

**GWINNETT COUNTY, GEORGIA
DEPARTMENT OF WATER RESOURCES**

**CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE
PROGRAM SUMMARY**

Mission: The mission of the Gwinnett County Department of Water Resources is to enhance the quality of life by providing excellent water, wastewater, and stormwater services at the best possible value to our customers, while preserving natural water resources.

Vision: The Gwinnett County Department of Water Resources will be widely recognized as a publicly-owned utility of the highest caliber in all aspects of its services and operations through a commitment to and demonstration of service excellence to our customers.

The purpose of this document is to set forth a formal Capacity, Management, Operations, and Maintenance Program (Program) that addresses and provides for the continued operation and management of Gwinnett County's sanitary sewer collection system in an environmentally conscientious and cost-effective manner. This Program provides for specific activities and reporting procedures to document the progress of the Program as outlined in Capacity, Management, Operations and Maintenance (CMOM) Consent Agreement Guidance, Georgia Water Environment Federation, April, 2006.

The specific goals of the Gwinnett County, Georgia CMOM Program are:

- a.) On a continuing basis minimize the possibility of sanitary sewer overflows (SSOs) from the Gwinnett County Department of Water Resources' sewerage system; and
- b.) Implement an immediate response program to strive for quick mitigation of the SSO when SSOs occur; and
- c.) Prioritize areas of the sewerage system that need to be addressed via short term and long term solutions based in part on consideration of the frequency of SSOs in specific areas of the sewerage system; and
- d.) Implement a SSO reporting procedure that, at a minimum, ensures for proper reporting and posting of SSOs that occur from Gwinnett County Department of Water Resources' sewerage system in accordance with the Georgia Department of Natural Resources Environmental Protection Division's (EPD's) Rules and Regulations for Water Quality Control; and
- e.) Provide firm schedules with major milestone dates for completion of sewerage system improvements as identified in the Program; and
- f.) Provide a Capital Improvement Plan (CIP) that ensures for the ongoing funding of sewerage system improvements; and

- g.) Develop sanitary sewer system annual operating budgets that ensure that at least 25 percent of each budget is earmarked for the implementation and administration of CMOM components; and
- h.) Provide regularly scheduled reports as defined in this Program to the EPD to document compliance with the Gwinnett County Department of Water Resources' Program, as provided in paragraphs (a) through (f) above.

1. Organization

Gwinnett County's sanitary sewer collection system is operated and maintained by the Gwinnett County Department of Water Resources (GCDWR). GCDWR includes nine major operating divisions: Engineering & Construction, Planning, Infrastructure Systems, Business Services, Customer Service & Billing, Water Production, Water Reclamation, Field Operations & Maintenance, and Stormwater.

Of the nine divisions, four have direct responsibility for implementing measures in the CMOM Program. Appendix B shows organizational charts of the department and its divisions that are involved in CMOM implementation, personnel and their wastewater collections system operator licensure/certification, and licensure/certification required for vacant positions. These divisions and a summary of their respective responsibilities are:

- 1.1 **Engineering & Construction:** This division has primary responsibility for the design and construction of the department's CIP. This responsibility entails substantial project management oversight of consultants' design and contractors' construction work as well as some in-house design. CMOM-related activities that the Engineering & Construction division has responsibility for are the design, procurement, and inspection of new capital construction projects associated with the collection system.
- 1.2 **Planning:** This division has primary departmental-level responsibility for departmental planning for future water and sewer needs, systems modeling, obtaining state and federal permits, issuing construction permits for new water and sewer extensions, and maintaining the Departments maps and as-built records. CMOM-related activities that the Planning Division has responsibility for include Sewer Master Plan, CIP development, collection system modeling, permitting and inspection of new sewer extensions by developers and other private entities, utility locations, and maintenance of the collection system map.
- 1.3 **Field Operations & Maintenance:**
 - 1.3.1 **Water Resources Laboratory:** The Water Resources Laboratory is responsible for laboratory analyses for water production and water reclamation. Additionally, this section manages the Industrial Pretreatment Program, including permitting, monitoring, and enforcement. CMOM-related activities that the Water Resources Laboratory has responsibility for include, grease trap monitoring and enforcement, administration of the pretreatment program, and water quality sampling.
 - 1.3.2 **Collections Workgroup:** The workgroup is organized into repair crews, hydro jet crews, and TV inspection crews. These crews perform field maintenance and repair work on collection system gravity sewer pipelines, force mains, and service lines; response to SSOs and other emergency situations; provide response to customer complaints; perform television inspections on new gravity sewer pipelines; and perform diagnostic television inspections on new pipelines and service lines.

1.3.3 **Administration/Warehouse Workgroup:** Although this workgroup provides support for all the operations of GCDWR, several of their activities are fundamental to the operation of the workgroups with direct responsibility for operation and maintenance of the collection system. Key support functions include dispatch, purchasing and procurement, warehousing, and equipment maintenance.

1.3.4 **SSSES Workgroup:** This workgroup manages contractors performing services related to the maintenance and rehabilitation of the sanitary sewer collection system. Contracted services managed by this workgroup include, chemical root control treatments, manhole adjustments, manhole and pipeline rehabilitation, flow metering, performing diagnostic television inspections on existing pipelines and service lines, and gathering information for asset management.

1.4 **Water Reclamation:**

1.4.1 **Pump Stations Workgroup:** This workgroup has responsibility for operation of the Flow Management Control Center, which controls the transfers of sanitary sewer flows between drainage basins. Pump stations are divided into fourteen routes with a mechanic assigned to each route. The mechanic is responsible for performing routine periodic inspections on each pump station on the route and performing minor repairs as needed. Mechanical maintenance crews perform the heavier repairs that are beyond the capability of the route mechanic. In addition, GCDWR has contracted with qualified contractors to perform comprehensive semi-annual maintenance check ups on all pump stations, generator preventive maintenance and overhead cranes.

2. **Legal Authorities**

On September 1, 1998, the Gwinnett County Board of Commissioners adopted an ordinance for sewage collection, treatment, and construction. This ordinance, known as the "Sewer Use Ordinance", sets forth uniform requirement for contributors into the wastewater collection and treatment system from Gwinnett County, Georgia and enables the County to comply with all applicable state and federal laws required by the Clean Water Act of 1977, amendments to this Act, and the general pretreatment regulations (40 CFR Part 403). Specific provisions of this "Sewer Use Ordinance" include:

2.1 **Infiltration/Inflow Control:** Section 5-2003, Paragraph 16.B. of the Sewer Use Ordinance prohibits the discharge of storm water, groundwater, rain water, street drainage, roof top drainage, basement drainage, subsurface discharge or yard drainage through direct or indirect connections to a sanitary sewer.

2.2 **Sewer Design and Construction:** Section 5-2012, Paragraph A provides that all extensions of the sewer system shall be designed and built in accordance with standards of the Department of Water Resources. The Sewer Use Ordinance authorizes the Director of the Department of Water Resources the authority to issue and amend sanitary sewer installation regulations and specifications for Gwinnett County. Such standards for the design and construction of gravity sewers are published and set forth a standard document entitled Gwinnett County Sanitary Sewer Standards, revised May, 2001. Standards for the design and construction of sanitary sewer pump stations and force mains are published and set forth in a standard document entitled Sanitary Sewer Pump Station & Force Main Design and Construction Manual, dated October 1, 2004.

- 2.3 **Inspection of New and Rehabilitated Sewers:** The above referenced Gwinnett County Sanitary Sewer Standards provide standards for the construction, testing, and installation of sewer lines that are applicable to new and rehabilitated public sewers. In addition, Section 5-2005, Paragraph 7 of the Sewer Use Ordinance provides the County the authority to enter the premises of any sewer system user to determine whether the user is complying with all requirements of the ordinance and any wastewater discharge permit or order issued hereunder. This right of entry extends to the purposes of inspection, sampling, records examination and copying, and the performance of related duties.
- 2.4 **Satellite Systems:** Section 5-2006 of the Sewer Use Ordinance provides that if another county, municipality, or user located within another municipality, contributes wastewater to the public sewer system, the County shall enter into an inter-municipal agreement with the contributing municipality. This section specifies that the agreement require the contributing municipality to adopt and maintain a sewer use ordinance that is at least as stringent as that of Gwinnett County.
- 2.5 **National Pretreatment Program:** Section 5-2003 of the Sewer Use Ordinance implements the general and specific prohibitions of the National Pretreatment Program 40 CFR 403.5. This section incorporates the National Pretreatment Standards by reference and sets forth local pretreatment limits on pollutants discharges by system users.

3. Measures and Activities

GCDWR is committed to earmarking 25 percent of the annual sanitary sewer system annual operating budgets for the implementation and administration of CMOM components.

- 3.1 **Maintenance Facilities and Equipment:** The Department of Water Resources maintains a 118,462 square foot central facility for administrative, engineering, planning, storm water, and maintenance operations, located at 684 Winder Highway, Lawrenceville, GA. Opened in 2000, this facility provides improved office and assembly accommodations for maintenance operations along with a 20,400 square foot warehouse, 3,600 square foot detached storage building, a 224,000 square foot storage yard, and mechanical and electrical shops for equipment and minor vehicle repair. GCDWR maintains an adequate heavy equipment inventory to fully equip repair crews, manhole raising crew, high pressure jet crews, and pump station repair crews. GCDWR also maintains vehicles and specialty equipment to fully equip TV inspection crews, electronic technicians, and odor control specialists. The Collections Workgroup's small vehicle inventory is adequate to support field coordinators, contract coordinators, inspectors, and crews of field technicians. In addition, the GCDWR maintains an inventory of stand-by emergency equipment that includes a vacuum pump truck, a 5-ton crane truck, four 80KW portable generators, a 40KW Portable Generator, a 20K Portable Generator, a 6-inch vacuum pump, a trailer mounted Godwin bypass pump, a Polaris 4X6 ATV, various light plants, message boards, and arrow boards. Appendix C is a list of vehicles and equipment assigned to the Collections Workgroup.
- 3.1.1 **Replacement Parts:** GCDWR maintains a fully stocked warehouse with all necessary materials required to make emergency repairs on the collection system and to carry on the daily operations of the workgroups responsible for the operation and maintenance of the collection system. Pipe, repair clamps, closure

pieces, transition couplings, and similar repair materials are stocked for all sizes of pipelines and force mains in the collection system. As GCDWR also operates the potable water system and stormwater system, many such parts are interchangeable. GCDWR has standardized on one manufacturer of submersible pumps, allowing it access to a substantial inventory of replacement parts. Replacement parts are stocked for the most common types of failures experienced on pump stations, including control systems, valves, vacuum prime systems and electrical components. A representative sample of items stocked in the warehouse is attached as Appendix D. As GCDWR has pump stations up to 30 MGD, it is not economically feasible to stock replacement pipe, pumps, motors, starters, and complete valves for the larger sized facilities. However, in preparation of specifications and purchase of equipment, priority is given to vendors who maintain local service facilities and local inventories of spare parts for the equipment they propose to provide. In such instances, the design of the facilities provides for redundancy to allow for the service and repair of failed equipment. The replacement parts are managed through the inventory control system. This software tracks the usage of the parts and notifies inventory personnel when it reaches a pre-set reorder point. The parts are replenished through the procurement process. The maintenance of vehicles, heavy equipment, and other motorized rolling stock is centralized countywide through Gwinnett County's Department of Support Services – Fleet Management Division (GCFMD)

- 3.2 **Development and Maintenance of Collection System Maps:** A transition has been made from a manual, paper map-based system to a Geographic Information System (GIS). All sewer lines, manholes, pump stations, and related appurtenances have been digitized in the GIS. Additionally, paper as-built drawings have been scanned into an EDMS (Electronic Document Management System) and attached logically to the feature(s) to which it relates in the GIS. This enables the user to pick on a collection system feature in the GIS and bring up an image of the as-built drawings for it. In addition, GCDWR has purchased and is implementing a work order management system to track CMOM related information including maintenance, rehabilitation, and emergency calls. GCDWR has linked the GIS with the work order management system and to its sewer capacity model. GCDWR currently has contracts to obtain survey grade GPS coordinates, inverts and rim elevations on every manhole within Gwinnett County which will greatly improve the accuracy of our GIS and sewer model.
- 3.3 **Overflow Correction Prioritization:** SSOs are tracked in a database according to date, location, volume, and cause. The locations and causes of these SSOs are analyzed monthly to determine trends in cause and/or location. In addition, SSOs are tracked in the GIS. Locations of spills are periodically plotted and analyzed. Preventive maintenance efforts, such as flushing, cleaning, and TV are adjusted and concentrated in the geographic area where the incidences of SSOs are greatest.
- 3.4 **Routine Preventive Operations and Maintenance:** Recognizing that preventive maintenance is an essential key in the prevention of SSOs and to maintaining adequate capacity conveyance capacity for peak flows, GCDWR has undertaken a number of preventive maintenance programs:
- 3.4.1 **Inflow/Infiltration Control:** GCDWR is continuing its inflow and infiltration (I/I) control efforts with a Sanitary Sewer System Rehabilitation and Project Management Contract aimed at reducing I/I and preventing SSOs. The goal is improving the overall integrity of the sanitary sewer collection system by

developing a criticality matrix that focuses available resources to maximize the effectiveness of rehabilitation efforts.

3.4.2 Easement Clearing: The GCDWR typically holds a twenty-foot wide permanent easement along its sewer lines. Easement clearing is performed to improve access to existing sanitary sewer lines, to locate hidden or buried manholes, and to reduce the potential for root intrusion into the sewer lines. Where sewers traverse undeveloped property, clearing of easements is typically tolerated. However, substantial opposition from homeowners and, occasionally environmentalists has arisen when easement clearing is needed in developed or environmentally sensitive areas. Accordingly, GCDWR has implemented a voluntary moratorium on clearing in developed residential area while citizen concerns are addressed and a review board to hear variance requests is established. However, clearing continues in multi-family and commercial developments. In addition, easements previously cleared are being re-mowed as needed to prevent re-growth.

3.4.3 Hydraulic Cleaning/Television Inspection: Pipeline hydraulic cleaning and television inspection are performed as part of routine maintenance in areas where the heaviest concentrations of SSOs have occurred and where deposition issues are chronic or in response to immediate flow problems. The hydraulic cleaning is effective in reducing material that becomes deposited in lines with minimal slopes and in areas of high commercial activity. Television inspection is an aid in identifying lines with obstructions, with corrosion problems, and with potential failure possibilities. Both cleaning and television inspection are performed by in-house crews from the Collections Workgroup as well as qualified contractors. It is anticipated that all critical lines within the GCDWR service area will be addressed every ten years. Further, on-going investigations will provide data necessary to prioritize those areas which will require attention on a more frequent basis. The reaches to be included in subsequent efforts will be continually adjusted to address changing needs and priorities. In addition to in-house crews, GCDWR also funds an annual contract for cleaning and television inspection services.

3.4.4 Manhole Location and Adjustment: In addition to in-house crews, GCDWR also funds an annual contract for sanitary sewer manhole adjustment services.

3.4.5 Grease Control: Grease interceptors are required where necessary for the proper handling of liquid wastes containing grease in excessive amounts. Such interceptors are required on restaurants, food-processing establishments, and industries whose processes generate grease. GCDWR's Water Resources Laboratory inspects and monitors all grease traps within the County. Should any significant deficiency be noted at a particular site, the site is revisited until compliance is achieved. The Sewer Use Ordinance also provides that the customers requiring grease interceptors shall have a continuing responsibility for revamping, enlarging or otherwise modifying their interceptors to achieve their intended purpose. Failure to comply with provisions of the program places them in violation of the county code and may result in enforcement actions. Enforcement actions include notices, citation, penalties, and ultimately termination of service. However, grease accumulations within the collection system remain a significant problem area. Grease contributors include apartments, which are not yet required to comply with all conditions of the Sewer Use Ordinance. The presence of grease in the system normally becomes apparent when it attaches to intruding roots or other system discontinuities and impedes flow. The Field Operations & Maintenance Division addresses these situations by either mechanical removal of the grease or by application of a chemical solvent to remove grease. It is anticipated that the aggressive cleaning,

television inspection, and root control programs discussed above will significantly reduce the impact of grease on operation of the sewer system.

3.5 **Sewage Pump Stations:** Pump stations are divided into fourteen routes with a mechanic assigned to each route. The mechanic is responsible for performing routine periodic inspections on each pump station on the route and performing minor repairs as needed. Mechanical maintenance crews perform the heavier repairs that are beyond the capability of the route mechanic. In addition, GCDWR has contracted with qualified contractors to perform comprehensive semi-annual maintenance check ups on all pump stations, generator preventive maintenance and overhead cranes. All new pump stations constructed in Gwinnett County are required to have a secondary power generator installed. Older stations are in the process of being retrofitted with generators with GCDWR's goal to provide a generator or a redundant power source at all pump stations in the event of a power failure. The majority of stations are small above-ground wet-well mounted pump stations or submersible pump stations serving residential areas. SCADA and telemetry system monitor the operation of remote pump stations, provide an alarm system to warn of pump station failure, and control flows through pump stations. There are presently three types of systems utilized for pump station/metering station communications for GCDWR:

3.5.1 **Dial up Telemetry:** The majority of pump stations are on a dial up monitor. This system polls each pump station on the system every 20 minutes. Report-by-exception alarms are handled concurrently. This system has functioned well for a number of years.

3.5.2 **Flow Management System:** This system is used to monitor and control regional stations by "real time" communications via a leased telephone line. At present, critical sites are on this system. Controls can be accessed and their state altered from a computer in the Central Dispatch office (Central Dispatch), thus improving response times greatly. The Human Machine Interface allows authorized personnel to control or view status of any pump station, metering station, or water reclamation facility connected to the Flow Management System. Flow Management staff also have the capabilities of access and control of equipment from any remote location via dial-up network. All data from the two primary systems are stored to a historical archive located in GCDWR's Flow Management Center. This information is used for trend analysis, pump runtime comparison, flow measurement and alarm history. Alarms are received in Central Dispatch. If alarms are not acknowledged within a specified amount of time, they are re-routed to a dedicated telephone that can only receive incoming calls from the remote radio telemetry units (RTU).

3.5.3 **Cellemetry:** The Cellemetry system, which operates on a cellular base channel frequency, is now utilized in approximately half of all pump stations as a back-up telemetry system in the event of failure of the primary telemetry units. In addition to alarms, this cellemetry/pump management system generates daily discrepancy reports to alert GCDWR's crews to problems and disparities.

3.5.4 **Radio Communications:** GCDWR recognizes the need for an effective and responsive Supervisory Control and Data Acquisition (SCADA) system to monitor and control all sanitary sewer pumping stations as the system grows over the years of operation. The County currently operates remote raw sewerage pump stations of various sizes and configurations, all across Gwinnett County. GCDWR recognizes that the advantages of an effective SCADA system are:

- Reduced labor for monitoring pump stations
- Better surveillance of station equipment

- Instantaneous notification of alarms
- Automatic gathering of operating data for management of flows and reporting
- Remote control capability
- Consistency in equipment for reliable maintenance and responsiveness to emergencies

With the ability to remove the monthly costs of telephone/cellular service and a desire to have the new medium able to accommodate future technological advances in the communications industry, GCDWR elected to proceed forward with a radio communications system option. This system will also take advantage of the seven existing towers owned and operated by Gwinnett County.

- 3.6 **Remote Flow Meters:** GCDWR has numerous stand-alone open-channel and area-velocity flow meters at various locations in the collection system. The purpose of these flow meters is to provide flow data for analysis of capacity. The existing flow meters are connected into the SCADA system for utilization by the Flow Management/SSES workgroup.
- 3.7 **Training:** GCDWR provides its employees training opportunities both through in-house programs and programs provided through County and private resources. All field personnel received training from manufacturers and through peer instruction on the use of equipment relevant to their tasks and refresher training is provided as needed. Safety training leading to certification in areas such as confined space entry, trenching, work zone traffic control, and flagging are required of most field supervisors and are provided through the County's Department of Financial Services – Risk Management or recognized safety instructors, including the National Safety Council and the Georgia Institute of Technology. Training programs for work skill enhancements, supervisory development, and personnel management are available to GCDWR employees through the County's Department of Human Resources. A training requirement matrix is currently being developed to ensure proper training is tracked, and maintained.

4. Design and Performance

- 4.1 **Sewer and Pump Requirements and Standards:** All new collection facilities are inspected by GCDWR, utilizing either in-house personnel or consultants under contract to GCDWR. As addressed in Paragraph 2.2, GCDWR has produced and maintains standards for the design and construction of new collection system pipelines and pump stations.
- 4.2 **Inspection Procedures and Specifications:** Section 5-2012, Paragraph A of the Sewer Use Ordinance provides that all extensions of the sewer system shall be designed and built in accordance with standards of the Department of Water Resources. The Sewer Use Ordinance authorizes the Director of the Department of Water Resources the authority to issue and amend sanitary sewer installation regulations and specifications for Gwinnett County. Such standards for the design and construction of gravity sewers are published and set forth a standard document entitled Gwinnett County Sanitary Sewer Standards, revised May, 2001. Standards for the design and construction of sanitary sewer pump stations and force mains are published and set forth in a standard document entitled Sanitary Sewer Pump Station & Force main Design and Construction Manual, dated October 1, 2004. The above referenced Gwinnett County Sanitary Sewer Standards provide standards for the construction, testing, and installation

of sewer lines that are applicable to new and rehabilitated public sewers. These provisions include:

4.2.1 At no time will any sewer construction commence before approval of all plans, submittal of required documents, including necessary easements, issuance of permits, and a preconstruction conference with the County inspector. (Article 3.1.1)

4.2.2 All sewer lines, manholes, and other appurtenances governed by GCDWR shall be installed according to approved plans and profiles. If a field change must occur, the redesigned area(s) must be submitted before installation. (Article 3.1.2)

4.2.3 Periodic site visits without advance notice to the Contractor (Article 4.3.1)

4.2.4 Visual inspections (Article 4.3.2)

4.2.5 Low pressure air testing (Article 4.8)

4.2.6 Deflection testing on PVC pipe (Article 4.9)

4.2.7 Internal TV Inspection (Article 4.10)

4.2.8 Infiltration requirements: Zero infiltration allowed on sewers 16-inches and smaller; 75 gallons per day/inch diameter/mile for sewers greater than 16-inches.

5. Monitoring, Measuring, and Modifications

The primary performance measures for GCDWR's CMOM Program are envisioned as:

- Reduction in the rate of backups and SSOs;
- Volume of I/I removed from the system;
- Percentage of annual GCDWR operating budget earmarked for CMOM-related components;
- Continuous improvement in the allocation of available assets based upon system analysis.

5.1 **Program Updates:** The Field Operations & Maintenance Division publishes a comprehensive statistical report monthly that catalogs routine operations and maintenance activities. Included in this report are many CMOM-related elements that are used to monitor the progress of operations and maintenance activities. Included in this report are SSOs, backups, emergency responses, I/I removals, and maintenance contract activity. Program elements will be formally updated as appropriate based on monitoring or performance evaluations.

5.2 **Program Summary:** This document represents the initial formal statement of GCDWR's CMOM Program. GCDWR views this document as a working document that will be refined and updated as improvements to its CMOM Program are made. The program document will be updated at least annually, and more as often as necessary to reflect significantly changes in the CMOM Program.

6. Overflow Emergency Response Plan

It is the policy of GCDWR to comply with reporting requirements set forth in Chapter 391-3-6 of the EPD's Rules and Regulations for Water Quality Control. Central Dispatch serves as the focal point for receiving information regarding potential sanitary SSOs in the collection system. Central Dispatch is typically alerted to potential SSOs through telephone calls from customers, contractors, environmental groups, regulatory agencies, and other County agencies. Additionally, all sanitary sewer pump stations in the collection system are equipped with telemetry that sends an alarm back to the Central Dispatch in the event of a pump station failure that could result in a SSO. Central

Dispatch monitors the pump station telemetry system for such alarms. Central Dispatch operates 24-hours per day, seven days a week. The Field Operations & Maintenance Division maintains crews on regular duty during regular business hours and during the days on Saturdays and Sundays. A rotational on-call schedule of field personnel and supervisors has been implemented to ensure that adequate personnel are available to handle any emergency repairs after regular business hours, on weekends, and holidays. This on-call rotation includes mechanical, electronic and electrical repair personnel.

- 6.1 **Receipt of SSO Reports:** Potential SSOs are considered emergencies. GCDWR is typically alerted to potential SSOs through telephone calls from customers, contractors, environmental groups, regulatory agencies, and other County agencies. Central Dispatch serves as a 24 hour per day, seven day per week point of contact for these entities. As indicated above, all sanitary sewer pump stations in the collection system are equipped with telemetry, and in the case of critical stations, backup telemetry systems. When there are problems at pump stations that could result in a SSO (e.g. pump fail, power fail, high wet well level), these systems send an alarm back to Central Dispatch. When a trouble call or pump station alarm is received, the dispatcher on duty dispatches an emergency response crew to the reported site. These crews are trained to diagnose the cause of the problem and begin appropriate corrective actions. If the crew determines that a SSO has occurred, the crew then contacts a field supervisor (Coordinator). The Coordinator meets with the crew at the site of the SSO and proceeds with estimating the size of the SSO using the procedures identified in Appendix E, investigating the receiving waterways for need of cleanup, and documenting information needed to report the SSO. Central Dispatch operates 24-hours per day, seven days a week. The Field Operations & Maintenance Division maintains crews on regular duty during regular business hours and during the days on Saturdays and Sundays. A rotational on-call schedule of field personnel and supervisors has been implemented to ensure that adequate personnel are available to handle any emergency repairs after regular business hours, on weekends, and holidays.
- 6.2 **Response:** When a trouble call or pump station alarm is received, the dispatcher on duty dispatches an emergency response crew to the reported site. These crews are trained to diagnose the cause of the problem and begin appropriate corrective actions. If the crew determines that a SSO has occurred, the crew then contacts a field supervisor (Coordinator). The Coordinator meets with the crew at the site of the SSO and proceeds with estimating the size of the SSO, investigating the receiving waterways for need of cleanup, and documenting information needed to report the SSO. All dispatchers, administrative support staff, supervisors, and field staff have two-way radios for constant communications. In addition, pagers are issued to field personnel so that they can be contacted via telephone when they are in the field or are on-call after hours. Once the Coordinator confirms that the SSO meets the requirements that the EPD set forth in Section 391-3-6 of the Water Quality Control Act as a sewer spill requiring emergency action, the Coordinator then relays all pertinent information to the dispatcher on duty. The crew and Coordinator remain on-site until the SSO is stopped and until clean up is complete. Target response times are between 30 minutes to an hour during regular business hours and between one and two hours on evenings, weekends, and holidays.
- 6.3 **Official Notification:** Once the Coordinator confirms that the SSO meets the requirements that the EPD set forth in Section 391-3-6 of the Water Quality Control Act as a sewer spill requiring emergency action, the Coordinator then

relays all pertinent information to the dispatcher on duty. Signs are posted at the spill site, where the spill entered state waters, public access areas downstream of the spill, and within reasonable distance downstream depending on the magnitude of the spill. Upon receiving the SSO information, the dispatcher then immediately notifies the EPD either by telephone or fax machine. The dispatcher then proceeds with notification of GCDWR's Environmental Laboratory to begin required stream sampling and the local Health Department. For SSOs classified as "major spills", the dispatcher then proceeds with notification of downstream municipalities, agencies, or affected entities (citizens, homeowner groups, etc.) and local news media. Emergency contact lists showing whom to contact in cases of emergency are included in GCDWR's Department-wide Contingency Plan. GCDWR also publishes a notice of the spill in the Gwinnett Daily Post, the legal organ of the County, within seven calendar days.

6.4 **Training:** Emergency response to SSOs is the responsibility of the Field Operations & Maintenance Division. All dispatchers, field supervisors, foremen, lead workers, and managers involved in this emergency response effort have been trained in the procedures and in response requirements. In addition, field supervisors, foremen, and lead workers have been trained in the calculation of spill volumes. New personnel receive on-the-job training regarding these procedures. When performance reviews of the response or reporting process show that the procedures are not being carried out as effectively as practical, refresher training is provided.

6.5 **Emergency Operations:** All initial emergency response and most emergency repair work are carried out with in-house forces. As shown previous, GCDWR has adequate staff, vehicles, and equipment to effectively handle these duties. Annual contracts for the repair of large and small sewer lines and force mains augment the in-house repair capabilities. Such contracts provide that the contractor must provide emergency mobilization and repair operations when called on by GCDWR to do so. Construction contractors can also be hired through an accelerated procurement process to perform emergency repairs.

For pump stations, GCDWR also has emergency and accelerated repair arrangements with its mechanical and equipment suppliers to augment its in-house repair capabilities. GCDWR also maintains annual contracts with qualified local contractors for electrical repair, motor repair, and generator repairs.

7. System Evaluation and Capacity Assurance

With the population growth of Gwinnett County being among the highest in the nation, assessment of the capacity of the collection system and the treatment facilities is a continuous process. GCDWR has a full-time planning staff of engineers and technicians who monitor potential growth in wastewater flows. In addition, GCDWR has an aggressive master planning program and maintains a current Master Plan to project future average and peak flows in order to proactively provide wastewater infrastructure to accommodate those future flows. GCDWR planning efforts utilize flow projections based on historical data and continually monitored existing flows to identify system requirements. Flow projections are developed and applied to all major drainage basins to allow infrastructure planning.

7.1 **Hydraulic Modeling:** GCDWR's Planning Division has an active on-going hydraulic modeling effort. The best available data is used to analyze the system

capacity and compare it to metered or unit based flows. The Planning Division works in close coordination with Gwinnett County Department of Planning and Development to monitor proposed new development within the County and anticipates what effect the proposed development will have on the sewer infrastructure. If there is any question as to existing conditions, the Planning Division works with proposed developments to ensure it obtains necessary survey as-built and flow meter data to improve the hydraulic model accuracy.

7.2 **Master Plan:** GCDWR's Planning Division has an active, on-going Master Planning effort, providing the strategy for long-term capacity enhancements needed for the wastewater conveyance system. Base flows and remaining I/I after anticipated rehabilitation for each basin from the preceding study are used, along with population projections developed by the Department of Planning & Development and the Atlanta Regional Commission, to determine ultimate capacity requirements throughout the wastewater network. A model of the network was developed and the capacity of each sewer reach was compared with both existing and future peak flows.

7.3 **Capital Improvement Plan:** The GCDWR Planning Division maintains the long-range plan, including a 6-year Capital Improvement Plan (CIP), for system improvements. The long-range plan includes the upgrades of existing lines, the installation of new lines, and the installation of pumping stations. A copy of the plan is presented in Appendix F. This program is funded from available revenues, bonds, and other sources. Projects include not only those referenced above, but also water and wastewater treatment, water distribution, and various other departmental projects.

7.2.1 **Updates:** The Gwinnett County Board of Commissioners through an annual budget process provides funding for operation, maintenance, and upgrade of the sanitary sewer system from system revenues. New projects are recommended for incorporation in the CIP as new planning, engineering and field information becomes available.

7.3 **Rehabilitation Identification and Prioritization:** Sewer rehabilitation projects are generally identified through the SSES workgroup or through the planning/permitting process. Identified projects are discussed with planning, engineering, and the financial staff to designate a priority and appropriate funding source. Rehabilitation projects are generally funded through the capital budget program and funding amounts are reviewed and adjusted on an annual basis.

8. Program Audit

GCDWR will produce annual reports to determine which strategies are working and which can benefit from further improvement. The report will also identify gaps in the program. This plan will serve as an operational guide for all GCDWR staff, but will be flexible enough to allow for changes in response to changing conditions in the collections system. GCDWR will report on applicable metrics utilizing the EXAMPLE COLLECTION SYSTEM PERFORMANCE INDICATOR DATA COLLECTION FORM in Appendix A of GUIDE FOR EVALUATING CAPACITY, MANAGEMENT, OPERATION, AND MAINTENANCE (CMOM) PROGRAMS AT SANITARY SEWER COLLECTION SYSTEMS, United States Environmental Protection Agency Office of Enforcement and Compliance Assurance (2224A), EPA 305-B-05-002 dated January, 2005.