Memorandum

Date: May 15, 2013

To: Honorable Chairwoman Rebeca Sosa and Members
Board of County Commissioners

From: Carlos A. Gimenez
Mayor

Subject: Water and Sewer Infrastructure and Financing Issues

Background

In 1972, the Board of County Commissioners (Board) voted to merge the City of Miami Water and Sewer Authority with the County Water and Sewer Authority to create a regional utility system. This was done to address serious water quality problems resulting from inadequate wastewater systems, some of which were dumping raw sewage into the ocean, and to expand the water and sewer system on a comprehensive basis to keep pace with growth. Additionally, all of the privately owned systems were purchased, two new sewage treatment plants were built, and the Virginia Key plant was substantially expanded. The water supply system has also been expanded in similar fashion. Until recently, this regional system has served us well, and our customers have enjoyed among the lowest rates for comparably sized utilities anywhere in the nation. The system has aged, new regulatory mandates have been imposed, and the cost of meeting future demands has risen accordingly. We have nearly 14,000 miles of water and sewer pipes, more than half of which are more than 50 years old. Our newest sewer plant is more than 30 years old, and our newest water plant is more than 45 years old. We have more than 1,000 sewer pump stations, about 10% of which now require capacity upgrades to serve new demands in their service areas. Most of you have heard from constituents regarding lack of capacity at pump stations to accommodate changes of use and new construction, so correcting this situation is an essential priority. While we have spent more than $1.8 billion in the past 15 years to upgrade the water and sewer system, we now must address the reality of an aging system, very expensive unfunded regulatory mandates, and investing in additional capacity to support our recovering economy.

In early 2011 as a Commissioner, I requested a report on water and sewer infrastructure following several disasterous water and sewer pipeline failures. As Mayor, I transmitted that report to the Board on August 24, 2011. In February of 2012, the Board requested an additional report identifying the most deteriorated water and sewer infrastructure, and that report was provided to the Board in July of 2012. I have provided a series of reports to the Board regarding progress on negotiations with the Environmental Protection Agency (EPA), the Department of Justice, and the Florida Department of Environmental Protection (DEP) to address in a consent decree the projects needed to improve the reliability of the sewer system, my last report having been distributed within the past two weeks. The Water and Sewer Department's Multi-Year Capital Improvement Plans adopted by the Board over the past several years have highlighted the growing infrastructure needs and associated funding requirements. The time has now come to take action on these needs.

Infrastructure Needs

In general, infrastructure needs result from three factors: 1) aging infrastructure that needs to be renewed; 2) new infrastructure to meet changing regulatory requirements; and 3) new infrastructure to meet additional capacity requirements for economic growth and for operational reliability.

The Water and Sewer Department's Multi-Year Capital Improvement Plan calls for expenditures of $4.64 billion for the six years beginning October 1, 2012, with $3.07 billion allocated to wastewater projects and $1.57 billion allocated to water projects. The total WASD capital plan extending at least 15 years is valued at $12.6 billion, including all of the consent decree projects, all of the ocean outfall compliance requirements, and other essential projects. These longer term planning level projects are likely to change somewhat over time, so the 6 year plan described here in more detail is our primary focus.

Sewer System Consent Decree

For the past two years County staff has been negotiating with EPA, the Department of Justice, and DEP to replace the consent decree which has been in place since 1995 when sewage overflows due to lack of capacity were the primary issue with a new consent decree that focuses primarily on replacing aging sewer lines, pump stations, and treatment plant components. Over the past 5 years the collection system has experienced 798 overflows from all causes, and the plants have had 16 overflows. A civil penalty of approximately $970,000 and an environmental project to extend sewers valued at approximately $2 million is included in the consent decree. As is the case for the existing consent decree, municipal utilities throughout the County will be required to comply with operational and maintenance requirements specified in the new consent decree through an ordinance administered by the County's Department of Regulatory and Economic Resources (RER). Some additional flexibility will be provided to enable some additional connections to pump stations that are over capacity while upgrades are in progress. The municipal costs of compliance are unknown at this time, but all municipal utilities have met with staff to review and understand the terms of the new consent decree. The consent decree includes upgrades to treatment plants of $1.02 billion and upgrades to the collection system of $580 million over a 15 year period. Within the 6 year CIP, sewer plant upgrades of $420 million, sewer pipeline projects of $354 million, and pump station upgrades of $106 million are included as required by the consent decree. The initial phases of these projects are all included in the Department's Multi-Year Capital Improvement Plan. The final version of the new consent decree is on the agenda for the Board's May 21, 2013, meeting. It is very important that action be taken so that the consent decree can be lodged in court by the Department of Justice and DEP to resolve the lawsuit that has already been filed. A list of all of the consent decree projects can be found as Attachment 1 to this memorandum. Attachment 2 describes in general the basis of and need for all of the non-consent decree projects that are included in the Multi-Year Capital Improvements Plan.

Non-Consent Decree Projects

Projects within the six year CIP that are not part of the consent decree include water and sewer plant upgrades of $1.6 billion, pipeline upgrades of $1.3 billion, pump station upgrades of $691 million, and equipment replacement of $208 million. These projects address other regulatory requirements such as the State Outfall Statute, pump station capacity to meet continuing growth, and fireflow capacity, replacement of pipes and equipment that are in danger of failing due to age or damage, providing redundant capacity to maintain service when system components do fail, and providing additional capacity to meet the needs of growth. Failure to address these needs will put the health and economic well-being of the community at risk.

Financing Issues

Each year the adopted budget includes an update of the Multi-Year Capital Improvement Plan, associated revenue requirements, and any rate adjustments that are projected to support the funding of that plan through the sale of revenue bonds. Both the FY 2011-12 and the FY 2012-13 adopted budgets speak to the need for WASD rate increases in FY 2013-14. **In fact the FY 2012-13 adopted budget projected a rate increase of nine percent (9%) for WASD for FY 2013-14.**

WASD's Master Bond Ordinance requires that the Board establish borrowing limits by ordinance. Individual bond sales are approved by series resolutions. The ordinance that requires Board action establishes for WASD a total borrowing limit of $4.2 billion, sufficient to fund in combination with other revenue sources the Capital Plan for the next six years. The series resolution requiring Board action is to approve certain parameters for a bond issue which will provide funding for the first two years of the CIP.

The proposed bond issue will yield $300 million for capital projects, $152 million to replace existing bonds at a lower rate of interest resulting in a present value savings of approximately $19.2 million over the remaining 16 year life of the bonds, and $51 million to fund the cost of issuing the bond, establishing debt service reserves, and providing capitalized interest for a total bond sale of $503 million. A third item for Board action is an amendment to increase WASD's rates by 8% beginning October 1, 2013. This rate increase is directly tied to the debt service and reserve requirements of the bond sale, pursuant to WASD's Master Bond Ordinance.

It should be noted that the required rate increase is less than the 9% rate increase that was projected as part of the adopted WASD Capital Improvement Plan (CIP). This proposed rate adjustment will increase the monthly bill for an average water and sewer customer by $3.36. Attachment 3 is a spreadsheet that identifies projected bond sales over the next six years to support the Multi-Year Capital Improvements Plan and the rate adjustments that would be necessary to pay the cost of those bonds. The need to sell bonds is determined by the rate of expenditures and the availability of funds from other sources to support the program. The rate adjustments needed to service the sale of bonds is also dependent on the timing of bond sales and the actual interest rates that apply. Rate adjustments are made in response to operating costs, maintenance of reserves, and debt service requirements. Every rate adjustment is carefully reviewed by the Department's bond engineer, the Office of Management and Budget, and the Finance Department before becoming a budget recommendation. It is important to note that WASD has taken several actions to reduce costs over the past few years. About 300 positions have been eliminated. Fleet size has been significantly reduced. Fraudulent acquisition and sale of cell phones and fund embezzlement were successfully prosecuted. **This year's successful amendment of the State Outfall Statute will avoid a billion dollars in capital costs.** Increasing rates is a difficult action, but we are now experiencing the consequences of avoiding needed increases for too long. Attachment 4 is a review of the history of WASD rate adjustments. Even with the recommended rate adjustment, WASD's rates will continue to be among the lowest in the nation. Attachment 5 is a national rate comparison and Attachment 6 is a statewide rate comparison. A comparison of local utility rates is not currently available, but we will provide that analysis in the near term.

Executing the Capital Plan

The most successful models for implementing large scale capital projects have involved a partnership of County staff and contracted program management, design, and construction services. This has worked effectively at the Airport, the Seaport, and at WASD where the largest single capital project ever undertaken, the high level disinfection project at the South District Wastewater Plant, is being completed ahead of schedule and under its $600 million budget. Currently, WASD is utilizing a design/build contract to replace the sewer line from Miami Beach to Virginia Key, and that project is on schedule and within budget.

At my direction, a complete review of the WASD capital plan will be undertaken by the Department bond engineer to identify and evaluate the full range of public/private partnership opportunities that exist in the long term program.

As a result of a recent Board discussion and my commitment to bring items of significant importance to the Board, I cancelled two advertisements for program management/construction management consultants for the consent decree projects and for the pump station improvement program. These solicitations have engendered a great deal of discussion as to how they can best be structured and how opportunities for smaller companies can best be addressed. Two workshops with industry were held prior to the solicitations being advertised, and those workshops generated many suggestions. I have directed all of the departments involved in the process to provide a final recommendation for these critical procurements for consideration by the Board on June 4, 2013.

Of particular concern is access to these large capital projects by community and small business enterprises throughout the future years of the capital program. RER' Small Business Development Office (SBD) assists capital departments in their development of small business participation recommendations. Once submitted to SBD, a thorough review of the project scope is conducted to ensure that no artificial barriers exist that may impede small business participation. An availability analysis is then conducted to ensure there are available and qualified certified small businesses to support the application of small business set-asides or goals. These actions for the application of contract measures are in accordance with the Section 2-10.4.01 of the Code that governs the Community Business Enterprise (CBE) program. The objective of the program is to assure that not less than 10% of the County's total annual expenditures for professional architectural, landscape architectural, engineering, surveying and mapping services are expended with Community Business Enterprise firms. In the last two years, over $5 million or 15% of County awards have been awarded to Community Business Enterprise firms, either directly or via Community Business Enterprise measures.

While it is the commitment of the County to provide maximum opportunities to small businesses, measures are not arbitrarily assigned to contracts. On the contrary, efforts are deliberate and dedicated to maximizing opportunities for certified small businesses. As is the requirement for all capital departments, WASD submitted the two program management/construction management project packages in question to SBD including the project scopes, technical requirements and recommended Community Business Enterprise goals. SBD reviewed and analyzed the project scopes, related minimum and special requirements; then conferred and sought clarifications with WASD. With all pertinent information, SBD conducted availability analyses to determine the Community Business Enterprise community's availability to propose and meet the stipulated minimum and special requirements. Through collaboration with WASD, analysis of the scopes and responses of availability

from CBE firms, SBD assigned goals of 18% for E13-WASD-01 and 24% for E13-WASD-02. Subsequently, in an effort to maximize CBE participation, SBD has reevaluated the project scopes, technical requirements, and related minimum and special requirements. Clarifications of the scope and special requirements were made by the WASD. As a result of this review, it is anticipated that the CBE goal may increase. The final CBE goals will be included in the respective solicitations to be approved by the Board at a future meeting. As in all other projects, these goals will be monitored by SBE for compliance.

Full participation of the County's diverse workforce on the upcoming construction projects is essential to the overall success of the Multi-Year Capital Improvement Plan. WASD is committed to augmenting SBD staff to ensure optimal participation of small businesses on all contracts. Additionally, complete compliance with the County's Community Workforce Program requirements will be strictly enforced. The Water & Sewer Department will provide the resources necessary to supplement Small Business Development's staff for outreach efforts to certify small businesses in the relevant trade areas, placement of small business goals, and monitoring of small business and community workforce goals. I believe it is important to have this monitoring and compliance capacity operate independently of the operational departments to achieve a consistent and effective result with respect to creating opportunities within our community.

Recommendation

It is imperative that we all work together to address these critical action items as soon as possible. The County needs to settle the federal litigation and move forward with that work to avoid serious economic consequences for our economy. We need to put into place the financial and human resources to initiate these critical projects and to ensure, within the legal limits by which we must abide, that the opportunities created by this capital program are available to our community's businesses. This is the beginning of a long process that will afford many opportunities to incorporate new and different approaches to accomplishing the essential requirements of a healthy and growing community. At a subsequent meeting, I will be providing to the Board a proposed capital plan and required financing plan in order to the needs of this community.

I look forward to addressing all of your concerns.

Attachments

c: R. A. Cuevas, Jr., County Attorney
Office of the Mayor Senior Staff
John W. Renfrow, P.E., Director, Water and Sewer
Lester Sola, Director, Internal Services
Jennifer Moon, Director, Office of Management and Budget
Mario Goderich, Assistant Director, Regulatory and Economic Resources
Frank Hinton, Bond Administration Division, Finance Department

Attachment 1

Consent Decree Capital Projects Descriptions and Costs

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
South District WWTP, 8950 SW 232 St., Goulds, FL 33170			
1.1	Headworks	Routine repairs on existing bar screen mechanisms in headwork structure prior to aerated grit chambers	Failure of bar screen mechanism could result in the blinding of the bar screen and cause an overflow of raw sewage from the plant headworks structure towards nearby surface waters, especially during peak wet weather.
1.2	Oxygen Production	Replacement and retrofit of existing air compression units .	Replacements and modifications are needed to meet WWTPs 125 ton oxygen demand. Loss of pure oxygen production will affect performance of secondary treatment process and result in effluent limit violations.
1.3	Oxygenation Trains	Aeration mixers retrofit, structural rehabilitation, and surface coating application	Loss of aeration tank capacity will result in effluent limit violations.
1.4	Chlorine Building	Replacement of motor control centers, relocation of electrical panels and roof repairs of old chlorine building where flushing water pumps are to remain.	Roof leaks or failure of MCC and electrical panel could result in loss of plant flushing water which in used for spray systems and odor control.
1.5	Effluent Pump Station	Upgrade of existing obsolete pump control systems, upgrade pumps drives and motors and structural rehabilitation of pump station wet well chambers 2-4.	Loss of pumping capacity or wet well function will result in unpermitted effluent discharge into the surrounding surface waters.
1.6	Gravity Sludge Thickeners	Replacement of thickened sludge pumps, and electrical systems in concentrator pump station. Rehabilitation of concentrator collector mechanisms and structural rehabilitation and coating of concentrators.	Failure of sludge thickening will result in a biological overloading of the secondary treatment process and effluent limit violations.
1.7	Digesters and Control Buildings	Rehabilitation or replacement of digester roofs; digester tank cleaning, structural rehabilitation and coating; sludge mixers improvement	Loss of digestion capacity will result in a decline in biogas/methane production for power generation and unstabilized sludge that will require landfill disposal.
1.8	Dewatering Facility	Replace existing Interim dewatering building with a new permanent dewatering facility, to include centrifuges, controls, polymer system, structural, mechanical and electrical systems.	Failure of sludge dewatering would result in solids accumulation in the secondary treatment process and effluent limit violations.
1.9	FOG Removal Facility	Separation operations improvements to recently constructed FOG removal facility to aid in conveyance of oils and floating grease to beneficial use option and removal of excess grit and settled solids.	Current FOG separation tank is not capable of adequately handing solids load, resulting in excess odors and unanticipated manual labor to remove large amounts of grit, settled soils and hardened grease.
1.10	Odor Control	Upgrade odor control facilities	Complaints of nuisance odors by nearby residents could result from a lack of properly functioning odor control systems.
1.11	General Electrical	Rehabilitation and replacement of electrical controls and wiring as needed.	Loss of electrical controls or wiring could result in plant shutdowns, wastewater overflows and effluent violations.
1.12	Chlorine Contact Chamber Structural	Structural rehabilitation and coating of chlorine contact chambers 1-4	Structural failure of a chlorine contact chamber would lead to a lack of disinfection contact time, an effluent violation. A hydraulic overload could also occur from multiple chambers being out of service for corrective maintenance, resulting in an effluent spill to nearby surface waters.

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
Central District WWTP, 3989 Rickenbacker Causeway, Miami, FL 33149			
2.1	Electrical Improvements	Rehabilitation and replacement of electrical controls and wiring as needed	Loss of electrical controls or wiring could result in plant shutdowns, wastewater overflows and effluent violations.
2.2	Building improvements	Repairs to maintenance, operations control and administration buildings to include refurbishing of roofs and staff facilities	These improvements are needed to provide staff with adequate and safe facilities to perform their jobs.
2.3	Headworks Plant 1	Headworks retrofit to include addition of influent screens and an electrical room with replacement of electrical systems	Failure of headwork electrical system will result in grit accumulation in secondary treatment process leading to effluent limit violations. Lack of headworks screening results in accumulation of rags and plastics in plant processes, leading to pump, mixer and clarifier collection mechanism failure; and effluent limit violations.
2.4	Headworks Plant 2	Headworks retrofit to include addition of influent screens and an electrical room with replacement of electrical systems	Failure of headwork electrical system will result in grit accumulation in secondary treatment process leading to effluent limit violations. Lack of headworks screening results in accumulation of rags and plastics in plant processes, leading to pump, mixer and clarifier collection mechanism failure; and effluent limit violations.
2.5	Oxygenation Trains Plant 1	Aeration mixers retrofit, structural rehabilitation, and surface coating application	Loss of oxygenation tank capacity will result in effluent limit violations.
2.6	Oxygenation Trains Plant 2	Aeration mixers retrofit, structural rehabilitation, and surface coating application	Loss of oxygenation tank capacity will result in effluent limit violations.
2.7	Secondary Clarifiers Plant 1	Structural rehabilitation and replacement of sludge collection mechanisms	Loss of sludge settling capacity will result in effluent limit violations.
2.8	Secondary Clarifiers Plant 2	Structural rehabilitation and replacement of sludge collection mechanisms	Loss of sludge settling capacity will result in effluent limit violations.
2.9	RS Pump Stations Plant 1	replacement of return sludge pump, piping, motor control centers and structural repairs to pump stations	Loss of return sludge pumping capacity will result in a failure of the aeration process and effluent limit violations.
2.10	RS Pump Stations Plant 2	replacement of return sludge pump, piping, motor control centers and structural repairs to pump stations	Loss of return sludge pumping capacity will result in a failure of the aeration process and effluent limit violations.
2.11	Effluent Pump Station	Pump replacement in effluent pump station	Loss of sufficient pumping capacity will result in unpermitted effluent discharge into the surrounding surface waters.
2.12	Sludge Thickeners Plant 1	Replacement of thickened sludge pumps, sanitary sewer pumps, HVAC and electrical systems in concentrator pump station. Rehabilitation of concentrator collector mechanisms and structural rehabilitation and coating of concentrators.	Failure of sludge thickening will result in a biological overloading of the secondary treatment process and effluent limit violations.
2.13	Sludge Thickeners Plant 2	Replacement of thickened sludge pumps, sanitary sewer pumps, HVAC and electrical systems in concentrator pump station. Rehabilitation of concentrator collector mechanisms and structural rehabilitation and coating of concentrators.	Failure of sludge thickening will result in a biological overloading of the secondary treatment process and effluent limit violations.
2.14	Digesters Plant 1	Complete rehab of sludge digester clusters (roofs, concrete structures, recirculation & transfer pumps, mixers, & electrical systems)	Loss of digestion capacity will result in a decline in biogas/methane production for power generation and unstabilized sludge that will require landfill disposal.
2.15	Digesters Plant 2	Complete rehab of sludge digester clusters (roofs, concrete structures, recirculation & transfer pumps, mixers, & electrical systems)	Loss of digestion capacity will result in a decline in biogas/methane production for power generation and unstabilized sludge that will require landfill disposal.
2.16	Dewatering Building	Construction of a new dewatering facility and sludge cake conveyance system to sludge storage buildings	Failure of sludge dewatering would result in solids accumulation in the secondary treatment process and effluent limit violations.

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
Central District WWTP, 3989 Rickenbacker Causeway, Miami, FL 33149 (continued)			
2.17	Chlorination Facilities	Replacement of chlorine gas storage, liquid chlorination and dosing system with bulk sodium hypochlorite storage and dosing system in separate outdoor structures	Failure of existing chlorine gas storage system could lead to and unregulated discharge of chlorine gas and exposure of plant personnel and nearby community to chlorine gas. Additionally, a failure of the chlorine system would result in a lack of disinfection of effluent, a effluent violation.
2.18	Odor Control Systems	Odor control buildings motor control center replacement including air conditioned electrical rooms. Replacement of odor control chemical pumps, piping, valves and gas stripping tower media.	Complaints of nuisance odors by nearby residents could result from a lack of properly functioning odor control systems.
2.19	Co-Gen Facility	Installation of two new Cogeneration engines, Cogeneration Building improvements, replacement of biogas pipeline and installation o biogas conditioning system.	Sudden loss of cogeneration engines could result in partial loss of power to the plant and temporary equipment shutdown. Consistent lack of cogeneration units would result in loss of heat for the anaerobic digesters.
2.20	Septage Unloading	Construction of a new septage handling station to remove FOG from the main wastewater treatment stream and treat either through digestion or off-site third part facility.	Septage currently puts and added load on plant's secondary treatment, is labor intensive.
2.21	Pump Station 1	Rehabilitation of pump station odor control system and of bar screen mechanisms	Odor complaints could result from an improperly functioning odor control system. Failure of bar screen mechanism could result in the blinding of the bar screen and cause an overflow of raw sewage from the pump station towards nearby surface waters, especially during peak wet weather flow events.
2.22	Pump Station 2	Rehabilitation of pump station odor control system, rehabilitation of bar screen mechanisms, and replacement pump stations flow metering to improve maintenance accessibility	Odor complaints could result from an improperly functioning odor control system. Failure of bar screen mechanism could result in the blinding of the bar screen and cause an overflow of raw sewage from the pump station towards nearby surface waters, especially during peak wet weather flow events. Inability to access the station's flow meter in a timely fashion has resulted in periods without proper flow measurement from this pump station.
2.23	O2 Plant Process Controls Phase 2	Replacement of process control equipment for existing oxygen production systems either due to equipment failing or being obsolete.	Loss of pure oxygen production will affect performance of secondary treatment process and result in effluent limit violations.
2.24	Gas Monitoring	Gas monitoring and alarms in hazardous areas	Personnel could be overcome by noxious fumes such as hydrogen sulfide, carbon dioxide carbon monoxide or methane if unaware of their presence due to lack of gas monitoring.
2.25	Ventilation Improvements	Ventilation Improvements in Hazardous Areas	Sufficient ventilation in hazardous areas is required to meet NFPA 820.
2.26	Rehabilitation of Walkways and Stairways	Replacement of corroded walkways, stairways, railings, grating throughout the plant	Personnel could suffer falling injuries from eroding concrete and corroding metal.
2.27	Oxygen Production	Construction of a new 80 ton/day oxygen production cryogenic tower and air compression unit to provide full redundancy as existing units are near the end of useful life and prone to failure.	Loss of pure oxygen production will affect performance of secondary treatment process and result in effluent limit violations.
2.28	SCADA RTU Upgrades	SCADA RTU upgrades due to exisiting RTUs being obsolete and difficulty of locating replacement parts	Failure to upgrades these RTUs could result in loss of monitoring and control of unit processes
2.29	High Strength Influent Impact Study	Investigation as to the sources of increased TSS and BOD loading experienced at the plant and conceptual solutions to eliminate or mitigate the change in plant influent characteristics	Influent loading characteritics well above design parameters are contributing factors in effluent limit violations. If unadressed, continued effluent violation are likely.

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
North District WWTP, 2575 NE 156 St., North Miami, FL 33160			
3.1	Headworks and Sludge Degritting Transfer	Phase 1: Replacement of bar screens with perforated plate screens Phase 2: Upgrade pretreatment buildings for fire code compliance and replacement of primary sludge grit separation	Replacement of influent screens and upgrade of headworks will reduce rags problems and improve treatment process.
3.2	Primary Clarifiers and Odor Control	Rehabilitation of structural, mechanical and odor control systems	Loss of primary clarifier capacity will increase workload of the secondary treatment process and will result in effluent limit violations. Complaints of nuisance odors by nearby residents could result from a lack of properly functioning odor control systems.
3.3	Oxygenation Trains	Rehabilitation of Aeration Tanks structural, mechanical and electrical systems	Loss of oxygenation tank capacity will result in effluent limit violations.
3.4	Oxygen Production	Rehabilitation of oxygen plant structural, mechanical and electrical systems	Loss of pure oxygen production will affect performance of secondary treatment process and result in effluent limit violations.
3.5	Secondary Clarifiers	Structural, mechanical and electrical rehabilitation of the secondary clarifiers	Loss of sludge settling capacity will result in effluent limit violations.
3.6	Disinfection	Replacement of chlorine gas storage, liquid chlorination and dosing system with bulk sodium hypochlorite storage and dosing system in the existing chlorine building	Failure of existing chlorine gas storage system could lead to and unregulated discharge of chlorine gas and exposure of plant personnel and nearby community to chlorine gas. Additionally, a failure of the chlorine system would result in a lack of disinfection of effluent, a effluent violation.
3.7	Effluent Disposal	Installation of standby pumps to ensure effluent disposal capacity and structural rehabilitation of ocean outfall pump station wet well	Loss of sufficient pumping capacity or wet well function will result in unpermitted effluent discharge into the surrounding protected wetlands.
3.8	Plant Wide Electrical	Rehabilitation and replacement of electrical controls and wiring as needed	Loss of electrical controls or wiring could result in plant shutdowns, wastewater overflows and effluent violations.
3.9	Flood Mitigation	Generator and Electrical Building flood mitigation at NDWWTP	Flooding of emergency standby generator and electrical switchgear area would result in loss of emergency power and power distribution. Emergency power is most critical during storm events when flooding is most likely.
3.10	Yard Piping Replacement	Replacement of wastewater piping that interconnects unit processes throughout the plant	A leak or rupture of plant yard piping will result in sewage and/or sludge spill that may contaminate nearby surface waters.
3.11	SCADA RTU Upgrades	SCADA RTU upgrades due to exisiting RTUs being obsolete and difficulty of locating replacement parts	Failure to upgrades these RTUs could result in loss of monitoring and control of unit processes

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
Wastewater Collection and Transmission Lines			
4.1	Collection System I/I Repairs	Rehab of Collection System (Dig & Replace Mainlines and Laterals, Manhole Replacement, Cured-in-Place Liners and Sectional Liners)	Renewal/replacement of defective gravity sewers with documented excessive inflow/infiltration
4.2	Government Cut FM - Phase 1& 2 (construction ongoing)	Replace existing portion of 54 inch FM from the water shaft of Phase 1 in Government Cut to mainland Miami Beach	Replace critically damaged sections of 54-inch force main to avert catastrophic failures in Government Cut
4.3	Government Cut FM - Phase 3	Replace existing portion of 54 inch FM from land shaft of Phase 1 at Fisher Island to CDWWTP at Virginia Key	Replace critically damaged sections of 54-inch force main to avert catastrophic failures in Fisher's Cut
4.4	North Dade 72 inch PCCP FM Rehabilitation	Rehabilitation of the remaining 3.5 miles of the 72 inch PCCP FM located between NW 17 Ave and NE 10 Ave	Replace remaining damaged section of 72-inch force main that has experienced catastrophic failure
4.5	South Dade 54 inch PCCP FM Rehabilitation	Rehabilitation of approximately 2.5 miles of 54 inch PCCP FM from SW 112 Ave and SW 280 St to SW 107 Ave and SW 248 St	Replace sections of 54-inch force main that has critically damages pipe segments
4.6	Replacement of Tamiami Canal Aerial Crossing FM's at NW 37th Ave	Replace corroded twin 24 inch FM's crossing the Tamiami Canal at NW 37 Ave, just south of NW 21 St	Replace twin 24-inch force mains that are corroded and have experienced failures
4.7	Replacement of 18 inch DIP FM in Miami Lakes	Replace 1 mile of corroded 18 inch DIP FM located at NW 60 Ave and NW 138 St	Replace severely corroded 18-inch pipe that has had multiple failures
4.8	Rehabilitation of 54 inch PCCP FM in the City of Miami	Rehabilitate by Cured-in-Place liner approximately 2 miles of 54 inch PCCP FM located on NW 2 St between NW 67 Ave and NW 37 Ave	Complete rehabilitation of 54-inch force main that is deteriorated and has experienced failures
4.9	Replace Approximately 25 miles of AC force mains	See attached description of individual force mains	Replace asbestos cement force mains that have experienced failures and are difficult to locate in the field.
4.10	Opa-Locka Airport 48" PCCP force main replacement	Rehabilitation of 2.5 miles of 48" PCCP force main running along the Biscayne Canal between NW 57th Avenue & NW 32 nd Avenue	Complete rehabilitation of 48-inch force main that is deteriorated and determined to have approximately one quarter of its line segments destressed based on in-situ condition assements

Consent Decree Capital Project Descriptions

Project Number	Project Name	Project Description	Project Impact/Need
		Sewer Pump Station Systems	
5.1	Upgrade of PS#0418	Covert PS# 418 into a booster type station	The station has reach the end of its useful life. Booster station is needed to relieve pressures in the Doral area.
5.2	Upgrade of PS#0691	Replacement of pumping and electrical equipment	Existing equipment is beyond its useful life. Station capacity increase is required to handle increased Homestead flows
5.3	Upgrade of PS#0692	Replacement of pumping and electrical equipment	Existing equipment is beyond its useful life. Station capacity increase is required to handle increased Homestead flows
5.4	Replacement of Switchgear PS#0414	Replacement of electrical switchgear	Existing equipment is beyond its useful life.
5.5	Replacement of Switchgear and Rehabilitation of Wet well PS#0415	Replacement of electrical switchgear and rehabilitation of the wet well to include a odor control unit	Existing equipment is beyond its useful life. Wet well structure is deteriorated badly due to H2S
5.6	Replacement of Switchgear PS#0416	Replacement of electrical switchgear	Existing equipment is beyond its useful life.
5.7	Replacement of Switchgear and Rehabilitation of Wet well PS#0417	Replacement of electrical switchgear and rehabilitation of the wet well to include a odor control unit	Existing equipment is beyond its useful life. Wet well structure is deteriorated badly due to H2S
5.8	Replacement of Electrical and Mechanical Equipment in PS#0107	Replacement of pumping and electrical equipment	Existing equipment is beyond its useful life. Parts are not readily available for the load cell type controllers
5.9	Replacement of Plumbing and Electrical Equipment at PS#0301	Replacement of pumping and electrical equipment to include generator	Existing equipment is beyond its useful life due to the saltwater environment
5.10	Upgrade of PS#0488	Conversion of pump station to submersible type station	Existing equipment is beyond its useful life.
5.11	Installation of 60 inch FM from Kendall Dr to PS#0536	Installation of 60" F/M from Kendall Dr to PS#0537 to eliminate the 42" reduction in the 60" F/M	To reduce pressure differential and increase flow transfer between PS#0559 and 0536
5.12	Replacement of Switchgear at PS#0187	Replacement of Anvic Drive with VFD	Existing equipment is beyond its useful life. Parts are not available
5.13	Refurbish Emergency Generators and Controls at Regional Pump Stations	Refurbish emergency generators and controls at regional pump stations due to parts obsolescence	Emergency backup generators are unreliable due to age of controllers and condition of wiring on the engines
5.14	Upgrade of PS #0086, 0492	See attached Pump Station Compliance Projects sheet for individual pump station project descriptions.	The pump stations are out of compliance of the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours.
5.15	Upgrade of PS #0065, 0201, 0334, 0374, 0607	See attached Pump Station Compliance Projects sheet for individual pump station project descriptions.	The pump stations are out of compliance of the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours.
5.16	Upgrade of PS #00198, 0437, 0466, 0680	See attached Pump Station Compliance Projects sheet for individual pump station project descriptions.	The pump stations are out of compliance of the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours.
5.17	Upgrade of PS #0037, 0351, 0370, 0403	See attached Pump Station Compliance Projects sheet for individual pump station project descriptions.	The pump stations are out of compliance of the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours.
5.18	Upgrade of PS #0441, 0491, 0710, 0827, 0852, 1236	See attached Pump Station Compliance Projects sheet for individual pump station project descriptions.	The pump stations are out of compliance of the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours.
5.19	SCADA RTU Upgrades	SCADA RTU upgrades for 635 pump stations due to exisiting RTUs being obsolete and difficulty of locating replacement parts	Failure to upgrades these RTUs could result in loss of monitoring and control of wastewater pump stations

Consent Decree Capital Projects Cost

	Project No.	Fiscal Year	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	Total
South District WWTP	1.1	Headworks	-	-	-	-	41,839	6,538	154,902	371,647	153,416	-	-	-	-	-	-	-	728,343
	1.2	Oxygen Production	-	-	-	391,105	105,193	349,832	3,378,841	3,324,558	-	-	-	-	-	-	-	-	7,549,529
	1.3	Oxygenation Trains	-	-	-	-	-	910,149	210,883	1,322,071	2,255,770	2,327,955	2,383,075	2,479,328	2,558,666	2,640,544	1,032,878	-	18,121,319
	1.4	Chlorine Building	-	-	-	-	-	-	-	148,232	21,135	960,840	1,390,501	-	-	-	-	-	2,520,707
	1.5	Effluent Pump Station	-	-	-	-	125,103	1,308,685	323,343	1,960,610	9,031,048	9,294,577	4,966,818	-	-	-	-	-	27,010,183
	1.6	Gravity Sludge Thickeners	-	-	-	-	-	-	272,875	71,985	268,563	2,299,141	2,333,710	-	-	-	-	-	5,246,274
	1.7	Digesters and Control Buildings	-	-	2,454,906	590,571	1,444,494	8,121,074	8,380,949	8,649,139	8,950,366	9,211,541	729,251	-	-	-	-	-	48,532,291
	1.8	Dewatering Facility	-	-	259,953	685,556	138,425	2,651,363	5,840,442	6,027,336	1,005,459	-	-	-	-	-	-	-	16,608,534
	1.9	FOG Removal Facility	-	-	53,280	8,604	219,033	542,799	104,360	-	-	-	-	-	-	-	-	-	928,077
	1.10	Odor Control	-	-	-	-	-	-	-	443,513	94,217	1,051,540	4,125,980	2,414,817	-	-	-	-	8,130,067
	1.11	General Electrical	-	-	-	-	-	680,600	125,643	2,054,136	6,206,975	3,097,789	-	-	-	-	-	-	12,165,144
	1.12	Chlorine Contact Chamber Structural	-	-	-	-	82,826	316,825	56,682	1,364,987	2,946,125	2,168,155	-	-	-	-	-	-	6,935,601
																			154,476,068
Central District WWTP	2.1	Electrical Improvements	-	-	-	-	-	1,583,061	325,834	10,191,482	16,291,983	-	-	-	-	-	-	-	28,392,361
	2.2	Building Improvements	-	-	258,096	116,239	4,545	5,294,696	-	-	-	-	-	-	-	-	-	-	5,673,576
	2.3	Headworks Plant 1	-	-	1,102,202	273,958	2,475,309	15,803,377	983,013	-	-	-	-	-	-	-	-	-	20,637,859
	2.4	Headworks Plant 2	-	-	520,763	727,956	140,863	9,116,827	10,384,926	-	-	-	-	-	-	-	-	-	20,891,336
	2.5	Oxygenation Trains Plant 1	-	-	352,796	98,579	-	3,156,909	3,274,552	-	-	-	-	-	-	-	-	-	6,882,836
	2.6	Oxygenation Trains Plant 2	-	-	-	-	794,684	222,050	491,555	3,061,827	3,683,324	3,801,190	3,902,915	-	-	-	-	-	15,957,546
	2.7	Secondary Clarifiers Plant 1	-	-	-	-	-	-	-	-	-	236,638	80,905	1,064	1,541,485	1,608,439	1,450,715	-	4,919,245
	2.8	Secondary Clarifiers Plant 2	-	-	-	-	224,618	213,187	19,997	1,090,489	1,377,561	1,417,758	1,463,127	1,435,483	-	-	-	-	7,242,220
	2.9	RS Pump Stations Plant 1	-	-	-	-	-	-	-	-	-	454,178	155,282	2,042	2,958,554	3,087,058	2,784,340	-	9,441,453
	2.10	RS Pump Stations Plant 2	-	-	-	-	443,831	421,248	39,514	2,154,741	2,721,978	2,801,407	2,891,052	2,836,431	-	-	-	-	14,310,201
	2.11	Effluent Pump Station	-	-	-	-	-	552,191	113,655	2,852,708	6,407,518	-	-	-	-	-	-	-	9,926,072
	2.12	Sludge Thickeners Plant 1	-	-	-	-	-	546,298	186,780	2,456	6,570,272	3,850,434	-	-	-	-	-	-	11,156,240
	2.13	Sludge Thickeners Plant 2	-	-	-	-	561,391	77,681	2,739,338	5,796,932	376,975	-	-	-	-	-	-	-	9,552,318
	2.14	Digesters Plant 1	-	-	-	-	-	-	-	-	1,207,784	700,764	1,776,844	15,513,866	17,991,722	17,881,588	5,611,977	-	60,684,546
	2.15	Digesters Plant 2	-	-	1,665,295	1,452,860	8,484,586	18,247,999	18,821,982	19,344,453	18,271,910	19,429,354	17,043,429	-	-	-	-	-	122,761,868
	2.16	Dewatering Building	-	-	-	-	1,393,675	3,843,931	1,302,317	7,289,016	45,885,816	40,238,100	-	-	-	-	-	-	99,952,854
	2.17	Chlorination Facilities	-	-	867,598	247,011	936,785	14,662,561	-	-	-	-	-	-	-	-	-	-	16,713,956
	2.18	Odor Control Systems	-	-	-	-	-	1,125,307	228,456	4,986,019	13,868,541	-	-	-	-	-	-	-	20,208,323
	2.19	Co-Gen Facility	-	-	479,041	1,092,598	417,016	2,070,650	17,332,719	8,919,180	-	-	-	-	-	-	-	-	30,311,204
	2.20	Septage Unloading	-	-	-	-	-	-	-	1,549,079	394,410	4,683,584	22,434,543	-	-	-	-	-	29,061,616
	2.21	Pump Station 1	-	-	-	-	-	722,605	65,664	9,805,232	982,013	-	-	-	-	-	-	-	11,575,513
	2.22	Pump Station 2	-	-	-	335,348	30,474	4,569,620	435,919	-	-	-	-	-	-	-	-	-	5,371,361
	2.23	O2 Plant Process Controls Phase 2	-	-	29,932	2,651	267,233	183,093	-	-	-	-	-	-	-	-	-	-	482,909
	2.24	Gas Monitoring	-	-	-	20,571	2,306	312,036	-	-	-	-	-	-	-	-	-	-	334,913
	2.25	Ventilation Improvements	-	-	-	-	-	-	-	-	-	150,050	33,312	352,802	1,567,735	663,075	-	-	2,766,973
	2.26	Rehabilitation of Walkways and Stairways	-	-	155,070	160,032	165,606	170,438	175,892	181,521	187,843	193,324	199,511	205,895	213,066	219,283	226,300	231,622	2,685,405
	2.27	Oxygen Production	-	-	-	985,349	648,868	104,942	9,076,204	12,477,462	3,210,366	-	-	-	-	-	-	-	26,503,191
	2.28	SCADA RTU Upgrades	-	-	396,000	-	-	-	-	-	-	-	-	-	-	-	-	-	396,000
	2.29	High Strength Influent Impact Study	-	780,780	763,620	-	-	-	-	-	-	-	-	-	-	-	-	-	1,544,400
																			596,338,296
North District WWTP	3.1	Headworks and Sludge Degritting Transfer	-	1,639,000	491,699	-	17,047,686	9,091,560	3,507,930	-	-	-	-	-	-	-	-	-	31,777,875
	3.2	Primary Clarifiers and Odor Control	-	-	-	-	2,612,761	494,222	4,829,504	15,159,812	15,687,789	8,846,884	-	-	-	-	-	-	47,630,971
	3.3	Oxygenation Trains	-	-	-	-	-	-	-	1,270,471	466,019	15,199	10,447,256	11,179,751	3,445,446	-	-	-	26,824,143
	3.4	Oxygen Production	-	-	-	-	-	-	-	-	252,409	198,663	24,580	4,850,151	1,813,787	-	-	-	7,139,589
	3.5	Secondary Clarifiers	-	-	-	-	-	-	-	2,693,973	1,951,120	429,938	8,238,951	13,094,717	13,550,772	13,946,188	14,392,466	13,347,376	81,645,502
	3.6	Disinfection	-	-	-	-	-	1,101,627	153,361	5,799,971	11,666,790	-	-	-	-	-	-	-	18,721,749
	3.7	Effluent Disposal	-	-	-	-	1,372,663	398,129	359,972	7,533,010	7,795,365	8,022,837	2,018,853	-	-	-	-	-	27,500,829
	3.8	Plant Wide Electrical	-	-	244,034	275,217	284,803	286,490	89,794	3,251,687	4,854,550	4,996,207	4,576,909	-	-	-	-	-	18,859,689
	3.9	Flood Mitigation	-	-	187,928	90,573	10,977	4,038,111	-	-	-	-	-	-	-	-	-	-	4,327,589
	3.10	Yard Piping Replacement	-	-	-	-	234,813	79,320	1,900	1,367,338	1,450,730	1,493,063	274,396	-	-	-	-	-	4,901,560
	3.11	SCADA RTU Upgrades	-	-	803,000	397,320	-	-	-	-	-	-	-	-	-	-	-	-	1,200,320
																			270,529,817
Wastewater Collection and Transmission Lines	4.1	Collection System I/I Repairs	-	-	8,000,001	8,256,001	8,543,536	8,792,839	9,074,210	9,364,584	9,690,729	9,973,507	10,292,659	10,622,024	10,991,962	11,312,711	11,674,718	11,949,282	138,538,762
	4.2	Government Cut FM - Phase 1& 2 (construction ongoing)	-	35,187,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35,187,000
	4.3	Government Cut FM - Phase 3	-	7,280,002	1,170,001	21,903,244	56,665,193	30,357,681	-	-	-	-	-	-	-	-	-	-	117,376,121
	4.4	North Dade 72 inch PCCP FM Rehabilitation	-	-	1,418,160	161,284	6,167,132	11,115,002	4,902,538	-	-	-	-	-	-	-	-	-	23,764,116
	4.5	South Dade 54 inch PCCP FM Rehabilitation	-	-	1,088,205	151,492	5,004,319	10,590,039	1,736,650	-	-	-	-	-	-	-	-	-	18,570,705
	4.6	Replacement of Tamiami Canal Aerial Crossing FM's at NW 37th Ave	-	-	46,464	3,030	610,749	67,200	-	-	-	-	-	-	-	-	-	-	727,443
	4.7	Replacement of 18 inch DIP FM in Miami Lakes	-	-	140,614	15,879	1,117,718	1,049,122	-	-	-	-	-	-	-	-	-	-	2,323,333
	4.8	Rehabilitation of 54 inch PCCP FM in the City of Miami	-	-	656,196	74,100	5,216,016	4,895,901	-	-	-	-	-	-	-	-	-	-	10,842,213
	4.9	Replace Approximately 30 miles of AC FM Transmission System	-	-	2,531,777	855,518	20,484	15,559,048	16,416,757	16,942,093	383,216	-	-	-	-	-	-	-	52,708,893
	4.10	Opa-Locka Airport 48" PCCP force main replacement	-	-	1,263,122	306,376	2,522,364	14,617,293	4,959,467	-	-	-	-	-	-	-	-	-	23,668,622
																			423,707,208
Sewer Pump Station Systems	5.1	Upgrade of PS#0418	-	-	1,314,411	253,448	2,768,448	8,912,982	9,198,198	1,430,383	-	-	-	-	-	-	-	-	23,877,869
	5.2	Upgrade of PS#0691	-	-	312,822	79,649	313,521	2,228,245	2,299,548	773,707	-	-	-	-	-	-	-	-	6,007,492
	5.3	Upgrade of PS#0692	-	-	312,822	79,649	313,521	2,228,245	2,299,548	773,707	-	-	-	-	-	-	-	-	6,007,492
	5.4	Replacement of Switchgear PS#0414	-	-	82,090	15,903	220,424	715,769	447,252	-	-	-	-	-	-	-	-	-	1,481,438
	5.5	Replacement of Switchgear and Rehabilitation of Wet well PS#0415	-	-	250,256	63,718	250,817	1,782,597	1,839,640	618,966	-	-	-	-	-	-	-	-	4,805,995
	5.6	Replacement of Switchgear PS#0416	-	-	82,090	15,903	220,424	715,769	447,252	-	-	-	-	-	-	-	-	-	1,481,438
	5.7	Replacement of Switchgear and Rehabilitation of Wet well PS#0417	-	-	166,839	42,477	167,211	1,188,400	1,226,428	412,644	-	-	-	-	-	-	-	-	3,203,999
	5.8	Replacement of Electrical and Mechanical Equipment in PS#0107	-	-	208,548	53,097	209,014	1,485,496	1,533,032	515,804	-	-	-	-	-	-	-	-	4,004,992
	5.9	Replacement of Plumbing and Electrical Equipment at PS#0301	-	-	251,740	48,772	675,966	2,195,023	1,371,571	-	-	-	-	-	-	-	-	-	4,543,072
	5.10	Upgrade of PS#0488	-	-	164,178	31,809	440,848	1,431,539	894,504	-	-	-	-	-	-	-	-	-	2,962,877
	5.11	Installation of 60 inch FM from Kendall Dr to PS#0536	-	-	328,356	63,618	881,694	2,863,073	1,789,005	-	-	-	-	-	-	-	-	-	5,925,746
	5.12	Replacement of Switchgear at PS#0187	-	-	197,015	38,171	529,016	1,717,844	1,073,403	-	-	-	-	-	-	-	-	-	3,555,449
	5.13	Refurbish Emergency Generators and Controls at Regional Pump stations	-	-	195,639	12,758	2,845,744	-	-	-	-	-	-	-	-	-	-	-	3,054,141
	5.14	Upgrade of PS #0086, 0492	-	1,402,501	724,888	-	-	-	-	-	-	-	-	-	-	-	-	-	2,127,389
	5.15	Upgrade of PS #0065, 0201, 0334, 0374, 0607	-	-	413,901	3,576,929	1,844,840	-	-	-	-	-	-	-	-	-	-	-	5,835,671
	5.16	Upgrade of PS #00198, 0437, 0466, 0680	-	-	-	269,264	2,333,790	1,203,314	-	-	-	-	-	-	-	-	-	-	3,806,369
	5.17	Upgrade of PS #0037, 0351, 0370, 0403	-	-	-	-	380,968	3,292,323	1,698,051	-	-	-	-	-	-	-	-	-	5,371,342
	5.18	Upgrade of PS #0441, 0491, 0710, 0827, 0852, 1236	-	-	-	-	-	533,841	4,613,465	2,379,445	-	-	-	-	-	-	-	-	7,526,751
	5.19	SCADA RTU Upgrades	-	-	3,957,005	4,083,629	1,962,827	-	-	-	-	-	-	-	-	-	-	-	10,003,462
																			105,582,981
		Expenses * Previously Spent	*53,042,852	46,289,283	36,362,353	48,407,817	142,938,988	242,916,618	161,610,220	185,728,407	206,570,083	142,344,615	101,783,858	64,988,372	56,633,195	51,358,886	37,173,395	25,528,280	1,603,677,222

Non Consent Decree Needs

- **Other Regulatory Related:** *These are capital projects that are required by various regulatory requirements such as Outfall Legislation, Safe Drinking Water Act, Health and Safety Regulations, etc. Failure to do these projects will result in violations of law subject to fines and other enforcement actions.*
  - *All Years Water is $3.32 Billion* *Wastewater is $3.98 Billion*
  - *Six Years Water is $1.27 Billion* *Wastewater is $1.76 Million*

Attachment 2

MIAMI-DADE COUNTY

Non Consent Decree Needs

- **Growth & Development Related:** *These are capital projects that address capacity limitations and other deficiencies in the system which restrict and/or limit construction projects and other developments. Failure to do these projects will adversely impact economic growth and development throughout the county.*
  - *All Years Water is $419 Million* *Wastewater is $1.28 Billion*
  - *Six Year Water is $161 Million* *Wastewater is $565 Million*

Attachment 2

MIAMI-DADE COUNTY

Non Consent Decree Needs

- **Rehabilitation and Replacement Related:** *These are capital projects that address identified rehabilitation and replacement infrastructure needs. Failure to perform these projects could result in pipe failures and equipment breakdowns with attendant service interruptions, sewage spills and other permit violations subject to regulatory enforcement actions and fines.*

  – *All Years Water is $340 Million* *Wastewater is $1.70 Billion*

  – *Six Years Water is $131 Million* *Wastewater is $750 Million*

Attachment 2

MIAMI-DADE COUNTY

MIAMI-DADE WATER AND SEWER DEPARTMENT
MYCIP - FUTURE BOND ISSUES
2013-FUTURE CAPITAL PLAN SUMMARY

Attachment 3

	2013-2014 (*) OCTOBER	2014-2015 OCTOBER	2015-2016 OCTOBER	2016-2017 OCTOBER	2017-2018 OCTOBER	2018-2019 OCTOBER	TOTAL SIX YEAR FUNDING	FUTURE FUNDING	Total
Wastewater	$ 157,336,906	$ 177,819,664	$ 304,477,499	$ 583,579,068	$ 672,897,780	$ 569,574,512	$ 2,465,685,429	$ 6,002,252,170	$ 8,467,937,599
Water	$ 142,663,094	$ 70,564,493	$ 166,543,328	$ 172,232,877	$ 298,048,187	$ 255,234,467	$ 1,105,286,446	$ 615,783,803	$ 1,721,070,249
TOTAL	$ 300,000,000	$ 248,384,157	$ 471,020,827	$ 755,811,945	$ 970,945,967	$ 824,808,979	$ 3,570,971,875	$ 6,618,035,973	$ 10,189,007,848

* Assumes $300M Bond Sale in FY 2012-2013

TOTAL DEBT SERVICE PAYMENTS *	$ 155,027,000	$ 162,169,625	$ 170,390,250	$ 176,851,250	$ 202,348,000	$ 244,627,496

* Net of SWAP Receipts

PROPOSED RETAIL INCREASES FOR BUDGET PURPOSES	8%	6%	6%	5%	5%	TBD

* Wholesale rates are calculated based on cost recovery but in the current projections calculated at a 4% increase.

BREAKDOWN OF TOTAL BOND ISSUANCE	
Bond Construction	$ 3,570,971,875
Capitalized Interest	$ 377,000,000
WASD Bond Reserve	$ 254,000,000
Cost of Bond Issuance	$ 43,000,000
TOTAL	$ 4,244,971,875

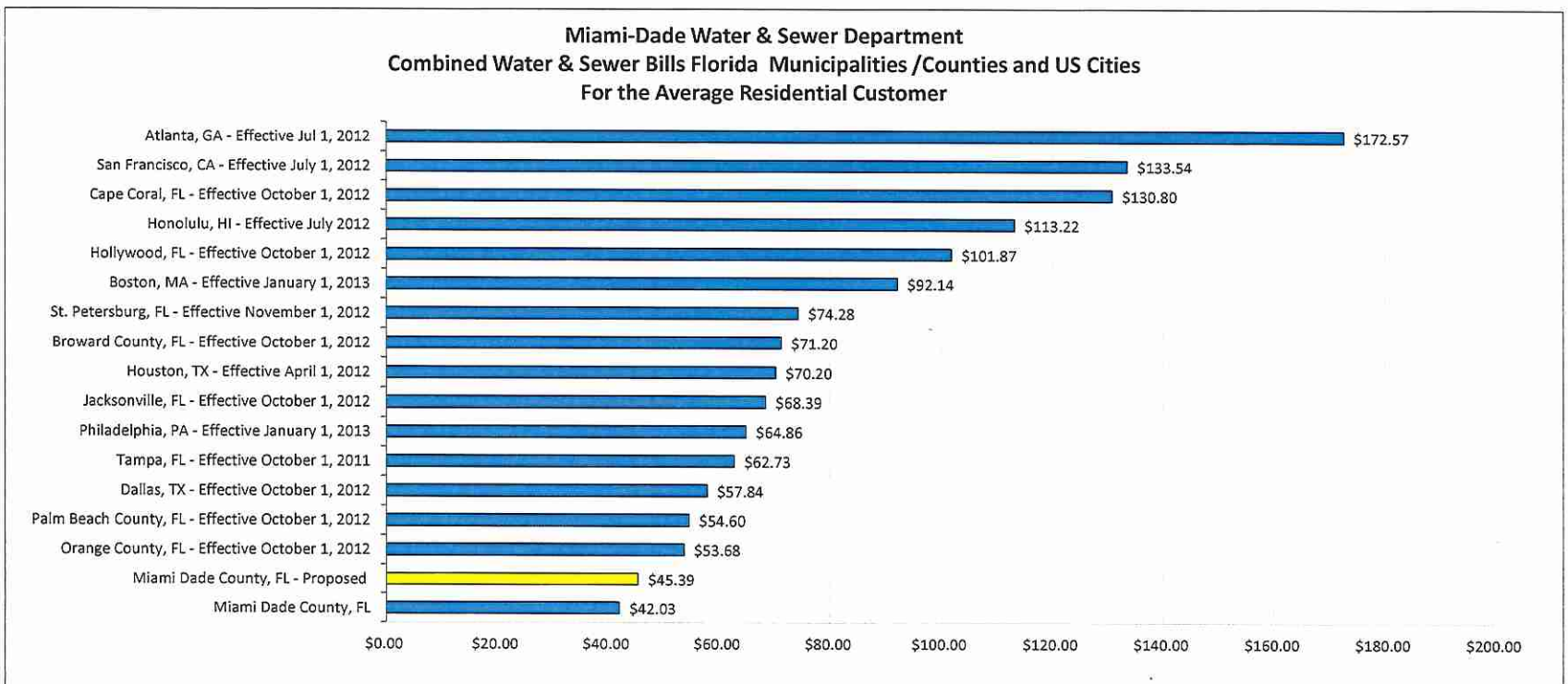
Miami-Dade Water & Sewer Department
Monthly Water and Sewer Charges
And Percentage Changes
Average 6,750 Gallon Customer

Effective Date	Water and Sewer Bill Total	$ Change	%
10/1/1995	$29.69		4.6%
10/1/1996	$31.01		4.4%
10/1/1997	$31.01		0.0%
10/1/1998	$31.01		0.0%
10/1/1999	$31.01		0.0%
10/1/2000	$31.01		0.0%
10/1/2001	$27.61	-$3.40	-11.1%
10/1/2002	$27.01	-$0.60	-2.2%
10/1/2003	$28.77	$1.76	6.5%
10/1/2004	$28.77	$0.00	0.0%
10/1/2005	$30.99	$2.22	7.7%
01/1/2007	$32.37	$1.38	4.5%
10/1/2007	$33.92	$1.55	4.8%
10/1/2008	$35.74	$1.82	5.4%
10/1/2009	$37.88	$2.14	6.0%
04/1/2010	$40.03	$2.14	6.0%
10/1/2010	$42.03	$2.00	5.0%
10/1/2011	$42.03	$0.00	0.0%
10/1/2012	$42.03	$0.00	0.0%

Attachment 4

Combined Water and Sewer Bills Florida Municipalities/Counties and Major US Cities
For the Average Monthly Residential Customers

Municipalities/Counties	FY 12-13
Miami Dade County, FL	$42.03
Miami Dade County, FL - Proposed	$45.39
Orange County, FL - Effective October 1, 2012	$53.68
Palm Beach County, FL - Effective October 1, 2012	$54.60
Dallas, TX - Effective October 1, 2012	$57.84
Tampa, FL - Effective October 1, 2011	$62.73
Philadelphia, PA - Effective January 1, 2013	$64.86
Jacksonville, FL - Effective October 1, 2012	$68.39
Houston, TX - Effective April 1, 2012	$70.20
Broward County, FL - Effective October 1, 2012	$71.20
St. Petersburg, FL - Effective November 1, 2012	$74.28
Boston, MA - Effective January 1, 2013	$92.14
Hollywood, FL - Effective October 1, 2012	$101.87
Honolulu, HI - Effective July 2012	$113.22
Cape Coral, FL - Effective October 1, 2012	$130.80
San Francisco, CA - Effective July 1, 2012	$133.54
Atlanta, GA - Effective Jul 1, 2012	$172.57



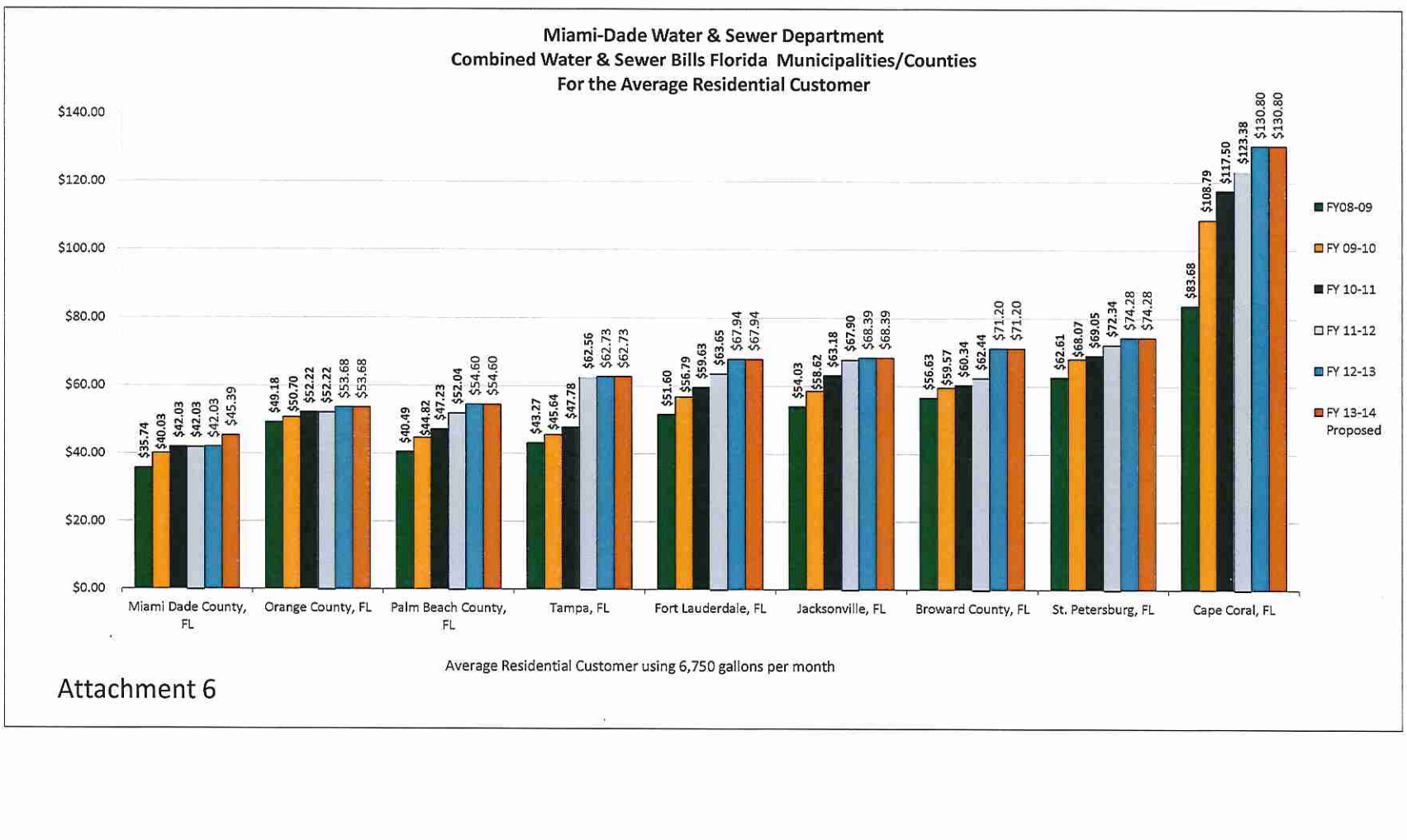
Attachment 5

Average Residential Customer using 6,750 gallons per month

Lasst Updated: May 3, 2013

Combined Water and Sewer Bills Florida Municipalities/Counties
For the Average Monthly Residential Customers

Municipalities/Counties	FY08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14 Proposed
Miami Dade County, FL	$35.74	$40.03	$42.03	$42.03	$42.03	$45.39
Orange County, FL	$49.18	$50.70	$52.22	$52.22	$53.68	$53.68
Palm Beach County, FL	$40.49	$44.82	$47.23	$52.04	$54.60	$54.60
Tampa, FL	$43.27	$45.64	$47.78	$62.56	$62.73	$62.73
Fort Lauderdale, FL	$51.60	$56.79	$59.63	$63.65	$67.94	$67.94
Jacksonville, FL	$54.03	$58.62	$63.18	$67.90	$68.39	$68.39
Broward County, FL	$56.63	$59.57	$60.34	$62.44	$71.20	$71.20
St. Petersburg, FL	$62.61	$68.07	$69.05	$72.34	$74.28	$74.28
Cape Coral, FL	$83.68	$108.79	$117.50	$123.38	$130.80	$130.80



Attachment 6