include:

- DWM increased monthly collection rates in the past five years from the low 90% range to approximately 98% on a rolling 12-month average.
- DWM has a comprehensive meter program to improve the accuracy and reliability of over 150,000 small meters and over 3,000 large meters. Meters are being fitted with Automated Meter Reading technology to decrease reading and billing errors.
- Longer-term program for water loss has been implemented consisting of a series of projects that progress from meter replacement and meter leak repair to the Valve and Hydrant testing and repair project to a leak detection program to water main leak repair.

Financial Planning

DWM has strengthened its financial position through increases to customer water and sewer rates and more broad based revenue from Municipal Option Sales Taxes. These increases in funding have attempted to balance the need for immediate capital for infrastructure improvement, the Department's ability to fund these projects and the security of DWM's bondholders. In response to the 3-year drought, outdoor watering restrictions and associated revenue impacts DWM implemented strict financial controls in both FY2008 and FY2009. This included the program delays and staff reductions. The Department's debt coverage ratio increased from 1.28 in FY2007 to 1.45 times in FY2008.

Consent Decree Compliance

DWM has spent the last decade improving operations to meet the requirements of two federal consent decrees—the Combined Sewer Overflow (CSO) Consent Decree (1998) and the First Amended Consent Decree (1999). The CSO Consent Decree includes requirements to improve water quality in area watersheds, provide detailed reporting of CSO events, and implement projects to improve treatment at CSO facilities. DWM reports that they have met Enviornmental Protection Agency (EPA) standards for water quality, reduced CSO spills from over 100 per year to an average of 4 per year, and completed the requirements of the CSO Consent Decree in 2008. DWM is in substantial compliance with provisions of both consent decrees, but certain project of the capital program remain to be completed. A partial list of completed Consent Decree projects include:

- Greenway Acquisition Program;
- Custer Avenue Storage Facility;
- McDaniel, Stockade & Greensferry Sewer Separation Projects;
- CSO Dechlorination Systems; and
- Nancy Creek Sanitary Sewer Tunnel.

DWM is implementing additional projects to achieve compliance with the First Amended Consent Decree by the 2014 deadline. While this report, by its nature, highlights findings and recommendations, it is important to note that the capital program relating to the Consent Decree has largely been delivered on time and on budget.

Performance and Awards

- **Water Efficiency Leader Award.** In 2008, the EPA awarded DWM Commissioner Robert Hunter the "Water Efficiency Leader Award" to commend his leadership during the 2007-2008 droughts in Georgia. Commissioner Hunter led many initiatives to educate Atlanta water customers on conservation and water-saving devices. DWM also worked with City Council to raise the rate on irrigation water, implement watering restrictions and develop rebate programs for high efficiency toilets.

- **Customer Call Center "Center of Excellence" Award.** In 2008, DWM's Customer Call Center received an award as a "Center of Excellence" by Purdue University's Center for Customer-Driven Quality. The Call Center was measured and benchmarked against peer organizations in over 20 performance metrics for efficiency and effectiveness. According to Purdue's 2008 Benchmark Assessment, DWM performed better than the industry average in metrics such as:

  - Caller Satisfaction;
  - Service Level (Based on number of calls answered in 120 seconds);
  - Number of Calls Abandoned by Customers; and
  - Operating Cost per Call Minute.

- **Wastewater Reclamation Center Awards.** DWM earned 3 Platinum, 17 Gold and 3 Silver national awards for from the National Association of Clean Water Agencies for operating without permit violations.

- **Drinking Water Treatment Plants.** DWM is nationally recognized at the Gold Award level by the national Association of Metropolitan Water Agencies and earned performance awards for operation from the American Water Works Association.

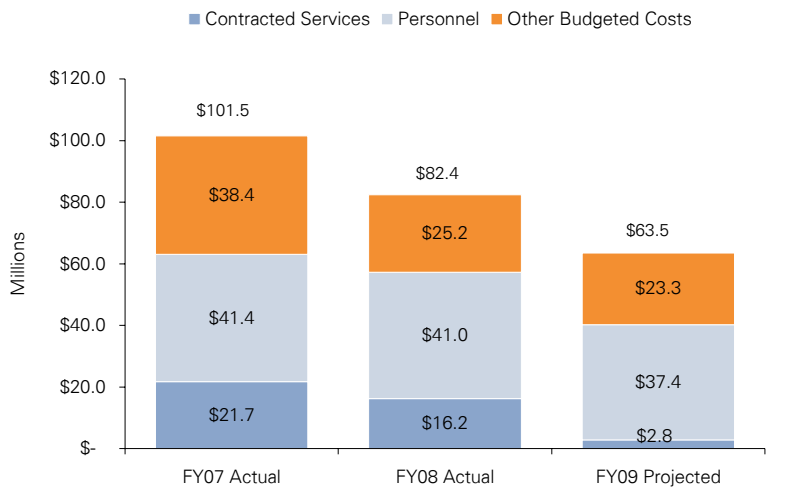
Journeyman Program

Over the last three years, DWM's Bureau of Wastewater Treatment and Collection (WWTC) identified significant issues related to the underutilization of staff, high contractor costs, and insufficiently-trained employees. To address these issues, WWTC is working to reclassify labor positions within the bureau to meet the requirements of a Georgia Department of Labor Journeyman Program. The Journeyman Program allows WWTC to provide its employees with skills training along the following paths:

- Industrial Mechanic – 2 year program;
- Electrician – 4 year program;
- Process Control Technician – 4 year program;
- Operator – State monitored requirements and licensure;
- Collection System Operator Maintenance – 2 year program; and
- Collection System Operator Construction – 2 year program.

WWTC believes that transitioning the positions to the journeyman program presents many benefits to employees and WWTC. Employees gain skills to complete their job more effectively and enhance DWM career opportunities. WWTC believes that more skilled employees will allow the bureau to realize cost-savings through a more effective staff, and lower utilization of contractor services. Among other cost-saving initiatives and process improvements, WWTC believes that the Journeyman Program has helped contribute to the following cost-savings between FY2007 and FY2008.

EXHIBIT 3.0:



Source: DWM Bureau of Wastewater Treatment and Collections FY07-FY09 Cost Savings Reports

WWTC reported a reduction in overall budgeted costs by $19.1 million from FY2007 to FY2008. WWTC projects to reduce overall FY2009 budget costs by $18.9 million compared to FY2008.

DWM continues to implement additional training programs for job-specific, technical skills, and broader skill sets (e.g., new supervisor training program). This includes the ongoing development of a career track program for internal personnel development and promotion.

Construction Management Group - Partnering

DWM's Construction Management Group (CMG) implemented a partnering process to establish DWM and contractor project teams. The primary objective of the teams is to successfully execute the terms of the contract in a manner that is beneficial for the parties involved. DWM develops partnering teams upon award of a construction contract with representatives from CMG and the contractor. The partnering team works to define specific goals for the project, establish expectations, drive accountability, establish communication protocols and develop a decision escalation structure for each capital project. The team meets for formal status report sessions on budget, schedule, safety and project issues. The formal status report sessions help drive accountability to project goals and focuses the team on continuous improvement. Through this effort, partnering with contractors helps DWM works with contractors to help control project budgets and schedules and help meet Consent Decree deadlines.

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4. Overarching Items

During the performance review, items were analyzed that relate to DWM organization-wide. DWM's organizational structure and employee perception are addressed.

A. Organizational Structure

Observations and Analysis

Span of Control and Organization Alignment

DWM's current organizational structure does not allow for effective span of control (4A.1). The Commissioner has ten direct reports as follows:

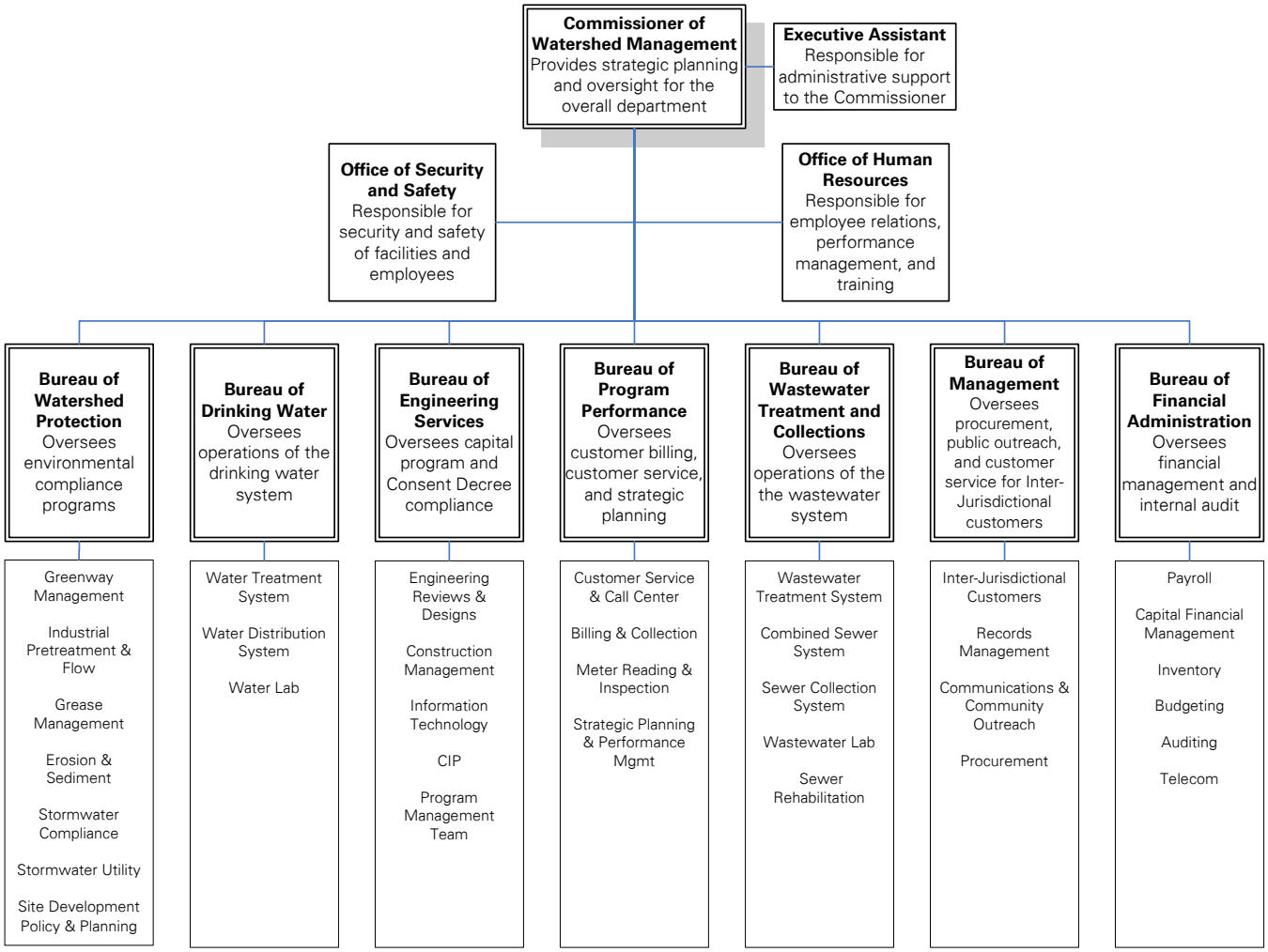
- Executive Assistant;
- Safety and Security Officer;
- Human Resources Officer;
- Watershed Protection Deputy Commissioner;
- Drinking Water Deputy Commissioner;
- Engineering Services Deputy Commissioner;
- Program Performance Deputy Commissioner;
- Wastewater Deputy Commissioner;
- Management Deputy Commissioner; and
- Financial Administration Deputy Commissioner.

Industry leading practices indicate that having five to seven direct reports allows for more suitable levels of oversight, accountability and accessibility to management. Right-sizing span of control can provide more focused and effective leadership, and streamlined functions and processes.

DWM's current structure does not provide for a focused position to directly support the Commissioner (4A.1). Organizations have shown success in employing a deputy, or assistant for the organization's top leadership. This position helps to oversee organization management and operations, steer strategic mission, and provide the organization's top leadership with direct service.

DWM's current organizational structure does not consistently align to function (4A.1). There are varying functions and services contained within single bureaus without correlation. For example, the internal Strategic Planning function is organized within the Bureau of Program Performance. Other functions of the Bureau of Program Performance relate to external customer functions: meter reading, billing, collecting, and customer service. Exhibit 4.0 illustrates the current organizational structure and the functions of each bureau.

EXHIBIT 4.0:



http://www.atlantawatershed.org/images/wm_org_051004.pdf

Decentralization and Function Constraints

DWM lacks centralized processes in the areas of human resources and procurement (4A.2). DWM utilizes numerous "liaison" positions within each bureau that further decentralize key processes. The Office of Human Resources and the DWM Procurement Division have limited ability to implement standardized processes across DWM because bureau liaisons operate autonomously and report directly to their Deputy Commissioners. The decentralization reduces process consistency by involving multiple parties and limits function efficiency. This results in duplication of efforts, particularly related to administration.

The processes, responsibilities, and interaction between DWM and the City Departments of Human Resources and Procurement are not clearly defined (4A.2). Lack of process coordination between DWM and the City Departments as well as staffing limitations in the City Departments often delay process completion. There is also lack of accountability for the level of service provided to DWM by DWM funded positions in DHR and DOP.

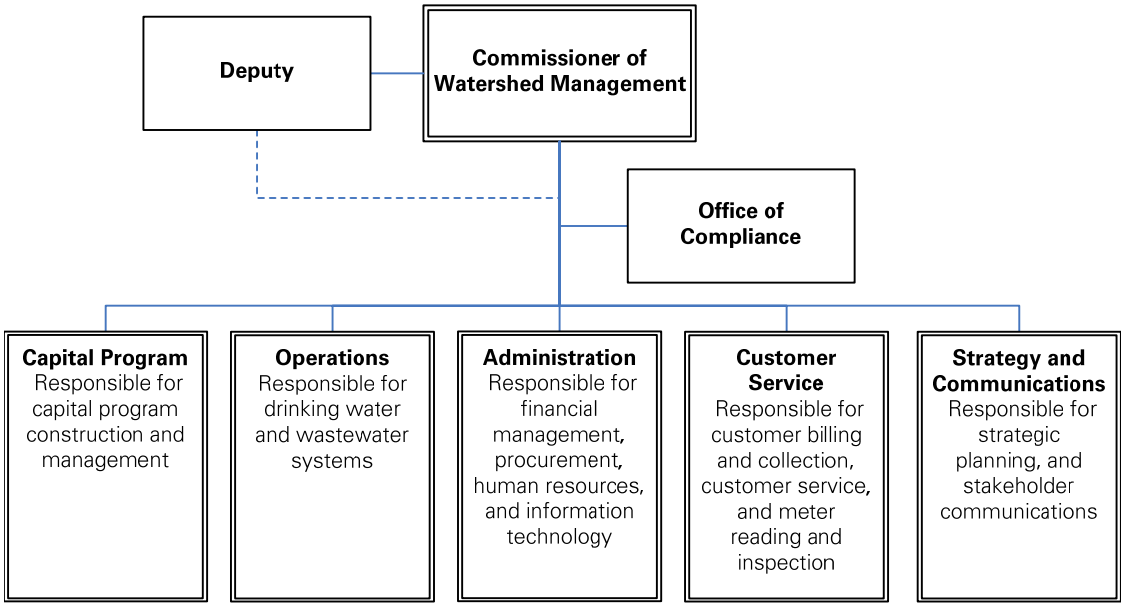
DWM does not have a central location or single point of contact for tracking, monitoring, and reporting compliance requirements (4A.3). Compliance monitoring and reporting is performed by multiple process owners residing in different bureaus. Each deputy commissioner is responsible for maintaining compliance with related requirements within their bureau. There is not a single person responsible for department compliance and DWM has no organization wide database and monitoring tool for tracking compliance requirements.

The DWM internal audit function is not organizationally aligned to allow effective functionality (4A.4). The DWM Internal Auditor job is responsible for assisting the City Department of Finance with the annual financial audit and performing attestation engagements, performance audits, and other non-audit services. The extent of DWM's benefit from the internal audit function is limited to only one employee who spends four months of the year assisting the City with the annual financial audit. As of January 2009, the DWM FY2009 Audit Plan was not yet finalized. The internal audit function should be independent of the functions audited. However, DWM's internal audit function reports to the Deputy Commissioner of the Bureau of Financial Administration.

Recommendations

4A.1 DWM should improve organizational structure to better align to their strategic mission for effectiveness and accountability. The new structure should reduce span of control levels, better align to function, streamline processes, reduce fragmented or redundant processes, and provide a direct support position to the Commissioner. Several different solutions could enhance the operating effectiveness of DWM's organizational structure. Different designs will yield varying results. Exhibit 4.1 depicts one possible option for DWM's future organizational structure.

EXHIBIT 4.1:



4A.2 DWM should centralize human resources and procurement processes at the Department level. DWM should work with City Departments of Human Resources and Procurement to develop a communication plan to enhance accountability and clearly define roles and responsibilities.

4A.3 DWM should implement and maintain a consolidated system for tracking and monitoring compliance requirements.

4A.4 DWM should reorganize the internal audit function to report directly to the DWM Commissioner. DWM should increase internal audit resources in order to enhance the evaluation and monitoring of DWM performance, risks, and controls.

B. Employee Perception

Observations and Analysis

DWM employees completed a Job Activity Questionnaire ("JAQ") in an effort to gain a better understanding of DWM operations. The JAQ identified perceived common DWM strengths and areas for improvement (4B.1). The JAQ enabled KPMG to obtain anonymous feedback from employees in electronic and hardcopy form. The purpose of the JAQ was to identify broad themes in employee perception of responsibilities, strengths, and opportunities within DWM. The JAQ responses are analyzed to identify common trends to assist with issue identification and analysis. JAQ's that result in balanced responses generally are not indicative of broader issues. We take the findings of the JAQ's as indicators of issues to consider in our broader fieldwork. As an example, the survey identified communication within DWM as something that "works well" and something that "does not work well".

KPMG received 145 JAQ responses representing approximately 10% of DWM employees. Each question did not receive an answer from all respondents. Surveys of this nature typically yield varying and even contradictory results. Responses were compiled into an electronic database for analysis. Exhibit 4.2 shows common themes in responses to selected survey questions.

EXHIBIT 4.2:

Question	Responses:	Summarized Themes from DWM Employee JAQ Responses
In terms of efficiency - What works well in your division?	**24**	• Management to staff communication. Inter-division, bureau, and department communication.
	24	• Management and teamwork.
	18	• Competency and performance of employees who possess necessary skills and knowledge to complete job responsibilities.
In terms of efficiency - What does NOT work well in your division?	**24**	• Communication from management and across bureaus.
	17	• Lengthy processes that are dependant on other departments. Lack of process ownership and incentive to perform tasks.
	16	• IT systems and equipment.
What should DWM keep doing?	**44**	• Enhancing employee selection, performance incentives, continuing education, and cross-training opportunities.
	20	• Maintaining focus on customer service, leading practices, and process improvements.
	7	• Improving IT systems and equipment.
What should DWM start doing?	**33**	• Providing employee development opportunities. Reward good performance and remove unqualified management.
	18	• Improve management, listen to employees, and utilize employees in the right positions.
	14	• Improving and enhancing technology, systems, and equipment.
What should DWM stop doing?	**23**	• Placing unqualified people into positions and not promoting from within. Creating top-heavy management that shows favoritism.
	15	• Avoiding opportunities to reduce bureaucracy within DWM. Avoiding interaction with other City Departments.
	12	• Utilizing external consultants unnecessarily.
Additional comments.	**12**	• Favoritism is an issue. Many people in upper management are unqualified for their jobs. Upper management is not transparent.
	8	• DWM is making progress. DWM is doing a good job.
	6	• Existing cross-training and continuing education opportunities are valuable, appreciated, and needed.

Source: Job Activity Questionnaires

Note: Three most common themes are provided for each question.

Recommendations

4B.1 DWM should evaluate the perceived common strengths and areas for improvement identified in the JAQ. Action plans should be developed to continue current perceived strengths and address current perceived areas for improvement. DWM should consider performing a periodic employee satisfaction survey to monitor and measure employee satisfaction.

5. Financial Management

KPMG assessed DWM's financial management system and oversight, potential risks, and potential effects to DWM stakeholders and customers. Specific financial management processes were assessed in addition to future financial planning and strategy methods used in the 2008 Four Year Rate Package (2008 Rate Package), financing assumptions and management accounting topics. Focus areas include financial controls, financing methods and schedules, use of funds and cash flow, financial planning and assumptions for rate projections.

A. Financial Plan

Observations and Analysis

2009 Interim Results

DWM's primary revenue sources are water and sewer services charges and Municipal Option Sales Tax (MOST). DWM calculated the following financial performance measures for the fiscal year ending June 30, 2009 (FY2009) through January 31, 2009:

EXHIBIT 5.0:

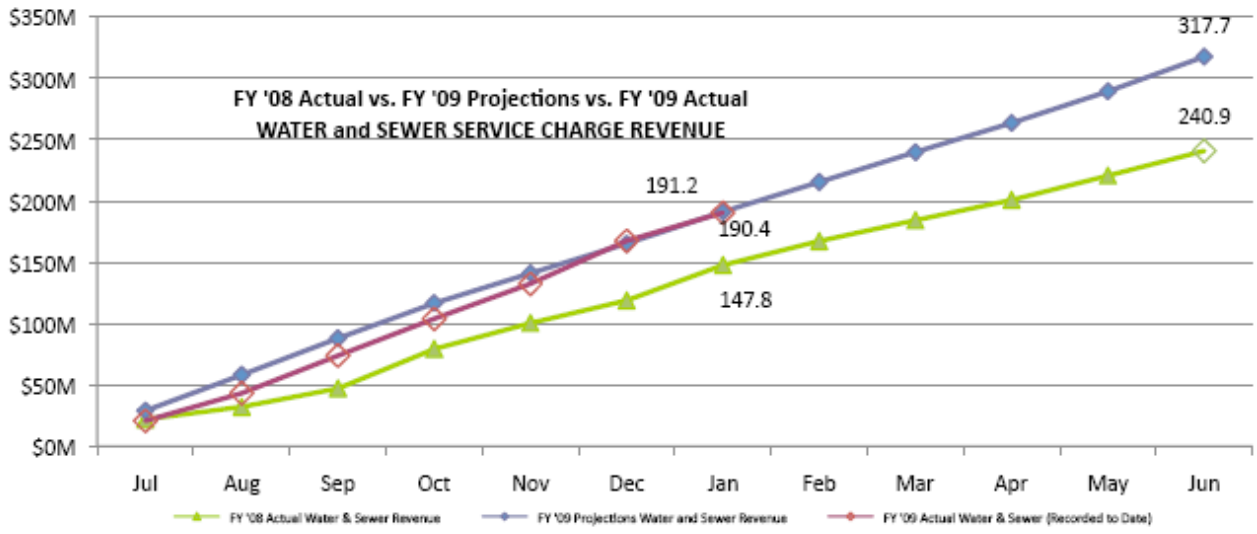
Performance Measure	DWM Calculation
Water and sewer service charge revenue	0.4% below FY2009 projections
MOST revenue	4.5% below FY2009 projections
Operating expenditures	37% below FY2009 projections

Source: DWM Website

DWM's calculations in Exhibit 5.0 indicate that for the first seven months of the current fiscal year, the actual revenues are tracking close to the DWM's revenue projections. The calculated expenditures are significantly less than the budgeted expenditures.

Water and Sewer Service Charge Revenue. Exhibit 5.1, prepared by DWM, shows that the water and sewer revenue from July 1, 2008 through January 31, 2009 is consistent with projected revenue. We noted that DWM reported FY2008 water and sewer charge revenue of approximately $240 million. This revenue total does not reconcile to the DWM audited FY2008 financial statement total of approximately $274 million. DWM's explanation of this variance was that the CAFR statement includes audit adjustments and re-classifications, whereas DWM's monthly reporting does not.

EXHIBIT 5.1:

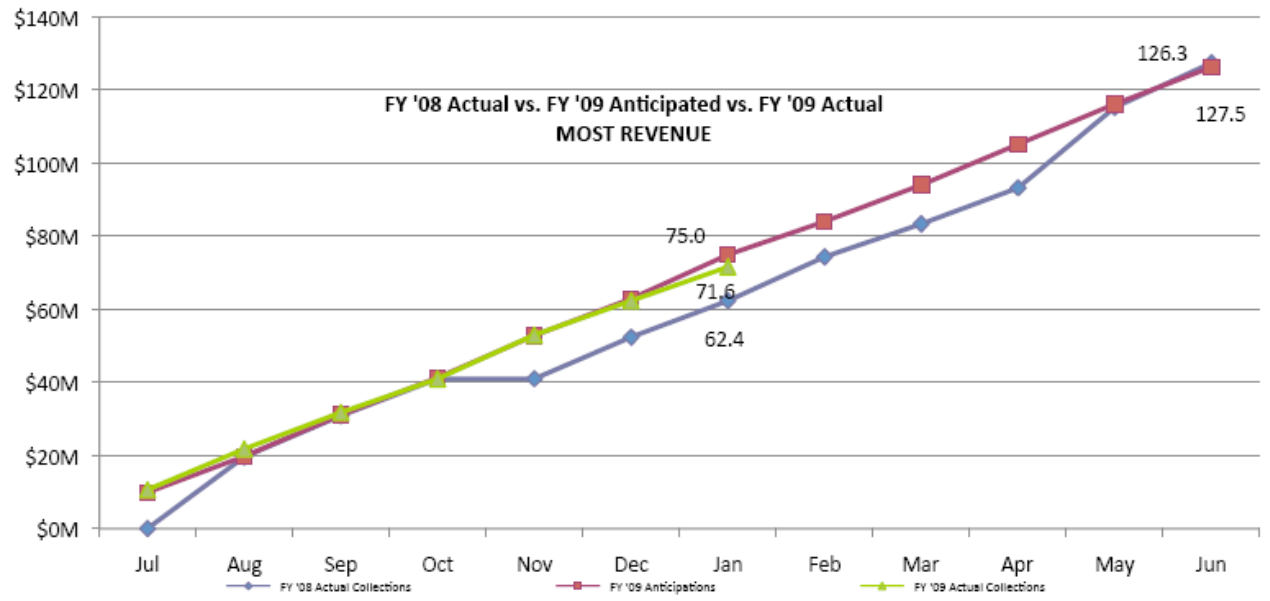


Source: DWM Website – Financial Picture as of 02-24-2009

DWM's FY2009 water and sewer service charge revenue for the seven months ended January 31, 2009 is $190.4 million, or approximately $800,000 less than projections. DWM's FY2009 revenue projection of $317.7 million exceeds FY2008 actual revenue by nearly $77 million. DWM believes the current economic and drought conditions have affected water consumption which impacts revenue collections. For FY2008-09, DWM made a downward adjustment to annual revenue projection to reflect prevailing economic conditions.

MOST Revenue. In July 2004, City voters approved a four year 1% MOST to lessen projected increase in water and sewer rates and broaden the revenue responsibility. DWM applies the revenue generated from MOST towards reducing the water and sewer rates. In February 2008, City voters approved MOST for an additional four-year period. DWM's chart shown in Exhibit 5.2, indicates MOST revenue from July 1, 2008 through January 31, 2009 is below projected revenue.

EXHIBIT 5.2:



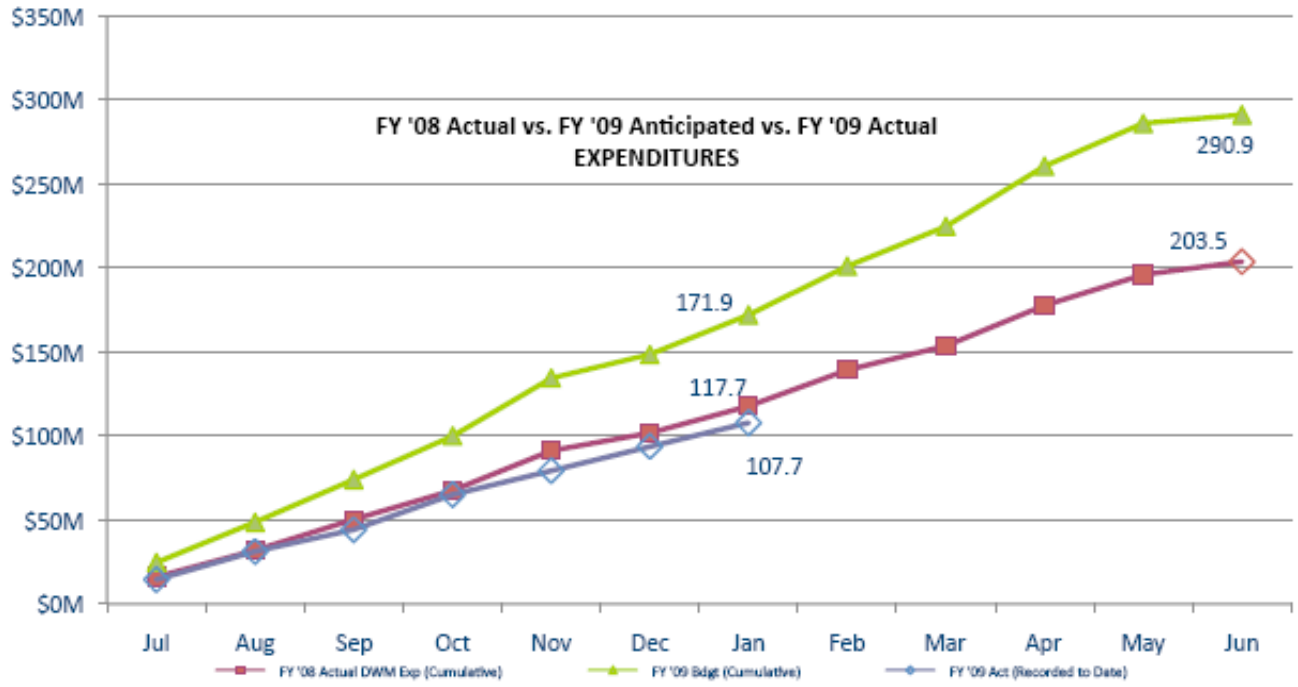
Source: DWM Website – Financial Picture as of 02-24-2009

DWM projects FY2009 MOST revenue of $126.3 million. DWM has recognized approximately $71.6 million in FY2009 MOST revenue for the seven months ended January 31, 2009, approximately $3.4 million less than projected FY2009 MOST revenue.

The 2008 sales tax authorization will expire in 2012 and may be extended for an additional four-year period if approved by City voters. Annually, MOST generates more than $120 million. Compared to peer agencies, DWM's water and sewer rates are among the highest in the nation. Eliminating MOST revenue would require DWM to revisit revenue and expenditure assumptions used in the Financial Planning and Rate Model (Rate Model), likely increasing water and sewer rates.

Operating Expenses. DWM's chart shown in Exhibit 5.3, shows operating expenses from July 1, 2008 through January 31, 2009 are below estimates. We noted that DWM reported FY2008 operating expenses of approximately $204 million. This expense total does not reconcile to the DWM audited FY2008 financial statement total of approximately $236 million. DWM's explanation of this variance was that the CAFR statement includes audit adjustments and re-classifications, whereas DWM's monthly reporting does not.

EXHIBIT 5.3:



Source: DWM Website – Financial Picture as of 02-24-2009

DWM has incurred approximately $107.7 million in operating expenses for the seven months ended January 31, 2009, or approximately $64.2 million less than budgeted and $10 million less than the corresponding period for 2008. Contributing factors to the reduced operating spend include DWM reducing non-essential spending through management directives, operational efficiencies and the recent workforce reductions. The budget to actual variance may also be attributed to a conservative budget preparation process and a lag in certain expenditures such as vendor accounts payable.

Exhibit 5.4 provides a history of budget and actual expenditures for Operating Funds 5051 and 5052. As shown, DWM has by design consistently spent less than its adopted operating budget for the past two fiscal years.

EXHIBIT 5.4:

	FY 2006-07	FY2007-08	FY2008-09	FY2008-09 through Jan 31, 2009
Operating Budget - Funds 5051 and 5052	$321,745,178	$347,640,293	$290,903,000	$171,900,000
Actual Reported Operating Costs	$265,379,761	$222,850,664	N/A	$107,700,000

Sources: FY 2007-08 Approved Budget (DWM Strategic Financial Planning Model – May 2008),
DWM Monthly Budget-to-Actual Report - January 31, 2009, and FY 2008-09 Approved Budget. (Includes $17 million in one time prior year encumbrance)

Current Financial Environment

The current capital market and economic environment is causing challenges for DWM's Capital Improvement Program. These challenges are discussed below:

Debt levels and capital funding needs. DWM has made significant investment in capital facilities over the last seven years. Much of this investment has been funded with capital debt. As shown in Exhibit 5.5, DWM has the following outstanding debt obligations as of January 1, 2009:

EXHIBIT 5.5:

Debt Instrument	Balance As of January 1, 2009 (in millions)
Revenue Bonds	$2,468
GEFA Loans	$150
Tax Exempt Commercial Paper Loan	$157
Total	**$2,775**

Source: City FY2007-08 CAFR

DWM is operating under two federal Consent Decrees Orders and two State Consent Orders related to environmental issues for its water and sewer infrastructure. To address these orders, DWM has identified capital improvements totaling approximately $2.075 billion for the period ending June 30, 2012 (see Exhibit 5.16 for additional details). DWM plans to fund these projects through issuance of revenue bonds, Georgia Environmental Facilities Authority (GEFA) loans, and through cash flow from operations generated from water and sewer rate increases. Capital improvement program spending is projected to increase from an annual average of approximately $392 million for FY2004 through FY2008, to an annual average of approximately $519 million in FY2009 through FY2012. Given current market conditions and available capital funding options, DWM may face liquidity issues in the capital debt market to fund capital projects.

Capacity of Tax-exempt Commercial Paper (TECP) Program. In March 2006, DWM authorized a TECP program by issuing Water and Sewer Commercial Paper Notes Series 2006. The TECP finances, on a short-term basis, a portion of the long-term capital improvement program. DWM has relied on the TECP funding source to reduce the cost of financing capital by matching debt events more consistently with cash outlay requirements. Over the past several years, TECP has allowed DWM to fund capital projects based on cash flow requirements, and effectively schedule the issuance of long-term revenue bonds only as the cash is needed and reduce interest cost on the overall capital program. Thus, DWM would have more flexibility to budget and procure construction contracts using the TECP and at a later date issue revenue bonds to remove the related short-term loans. DWM's reliance on short-term borrowing to finance its large capital improvement program has inherent risks – e.g., DWM retains the risk associated with potential change in long-term interest rates.

It is our understanding that, in February 2009, the TECP lenders terminated the line of credit (LOC) associated with this short-term funding source due to a tightening of credit within current financial market conditions. The February 2009 outstanding TECP balance is approximately $157 million and approximately $33 million in payment requests that are currently being processed – a total projected outstanding balance of approximately $190 million. As a result of the TECP LOC termination, the TECP outstanding balance at May 30, 2009 will be converted to short-term loans. These short-term loans will likely bear higher interest costs that will continue to rise as the short-term loans remain outstanding causing additional financial burden on DWM. The termination of TECP LOC is expected to significantly constrain DWM's ability to procure and fund capital projects on a cash-flow basis. DWM's access to capital funding is critical to meet the Consent Decree and Consent Orders milestones.

In addition to the $190 million in outstanding balance for the TECP program, DWM has estimated that approximately $146 million in new revenue bond funding will be required to fully fund the capital projects initially procured using the TECP program.

Water and Sewer Rates

According to DWM, the average Atlanta household uses approximately 6,000 gallons (8 Centum Cubic Feet) a month and results in an average total monthly water and sewer bill of approximately $108. Exhibit 5.6 provides a breakout of the average monthly residential bill and future average monthly bills reflecting the scheduled DWM rate increases.

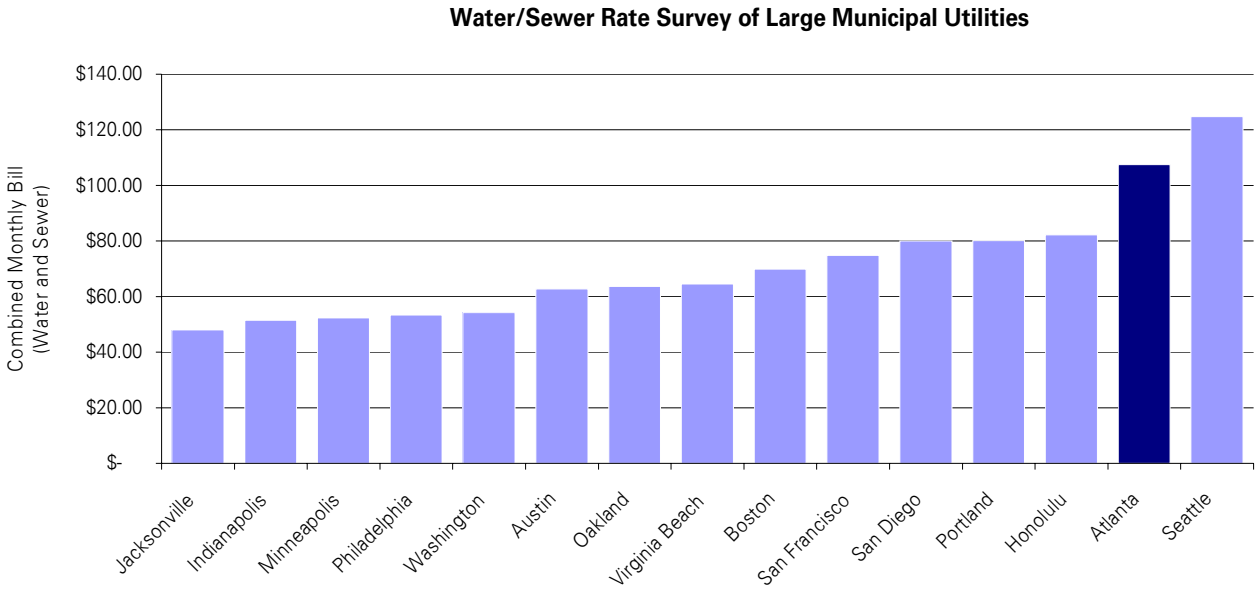
EXHIBIT 5.6:

Description	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12
Water Service	$24.79	$31.27	$35.03	$39.27	$43.84
Wastewater Service	$59.81	$76.27	$85.79	$96.52	$108.08
Total	$84.60	$107.54	$120.82	$135.79	$151.92
% rate increase from prior year		27.5%	12.5%	12.5%	12.0%

Source: DWM Website

Atlanta has the 2nd highest water/sewer rates in the country for a major metropolitan area based on KPMG revised analysis of a 2007 Black & Veatch survey. KPMG updated the rates for FY2009 for the top 15 cities in this survey with the results shown in the following chart:

EXHIBIT 5.7:



Source: KPMG survey of water and sewer rates of large municipal utilities

The United States Environmental Protection Agency (EPA) provides guidance on the affordability of retail sewer rates using a 2% Median Household Income (MHI) annual threshold as one affordability factor in conjunction with measures of the system's debt, socioeconomic conditions of the area, and financial management conditions. The City's 2008 MHI was $47,982. According to EPA guidance, the monthly affordability threshold for sewer charges is approximately $80.

The scheduled rate increases may cause the average monthly sewer bill to exceed the EPA affordability guideline in FY2010. Although inflation may raise the MHI in certain customer classes, customers in lower income classes would be most impacted by affordability issues with current and planned rate schedules. As such, DWM's ability to increase the water and sewer rates beyond FY2012 (i.e., Four Year Rate Package) could be constrained based upon affordability for its customers. Additionally, MOST revenue (representing 25%-30% of operating revenue) helps reduce DWM retail water and sewer rates and is subject to voter approval every four years. If MOST revenue is eliminated in the future, rates would likely increase. DWM has dealt with the affordability issue for senior citizens by creating a "Low-income Senior Citizens Discount" program for the customers that are 65 years or older with a maximum household income of $25,000 or less. Under this program qualified customers are eligible for a 30% discount on their monthly water and sewer bills.

In June 2008, the City Council adopted a 2008 Rate Package to help finance DWM's on-going capital improvement program as shown in Exhibit 5.8.

EXHIBIT 5.8:

Fiscal Year	Rate Increase
2009	27.5%
2010	12.5%
2011	12.5%
2012	12.0%

Source: DWM Website, http://www.atlantawatershed.org/custsrv/water_and_sewer_rates.htm

The current drought conditions in North Georgia have led to government mandated water restrictions for outdoor water use. These drought restrictions have resulted in a consumption decrease and have reduced water revenue. The 27.5% rate increase for FY2009 reflects the combination of drought induced consumption declines and funding need for its capital improvement program. The City Council stipulated that the rate increases for FY2010 through FY2012 will be effective conditional upon an audit of the Department. A multi-year rate package, such as this, is viewed favorably by the financial markets when the City needs to issue bonds to finance the DWM's capital projects.

2008 Rate Model

DWM uses a Financial Planning and Rate Model (Rate Model) to project capital and operating expenditures and calculate funding requirements from retail water and sewer revenue and from bond proceeds. The analysis supporting the 2008 Rate Package is based on assumptions for capital improvement program funding and assumptions for operations. DWM calculates total costs for operations, capital investment and financing. The

Rate Model then determines the proceeds available from taxes, other revenues, and bond proceeds and determines the adequacy of customer revenue to meet the total costs of DWM. The Rate Model is principally developed, managed and maintained by an outside consultant. While DWM is provided with a copy of the Rate Model, DWM staff does not have the ability to prepare alternative scenarios using sensitivity analysis to address the impact of changing certain assumptions. Rather, DWM relies on the outside consultants to prepare and analyze alternative scenarios.

Four Year Rate Package

The following schedules provide details from DWM's May 2008 Rate Model used by DWM in supporting the four year rate package with operating, capital budget, and related assumptions. The values in the scenarios are taken directly from the Rate Model and its key assumptions within the four year projection.

Sources and Uses of Funds – Capital

Exhibit 5.9 presents the sources and uses of funds related to DWM's capital improvement program and includes the additional Revenue Bonds proposed to finance the capital program. TECP proceeds are shown only in FY2009 and FY2010, but interim financing is assumed to be used each year until the revenue bonds replace the TECP outstanding balance. Key DWM capital financing assumptions for this projection included the following:

- Revenue bonds with term of 30 years and interest of 4.65%;
- TECP with $600 million line of credit is used for interim financing in FY2009–10 until revenue bonds are issued to reduce the TECP outstanding balance;
- Capital projects of $2.075 billion are projected between FY2009–12;
- Capital projects have been reduced each year by 5% from the original proposed CIP for the 2008 Rate Package (The 5% reduction in capital requirements amounts to approximately $100 million within the 2008 Rate Package). DWM's Rate Consultant indicated that the decision to reduce capital requirements by 5% was based on factors such as procurement delays, value engineering and administrative decision.
- GEFA loans of $50 million per year for FY2010–12;
- Existing bond proceeds of $117 million is available for spending in FY2009; and
- Revenue bond amounts of $550 million per year for FY2010–12 are issued to finance the CIP.

EXHIBIT 5.9:

Sources and Uses of Funds - Capital Funds Financial Plan/Rate Model - May 2008	FY2009	FY2010	FY2011	FY2012
Sources of Funds:				
Existing Revenue Bond Proceeds (prior balance)	$ 117,226,529	$ -	$ -	$ -
New Revenue Bond Proceeds	-	550,000,000	550,000,000	550,000,000
TECP Proceeds	352,264,435	2,048,055	-	-
GEFA Proceeds	-	50,000,000	50,000,000	50,000,000
Transfers from 5052	-	-	-	-
Total Sources of Funds	**$ 469,490,964**	**$ 602,048,055**	**$ 600,000,000**	**$ 600,000,000**
Uses of Funds:				
Wastewater CSO Consent Decree	$ (3,248,206)	$ -	$ -	$ -
Wastewater First Amended Consent Decree (SSO)	(182,478,721)	(299,804,937)	(293,275,010)	(426,303,867)
Wastewater Regulatory or Contract Compliance	(44,735,035)	(12,192,985)	(935,477)	(181,720)
Wastewater System Renewal or Operational Reliability	(11,138,250)	(11,629,502)	(8,066,813)	(8,227,725)
Water Consent Order	(38,320,936)	(38,113,534)	(28,225,000)	(900,000)
Water Regulatory or Contract Compliance	(27,647,075)	(22,557,203)	(16,598,620)	(15,788,585)
Water System Renewal or Operational Reliability	(186,632,792)	(249,436,634)	(167,610,440)	(91,197,358)
Adjustment per Rate Model (5%)	24,710,051	31,686,740	25,735,568	27,129,963
Total Uses of Funds	**$ (469,490,964)**	**$ (602,048,055)**	**$ (488,975,792)**	**$ (515,469,292)**
Net Increase (Decrease) in Reserves	**$ -**	**$ -**	**$ 111,024,208**	**$ 84,530,708**

Source: DWM Four Year Rate Package – Rate Model May 2008

Sources and Uses of Funds – Operations

Exhibit 5.10 presents the sources and uses of DWM's operations and includes the retail water and sewer rates as adjusted in the 2008 Rate Package. Key DWM operating assumptions for this projection included the following:

- The MOST revenue is constant at $123 million;
- Spending in the Revenue Fund (Fund 5051) and Renewal and Extension Fund (Fund 5052) for operations are estimated at 98% of adopted budget and apply a 3% base inflation factor;
- Ending reserves in the combined Revenue (Fund 5051) and Renewal and Extension (Fund 5052) funds totaling a minimum of two months of operating expenditures;
- Rate increases in each year are calculated to meet the additional cost requirements of the debt financing and operating costs while maintaining a minimum cash balance of two months operating expenditures; and
- An elasticity factor of 1% reduction was applied to water consumption for every 10% increase in rates.

EXHIBIT 5.10:

Sources and Uses of Funds - Operating Funds Financial Plan/Rate Model - May 2008	FY2009	FY2010	FY2011	FY2012
Sources of Funds:				
Retail Water and Sewer Revenues (Existing Rates)	$ 254,664,508	$ 257,211,153	$ 259,783,264	$ 262,381,097
Retail Water and Sewer Revenues (Increased Rates)	63,029,466	99,757,738	141,315,906	186,480,962
Wholesale (I/J) Water and Sewer Revenues	16,675,530	17,083,280	16,083,280	10,083,280
Municipal Options Sales Tax (MOST)	123,271,249	123,271,249	123,271,249	123,271,249
Other Revenues	15,805,775	15,767,576	15,728,994	15,690,027
Interest Revenues (Bond and Cash Funds)	5,646,098	5,623,271	5,626,590	5,644,876
Total Sources of Funds	**$ 479,092,626**	**$ 518,714,267**	**$ 561,809,283**	**$ 603,551,491**
Uses of Funds:				
Fund 5051 Expenditures	$ (199,742,597)	$ (214,117,617)	$ (221,227,028)	$ (229,629,432)
Fund 5052 Expenditures	(68,428,705)	(73,009,659)	(74,918,522)	(77,910,021)
Other Dept; PILOT; Franchise; Indirect Costs	(38,623,105)	(38,923,105)	(38,923,105)	(38,923,105)
Revenue Bond Debt Service (Existing Bonds)	(148,203,435)	(150,006,652)	(149,741,081)	(149,849,045)
Revenue Bond Debt Service (New Bonds)	-	(15,896,913)	(44,906,385)	(71,428,067)
GEFA Loans (Existing and New)	(8,316,435)	(8,316,435)	(11,291,960)	(14,267,484)
Tax-exempt Commercial Paper and Other Debt Service	(16,096,589)	(19,289,838)	(19,785,999)	(21,626,965)
PAYGO Financing	-	-	-	-
Total Uses of Funds	**$ (479,410,866)**	**$ (519,560,219)**	**$ (560,794,080)**	**$ (603,634,119)**
Net Increase (Decrease) in Reserves	**$ (318,240)**	**$ (845,952)**	**$ 1,015,204**	**$ (82,628)**
System Combined Reserves	**$ 53,707,315**	**$ 52,861,363**	**$ 53,876,567**	**$ 53,793,939**

Source: DWM Four Year Rate Package – Rate Model May 2008

Capital Project Financing

Long Term Financing and Life of Capital Assets

The long-term financing of the capital improvement program provides an approach for distributing costs equitably over the life of capital assets. Over the past five fiscal years, DWM has averaged about $392 million in capital expenditures annually. These capital improvement projects are intended to achieve regulatory compliance, meet future service needs, improve service levels, and expand service coverage area through renewal, replacement and expansion of the water and sewer infrastructure. DWM's water and sewer infrastructure consists of treatment facilities, water collection and distribution system, sewer collection system, and pumping stations. Typically, these capital assets have a long useful lives ranging from 50 years to 75 years. Exhibit 5.11 identifies the range of asset lives as reported in the City FY2008 Comprehensive Annual Financial Report (CAFR).

EXHIBIT 5.11:

Classification	Range of Asset Lives
Water and Wastewater plant and treatment facilities	50-75 years
Water collection and distribution system	75 years
Wastewater system	67 years

Source: City FY 2007-08 CAFR

DWM funds capital projects primarily through issuance of revenue bonds, tax-exempt commercial paper (TECP) program, Georgia Environmental Facilities Authority (GEFA) loans, as well as cash flow generated through operations (otherwise referred to as "PayGo".) Exhibit 5.12 presents the typical financing term used for the repayment of principal and interest payments for the capital projects funded through particular bonds and loans.

EXHIBIT 5.12:

Funding Source	Financing Term
Tax-exempt Revenue Bonds	30 - 40 years
GEFA Loans	20 - 30 years
Tax-exempt Commercial Paper	1 - 5 years
PayGo / Operating Revenues	N/A

Source: Industry Benchmark

Per the FY2008 CAFR, DWM had approximately $2.7 billion in long-term outstanding debt. Based on the current repayment schedule, essentially all of the existing long-term debt is scheduled to be fully paid by FY2043.

DWM plans to issue approximately $1.956 billion in new long-term debt within the 2008 Rate Package period as shown below in the information from DWM's Rate Model. The 2008 Rate Package did not anticipate issuing any new revenue bonds or GEFA loans for the FY2008-09.

EXHIBIT 5.13:

Projected Debt Amount (includes funded reserves or surety)					
Description	**FY 2008-09**	**FY 2009-10**	**FY 2010-11**	**FY 2011-12**	**TOTAL**
Revenue Bond Issue	$0	$550,000,000	$550,000,000	$550,000,000	$1,650,000,000
GEFA Loans	$0	$50,000,000	$50,000,000	$50,000,000	$150,000,000
Sub-Total	*$0*	*$600,000,000*	*$600,000,000*	*$600,000,000*	*$1,800,000,000*
Reserves or Surety	$0	$52,159,188	$52,159,188	$52,159,188	$156,477,564
Total	$0	$652,159,188	$652,159,188	$652,159,188	$1,956,477,564

Source: DWM Four Year Rate Package – Rate Model May 2008

Exhibit 5.14 presents the proforma debt service requirements for revenue bonds, other sub-ordinated debt, and planned debt issues.

EXHIBIT 5.14:

Annual Debt Service Requirements				
Description	**FY 2008-09**	**FY 2009-10**	**FY 2010-11**	**FY 2011-12**
Existing Revenue Bonds	$ 148,203,435	$ 150,006,652	$ 149,741,081	$ 149,849,045
Other (Subordinate) Debt	8,316,435	8,316,435	8,316,435	8,316,435
Sub-total Existing Debt	156,519,870	158,323,087	158,057,516	158,165,480
New Revenue Bonds	-	15,896,913	44,906,385	71,428,067
GEFA Loans	-	-	2,975,525	5,951,049
Sub-total New Debt Issues	-	15,896,913	47,881,910	77,379,116
Total Annual Debt Service	$ 156,519,870	$ 174,220,000	$ 205,939,426	$ 235,544,596

Source: DWM Four Year Rate Package – Rate Model May 2008

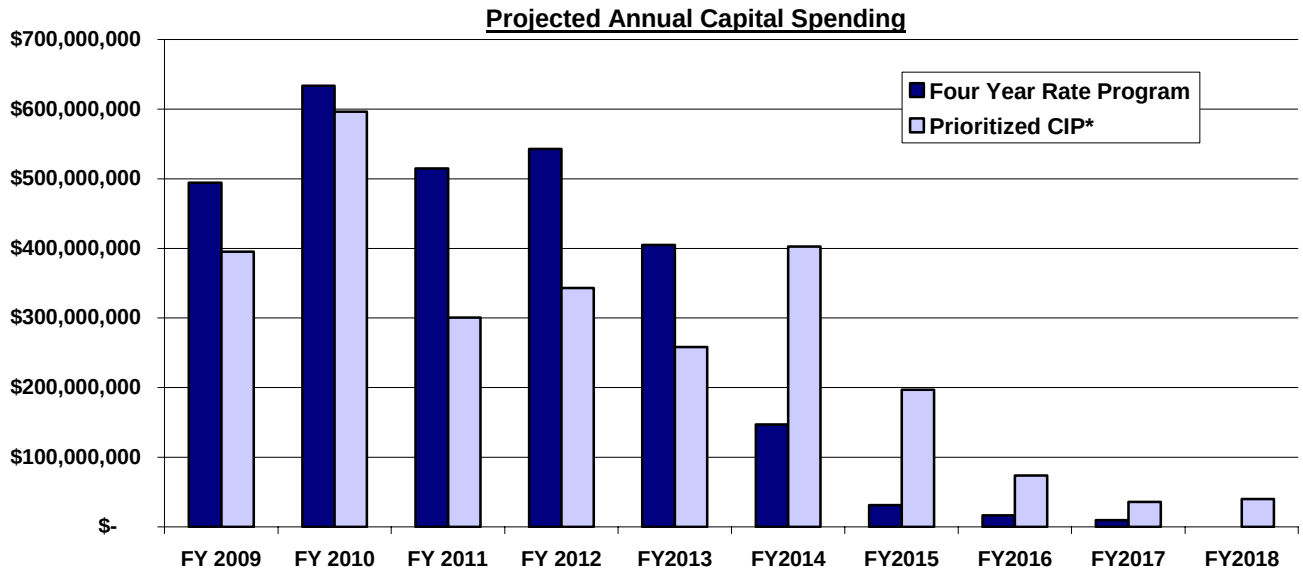
Presently, the annual debt service requirement represents nearly one-third of DWM's annual costs. With the planned long-term debt issuances, DWM expects the annual debt service requirement to represent a greater portion of DWM's annual expenses going forward. DWM has several options available for optimizing the debt structure (i.e., through refinancing of existing debt, zero coupon bonds, revenue bonds with 40-year term, variable debt service payment, etc.) and the ability to spread the debt service requirements over the expected life of the underlying capital assets to the extent possible. Such action can have a positive impact on the current rate payers (i.e., any reduction in an annual debt service requirements could translate into lower water and sewer rates) and can promote "generational equity" in the system by allocating a portion of the debt burden associated with capital projects to future customer base.

Prioritized Capital Improvement Program

Recognizing the challenges raised by the developing uncertainty in the current financial markets, DWM recently evaluated the priority of capital projects included in the 2008 Rate Package. Because a significant portion of the capital program relies on the capital debt markets, it is important for the City to operate in a fiscally prudent and responsible manner so it can continue to access the capital markets it is relying on to meet the Consent Decrees. DWM's recent evaluation re-prioritized capital projects based on regulatory compliance requirements and other near-term infrastructure improvement needs. Exhibit 5.15 below shows projected annual capital spending for the 2008 Rate Package and the Prioritized CIP through FY2018 (the Prioritized CIP includes $146 million in TECP commitments for active capital projects). While Exhibit 5.15 displays a significant decline in annual capital

spending after FY 2014, the long-term capital needs will likely increase as the future Capital Improvement Program updates are made to reflect other system enhancements and renewal and replacement of DWM's water and sewer infrastructure.

EXHIBIT 5.15:



Source: DWM Four Year Rate Package – Rate Model May 2008 and March 2009 Revised Capital Improvement Plan

The 2008 Rate Package included $2.075 billion in capital spending over the four year period. These capital projects are debt funded through issuance of revenue bonds, TECP program, GEFA loans, and available balances from prior revenue bonds. Exhibit 5.16 presents a summary of annual capital spending assumptions included in the 2008 Rate Package and the revised capital spending from the Prioritized CIP schedule.

EXHIBIT 5.16:

Projected Annual Capital Funding Requirements

Description	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	TOTAL
Four-Year Rate Package	$469,490,965	$602,048,055	$488,975,792	$515,469,293	$2,075,984,105
Prioritized Capital Program*	$394,991,321	$596,374,771	$300,805,122	$342,907,630	$1,635,078,844
Difference	$74,499,644	$5,673,284	$188,170,670	$172,561,663	$440,905,261

* Prioritized Capital Program includes $146 million in TECP commitments for active projects

Source: DWM Four Year Rate Package – Rate Model May 2008 and March 2009 Revised Capital Improvement Plan

DWM has a current balance of $77 million from prior bond issues to fund capital projects. As shown above, the Prioritized CIP shows lower Capital Funding requirements when compared to the 2008 Rate Package. The annual capital spending projections included in the Prioritized Capital Program is approximately $1.6 billion and 20% less

than the annual capital spending in the 2008 Rate Package. Thus, the annual debt service requirements for the new bond issues could be smaller under the Prioritized CIP schedule than those in the 2008 Rate Package.

Capital Improvement Program Coordination

There are three major inputs DWM uses to develop its capital improvement program funding and financing strategy:

Capital Costs. The Bureau of Engineering Services (BES) is responsible for overall management of DWM's capital improvement program, including design and construction projects to comply with the City's Consent Decrees and Administrative Orders, as well as other improvements to the City's water and sewer systems. BES prepares and maintains a listing of capital improvement projects along with projected annual "cash flow" requirements for these capital projects;

Financing Costs. The Bureau of Financial Administration, the Rate Consultant and the Financial Consultant review the projected annual "cash flow" requirements for the capital projects and prepare a financing strategy and water and sewer rates projection that satisfy the annual cash flow requirements for capital projects. Using historical data, assumptions are prepared for interest rates on anticipated bond issues, GEFA loans, and other short-term financing instruments. Annual debt service requirements for new debt funding is reflected in the water and sewer rates; and

Financing Strategy. The City's Financial Advisor provides guidance regarding debt structure for existing as well as any new debt issuance by DWM and works with City Debt Management, Bond Counsel and underwriters to prepare for debt issues.

To support a debt issue or rate adoption, the Rate Consultants and the Financial Consultants must gather key assumptions related to operations, budgets and projected water consumption and prepare the projected financing and revenue requirements DWM needs for rate setting. While these processes appear to be taking place currently, it does not appear to be a routine or formal process.

B. Financial Plan – Alternative Scenario

Since the 2008 Rate Package was approved in June 2008, conditions affecting the capital and operating costs have changed as described in previous sections. DWM indicated that it is in the process of updating its financial projections for the Rate Model to support upcoming bond issues. DWM also indicated that preliminary results were incomplete and therefore unavailable for KPMG review. Therefore, KPMG prepared an alternative scenario reflecting current projected capital and operating costs using the format consistent with the DWM Rate Model. Further, the intent of this section is to show the sensitivity of the Rate Model and how underlying assumptions can impact resulting rates. The key assumptions within this alternative scenario are as follows:

- Operations and maintenance costs from Revenue Fund (5051) and Renewal and Extension Fund (5052) Fund are estimated at 85% of the approved budgets. The original Rate Model assumes 98% of approved budgets. For FY2007-08, the actual annual operating budget represented approximately 78% of the allocated budget, and for the current fiscal year, the operating expenditures reported for the first seven months of the current fiscal year are approximately 63% of budget.

EXHIBIT 5.17:

DWM's Operating Funds 5051 and 5052 Expenditures (Budget and Rate Scenarios)

Alternative Scenario	FY 2009	FY 2010	FY 2011	FY 2012
Budget	$ 273,644,186	$ 292,987,016	$ 303,209,744	$ 313,815,768
Four Year Rate Package (98% of budget)[1]	$ 268,171,302	$ 287,127,276	$ 296,145,549	$ 307,539,453
Alternative Scenario (85% of budget)	$ 232,597,558	$ 249,038,964	$ 257,728,282	$ 266,743,403

[1] The Four Year Rate Package applied 98% of budget less $1 million adjustment for FY 2011.

Sources: FY2009 – FY2012 Budget and Rate Package data from Strategic Financial Plan Rate Model (May 2008); Alternative scenario from KPMG calculation based on budget.

- Capital cost projections are based on the DWM Prioritized CIP schedule. This represents a total of $1.635 billion (includes $77 million in available funding from previous bond proceeds) in capital needs versus $2.075 billion in capital needs from the Rate Model plan. The prioritized capital improvement program of $1.635 billion also includes $146 million for active capital projects that were initially procured through the TECP program. KPMG met with DWM's Bureau of Engineering Services and DWM's Rate Consultant to discuss the revised capital plan and used the values provided by DWM in their alternative scenario analysis for FY2009 to FY2012.

- Revenue bonds are assumed to have a 5% annual interest rate compared to the 4.65% in original Rate Model plan. As discussed earlier, the TECP program is terminated in FY2009 and the outstanding balance of

approximately $158 million plus other outstanding payment commitments of $33 million are paid off through the FY2009 revenue bond issue.

- The water and sewer rates are based on the 2008 Rate Package approved by the City Council. Through January 2009, retail water/sewer revenues are closely tracking the budgeted amounts for FY2009.

- Other data used in this scenario is extracted from the original financial Rate Model used for the 2008 Rate Package and has not been revised.

Other factors were not quantified and therefore not reflected in the alternative scenario analysis. While several factors may have a net positive impact on DWM finances, they should be studied when the Rate Model is adjusted and before any action is finalized. Examples of other factors include:

- Adjusting for the impact of cost cutting measures that took place in December 2008 through February 2009;

- Adjusting for eliminating the Variable Rate Debt Obligations;

- Adjusting for the potential impact of current economic conditions on DWM's revenues;

- Adjusting for any changes in the Department's indirect costs;

- Adjusting for the impact of additional revenues from implementing items identified in this report; and

- Adjusting for collection of other amounts from the City of Atlanta General Fund.

Exhibit 5.18 presents a summary of the revised prioritized capital schedule and financing plan. The results show revenue bond financing each year supplemented by GEFA loans needed to meet the revised capital funding requirements. Consistent with the prioritized capital schedule, the financing plan includes a new revenue bond issue in May 2009 and then new bond issues every six months in FY2010 and FY2011 and one bond issue in FY2012.

EXHIBIT 5.18:

Sources and Uses of Funds (Capital Funds) Financial Plan/Rate Model - Alternative Scenario with 4 Yr Rate Package	FY2009	FY2010	FY2011	FY2012
Sources of Funds:				
Existing Revenue Bond Proceeds (prior balance)	$ 77,310,416	$ -	$ -	$ -
New Revenue Bond Proceeds (Net)	410,661,087	379,084,197	515,604,513	292,907,630
GEFA Proceeds		50,000,000	50,000,000	50,000,000
Total Sources of Funds	**$ 487,971,503**	**$ 429,084,197**	**$ 565,604,513**	**$ 342,907,630**
Uses (Commitment) of Funds:				
Existing Revenue Bond Project Commitments	$ (77,310,416)	$ -	$ -	$ -
New CIP Projects Planned	$ (220,172,087)	$ (429,084,197)	$ (565,604,513)	$ (342,907,630)
TECP - Payoff	$ (190,489,000)			
Total Uses of Funds	**$ (487,971,503)**	**$ (429,084,197)**	**$ (565,604,513)**	**$ (342,907,630)**
Net Increase (Decrease) in Reserves	**$ -**	**$ -**	**$ -**	**$ -**

Source: DWM Rate Model and KPMG Analysis

Exhibit 5.19 provides the details resulting from this scenario for the Operating Funds (5051 and 5052).

EXHIBIT 5.19:

Sources and Uses of Funds (Operating Funds) Financial Plan/Rate Model - Alternative Scenario with 4 Yr Rate Package	FY2009	FY2010	FY2011	FY2012
Sources of Funds:				
Retail Water and Sewer Revenues (Existing Rates)	$ 254,664,508	$ 257,211,153	$ 259,783,264	$ 262,381,097
Retail Revenue Increase (4 Yr Rate Package)	63,029,466	99,757,738	141,315,906	186,480,962
Wholesale (I/J) Water and Sewer Revenues	16,675,530	17,083,280	16,083,280	10,083,280
Municipal Options Sales Tax (MOST)	123,271,249	123,271,249	123,271,249	123,271,249
Other Revenues	15,805,775	15,767,576	15,728,994	15,690,027
Interest Revenues (Bond and Cash Funds)	5,646,098	5,623,271	5,626,590	5,644,876
Total Sources of Funds	**$ 479,092,626**	**$ 518,714,267**	**$ 561,809,283**	**$ 603,551,491**
Uses of Funds:				
Fund 5051 Expenditures	$ (173,246,130)	$ (185,714,259)	$ (192,314,259)	$ (199,168,385)
Fund 5052 Expenditures	(59,351,428)	(63,324,704)	(65,414,024)	(67,575,018)
Other Dept; PILOT; Franchise; Indirect Costs	(38,623,105)	(38,923,105)	(38,923,105)	(38,923,105)
Revenue Bond Debt Service (Existing Bonds)	(148,203,435)	(150,006,652)	(149,741,081)	(149,849,045)
Revenue Bond Debt Service (New Bonds)		(35,908,392)	(72,727,504)	(112,929,291)
GEFA Loans (Existing and New)	(8,316,435)	(8,316,435)	(11,291,960)	(14,267,484)
Tax-exempt Commercial Paper and Other Debt Service	(8,372,222)	(2,705,381)	(2,705,381)	(2,705,381)
Total Uses of Funds	**$ (436,112,755)**	**$ (484,898,929)**	**$ (533,117,314)**	**$ (585,417,709)**
Net Increase (Decrease) in Reserves	**$ 42,979,871**	**$ 33,815,338**	**$ 28,691,969**	**$ 18,133,782**
System Combined Reserves	**$ 151,583,871**	**$ 185,399,209**	**$ 214,091,178**	**$ 232,224,960**

Notes: Beginning Fund Balance for FY2009 is based on FY2008 CAFR showing $108,604,000 in pooled investment fund.
Debt service is assumed due six months after each bond issue.

Source: DWM Rate Model and KPMG Analysis

As shown in Exhibit 5.19, the reduced operations and maintenance (O&M) and capital costs in the alternative scenario have a positive effect on projected cash flow and increase the net system reserves (e.g., from $108 million in FY2008 to $232 million in FY2012). The alternative scenario in Exhibits 5.18 and 5.19 shows that, under these assumptions, the financial condition of DWM improves with the existing 2008 Rate Package, a reduced capital budget and related borrowing, and O&M costs at 85% of budget. There are other variables, such as MOST revenue and water consumption, that are based on original budget and Rate Model assumptions that can affect the financial condition. These variables were not changed in the alternative scenario.

With the future year rate adjustments, the accumulated net revenues are projected to provide additional funds that may be used for other financial policy options such as rate reduction or pay-as-you-go (PayGo) capital financing. As discussed in the following sections of the report, there are a number of alternatives that the City may consider regarding increased projected surpluses in net revenues.

Rate Adjustment Revenues

As shown in Exhibit 5.20, the additional revenue DWM projects over 3 years is $121 million per year by FY2012.

EXHIBIT 5.20:

Rate Increases:	FY2010	FY2011	FY2012
12.5% (FY2010)	$ 36,097,978	$ 36,458,957	$ 36,823,547
12.5% (FY2011)	-	40,560,590	40,966,196
12.0% (FY2012)	-	-	43,751,897
Total Rate Increase Revenue	**$ 36,097,978**	**$ 77,019,547**	**$ 121,541,640**

Source: DWM Rate Model and KPMG Analysis

For comparison purposes, KPMG calculated two different rate increase scenarios – a 10.0% and 8.0% rate increase in FY2010 through FY2012 in water and sewer services. To clarify, the 10.0% and 8.0 % rate scenarios are intended to show projected outcomes based upon assumptions used in the alternative scenario. As shown in Exhibit 5.21, a 10.0% rate increase annually for three fiscal years adds approximately $98 million per year starting in FY2012. The 8.0% rate increase annually for three fiscal years adds approximately $77 million per year starting in FY2012. The alternative scenarios reflect the 10% price elasticity factor used in the 2008 Rate Package. The alternative scenarios meet the City's debt service coverage requirements when using contributions from a Rate Stabilization Fund established from net operating fund balances. DWM should ensure that all minimum debt service coverage covenants are met when updating its analysis.

EXHIBIT 5.21:

10% Increase

Rate Increases:	FY2010	FY2011	FY2012
10% (FY2010)	29,382,618	29,382,618	29,382,618
10% (FY2011)	-	32,567,286	32,567,286
10% (FY2012)	-	-	36,114,456
Total Rate Increase Revenue	**$ 29,382,618**	**$ 61,949,904**	**$ 98,064,360**

8% Increase

Rate Increases:	FY2010	FY2011	FY2012
8% (FY2010)	23,506,094	23,506,094	23,506,094
8% (FY2011)	-	25,619,110	25,619,110
8% (FY2012)	-	-	27,935,025
Total Rate Increase Revenue	**$ 23,506,094**	**$ 49,125,204**	**$ 77,060,229**

Source: DWM Rate Model and KPMG Analysis

C. Financial Plan – Options and Recommendations

Recommendations

Rate Model

5C.1 The Rate Model is the primary tool utilized by DWM to establish customer rates, which results in hundreds of millions of dollars in revenue. DWM has a high level of dependency on external consultants for the management and operation of the Rate Model. DWM staff should be skilled in the Rate Model processes and should be accountable for the inputs and outputs of the Rate Model. The Department of Finance and other City stakeholders should perform analysis apart from DWM or DWM consultants to review and agree upon Rate Model assumptions, inputs, and outputs.

Projected Net Operating Revenues

5C.2 There are several options available to DWM and the City for utilizing any projected net operating revenues. The recent trend in reduced operating expenditures as well as the recently reduced annual CIP plan may generate positive net operating revenues for the remainder of the 2008 Rate Package. Based on these trends and projections, KPMG recommends that City Council closely evaluate the four options discussed below with respect to any projected net operating revenues. The City should balance the financial impact on the rate payers, projected accumulated balances in operating funds, and the financial stability desired by the bond market. The Rate Model and assumptions used should be reviewed on a regular basis to evaluate the model's assumptions and current economic conditions. KPMG recommends that the City prepare a detailed cash flow analysis that reflects an operating budget consistent with historical financial results. The capital budgets should be prepared using alternative scenarios to meet at least the minimum Consent Decree requirements, assessed deferred maintenance issues, and to enhance water and sewer operations. These projections should be analyzed to determine if there are projected excess net revenues. To the extent there are projected excess net revenues, the City should consider a combination of the following:

- Establish a Rate Stabilization Fund – Dedicate a portion of net operating revenues to a special purpose fund to help mitigate or avoid future rate increases; and/or

- Increase Capital Investment Using PayGo – Apply a portion of net operating revenues to planned capital projects; and/or

- Reduce Outstanding Debt – Apply a portion of net operating revenues to reduce outstanding debt obligations; and/or

- Adjust Planned Retail Water and Sewer Rates – Apply a portion of net operating revenues to defer or adjust the planned rates included in the 2008 Rate Package.

Each of the four options presented above will have a net positive impact on DWM's water and sewer rates; however, the timing of expected benefits will depend on the option or combination of options selected. For example, establishing a rate stabilization fund or adjusting the planned retail water and sewer rates could provide benefits to the retail customers on a near-term basis. Where as, using the projected net operating revenues to pay for either the capital improvement program or reducing outstanding debt could spread those benefits over a much longer term. These options are not mutually exclusive. DWM and the City can choose a combined approach that provides benefits, while retaining the flexibility to address future challenges. Each of the options is summarized in terms of benefits and costs in Exhibit 5.22.

EXHIBIT 5.22:

Option	Benefits	Considerations
Establish a Rate Stabilization Fund	Mitigates rate spikes and provides more gradual rate adjustments	Need to create new fund or account and rules for management
	Covers shortfalls within the budget process and unexpected financial demands or operating conditions during year	Need to amend Master Bond Ordinance related to outstanding and new bonds
	Viewed favorably by bond holders and rating agencies	Use is generally restricted and may require City Council approval if not included in the budget
Increase Capital Investment Using PayGo	Reduces debt borrowing requirement and increases future debt borrowing capacity	Current ratepayers pay costs of long-term assets up front
	Flexibility to finance when funds are available	Rate burden currently high
Reduce Outstanding Debt	Reduces debt burden and debt service costs	May be penalties and costs to call bonds (subject to current market conditions)
	Increases debt capacity for future borrowing	
Adjust Scheduled Water and Sewer Rates	Provides ratepayers with relief from high rates	Increases financial risk if revenues not sufficient
	Allows more capacity for future rate increases	Existing bond holders and rating agencies may view rate reduction negatively

Source: KPMG Research and Analysis

The options outlined in Exhibit 5.22 are discussed in more detail as follows.

Establish a Rate Stabilization Fund

DWM's annual revenue requirements and water usage can vary significantly from year to year. The purpose of a Rate Stabilization Fund is to stabilize retail water and sewer rates by covering revenue requirements in the years in which rates may be insufficient to meet financial obligations. The Rate Stabilization Fund is a financial tool used by municipal utilities to accumulate funds, similar to a savings account, to offset rate increases or short-term borrowing that may be otherwise required.

Benefits of establishing a Rate Stabilization Fund include:

- Reassuring bond holders and rating agencies that additional funds are available to make debt payments if needed;
- Improving budgeting flexibility by allowing the Rate Stabilization Fund as a source of revenue; and
- Reducing negative responses from customers caused by large rate increases.

DWM could establish the Rate Stabilization Fund with a number of considerations:

- DWM could create the rate stabilization fund either as an account within the Revenue Fund (5051), or as a separate fund;
- DWM could establish a target minimum balance in the Rate Stabilization Fund (for example 15% of annual retail water and wastewater revenues or approximately $50 million); and
- DWM could transfer monies to the Rate Stabilization Fund during the year as a budgeted item (transfer from Revenue fund balance) or at year-end (from remaining fund balances) provided financial obligations, such as annual debt service payments, are made.

Creating a Rate Stabilization Fund may require:

- Revising the Master Bond Covenant;
- Establishing a new fund or account within Fund 5051, and appropriate controls in the financial system;
- Including the Rate Stabilization Fund in the annual budget process; and

- Transferring funds from Revenue Fund (5051) and Renewal and Extension Fund (5052) for initial Rate Stabilization Fund balance.

Uses of Rate Stabilization Funds are generally restricted and may require the City Council approval when not previously included in the authorized budget.

Increase Capital Investment Using Pay As You Go (PayGo)

With the Renewal and Extension (R&E) Fund (Fund 5052), DWM relies on a PayGo approach for funding internal capital projects at approximately $50 million annually. DWM is using these funds to address deferred maintenance and capital investments over the years. DWM has determined that this amount is needed on an annual basis in order to address the accumulated backlog of deferred capital system needs. This includes costs associated with water and sewer line extension projects, salaries and other expenses for CIP engineering, and project management for internal projects. Large capital projects, requiring procurement of contracted services, are typically funded from revenue bonds, GEFA loans, and TECP. DWM has an option to apply the balances accumulated in the R&E Fund to finance a portion of future capital program requirements. This option uses net revenues as a capital funding source, reducing the need to issue new revenue bonds or loans.

The City's decision to fund capital projects using a PayGo approach should consider the following factors:

- Long-term tax exempt debt generally carries a lower cost of capital compared to the opportunity cost from investing internally generated cash flow;
- A PayGo approach generally puts the cost burden of funding capital projects on the existing customer base; whereas, funding capital projects through long-term financing could distribute capital costs equitably over a longer period (i.e., promotes generational equity in the system);
- The original 2008 Rate Package did not include any PayGo funding of large capital projects; and
- Annual debt service costs are reduced by avoiding additional debt through the use of PayGo funding.

Reduce Outstanding Debt

DWM had approximately $2.65 billion in outstanding debt at the end of the FY2008. Considering the cumulative net operating revenues within the alternative scenario, one of the options available to DWM is to apply the projected fund balances towards an early retirement of outstanding debt obligation(s). The City's decision to prematurely retire outstanding debt using the projected net operating revenues should include a legal opinion from the Bond Counsel and consider the following factors:

- **Interest burden of the outstanding debt series** – select the debt series that provides the maximum benefits to the customers;
- **Costs associated with prematurely retiring outstanding debt series**; and
- **Anticipated cost of raising new capital funding** – benefits of prematurely retiring outstanding debt series should outweigh the cost of issuing new debt series.

Adjust Scheduled Water And Sewer Rates

The alternative scenario discussed earlier, suggests that under the revised assumptions (annual operating expenses at 85% of the budget and prioritized capital spending), DWM could realize cumulative net operating revenues within the 2008 Rate Package of approximately $123 million (ending reserve balance at FY2012 of $232.2 million less beginning reserves in FY2009 of $108.6 million) .

An option available to DWM and the City could be to adjust the water and sewer rates planned for the next three fiscal years as part of the 2008 Rate Package. The decision to adjust the planned rates should be balanced with preserving DWM's financial strength and maintaining stable credit ratings. Three rate increase scenarios are summarized detailing net increases or decreases in reserves for FY2009-12. Within the scenarios, annual operating expenses exceed revenues in FY2012 with the 10.0% scenario and in FY2011 and FY2012 with the 8.0% scenario. However, net increases in other years with the 2008 Rate Package compensate for the shortfall. The use of the Rate Stabilization Fund option would allow the accumulated excess net operating revenues to compensate for shortfalls in other years. The projected reserves in the following three scenarios still exceed the minimum two months of operating revenues.

EXHIBIT 5.23:

System Combined Reserves

Alternative Scenario	FY 2009	FY 2010	FY 2011	FY 2012
Beginning Reserves Available	$ 108,604,000	$ 151,583,871	$ 185,399,209	$ 214,091,178
Net Increase (Decrease) in Reserves	$ 42,979,871	$ 33,815,338	$ 28,691,969	$ 18,133,782
Ending Reserves Available	**$ 151,583,871**	**$ 185,399,209**	**$ 214,091,178**	**$ 232,224,960**
10.0% Rate Increase Scenario	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**
Beginning Reserves Available	$ 108,604,000	$ 151,583,871	$ 178,053,555	$ 190,408,988
Net Increase (Decrease) in Reserves	$ 42,979,871	$ 26,469,684	$ 12,355,433	$ (7,253,354)
Ending Reserves Available	**$ 151,583,871**	**$ 178,053,555**	**$ 190,408,988**	**$ 183,155,633**
8.0% Rate Increase Scenario	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**
Beginning Reserves Available	$ 108,604,000	$ 151,583,871	$ 172,177,031	$ 171,707,765
Net Increase (Decrease) in Reserves	$ 42,979,871	$ 20,593,160	$ (469,267)	$ (28,257,485)
Ending Reserves Available	**$ 151,583,871**	**$ 172,177,031**	**$ 171,707,765**	**$ 143,450,280**

Source: DWM Rate Model and KPMG Analysis

Financial Analysis Coordination

The City and DWM should develop a formal process for coordination among BES, the Water and Sewer Rate and Financial Consultants, and the City's independent Financial Advisor to develop alternative long-term funding strategies for the Capital Improvement Program. The City and DWM should identify risks and opportunities with each strategy in a collaborative manner. Additionally, an annual process for updating the strategy and agreement of capital funding priorities and key financial, operational and rate assumptions should be conducted prior to final budget approval by the City Council. Consideration should be given to requiring the key parties to routinely meet to review and assess DWM's capital program financing needs and develop options for management review and approval. Taking into account DWM's large capital improvement program, enhanced coordination among the BES, Rate Consultants and the Financial Advisor will allow DWM to develop a balanced capital financing strategy that takes into account various factors, including prioritization of capital projects, financial market conditions, impact on the retail water and sewer rates, and the capacity of DWM to efficiently procure and manage the capital projects. Improved coordination among the BES, Rate Consultants, and Financial Advisor is expected to result in the following benefits:

- Improved oversight of the rate setting process;
- Proactive assessment and prioritization of capital projects to match funding availability and capacity;
- Improved predictability of its annual capital spending levels;
- Improved efficiency in utilization of staffing, vendor and financial;
- Optimized capital financing strategies will help DWM to better assess options; and
- Increased analysis of financing options to improve service delivery for water and wastewater customers.

D. Cash Management, Processes and Controls

Observations and Analysis

Accounts Payable

The City's Department of Finance (DOF) provides accounts payable (A/P) services to City departments utilizing the Oracle financial system. DWM's Bureau of Financial Administration (BFA) serves as the liaison between DOF and DWM. DOF's process requires vendors to remit invoices directly to DOF.

BFA does not maintain comprehensive procurement supporting documentation or have direct access to vendor invoices to proactively assist DOF in resolving invoice issues (5D.1). DOF's invoice process requires a three-way match for vendor payment. A three-way match exists when there is agreement amongst the following:

- Purchase order (PO);
- Vendor invoice; and
- Receiving and shipping information.

When matching issues exist, DOF places invoices on "hold". Typically, DOF places invoices on hold for the following reasons:

- Goods and services not classified as received within Oracle;
- Vendor invoices do not match the PO or receiving information;
- Insufficient funds in designated budget accounts; and
- Lack of invoice approval.

As of January 21, 2009, DWM had 174 invoices on hold with the average hold time being 194 days (5D.2). The following invoices on hold require BFA input to facilitate DOF invoice payment.

EXHIBIT 5.24:

Invoices on Hold		
Bureau	**Number**	**Value**
Watershed Administration	1	$8,377.52
Wastewater Treatment	130	$235,836.24
Watershed Engineering	7	$4,770.00
Drinking Water	1	$17,281.80
Customer Service	5	$971.64
Watershed Protection	7	$9,574.72
Site Development	3	$6,832.76
Safety and Security	3	$1,335.39
Unidentified	17	$161,781.62
Totals	**174**	**$446,761.69**

Source: DWM Accounts Payable Report

The average hold time is 194 days for the invoices listed in Exhibit 5.24. In addition to the hold time, the number of DWM invoices on hold is increasing. The City does not have a prompt payment policy requiring the City to remit payment to vendors within a specified timeframe. The City is not paying vendor penalties for late payments.

Fixed Assets

BFA serves as a liaison between DOF and DWM for asset tracking and inventory management. **The following issues have been identified:**

- **Lack of documentation of fixed asset purchases (5D.3);**
- **DOF has not distributed asset tags since May 2008 (5D.3); and**
- **Inventory of fixed assets is not timely (5D.3).**

DWM does not retain adequate documentation regarding the procurement of fixed assets. POs, vendor invoices and packing slips for procured items are not available electronically in a central repository. This creates challenges to accurately locate and tag purchased assets.

DOF assigns and distributes asset tags to City departments for procured items according to the City's fixed asset policy. DOF issued asset tags to DWM for the period January 2008 to May 2008. Prior to May 2008, DOF experienced a reduction in staff. DOF expressed capacity issues in managing the City's fixed assets. Since May 2008, DOF has not distributed asset tags to DWM which may impact future physical inventories.

In 1999 and 2008, a professional services firm conducted a physical inventory of fixed assets for the Department of Water (precursor to DWM) and DWM, respectively. Between 1999 and 2008, DWM did not conduct a physical inventory of fixed assets. Per the City's FY2008 audited financial statements Note 16, DWM understated gross capital assets by approximately $807 million and overstated accumulated depreciation by approximately $285 million at June 30, 2007.

Funded Positions in City Departments

There is not a clear documented correlation between City positions that DWM funds and the services that DWM receives (5D.4). DWM currently funds 68 positions in other City departments. City departments have authority to promote staff within these positions without the consent of DWM, thus increasing DWM costs. City departments also have authority to assign the functions and tasks of these positions that are not related to DWM. This may create instances where the funded positions are unable to meet DWM's immediate needs. The City Cost Allocation Plan does not consistently credit DWM for the positions funded by DWM. Exhibit 5.25 summarizes the number of positions DWM funds within other City Departments and the number of internal DWM positions in similar functions. Specific position responsibilities were not compared.

EXHIBIT 5.25:

Department	Number of External Positions Funded by DWM	Number of Internal DWM Positions in Similar Functions
Audit Administration	2	n/a[1]
Department of Finance	10	34
Department of Human Resources	12	27
Department of Procurement	14	12
Department of Public Works	14	0
Executive Offices	6	n/a
Law	9	0
Management Services Office	1	n/a
Total	**68**	**73**

Source: City Position Report, DWM Jan 2009 Position Report

[1] "N/A" (not applicable) is used when external funded positions may not functionally align to internal positions.

City Cost Allocation Plan

The City prepares an Office of Management and Budget (OMB) Circular A-87 and a Full Cost Allocation plan. The A-87 cost plan is used to charge indirect costs to federal grants. The Full Cost Plan identifies indirect costs incurred supporting special revenue, enterprise, and general fund activities. DWM includes indirect costs, identified from the Full Cost Plan, when calculating water and waste water rates.

In reviewing the City's FY2007 Indirect Cost Allocation Plan (Cost Plan), the following potential issues were identified:

- **DWM is not consistently receiving credit for positions funded in other City departments allocating costs.**
- **Cost drivers do not consistently correlate cost to benefit.**
- **DWM receives duplicate allocations (5D.5).**

The approach used to allocate Department of Human Resources costs provides a representative example of the issues identified. DWM receives allocated costs from the following three Department of Human Resources subpools:

- **HR Services** – allocated by the number of full-time employees;
- **Psychological Services** – allocated by the number of employees receiving assistance; and
- **Water** – allocated by a direct assignment to DWM.

Exhibit 5.26 summarizes the potential issues identified for the Department of Human Resources example:

EXHIBIT 5.26:

Cost Plan Schedule	Allocated Cost Category	Direct Bill Credit Applied	Re-Assess Allocation Driver	Potential Duplicative Allocation
9	Human Resources – HR Services	No	No	Yes
9	Human Resources – Psychological Services	No	Yes	Yes
9	Human Resources – Water	Yes	No	Yes

Source: City Central Services Cost Allocation Report, February 2008.

DWM funds 12 positions in the Department of Human Resources. DWM receives a credit in the Cost Plan for the funded positions within the Water subpool, but not in the HR Services or Psychological Services subpools.

Since Psychological Services are allocated based on the number of employees receiving assistance, this assumes that levels of assistance received are the same. The Water subpool is allocated specifically to DWM and should be used to identify allowable Human Resource supporting costs. DWM may be allocated duplicative costs from the HR Services and Psychological Services subpools.

Recommendations

5D.1 BFA should increase coordination throughout DWM bureaus to centrally maintain procurement supporting documentation. BFA should train bureau A/P representatives to properly document PO and receipt of assets to help reduce the number of matching issues. BFA and DOF should consider scanning vendor invoices and receiving information to increase DWM visibility into the A/P process and improve fixed asset documentation.

5D.2 BFA should continue to routinely monitor the Invoices on Hold report and work with DOF to facilitate more timely vendor payment. DOF and BFA should establish a target timeframe (e.g. 30 days) to benchmark payment processing once the invoice and goods or services have been received.

5D.3 BFA should work with DOF to ensure that DWM fixed assets are tagged and recorded appropriately. DWM should perform an annual physical inventory of fixed assets.

5D.4 DWM and City departments should work together to more clearly define the roles and responsibilities of those positions DWM is funding.

5D.5 DWM and the City should review allocation approaches and statistics utilized in the City wide Cost Allocation Plan to help ensure accuracy.

6. Capital and Construction

Background

The Bureau of Engineering Services (BES) is responsible for managing DWM's capital improvement program (CIP). BES's responsibilities include:

- Design and construction of capital improvements to the water and wastewater systems;
- Manage construction costs and project schedule; and
- Compliance with deadlines associated with the City's Consent Decree and Consent Orders.

BES works closely with other bureaus within DWM that identify capital needs and support delivery of capital projects. BES is comprised of four groups including the following:

- Construction Management Group (Construction Management) – manages the construction of capital projects;
- Facilities Design – designs drinking and wastewater facilities for new capital projects and assists operations with renewal, replacement, and large maintenance projects;
- Engineering Conveyance Design – provides engineering and technical support for operations groups during planning and design of conveyance projects across water, sewer and storm systems; and
- Information Technology – supports BES project management systems and tools.

DWM is subject to two related consent decrees entered into by the City to resolve alleged violations of the Federal Clean Water Act and Georgia Quality Control Act. A program manager, MWH/Khafra, Joint Venture (JV), was engaged in 2001 to assist the City with managing the planning, design and construction of projects associated with the First Amended Consent Decree. A project management team was created that comprised of JV and City employees.

The First Amended Consent Decree resolved allegations regarding the City's wastewater treatment facilities, inter-jurisdictional requirements, and the City's sewerage collection and transmission system. Agreed upon capital improvements, upgrades and repairs under the First Amended Consent Decree must meet milestones with completion by July 1, 2014.

The Combined Sewer Overflow (CSO) Consent Decree requires the City to study performance of existing facilities, evaluate treatment alternatives and improve the performance, maintenance, operation and management of existing treatment facilities.

The City is also subject to two administrative Consent Orders issued by the Georgia Department of Natural Resources Environmental Protection Division requiring compliance with the Georgia Rules for Safe Drinking Water. To comply with the Consent Orders, DWM implemented both capital and operational improvements at water treatments plants. DWM has made progress towards completing the provisions of both Consent Orders, but certain projects of the capital program remain to be completed.

Furthermore, over time, DWM made limited capital investment in normal capital repair and maintenance of the overall system. The combination of environmental mandates and historically limited capital investment required DWM to undertake a significant CIP beginning in 2004. DWM's current cumulative CIP through June 30, 2014 is as follows:

- $4.1 billion in estimated cost of capital projects, an increase from the original estimate of $3.9 billion;
- Since 2004, DWM has incurred $1.5 billion of construction costs through June 30, 2008;
- DWM is committed to spending $2.6 billion for completing capital projects through June 30, 2014; and
- DWM estimates its CIP average annual spend through June 30, 2014 to be approximately $435 million per year.

Between FY2004 and FY2008, DWM averaged $392 million in CIP spend annually. The Four Year Rate Package for FY2009 through FY2012 forecasts annual CIP spend to average $519 million per year. Exhibit 6.0 provides the historical annual CIP expenditures and DWM estimates of future CIP spending.

EXHIBIT 6.0:

Fiscal Year	Construction in Progress (millions)
2004*	$ 296
2005*	$ 365
2006*[1]	$ 223
2007*	$ 501
2008*	$ 380
2009**	$ 469
2010**	$ 602
2011**	$ 489
2012**	$ 515
2013 & 2014	$ 535
Average 2004 - 2008	$ 392
Average 2009 - 2012	$ 519
Average 2009 - 2014	$ 435

Sources: * Actual annual CIP spend amounts for FY2004 - FY2008 based on additions to construction in progress at year end per audited financials.
**Projected annual CIP spend amounts for FY2009-12 based on the Four Year Rate Package

[1]FY2006 is based on six months ended June 30, 2006 based on a change in reporting period.

When the 2008 Rate Package was prepared, the total estimated cost to complete the planned CIP increased to $4.1 billion from the 2004 estimate of $3.9 billion. However, subsequent to preparation of the 2008 Rate Package and the FY2008 close, changes in the credit markets have reduced DWM's ability to borrow the funds needed to construct the planned CIP. In February 2009, the total estimated cost to complete decreased from $4.1 billion to $3.8 billion based on updated program information and revised project cost forecasts.

Furthermore, the operating component of the financing plan changed in the current fiscal year.

- DWM realized an operating revenue shortfall in the fall of 2008;
- DWM experienced increased financing costs due to the fall 2008 credit crisis; and
- DWM implemented cost control strategies in early FY2009.

In response to the capital, financing and operating changes, DWM reprioritized the CIP projects to align funding availability with environmental compliance issues and routine capital investment.

DWM updated its operating financial estimates in March 2009, reflecting improvements in operating cash flow compared to previous estimates. The capital financing projections continue to change based on an evolving credit market. Also in March 2009, the City's Financial Advisors lowered the estimates of potential credit availability from $600 million to as low as $450 million. As part of preparing the May 2009 bond package, DWM is reevaluating CIP spending that may result in future reductions in CIP spend.

Project Approach

KPMG conducted interviews with 21 project management and support personnel, reviewed documented policies and procedures related to management of capital projects and performed detailed reviews and analyses of available project data. KPMG judgmentally selected nine projects to perform a detailed review of project files, perform testing of compliance with documented processes and use as a basis of discussion related to roles and responsibilities of BES personnel. KPMG selected the sample based on the status of the project in order to review projects in multiple phases including planning, design and construction. Exhibit 6.1 summarizes the selected projects, status and current forecasted costs at completion.

EXHIBIT 6.1:

WBS Number	Project Name	Status	Current CIP Forecast (February 2009)	
05.13.001	West Area CSO Storage Tunnel & Pumping Station	Construction	$	248,243,332
05.14.001	Custer Ave CSO Storage and Dechlorinization Facility	Construction	$	41,210,185
05.28.001	Watershed Master Plan	Master Plan Development	$	4,322,715
02.19.004	Utoy Creek - Small Capital Projects	Planning/Design	$	1,672,298
98.02.034	Hemphill & Chattahoochee WTP Improvements	Construction	$	34,687,380
98.04.019	North Area Main Improvements	Planning/Design	$	37,500,000
98.03.017	Hemphill Finished Water Pump Station	Procurement	$	20,206,149
98.08.037	Automation of Hemphill & Chattahoochee Treatment Plants	Procurement	$	13,045,000
02.17.910	RM Clayton Digester Cover Replacement	Construction	$	15,482,000

Source: DWM February 2009 "Capital Improvement Program Status Report" printed from CIPR

Key focus areas of our review included assessment of overall program management, organizational structure, budget development, procurement practices, contracting methods, contract compliance, controls over project budget and schedule, controls over payments and retainage of capital expenditures, change management, risk management and project controls.

The assessment of key areas resulted in recommendations for improvement in the following areas:

- Program Management and Organization;
- Project Controls and Risk Management;
- Communication and Reporting;
- Design Management;
- Cost Estimating and Forecasting;
- Procurement and Contract Management;
- Financial Management;
- Change Management;
- Schedule Management; and
- Systems and Tools.

A. Program Management and Organization

Observations and Analysis

Program Management

Program management involves the implementation of knowledge, skills, tools, and techniques to individual program activities to meet the established requirements developed for the capital program. The future capital construction will be more problematic for DWM as it will include a larger number of concurrent projects that while similar in nature, will have more interim First Amended Consent Decree milestones. This will increase the complexities involved with managing DWM's future CIP. In addition, DWM plans to begin numerous water-related projects in the next few years adding to the project management workload To meet these requirements, a project team should follow established processes and leverage internal management tools and controls.

BES does not assign an overall project manager to oversee capital projects from planning through closeout to ensure appropriate oversight of cost and schedule management (6A.1). The current delivery process appears to be fragmented. There are ineffective transitions from design to procurement to construction. Ineffective transitions in the project delivery cycle may lead to an inconsistent approach to project delivery and a lack of appropriate oversight over the project budget and schedule. Additionally, BES does not develop end-to-end project delivery schedules for each project. BES relies on external consultants to develop, maintain, monitor and report design and schedule information during design development and construction.

There is not a single point of responsibility for managing the overall project budget. The project manager for each phase tracks the budget during the various phases of planning, design and construction. Upon completion of the design phase and procurement of a contractor, the budget ownership transfers to the Construction Management project manager for monitoring and reporting.

The BES Project Management Manual (PMM) Section 4.1.1 - Build and Maintain the Project Team states that project managers lead teams including representatives from the operating bureau, Facilities Design, Engineering, Construction Management and Public Involvement Group. Based on discussions with BES personnel, project managers do not consistently apply this guidance across all projects. The current project delivery approach does not assign one point of responsibility and accountability for managing cost, schedule, and project risk.

BES lacks a succession plan for transferring knowledge, sharing data or providing appropriate training for key capital program processes (6A.2). Within DWM, a single individual possesses knowledge of important relationships with other City agencies, historical perspective, and an understanding of key processes to manage the capital program. BES is currently updating the PMM to delineate key processes and project delivery

responsibilities. However, key processes such as overall program management and project prioritization, are not documented or clearly communicated across Facilities Design, Engineering and Construction Management.

Policies and Procedures

The PMM does not clearly define the roles and responsibilities for the end-to-end project delivery cycle (6A.3). The PMM defines DWM's approach to project delivery and establishes processes for planning, design and construction management. Construction Management is actively updating the PMM Section 7 – Construction that provides guidance for construction management processes and tools. DWM provided KPMG with recent PMM revisions and draft updates improving the following Construction Management processes:

- Developing a detailed change order process;
- Updating contractor payment application review and approval process; and
- Detailing process improvements for project closeout.

Construction Management's proposed updates to the PMM provide clearly defined roles and responsibilities for each of its key processes. While revisions to the Construction Management section improved certain processes, KPMG found the PMM does not clearly define roles and responsibilities for all activities for the end-to-end project delivery cycle within BES. In addition, responsibility for completing, monitoring, and approving key activities within the project delivery cycle are not clearly defined in the PMM. For example, Section 2.2 – Project Funding in the PMM does not clearly define the responsibilities for activities related to project funding.

Recommendations

6A.1 BES should consider requiring the use of project teams during the planning process and assigning responsibility for overall delivery of the project to an overall project manager. The project manager should be responsible for managing the overall project delivery budget and schedule including key project activities such as planning, design, procurement, construction and project closeout. The project manager should also be responsible for monitoring and reporting on project risks. BES should reflect updates to the project delivery process in the Project Management Manual.

BES should carefully consider the assignment of an overall project manager to ensure they are not adding an additional level of authority that might hinder the delivery cycle. The project manager's roles and responsibilities should be clearly defined and communicated to project teams and may require additional training for staff.

6A.2 DWM should develop a succession plan for management of BES and document key senior management responsibilities and procedures regarding management of the capital program and project delivery. DWM should consider identifying potential successors to senior management positions based on qualifications and experience.

6A.3 The updated PMM should clearly define the roles and responsibilities for the end-to-end project delivery cycle as well as each detailed section of the PMM. BES may consider developing a responsibility matrix to be included in the introduction section or the appendix to the PMM clearly demonstrating roles and responsibilities in overall delivery of capital projects. BES may consider using a Responsibility, Accountability, Consult and Inform (RACI) matrix to provide a summary to stakeholders of the personnel involved with each of the key activities in project delivery.

B. Project Controls and Risk Management

Observations and Analysis

Project Controls

BES does not have a dedicated project controls group (6B.1). While there are personnel within BES that perform certain project control functions, this is only one their areas of responsibility for managing projects. Typically, the project controls function manages project budget, schedule, and scope changes. Project controls utilize available resources and tools to identify and manage issues and variances related to scope changes, program or project budgets and program or project schedules. Additionally, project controls resources can assist in managing program level controls including:

- Program schedules;
- Program budgets;
- Risk management;
- Reporting; and
- Knowledge sharing.

BES does not have a dedicated project controls function or group. Internal resources are not available to:

- Perform detailed cost and schedule reviews;
- Validate data in project reporting;
- Perform risk management;
- Ensure consistency in project management;
- Share knowledge;
- Provide training; or
- Assist in managing the CIP program schedule.

In addition, an internal estimating resource is not available to develop or review project budgets, review project cost estimates prepared by design consultants or assist Construction Management in reviewing estimates for proposed project changes. BES does not have a process or resource in place to validate program and project reporting or ensure the Capital Improvement Program Reporting (CIPR) is up to date with current cost forecasts.

Risk Management

BES does not use a formal risk assessment process to identify potential project and program risks (6B.2). Risk management is a process for identifying and responding to program and project risks and opportunities in an organized, periodic and formal fashion. There is a need to balance risk with an entity's tolerance for contractual, financial, operational, and organization requirements. Features of a formalized risk management process include identification of risk and potential exposures, monitoring risks, developing an effective risk management strategy to reduce the potential for loss, and tracking action items. Project management typically addresses each risk by accepting the risk, mitigating the risk, transferring the risk to other parties when appropriate, or avoiding risk through appropriate actions.

Failure to identify, monitor and manage risk may result in unforeseen impacts to program and project cost and schedule. BES indicates that project managers complete risk assessments in project meetings and daily project management activities throughout the life of the project. BES uses project meeting minutes to document risk analyses and mitigation steps throughout the life of the project. However, no formal tracking or monitoring process exists to help ensure identification, monitoring and mitigation of project risks, creating a cumbersome process.

DWM Lessons Learned

BES lacks a formal process for identifying, tracking and managing lessons learned from the Consent Decree and completed projects (6B.3). Leveraging lessons learned from previous capital projects may help mitigate similar problems on future projects. The previous lessons should be significant, valid, and applicable to the new project. At completion of the CSO Consent Decree program, BES Management informally identified a number of lessons learned for implementation on future capital projects.

To address these points, BES implemented a number of process improvements including:

- Standardizing construction contracts;
- Updating key processes within the Project Management Manual; and
- Developing a partnering program with project team members.

While BES implemented these process improvements, there is a lack of documentation and tracking of lessons learned to help ensure implementation of appropriate controls or updates to policies and procedures to reflect changes.

Recommendations

6B.1 BES should consider developing a project controls group to act as a resource in delivering capital projects. Key responsibilities should include completing independent cost estimates or analysis of initial budgets, cost estimates and work authorizations, performing schedule analysis, providing training, tracking lessons learned, and overseeing risk management functions. In addition, the project controls group can prepare or validate program and project reporting, assist in training and helping ensure consistent delivery across capital projects. In developing a project controls group, BES should structure the group as a resource to the project delivery teams, not add an additional layer of oversight. The project controls group should include an experienced cost estimator and scheduler for a program the size and scale of DWM.

6B.2 BES should consider developing a formal risk assessment and analysis process that will help identify risks to the overall capital program and ongoing capital projects. The risk assessment tools should be used to identify, evaluate the potential impacts, monitor, communicate and report on project risks. Additional uses of these tools should include developing contingency or allowance budgets for project risks. In addition, the process can monitor the implementation of developed risk mitigation or response action items. A risk register or risk assessment can be a useful tool in communicating the impact of project risks to senior management and key project stakeholders. BES should also develop and maintain a formal risk assessment process for ongoing capital projects. BES should consider updating and communicating results of the risk assessment on a regular basis to key stakeholders such as the project teams.

6B.3 BES should consider implementing a formal procedure for tracking and following up on lessons learned to help ensure implementation of process improvements on future projects. At a minimum, the lessons learned procedure for tracking progress should include clearly documenting the lesson learned, responsibility for follow up, action steps taken or work completed and open items. BES should consider assigning one individual responsible for verifying implementation of lessons learned on future projects. One suggestion is to include this task in the project controls function.

C. Communication and Reporting

Observations and Analysis

BES does not have a formal process in place for program and project reporting requirements (6C.1). Defined communication and reporting protocols are key activities for managing a large capital program. Communicating capital program reporting protocols to stakeholders helps to ensure consistent and accurate reporting processes. Individual project reporting should be a defined and consistent process that captures comparable information such as budget, schedule, and project risks on a continual and consistent basis. Communication protocols should be clearly defined and facilitate useful and timely information between parties.

Program reporting processes including requirements, distribution and frequency are not established and documented within BES policies and procedures. Project managers update the Capital Improvement Program Reporting (CIPR) upon receipt of a request for payment from a design consultant of contractor. The PMM does not include the CIPR update process and in certain instances, updates are not completed timely or consistently. In addition, CIPR reporting is not consistently completed by publishing the report within the system to document the date it is updated. The CIPR update process commences upon receipt of an invoice and not at an established frequency, such as the first of every month to help ensure forecasts and cash flow projections are accurate and up to date.

Recommendations

6C.1 BES should clearly document the program and project reporting requirements including responsibility for completing reporting, required timing, and defined reporting requirements. Both program and project level processes should be documented. Program level reporting should define requirements for key stakeholders such as the City Council and the Georgia Environmental Facilities Authority, including timing, responsibility and data validation. Project level reporting should include assigned responsibility for updating the CIPR system, timing and frequency of updates, and clearly define reporting information. Project reporting timing and frequency should align with program level reporting to help ensure up to date and accurate program level information is reported to key stakeholders.

In developing program and project reporting processes, BES should leverage existing systems such as Primavera, the CIPR, and Oracle to help ensure efficient and accurate reporting.

D. Procurement and Contract Management

Observations and analysis related to Procurement and Contract Management are included in the Operations Section of the report (see 7.G for further details). The observation included in this section of the report relates specifically to BES and management of design consultants and contractors during project delivery.

Observations and Analysis

Design Consultant and Contractor Evaluation Process

DWM does not have a consultant or contractor evaluation process to determine overall performance, quality and timeliness of deliverables, contract compliance and ability to meet predetermined performance metrics (6D.1). The performance evaluation process is a procedure put in place to provide fair, consistent and uniform processes to evaluate the performance of vendors. An efficient and effective performance evaluation process will help ensure only qualified design consultants and contractors perform work for DWM. We understand the City Department of Procurement has a vendor review process, but this may not address the needs of BES in evaluating design consultants and contractors performance on capital projects.

Recommendations

6D.1 DWM should consider developing a formal design consultant and contractor performance evaluation process to monitor vendor performance. This should start with a review of the current Department of Procurement vendor review process to determine if this will meet this need or if it can enhanced to support DWM needs. The objective of the evaluation process should be identifying design consultants and contractors that are not performing and should not be awarded future contract awards or task orders. DWM should work closely with the City of Atlanta's Department of Procurement to develop an efficient and effective performance evaluation process. The process should include clearly defined performance metrics regarding the ability to meet project milestones, assess the quality and timeliness of deliverables, schedule management, budget management, the ability to meet project manager expectations and contract compliance requirements.

E. Design Management

Observations and Analysis

Design management is the process of defining the project scope, developing and refining the project design and preparing the construction documents for bid of the construction phase of project delivery. The design phase for BES consists of the design development phase (approximately 30%), Preliminary Design Phase (approximately 60%) and Final Design Phase (approximately 100%). The percentages are industry standards and defined in the PMM.

Facilities Design does not have standard internal communication protocols (6E.1). Facilities Design does not schedule reoccurring meetings, provide regular training or have standard communication protocols for internal team members. The project team does not consistently share knowledge or communicate project priorities. While the Facilities Design's director is responsible for the management of design of projects, he also has projects that he is managing. He has limited availability to guide Facilities Design and focus on larger issues and management of personnel. This may result in a lack of a clear direction of Facilities Design personnel and the ability to respond to larger project issues and risks.

In certain instances, Facilities Design project managers are not consistently applying PMM *Section 5 - Design* procedures (6E.2). Construction cost estimates are not consistently prepared at 30%, 60%, and 100% design phases. In an effort to reduce costs, the 60% estimate is not consistently completed. Without this estimate, Facilities Design may not have a full understanding of the project costs in the design phase when changes to reduce project costs can still be incorporated.

There is inconsistent coordination and communication between Facilities Design and Construction Management or Engineering and Construction Management while performing constructability and operability reviews (6E.3). Construction Management project managers are not consistently performing constructability and operability reviews during the Final Design Phase due to scheduling, resource, and coordination constraints. The PMM does not address the timing of the constructability and operability reviews performed by Construction Management project managers. BES is scheduling a monthly meeting for senior project personnel including representatives from Facilities Design, Engineering and Construction Management. The intent of the monthly meeting is to provide training, knowledge sharing and assistance in communication of project issues.

Scope and Configuration Controls

The scope and configuration controls process tracks the project and the design development from the initial concept stage to final drawings and specifications. The preferred construction industry practice configuration management effort includes an audit trail of decisions and design modifications throughout design development. The configuration management effort includes:

- Identifying, documenting and verifying the functional and physical characteristics of an item;
- Recording the configuration of an item; and
- Controlling changes to an item.

BES does not have a formal documented process for scope and configuration controls to track changes during the design development process (6E.4). There does not appear to be a consistent use of tracking tools or logs to report changes to scope configuration. BES tracks scope changes through design meeting minutes, while the design consultant monitors how the changes are addressed. This inefficient process requires considerable effort to address should a scope question arise. There is a lack of a formal process to help ensure changes are appropriately managed and addressed during the design phase.

Recommendations

6E.1 BES should consider establishing standard communications protocols and standing meetings to allow for knowledge sharing, training, communication of project issues and allow for greater transparency within Facilities Design. BES should work to provide clear lines of communication with team members to help ensure priority projects are a focus and clear communication of schedule milestones to all project team members.

6E.2 Compliance with the BES Project Management Manual should be mandatory for all Facilities Design and Engineering project managers to help ensure consistency in delivering projects. BES Facilities Design should consider updating the PMM to reflect current processes and help ensure appropriate controls are in place during design.

6E.3 BES should develop a standard process by which the Construction Management project manager conducts a constructability and operability review at approximately 60% design for capital projects. Based on this review the construction project manager should develop a standard report for submittal to

the Facilities Design project manager and design consultant regarding issues identified, proposed solutions, and action items where applicable.

6E.4 BES should develop scope and configuration controls to track changes made during design development to help ensure that design related changes minimize delay to the overall program schedule. BES should require the design consultants to implement a document control system to manage, track, and report scope and configuration changes throughout the design process. The formal process should include a tracking log for design review comments including specific action items and target resolution dates to allow for follow up by Facilities Design personnel.

F. Cost Estimating and Forecasting

Observations and Analysis

Project cost estimating and forecasting are key financial controls during the project planning, design and construction phases of capital projects. A large capital program, such as DWM's, should have clearly established processes and controls in place for budget development, project forecasting, and financial reporting.

Within BES, there are no formally defined processes for CIP budgeting, estimating or cost forecasting (6F.1). Initial budgets are usually an Order of Magnitude Estimate (OME), typically developed by an external consultant. BES does not use consistent processes or standard budget templates to develop initial project estimates.

BES relies on the design consultants to provide cost estimates for the project at 30%, 60% and 100% design and does not prepare an internal estimate for comparison. The requirements for the construction cost estimates are included in Section 5 – Design of the PMM based upon completion of the various stages of design. However, cost estimates are not consistently completed as directed in the PMM. The BES project managers put the designers initial and updated project estimates into the CIPR as a placeholder for current forecasts until the construction contract is bid and award. Upon construction contract award, the contract value is entered into CIPR as the project budget for construction. Three of the nine projects sampled had exceeded the baseline budgets. This may be due to a number of factors, but the current systems do not allow for clearly tracking budget increases and the reasons for the increases.

The PMM does not address project forecasting completed by Construction Management. When managing construction budgets, the project manager uses the awarded contract value, including allowances, as the current construction budget. Construction Management primarily relies on the contractor's forecasts and estimates to monitor and assess potential changes to the contract value.

BES does not have an internal project cost estimator experienced in estimating large-scale water and sewer projects (6F.2). During the design phase, BES does not complete an internal analysis of the design consultant's estimate, work authorizations or proposed contract changes. As needed, BES outsources estimating responsibilities to an independent third party consultant for complex projects.

BES project managers do not follow consistent processes, guidance when developing, or evaluating contract allowances (6F.3). BES relies on the use of contract allowances to manage contract changes. The PMM does not address the development of project contingencies or allowances in development of the project

budgets and estimates by the design consultant. When reviewing project estimates, BES does not have standard processes for assessing allowances. Construction Management is not consistently involved in developing contract allowances for capital projects.

Exhibit 6.2 identifies the total allowance and unforeseen work element allowances as a percentage of the original contract award for the four projects awarded contracts. The remaining five projects had not yet awarded construction contracts and were in various stages of design and procurement. For the projects sampled, the total allowance varies from 4.0 percent to 52.8 percent of the original contract award. Similarly, variances to unforeseen work elements allowances range from 0.8 percent to 9.0 percent of the original contract award.

EXHIBIT 6.2:

Project	Project Type	Original Contract Award	Total Allowance	Allowance as % of Contract Award	Unforeseen Work Elements Allowance	Unforeseen as % of Contract Award
West Area CSO StorageTunnel and Pumping Station	Lump Sum	$ 210,231,000	$ 26,300,000	12.5%	$ 6,000,000	2.9%
Custer Avenue	Lump Sum	$ 36,036,817	$ 1,425,000	4.0%	$ 300,000	0.8%
Hemphill and Chattahoochee WTP Improvements	Design Build	$ 33,128,550	$ 6,734,868	20.3%	$ 2,984,868	9.0%
RM Clayton Digester Cover Replacement	Lump Sum	$ 15,482,000	$ 8,175,000	52.8%	$ 350,000	2.3%
Total:		**$ 294,878,367**	**$ 42,634,868**	**14.5%**	**$ 9,634,868**	**3.3%**

Source: DWM Project Bid Schedules

BES believes the documentation from the sampled projects justifies the inclusion of total allowances included in base contract amounts. Examples of allowances include:

- Site security scope of work not published with bid documents for security reasons;
- Design-build of certain scope items to expedite the design schedule; and
- Specialty scope items for design by experienced or qualified sub-consultants.

Recommendations

6F.1 BES should develop a formal process for preparing initial project budgets to ensure a consistent process for initial budgets of capital projects. The process should clearly define key budget components such as contingency and escalation factors, use of standard templates, and clearly define roles of internal resources and external consultants in preparing initial project budgets. This should also include measurement against project budgets throughout the project lifecycle. As an example, the construction cost escalation should be included through the 50 percent point of construction. Section 2.3 – Project Initiation in the PMM should document the budget development process.

6F.2 BES should consider hiring an experienced project estimator as an available resource to review initial project budgets, design consultant estimates, and contractor proposals for work authorizations.

6F.3 BES should develop standard guidelines for project managers to develop and assess project contingency and allowances to help ensure consistency across capital projects. Construction Management project managers should consistently be involved in the development of allowances, as they are required to manage the project. Understanding that each project is unique and the level of contingency and allowances will need to be assessed on a project by project basis, BES should develop standard guidelines including responsibilities for developing allowances, approval of contract allowances, and clearly established allowance line items for each project (e.g., unforeseen conditions or owner's contingency).

G. Financial Management

Observations and Analysis

Financial management and reporting is an important control for stakeholders of a large-scale capital program and project. Project financial management should be a defined and consistent process that captures comparable information. At a minimum, project financial reporting should capture original budget, budget adjustments, revised budget, commitments to date, actual spent to date amounts, forecast values and variances between forecast and budget amounts.

Request for Payment Process

Based on the amount of construction in progress and contracts in place, there are a number of consultant and contractor invoices processed by DWM. During FY2008, DWM completed approximately $380 million of construction. KPMG reviewed policies and procedures related to requests for payment and tested a sample of 33 requests for payment. KPMG's sample included 17 design consultant requests for payment and 16 construction contractor applications for payment. Detailed review and approval processes are in place and documented in the PMM for the construction contractor applications for payment. Key processes include the review process, documentation of required approvals, timing of approvals and a standard checklist to help ensure consistency during review.

DWM awards design consultants' not-to-exceed task orders through existing master service agreements with pre-established rates and markups. As a result, design consultant invoices are billed based on time and reimbursable expenses incurred during the billing period. DWM typically awards construction contracts as lump sum contracts with allowances for certain scope of work areas, undefined scope or unforeseen conditions established in the overall contract price. As a result the lump-sum amounts are billed based on the work put in place during the period (i.e., % complete) and allowances are billed based on agreed upon terms including lump-sum, time and materials or unit-price. Specific issues identified during KPMG's testing include:

- **DWM does not require construction contractors to submit partial lien waivers with applications for payment as a condition for payment (6G.1).** The PMM and General Conditions of the City's construction contracts do not address monthly payment submissions by contractors of partial lien waivers to DWM. Fifteen of the sixteen (94%) applications for payment tested were approved for payment lacked a partial lien waiver.

- **Facilities Design and Engineering lack clearly defined review and approval procedures for design consultant requests for payment (6G.2).** The BES Project Management Manual does not clearly address the review and approval process for design consultant requests for payment. Section 6 – Annual Contracts of the Project Management Manual references the procedures for submitting pay estimates for construction as the guideline for processing payments. These processes are not functions that should rely on the same processes due to differences in contract types and required supporting documentation.

  Testing results identified differences in the amount billed versus the amount supported in the underlying documentation. For two of the seventeen (12%) of the design consultant requests for payment, KPMG found differences in the amounts billed versus the amounts supported resulting in a potential over billing totaling $4,617. In one instance, KPMG found a difference of 20 hours billed to DWM, versus hours supported by underlying documentation such as timesheets resulting in a potential over billing of $3,497 or 11.4 percent of the $30,627 invoice billed during the period. In another, missing supporting documentation for time and expenses billed resulted in a potential over billing of $1,120, or 8.5 percent of the $13,235 invoice billed during the period. While the differences in amounts billed and supported are not significant, this may represent a process and control issue for the review and approval of invoices. Without such a process, there is an increased risk for inappropriate payments to vendors.

- **DWM does not have a documented policy or approval authority that requires certain levels of review and approval during the request for payment process (6G.3).** The current request for payment process for DWM construction contractors requires six levels of review including the:

  - Construction Management Project Manager;
  - Deputy Director of Construction Management;
  - Construction Management accountant;
  - Construction Management Director of Construction;
  - Deputy Commissioner for the Bureau of Engineering Services; and
  - Commissioner of DWM.

It is not a common practice for an Agency head to approve small payments. Having six levels of review adds time to the approval process and takes senior leadership focus away from the more significant payments.

Construction Management implemented a formal process that identifies the required approvals and target timelines for Construction Management personnel to help expedite the review and approval process. DWM does not have a policy addressing required senior management approvals for the request for payment process. In addition, multiple levels of approval may lead to decreased accountability as the approver may only be confirming the payment approval at a prior level without a clear definition of responsibility of each reviewer.

Project Financial Closeout

DWM does not close contracts timely (6G.4). DWM has documented detailed closeout processes in place to close capital improvement projects and release remaining contract funds to the Project Reserve Account. Once released, these funds are allocated to other capital projects. However, DWM does not close contracts timely, as multiple contracts exist for each capital project. DWM did not close any projects during FY2008 and the most recent contract closings occurred August 2007. During the period, FY2001 through FY2007 DWM released contract funding of approximately $29.8 million, or approximately $4.3 million per year, to the Project Reserve Account. As of February 2009, DWM identified several capital projects pending closeout, without significant account balances. DWM is closing projects in groups, instead of upon project completion.

Recommendations

6G.1 BES should require partial lien waivers to be submitted with each contractor application for payment as a condition for payment. BES should consider updating the Project Management Manual and standard General Conditions of the construction contract to include requirements regarding the submittal of lien waivers as a condition for approval for payment. BES should consider including the lien waiver requirement be incorporated into the "Pay Estimate Review Process Checklist" completed by the project manager for each application for payment.

6G.2 BES should develop and document in Section 5 – Design of the PMM a clearly defined review and approval process for design consultant invoices. Facilities Design and Engineering should consider leveraging existing documented procedures, process flows, and review checklists currently used by Construction Management for processing various construction consultants' invoices. BES should ensure processes clearly define the review procedures and required approvals for design consultant invoices. Project managers should ensure appropriate supporting documentation is a condition for payment for project invoices.

6G.3 DWM should develop and document an approval authority matrix for the request for payment process that limits the required approvals for processing contractor applications for payment based on the dollar value and type of payment. As an example, DWM may consider only requiring Commissioner's approval

for requests for payment greater than a certain dollar amount (e.g., $250,000), or to approve the release of retainage to the contractor and major subcontractors. In developing approval authorities, DWM should consider City requirements, the acceptable level of review on each application for payment and target timelines for review and approval of invoices.

6G.4 DWM should close construction contracts on a regular basis as projects are completed (e.g., quarterly or semi-annually) to help ensure funding is available for additional capital projects. DWM should update project closeout procedures to include the timing of assessing contract closeout.

H. Change Management

Observations and Analysis

In the construction industry, contractor and vendor changes are tracked through a formal change management process. Changes to a contractor or vendor agreement, which may involve changes in scope, schedule, or price, typically require one party to notify the other of the change through a reporting mechanism. Either party to the contract may request changes. The contractor's or vendor's change proposal should include an analysis of probable cost and schedule impacts based on the level of design for the change. A change management system records and tacks these documents. Through systematic tracking, issues can be monitored, updated, approved, and the status communicated to the project team.

Contract Allowances and Contingency Management

BES manages contract changes by including allowances in the construction contract. Use of allowances is an attempt to mitigate delays in the change order review and approval process required by City Procedures. Work authorizations approved by BES document approval to charge against an allowance and to bill these charges through the monthly application for payment process. The PMM provides Construction Management with a clearly defined process regarding the review and approval of work authorizations during a project's construction. However, using allowances to manage construction contracts may limit Construction Management's ability to effectively:

- Monitor project costs;
- Allocate funding; and
- Align project costs with defined scope.

Justification for work authorizations do not consistently agree to allowance coding (6H.1). For example, direct costs for trucks, computers, and site visit costs, with a markup are being passed through the contractor. Reviews of the work authorizations below charged to the West Tunnel CSO Project "Unforeseen Work Elements" allowance identified the following issues:

- WTGC-109 – Work authorization for office equipment totaling $10,521 is not clearly supported by work authorization documentation. Costs of $6,216 for office supplies including cabinets, a digital camera, phones, laptop computer and scanner are not supported by appropriate documentation.

- WTGC-292 – Work authorization for the Mayor's visit to the project site is not supported by appropriate documentation totaling $3,684.

- WTGC-195 – Work authorization for the purchase of two new Ford Explorer's for use by the City to support the project. The City authorized the final invoice amount of vehicle purchase price, insurance and gasoline credit charges for these vehicles plus a 5% markup. The work authorization indicated a purchase price of approximately $23,200 for each vehicle, excluding taxes, title and tags.

- WTGC-177 – Work authorization for the purchase of three used Ford Explorer's for the use by the City on the project. The work authorization is for the purchase of three pre-owned vehicles from another contractor in the total amount of $25,000 including a 5% markup.

- WTGC-634 – Work authorization totaling $15,618 billed for a project completion event including a 5% mark up for the contractor. Project completion event costs were clearly supported in work authorization documentation.

DWM Construction Management approved using the Unforeseen Work Elements allowance for each of the above work authorizations. The Unforeseen Work Elements allowance is for unanticipated project costs. Some routine and expected costs, such as project trailers, have been funded through the Unforeseen Work Element allowance. Allowing funding of routine costs in this manner circumvents the City's procurement process. DWM indicated that this process accelerates the procurement process and avoids potential project delays.

BES directed the contractor to acquire project vehicles for use by City and contractor personnel through construction contract allowances rather than through the City Department of Public Works (6H.2). These vehicles were purchased, registered and insured by the contractor for use by City employees, both on and off project sites. In certain instances, DWM allowed employees to take project vehicles home and off site in accordance with DWM's internal vehicle use policies. The City departments generally purchase, insure and register vehicles through the Department of Public Works. According to the project manager, the vehicles identified above were not purchased through the standard City vehicle procurement process. KPMG contacted the City Department of Law to obtain additional information regarding any legal issues related to the above vehicle purchase and use including potential liability issues. The Department of Law stated DWM specifically contemplated the need for the on-site project vehicles and that DWM appears to have a longstanding practice of requiring contractors to provide vehicles for on-site use for large projects. According to the Department of Law, the City's process was not used because the project vehicles were purchased by and for the contractor and not by the City for City ownership. In one instance, at project completion, Construction Management directed a

contractor to purchase project vehicles from another contractor that recently completed a DWM project through a contract allowance. The Department of Law also stated that DWM's employee vehicle use policy seems to follow closely with the City's policy for use of City owned vehicles and that use of the vehicles would be restricted under the contract for project purposes only. The Department of Law did not have any specific information regarding how enforces the policies, particularly with respect to monitoring the use of vehicles that were allowed to be taken off site.

While Construction Management has detailed work authorization review and approval processes, it appears there is a lack of overall transparency in certain types of project costs included in contract allowances. DWM clearly requires that contractors provide trailers and similar general conditions items for its use during a project; however, these are not unforeseen costs. We agree that project trailers and vehicles are often necessary on large construction projects, this is generally a requirement included in the general conditions requirements of the base contract. While it appears the purchase of vehicles by the contractor for the project are allowable under the terms and conditions of the contract, this practice allows City use of contractor vehicles without the requirements of formerly purchasing vehicles as part of the City's fleet. The vehicle purchase also includes additional costs of a five percent markup applied to the direct cost of the vehicles as allowed in the contracts for work authorizations. DWM also requires the contractor provide insurance and maintenance for the vehicles. It is not clear if these costs are higher or lower if vehicles are provided by the contractor or by the City's Department of Public Works.

Recommendations

6H.1 BES should revise allowance procedures to include an allowance line item for "Owner Allowances" in order to code work authorizations related to City costs such as trailers, computers, office supplies, etc. for more transparency and more accurate classification of project costs.

6H.2 BES should evaluate the financial impacts of acquiring project vehicles through the City Department of Public Works in comparison of current practices requiring the contractor to purchase project vehicles through contract allowances. BES should consider project needs, timing of vehicle needs, liability issues, contractor markups, insurance and maintenance costs in evaluating the process for purchasing project vehicles for use by City employees.

I. Schedule Management

Observations and Analysis

Schedule Management includes the processes and procedures in place to monitor, manage, track, and report program and project progress as well as to help ensure internal milestones and external consultant and contractor project milestones are achieved. For large-scale projects, documented policies and procedures related to schedule management should be in place to manage and monitor the program and project schedule.

DWM spent $1.5 billion on CIP during the period from 2000 through 2008. These large-scale capital projects were necessary to meet Consent Order and Consent Decree milestone deadlines. Construction Management followed schedule management processes in accordance with documented processes to meet these milestones during construction. However, going forward, additional risks due to potential delays in the design development, funding and procurement processes may affect overall project delivery schedules. BES should work to ensure appropriate controls are in place to mitigate and plan for potential schedule delays. Based on a review on schedule management processes, KPMG found the following observations and related recommendations.

BES does not consistently prepare a "Master Schedule" for the project life cycle, from planning through construction, as required by the PMM *Section 4.8.3 – Scheduling* (6I.1). The PMM states that an internal BES project schedule will be developed, separate from the contractors construction schedule, in order to monitor key milestones during project delivery. This process was not consistently completed for the projects reviewed.

BES does not currently have personnel assigned to the project team with large-scale program and project scheduling experience (6I.2). BES does not have the internal staffing to support the schedule management functions on the Capital Improvement Program. BES uses external schedule consultants on large capital projects to perform detailed schedule analysis on an as needed basis but typically relies on the project manager to review and approve the project schedule.

BES does not consistently hold design consultants accountable to meet schedule and deliverable milestones during design development (6I.3). BES develops baseline schedules for project initiation and does not consistently monitor and update the schedules during design development. We found baseline design schedules are not updated and maintained during design development for projects selected for review. In addition, four of the five design and engineering personnel interviewed noted that holding design consultants accountable for meeting schedules is a constant issue. While DWM, external issue, and the design team may each cause delays to a project design, the party responsible for the delay should be held accountable for the

delays they cause. KPMG noted the following design schedule delay issues resulting from delays attributable to the design consultant, BES and external factors:

- Watershed Master Plan - The initial design schedule identified a project completion date of October 2004 for development of the Master Plan. This project is still ongoing and the design consultant has provided a current schedule showing revised completion dates. Multiple delays during development of the Master Plan appear to be caused by BES, the design consultant and external influences, resulted in three extensions to the design consultant of 3 months, 13 months and 18 months. The final extension also included $822,000 for increased design development costs.

- Hemphill Finished Water Pump Station - The notice to proceed was issued to the design consultant in May 2006, with a preliminary baseline schedule for a seven month design schedule. The work was completed in early 2008, approximately one year behind the original baseline schedule. Multiple delays occurred during this period including funding delays, a change in the project manager, and relatively low priority of the project. During this time, the design consultant did not submit a revised design schedule nor were they held accountable to an updated design milestone delivery schedule.

- Automation of Hemphill and Chattahoochee Treatment Plants - The notice to proceed was issued to the design consultant on December 13, 2004. A design schedule was not provided in the proposal or during the project but targeted completion was targeted for July 2006. Design was not completed until, May 2008, almost two years beyond the original schedule.

Recommendations

6I.1 BES should develop the master project schedule in accordance with the PMM to monitor and manage the overall delivery cycle for capital projects. The master schedule should be high-level, and include key project components such as planning, design, procurement and construction. The overall project manager should maintain and update the master schedule on a regular basis (e.g., monthly).

6I.2 BES should consider hiring a full-time internal master scheduler with experience in planning and scheduling large capital projects and programs. The full time scheduler should be made available to manage the program schedule, assist in construction schedule analysis at the project level, monitor design progress, identify causes of schedule variances and be a resource to project teams in delivering capital projects. BES may consider including the full-time scheduler in a project controls group as a resource to Construction Management.

6I.3 BES should put processes in place to monitor and manage design consultant schedules in accordance with milestone deliverable dates. Design consultants should be held accountable to provide deliverables and updated design schedule updates during the course of the project. If multiple parties are responsible for the delays, the delays should be analyzed to determine the party responsible for the delay. A detailed integrated project schedule that includes both design and construction with key milestones when design is 30%, 60% and 90% complete should be developed to manage the design process. Design reviews conducted at each key milestone may be used to verify the project design status. Additional ways to address this issue should include linking milestone payments to clearly defined milestones and deliverables that are verified and documented by the DWM project team prior to payment. It should be clear to the design team that if the schedule falls behind due to reasons linked to the design team, the design team will be required to accelerate the work, at no additional cost to DWM, to complete the design on time. DWM should also consider establishing liquidated damages for late deliverables, as long as these are not designed to be a penalty payment.

J. Systems and Tools

Observations and Analysis

DWM uses multiple systems and tools to manage program and project data to track and report to stakeholders. The systems are not integrated, requiring multiple inputs of the same data. This increases the risk for data input errors, decreases efficiency in reporting, and delays timely reporting of cost and schedule information. Key systems and tools used by the BES include the following in managing and supporting project delivery:

- *Capital Improvements Program Reporting* – This system was developed by DWM as an internal project reporting program to provide current project status, project scope, schedule, budget, forecasted costs, contract amounts, paid to date information, and cash flow reporting. Project managers are responsible for updating project data on a monthly basis. Paid to date information is received through an interface with the Oracle financial system. The CIPR produces summary reports for the ongoing capital projects in total and by program.

- *Oracle* – DWM and City accounting and finance software.

- *Primavera Expedition* – BES uses this project management software to maintain project schedule, cost and information. Primavera is used to electronically manage projects by tracking correspondence, transmittals, meeting minutes, submittals, RFI's and other necessary project documentation.

- *Microsoft Project Planner and Primavera P3 / P6 / SureTrack Schedule Software* – BES uses multiple scheduling software packages to manage the CIP. Facilities Design uses Microsoft Project Planner to schedule and manage project design schedules. Construction Management currently uses Primavera P3 scheduling software to manage ongoing capital projects, and is considering migrating to Primavera P6 to do the same, primarily because Primavera will soon no longer support P3. The PMT uses P6 for preparing its schedules as P6 allows projects to be managed as a portfolio of projects, rather than in a stand-alone project environment. The Utoy Small Projects Team uses Primavera SureTrack to manage its projects. SureTrack is similar to P3, but does not manage projects with large numbers of activities as P3 and P6.

- *Enterprise Content Management System (ECMS)* – An online document management system put in place by DWM in October 2008. The intended use is not clearly defined by DWM, but may be used to store project documents not currently maintained in Primavera Expedition.

- *Maximo* – DWM uses this asset management software to assist DWM Water and Wastewater with operations management. BES uses information from Maximo for project design and construction input.

- *Hansen* – DWM uses this maintenance management software to manage work orders and service requests. Hansen interfaces with the City's Geographic Information System to map assets of the City's water and sewer systems. BES uses Hansen for project design and construction input.

BES does not provide clearly defined document management processes regarding use of the ECMS document management system (6J.1). BES implemented an ECMS in October 2008. BES has not provided clear direction to staff regarding use of the system. BES intends ECMS to be an online document management system for program and project files. As of February 2008, BES senior management has not provided guidelines regarding the type of information expected to be stored on ECMS and a timeline for uploading project information.

BES is currently using multiple spreadsheets to track program and project budgets, costs to date, and forecasts, including ECMS and CIPR as well as project specific tracking sheets (6J.2, 6J.3). This non-integrated system for managing cost information makes it difficult to report timely and accurate program and project level cost and schedule information. Limitations in the CIPR system, do not allow management to generate a scenario analysis for program level reporting such as reprioritization of projects and impacts of changes in funding levels. CIPR does not track key historical data such as prior budgets and estimates. There are instances of inconsistencies in project data, formula errors, and data integrity issues in managing manual project spreadsheets.

Recommendations

6J.1 BES senior management should develop clearly defined document management processes and provide clear direction as to the expectations for use of the ECMS system. Processes should include the types of documents expected to be stored, an established file hierarchy organization and timing of implementation. In providing direction regarding use of ECMS, BES should consider the construction documents currently retained in Primavera, to avoid duplication of efforts and the best system for the capital program requirements.

6J.2 BES should develop an integrated cost management tool. DWM should develop a formal reporting system including project information linked to the CIPR from Oracle and Expedition to help ensure timely and accurate project reporting. In developing integrated systems and tools, DWM should consider the various reporting requirements and user needs for systems to ensure a comprehensive and efficient program is developed.

6J.3 BES should consider leveraging available technology tools to facilitate project monitoring and reporting to increase the increase the efficiency and effectiveness of personnel. This effort should be in conjunction with Recommendation 6J.2 above.

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7. Operations

KPMG assessed the efficiency and effectiveness in key DWM operational areas. The assessment focused on productivity, efficiency, effectiveness and outcomes of the operational areas as well as the associated levels of internal controls within DWM. KPMG reviewed key DWM operational areas and compared to industry benchmarks and comparable water and sewer utilities where appropriate. The assessment of key operational areas includes recommendations for potential cost savings, revenue enhancements, and process efficiencies. Key operational areas include:

- Billing;
- Accounts Receivable, Memorandums of Understanding, and Collections;
- Revenue and Cash Flow;
- Customer Service and Accounts;
- Water Loss;
- Inter-jurisdictional Accounts;
- Procurement; and
- Use of City Staff Assets.

In December 2008, DWM billed customers an adjustment for increased rates for the month of July 2008 not previously billed. The "back billing" resulted in reported billing errors and water shut-offs. This performance review does not specifically address the sequence or issues surrounding the December 2008 "back billing". The City Auditor's Office is conducting a separate audit to review the event.

A. Billing

Observations and Analysis

DWM does not have a documented methodology for resolving billing edit errors and permits manual edits to consumption on customer accounts (7A.1). DWM bills customers on a monthly basis for water and/or wastewater services. DWM uses the enQuesta system to manage customer accounts and billings. enQuesta calculates bill amounts based on customer rates and consumption levels. The consumption levels are obtained by meter readings in the field or estimations determined during the billing edit process. DWM uses a billing edit process to review meter reading data and edit customer usage for billing input. The billing edit process is not standardized and allows for subjectivity by billing staff in estimating consumption.

Each billing cycle there are a high number of accounts that do not receive actual meter readings due to meter read errors, equipment failures, or human error (7A.2). When an actual meter read is not obtained, the consumption is determined by the following:

- **enQuesta Estimations** – Calculated by formula in enQuesta based upon historic data; and
- **Forced Usage Estimates –** Determined by billing staff and manually input in enQuesta.

DWM estimates the customer's bill and subsequently bills any variances caused by the estimate when the next actual reading occurs. DWM applied enQuesta estimations or forced usage estimates more than 110,000 times in calendar year 2008. The estimates represented 9.5% of total billings.

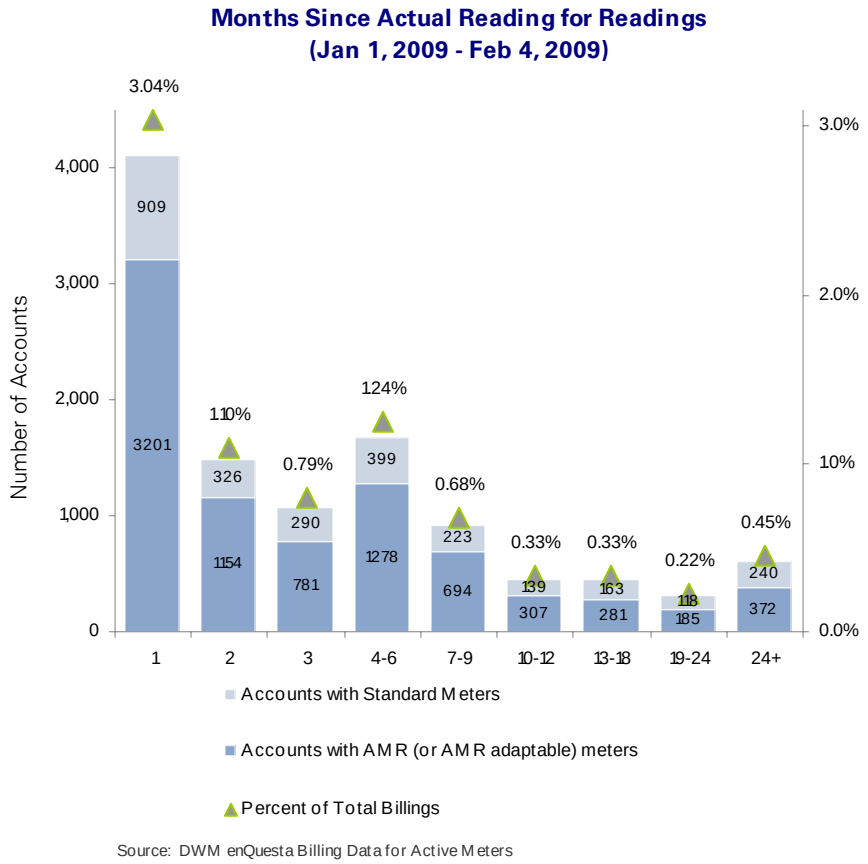
EXHIBIT 7.0:

Month	Accounts Forced or Estimated	Total Readings	Percentage Forced or Estimated
Jan-08	9,389	91,673	10.2%
Feb-08	9,804	98,521	10.0%
Mar-08	9,517	104,468	9.1%
Apr-08	7,290	82,308	8.9%
May-08	8,253	88,252	9.4%
Jun-08	9,833	107,673	9.1%
Jul-08	10,666	111,033	9.6%
Aug-08	9,229	88,321	10.4%
Sep-08	9,534	111,672	8.5%
Oct-08	10,687	98,312	10.9%
Nov-08	7,208	84,714	8.5%
Dec-08	11,397	121,993	9.3%
Total	**112,807**	**1,188,940**	**9.5%**

Source: DWM Historical enQuesta Billing Data

More than 135,000 readings occurred between January 1, 2009 and February 4, 2009. More than 1,300 meters have not had an actual meter reading during the last 12 months, and more than 600 meters have not had an actual reading during the last 24 months. Exhibit 7.1 shows the duration of estimated accounts read between January 1, 2009 and February 4, 2009. The data distinguishes between accounts with standard meters, which require a manual read, and Automatic Meter Reading (AMR) meters which can be read automatically.

EXHIBIT 7.1:



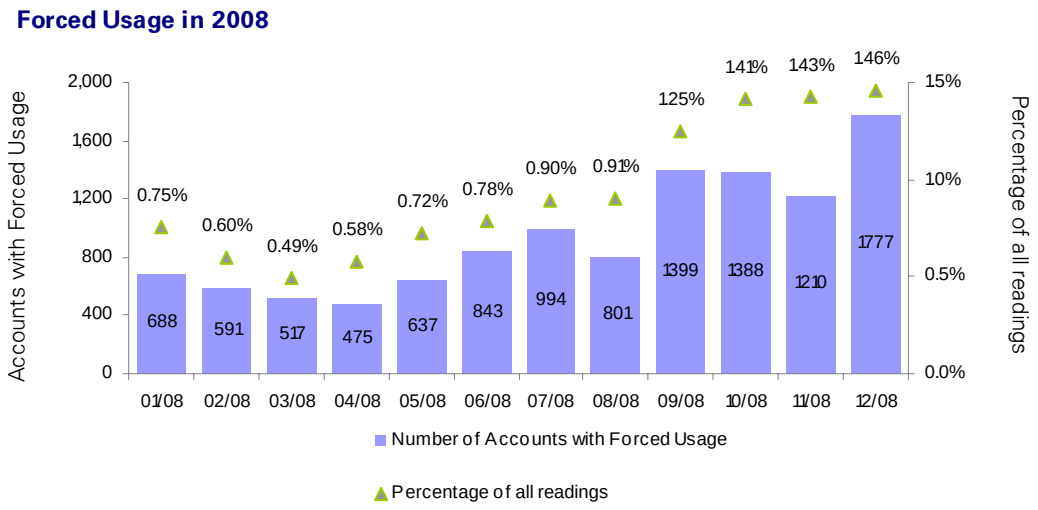
Source: DWM enQuesta Billing Data for Active Meters

The February 2009 monthly AMR conversion report showed 2,326 malfunctioning AMR meters. **The broken AMR meters prevent actual readings and increase estimated readings (7A.2).**

The AMR conversion process contributes to a delay in repairing malfunctioning traditional (non-AMR) meters (7A.3). DWM is currently in the process of converting traditional meters to AMR meters. Traditional meters scheduled for AMR conversion are not typically repaired due to scheduled replacement. DWM continues estimating consumption for these malfunctioning traditional meters.

Despite enQuesta's estimation capability, billing staff override the estimated value based on individual judgment. There was no written policy identified during fieldwork on applying forced usage estimates (7A.4). Billing staff adjusts accounts with "high usage" and "negative-reading" exceptions identified by the manual edit process. These manual consumption estimates are not calculated using a prescribed formula or documented guidance. Billing staff calculate consumption based on recent billings, rather than a 12-month average usage. DWM applied forced usage estimates more than 11,000 times in calendar year 2008. In 2008, there is an upward trend in the number of forced usage estimates being performed. In December 2008, DWM forced consumption on more than 1,700 accounts. Using forced usage estimates to adjust consumption down may result in lost revenue. Exhibit 7.2 shows the percentage of accounts for forced usage estimates out of total actual read accounts by month during 2008.

EXHIBIT 7.2:



Source: DWM Historical enQuesta Billing Data

Management does not conduct a comprehensive review of staff edits (7A.5). The enQuesta system records the user performing each edit. Management does inspect the enQuesta exception reports detailing "high usage", "no read", and "negative reading" accounts. The current enQuesta exception reports do not effectively identify the actions or rationale by Billing staff during the edit process.

There is a lack of consistency in creating and executing work orders which may result in system water loss and revenue loss (7A.6). Billing staff create work orders in enQuesta for the Inspections team to address and remedy. However, Billing staff are not consistently creating work orders when actual meter readings are not obtained. Billing staff note high-usage accounts and create a "Priority Read" work order. Inspectors use this

work order and read the meter a second time. Leaks are often identified when customers receive unusually high water bills.

User access and permission rights in enQuesta are not aligned to Billing and other Bureau of Program Performance staff functions and are not regularly evaluated (7A.7). Billing staff can:

- Modify the rate category associated with an account; and
- View customer's personally identifiable information.

As an example, billing and customer service staff can change a customer's billing classification to a senior citizen rate. Billing and customer service staff with access to enQuesta are able to view sensitive customer information including social security numbers. DWM does not consistently conduct periodic user access reviews for the enQuesta system to determine whether such changes were appropriately made. DWM maintains a user listing in Microsoft Excel, which is not periodically updated.

DWM is subject to the Fair and Accurate Credit Transactions Act (FACTA) that relates to identity theft prevention (7A.8). FACTA requires organizations offering credit to consumers (including energy and utility companies) to develop and implement a written Identity Theft Prevention Program. This includes developing written policies and procedures; training "relevant" staff to implement the program; and reporting at least annually to the board of directors, a committee thereof, or senior management on compliance with the regulations. The current implementation deadline is May 2009.

Recommendations

7A.1 DWM should develop a documented policy defining specific guidance and parameters for applying consumption usage estimates without subjectivity by billing staff during the bill edit process.

7A.2 DWM should reduce the frequency of estimated consumption and increase the number of actual meter reads. Meters should not be estimated for multiple consecutive months. Work orders should be generated and prioritized when consecutive monthly estimates occur. DWM should confirm that newly installed and malfunctioning AMR meters are repaired or replaced timely.

7A.3 DWM should reduce the number of malfunctioning AMR meters and allow the replacement of broken traditional (non-AMR) meters if the AMR meter cannot be installed in a timely manner.

7A.4 DWM should develop a documented policy defining specific guidance and parameters for applying forced usage estimates. Forced usage estimates should not be used to lower consumption without proper cause.

7A.5 Management should review changes to customer consumption levels made by billing staff during the edit process.

7A.6 Work orders should be generated by enQuesta or by Billing staff when there has been consecutive system estimations or when forced usage estimates are performed.

7A.7 DWM should restrict access and permissions in the enQuesta system on a least-privileged basis or as minimally required by job function.

7A.8 DWM should take steps to ensure compliance with future FACTA regulations.

B. Accounts Receivable, Memorandums of Understanding and Collections

Observations and Analysis

Accounts Receivable

At November 30, 2008 accounts receivable (A/R) was approximately $81.0 million with approximately $58.9 million related to sewer accounts and $22.1 million for water accounts. DWM's A/R balance includes the following customer categories: Residential, Commercial, City of Atlanta and Other Governments. The average number of days outstanding for A/R is 93 days. The following table shows the current and delinquent A/R for City of Atlanta ("City Gov"), Other Inter-jurisdictional Governments ("Public") and Residential and Commercial ("Res & Comm") customers. Exhibit 7.3 categorizes A/R balances by customer type, water or sewer services, and the number of days outstanding.

EXHIBIT 7.3:

Accounts Receivable Balances at November 30, 2008 (in thousands)

		Delinquent A/R (30-120 Days Outstanding)					
Customer Type	**Current**	**30 Days**	**60 Days**	**90 Days**	**120 Days**	**Delinquent Total**	**Total**
Sewer:							
City Gov	$ 143	$ 153	$ 254	$ 62	$ 7,027	$ 7,496	$ 7,679
Public	123	381	148	39	3,612	4,181	4,338
Res & Comm	7,627	5,023	2,561	1,310	29,803	38,697	46,878
Sewer Total	**$ 7,892**	**$ 5,556**	**$ 2,964**	**$ 1,411**	**$ 40,442**	**$ 50,373**	**$ 58,896**
Water:							
City Gov	$ 61	$ 67	$ 109	$ 28	$ 2,598	$ 2,802	$ 2,886
Public	51	157	66	17	1,645	1,884	1,942
Res & Comm	3,786	2,965	1,616	916	7,599	13,097	17,252
Water Total	**$ 3,898**	**$ 3,189**	**$ 1,791**	**$ 961**	**$ 11,842**	**$ 17,784**	**$ 22,081**
COMBINED:							
Total City Gov	$ 204	$ 220	$ 364	$ 90	$ 9,625	$ 10,298	$ 10,565
Total Public	173	537	214	56	5,258	6,065	6,280
Total Res & Comm	11,413	7,988	4,177	2,227	37,402	51,794	64,131
% of Total Res/Comm	18%	12%	7%	3%	58%	81%	100%
Grand Total ($)	**$ 11,790**	**$ 8,745**	**$ 4,755**	**$ 2,373**	**$ 52,284**	**$ 68,157**	**$ 80,976**
% of Grand Total	15%	11%	6%	3%	65%	84%	100%

Exhibit 7.4 shows the A/R balance has increased from $71.8 million at July 30, 2008, to $81.0 million at November 30, 2008.

EXHIBIT 7.4:

A/R Trend Data: Jul - Nov 2008 (millions)					
	Jul-08	**Aug-08**	**Sep-08**	**Oct-08**	**Nov-08**
A/R Balance	$ 71.8	$ 72.1	$ 72.8	$ 76.1	$ 81.0
Monthly Increase %		0.4%	0.9%	4.5%	6.4%

Source: DWM Collections Billing FY08 and FY09 Excel file

As of November 30, 2008, approximately $51.8 million of Residential and Commercial A/R is delinquent (See Exhibit 7.3). DWM defines delinquent accounts as equal to or greater than 30 days past due. DWM classifies accounts into the following classifications:

- Disputes,
- Liens,
- Outside Collections,
- Installments,
- Promise to Pay, and
- In-House Collections.

DWM has made write offs in the past; however, DWM does not systematically write off bad debt (7B.1). The City Council adopted Ordinance No. 90-O-1324 providing guidance to write off bad debt in accordance with generally accepted accounting principles. City Ordinance No. 90-O-1324 does not identify a time period for writing off uncollectible accounts. DWM is also subject to Georgia Code, Title 9, Chapter 3, Article 25, which establishes a four-year statute of limitations on bad debt.

Memorandums of Understanding

The City of Atlanta's General Fund owes DWM approximately $140 million for a combination of past water and sewer charges, other services performed, and borrowed funds (7B.2). On December 11, 2008, the City of Atlanta issued a Memorandum of Understanding (MOU) to establish a payment plan for water and sewer charges, and other amounts owed for services benefiting General Fund departments. On December 23, 2008, the City issued a second MOU establishing a repayment plan to DWM for funds borrowed from DWM's equity in the City-wide cash pool. As of June 30, 2008, the City's General Fund owes DWM the following:

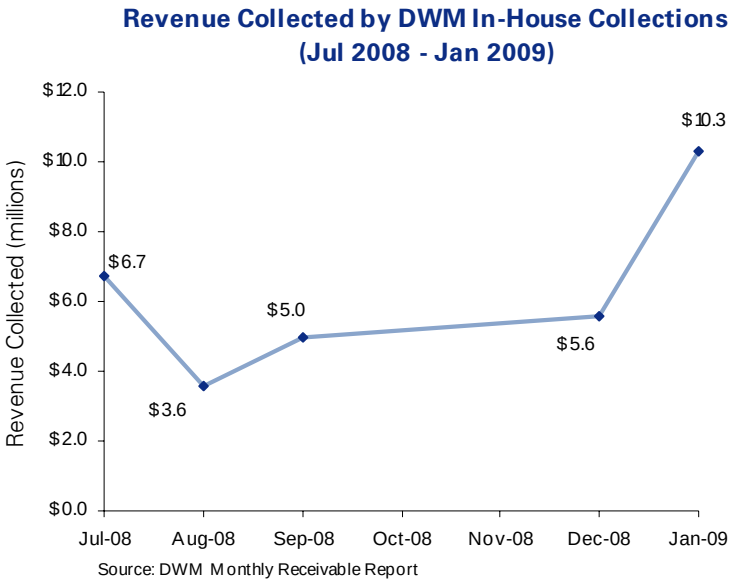
- Approximately $23.4 million for past water and sewer charges, and other amounts owed for services performed, which the City is paying back at a rate of $4 million per year plus interest beginning July 1, 2010; and

- Approximately $116.2 million for funds borrowed which the City is paying at a rate of $10 million per year plus interest beginning July 1, 2009.

Collections

DWM in-house collections staff is responsible for contacting delinquent account holders by mail and phone to request payment before discontinuing water and sewer services. DWM contacts customers by mail when their accounts are 30, 60, and 90 days delinquent. Collections staff increased from four to seven representatives in December 2008 to enhance collections. Revenue collections have increased 85% from December 2008 to January 2009, as shown in Exhibit 7.5. DWM indicated that data is unavailable for October 2008 and November 2008.

EXHIBIT 7.5:



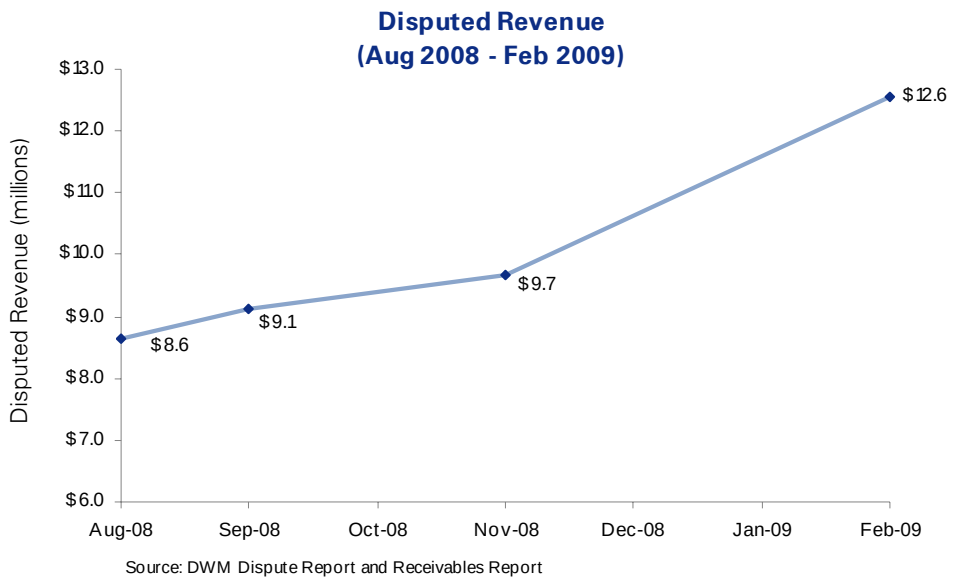
DWM collection reports are only generated monthly (7B.3). DWM produces a monthly receivable report detailing accounts 60 days past due and a minimum balance of $200. Producing monthly collections reports compared to more timely reporting further delays collection efforts. The Collections supervisor distributes the delinquent accounts by billing cycles among the Collections representatives. The staff continues to contact the account holders these reports identify until management provides new collections assignments at the beginning of the following month.

Current collection procedures lead to varying and inconsistent collection efforts (7B.4). Management provides Collection staff with Microsoft Excel spreadsheets detailing delinquent accounts and collection assignments. Management does not prioritize delinquent accounts. DWM does not have a policy for sending delinquent accounts to a 3rd party collection agency within a designated time period.

DWM does not prioritize dispute resolution efforts (7B.5). DWM Information Technology (IT) produces a monthly report of accounts in dispute. The February 2009 report contained more than $12.5 million in disputed amounts. Approximately 7% of active disputes as of January 2009 are more than six months old.

DWM allows customers to dispute a bill prior to service disconnection. Exhibit 7.6 shows an increasing trend in the volume and dollar value of disputes. DWM indicated that data is unavailable for October 2008, December 2008, and January 2009.

EXHIBIT 7.6:



Source: DWM Dispute Report and Receivables Report

The Disputes Resolution team was formed in October 2008 and is still developing its policies and procedures. The Disputes Resolution team consists of one manager and four research technicians. While the Disputes team is working towards resolving the outstanding complaints, a backlog of outstanding issues remains. DWM does not continue collection efforts on customers who have amounts in dispute. Service will not be disconnected provided the customer is current on undisputed charges. DWM does not limit the frequency of customer disputes within a defined period of time.

DWM does not typically initiate legal prosecution for illegal water consumption (7B.6). The Billing and Collection divisions investigate possible illegal consumption of water services to determine if the consumption of services is due to an illegal connection to the system. If DWM determines consumption is illegal, DWM schedules the services for termination. Although DWM charges customers for service termination and removing meters, there are no additional penalties or prosecution for repeat offenders. Section 154-69 of the Code of Ordinances indicates that if the termination or removal of a meter is the result of an illegal connection, any violation shall subject the offender to punishment pursuant to a penalty. Section 154-70 indicates that the offender is subject to a fine or imprisonment for an illegal connection to the City system.

Recommendations

7B.1 DWM should work with City Council and Department of Law to develop documented procedures and practices for analyzing and writing off bad-debts in accordance with City Code and State legislation.

7B.2 DWM should assess the impact of large interfund balances to bond covenants.

7B.3 DWM should produce collection reports on a continuous basis, and collections schedules should coincide with billing cycles.

7B.4 DWM should document and enforce standardized collections procedures.

7B.5 DWM should document and enforce formal policies for the prioritization of accounts that the Disputes Resolution team addresses and for the number, volume, and frequency of allowable disputed charges.

7B.6 Per City Code, DWM should initiate prosecution efforts for customers consuming water illegally.

C. Revenue and Cash Flow

Observations and Analysis

KPMG analyzed DWM's current services and compared to peer agencies. KPMG identified the following revenue enhancement opportunities:

- New services and fees; and
- Current services.

New Services and Fees

DWM is not collecting impact fees on water, sewer, or stormwater services (7C.1). Presently, other local jurisdictions collect impact fees on water, sewer, or stormwater services. There is opportunity for collection of these fees as the City Bureau of Buildings collects impact fees for the Departments of Parks and Recreation, Public Safety and Transportation. The Bureau of Buildings is also responsible for the calculation of Developmental Impact fees. New construction and occupancy changes to existing buildings are subject to Developmental Impact fee assessments.

DWM is not charging a stormwater fee and is in the process of developing a stormwater utility program (7C.1). Peer organizations charge a stormwater fee to residential and commercial customers. KPMG's research indicates peer organizations charge an average monthly fee between $3 and $4 to residential customers. Utility organizations can then use the fees to address stormwater needs.

The City does not reimburse DWM's Office of Safety and Security (OSS) for training costs (7C.2). OSS provides safety and security training to DWM and other City departments.

DWM's Utoy Creek Water Reclamation Center laboratory is currently serving only DWM internal bureaus (7C.2). The laboratory is a state certified and tests drinking water and wastewater. The laboratory does not provide services to other jurisdictions and is considering expanding services to non-City customers.

Current Services

If the authorized late fee of $5 or 5%, whichever is greater, had been applied to customer accounts, DWM would have generated additional revenue of approximately $1.4 million (7C.3). City Code 154-120 authorizes "a late fee of $5 or five percent of the total bill, whichever is greater, will be assessed on all water and sewer bills rendered that are not paid by the established due date on the bill". The enQuesta software calculates

and applies a late fee of 5% of the current bill to delinquent accounts. For bills less than $100, a five percent late fee will be less than the $5 minimum called for in City Code. In calendar year 2008, DWM billed more than $4.3 million in late fees. More than 82% of the late fees assessed were less than $5.

If the authorized fee of $75 for "Same Day" services had been applied to customer accounts, DWM would have generated additional revenue of approximately $50,160 (7C.3). DWM offers "Same Day" services upon request and typically charges customers a $10 fee for the service. DWM does not offer "After Hours" services to customers. City Code 154-68 authorizes DWM to charge $75 for the aforementioned services. Since September 2006, DWM has applied 776 same day service fees to customer accounts.

DWM is not charging customers for damages to water meters as authorized by City Code 154-72 (7C.3). Peer agencies inform customers that damage to water meters is the customer's responsibility. Peer agencies charge customers to repair or replace damaged meters located on the customer's property.

DWM is not charging fees or penalties for illegal water consumption (7C.4). DWM charges disconnection fees to customers consuming water illegally.

Recommendations

7C.1 DWM should work with the Law Department regarding the following:

- Impact Fees - The City should further evaluate the feasibility of implementing an impact fee for new water and sewer connections taking into an account the large capital investment made in the City's water and sewer infrastructure. DWM should limit such impact fees to retail customers as the wholesale customers are paying capital costs.

- Stormwater Utility - DWM should consider a fee-based stormwater user charge. Additionally, establishing a separate fund to track and recover costs associated with the stormwater utility would help maintain the existing infrastructure and would allocate the costs equitably among the customers.

7C.2 DWM should recover costs for training services provided to City departments and market the Utoy Creek laboratory services to a broader customer base.

7C.3 DWM should charge fees to customers as allowed by current or future City Code including:

- Late Fees,

- Same Day or After Hours Service, and

- Charges for Damaged Water Meters.

7C.4 DWM should request changes to City Code to permit charging illegal consumption penalties.

D. Customer Service and Accounts

Observations and Analysis

KPMG reviewed the following customer service operations: the Customer Call Center, Customer Service Inspections, and Refund Processing. Each of these business processes operate separately within the Bureau of Program Performance (BPP).

Customer Call Center

The Customer Call Center includes 6 management team members, 3 team leads, 31 Customer Service Representatives, and 5 Customer Care Specialists. The Call Center facilitates service connection and disconnection, initiates leak investigations, aides in resolving billing complaints, and educates callers on water conservation techniques. DWM reports that the Call Center answers approximately 30,000 calls per month, and has reduced average customer wait time from 11 minutes to 45 seconds within the past twelve months.

Customer Service Inspections

DWM has 34 Customer Service Inspectors and 3 supervisors responsible for resolving work orders opened by the Billings, Collections, Call Center, and Walk-in Customer Service groups. The Inspections team helps complete work orders, including priority meter reading, service connections and disconnections, meter locking, and meter investigations for leaks and damaged hardware.

The inspections process is manual and paper-based (7D.1). When inspectors identify an undisclosed issue, the results are manually entered into the work order system. Supervisors review the paper copies prior to delivering to data entry staff who update and close the work orders in enQuesta. Delaying the work order process may result in longer response time, delayed repairs, and increased water loss.

The Inspections team does not have access to the enQuesta system (7D.1). The Billing, Collections and Call Center staff generate work orders in the enQuesta billing system and print them to a network printer in the Inspections team's office. The Inspections team has addressed and acted upon the same work order multiple times by different inspectors. Duplicate work order printings have resulted in duplicate work efforts.

Refund Processing

The current refund process is manual and initiated by the customer (7D.2). City Code directs DWM to process customer refunds "for erroneous, duplicate or overpayment of water and sewer charges" including:

- **Closed Accounts -** Customers who close their account with a balance that is less than their meter deposit; and

- **Active Accounts -** Customers with a credit balance on their account.

DWM processes approximately 45 refunds per day. Most refunds relate to meter deposits on terminated accounts. The Code of Ordinances Section 154-114 requires a fixed fee deposit based on the meter size for establishing new services with the DWM.

DWM's current refund practices are not in compliance with City Code (7D.2). On January 30, 2008, the Mayor approved an amendment to City of Atlanta, Code of Ordinances Part II, Chapter 154, Article III, Division 1, Section 154-114, Paragraph (f). The amendment calls for DWM to refund deposits or credits on closed accounts for water service and for other purposes within 60 days of account closing.

EXHIBIT 7.7:

Before Amendment	After Amendment
"When accounts are closed, the deposit credited to such accounts shall be applied to any unpaid balance. Any credit remaining after unpaid balances are satisfied may, at the customer's request, be refunded without interest or transferred without interest to another account to serve as a deposit or a portion of the required deposit for such new account."	"When accounts are closed, the deposit collected for such accounts shall be applied to any unpaid balance. Any funds remaining for the account after unpaid balances are satisfied shall be refunded within sixty (60) days without interest, or upon customer request, shall be transferred without interest to another account to serve as a deposit or a portion of the required deposit for such new account."

DWM staff involved in the refund process were unaware of the abovementioned change in City Code during interviews with KPMG. The account balance report dated February 10, 2009 listed 28,694 final billed customer accounts with outstanding credit balances totaling approximately $4 million (dating back to August 1999). DWM has not refunded credit balances because the customers did not contact DWM to initiate the refund process. As of February 10, 2009 the median credit account balance is $44.88 and the average credit account balance is $138.60.

Exhibit 7.8 identifies the credit account count, value and average by size of credit.

EXHIBIT 7.8:

Credit Account Balances (as of February 10, 2009)			
Refund Amount	**Count**	**Value**	**Avg. Refund Due**
$0 to $1	1,297	($488.10)	($0.38)
$1 to $4.99	2,048	($5,914.01)	($2.89)
$5 to $9.99	2,265	($16,149.76)	($7.13)
$10 to $19.99	3,155	($46,438.06)	($14.72)
$20 to $29.99	2,459	($60,342.95)	($24.54)
$30 to $39.99	2,226	($78,617.78)	($35.32)
$40 to $49.99	1,798	($80,525.58)	($44.79)
$50 to $74.99	5,128	($323,381.53)	($63.06)
$75 to $99.99	3,212	($266,691.80)	($83.03)
$100 to $199.99	2,521	($345,741.17)	($137.14)
$200 to $499.99	1,556	($472,348.08)	($303.57)
$500 to $999.99	500	($348,899.87)	($697.80)
$1,000 to $4,999.99	460	($925,668.90)	($2,012.32)
$5,000 to $14,999.99	55	($447,620.89)	($8,138.56)
$15,000 to $49,999.99	11	($244,760.02)	($22,250.91)
$50,000+	3	($313,477.07)	($104,492.36)
TOTAL	**28,694**	**($3,977,065.57)**	**($138.60)**

Source: DWM Credit Balance Report

City Code Section 154-114 states that: "Deposits made on accounts shall be refunded, provided no action to terminate service has been taken, after five years of uninterrupted water service." When DWM transferred customer deposits from C-STAR to enQuesta during the January 2007 implementation, the deposit date was reset to January 2007 for customers with accounts less than five years old. For customers with accounts longer than five years, DWM refunded the deposits to the customers. Someone with an account that was 59 months old in January 2007 would not have their refund initiated until January 2012, or approximately 10 years after the account was opened, beyond the period required by City Code.

The City Code addressing the unclaimed deposits [Section 154-114, Paragraph (g)] may be in conflict with Georgia Code Title 44, Chapter 12, Article 5, known as the "Disposition of Unclaimed Property Act" (7D.3). The Disposition of Unclaimed Property Act protects the rights of owners of abandoned property, including unclaimed deposits and credit balances, and relieves those holding the property of the continuing responsibility to account for the property. Under the Act, when someone holds property ("holder") that belongs to someone else ("owner"), but has lost contact with the owner for a specified period ("holding period"), that holder must turn over (remit) the property to the State. The State then serves as the custodian for any property remitted under the

Act allowing the owners or their heirs an opportunity to claim their property in the future. DWM does not remit this escheat property to the State as outlined in State Code.

Recommendations

7D.1 DWM should provide the Customer Service Inspections team with access to enQuesta to allow electronic access to work orders. DWM should also evaluate the use of handheld devices for inspectors to receive and update work orders electronically.

7D.2 DWM should enhance the refund process to comply with City Code including:

- Refunding deposits on closed customer accounts within 60 days of account closing; and
- Tracking customer deposit dates according to the service initiation date and not the enQuesta transition date.

7D.3 DWM should seek legal advice on potential conflicts between City Code and Georgia Code concerning unclaimed property and settle accounts accordingly.

E. Water Loss

Observations and Analysis

Water Loss Calculation

DWM data from the 2007 Water Loss Audit Report shows water loss at 26%. (7E.1). Water loss represents a key indicator of a utility's efficiency in treating and distributing water. The American Water Works Association (AWWA) classifies losses as either apparent losses from meter inaccuracies or unauthorized consumption, or real losses due to leaks or water main breaks. Using AWWA's guidelines, DWM prepared a Water Loss Audit Report for 2007 as shown in Exhibit 7.9.

EXHIBIT 7.9:

DWM's 2007 Water Loss Audit Report			
Description	**Amount**	**Unit**	**Note**
Volume treated at plants	40,327	MG/yr	Total treated at 3 plants
Less: Wholesale water sold	(1,264)	MG/yr	Interjurisdictional water
Water supplied	**39,063**	MG/yr	Retail water
Less: Billed retail metered water	(27,746)	MG/yr	DWM billing system records
Unbilled: metered water	(493)	MG/yr	DWM billing system records
Unbilled: unmetered water	(488)	MG/yr	Calculated based on 1.25%
Unauthorized consumption	(98)	MG/yr	Calculated based on 0.25%
Total consumption	**(28,825)**	MG/yr	
Water losses	**10,238**	MG/yr	Water supplied less total consumption
Non-revenue water	**11,317**	MG/yr	Water supplied less billed metered water
Water loss % of water supplied	26%		
Non-revenue water % of water supplied	29%		

Source: DWM 2007 Water Loss Audit Report

In 2007, DWM reported water losses of $2.6 million, based on "non-revenue water", as shown in Exhibit 7.10.

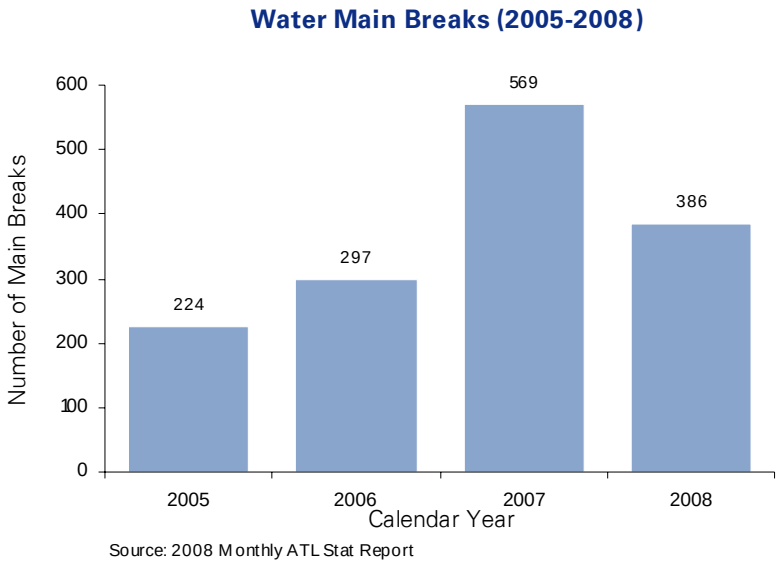
EXHIBIT 7.10:

DWM Water Loss Impact:			
		Amount	**Unit**
Variable Production Cost	$	252	$ per MG
Water Loss		10,238	MG per Year
Annual Cost of Water Loss	$	2,577,011	$ Variable Cost x Water Loss MG

Source: DWM 2007 Water Loss Audit Report

Based on 2007 data, DWM's water losses are considered high. Current contributing factors include water main breaks and estimated billing. Exhibit 7.11 shows the cumulative number of main breaks between calendar years 2005 and 2008. Calendar year 2007 had more main breaks compared to other years. The number of main breaks reduced in 2008.

EXHIBIT 7.11:



Source: 2008 Monthly ATL Stat Report

The water industry promotes many approaches to reduce water loss. DWM has initiated the following approaches:

- **Valve and Hydrant Program (2009 – 2012) –** locates, maintains, repairs or replaces distribution valves in the drinking water system;
- **Leak Detection Program (2010 – 2013) –** identifies non-surfacing leaks for repairs; and
- **Flushing Program (2011 – 2014) –** removes sediment from water pipes by discharging water through hydrants.

DWM's estimated consumption may not reflect actual usage because DWM continues estimating consumption for accounts with malfunctioning traditional meters scheduled for AMR replacement (7E.1). As previously indicated in the bill editing process, DWM estimates consumption due to water meter malfunctions. The February 2009 monthly AMR conversion report showed 2,326 malfunctioning AMR meters.

Traditional meters scheduled for AMR conversion are not typically repaired due to scheduled replacement. DWM continues estimating consumption for these malfunctioning traditional meters.

Recommendations

7E.1 DWM should establish a strategic initiative to reduce and monitor water loss on an ongoing basis and should include targeted water loss levels with performance measurements such as unbilled metered water and unbilled unmetered water.

F. Inter-jurisdictional Accounts

Observations and Analysis

DWM provides services for surrounding local governments, referred to as inter-jurisdictional accounts. Four bureaus (Bureaus of Management, Program Performance, Financial Administration and Watershed Protection) have management responsibilities over inter-jurisdictional accounts.

Management responsibilities are decentralized and limit DWM's ability to identify and resolve billing issues in a timely manner (7F.1). The four Bureaus' responsibilities are as follows:

- **Customer Service –** The Deputy Commissioner of the Bureau of Management meets with inter-jurisdictional customers semi-annually. This limited contact does not provide adequate communication to address billing and collections issues.

- **Water Billing –** The Bureau of Program Performance bills monthly for inter-jurisdictional water.

- **Sewer Billing –** The Bureau of Financial Administration (BFA) bills for inter-jurisdictional sewer. The Bureau of Wastewater Treatment and Collections calculates operations and maintenance (O&M) costs which the BFA bills monthly. The Bureau of Engineering calculates capital project costs which the BFA bills quarterly.

- **Compliance Billing –** The Bureau of Watershed Protection monitors and calculates bills for industrial flow and treatment costs. They provide this information to the Bureau of Program Performance to bill monthly.

DWM is operating without current formal agreements for services to inter-jurisdictional customers (7F.2). DWM has six inter-jurisdictional water customers and six inter-jurisdictional wastewater customers. Three of the six inter-jurisdictional customer agreements were for a period that has ended. KPMG is not aware of any amendments to the contracts. Exhibit 7.12 identifies contract effective end dates for current inter-jurisdictional customers.

EXHIBIT 7.12:

Water Customer	Contract Effective End Date
Clayton County	December 31, 2020
Coweta County	December 31, 2021
City of Fairburn	September 23, 1997
Fayette County	July 10, 2003
City of Hapeville	December 31, 2020
Union City	June 26, 1997

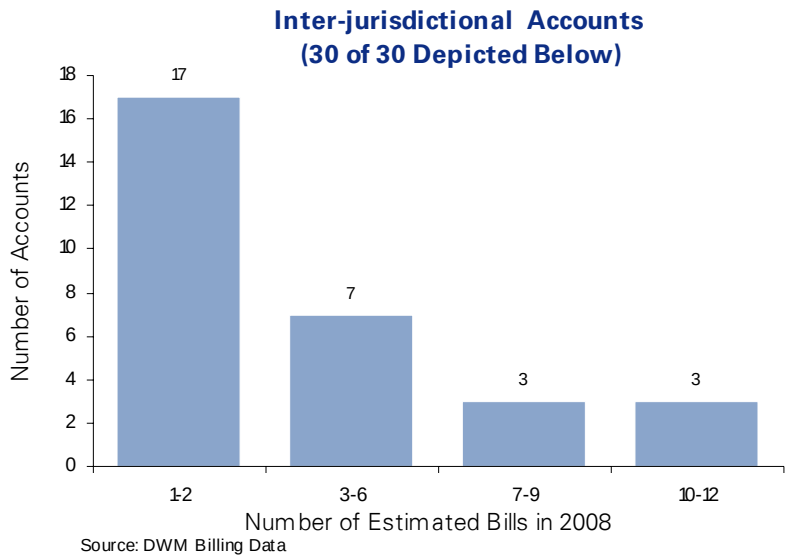
Wastewater Customer	Contract Effective End Date
College Park	May 12, 2028
Clayton County	October 29, 2009
DeKalb County	June 30, 2029
East Point	July 17, 2029
Fulton County	October 11, 2022
City of Hapeville	December 28, 2029

Source: DWM Inter-Jurisdictional Agreements

The six water agreements do not include provisions for delinquent payment penalties, charges for meter repairs, or key performance indicators (7F.3). One water agreement allows for interest to be applied to late payments.

Thirteen of the thirty metered accounts for the inter-jurisdictional water customers were estimated for three or more months in calendar year 2008 (7F.4). DWM has been estimating consumption and charges for services for two accounts for more than 12 consecutive months. The average monthly bill on these two accounts range from $2,500 to $5,000. Exhibit 7.13 identifies the number of estimates used for the 30 inter-jurisdictional water accounts in 2008.

EXHIBIT 7.13:



Source: DWM Billing Data

The Operations and Maintenance (O&M) sewer bills do not include indirect and other support costs (7F.5). As an example, the direct cost of chemicals is included in billings however, the indirect costs of procuring, storing, transporting, and handling the chemicals are not included. BFA prepares monthly inter-jurisdictional bills for O&M costs. DWM uses actual monthly costs for WWTC. These actual costs do not reflect any adjustments made during the hard close in the annual audit. DWM does not reconcile monthly O&M costs to the final year end adjusted balances. To the extent that audit adjustments are made after the fact, these adjustments may not be reflected in the bill.

Recommendations

7F.1 DWM should centralize management and reporting of inter-jurisdictional accounts to create greater accountability for billing and collections information.

7F.2 DWM should maintain current executed water service agreements with jurisdictions.

7F.3 DWM should establish contracts that more effectively mitigate service risks and include performance measures.

7F.4 DWM should reduce the usage of estimation and obtain actual reads.

7F.5 DWM should examine opportunities to recalculate the sewer O&M costs and then renegotiate sewer service agreements to adequately recover costs of services. DWM should bill a "Month 13" for inter-jurisdictional sewer customers to account for year-end financial adjustments.

G. Procurement

Observations and Analysis

The roles and responsibilities of DWM Procurement are not clearly defined to stakeholders (7G.1). The City's Department of Procurement (DOP) is responsible for the procurement process, with support from DWM Procurement. There is inconsistent coordination between DWM procurement and DOP. DWM Procurement and DOP often duplicate efforts related to tracking procurements. Additionally, some DWM Bureaus directly interact with DOP, bypassing DWM Procurement.

The procurement process is lengthy and creates numerous challenges to DWM in their efforts to meet their procurement needs (7G.2). Extended procurement cycles may result in increased costs to DWM. For example, delaying contractual awards may result in increased costs or extended timeframes.

Improving communication between DOP and DWM staff should reduce pending issues related to active procurements. Exhibit 7.14 shows completed procurements sampled between May 2005 and September 2008. "Task Orders" are positively exceeding established targets, while "Formal Contracts" and "Renewals and Amendments" are not meeting established targets.

EXHIBIT 7.14:

Type of Procurement	Number of Procurements	Average Time	Target Time	Difference
Formal Contracts	43	306	180	126
Task Orders	52	72	120	(48)
Renewals and Amendments	101	143	120	23

Source: DWM Procurement Timeline and ATL Stats Report

Duplicative procurement review efforts between DWM Procurement and DOP create process delays (7G.3, 7G.4). DWM and DOP identified DOL's procurement review as a contributing factor in not meeting the established targets above. DWM funds the following positions related to City procurement and legal consultation:

- Twelve positions in DWM Procurement – supporting DWM bureaus with preparation of procurement documents;
- Fourteen positions in DOP – facilitating procurements for DWM and other City departments; and

- Nine positions in Department of Law (DOL) – one staff in DOL is assigned to review DWM procurements.

Electronic signature routing is not enabled for DWM procurements (7G.5). DOP routes hard-copy procurement documents to six City departments for final approvals prior to contract execution. The City's contract approval target is 35 days. In 2008, the approval process averaged 95 days compared to 143 days in 2007. In 2007, DWM made preparations for electronic signature approval. DOP has not finalized electronic signature approval for DWM.

Specific to DWM construction contracts, DWM does not require site visits as a condition for vendor bid submissions (7G.6). DWM requires potential bidders to certify familiarity with the proposed project site. This may result in increased pricing in vendor proposals or increase procurement bid time when addressing vendor questions. Project managers do not have consistent access to procurement status reports, limiting their ability to proactively manage the construction project timeline and resources.

Recommendations

7G.1 DWM should further define the roles and responsibilities for the DWM procurement division in conjunction with the predefined roles and responsibilities of DOP. DWM should work with DOP to develop agreed upon reporting tools that eliminate duplication of efforts and enhance coordination.

7G.2 DWM and DOP should document and evaluate current procurement processes to gain efficiencies and reduce lifecycle time.

7G.3 DWM should enhance their quality review process, enabling them to be more accountable for their procurements. DWM should enhance their policies and procedures to include a standard review checklist for DWM Procurement staff reviews of bid packages. DWM should consider taking responsibility to assemble the procurement package, complete with legal review and necessary reprographics.

7G.4 DWM and DOP should work together to increase process visibility. DWM should create a centralized process for project managers to review procurement status reports and identify expected completion dates for procurements.

7G.5 DWM should implement electronic signature approvals.

7G.6 DWM should consider including mandatory site visits as a condition for bidding construction projects.

H. Use of City Assets

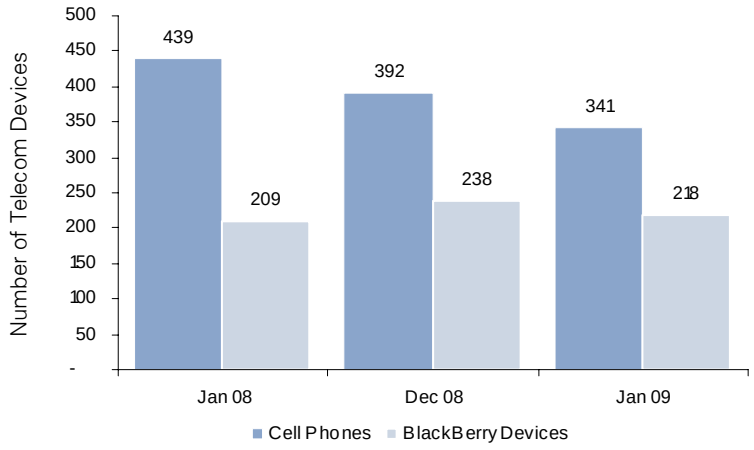
Observations and Analysis

Telecommunication Devices

Not all DWM assigned telecommunication devices are fully utilized and there is a lack of consistency in distribution of cell phone and BlackBerry devices (7H.1). Between January 2008 to January 2009, DWM reduced the cell phones assigned to DWM employees from 439 cell phones to 341 cell phones. BlackBerry devices assigned to DWM personnel increased from 209 devices to 218 in the past year. In December 2008, during the course of this engagement, DWM decreased the total number of telecom devices with initiatives to continue measuring cost savings throughout the organization.

EXHIBIT 7.15:

Telecom Devices in 2008 - 2009



Source: DWM Device Master User List

In 2008, there were 237 wireless cards issued to DWM employees. During the month of December 2008, DWM initiated a "clean up" of wireless cards in order to reduce costs. DWM reduced the number of active wireless cards by 9%, suspending service (at a cost of $5/month) or disconnecting service to 22 wireless cards.

Device distribution does not directly correlate with job responsibilities and necessity or time spent outside of the office performing job duties (7H.1). For example, seven out of nineteen Senior Administrative Assistants have cell phone or BlackBerry devices, and two of the three college interns have cell phones.

Vehicle Assignments

The City vehicle policy was reviewed and compared to DWM overnight vehicle assignments. There were no issues identified. DWM does not manage the procurement of City vehicles or motor vehicle acquisition. The Office of Fleet Services, within the Department of Public Works, performs these functions.

Recommendations

7H.1 DWM should review job functions and responsibilities to identify the need for telecom devices. DWM should limit distribution of telecom devices to employees whose job functions require travel away from assigned office space for the majority of each day.

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8. Appendix A: Summary of Observations and Recommendations

Exhibit A.0 provides a list of observations and recommendations identified in this report.

EXHIBIT A.0:

Observations	Recommendations
Section 4. Overarching Issues	
4A. Organizational Structure	
• DWM's current organizational structure does not allow for effective span of control (4A.1). • DWM's current structure does not provide for a focused position to directly support the Commissioner (4A.1). • DWM's current organizational structure does not consistently align to function (4A.1).	• DWM should improve organizational structure to better align to their strategic mission for effectiveness and accountability. The new structure should reduce span of control levels, better align to function, streamline processes, reduce fragmented or redundant processes, and provide a direct support position to the Commissioner. Several different solutions could enhance the operating effectiveness of DWM's organizational structure. Different designs will yield varying results (4A.1).
• DWM lacks centralized processes in the areas of human resources and procurement (4A.2). • The processes, responsibilities, and interaction between DWM and the City Departments of Human Resources and Procurement are not clearly defined (4A.2).	• DWM should centralize human resources and procurement processes at the Department level. DWM should work with City Departments of Human Resources and Procurement to develop a communication plan to enhance accountability and clearly define roles and responsibilities (4A.2).
• DWM does not have a central location or single point of contact for tracking, monitoring, and reporting compliance requirements (4A.3).	• DWM should implement and maintain a consolidated system for tracking and monitoring compliance requirements (4A.3).
• The DWM internal audit function is not organizationally aligned to allow effective functionality (4A.4).	• DWM should reorganize the internal audit function to report directly to the DWM Commissioner. DWM should increase internal audit resources in order to enhance the evaluation and monitoring of DWM performance, risks, and controls (4A.4).
4B. Employee Perception	
• DWM employees completed a Job Activity Questionnaire ("JAQ") in an effort to gain a better understanding of DWM operations. The JAQ identified perceived common DWM strengths and areas for improvement (4B.1).	• DWM should evaluate the perceived common strengths and areas for improvement identified in the JAQ. Action plans should be developed to continue current perceived strengths and address current perceived areas for improvement. DWM should consider performing a periodic employee satisfaction survey to monitor and measure employee satisfaction (4B.1).

Observations	Recommendations
Section 5. Financial Management	
5C. Financial Plan – Options and Recommendations	
• The Rate Model is the primary tool utilized by DWM to establish customer rates, which results in hundreds of millions of dollars in revenue. DWM has a high level of dependency on external consultants for the management and operation of the Rate Model (5C.1).	• DWM staff should be skilled in the Rate Model processes and should be accountable for the inputs and outputs of the Rate Model. The Department of Finance and other City stakeholders should perform analysis apart from DWM or DWM consultants to review and agree upon Rate Model assumptions, inputs, and outputs (5C.1).
• There are several options available to DWM and the City for utilizing any projected net operating revenues. The recent trend in reduced operating expenditures as well as the recently reduced annual CIP plan may generate positive net operating revenues for the remainder of the 2008 Rate Package (5C.2).	• City Council should closely evaluate the four options discussed below with respect to any projected net operating revenues. The City should balance the financial impact on the rate payers, projected accumulated balances in operating funds, and the financial stability desired by the bond market. The Rate Model and assumptions used should be reviewed on a regular basis to evaluate the model's assumptions and current economic conditions. KPMG recommends that the City prepare a detailed cash flow analysis that reflects an operating budget consistent with historical financial results. The capital budgets should be prepared using alternative scenarios to meet at least the minimum Consent Decree requirements, assessed deferred maintenance issues, and to enhance water and sewer operations. These projections should be analyzed to determine if there are projected excess net revenues. To the extent there are projected excess net revenues, the City should consider a combination of the following: o Establish a Rate Stabilization Fund – Dedicate a portion of net operating revenues to a special purpose fund to help mitigate or avoid future rate increases; and/or o Increase Capital Investment Using PayGo – Apply a portion of net operating revenues to planned capital projects; and/or o Reduce Outstanding Debt – Apply a portion of net operating revenues to reduce outstanding debt obligations; and/or o Adjust Planned Retail Water and Sewer Rates – Apply a portion of net operating revenues to defer or adjust the planned rates included in the 2008 Rate Package.

Observations	Recommendations
5D. Cash Management, Processes and Controls	
• BFA does not maintain comprehensive procurement supporting documentation or have direct access to vendor invoices to proactively assist DOF in resolving invoice issues (5D.1).	• BFA should increase coordination throughout DWM bureaus to centrally maintain procurement supporting documentation. BFA should train bureau A/P representatives to properly document PO and receipt of assets to help reduce the number of matching issues. BFA and DOF should consider scanning vendor invoices and receiving information to increase DWM visibility into the A/P process and improve fixed asset documentation (5D.1).
• As of January 21, 2009, DWM had 174 invoices on hold with the average hold time being 194 days (5D.2).	• BFA should continue to routinely monitor the Invoices on Hold report and work with DOF to facilitate more timely vendor payment. DOF and BFA should establish a target timeframe (e.g. 30 days) to benchmark payment processing once the invoice and goods or services have been received (5D.2).
• The following issues have been identified: o Lack of documentation of fixed asset purchases; o DOF has not distributed asset tags since May 2008; and o Inventory of fixed assets is not timely (5D.3).	• BFA should work with DOF to ensure that DWM fixed assets are tagged and recorded appropriately. DWM should perform an annual physical inventory of fixed assets (5D.3).
• There is not a clear documented correlation between City positions that DWM funds and the services that DWM receives (5D.4).	• DWM and City departments should work together to more clearly define the roles and responsibilities of those positions DWM is funding (5D.4).
• In reviewing the City's FY2007 Indirect Cost Allocation Plan (Cost Plan), the following potential issues were identified: o DWM is not consistently receiving credit for positions funded in other City departments allocating costs; o Cost drivers do not consistently correlate cost to benefit; and o DWM receives duplicate allocations (5D.5).	• DWM and the City should review allocation approaches and statistics utilized in the City wide Cost Allocation Plan to help ensure accuracy (5D.5).

Observations	Recommendations
Section 6. Capital and Construction	
6A. Program Management and Organization	
• BES does not assign an overall project manager to oversee capital projects from planning through closeout to ensure appropriate oversight of cost and schedule management (6A.1).	• BES should consider requiring the use of project teams during the planning process and assigning responsibility for overall delivery of the project to an overall project manager. The project manager should be responsible for managing the overall project delivery budget and schedule including key project activities such as planning, design, procurement, construction and project closeout. The project manager should also be responsible for monitoring and reporting on project risks. BES should reflect updates to the project delivery process in the Project Management Manual. BES should carefully consider the assignment of an overall project manager to ensure they are not adding an additional level of authority that might hinder the delivery cycle. The project manager's roles and responsibilities should be clearly defined and communicated to project teams and may require additional training for staff (6A.1).
• BES lacks a succession plan for transferring knowledge, sharing data or providing appropriate training for key capital program processes (6A.2).	• DWM should develop a succession plan for management of BES and document key senior management responsibilities and procedures regarding management of the capital program and project delivery. DWM should consider identifying potential successors to senior management positions based on qualifications and experience (6A.2).
• The PMM does not clearly define the roles and responsibilities for the end-to-end project delivery cycle (6A.3).	• The updated PMM should clearly define the roles and responsibilities for the end-to-end project delivery cycle as well as each detailed section of the PMM. BES may consider developing a responsibility matrix to be included in the introduction section or the appendix to the PMM clearly demonstrating roles and responsibilities in overall delivery of capital projects. BES may consider using a Responsibility, Accountability, Consult and Inform (RACI) matrix to provide a summary to stakeholders of the personnel involved with each of the key activities in project delivery (6A.3).

Observations	Recommendations
6B. Project Controls and Risk Management	
• BES does not have a dedicated project controls group (6B.1).	• BES should consider developing a project controls group to act as a resource in delivering capital projects. Key responsibilities should include completing independent cost estimates or analysis of initial budgets, cost estimates and work authorizations, performing schedule analysis, providing training, tracking lessons learned, and overseeing risk management functions. In addition, the project controls group can prepare or validate program and project reporting, assist in training and helping ensure consistent delivery across capital projects. In developing a project controls group, BES should structure the group as a resource to the project delivery teams, not add an additional layer of oversight. The project controls group should include an experienced cost estimator and scheduler for a program the size and scale of DWM (6B.1).
• BES does not use a formal risk assessment process to identify potential project and program risks (6B.2).	• BES should consider developing a formal risk assessment and analysis process that will help identify risks to the overall capital program and ongoing capital projects. The risk assessment tools should be used to identify, evaluate the potential impacts, monitor, communicate and report on project risks. Additional uses of these tools should include developing contingency or allowance budgets for project risks. In addition, the process can monitor the implementation of developed risk mitigation or response action items. A risk register or risk assessment can be a useful tool in communicating the impact of project risks to senior management and key project stakeholders. BES should also develop and maintain a formal risk assessment process for ongoing capital projects. BES should consider updating and communicating results of the risk assessment on a regular basis to key stakeholders such as the project teams (6B.2)
• BES lacks a formal process for identifying, tracking and managing lessons learned from the Consent Decree and completed projects (6B.3).	• BES should consider implementing a formal procedure for tracking and following up on lessons learned to help ensure implementation of process improvements on future projects. At a minimum, the lessons learned procedure for tracking progress should include clearly documenting the lesson learned, responsibility for follow up, action steps taken or work completed and open items. BES should consider assigning one individual responsible for verifying implementation of lessons learned on future projects. One suggestion is to include this task in the project controls function (6B.3).

Observations	Recommendations
6C. Communication and Reporting	
• BES does not have a formal process in place for program and project reporting requirements (6C.1).	• BES should clearly document the program and project reporting requirements including responsibility for completing reporting, required timing, and defined reporting requirements. Both program and project level processes should be documented. Program level reporting should define requirements for key stakeholders such as the City Council and the Georgia Environmental Facilities Authority, including timing, responsibility and data validation. Project level reporting should include assigned responsibility for updating the CIPR system, timing and frequency of updates, and clearly define reporting information. Project reporting timing and frequency should align with program level reporting to help ensure up to date and accurate program level information is reported to key stakeholders. In developing program and project reporting processes, BES should leverage existing systems such as Primavera, the CIPR, and Oracle to help ensure efficient and accurate reporting (6C.1).
6D. Procurement and Contract Management	
• DWM does not have a consultant or contractor evaluation process to determine overall performance, quality and timeliness of deliverables, contract compliance and ability to meet predetermined performance metrics (6D.1).	• DWM should consider developing a formal design consultant and contractor performance evaluation process to monitor vendor performance. This should start with a review of the current Department of Procurement vendor review process to determine if this will meet this need or if it can enhanced to support DWM needs. The objective of the evaluation process should be identifying design consultants and contractors that are not performing and should not be awarded future contract awards or task orders. DWM should work closely with the City of Atlanta's Department of Procurement to develop an efficient and effective performance evaluation process. The process should include clearly defined performance metrics regarding the ability to meet project milestones, assess the quality and timeliness of deliverables, schedule management, budget management, the ability to meet project manager expectations and contract compliance requirements (6D.1).

Observations	Recommendations
6E. Design Management	
• Facilities Design does not have standard internal communication protocols (6E.1).	• BES should consider establishing standard communications protocols and standing meetings to allow for knowledge sharing, training, communication of project issues and allow for greater transparency within Facilities Design. BES should work to provide clear lines of communication with team members to help ensure priority projects are a focus and clear communication of schedule milestones to all project team members (6E.1).
• In certain instances, Facilities Design project managers are not consistently applying PMM Section 5 - Design procedures (6E.2).	• Compliance with the BES Project Management Manual should be mandatory for all Facilities Design and Engineering project managers to help ensure consistency in delivering projects. BES Facilities Design should consider updating the PMM to reflect current processes and help ensure appropriate controls are in place during design (6E.2).
• There is inconsistent coordination and communication between Facilities Design and Construction Management or Engineering and Construction Management while performing constructability and operability reviews (6E.3).	• BES should develop a standard process by which the Construction Management project manager conducts a constructability and operability review at approximately 60% design for capital projects. Based on this review the construction project manager should develop a standard report for submittal to the Facilities Design project manager and design consultant regarding issues identified, proposed solutions, and action items where applicable (6E.3).
• BES does not have a formal documented process for scope and configuration controls to track changes during the design development process (6E.4).	• BES should develop scope and configuration controls to track changes made during design development to help ensure that design related changes minimize delay to the overall program schedule. BES should require the design consultants to implement a document control system to manage, track, and report scope and configuration changes throughout the design process. The formal process should include a tracking log for design review comments including specific action items and target resolution dates to allow for follow up by Facilities Design personnel (6E.4).

Observations	Recommendations
6F. Cost Estimating and Forecasting	
• Within BES, there are no formally defined processes for CIP budgeting, estimating or cost forecasting (6F.1).	• BES should develop a formal process for preparing initial project budgets to ensure a consistent process for initial budgets of capital projects. The process should clearly define key budget components such as contingency and escalation factors, use of standard templates, and clearly define roles of internal resources and external consultants in preparing initial project budgets. This should also include measurement against project budgets throughout the project lifecycle. As an example, the construction cost escalation should be included through the 50 percent point of construction. Section 2.3 – Project Initiation in the PMM should document the budget development process (6F.1).
• BES does not have an internal project cost estimator experienced in estimating large-scale water and sewer projects (6F.2).	• BES should consider hiring an experienced project estimator as an available resource to review initial project budgets, design consultant estimates, and contractor proposals for work authorizations (6F.2).
• BES project managers do not follow consistent processes, guidance when developing, or evaluating contract allowances (6F.3).	• BES should develop standard guidelines for project managers to develop and assess project contingency and allowances to help ensure consistency across capital projects. Construction Management project managers should consistently be involved in the development of allowances, as they are required to manage the project. Understanding that each project is unique and the level of contingency and allowances will need to be assessed on a project by project basis, BES should develop standard guidelines including responsibilities for developing allowances, approval of contract allowances, and clearly established allowance line items for each project (e.g., unforeseen conditions or owner's contingency) (6F.3).
6G. Financial Management	
• DWM does not require construction contractors to submit partial lien waivers with applications for payment as a condition for payment (6G.1).	• BES should require partial lien waivers to be submitted with each contractor application for payment as a condition for payment. BES should consider updating the Project Management Manual and standard General Conditions of the construction contract to include requirements regarding the submittal of lien waivers as a condition for approval for payment. BES should consider including the lien waiver requirement be incorporated into the "Pay Estimate Review Process Checklist" completed by the project manager for each application for payment (6G.1).

Observations	Recommendations
• Facilities Design and Engineering lack clearly defined review and approval procedures for design consultant requests for payment (6G.2).	• BES should develop and document in Section 5 – Design of the PMM a clearly defined review and approval process for design consultant invoices. Facilities Design and Engineering should consider leveraging existing documented procedures, process flows, and review checklists currently used by Construction Management for processing various construction consultants' invoices. BES should ensure processes clearly define the review procedures and required approvals for design consultant invoices. Project managers should ensure appropriate supporting documentation is a condition for payment for project invoices (6G.2).
• DWM does not have a documented policy or approval authority that requires certain levels of review and approval during the request for payment process (6G.3).	• DWM should develop and document an approval authority matrix for the request for payment process that limits the required approvals for processing contractor applications for payment based on the dollar value and type of payment. As an example, DWM may consider only requiring Commissioner's approval for requests for payment greater than a certain dollar amount (e.g., $250,000), or to approve the release of retainage to the contractor and major subcontractors. In developing approval authorities, DWM should consider City requirements, the acceptable level of review on each application for payment and target timelines for review and approval of invoices (6G.3).
• DWM does not close contracts timely (6G.4).	• DWM should close construction contracts on a regular basis as projects are completed (e.g., quarterly or semi-annually) to help ensure funding is available for additional capital projects. DWM should update project closeout procedures to include the timing of assessing contract closeout (6G.4).
6H. Change Management	
• Justification for work authorizations do not consistently agree to allowance coding (6H.1).	• BES should revise allowance procedures to include an allowance line item for "Owner Allowances" in order to code work authorizations related to City costs such as trailers, computers, office supplies, etc. for more transparency and more accurate classification of project costs (6H.1).

Observations	Recommendations
• BES directed the contractor to acquire project vehicles for use by City and contractor personnel through construction contract allowances rather than through the City Department of Public Works (6H.2).	• BES should evaluate the financial impacts of acquiring project vehicles through the City Department of Public Works in comparison of current practices requiring the contractor to purchase project vehicles through contract allowances. BES should consider project needs, timing of vehicle needs, liability issues, contractor markups, insurance and maintenance costs in evaluating the process for purchasing project vehicles for use by City employees (6H.2).
6I. Schedule Management	
• BES does not consistently prepare a "Master Schedule" for the project life cycle, from planning through construction, as required by the PMM Section 4.8.3 – Scheduling (6I.1).	• BES should develop the master project schedule in accordance with the PMM to monitor and manage the overall delivery cycle for capital projects. The master schedule should be high-level, and include key project components such as planning, design, procurement and construction. The overall project manager should maintain and update the master schedule on a regular basis (e.g., monthly) (6I.1).
• BES does not currently have personnel assigned to the project team with large-scale program and project scheduling experience (6I.2).	• BES should consider hiring a full-time internal master scheduler with experience in planning and scheduling large capital projects and programs. The full time scheduler should be made available to manage the program schedule, assist in construction schedule analysis at the project level, monitor design progress, identify causes of schedule variances and be a resource to project teams in delivering capital projects. BES may consider including the full-time scheduler in a project controls group as a resource to Construction Management (6I.2).

Observations	Recommendations
• BES does not consistently hold design consultants accountable to meet schedule and deliverable milestones during design development (6I.3).	• BES should put processes in place to monitor and manage design consultant schedules in accordance with milestone deliverable dates. Design consultants should be held accountable to provide deliverables and updated design schedule updates during the course of the project. If multiple parties are responsible for the delays, the delays should be analyzed to determine the party responsible for the delay. A detailed integrated project schedule that includes both design and construction with key milestones when design is 30%, 60% and 90% complete should be developed to manage the design process. Design reviews conducted at each key milestone may be used to verify the project design status. Additional ways to address this issue should include linking milestone payment to clearly defined milestones and deliverables that are verified and documented by the DWM project team prior to payment. It should be clear to the design team that if the schedule falls behind due to reasons linked to the design team, the design team will be required to accelerate the work, at no additional cost to DWM, to complete the design on time. DWM should also consider establishing liquidated damages for late deliverables, as long as these are not designed to be a penalty payment (6I.3).
6J. Systems and Tools	
• BES does not provide clearly defined document management processes regarding use of the ECMS document management system (6J.1).	• BES senior management should develop clearly defined document management processes and provide clear direction as to the expectations for use of the ECMS system. Processes should include the types of documents expected to be stored, an established file hierarchy organization and timing of implementation. In providing direction regarding use of ECMS, BES should consider the construction documents currently retained in Primavera, to avoid duplication of efforts and the best system for the capital program requirements (6J.1).

Observations	Recommendations
• BES is currently using multiple spreadsheets to track program and project budgets, costs to date, and forecasts, including ECMS and CIPR as well as project specific tracking sheets (6J.2, 6J.3).	• BES should develop an integrated cost management tool. DWM should develop a formal reporting system including project information linked to the CIPR from Oracle and Expedition to help ensure timely and accurate project reporting. In developing integrated systems and tools, DWM should consider the various reporting requirements and user needs for systems to ensure a comprehensive and efficient program is developed (6J.2). • BES should consider leveraging available technology tools to facilitate project monitoring and reporting to increase the increase the efficiency and effectiveness of personnel. This effort should be in conjunction with Recommendation 6J.2 above (6J.3).
Section 7. Operations	
7A. Billing	
• DWM does not have a documented methodology for resolving billing edit errors and permits manual edits to consumption on customer accounts (7A.1). • Each billing cycle there are a high number of accounts that do not receive actual meter readings due to meter read errors, equipment failures, or human error (7A.2). • The broken AMR meters prevent actual readings and increase estimated readings (7A.2). • The AMR conversion process contributes to a delay in repairing malfunctioning traditional (non-AMR) meters (7A.3). • Despite enQuesta's estimation capability, billing staff override the estimated value based on individual judgment. There was no written policy identified during fieldwork on applying forced usage estimates (7A.4). • Management does not conduct a comprehensive review of staff edits (7A.5).	• DWM should develop a documented policy defining specific guidance and parameters for applying consumption usage estimates without subjectivity by billing staff during the bill edit process (7A.1). • DWM should reduce the frequency of estimated consumption and increase the number of actual meter reads. Meters should not be estimated for multiple consecutive months. Work orders should be generated and prioritized when consecutive monthly estimates occur. DWM should confirm that newly installed and malfunctioning AMR meters are repaired or replaced timely (7A.2). • DWM should reduce the number of malfunctioning AMR meters and allow the replacement of broken traditional (non-AMR) meters if the AMR meter cannot be installed in a timely manner (7A.3). • DWM should develop a documented policy defining specific guidance and parameters for applying forced usage estimates. Forced usage estimates should not be used to lower consumption without proper cause (7A.4). • Management should review changes to customer consumption levels made by billing staff during the edit process (7A.5).

Observations	Recommendations
• There is a lack of consistency in creating and executing work orders which may result in system water loss and revenue loss (7A.6).	• Work orders should be generated by enQuesta or by Billing staff when there has been consecutive system estimations or when forced usage estimates are performed (7A.6).
• User access and permission rights in enQuesta are not aligned to Billing and other Bureau of Program Performance staff functions and are not regularly evaluated (7A.7).	• DWM should restrict access and permissions in the enQuesta system on a least-privileged basis or as minimally required by job function (7A.7).
• DWM is subject to the Fair and Accurate Credit Transactions Act (FACTA) that relates to identity theft prevention (7A.8).	• DWM should take steps to ensure compliance with future FACTA regulations (7A.8).
7B. Accounts Receivable, Memorandums of Understanding and Collections	
• DWM has made write offs in the past; however, DWM does not systematically write off bad debt (7B.1).	• DWM should work with City Council and Department of Law to develop documented procedures and practices for analyzing and writing off bad-debts in accordance with City Code and State legislation (7B.1).
• The City of Atlanta's General Fund owes DWM approximately $140 million for a combination of past water and sewer charges, other services performed, and borrowed funds (7B.2).	• DWM should assess the impact of large interfund balances to bond covenants (7B.2).
• DWM collection reports are only generated monthly (7B.3).	• DWM should produce collection reports on a continuous basis, and collections schedules should coincide with billing cycles (7B.3).
• Current collection procedures lead to varying and inconsistent collection efforts (7B.4).	• DWM should document and enforce standardized collections procedures (7B.4).
• DWM does not prioritize dispute resolution efforts (7B.5).	• DWM should document and enforce formal policies for the prioritization of accounts that the Disputes Resolution team addresses and for the number, volume, and frequency of allowable disputed charges (7B.5).
• DWM does not typically initiate legal prosecution for illegal water consumption (7B.6).	• Per City Code, DWM should initiate prosecution efforts for customers consuming water illegally (7B.6).

Observations	Recommendations
7C. Revenue and Cash Flow	
• DWM is not collecting impact fees on water, sewer, or stormwater services (7C.1). • DWM is not charging a stormwater fee and is in the process of developing a stormwater utility program (7C.1).	• DWM should work with the Law Department regarding the following: o Impact Fees - The City should further evaluate the feasibility of implementing an impact fee for new water and sewer connections taking into an account the large capital investment made in the City's water and sewer infrastructure. DWM should limit such impact fees to retail customers as the Wholesale customers are paying capital costs. o Stormwater Utility - DWM should consider a fee-based stormwater user charge. Additionally, establishing a separate fund to track and recover costs associated with the stormwater utility would help maintain the existing infrastructure and would allocate the costs equitably among the customers (7C.1).
• The City does not reimburse DWM's Office of Safety and Security (OSS) for training costs (7C.2). • DWM's Utoy Creek Water Reclamation Center laboratory is currently serving only DWM internal bureaus (7C.2).	• DWM should recover costs for training services provided to City departments and market the Utoy Creek laboratory services to a broader customer base (7C.2).
• If the authorized late fee of $5 or 5%, whichever is greater, had been applied to customer accounts, DWM would have generated additional revenue of approximately $1.4 million (7C.3). • If the authorized fee of $75 for "Same Day" services had been applied to customer accounts, DWM would have generated additional revenue of approximately $50,160 (7C.3). • DWM is not charging customers for damages to water meters as authorized by City Code 154-72 (7C.3).	• DWM should charge fees to customers as allowed by current or future City Code including: o Late Fees, o Same Day or After Hours Service, and o Charges for Damaged Water Meters (7C.3).
• DWM is not charging fees or penalties for illegal water consumption (7C.4).	• DWM should request changes to City Code to permit charging illegal consumption penalties (7C.4).

Observations	Recommendations
7D. Customer Service and Accounts	
• The inspections process is manual and paper-based (7D.1). • The Inspections team does not have access to the enQuesta system (7D.1).	• DWM should provide the Customer Service Inspections team with access to enQuesta to allow electronic access to work orders. DWM should also evaluate the use of handheld devices for inspectors to receive and update work orders electronically (7D.1).
• The current refund process is manual and initiated by the customer (7D.2). • DWM's current refund practices are not in compliance with City Code (7D.2).	• DWM should enhance the refund process to comply with City Code including: o Refunding deposits on closed customer accounts within 60 days of account closing; and o Tracking customer deposit dates according to the service initiation date and not the enQuesta transition date (7D.2).
• The City Code addressing the unclaimed deposits [Section 154-114, Paragraph (g)] may be in conflict with Georgia Code Title 44, Chapter 12, Article 5, known as the "Disposition of Unclaimed Property Act" (7D.3).	• DWM should seek legal advice on potential conflicts between City Code and Georgia Code concerning unclaimed property and settle accounts accordingly (7D.3).
7E. Water Loss	
• DWM data from the 2007 Water Loss Audit Report shows water loss at 26%. (7E.1). • DWM's estimated consumption may not reflect actual usage because DWM continues estimating consumption for accounts with malfunctioning traditional meters scheduled for AMR replacement (7E.1).	• DWM should establish a strategic initiative to reduce and monitor water loss on an ongoing basis and should include targeted water loss levels with performance measurements such as unbilled metered water and unbilled unmetered water (7E.1).
7F. Inter-jurisdictional Accounts	
• Management responsibilities are decentralized and limit DWM's ability to identify and resolve billing issues in a timely manner (7F.1). • DWM is operating without current formal agreements for services to inter-jurisdictional customers (7F.2).	• DWM should centralize management and reporting of inter-jurisdictional accounts to create greater accountability for billing and collections information (7F.1). • DWM should maintain current executed water service agreements with jurisdictions (7F.2).

Observations	Recommendations
• The six water agreements do not include provisions for delinquent payment penalties, charges for meter repairs, or key performance indicators (7F.3).	• DWM should establish contracts that more effectively mitigate service risks and include performance measures (7F.3).
• Thirteen of the thirty metered accounts for the inter-jurisdictional water customers were estimated for three or more months in calendar year 2008 (7F.4).	• DWM should reduce the usage of estimation and obtain actual reads (7F.4).
• The Operations and Maintenance (O&M) sewer bills do not include indirect and other support costs (7F.5).	• DWM should examine opportunities to recalculate the sewer O&M costs and then renegotiate sewer service agreements to adequately recover costs of services. DWM should bill a "Month 13" for inter-jurisdictional sewer customers to account for year-end financial adjustments (7F.5).
7G. Procurement	
• The roles and responsibilities of DWM Procurement are not clearly defined to stakeholders (7G.1).	• DWM should further define the roles and responsibilities for the DWM procurement division in conjunction with the predefined roles and responsibilities of DOP. DWM should work with DOP to develop agreed upon reporting tools that eliminate duplication of efforts and enhance coordination (7G.1).
• The procurement process is lengthy and creates numerous challenges to DWM in their efforts to meet their procurement needs (7G.2).	• DWM and DOP should document and evaluate current procurement processes to gain efficiencies and reduce lifecycle time (7G.2).
• Duplicative procurement review efforts between DWM Procurement and DOP create process delays (7G.3, 7G.4).	• DWM should enhance their quality review process, enabling them to be more accountable for their procurements. DWM should enhance their policies and procedures to include a standard review checklist for DWM Procurement staff reviews of bid packages. DWM should consider taking responsibility to assemble the procurement package, complete with legal review and necessary reprographics (7G.3). • DWM and DOP should work together to increase process visibility. DWM should create a centralized process for project managers to review procurement status reports and identify expected completion dates for procurements (7G.4).

Observations	Recommendations
• Electronic signature routing is not enabled for DWM procurements (7G.5). • Specific to DWM construction contracts, DWM does not require site visits as a condition for vendor bid submissions (7G.6).	• DWM should implement electronic signature approvals (7G.5). • DWM should consider including mandatory site visits as a condition for bidding construction projects (7G.6).
7H. Use of City Assets	
• Not all DWM assigned telecommunication devices are fully utilized and there is a lack of consistency in distribution of cell phone and BlackBerry devices (7H.1). • Device distribution does not directly correlate with job responsibilities and necessity or time spent outside of the office performing job duties (7H.1).	• DWM should review job functions and responsibilities to identify the need for telecom devices. DWM should limit distribution of telecom devices to employees whose job functions require travel away from assigned office space for the majority of each day (7H.1).

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9. Appendix B: List of Acronyms

Exhibit B.0 provides a list of acronyms and definitions identified in this report.

EXHIBIT B.0:

Term	Definition	Term	Definition
A/P	Accounts Payable	ECMS	Enterprise Content Management System
A/R	Accounts Receivable	EPA	Environmental Protection Agency
AICPA	American Institute of Certified Public Accountants	FY	Fiscal Year
AMR	Automated Meter Read(er)	GEFA	Georgia Environmental Facilities Authority
AWWA	American Water Works Association	GIS	Geographic Information System
BDW	Bureau of Drinking Water	JAQ	Job Activity Questionnaire
BES	Bureau of Engineering Services	KPMG	KPMG LLP
BFA	Bureau of Financial Administration	LOC	Line of Credit
BM	Bureau of Management	MOST	Municipal Option Sales Tax
BPP	Bureau of Program Performance	MOU	Memorandum of Understanding
BWP	Bureau of Watershed Protection	O&M	Operations and Maintenance
CAD	Computer Aided Drafting	OMB	Federal Office of Management and Budget
CAFR	Comprehensive Annual Financial Report	OME	Order of Magnitude Estimate
CIP	Capital Improvement Program	PMM	DWM's Project Management Manual
CIPR	Capital Improvement Program Reporting	PO	Purchase Order
City	City of Atlanta	R&E	DWM's Renewal and Extension Fund
CMG	Construction Management Group	RACI	Responsibility, Accountability, Consult and Inform
CSI	Construction Specifications Institute	SSO	Single Sewer Overflow
CSO	Combined Sewer Overflow	TECP	Tax Exempt Commercial Paper
DOF	City Department of Finance	WWTC	Bureau of Wastewater Treatment and Collection
DOL	City Department of Law		
DOP	City Department of Procurement		
DWM	Department of Watershed Management		

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DEPARTMENT OF
WATERSHED MANAGEMENT
ROBERT J. HUNTER
COMMISSIONER

April 23, 2009

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RE: KPMG Performance Review – Department of Watershed Management
April 21, 2009 Draft

The Department of Watershed Management has received and reviewed the April 21, 2009 draft audit report. Attached is our preliminary response to the observations and recommendations. Given the very short review time allowed in your schedule, our comments are exceptionally brief. We will prepare a supplemental document with a more detailed discussion.

Let me first congratulate and thank KPMG for the professional and cooperative work environment and relationship that was actively developed between their team and that of Watershed Management. In anticipation of the audit, Watershed began assembling over 1,200 documents in October 2008. Between December 2008 and April 2009, KPMG and Watershed worked closely on a daily basis to identify, analyze and assess information on the department's operations, performance, policies and procedures. The performance review is a snapshot of conditions at one point in time and the limitation imposed by the April 30, 2009 report deadline precluded the availability and analysis of some significant information (e.g., the financial rate analysis from the current revenue bond feasibility study). While the two teams have not always been in agreement, they have always been working towards a common goal: the continuous improvement of the Department of Watershed Management.

The Department's response in this document will be limited by the necessary schedule to a statement of our agreement, disagreement or partial agreement with the eighty-three findings and recommendations accompanied by a brief comment. However, there are a few larger issues that require a more detailed

response. These issues have been discussed with KPMG as part of the review process.

Risk Assessment

Watershed Management strongly believes that the findings and recommendations require a risk assessment. KPMG has properly stated that this was not part of the study scope and precluded by the extremely short schedule. However, without some quantification of the relative importance or risk of the findings and recommendations, it is difficult for the reader (and the Department) to assess the significance of the information and to prioritize actions. Which is the most critical recommendation to address: organizational structure, employee's perception of departmental strengths, development of a stormwater utility and additional fees, partial lien waivers, hiring rate modelers and/or project schedulers, documentation of program & project reporting requirements, taking steps to comply with future FACTA regulations or the review communication device policy? No organization has the resources to implement all changes simultaneously. In fact, some recommendations require programs of sequential events that can only progress if predecessor actions are completed (e.g., water loss program). We will attempt to add this risk assessment perspective in our subsequent document.

Financial Plan – Alternative Scenario (5B)

KPMG and Watershed have had extensive discussions, have a mutual understanding but a disagreement concerning the alternative financial scenario presentation. Both parties understand that the financial analysis was limited by the simple fact that KPMG's performance review work and Watershed's work on our current bond offering were on similar schedules. This meant that the new, comprehensive financial feasibility report for the 2009 bond issue was not reviewed by KPMG. The basis of Watershed's disagreement with KPMG's alternative financial scenario is that KPMG changed two of the basic financial assumptions for the 2008 rate analysis but did not change other significant assumptions. Assuming that the department will spend less money for operating expenses and capital programs yields the predicable result that more revenue will be available if all else is equal. But in the real world all else is not equal between 2008 and 2009. For example, the 2008 rate analysis included the assumption that new debt would be at a 4.65% interest rate. KPMG increased that rate to 5.0%. The estimate in the current bond financial model and reflective of current market conditions is 7.15%, a cost increase of almost $60 million.

Conditions have changed between 2008 and 2009 and a comprehensive list of modified assumptions must be included in the analysis. These modified factors include, among others, increases in the costs for the refund cost of the Tax Exempt Commercial Paper Program ($55.5 million increase) and changes in the Direct, Indirect, PILOT and Franchise costs ($36.2 million increase). This does not mean that any of the analyses are incorrect. It does mean that they were done at different times, with different assumptions and with differences in the availability of data and time for analysis. We would argue that the most comprehensive and up to date analysis should be the basis for discussion.

Watershed Management is in agreement that there are essentially four options for utilizing net revenues, if any actually occur. In fact, all four options were discussed by the City's financial team (Departments of Finance & Watershed Management) and with City Council during last year's budget workshops and hearings. The establishment of a Rate Stabilization Fund was discussed in the form of a reserve account to address the increased volatility of the sales tax revenue. The PayGo capital investment option was discussed during our budget presentation in Council Chambers with the CFO (Janice Davis) stating unequivocally that any net revenues should be used for this option. Given our continued need to bond finance the capital program, the third option of reducing outstanding debt received the least attention. However, rate adjustments were discussed in some detail and some Council Members requested and received financial model runs for alternative rate scenarios.

Utility Industry Benchmark Comparisons

The performance review includes a very limited number of direct comparisons to utility performance benchmarks. The Department has found that benchmarking with other utilities has been a productive exercise not only to gauge effectiveness and efficiency but also to develop implementation strategies. We will include additional information in our full evaluation document.

Precision of Findings and Recommendations

I appreciate the precise phrasing KPMG used in their findings and recommendations. While it requires close attention by the reader, there are significant differences in the specific wording used. For example, the lack of a "centralized process" is entirely different from the lack of a process. The judicious use of these qualifying statements (e.g., centralized, formal, dedicated,

consistently, clearly defined, etc.) has facilitated both the discussion and implementation of findings and recommendations.

I met with Watershed Management employees in a series of meetings last Fall to prepare and orient them for the performance audit and I emphasized three main points. First, their expectations should be based on the performance audit process. The purpose of a performance audit is to identify ways that an organization can become more effective and efficient. Therefore, it is by design focused on items that can be improved. A performance audit generally does not discuss what is working well. I thank the KPMG staff for their verbal praise of Watershed's operational performance and improvements during the audit; including cost control and effectiveness (i.e., getting things done).

My second point was that the department's approach to the audit must be cooperative and professional. I believe both teams have excelled in this regard.

My final point was that we needed to view the auditor as an Advisor and not an Adversary. The Vision Statement for Watershed Management is "Atlanta will be THE leader of the water resources industry – serving our customers, protecting our watersheds and improving the environment". Sections 2 and 3 of the performance review report present an abridged view of the challenges Watershed faced when formed in late 2002 and the progress and accomplishments to date. We have made great improvements. However, the implementation of our strategic plan is not complete and our continuous improvement efforts must continue for several years before we approach our vision. I thank KPMG, in their role of advisor, for assisting us with that effort.

Sincerely,

Robert J. Hunter, Commissioner
Department of Watershed Management

Ref #	Audit Finding	Audit Recommendation	DWM Response on the Finding *(a detailed response will be provided in a separate report)*
OVERARCHING ITEMS			
Organizational Structure			
4A.1.a	DWM's current organizational structure does not allow for effective span of control.(4A.1)	DWM should improve organizational structure to better align to their strategic mission for effectiveness and accountability. The new structure should reduce span of control levels, better align to function, streamline processes, reduce fragmented or redundant processes, and provide a direct support position to the Commissioner. Several different solutions could enhance the operating effectiveness of DWM's organizational structure. Different designs will yield varying results (4A.1)	**PARTIALLY AGREE:** DWM's organizational structure has evolved over the last few years and continues to change this year and in next year's budget. Our goal is to provide effective and efficient service to our customers and we will continue to evaluate our structure to achieve that goal.
4A.1.b	DWM's current structure does not provide for a focused position to directly support the Commissioner.(4A.1)	See previous recommendation.	**PARTIALLY AGREE:** DWM does not have this position; however, in the water and wastewater utility industry, such a position would be exceptionally uncommon.
4A.1.c	DWM's current organizational structure does not consistently align to function.(4A.1)	See previous recommendation.	**PARTIALLY AGREE:** DWM's structure is evolutionary in nature and during the period of this audit, some functions were realigned and this type of realignment will continue in the future as appropriate.
4A.1.d	DWM lacks centralized processes in the areas of human resources and procurement.(4A.1)	See previous recommendation.	**PARTIALLY AGREE:** DWM has allocated these resources at both the department and bureau levels. We have already made realignments and will continue to make changes as appropriate.
4A.2	The processes, responsibilities, and interaction between DWM and the City Departments of Human Resources and Procurement are not clearly defined.(4A.2).	DWM should centralize human resources and procurement processes at the Department level. DWM should work with City Departments of Human Resources and Procurement to develop a communication plan to enhance accountability and clearly define roles and responsibilities (4A.2).	**PARTIALLY AGREE:** DWM agrees that the processes, responsibilities and interactions between DWM, DHR and DOP need improvement. We do not agree that the solution is the communication plan.
4A.3	DWM does not have a central location or single point of contact for tracking, monitoring, and reporting compliance requirements. (4A.3)	DWM should implement and maintain a consolidated system for tracking and monitoring compliance requirements (4A.3).	**AGREE:** While a single point of compliance is not recommended because the subject matter experts are within the respective bureaus, we do agree that developing a compliance tracking and reporting system to oversee bureau activities for compliance would be beneficial. We are evaluating the use of our new enterprise content management system (ECMS) as the vehicle for this effort.
4A.4	The DWM internal audit function is not organizationally aligned to allow effective functionality.(4A.4)	DWM should reorganize the internal audit function to report directly to the DWM Commissioner. DWM should increase internal audit resources in order to enhance the evaluation and monitoring of DWM performance, risks, and controls (4A.4).	**AGREE:** Watershed has previously evaluated this as part of our "Ideal" utility financial organization and agree that the internal auditor should report to the Office of the Commissioner.

Employee Perception			
4B.1	DWM employees completed a Job Activity Questionnaire ("JAQ") in an effort to gain a better understanding of DWM operations. The JAQ identified perceived common DWM strengths and areas for improvement.(4B.1)	DWM should evaluate the perceived common strengths and areas for improvement identified in the JAQ. Action plans should be developed to continue current perceived strengths and address current perceived areas for improvement. DWM should consider performing a periodic employee satisfaction survey to monitor and measure employee satisfaction (4B.1).	**PARTIALLY AGREE:** Watershed values the opinions of our employees. While this information represents responses from a small percentage of our total employees, we will evaluate the findings and give them fair consideration.
SECTION 5. FINANCIAL MANAGEMENT			
5C. Financial Plan			
5C.1	The Rate Model is the primary tool utilized by DWM to establish customer rates, which results in hundreds of millions of dollars in revenue. DWM has a high level of dependency on external consultants for the management and operation of the Rate Model (5C.1).	DWM staff should be skilled in the Rate Model processes and should be accountable for the inputs and outputs of the Rate Model. The Department of Finance and other City stakeholders should perform analysis apart from DWM or DWM consultants to review and agree upon Rate Model assumptions, inputs, and outputs (5C.1).	**PARTIALLY AGREE:** DWM has included in the FY2010 budget additional In-house resources related to financial modeling. Currently, we rely on our consultant for the overall development of the rate forecast model. However, the DWM staff is responsible for the understanding, evaluation and final agreement of the inputs and outputs of the rate model. Also, DOF is responsible for review of the financial analysis and recommendations. Any additional independent reviews would be outside normal water utility practices.
5C.2	There are several options available to DWM and the City for utilizing the projected net operating revenues. The recent trend in reduced operating expenditures as well as the reduced level of annual capital improvement program spending is projected to generate positive net operating revenues for the current fiscal year (FY 2008-09) as well as the remaining fiscal years of the 2008 Rate Package (5C.2).	City Council should closely evaluate the four options discussed below. The City should balance the financial impact on the rate payers, projected accumulated balances in operating funds, and the financial stability desired by the bond market. o Establish a Rate Stabilization Fund -Dedicate a portion of net operating revenues to a special purpose fund to help mitigate or avoid future rate increases; o Increase Capital Investment Using PayGo -Apply a portion of net operating revenues to planned capital projects; o Reduce Outstanding Debt -Apply a portion of net operating revenues to reduce outstanding debt obligations; and o Adjust Planned Retail Water and Sewer Rate Increases -Apply a portion of net operating revenues to defer or reduce the planned rate increases included in the 2008 Rate Package (5C.2).	**PARTIALLY AGREE:** DWM has and will always continue to explore various methods of structuring our finances. All of these options have been explored in the past. DWM agrees that there are essentially four options for utilizing Net Revenues; however, DWM strongly disagrees with the audit's partial financial analysis, which modifies only two assumptions from the 2008 rate analysis, when in fact there are a large number of assumptions that have significantly changed from 2008 to 2009. The full analysis indicates that Net Revenues will be significantly lower than the audit suggests. See additional comments in the cover letter.

5D. Cash Management, Processes and Controls			
5D.1	BFA does not maintain comprehensive procurement supporting documentation or have direct access to vendor invoices to proactively assist DOF in resolving invoice issues (5D.1).	BFA should increase coordination throughout DWM bureaus to centrally maintain procurement supporting documentation. BFA should train bureau A/P representatives to properly document PO and receipt of assets to help reduce the number of matching issues. BFA and DOF should consider scanning vendor invoices and receiving information to increase DWM visibility into the A/P process and improve fixed asset documentation (5D.1).	**PARTIALLY AGREE:** Prior to Oracle the A/P function was centralized in BFA, but upon the implementation of Oracle, the decision was made to centralize this in the DOF A/P division; therefore, DWM's Bureau of Finance does not maintain comprehensive documentation. DWM is evaluating the use of document management system (ECMS) to streamline and control this process.
5D.2	As of January 21, 2009, DWM had 174 invoices on hold with the average hold time being 194 days (5D.2).	BFA should continue to routinely monitor the Invoices on Hold report and work with DOF to facilitate more timely vendor payment. DOF and BFA should establish a target timeframe (e.g. 30 days) to benchmark payment processing once the invoice and goods or services have been received (5D.2).	**PARTIAL AGREEMENT:** Recent analysis of the invoices on hold report demonstrated that the vast majority of the items were duplicates of invoices that had already been paid; therefore, the average hold time is incorrect. DWM does routinely monitor the invoices on hold report and we have an established payment target time frame.
5D.3	The following issues have been identified: • Lack of documentation of fixed asset purchases; • DOF has not distributed asset tags since May 2008; and • Inventory of fixed assets is not timely (5D.3).	BFA should work with DOF to ensure that DWM fixed assets are tagged and recorded appropriately. DWM should perform an annual physical inventory of fixed assets (5D.3).	**AGREE:** DWM will continue to work with DOF to ensure that the department's assets are recorded appropriately.
5D.4	There is not a clear documented correlation between City positions that DWM funds and the services that DWM receives (5D.4).	DWM and City departments should work together to more clearly define the roles and responsibilities of those positions DWM is funding (5D.4).	**AGREE:** DWM will continue to work with the other City departments to ensure that DWM funded positions are utilized in a way that is efficient for the department.
5D.5	In reviewing the City's FY2007 Indirect Cost Allocation Plan (Cost Plan), the following potential issues were identified: • DWM is not consistently receiving credit for positions funded in other City departments allocating costs; • Cost drivers do not consistently correlate cost to benefit; and • DWM receives duplicate allocations (5D.5).	DWM and the City should review allocation approaches and statistics utilized in the City wide Cost Allocation Plan to help ensure accuracy (5D.5).	**PARTIALLY AGREE:** DWM already reviews the allocation plan upon receipt from DOF. For example, our last review revealed that approx. $7 million was not allocated appropriately and resulted in an appropriate credit to DWM. We will continue to work with DOF to evaluate and revise this process.

SECTION 6. CAPITAL AND CONSTRUCTION			
6A. Program Management and Organization			
6A.1	BES does not assign an overall project manager to oversee capital projects from planning through closeout to ensure appropriate oversight of cost and schedule management. (6A.1)	BES should consider requiring the use of project teams during the planning process and assigning responsibility for overall delivery of the project to an overall project manager. The project manager should be responsible for managing the overall project delivery budget and schedule including key project activities such as planning, design, procurement, construction and project closeout. The project manager should also be responsible for monitoring and reporting on project risks. BES should reflect updates to the project delivery process in the Project Management Manual. BES should carefully consider the assignment of an overall project manager to ensure they are not adding an additional level of authority that might hinder the delivery cycle. The project manager's roles and responsibilities should be clearly defined and communicated to project teams and may require additional training for staff (6A.1).	**AGREE IN PART:** DWM has previously considered this approach. Based on the vast differences in skill sets to manage a program of this size through each phase, we chose to uses project teams through design and construction phases that are composed of representatives from the user bureau, engineering design and construction management. In light of the auditor's recommendation, we will reevaluate this structure to ensure we are managing the program as efficiently and effectively as possible.
6A.2	BES lacks a succession plan for transferring knowledge, sharing data or providing appropriate training for key capital program processes (6A.2).	DWM should develop a succession plan for management of BES and document key senior management responsibilities and procedures regarding management of the capital program and project delivery. DWM should consider identifying potential successors to senior management positions based on qualifications and experience (6A.2).	**AGREE:** DWM agrees. Our strategic plan highlights the need for succession planning through the department and not just in BES. DWM's human resources group will continue to work on this priority.
6A.3	The PMM does not clearly define the roles and responsibilities for the end-to-end project delivery cycle (6A.3)	The updated PMM should clearly define the roles and responsibilities for the end-to-end project delivery cycle as well as each detailed section of the PMM. BES may consider developing a responsibility matrix to be included in the introduction section or the appendix to the PMM clearly demonstrating roles and responsibilities in overall delivery of capital projects. BES may consider using a Responsibility, Accountability, Consult and Inform (RACI) matrix to provide a summary to stakeholders of the personnel involved with each of the key activities in project delivery (6A.3).	**AGREE:** DWM will update the PMM to ensure that roles and responsibilities are clearly defined and easy to reference for both personnel and stakeholders.

6B. Project Controls and Risk Management			
6B.1	BES does not currently have a dedicated project controls group. (6B.1)	BES should consider developing a project controls group to act as a resource in delivering capital projects. Key responsibilities should include completing independent cost estimates or analysis of initial budgets, cost estimates and work authorizations, performing schedule analysis, providing training, tracking lessons learned, and overseeing risk management functions. In addition, the project controls group can prepare or validate program and project reporting, assist in training and helping ensure consistent delivery across capital projects. In developing a project controls group, BES should structure the group as a resource to the project delivery teams, not add an additional layer of oversight. The project controls group should include an experienced cost estimator and scheduler for a program the size and scale of DWM (6B.1).	**AGREE:** DWM utilizes the PMT (Program Management Team) as a significant part of our Project Controls Group, the development of our in-house project controls group has been a priority in the last year and we will continue to recruit Program level Schedulers and Estimators. The current condition of the construction industry should facilitate that recruitment and hiring.
6B.2	BES does not use a formal risk assessment process to identify potential project and program risks (6B.2).	BES should consider developing a formal risk assessment and analysis process that will help identify risks to the overall capital program and ongoing capital projects. The risk assessment tools should be used to identify, evaluate the potential impacts, monitor, communicate and report on project risks. Additional uses of these tools should include developing contingency or allowance budgets for project risks. In addition, the process can monitor the implementation of developed risk mitigation or response action items. A risk register or risk assessment can be a useful tool in communicating the impact of project risks to senior management and key project stakeholders. BES should also develop and maintain a formal risk assessment process for ongoing capital projects. BES should consider updating and communicating results of the risk assessment on a regular basis to key stakeholders such as the project teams (6B.2)	**PARTIALLY AGREE:** Risk assessments are not conducted through a formal matrix format as discuss in the audit; however, the department uses other risk assessment methodologies. We will consider the use of a more formal risk matrix approach.
6B.3	BES lacks a formal process for identifying, tracking and managing lessons learned from the Consent Decree and completed projects (6B.3).	BES should consider implementing a formal procedure for tracking and following up on lessons learned to help ensure implementation of process improvements on future projects. At a minimum, the lessons learned procedure for tracking progress should include clearly documenting the lesson learned, responsibility for follow up, action steps taken or work completed and open items. BES should consider assigning one individual responsible for verifying implementation of lessons learned on future projects. One suggestion is to include this task in the project controls function (6B.3).	**PARTIALLY AGREE:** BES does have a process for documenting lessons learned. However, we will evaluate how to make this process more formal and ensure that the lessons are tracked and evaluated more consistently and comprehensively.

6C. Communication and Reporting			
6C.1	BES does not have a formal process in place for program and project reporting requirements (6C.1).	BES should clearly document the program and project reporting requirements including responsibility for completing reporting, required timing, and defined reporting requirements. Both program and project level processes should be documented. Program level reporting should define requirements for key stakeholders such as the City Council and the Georgia Environmental Facilities Authority, including timing, responsibility and data validation. Project level reporting should include assigned responsibility for updating the CIPR system, timing and frequency of updates, and clearly define reporting information. Project reporting timing and frequency should align with program level reporting to help ensure up to date and accurate program level information is reported to key stakeholders. In developing program and project reporting processes, BES should leverage existing systems such as Primavera, the CIPR, and Oracle to help ensure efficient and accurate reporting (6C.1).	**PARTIALLY AGREE:** BES has three primary management and reporting programs (Primavera, Expedition and CIPR) and while each manager knows the details of their reporting requirements; however, there is not a formal process currently in place that details all the reporting requirements. DWM currently has a project that will links the various management and reporting programs into a consolidated system and will be the basis for meeting the formal project reporting requirements.
6D. Procurement and Contract Management			
6D.1	DWM does not have a consultant or contractor evaluation process to determine overall performance, quality and timeliness of deliverables, contract compliance and ability to meet predetermined performance metrics (6D.1).	DWM should consider developing a formal design consultant and contractor performance evaluation process to monitor vendor performance. This should start with a review of the current Department of Procurement vendor review process to determine if this will meet this need or if it can be enhanced to support DWM needs. The objective of the evaluation process should be identifying design consultants and contractors that are not performing and should not be awarded future contract awards or task orders. DWM should work closely with the City of Atlanta's Department of Procurement to develop an efficient and effective performance evaluation process. The process should include clearly defined performance metrics regarding the ability to meet project milestones, assess the quality and timeliness of deliverables, schedule management, budget management, the ability to meet project manager expectations and contract compliance requirements (6D.1)	**PARTIALLY AGREE:** DWM currently uses DOP's procedures and forms for evaluating consultants and contractors. We agree that a more detailed evaluation process is desirable and have developed a draft consultant evaluation form that is currently under internal review.

6E. Design Management			
6E.1	Facilities Design does not have standard internal communication protocols (6E.1).	BES should consider establishing standard communications protocols and standing meetings to allow for knowledge sharing, training, communication of project issues and allow for greater transparency within Facilities Design. BES should work to provide clear lines of communication with team members to help ensure priority projects are a focus and clear communication of schedule milestones to all project team members (6E.1).	**PARTIALLY AGREE:** BES has initiated monthly meetings with all project and group managers to report on project status and budgets and to review new policies and requirements for project implementation.
6E.2	In certain instances, Facilities Design project managers are not consistently applying PMM Section 5 -Design procedures (6E.2).	Compliance with the BES Project Management Manual should be mandatory for all Facilities Design and Engineering project managers to help ensure consistency in delivering projects. BES Facilities Design should consider updating the PMM to reflect current processes and help ensure appropriate controls are in place during design (6E.2).	**AGREE:** BES was made aware by the audit that at least one manager was unaware of some procedures in the PMM. We will continue to cover the PMM in the technical training plans and monitor its use more closely with all project managers.
6E.3	There is inconsistent coordination and communication between Facilities Design and Construction Management or Engineering and Construction Management while performing constructability and operability reviews (6E.3).	BES should develop a standard process by which the Construction Management project manager conducts a constructability and operability review at approximately 60% design for capital projects. Based on this review the construction project manager should develop a standard report for submittal to the Facilities Design project manager and design consultant regarding issues identified, proposed solutions, and action items where applicable (6E.3).	**PARTIALLY AGREE:** BES uses ongoing/continual process reviews versus the audit's recommendation of set percent design completion reviews; however, we will re-evaluate this recommended method to increase consistency.
6E.4	BES does not have a formal documented process for scope and configuration controls to track changes during the design development process (6E.4).	BES should develop scope and configuration controls to track changes made during design development to help ensure that design related changes minimize delay to the overall program schedule. BES should require the design consultants to implement a document control system to manage, track, and report scope and configuration changes throughout the design process. The formal process should include a tracking log for design review comments including specific action items and target resolution dates to allow for follow up by Facilities Design personnel (6E.4).	**PARTIALLY AGREE:** BES currently has tracking methods that apply to specific phases of the project; however, the tracking for all phases of the project are not centralized in one place. This recommendation is one of the issues being addressed in our on-going systems integration project.

6F. Cost Estimating and Forecasting			
6F.1	Within BES, there are no formally defined processes for CIP budgeting, estimating or cost forecasting (6F.1).	BES should develop a formal process for preparing initial project budgets to ensure a consistent process for initial budgets of capital projects. The process should clearly define key budget components such as contingency and escalation factors, use of standard templates, and clearly define roles of internal resources and external consultants in preparing initial project budgets. This should also include measurement against project budgets throughout the project lifecycle. As an example, the construction cost escalation should be included through the 50 percent point of construction. Section 2.3 -Project Initiation in the PMM should document the budget development process (6F.1).	**PARTIALLY AGREE:** Project managers for design and construction actively work with the project teams reviewing items of cost. Employing independent project estimators from outside service firms is more common in Large federal programs.
6F.2	BES does not have an internal project cost estimator experienced in estimating large-scale water and sewer projects (6F.2).	BES should consider hiring an experienced project estimator as an available resource to review initial project budgets, design consultant estimates, and contractor proposals for work authorizations (6F.2).	**PARTIALLY AGREE:** BES does not have an internal project cost estimator. We use independent project estimators as is common in large Federal programs. Our on-going recruitment efforts should be facilitated by the current state of the construction industry.
6F.3	BES project managers do not follow consistent processes, guidance when developing, or evaluating contract allowances (6F.3).	BES should develop standard guidelines for project managers to develop and assess project contingency and allowances to help ensure consistency across capital projects. Construction Management project managers should consistently be involved in the development of allowances, as they are required to manage the project. Understanding that each project is unique and the level of contingency and allowances will need to be assessed on a project by project basis, BES should develop standard guidelines including responsibilities for developing allowances, approval of contract allowances, and clearly established allowance line items for each project (e.g., unforeseen conditions or owner's contingency) (6F.3).	**PARTIALLY AGREE:** BES has not developed a formal process because the development of allowances requires input on several levels to plan for project success. We will formalize our process and development guidance for project managers
6G. Financial Management			
6G.1	DWM does not require construction contractors to submit partial lien waivers with applications for payment as a condition for payment (6G.1).	BES should require partial lien waivers to be submitted with each contractor application for payment as a condition for payment. BES should consider updating the Project Management Manual and standard General Conditions of the construction contract to include requirements regarding the submittal of lien waivers as a condition for approval for payment. BES should consider including the lien waiver requirement be incorporated into the "Pay Estimate Review Process Checklist" completed by the project manager for each application for payment (6G.1).	**AGREE:** Currently a partial lien waiver is only required when the project is completed and finalized. We will further evaluate this recommendation.

6G.2	Facilities Design and Engineering lack clearly defined review and approval procedures for design consultant requests for payment (6G.2).	BES should develop and document in Section 5 - Design of the PMM a clearly defined review and approval process for design consultant invoices. Facilities Design and Engineering should consider leveraging existing documented procedures, process flows, and review checklists currently used by Construction Management for processing various construction consultants' invoices. BES should ensure processes clearly define the review procedures and required approvals for design consultant invoices. Project managers should ensure appropriate supporting documentation is a condition for payment for project invoices (6G.2).	**PARTIALLY AGREE:** BES does have defined procedures for review and approval of consultant's pay requests. The audit revealed some inconsistency in adherence to those procedures. We are addressing this through additional training and control procedures. We will also update the PMM accordingly.
6G.3	DWM does not have a documented policy or approval authority that requires certain levels of review and approval during the request for payment process (6G.3).	DWM should develop and document an approval authority matrix for the request for payment process that limits the required approvals for processing contractor applications for payment based on the dollar value and type of payment. As an example, DWM may consider only requiring Commissioner's approval for requests for payment greater than a certain dollar amount (e.g., $250,000), or to approve the release of retainage to the contractor and major subcontractors. In developing approval authorities, DWM should consider City requirements, the acceptable level of review on each application for payment and target timelines for review and approval of invoices (6G.3).	**AGREE:** DWM is conservative in that it requires a large number of invoice approvals. We will devise ways to streamline this process.
6G.4	DWM does not close contracts timely (6G.4).	DWM should close construction contracts on a regular basis as projects are completed (e.g., quarterly or semi-annually) to help ensure funding is available for additional capital projects. DWM should update project closeout procedures to include the timing of assessing contract closeout (6G.4).	**AGREE:** This is a good practice especially with large projects.
6H. Change Management			
6H.1	Justification for work authorizations do not consistently agree to allowance coding (6H.1).	BES should revise allowance procedures to include an allowance line item for "Owner Allowances" in order to code work authorizations related to City costs such as trailers, computers, office supplies, etc. for more transparency and more accurate classification of project costs (6H.1).	**AGREE:** BES is in agreement with the establishment of an additional allowance item. DWM will re-evaluate this practice, which is commonly used for construction projects nationally.
6H.2	BES directed the contractor to acquire project vehicles for use by City and contractor personnel through construction contract allowances rather than through the City Department of Public Works (6H.2).	BES should evaluate the financial impacts of acquiring project vehicles through the City Department of Public Works in comparison of current practices requiring the contractor to purchase project vehicles through contract allowances. BES should consider project needs, timing of vehicle needs, liability issues, contractor markups, insurance and maintenance costs in evaluating the process for purchasing project vehicles for use by City employees (6H.2).	**PARTIALLY AGREE:** The vehicles were provided under provisions stated in contract documents approved by the DOP and authorized by City Council. The Law Department reviewed these provisions and found no violation of City policies. We will further evaluate this practice.

6I. Schedule Management			
6I.1	BES does not consistently prepare a "Master Schedule" for the project life cycle, from planning through construction, as required by the PMM Section 4.8.3 - Scheduling (6I.1).	BES should develop the master project schedule in accordance with the PMM to monitor and manage the overall delivery cycle for capital projects. The master schedule should be high-level, and include key project components such as planning, design, procurement and construction. The overall project manager should maintain and update the master schedule on a regular basis (e.g., monthly) (6I.1).	**DISAGREE:** BES has developed a Master Program schedule which is maintained by a dedicated staff member and the PMT. The Master Schedule is discussed at the monthly PM and Group Managers meeting.
6I.2	BES does not currently have personnel assigned to the project team with large-scale program and project scheduling experience (6I.2).	BES should consider hiring a full-time internal master scheduler with experience in planning and scheduling large capital projects and programs. The full time scheduler should be made available to manage the program schedule, assist in construction schedule analysis at the project level, monitor design progress, identify causes of schedule variances and be a resource to project teams in delivering capital projects. BES may consider including the full-time scheduler in a project controls group as a resource to Construction Management (6I.2).	**PARTIALLY AGREE:** Historically, BES relied on embedded consultant staff for project scheduling tasks; however, BES has several senior members with extensive private sector and specialty experience that provide direction to the design firms. BES will continue to seek the hire of this level of talent if we can overcome the competitive private sector pay scales.
6I.3	BES does not consistently hold design consultants accountable to meet schedule and deliverable milestones during design development (6I.3)	BES should put processes in place to monitor and manage design consultant schedules in accordance with milestone deliverable dates. Design consultants should be held accountable to provide deliverables and updated design schedule updates during the course of the project. If multiple parties are responsible for the delays, the delays should be analyzed to determine the party responsible for the delay. A detailed integrated project schedule that includes both design and construction with key milestones when design is 30%, 60% and 90% complete should be developed to manage the design process. Design reviews conducted at each key milestone may be used to verify the project design status. Additional ways to address this issue should include linking milestone payment to clearly defined milestones and deliverables that are verified and documented by the DWM project team prior to payment. It should be clear to the design team that if the schedule falls behind due to reasons linked to the design team, the design team will be required to accelerate the work, at no additional cost to DWM, to complete the design on time. DWM should also consider establishing liquidated damages for late deliverables, as long as these are not designed to be a penalty payment. (61.3).	**DISAGREE:** BES has met every design and construction milestone for the CSO and SSO Consent Decrees. However, we will review the auditor's recommendations and evaluate potential improvements to our program.

6J. Systems and Tools			
6J.1	BES does not provide clearly defined document management processes regarding use of the ECMS document management system (6J.1).	BES senior management should develop clearly defined document management processes and provide clear direction as to the expectations for use of the ECMS system. Processes should include the types of documents expected to be stored, an established file hierarchy organization and timing of implementation. In providing direction regarding use of ECMS, BES should consider the construction documents currently retained in Primavera, to avoid duplication of efforts and the best system for the capital program requirements (6J.1).	**AGREE**: ECMS is a document management system for the entire department and was only in test mode through the end of 2008. BES and DWM are still in the process of defining and fully implementing its use.
6J.2	BES is currently using multiple spreadsheets to track program and project budgets, costs to date, and forecasts, including ECMS and CIPR as well as project specific tracking sheets (6J.2, 6J.3).	BES should develop an integrated cost management tool. DWM should develop a formal reporting system including project information linked to the CIPR from Oracle and Expedition to help ensure timely and accurate project reporting. In developing integrated systems and tools, DWM should consider the various reporting requirements and user needs for systems to ensure a comprehensive and efficient program is developed (6J.2).	**PARTIALLY AGREE:** DWM is currently integrating our multiple project management financial and procurement systems. The results of this effort will meet the recommendation of the audit.
6J.3	Same as above	BES should consider leveraging available technology tools to facilitate project monitoring and reporting to increase the efficiency and effectiveness of personnel. This effort should be in conjunction with Recommendation 6J.2 above (6J.3).	**AGREE:** The effort is currently underway.
SECTION 7. OPERATIONS			
7A. Billing			
7A.1	DWM does not have a documented methodology for resolving billing edit errors and permits manual edits to consumption on customer accounts (7A.1).	DWM should develop a documented policy defining specific guidance and parameters for applying consumption usage estimates without subjectivity by billing staff during the bill edit process (7A.1).	**PARTIALLY AGREE:** Business Process Mapping had been previously developed for the bill editing process; however, we recently expanded this to include policies that address a wider range of scenarios that would warrant a bill to be edited.
7A.2	Each billing cycle there are a high number of accounts that do not receive actual meter readings due to meter read errors, equipment failures, or human error (7A.2).	DWM should reduce the frequency of estimated consumption and increase the number of actual meter reads. Meters should not be estimated for multiple consecutive months. Work orders should be generated and prioritized when consecutive monthly estimates occur. DWM should confirm that newly installed, malfunctioning AMR meters are repaired or replaced timely (7A.2).	**AGREE:** DWM agrees that the number of estimated readings are higher than we desire, which is why DWM initiated the AMR project for the primary purpose of replacing old and non-functioning meters and installing devices on each meter that permit automated (non-manual) readings.

7A.2	The broken AMR meters prevent actual readings and increase estimated readings (7A.2).	Same as above	**PARTIALLY AGREE:** Any type of broken meter, AMR or traditional, prevents actual readings and results in an estimated reading. For those AMR meters that are broken, there is a formal process for repairing those meters.
7A.3	The AMR conversion process contributes to a delay in repairing malfunctioning traditional (non-AMR) meters (7A.3).	DWM should reduce the number of malfunctioning AMR meters and allow the replacement of broken traditional (non-AMR) meters if the AMR meter cannot be installed in a timely manner (7A.3).	**PARTIALLY AGREE:** The AMR Project provided a systematic approach for replacing broken and old meters. Based on the evaluation of resources, a strategic decision was made to allow the majority of meters to be replaced through the AMR project. Since August 2007, a total of 11,500 work orders for non-functioning non AMR meters have been completed.
7A.4	Despite enQuesta's estimation capability, billing staff override the estimated value based on individual judgment. There was no written policy identified during fieldwork on applying forced usage estimates (7A.4).	DWM should develop a documented policy defining specific guidance and parameters for applying forced usage estimates. Forced usage estimates should not be used to lower consumption without proper cause (7A.4).	**PARTIALLY AGREE:** There were already detailed Business Process Mappings in place to guide the billing staff through the editing and estimation process; however, we have since developed written policies to support the process mappings.
7A.5	Management does not conduct a comprehensive review of staff edits (7A.5).	Management should review changes to customer consumption levels made by billing staff during the edit process (7A.5).	**PARTIALLY AGREE:** DWM has always had a review process; however, we have revised our control process to mandate consistent and frequent review of staff edits.
7A.6	There is a lack of consistency in creating and executing Work orders which may result in system water loss and revenue loss. (7A.6).	Work orders should be generated by enQuesta or by Billing Staff when there has been consecutive system estimations or when forced usage estimates are performed. (7A.6)	**PARTIALLY GREE:** DWM is currently working on a programming solution that will automatically generate workorders and/or alerts when these scenarios occur.
7A.7	User access and permission rights in enQuesta are not aligned to Billing and other Bureau of Program Performance staff functions and are not regularly evaluated (7A.7).	DWM should restrict access and permissions in the enQuesta system on a least-privileged basis or as minimally required by job function. (7A.7)	**AGREE:** We are working with the software vendor to develop additional employee access levels to protect customer information.
7A.8	DWM is subject to the Fair and Accurate Credit Transactions Act (FACTA) that relates to identity theft prevention (7A.8).	DWM should take steps to ensure compliance with future FACTA regulations. (7A.8)	**AGREE:** DWM is already taking the necessary steps to ensure compliance on FACTA's "Red Flags" identify theft mandate.

7B. Accounts Receivable, Memorandums of Understanding and Collections			
7B.1	DWM has made write offs in the past; however, DWM does not systematically write off bad debt (7B.1).	DWM should work with City Council and Department of Law to develop documented procedures and practices for analyzing and writing off bad-debts in accordance with City Code and State legislation (7B.1)	**PARTIALLY AGREE:** This process also involves review and constraint from DOF and our external financial auditor. DWM will continue to work with Law and DOF to make this process more effective.
7B.2	The City of Atlanta's General Fund owes DWM approximately $140 million for a combination of past water and sewer charges, other services performed, and borrowed funds (7B.2).	DMW should assess the impact of large interfund balances to bond covenants (7B.2)	**PARTIALLY AGREE:** There are two MOUs to support the monies owed by the general fund. These monies are balance sheet transfers of assets and do not impact revenues and hence have no impact on the bond covenant.
7B.3	DWM collection reports are only generated monthly. (7B.3)	DWM should produce collection reports on a continuous basis, and collections schedules should coincide with billing cycles (7B.3).	**AGREE:** DWM is currently working with the CIS vendor and DWM IT staff to make this correction.
7B.4	Current collection procedures lead to varying and inconsistent collection efforts. (7B.4)	DWM should document and enforce standardized collections procedures. (7B.4)	**PARTIALLY AGREE:** DWM has thoroughly reviewed and updated all collection procedures as a result of the restructure of the collections team by hiring additional collectors and a new manager.
7B.5	DWM does not prioritize dispute resolution efforts. (7B.5)	DWM should document and enforce formal policies for the prioritization of accounts that the Disputes Resolution team addresses and for the number, volume, and frequency of allowable disputed charges. (7B.5)	**PARTIALLY AGREE:** DWM has written new procedures for resolving disputes.
7B.6	DWM does not typically initiate legal prosecution for illegal water consumption.(7B.6)	Per City code, DWM should initiate prosecution efforts for customers consuming water illegally (7B.6)	**DISAGREE:** DWM works with Law on collection efforts that justify prosecution beyond normal collections processes, such as Liens and Outside collection efforts.
7C. Revenue and Cash Flow			
7C.1.a	DWM is not collecting impact fees on water, sewer, or stormwater services.(7C.1)	DWM should work with the Law Department regarding the following: • Impact Fees -The City should further evaluate the feasibility of implementing an impact fee for new water and sewer connections taking into an account the large capital investment made in the City's water and sewer infrastructure. DWM should limit such impact fees to retail customers as the Wholesale customers are paying capital costs. • Stormwater Utility -DWM should consider a fee-based stormwater user charge. Additionally, establishing a separate fund to track and recover costs associated with the stormwater utility would help maintain the existing infrastructure and would allocate the costs equitably among the customers (7C.1).	**AGREE:** The establishment of impact fees for drinking water and wastewater is a comparatively complex issue for the city because of our extra jurisdictional retail service areas and our mix of combined and separated sewers. We are currently evaluating this option.

7C.1.b	DWM is not charging a stormwater fee and is in the process of developing a stormwater utility program.(7C.1).	Same as above (7C.1)	**AGREE:** We have been working on a stormwater utility and we anticipate bringing the utility and its new fee to council in FY2010.
7C.2.a	The City does not reimburse DWM's Office of Safety and Security (OSS) for training costs.(7C.2)	DWM should recover costs for training services provided to City departments and market the Utoy Creek laboratory services to a broader customer base (7C.2).	**AGREE:** We will evaluate how to best recover costs for training services to other departments.
7C.2.b	DWM's Utoy Creek Water Reclamation Center laboratory is currently serving only DWM internal bureaus.	Same as above (7C.2)	**DISAGREE:** The commercial laboratory business is exceptionally competitive and our analysis does not agree that this is a viable revenue source.
7C.3.a	If the authorized late fee of $5 or 5%, whichever is greater, had been applied to customer accounts, DWM would have generated additional revenue of approximately $1.4 million (7C.3)	DWM should charge fees to customers as allowed by current or future City Code including: • Late Fees, • Same Day or After Hours Service, and • Charges for Damaged Water Meters (7C.3)	**AGREE:** Late Fee – DWM has updated the billing system to allow for late fees to be $5 or 5%, whichever is greater.
7C.3.b	If the authorized fee for $75 for "Same Day" services had been applied to customer accounts, DWM should have generated additional revenue of approximately $50,160 (7C.3)	Same as above (7C.3)	**PARTIALLY AGREE:** This fee can be charged if requested. The stated revenue estimate is not based on requests. We are also in the process of evaluating after hours fees.
7C.3.c	DWM is not charging customers for damages to water meters as authorized by City Code 154-72 (7C.3)	Same as previous (7C.3)	**PARTIALLY AGREE:** DWM agrees that customers who damage their meter should be charged for the cost of replacement or repair. This is currently done, but only when it is clear that the customer actually damaged the meter. We are evaluating this overall policy.
7C.4	DWM is not charging fees or penalties for illegal water consumption. (7C.4)	DWM should request changes to City Code to permit charging illegal consumption penalties.(7C.4)	**AGREE:** DWM will work with Law to formulate the appropriate legislation.
7D. Customer Service and Accounts			
7D.1.a	The inspections process is manual and paper-based. (7D.1)	DWM should provide the Customer Service Inspections team with access to enQuesta to allow electronic access to workorders. DWM should also evaluate the use of handheld devices for inspectors to receive and update workorders electronically.(7D.1)	**AGREE:** DWM has currently funded in the FY10 budget a project (enQuesta mobile) that provides mobile handheld devices that allows inspectors to automatically receive and update workorders in the field.
7D.1.b	The Inspections team does not have access to the enQuesta system. (7D.1)	Same as previous (7D.1)	**DISAGREE:** The inspections team does have access to the enQuesta system.

7D.2.a	The current refund process is manual and initiated by the customer (7D.2)	DWM should enhance the refund process to comply with City Code including: • Refunding deposits on closed customer accounts within 60 days of account closing; and • Tracking customer deposit dates according to the service initiation date and not the enQuesta transition date (7D.2).	**AGREE:** DWM is currently testing the automated refund feature now, with an implementation date by Summer 2009.
7D.2.b	DWM's current refund practices are not in compliance with City code (7D.2)	Same as previous (7D.2)	**AGREE:** DWM is currently testing the automated refund feature now, with an implementation date by Summer 09.
7D.3	The City Code addressing the unclaimed deposits (Section 154-144, Paragraph (g)) may be in conflict with Georgia Code Title 44, Chapter 12, Article 5, known as the "Disposition of Unclaimed Property Act" (7D.3)	DWM should seek legal advice on potential conflicts between City Code and Georgia Code concerning unclaimed property and settle accounts accordingly (7D.3).	**AGREE:** DWM is currently working with Law to determine if the City Code is in violation of Georgia Code.
7E. Water Loss			
7E.1	DWM data from the 2007 Water Loss Audit Report shows water loss at 26%. (7E.1).	DWM should establish a strategic initiative to reduce and monitor water loss on an ongoing basis and should include targeted water loss levels with performance measurements such as unbilled metered water and unbilled unmetered water (7E.1).	**PARTIALLY AGREE:** DWM does have a strategic initiative to reduce water loss. DWM is taking steps to reduce the water loss percentage through current and future projects and programs. DWM's meter leak repair program has contributed the repair of approximately 750 leaks per month. The recently initiated Valve & Hydrant Rehabilitation Program and the future Leak Detection Program will both work to significantly reduce unbilled water.
7E.1	DWM's estimated consumption may not reflect actual usage because DWM continues estimating consumption for accounts with malfunctioning traditional meters scheduled for AMR replacement (7E.1).	Same as previous (7E.1)	**AGREE:** DWM made the strategic decision to schedule the replacement of malfunctioning meters through the AMR project due to the high volume of broken meters and resource constraints.
7F. Inter-Jurisdictional Accounts			
7F.1	Management responsibilities are decentralized and limit DWM's ability too identify and resolve billing issues in a timely manner.(7F.1)	DWM should centralize management and reporting of inter-jurisdictional accounts to create greater accountability for billing and collections information.(7F.1)	**PARTIALLY AGREE:** DWM is in the process of evaluating how to improve the efficiency of this system.
7F.2	DWM is operating without current formal agreements for services to inter-jurisdictional customers.(7F.2)	DWM should maintain current executed water service agreements with jurisdictions.(7F.2)	**AGREE:** DWM agrees with this recommendation; however, practical implementation is difficult but being evaluated in conjunction with Law.

7F.3	The six water agreements do not include provisions for delinquent payment penalties, charges for meter repairs, or key performance indicators (7F.3)	DWM should establish contracts that more effectively mitigate service risks and include performance measures.(7F.3)	**AGREE:** The drafting of the current agreement significantly predates DWM's involvement. We have begun the process of reviewing and where possible updating all agreements.
7F.4	Thirteen of the thirty metered accounts for the inter-jurisdictional water customers were estimated for three or more consecutive months.(7F.4)	DWM should reduce the usage of estimation and obtain actual reads.(7F.4)	**AGREE:** DWM has been replacing or repairing all under-performing IJ meters. DWM has already initiated a Large Meter Maintenance program and is currently testing and repairing all functioning meters for our wholesale customers.
7F.5	The Operations and Maintenance (O&M) sewer bills do not include indirect and other support costs.(7F.5)	DWM should examine opportunities to recalculate the sewer O&M costs and then renegotiate sewer service agreements to adequately recover costs of services. DWM should bill a "Month 13" for interjurisdictional sewer customers to accounts for year-end financial adjustments (7F.5).	**PARTIALLY AGREE:** DWM does include some parts of the indirect costs in the O&M sewer bills; however, we will examine our opportunities in this area.
7G. Procurement			
7G.1	The roles and responsibilities of DWM Procurement are not clearly defined to stakeholders (7G.1).	DWM should further define the roles and responsibilities for the DWM procurement division in conjunction with the predefined roles and responsibilities of DOP. DWM should work with DOP to develop agreed upon reporting tools that eliminate duplication of efforts and enhance coordination (7G.1).	**AGREE:** DWM will continue to work with DOP to define roles and responsibilities.
7G.2	The procurement process is lengthy and creates numerous challenges to DWM in their efforts to meet their procurement needs.(7G.2)	DWM and DOP should document and evaluate current procurement processes to gain efficiencies and reduce lifecycle time.(7G.2)	**AGREE:** DWM agrees that the process needs to be consolidated to reduce time and to better utilize resources.
7G.3	Duplicative procurement review efforts between DWM Procurement and DOP create process delays (7G.3)	DWM should enhance their quality review process, enabling them to be more accountable for their procurements. DWM should enhance their policies and procedures to include a standard review checklist for DWM Procurement staff reviews of bid packages. DWM should consider taking responsibility to assemble the procurement package, complete with legal review and necessary reprographics (7G.3).	**AGREE:** DWM agrees that the process needs to be consolidated to reduce time and to better utilize resources. DWM is ready to take responsibility for these additional functions.
7G.4	Same as previous (7G.3)	DWM and DOP should work together to increase process visibility. DWM should create a centralized process for project manager to review procurement status reports and identify expected completion dates for procurements (7G.4).	**AGREE:** This will be addressed as part of our system integration project.
7G.5	Electronic signature routing is not enabled for DMW Procurements (7G.5)	DWM should implement electronic signature approvals.(7G.5)	**AGREE:** DWM purchased an electronic signature software package (the same utilized by Aviation) and conducted training for all of the users. We are waiting for DOP's authorization.

7G.6	Specific to DWM construction projects, DWM does not require site visits as a condition for vendor bid submissions.(7G.6)	DWM should consider including mandatory site visits as a condition for bidding construction projects (7G.6)	**PARTIALLY AGREE:** DWM will further evaluate this recommendation.
7H. Use of City Assets			
7H.1	Not all DWM assigned telecommunication devices are fully utilized and there is a lack of consistency in distribution of cell phone and Blackberry devices (7H.1)	DWM should review job functions and responsibilities to identify the need for telecom devices. DWM should limit distribution of telecom devices to employees whose job functions require travel away from assigned office space for the majority each day (7H.1).	**PARTIALLY AGREE:** DWM also utilizes cell phones in place of fixed based radios at a substantial cost savings. In addition, the combination of cell phone and push to talk features is a critical component of our emergency response plan and of OOP (Continuity of Operations Plan). We do not agree with the recommendation related to travel away from office as a criteria.
7H.1	Device distribution does not directly correlate with job responsibilities and necessity or time spent outside of the office performing job duties (7H.1).	Same as above (7H.1)	**AGREE:** DWM approves telecommunication devices based on the employee's duties and responsibilities and not only on their position description or hours spent away from a desk. A justification is provided for each device.