

City of Memphis  
Gravity Sewer Operations and Maintenance  
Program

Draft  
April 8, 2015

Response to EPA letter dated February 4, 2015

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

  
Bobby D. Allen, P.E.

  
Date

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## Section 1

### Introduction

On September 20, 2012, the Consent Decree between the City of Memphis (Memphis or “City”), the United States, the State of Tennessee, and the Tennessee Clean Water Network was entered by the United States District Court for the Western District of Tennessee. Within the Consent Decree, a number of programs were set forth for the continued improvement of the City’s wastewater collection and transmission system (WCTS), including the Gravity Sewer Operations and Maintenance (O&M) Program described herein. The Gravity Sewer O&M Program is intended to document the protocols and procedures associated with the gravity sewer system in order to maintain existing sewer capacity and prevent sanitary sewer overflows (SSOs), particularly those caused by fats, oils, and grease (FOG), roots, or debris obstructions. The requirements for the Gravity Sewer O&M Program are described in section V.10.d of the Consent Decree.

This Gravity Sewer O&M Program is intended to address operating procedures, procedures for information management, and key performance indicators for the gravity sewer system, including manholes and inverted siphons. The program will be reviewed once every two years unless a more frequent review is determined to be necessary by the City, and the program may be modified based on changes in field operating conditions and industry standards.

#### 1.1 Description of the System

The City of Memphis provides sanitary sewer collection and treatment services to most areas within the city limits. Memphis also receives wastewater generated from municipal satellite systems, including the Horn Lake Creek Basin Interceptor Sewer District (Mississippi), the City of Germantown, portions of the cities of Bartlett, Collierville, Lakeland, and Millington, and from unincorporated areas of Shelby County. The WCTS is a separate sanitary sewer system that serves a total area of 442 square miles, with 314 square miles within the City limits and 128 square miles within suburban areas. The WCTS is divided into six major sewer basins: Loosahatchie River, Wolf River, Front Street, President’s Island, Nonconnah Creek, and Horn Lake Creek.

The sewer system in the Memphis service area is predominately gravity based and currently consists of approximately 2,400 miles of sewer lines, including gravity sewers and force mains, 85,000 manholes, and 102 lift stations. This excludes privately owned laterals or private collection systems, such as those lines within gated communities and apartment complexes; these sewers are neither owned nor maintained by Memphis and therefore are not covered by this Gravity Sewer O&M Program.

The Maynard C. Stiles WWTP, located near the confluence of the Mississippi and Wolf Rivers, serves the northern portion of the service area, including the Wolf River, Front Street, and Loosahatchie River sewer basins. This WWTP receives flow from two 96-inch diameter interceptors which generally follow the Loosahatchie and Wolf Rivers.

The T. E. Maxson WWTP, located near the confluence of McKellar Lake and the Mississippi River south of President’s Island, serves the southern portion of the service area, including the Nonconnah Creek, Horn Lake Creek, and President’s Island sewer basins. There are two main interceptors serving the T. E. Maxson WWTP. A 96-inch diameter sewer collects flow from the east, generally following Nonconnah

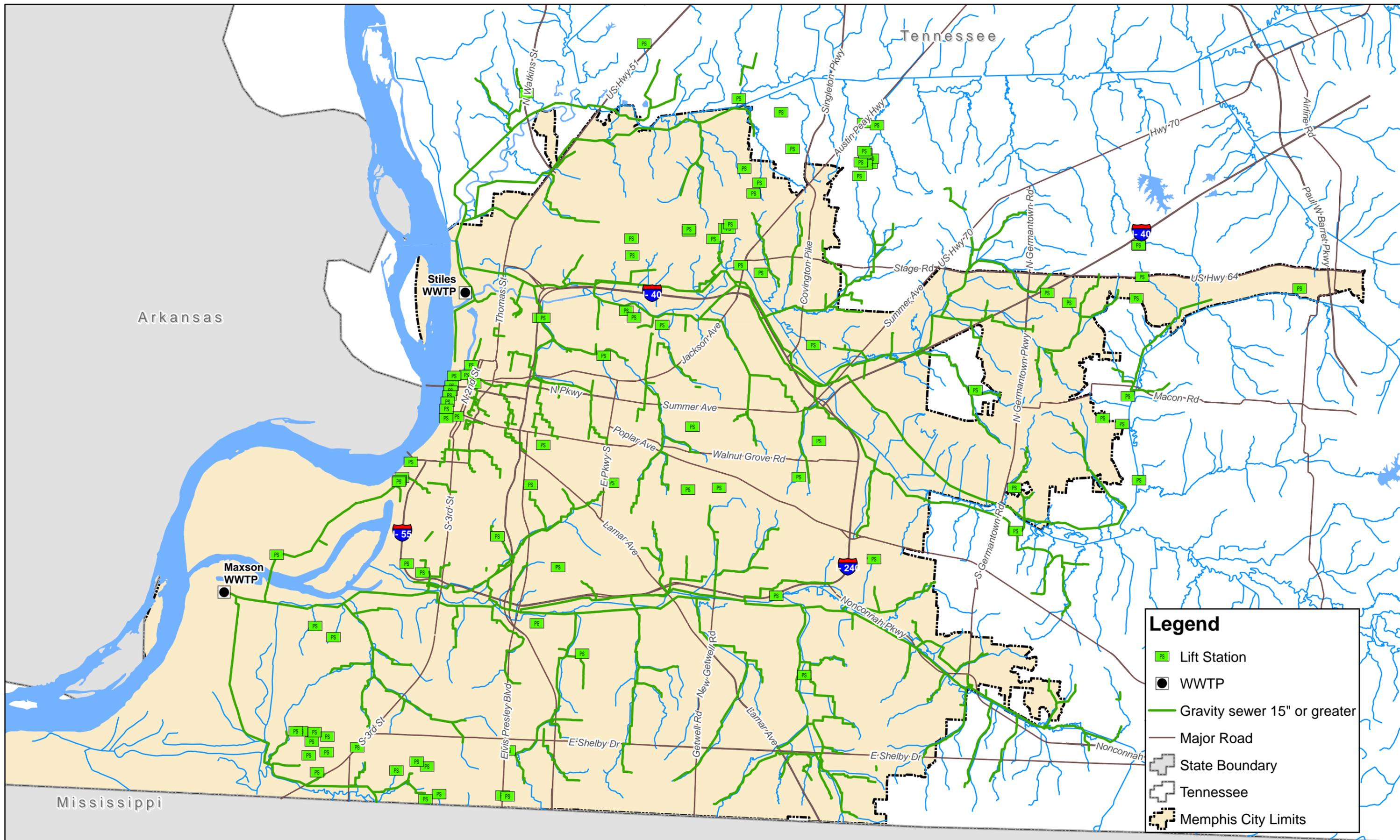
Creek. A second 90-inch diameter sewer serves the area to the south, including the Horn Lake Creek Basin Interceptor Sewer District in Mississippi.

**Figure 1-1** is a schematic of the WCTS showing lift stations, treatment plants, and gravity sewers 15 inches in diameter and larger.

## 1.2 Consent Decree Requirements

The Gravity Sewer O&M Program is intended to set forth protocols and procedures associated with the gravity sewer system in order to maintain existing sewer capacity and prevent SSOs, particularly those caused by FOG, roots, or debris obstructions. Requirements of the program are described in paragraphs V.10.d.(i) through V.10.d.(xii) in the Consent Decree and are summarized below:

- Written preventive operations and maintenance schedules and procedures related to the inspection and operation of the gravity sewer system
- An engineering evaluation of potential sulfide and corrosion control options
- Prioritizing the evaluation of the system considering the size of pipe, location of SSOs, community input, or other criteria Memphis finds appropriate
- Approach for the inspection of gravity sewer, manhole, and inverted siphon easements, including inspection of creek crossings, stream bank encroachment toward the sewer system, and easement accessibility
- A schedule for the maintenance of easements
- A description of resource commitments such as staffing, contractual support, and equipment
- Written standard gravity sewer system emergency/reactive operations and maintenance procedures
- Data attributes for the City's mapping program allowing program data to be compared in Memphis' information management system against other pertinent data such as the occurrence of SSOs, including repeat SSO locations, and permit violations.
- An inventory management system with information on critical equipment and spare parts
- A common information system that Memphis will use to track implementation of the Gravity Sewer System O&M Program, track maintenance activities, and track management, operations, and maintenance performance indicators
- Key Performance Indicators (KPIs) that will be tracked to measure performance of the WCTS through this Gravity Sewer O&M Program
- Reports which list equipment problems and the status of work orders generated during the prior month



### 1.3 Related Consent Decree Requirements

The Gravity Sewer O&M Program is one of several components required under the Consent Decree related to the Management, Operation, and Maintenance (MOM) of the Memphis WCTS. These MOM programs include:

- Sewer Overflow Response Plan (SORP)
- Fats, Oils, and Grease (FOG) Management Program
- Lift Station and Force Main O&M Program
- Gravity Sewer O&M Program
- Inter-Jurisdictional Agreement Program
- Continuing Sewer Assessment Program (CSAP)
- Infrastructure Rehabilitation Program (IRP)

The Gravity Sewer O&M Program focuses on activities to effectively operate and maintain the gravity sewer system. These activities primarily center on maintaining the existing sewer capacity by addressing the causes of SSOs, particularly those resulting from obstructions in the system. This program is closely related to the other above-listed components, which together provide a framework for Memphis to effectively and efficiently manage, operate, and maintain the WCTS. For example, observations made through the CSAP may result in setting more or less frequent cleaning and inspection priorities for a given sewer segment. Additionally, activities conducted through the Gravity Sewer O&M Program may be utilized to meet the CSAP target for assessment of approximately ten percent of the WCTS on average per year.

### 1.4 Organization of the Report

This Gravity Sewer O&M Program is organized into the following sections:

- **Section 1 – Introduction:** Provides background information, describes the existing system, and summarizes related Consent Decree requirements.
- **Section 2 – Definitions:** Provides definitions of commonly used terminology referenced in the document.
- **Section 3 – Resources:** Describes the resources available to support the Gravity Sewer O&M Program, including staffing, contractors, equipment, and critical spare parts.
- **Section 4 – Emergency/Reactive O&M Procedures:** Provides a general description of the activities performed by Memphis to address emergency operations and maintenance issues.
- **Section 5 – Preventive O&M Procedures:** Describes the on-going, preventive activities utilized by Memphis to properly operate and maintain the gravity sewer system.
- **Section 6 – Reporting:** Describes the information tracking system and how that system is used to assess performance indicators.

## Section 2

### Definitions

This section is designed to help familiarize readers with common terms and acronyms used in this document.

**Building Backup:** A wastewater release or backup into a building or private property that is caused by blockages, flow conditions, or other malfunctions in the WCTS. A wastewater backup or release that is caused by blockages, flow conditions, or other malfunctions of a Private Lateral (as defined in the Consent Decree) is not a Building Backup.

**Closed-circuit Television (CCTV):** Technology by which Memphis and/or its outside contractors use a video camera to visually inspect the internal condition of pipes and sub-surface structures.

**Continuing Sewer Assessment Program (CSAP):** The Consent Decree deliverable that sets forth the procedures for assessing and analyzing the infrastructure of the WCTS, including the establishment of procedures for setting priorities and schedules.

**Environmental Protection Agency (EPA):** United States Environmental Protection Agency and any of its successor departments or agencies.

**Fats, Oils, and Grease (FOG) Program:** "FOG" refers to fats, oils and grease, which are generated by residents and businesses processing or serving food and other products. A FOG program aims to prevent FOG accumulation in sewer systems.

**Force Mains:** Any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A force main is intended to convey wastewater under pressure.

**Geographic Information System (GIS):** A system consisting of hardware, software, and data that is designed to capture, store, and analyze geographically-referenced information.

**Gravity Sewer Line or Gravity Sewer:** Pipes that receive, contain, and convey wastewater not normally under pressure but are intended to flow unassisted under the influence of gravity.

**Gravity Sewer Operations and Maintenance (O&M) Program:** The Consent Decree deliverable that sets forth the protocols and procedures associated with the gravity sewer system.

**Inflow and Infiltration (I/I):** The total quantity of water from inflow, infiltration, and rainfall-induced infiltration without distinguishing the source.

**Infrastructure Rehabilitation Program (IRP):** The Consent Decree deliverable that describes the basis for evaluating and prioritizing how Memphis will manage and respond to defects found in the WCTS.

**Lift Station:** A facility in the WCTS (not at the WWTPs) comprised of pumps which lift wastewater to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary for the operation of the lift station.

**Lift Station and Force Main Operations and Maintenance (O&M) Program:** The Consent Decree deliverable that sets forth the protocols and procedures associated with the operation and maintenance of lift stations and force mains.

**Manhole or Junction Box:** A structure which provides a connection point for gravity lines, private service laterals, or force mains, as well as an access point for maintenance and repair activities.

**Memphis:** The City of Memphis, Tennessee, Public Works Division, and any successor thereto.

**Sanitary Sewer Overflow (SSO):** An overflow, spill, or release of wastewater from the WCTS or WWTPs, including: (a) unpermitted discharges; (b) overflows, spills, or releases of wastewater that may not have reached waters of the United States or the State; and (c) all Building Backups.

**Sewer Overflow Response Plan (SORP):** The SORP provides structured guidance, including a range of field activities to choose from, for a generalized uniform response to overflows.

**Supervisory Control and Data Acquisition (SCADA) System:** A system of automated sensory control equipment that monitors the operation of a portion of the lift stations within the collection system. The SCADA system is designed to convey alarms when predetermined conditions occur. Monitoring parameters may include, but are not limited to, power failures, high wet well levels, and pump failures that could potentially cause overflows.

**Tennessee Department of Environment and Conservation (TDEC):** Tennessee Department of Environment and Conservation and any of its successor departments or agencies.

**Unpermitted Discharge:** A discharge of pollutants which reaches waters of the United States or the State from (a) the WCTS, (b) WWTPs through a point source not specified in a National Pollutant Discharge Elimination System (NPDES) Permit, or (c) WWTPs which constitutes a prohibited bypass except if the criteria set forth at 40 C.F.R. § 122.41(m)(2) or 40 C.F.R. § 122.41(m)(4)(i)(A) – (C) are met.

**Wastewater Collection and Transmission System (WCTS):** The municipal wastewater collection, retention, and transmission system including all pipes, force mains, gravity sewer lines, lift stations, pumps, manholes, and appurtenances thereto, which are owned or operated by the City of Memphis and service the City of Memphis and which flow to the Maynard C. Stiles and T. E. Maxson WWTPs.

**Wastewater Treatment Plant (WWTP):** Devices or systems used in the storage, treatment, recycling, and reclamation of municipal wastewater. For purposes of this document and the Consent Decree, this definition shall refer only to the following treatment facilities: the Maynard C. Stiles WWTP located at 2303 N. 2nd St., Memphis, Tennessee, and the T. E. Maxson WWTP located at 2685 Plant Road, Memphis, Tennessee, and all components of such sewage treatment plants but does not include the WCTS.

**Waters of the State:** Waters of the State shall have the same meaning as "Waters" defined at TCA § 69-3-103, whereby "Waters" means any and all water, public or private, on or beneath the surface of the ground, that are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership that do not combine or effect a junction with natural surface or underground waters.

## Section 3

### Resources

In order to effectively and efficiently maintain and operate the gravity sewer system, Memphis utilizes a combination of internal staff and contractual support, which are described in this section. This section also describes the equipment and spare parts inventory utilized as part of the Gravity Sewer O&M Program.

The resources described in this section are anticipated to be adequate for the operation and maintenance of the gravity sewer system, including emergency and reactive O&M activities. Memphis recently completed an assessment of the Environmental Maintenance Bureau and anticipates the hiring of additional staff in 2015. Memphis will continue to monitor resources and equipment as part of its biennial assessment as described in Section 1.

Commented [m1]: Response to Comment 5

#### 3.1 Public Works Organization

The Division of Public Works is a multifaceted organization with an organizational structure in place to provide operations and maintenance of the Wastewater Collection and Transmission System (WTCS), as well as the streets, storm water management and drainage, flood control, and solid waste systems of the City. An organizational chart of the current Wastewater Collection Systems Department is included in **Appendix A**. Also, for information purposes only so that the reader of this document has a better understanding of the organizational structure, job descriptions of key staff members are included in Appendix A. While this document recognizes that the specifics may change, the City expects to maintain an appropriate level of effort in implementing the Gravity Sewer O&M Program.

The Wastewater Collection Systems Department, which is responsible for compliance with the regulatory requirements of the City's NPDES permits and for addressing sanitary sewer overflows (SSOs), is directed on a day-to-day basis by the Administrator of Wastewater Collection Systems. The Administrator reports directly to the Administrator of Environmental Engineering, who oversees all services associated with the WCTS. The Administrator of Environmental Engineering reports directly to the Public Works Director, who oversees all activities within the Public Works Division for the City.

The Wastewater Collection Department includes professionals with backgrounds in engineering, wastewater operations and maintenance, administration, and communications. These individuals coordinate and communicate work and programs with other departments and divisions of the City government, including engineering, construction administration, wastewater treatment, and others to achieve the goals of the WCTS.

The operation of the gravity sewer system is a joint effort among the Stoppage/Inspection and Repair Bureaus of the Wastewater Collection Systems Department. The Stoppage/Inspection Bureau evaluates the WCTS in an effort to identify defects and prevent problems. These evaluations include manhole and mainline inspections, CCTV inspections, dye testing, and smoke testing. The Stoppage/Inspection Bureau crews are also responsible for addressing line stoppages, responding to and cleaning sewer system overflows, and any physical remediating of SSO effects on the public and environment as set forth in the SORP. The Repair Bureau crews respond to calls to repair sewer and manhole issues reported by the Stoppage/Inspection crews.

All of these activities fall under the direction of the Wastewater Collection Systems Department and, specifically, the Environmental Maintenance Bureau (EMB), which is responsible for alleviating stoppages and for preventive maintenance of the WCTS. In addition, the EMB is responsible for prioritizing repairs. The Environmental Maintenance Manager is the head of the EMB and is responsible for operations and maintenance of the WCTS. The EMB Manager, who reports directly to the Administrator of Wastewater Collection Systems, is responsible for coordinating the activities of staff engaged in repair and maintenance of the City's WCTS and coordinating and preparing reports for TDEC and EPA compliance.

Currently seven shift supervisors, who report to the Environmental Maintenance Manager, are responsible for the day-to-day WCTS maintenance program. The shift supervisors oversee personnel by providing training, work direction, and assignments of work orders, including dispatch of stoppage crews to correct sewer overflows. Currently there are 113 full-time equivalent (FTE) positions in the City's organizational structure for the Stoppage/Inspection and Repair Bureaus of the Wastewater Collection Systems Department that maintain the WCTS and perform other maintenance / construction activities. General duties of each bureau are described in the following sections.

### 3.1.1 Stoppage / Inspection Bureau

The role of the Stoppage/Inspection Bureau is to locate, identify, and correct problems in the sewer collection system by providing both preventive maintenance cleaning of sewer lines and clearing stoppages on an emergency basis. The objectives of the Stoppage/Inspection Bureau are as follows:

- Respond to citizen complaints and other reports of sewer overflows or blockages
- Proactively attempt to eliminate sewer stoppages before they occur
- Perform preventive maintenance cleaning on the sewer system

The Stoppage/Inspection Bureau currently contains 57 FTEs, although this number is subject to fluctuations due to ~~staff turnover.~~ for example, staff turnover. Each Stoppage Crew and Inspection Crew is typically comprised of two persons. The majority of SSOs/issues that Environmental Maintenance crews address are associated with stoppages as opposed to damaged/broken lines (repair issues).

Commented [m2]: Response to Comment 6

### 3.1.2 Repair Bureau

Once prioritized repairs are identified, the role of the Repair Bureau is to provide repairs to the sewer system in a cost-effective manner. Specific activities of the Repair Bureau include:

- Installation of residential and commercial sewer service connections
- Main sewer line, force main, and sewer service connection repairs
- Stabilization of sewer trenches
- Expose and raise or lower manholes
- Supervise contracted main sewer line service connections, manhole repairs, and concrete and asphalt replacement

It is important to note that the Repair Bureau is not only responsible for addressing defects within the WCTS but completes other activities involving excavation, such as installing new sewer service

connections. The Repair Bureau currently contains 56 FTEs, although this number is subject to fluctuations due to staff turnover., for example, staff turnover. Each repair crew is typically comprised of seven persons. In addition to requiring more personnel per crew, repair jobs typically take longer and are more resource intensive than stoppage issues. Therefore, a repair crew typically handles fewer projects than a stoppage crew.

Commented [m3]: Response to Comment 6

## 3.2 Contractual Support

In addition to in-house staff, Memphis has the ability to contract with specialty firms to assist with activities under the Gravity Sewer O&M Program. Contractors are used to resolve stoppage calls when City resources become stretched and are used to perform cleaning activities under the preventive maintenance program. Additionally, contractors are used to provide sewer line and service lateral repairs, in addition to raising and lowering manholes and repairing sidewalks and driveways following repairs by City crews. Contractors are also used for complex or specialty sewer repair and rehabilitation projects. Contractor work is inspected by a representative of the City prior to acceptance.

Support contracts can generally be classified into one of three categories – emergency contracts, on-call contracts, and individual project contracts. Memphis currently has on-call contracts with firms to provide sewer cleaning services, install and repair service connections, and complete concrete repairs.

## 3.3 Equipment and Critical Spare Parts

The City maintains a significant inventory of equipment and critical spare parts to operate and maintain the gravity sewer system. This includes equipment and critical spare parts necessary for emergency / reactive O&M activities, as well as preventive O&M activities. If the need for additional equipment or critical spare parts arises, the City has the option of renting the equipment or purchasing critical spare parts from a local vendor or utilizing one of its existing maintenance contractors. The City stores its equipment and critical spare parts at the following locations: Environmental Maintenance Section facilities at 664 St. Jude Place, 1519 Levee Road, and Gayoso Lift Station at 35 Saffarans Avenue. The procedure for updating the equipment and critical inventories is included in Appendix B.

Commented [m4]: Response to Comment 4

### 3.3.1 Equipment

A list of the equipment utilized for WCTS operation and maintenance is provided in **Appendix BC.** The available equipment includes closed-circuit television (CCTV) inspection equipment, sewer cleaning equipment, trucks, backhoes, compressors, pumps, and other supplies. The City also has two large generators and two small portable generators that are used to supply temporary power to lift stations, if needed. The largest generator is capable of providing adequate power to operate the City's largest lift station.

Commented [m5]: Response to Comment 7

### 3.3.2 Critical Spare Parts

In addition to the equipment, the City also maintains a supply of critical spare parts that may be needed to complete repairs on the gravity sewer system. These include sections of pipe of various sizes, manhole frame and covers, etc. The current list of critical spare parts is included in Appendix BC. The inventory of critical spare parts is inspected quarterly to ensure that these parts are available to allow the City to quickly address required sewer repairs.

Commented [m6]: Updated appendix. Response to Comment 8

Any necessary equipment or critical spare parts that are needed to address sewer system O&M activities that are not kept by Memphis, such as 48-inch diameter gravity sewer pipe, can be obtained from outside vendors. Memphis has ongoing relationships with vendors and suppliers located within the

Memphis area and can initiate a request for critical spare parts from these vendors through phone requests, followed up by purchase orders or other documentation as needed to expedite the process. Requests of this type will be reviewed quarterly, at a minimum, to assess the need to keep additional critical spare parts on hand. For informational purposes, a list of vendors currently used, which is subject to periodic review and update as the City deems appropriate, is also included in Appendix B-C

## Section 4

### Emergency/Reactive O&M Procedures

In addition to preventive measures which are discussed in Section 5, the Gravity Sewer O&M Program includes emergency or reactive procedures. In many instances, emergency or reactive O&M activities are triggered by the observation of an SSO, but this may not always be the case. Situations determined by City staff to pose an immediate risk may be to human health are addressed as an emergency. For instance, observation of a severely broken sewer may initiate the need for immediate repair.

This section describes basic emergency or reactive O&M procedures for the gravity sewer system, but it does not include specific information for mitigating the impacts of an SSO or SSO reporting. Measures taken by the City to respond to SSOs are described in the Sewer Overflow Response Plan (SORP), which has been approved by EPA and TDEC and is included as an appendix to the Consent Decree. When an SSO is observed, the procedures described in the SORP are followed. Emergency or reactive O&M activities When a situation is encountered that the City believes poses an immediate risk to human health but is not related to an SSO, emergency O&M activities are initiated, which are documented through the City's work order system. An example sewer repair record is provided as Appendix D. Procedures associated with gravity sewer O&M activities are presented in Appendix E.

Unlike preventive measures, emergency O&M activities require the City to evaluate the nature of the emergency, take immediate corrective actions as required, and assess whether the situation can be addressed through internal resources or whether external contractors should be engaged to complete the activity.

In addition to taking action to reduce risks, field staff that identify potential emergency situations are instructed to notify their supervisor, who will assess whether the situation poses an immediate risk to human health. If the situation is determined to pose such an immediate risk, the required corrective action(s) are elevated enabling them to be completed as soon as practical. Depending on the nature of the emergency, the following corrective actions may be required and will be selected based upon the discretion and professional judgment of the City staff:

- Cleaning including hydraulic cleaning / jet washing, vacuum debris removal (vactoring), manual debris removal, or root cutting
- Inspecting the gravity sewer to assess the extent of repairs required
- Establishing temporary bypass pumping or initiating pump and haul procedures to divert flows around the problem area
- Repairing the sewer through a point repair, open cut replacement, lining, or other means

If the required corrective actions cannot be handled with internal resources, the Wastewater Collection System Administrator or the Environmental Maintenance Manager will notify the appropriate on-call contractor to schedule and complete the corrective actions. If on-call contractors do not have the appropriate capabilities or cannot complete the work in a timely manner, the Wastewater Collection System Administrator or the Environmental Maintenance Manager may proceed with securing an emergency contract to complete the work.

Commented [m7]: Response to Comment 1

Commented [m8]: Response to Comment 3

In some cases, the City may not be able to immediately proceed with corrective actions if safety or access is a concern. For instance, if a collapsed pipe is observed within a stream, City crews may need to wait for stream flows to recede prior to initiating a repair. In other cases, the emergency work performed may provide a temporary solution during which time the situation can be further assessed to determine if additional improvements are needed. These improvements may be addressed through increased levels of preventive O&M activities, such as more frequent cleaning, or may ultimately result in more extensive work. Additionally, the locations of emergency O&M activities may be considered while selecting future areas to inspect under the CSAP.

## Section 5

### Preventive O&M Procedures

In addition to emergency O&M procedures, on-going, preventive activities are utilized by Memphis to properly operate and maintain the gravity sewer system. The primary goals of this work are to ensure the system's existing hydraulic capacity is maintained, to identify structural defects that may require immediate attention, and to reduce overflows caused by blockages or structural failures.

These preventive maintenance activities include cleaning and inspection of the gravity sewer system, including interceptors, gravity mains, inverted siphons, and manholes, as well as the inspection of easements and corrosion control activities. [Procedures associated with gravity sewer O&M activities are presented in Appendix E.](#)

Commented [m9]: Response to Comment 1

#### 5.1 Sewer Cleaning

Sewer cleaning is an integral part of the preventive maintenance program and includes regularly scheduled cleaning activities, work under the City's approved Fats, Oils, and Grease (FOG) Program, and procedures to control roots within the system. Sewer cleaning activities may rely on a variety of equipment and techniques, such as hydraulic / jet washing, vacuum debris removal, root cutting, etc. Crews utilize their best professional judgment to select and use appropriate sewer cleaning equipment for a given situation.

Additionally, observations made in conjunction with sewer cleaning, such as the need for frequent cleaning to control roots, will be considered for further investigation to assess whether an appropriate long-term solution may be implemented to alleviate the need for frequent cleaning. For instance, in many cases, grease accumulation occurs at locations with a structural defect in the sewer, such as a protruding service connection or a sag in the sewer alignment.

##### 5.1.1 Regularly Scheduled Cleaning

Preventive maintenance cleaning activities focus on portions of the sewer system that have been identified to have a higher potential for flow restrictions caused by roots, grease, or debris accumulation. The purpose of these activities is to prevent this accumulation from causing future overflows or surcharging.

The City maintains a list of sewers identified as requiring more frequent cleaning through their Oracle work order system. This list is established and regularly reviewed as part of the Overflow Response Meeting, which is held approximately every two weeks and is usually attended by the Administrator of Wastewater Collection Systems, the Environmental Maintenance Manager, and individuals from the Stoppage and Repair Bureaus.

When a sewer segment is placed on the preventive maintenance cleaning list, the cleaning frequency, which typically ranges from 30 days to 420 days, is established. Following each subsequent cleaning of the sewer segment, the established cleaning frequency is reviewed and schedule adjustments are incorporated, as needed. For instance, if the previous time period between cleanings was 180 days but no evidence of debris accumulation was observed, the cleaning frequency may be extended to 240 days. Although this list is being periodically reviewed and adjusted to accommodate field investigation

activities, an example of the preventive maintenance cleaning list is provided as **Appendix CF** for informational purposes only.

Using this schedule, City stoppage crews perform sewer cleaning on these line segments when not responding to specific requests or addressing emergency activities. On-call contractors are also utilized, as needed, to complete this sewer cleaning work on schedule but are overseen by City staff to ensure the quality of the work and to assess the need to adjust the scheduled cleaning frequency.

### 5.1.2 Fats, Oils, and Grease Program

Although not included as part of the Gravity Sewer O&M Program, the Fats, Oils, and Grease (FOG) Program is another important component that Memphis utilizes to minimize blockages within the sewer system. Through the FOG Program, Memphis staff implement the City's ordinances related to Food Establishment Wastewater Discharge permits, conduct periodic inspections at food establishments of grease removal equipment, and oversee a public education campaign discouraging residents from discarding cooking oils and other FOG into the sewer system.

Observations of grease in the sewer system made through the Gravity Sewer O&M Program are submitted to the FOG Program for additional investigations to confirm compliance by food establishments and assess the need for targeted public education activities.

Additional details on the measures taken by the City to address FOG are described in the FOG Program Plan, which has been approved by EPA and TDEC and is included as an appendix to the Consent Decree.

### 5.1.3 Approach for Root Control

Root intrusion into the sewer system can result in flow restrictions and may lead to surcharging or overflows if not addressed. The City currently uses both chemical and mechanical root removal when roots are encountered during routine cleaning and inspection activities. The severity of the roots is documented, and if necessary, the pipe section may be placed on the preventive maintenance cleaning schedule.

Additionally, sewers undergoing frequent cleaning under the Gravity Sewer O&M Program because of roots may be prioritized for rehabilitation to correct the cracks or open joints that allow roots to enter the sewer.

## 5.2 Gravity Sewer & Manhole Inspections

Another important component of the Gravity Sewer O&M Program is the inspection of system components to assess the causes of surcharging and overflows as well as the structural integrity of the sewer system. This is conducted through inspections of the interceptor system, manhole inspections, closed-circuit television (CCTV) inspections of the gravity sewer, smoke testing, dyed water flooding, and other investigative techniques determined necessary by City staff. These activities, when conducted as part of the Gravity Sewer O&M Program, are primarily conducted by internal resources.

### 5.2.1 Interceptor Inspections

The Memphis sewer system has an extensive network of large diameter interceptor sewers that extend throughout the service area. These interceptor sewers, defined as sewers 36-inches in diameter and larger, serve as the critical backbone of the Memphis system and are thus prioritized for O&M activities. These interceptors represent approximately six percent of the gravity sewer system.

Because of this, annual interceptor inspections are planned for either the late fall/early winter or the late winter/early spring when vegetation die back allows easiest access to the interceptors. The interceptor inspection procedure consists of field observation of surface conditions between the interceptor manholes, the external structural conditions of the manholes themselves, and any evidence of previous SSOs in the area. Special attention is also paid to aerial or subsurface creek crossings and stream bank encroachment towards the sewer system. During the inspection, the external conditions of each manhole are observed. If defects or other problems are detected and the extent of defects warrants an internal inspection, the manhole is opened and assessed from the ground surface for structural defects and evidence of surcharging, according to the manhole inspection procedure described in Section 5.2.2. Observations are documented, as appropriate, through photographs and inspection sheets, an example of which is provided as **Appendix DG**.

Surface conditions along the sewer interceptor are evaluated for significant tree growth along the sewer alignment that may damage the interceptor, for structures such as buildings or fences that may impede access to the interceptor, and for depressions in the ground surface that may indicate a break in the interceptor. These and similar observations are documented and reported to the Administrator of Wastewater Collection Systems and the Environmental Maintenance Manager who assess the need for additional actions to ensure the integrity of the interceptor.

If the observed conditions warrant a repair, a work request is completed for defects observed and submitted to the Repair Bureau, who then oversees the completion of the repair using internal resources or external contracts.

During the interceptor inspection, inspectors will promptly report any observed SSO to their supervisor. Any observed SSO is promptly reported in accordance with the SORP.

### 5.2.2 Manhole Inspections

As access points to the gravity sewer system, manholes can provide valuable information about the structural and flow conditions of the adjacent sewer. When manhole inspections are performed, manholes are opened, and the following data is collected and recorded:

- Manhole location
- Manhole characteristics (depth, diameter, material, number of connecting pipes, etc.)
- Flow conditions (steady, surcharged, etc.)
- Structural condition (missing cover, evidence of corrosion, etc.)

Observations are documented through photographs, as appropriate, and inspection sheets, an example of which is provided as **Appendix DG**.

Data collected during manhole inspections is reported to the appropriate group for further action if needed. Structural problems in need of corrective action are reported to the Repair Bureau. Surcharged or slow flow conditions are reported to the Stoppage Bureau to remove the blockage and reduce threat of overflows. All surcharged lines and manholes are submitted for follow-up preventive maintenance consisting of a line cleaning by the City or by on-call contractors.

Because manholes serve as the access point to the sewer system, manhole defects may be observed in conjunction with other activities, such as sewer cleaning. Excluding work associated with emergency

activities, when a manhole is accessed by Memphis staff, an inspection report will typically be prepared and filed. Defect observations that are documented will be presented to the appropriate bureau for further action, as needed.

Because the systematic inspection and documentation of manhole conditions ~~will be~~ primarily conducted through ~~implementation of~~ the Continuing Sewer Assessment Program, (CSAP), adjustments to the reporting form ~~may be necessary~~ are expected to be completed by the first quarter of 2016, which will make it easier to integrate data collected through the Gravity Sewer O&M Program into a single information management system. ~~the two datasets. This timeframe allows the City to complete additional staff training during 2015.~~

Commented [m10]: Response to Comment 9

### 5.2.3 Closed Circuit Television (CCTV) Inspections

The CSAP provides schedules and establishes priorities for conducting assessments, primarily CCTV inspections, of approximately ten percent of the WTCS on average each year. In addition to that systematic collection of CCTV inspection data, CCTV inspections also are an important component of the Gravity Sewer O&M Program, and data collected through this O&M Program may be used to meet the CSAP assessment goal.

These CCTV inspections, which are conducted by the Inspection Bureau, may be initiated following a request from the Stoppage or Repair Bureaus to further assess the condition of a sewer, such as the cause of a blockage. CCTV inspections may be performed on manhole-to-manhole sewer segment or on service lines. The Inspector Bureau staff is responsible for selecting and utilizing appropriate equipment to perform the inspections.

Observations from the CCTV inspection are typically documented through photographs and inspection sheets, as appropriate. The CCTV inspection video is ~~usually recorded~~ retained by the Inspection Bureau ~~on local servers which are archived to a DVD or other electronic media and external hard drives annually.~~ CCTV inspection data is retained by the Inspection Bureau for a minimum of five years unless a more recent inspection is performed. As the information management system associated with the CSAP ~~is~~ continues to be developed and implemented, the City will evaluate the feasibility of archiving CCTV inspection data collected through the Gravity Sewer O&M Program in that system. ~~This evaluation is expected to occur prior to the end of 2015.~~

Commented [m11]: Response to Comment 10

Observations from the CCTV inspections requiring repair are documented and submitted to the Repair Bureau's Scheduler/Planner, who issues a work order through the Oracle system. To the extent feasible, the Inspection Bureau will also mark the location of the repair in the field with spray paint or flagging, as appropriate.

### 5.2.4 Smoke Testing

Smoke testing is another inspection tool employed by Memphis as part of the Gravity Sewer O&M Program. Smoke testing may be used in the following applications:

- Identify pipe defects
- Identify faulty service lateral connections
- Identify drain cross-connections
- Investigate cavities

- Locate hidden or covered manholes
- Perform infiltration and inflow investigations
- Verify connection to City sewer system

The smoke testing procedure involves placing a blower at a manhole to force a non-toxic, non-staining smoke into the sewer. This smoke will then fill the sewer line, including adjacent private service connections, and follow available paths to the ground surface. Locations where smoke is observed at the surface may then be documented through field reports and photographs, as appropriate. A smoke testing work request is typically issued by the Repair Bureau's Scheduler/Planner, and the results are tracked through the work order system.

### 5.2.5 Dyed Water Flooding Tests

Dyed water flooding tests (dye tests) may also be conducted periodically as part of the Gravity Sewer O&M Program. These tests are performed to confirm sewer flow direction and to determine if observed cavities in the ground surface are sewer-related.

The dyed water testing procedure varies depending on the purpose of the test. For instance, if a cross connection with a storm drain is suspected, dyed water may be introduced into a catch basin near the line being inspected, and the downstream manhole or sewer can be checked for the presence of dye. If dye is observed, then the catch basin may be directly or indirectly connected to the WCTS and additional investigation is warranted. Dyed water testing may be conducted in conjunction with CCTV inspections to better pinpoint the location where the dyed water enters the sewer. If the dyed water flooding test identifies the need for a repair, the Repair Bureau's Scheduler/Planner is contacted with the findings of the dyed water flooding work, and a work request is initiated in the work order system.

## 5.3 Inverted Siphons and Aerial Crossings

Inverted siphons, also known as depressed sewers, are constructed sags in the sewer that allow the sewer to pass below another object, most commonly a stream or river. These sewers may consist of two or more parallel pipes (or barrels) and are typically designed to achieve scouring velocities to minimize the accumulation of debris. However, the tendency for inverted siphons to accumulate debris makes cleaning and inspection of these sewers a priority within the Gravity Sewer O&M Program.

Following additional investigations and assessments, Memphis has located over ~~100~~300 inverted siphons within its system, with each usually containing two or three parallel pipes. Fourteen of the City's largest inverted siphons located on the Loosahatchie River, the Wolf River, and Nonconnah Creek were inspected using sonar in 2012, and those identified as in need of cleaning were scheduled to be cleaned. In addition, information Thirteen of these siphons were cleaned to adequately restore the required capacity in 2012 and 2013. For the remaining siphon, cleaning was unnecessary because it had been cleaned and a cured-in-place liner installed in 2010. Excluding those fourteen siphons, the remaining siphons will be assessed and cleaned (as necessary) as the CSAP is implemented. Information learned through this inspection project is being analyzed and implementation of the CSAP will be used to set future cleaning and inspection frequencies for those and other major inverted siphons within the system.

Commented [m12]: Response to Comment 11

Inverted siphons that have experienced blockages in the past are included as part of the preventive maintenance cleaning program, with the frequency of cleaning or flushing established based on the

observed debris accumulation. Additionally, if a blockage or surcharged sewers are observed in proximity to an inverted siphon, the sewer is cleaned from the observation point to at least one pipe segment past the inverted siphon. Field observations are evaluated to assess whether the inverted siphon or adjacent sewers should be included on the preventive maintenance cleaning schedule.

Because of the topography of the area, Memphis has very few aerial stream crossings. A separate inspection program will not be initiated to inspect these; they will be inspected in conjunction with CSAP work.

## 5.4 Easement Inspection and Maintenance

Because having adequate access is critical to the proper operation and maintenance of the sewer system, inspection and maintenance of easements is an important component of the Gravity Sewer O&M Program. In the ideal world, all easements would remain clear of any fences, buildings, trees, etc. to allow equipment access for maintenance of the collection system. The reality of the situation, however, is that over time permanent structures, fences, trees or vegetation may be built, grow, or otherwise encroach on the sewer easement and adversely impact access to the sewer system. The Consent Decree takes a practical approach and does not require the City to remove these objects, e.g., to assure that a portion of the sewer system is always accessible. If an SSO occurs that requires remediation, the City, however, may need to cut down trees or remove vegetation to remediate the SSO. Notwithstanding the fact that the City is not liable to repair or replace any such items that are removed in the process of completing repairs or maintenance on the collection system, the crews, as a practical matter, are instructed to work with the property owner whenever possible to try and limit the impact on the property while maintaining the necessary access based upon the situation.

Easements associated with interceptor sewers (defined as sewers 36-inches in diameter and larger) are typically inspected once per year, as described in Section 5.2.1. Written reports are developed to document easement inspections, including photographs of manholes, aerial creek crossings, and other pertinent observations, as appropriate. The procedure for documenting and responding to situations requiring corrective action or additional investigations is the same as described as part of the interceptor inspections.

Currently, easements associated with smaller diameter sewers are not regularly inspected or maintained, however, easement inspection in these areas will be completed in coordination with the CSAP work. As such, the schedule for assessment of easements for smaller diameter gravity sewer, manhole, and inverted siphon easements, is as follows:

1 <sup>st</sup> year after approval of the CSAP:	The Northern Area and Southern Area identified in Appendix E of the Consent Decree.
2 <sup>nd</sup> year after approval of the CSAP:	Lick Creek Assessment Area as set forth in Appendix F of the Consent Decree.
Subsequent Years:	The areas chosen to be assessed under the CSAP.

Easement inspection will include the assessment of the potential need to control vegetative growth or encroachment of man-made structures that could threaten the integrity of the affected portions of the WCTS. Information collected as part of that program will assess not only the need for immediate activities to facilitate access but will also set the frequency for future easement inspections in that area.

During easement inspections, the inspector will promptly report any observed SSO to their supervisor in accordance with the SORP.

During easement inspections if situations are encountered that prevent adequate access (excluding permanent structures, fences surrounding private property, trees and vegetation, as described in the Consent Decree), the City will normally conduct maintenance activities to provide adequate access within six months, weather permitting.

**Commented [m13]:** Response to Comment 2

## 5.5 Corrosion Control Approach

Based on historical observations of the City staff, large diameter interceptor sewers are the most prone to deterioration caused by hydrogen sulfide corrosion. Although CCTV inspection of these sewers may only be conducted periodically, the manholes associated with these sewers are typically inspected annually, as described in Section 5.2.1. The remainder of the system will be inspected for corrosion, including gravity sewers and manholes, as part of the systematic condition assessment work under the CSAP. If significant evidence of corrosion is observed, the City will assess the portions of the WCTS immediately upstream and downstream, as necessary, to determine the extent of the corrosion. This additional study will also attempt to identify the potential causes of the corrosion, including the possibility that the observed corrosion is caused by an industrial discharge as opposed to hydrogen sulfide. Once the cause and extent of corrosion throughout the WCTS is evaluated, a summary report of findings of significant corrosion, including a recommendation of the preferred sulfide and corrosion control methods shall be prepared including an engineering evaluation of options. These corrosion control methods may include lining systems, chemical addition to control hydrogen sulfide development, replacement of corroded system components with non-corrosive materials, adjustments to the operation of pump stations, etc.

The City also utilizes plastic-based, non-corrosive pipes, such as polyvinyl chloride (PVC), fiberglass reinforced polymer pipe (FRP), and high-density polyethylene (HDPE), for new sewer construction wherever possible.

## 5.6 Sewer System Maintenance

In addition to the inspection procedures described, system maintenance is another important component of the Gravity Sewer O&M Program. Large or complex system repairs are typically handled as capital improvement projects and thus are outside of this program. However, in order to quickly implement corrective actions to ensure the proper operation of the sewer system, City staff have the ability to perform many types of common maintenance activities within the system.

The City currently utilizes environmental maintenance crews, including contractor crews, to conduct sewer line maintenance activities. Maintenance is conducted in response to reactive and preventive activities. These crews are outfitted with backhoes and related trenching and shoring equipment. Additional heavy equipment is available from other City departments. Crews typically operate five days per week but are available on nights and weekends on an emergency basis. In general, repairs on sewers up to 36 inches in diameter can be completed by internal resources. City crews also perform repair work on manholes, including locating manholes that have been buried or covered with pavement, raising manholes, and repairing manhole inverts.

## Section 6

### Reporting

In order to effectively track implementation of the Gravity Sewer O&M Program, the City maintains an Oracle-based work order system. Through querying the information in this system, the City can track the key performance indicators established in the Consent Decree. Additionally, the City may compare information from the work order system against other pertinent information, such as the location of SSOs, for identification of portions of the WCTS that may require increased levels of O&M activities.

#### 6.1 Maintenance Tracking System

In 2011, the Environmental Maintenance Section transferred to an Oracle-based work order system. At that time, approximately ten previous years of inspection and stoppage data and almost twenty years of repair data were transferred into the new system.

This work order system allows work requests to be continuously tracked and managed and is an integral part of this program. The maintenance tracking procedure related to an overflow response is discussed in the SORP. Work requests are logged by the Scheduler/Planner, are prioritized, and kept open until the work is completed. Among other items, these work order request can be issued for the following:

- Investigations to assess the causes of surcharging or overflows
- Emergency and preventive sewer cleaning
- Gravity sewer and manhole inspections
- Smoke testing, dyed water flooding tests, or other investigations
- Point repairs, manhole repairs, and sewer replacement activities
- Installation or repair of service connections
- Location and raising of manholes
- Asphalt and concrete repairs

Once the work request is entered, a work order is issued to a supervisor in the Stoppage Bureau or the Repair Bureau based on the work location and the type of work. Daily crew assignments are compiled by the supervisors. Upon job completion, the work order is returned to the Scheduler/Planner with pertinent information and the job closed out. In addition, if a new sewer connection is installed, a connection record is made and entered both into a card file and into the database. Open work orders continue to be tracked by supervisors until the work is successfully completed. A monthly report summarizing work orders, actions taken, and the time to complete the work order is submitted for review to the Administrator of Wastewater Collection Systems and the Environmental Maintenance Manager. This monthly report will also include equipment problems observed.

Currently, work orders are tracked by address and map page. As City's geographic information system (GIS) is developed, the feasibility of also tracking work order activities by manhole or pipe identification numbers will be evaluated.

Some information gathered through the Gravity Sewer O&M Program is maintained in hard-copy format at the Environmental Maintenance Section. This includes interceptor or easement inspection reports and manhole inspection reports. In addition, CCTV inspection videos are retained by the Inspection Bureau. As the City's geographic information system (GIS) is developed and additional condition assessment information is collected through the CSAP, the City will look for opportunities to incorporate this information into a single information management system for consistent documentation and easier retrieval. The scope of the GIS program as required by the Consent Decree is set forth in Appendix J to the Consent Decree.

## 6.2 Key Performance Indicators

The following Key Performance Indicators (KPIs) will be used to measure performance of the gravity sewer system and will be included in the Annual Report:

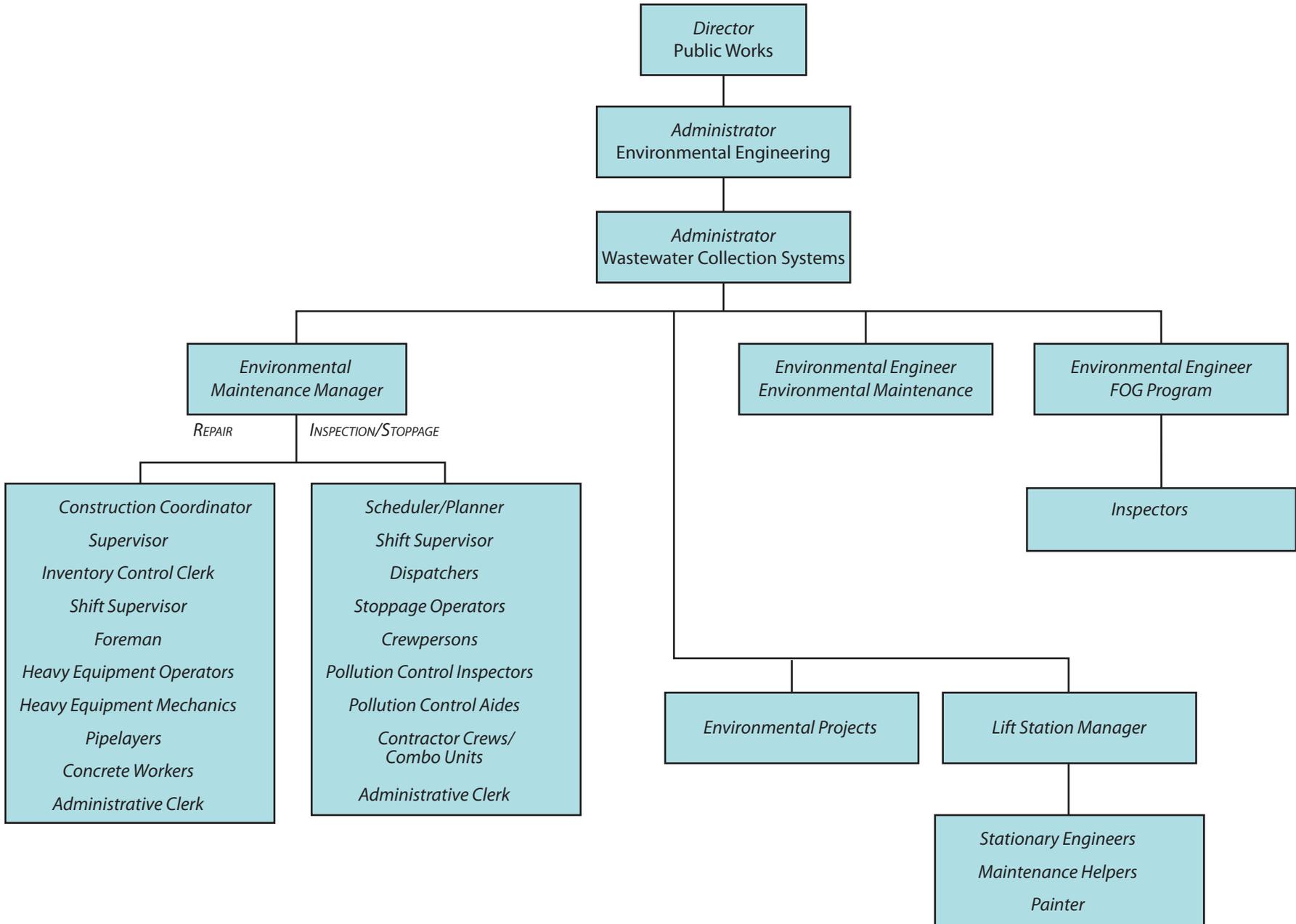
- Linear footage of gravity sewer inspections
- Linear footage of gravity sewer cleaned
- Number of manholes inspected
- Number of manholes cleaned or maintained
- Number of inverted siphons inspected
- Number of inverted siphons cleaned or maintained
- Number of SSOs per 100 miles of gravity sewer

Note that inspection and cleaning will be tracked by type (emergency, corrective, and preventive) but includes work completed under the CSAP or other City programs.

Appendix A

Organizational Chart

# CITY OF MEMPHIS PUBLIC WORKS ORGANIZATIONAL CHART



**JOB TITLE:** Environmental Engineer  
**DIVISION:** Public Works  
**SERVICE CTR:** Environmental Mnt.(CMOM program)  
**FLSA:** Exempt

**JCC#:** F052EV  
**DATE:** 6/5/2002

**ESSENTIAL JOB FUNCTIONS:** Works under the direction of the Manager of Environmental Maintenance to manage and provide technical support for major programs and projects in Environmental Maintenance such as the Capacity, Management, Operation, and Maintenance (CMOM) program. Supervises and evaluates a staff responsible for inspecting and maintaining the City's sewer lines including ensuring compliance with all OSHA/safety program regulations and guidelines; and directs and reviews the work of outside contractors. Manages programs to maintain compliance with all Federal Environmental Protection Agency and State of Tennessee regulations and requirements. Interprets and analyzes field data and reviews plans; performs detailed engineering calculations; maintains related data and prepares reports required by the EPA and the State of Tennessee. Responds to inquires and communicates on a regular basis with professionals and the general public regarding sewer problems. Researches and employs new developments in engineering techniques, methods, and materials in the operation of the wastewater collection system. Prepares budget estimates, specifications, and monitors daily expenditures.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned.

**TYPICAL PHYSICAL DEMANDS:** Must be able to communicate clearly verbally and in writing with management, staff, and the public. Requires visual acuity to read pipeline schematics and inspect designated areas related to sanitary sewers, traversing uneven woods, weeded areas, and flood lands, and some lifting and carrying objects such as engineering equipment weighing up to 25 lbs. Requires the ability to operate general office equipment such as a personal computer and telephone and specialized engineering equipment. Requires frequent use of an automobile to make on-site inspections.

**TYPICAL WORKING CONDITIONS:** Work is performed in an office and at sewer construction/repair sites throughout the City including exposure to sewer fumes and gases and changing weather conditions and temperatures.

**MINIMUM QUALIFICATIONS:** Bachelor's degree in Civil Engineering and four (4) years experience in environmental engineering and enforcement programs with at least two (2) of the four (4) years in a supervisory/lead capacity; or any combination of experience and training which enables one to perform the essential job functions. Must possess a license to practice engineering in the State of Tennessee or a state that has reciprocity with Tennessee. Before the end of 24 months of employment must take and pass written examination for State of Tennessee Class II Wastewater Collection License as condition of continued employment. Must possess a valid Tennessee driver's license.

\*\*\*\*\*

Eric P. Jahn 6/5/02  
WRITTEN BY: DATE:

Clyfford L. Smith 6/6/02  
EEO REVIEW: DATE:

REVIEWED FOR ADA: R2B  
6-6-02

Ken Call 6/12/02  
DIVISION APPROVAL: DATE:



EMPLOYMENT SERVICE CENTER

CITY OF MEMPHIS

SEPTEMBER 22, 1993

Applications will be accepted from 8:00 A.M. until 5:00 P.M. in the Employment Office, Room 1B-33, City Hall, 125 North Main until

OCTOBER 01, 1993

THE CITY CHARTER REQUIRES THAT CITY EMPLOYEES MUST ESTABLISH RESIDENCE WITHIN SHELBY COUNTY, TENNESSEE WITHIN SIX (6) MONTHS FROM DATE OF EMPLOYMENT.

**\*\* THIS POSITION IS PROMOTIONAL ONLY \*\***

**POSITION: ADMINISTRATOR - WASTE COLLECTION FACILITIES - (1 Opening)**  
Public Works/Environmental/Administration - J.O. #93-151 - GRADE 00

**ESSENTIAL JOB FUNCTIONS:** Works under the general direction of an assigned supervisor. Plans, coordinates, and directs activities concerned with maintenance and inspection of the physical sewer system, flood control, operation and maintenance of sewer lift stations, and storm water management; Analyzes trends, such as population and industrial growth of area being served to determine adequacy of current facilities and to project demands for future facilities; develops plans to meet expanded demands and requests engineering staff to design and prepare specifications for extended facilities and capacity; directs activities of designated employees who oversee water and sewage facilities; seeks consultants to perform special studies for the department, reviews bids, and makes recommendation for selection; confers with consultants and management personnel to discuss alternatives and to choose most suitable plan on basis of efficiency and cost-effectiveness; communicates with regulatory agencies to resolve any problems and to coordinate projects; inspects field projects to confirm conformance to specifications and government regulations; researches and evaluates new developments in materials, tools, and equipment and recommends or denies purchase; prepares various reports including monthly EPA report; and prepares department budget.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned from time to time.

**TYPICAL PHYSICAL DEMANDS:** Requires ability to inspect work area which may involve walking, sometimes across ditches, along river banks, or in wooded areas. Requires ability to communicate with staff, management, public government agencies, consultants, private contractors, and other City officials.

**TYPICAL WORKING CONDITIONS:** Work is performed in an office environment and outdoors to inspect field projects and to demonstrate new products.

**MINIMUM QUALIFICATIONS:** A Bachelor's Degree in Environmental Engineering, Civil Engineering, or related engineering degree, and five (5) years administrative experience in the field of wastewater treatment and/or collection; or any combination of training and experience which enables one to perform the essential job functions. Must possess a valid Tennessee Driver's License. **PROOF OF EDUCATION REQUIRED. (PHOTOCOPY OF LICENSE MUST BE ATTACHED TO APPLICATION).**

**SPECIAL REQUIREMENTS:** Must possess a current valid State of Tennessee Class II Wastewater Collection License or be able to obtain before the end of 24 months of employment as an Administrator of Waste Collection Facilities.

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EQUAL OPPORTUNITY EMPLOYER

JOB TITLE: Manager - Environmental Mnt.  
DIVISION: Public Works  
BUREAU: Environmental Mnt.  
FLSA: Exempt

JCC#: F101EN  
DATE: 04-13-93

**ESSENTIAL JOB FUNCTIONS:** Works under the direction of the Administrator of Collection System. Directs and coordinates, through subordinate supervisory personnel, activities of workers engaged in repair and maintenance of the City's sanitary sewer system: Reviews and analyzes reports and records and confers with supervisory personnel to obtain data required for planning department activities and to address future needs; gives work direction, resolves problems such as disgruntled property owners, and sets deadlines necessary to meet work objectives; evaluates current procedures and practices and develops and implements alternate methods to improve operations; researches and evaluates new developments in material, tools, and equipment to recommend or deny purchase; reviews new land development projects to evaluate additions and modifications to sewer system; coordinates department activities with inter-related activities of other City departments and representatives of utilities to insure optimum efficiency; prepares various reports for Management, State and EPA; prepares and monitors budget; prepares bid specifications and contracts necessary to requisition tools, equipment, and supplies; inspects work sites to evaluate work requirements; and directs clerical personnel in typing reports and record keeping activities.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned from time to time.

**TYPICAL PHYSICAL DEMANDS:** Requires ability to inspect work area which may involve walking in wooded and river swamp areas, climbing, and stooping. Requires ability to communicate with staff, public, utility representatives, other City departments managers, etc.

**TYPICAL WORKING CONDITIONS:** Majority of work is performed in an office environment but outdoor work is required to inspect work site, new development sites, and to meet with the public.

**MINIMUM QUALIFICATIONS:** High school graduate with eight (8) years experience in the maintenance and repair of sanitary sewer lines with five (5) of the eight years in a supervisory capacity; or any combination of experience and training which enables one to perform essential job functions.

**SPECIAL REQUIREMENTS:** Must possess a current valid State of Tennessee Wastewater Collection License and a valid Tennessee Driver's License.

\*\*\*\*\*

Mary Dennis  
WRITTEN BY:

4-26-93  
DATE:

Tom Miles  
EEO REVIEW:

4-26-93  
DATE:

REVIEWED FOR ADA: RGY 4/28/93



## CITY OF MEMPHIS

MARCH 01, 2006

**EQUAL OPPORTUNITY EMPLOYER**

Applications will be accepted from 8:00 A.M. until 5:00 P.M. in the Employment Office, Room 1B-33, City Hall, 125 North Main until or visit our Satellite Office at 4225 Riverdale

MARCH 10, 2006

For a complete listing of job openings please visit web site at [www.memphistn.gov](http://www.memphistn.gov)

**THE CITY CHARTER REQUIRES THAT CITY EMPLOYEES MUST ESTABLISH RESIDENCE WITHIN THE MEMPHIS CITY LIMITS WITHIN SIX (6) MONTHS FROM DATE OF EMPLOYMENT**

**POSITION: SHIFT SUPERVISOR/PUBLIC WORKS - (1 Opening) MINIMUM SALARY: \$4,710.41 Mo**  
Public Works/Environmental Maintenance - J.O. #06-014 GRADE 12 SM1

**ESSENTIAL JOB FUNCTIONS:** Works under the general supervision of the Supervisor of Environmental Maintenance. Directs and coordinates through subordinate personnel activities of workers engaged in the maintenance, repair, and/or replacement of the City's sanitary sewer lines, connections, and manholes; oversees personnel providing training, work direction, and evaluation of work performance; evaluates work demands and makes daily assignments; adjusts work schedules to meet work demands and shortage of staff; makes field inspections to review work and to evaluate work requirements such as type of equipment needed; inspects equipment daily, substitutes equipment needing repairs and prepares work order for maintenance required; completes daily activity reports; interprets personnel policies and contract memorandums and conveys to workers; takes disciplinary action according to established practices; confers with workers' representatives to attempt to resolve grievances; and investigates and resolves citizen complaints and requests.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned.

**TYPICAL PHYSICAL DEMANDS:** Requires ability to inspect work area which may involve walking in wooded and river swamp areas, climbing, and stooping. Requires ability to communicate with staff, management, public, Health Department officials and other City department supervisors.

**TYPICAL WORKING CONDITIONS:** Majority of work is performed outdoors to inspect work activities, to evaluate work requirements, and to respond to problem situations. Twenty-four hour, seven-day week operation. Must work assigned shift.

**MINIMUM QUALIFICATIONS:** High school graduate and six (6) years experience in sewer line maintenance with one (1) of the six (6) years in a supervisory/lead capacity; or any combination of training and experience which enables one to perform essential job functions. Must be on call 24 hours a day for emergencies and possess a valid Tennessee Driver's License. **(PROOF OF DRIVER'S LICENSE REQUIRED)**

**JOB TITLE:** Stoppage Operator/Sewer  
**DIVISION:** Public Works  
**SERVICE CTR:** Environmental Inspection  
**FLSA:** Non-exempt

**JCC#:** F556SO  
**DATE:** 12/16/98

**ESSENTIAL JOB FUNCTIONS:** Works under the general supervision of a Zone Supervisor to maintain sewer lines through clearing and removing stoppages, obstructions, or restrictions; inspects sewer lines and manholes and performs dye tests/smoke tests, if necessary, to locate the stoppage; drives and operates sewer cleaning equipment such as a flusher, vactor, power rodder, drag machine, etc. to clear the stoppage and applies chemical solvents to aid in clearing the obstruction; enters confined spaces to remove debris from manholes; cleans and disinfects areas such as basements and yards flooded as a result of sewer stoppages; performs routine washing of sewer lines, manholes, and siphons; and directs the tasks of a Semi-skilled Crewperson assigned to assist in these duties. Reports the location of the problem, action taken, and current job status to a dispatcher or supervisor using a mobile radio. Prepares a daily summary report on all activities performed and documents any special job site conditions. Performs light preventative maintenance of vehicles and equipment such as fluid levels, pre-trip inspections, filters, etc.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned.

**TYPICAL PHYSICAL DEMANDS:** Must be able to communicate clearly both verbally and in writing. Requires the ability to traverse uneven ground, lift and carry objects such as tools and power equipment weighing up to 50 lbs., and maneuver including stooping, bending, reaching (including above head), pushing, pulling, and climbing into and out of manholes. Requires the ability to drive and operate specialized sewer equipment such as a wash truck and power rodder.

**TYPICAL WORKING CONDITIONS:** Majority of work is performed in an outdoor environment. Performing job requires exposure to sewage fumes and odors, insects, weeds and poisonous plants, emulsifiers, bacteria, insecticides, sewer solvents, traffic, noise, heat and all types of weather conditions. Must be able to enter confined spaces such as a manhole/sewer line. Requires some contact with the general public.

**MINIMUM QUALIFICATIONS:** High School graduate and two (2) years experience in sewer line maintenance; or any combination of experience and training which enables one to perform the essential job functions. Must have a valid class "B" Tennessee driver's license with endorsement (C or N) for tanks 1,000 gallons or greater. Must comply with Federal Department of Transportation (DOT) Alcohol and Drug testing rules.

\*\*\*\*\*

*Eric A. Sabatin* 12/16/98  
WRITTEN BY: DATE:

*Tom Miley* 12/17/98  
EEO REVIEW: DATE:

REVIEWED FOR ADA: *R2B*  
12-16-98

*[Signature]* 12/21/98  
DIVISION APPROVAL: DATE:

JOB TITLE: Scheduler-Planner  
DIVISION: Public Works  
SERV. CENTER: Environmental  
FLSA: Exempt

UCC# 12005E  
REVISED DATE: 5/6/1993

**ESSENTIAL JOB FUNCTIONS:** Works under the supervision of the Manager of Environmental: Responsible for scheduling work crews to handle sewer repairs and/or sewer stoppages; and directs the work activities of designated staff; receives calls or complaints regarding sewer repairs, and obtains information from dispatchers on sewer stoppages; transfers information to complaint cards and enters detailed data into the computer; runs reports daily to analyze data by using specialized software to determine which repairs should be made priority; reassigns crews to handle emergency repairs; monitors status of repairs to ensure problems are corrected. Provides information or requests MLGW, telephone or cable companies to locate cable/lines; informs private contractors and plumbers of the location of sewer lines, pulls sewer maps or documents, and determines appropriate location by accurately calculating dimensions of sewer location. May occasionally go to job sites to locate sewer lines. Prepares special reports, regarding sewer repairs and maintenance, for administrative personnel in City and County departments, the State, and the EPA agency; maintains maps on sewer line locations. Interacts with the Mayor's Citizen Service Center regarding complaints received, and the City Attorney's office regarding claims filed due to sewer damages. Maintains files and utilizes data to schedule preventive maintenance for sewer systems.

**OTHER FUNCTIONS:**

1. Acts as supervisor in his/her absence to supervise daily work operations of other areas.
2. Performs additional functions (essential or otherwise) which may be assigned from time to time.

**TYPICAL PHYSICAL DEMANDS:** Requires the use of equipment, such as computer terminal, specialized software programs, radio transmitters, and telephones. Requires the ability to exercise independent judgment in assigning work crews to handle repairs. Involves constant contact with crews and staff to provide information or to reassign crews. Requires the ability to communicate with the public on sewer repair requests or complaints, plus utilities, private contractors, and plumbers regarding sewer repairs where tactfulness and persuasiveness is required. May occasionally operate sewer locator tools when locating sewer lines.

**TYPICAL WORKING CONDITIONS:** Work is performed in an office environment, and may occasionally be required to visit work sites to locate sewer lines.

**MINIMUM QUALIFICATIONS:** High School education and six years experience in planning and scheduling job projects, recordkeeping, and dealing with the public with two of the six years experience in working with computers preferred, or any combination of experience and training which enables one to perform the essential job functions.

Phyllis H. Gillispie / RLB  
Written By:

5-7-93  
Date:

Chris Reed  
Review:

5-7-93  
Date:

REVIEWED FOR ADA

RLB

JOB TITLE: Dispatcher  
DIVISION: Public Works  
SERVICE CENTER: Environmental Inspection  
FLSA: Non-exempt

JCC#: F264DP  
DATE: 12-8-93

ESSENTIAL JOB FUNCTIONS: Works under the general supervision of an assigned supervisor in the Environmental Inspection area of the Public Works Division. Receives and processes citizen complaints and requests regarding sewer maintenance needs; Answers telephone and obtains necessary information; relays information to crew assigned to area in which problem occurs, using two-way radio; inputs and retrieves complaint/request information such as time, location, nature of call and action taken, maintains follow up status, and generates reports based on data; and refers non-sewer maintenance calls to appropriate department or agency.

OTHER FUNCTIONS:

1. Performs additional functions (essential or otherwise) which may be assigned from time to time.

TYPICAL PHYSICAL DEMANDS: Requires the ability to operate personal computer, telephone and two-way radio. Must be able to communicate with the public and staff.

TYPICAL WORKING CONDITIONS: Work is performed in an office environment and involves contact with citizens and staff.

MINIMUM QUALIFICATIONS: High school graduation and four (4) years clerical experience; or any combination of experience and training which enables one to perform the essential job functions. One (1) year experience and/or education in operating personal computers with some experience in operating two-way radio preferred.

\*\*\*\*\*

Mary Dennis  
WRITTEN BY:

12-9-93  
DATE:

Ch. R. O.  
EEO REVIEW:

12-9-93  
DATE:

REVIEWED FOR ADA: (RAB) 12/9/93

**JOB TITLE:** Sewer Lift Stations Maintenance Manager    **JCC#:** F102LS  
**DIVISION:** Public Works    **DATE:** 04-22-98  
**SERVICE CTR:** Lift Stations  
**FLSA:** Exempt

**ESSENTIAL JOB FUNCTIONS:** Works under the direction of the Administrator of Wastewater Collection Systems. Plans and directs the maintenance of Flood Control Pumping Stations and Sewer Lift Stations. Trains, directs, and evaluates the performance of maintenance personnel in adherence to following proper operation and maintenance procedures; develops and implements maintenance procedures, including a preventive maintenance program; inspects pump stations and equipment for malfunctions and needed repairs; oversees the installation and testing of new or rebuilt equipment and the inspection of contracted maintenance work; ensures that proper records of maintenance, preventative maintenance and equipment manuals, etc. are maintained; prepares contracts, evaluates bids, and prepares the budget for flood control and sewer lift maintenance; and coordinates maintenance work with the operating personnel. Utilizes various PC programs to generate reports, inventory lists, and correspondence.

**OTHER FUNCTIONS:**

1. Performs additional functions (essential or otherwise) which may be assigned from time to time.

**TYPICAL PHYSICAL DEMANDS:** Requires the ability to operate a personal computer. Requires the ability to perform routine inspections of the facilities which involves climbing/descending on ladders. May have to assist with manual labor during emergency situations. Requires the ability to operate an automobile to drive to various City facilities for inspections and offices for meetings.

**TYPICAL WORKING CONDITIONS:** Majority of work is performed in an office environment, but must make inspections of facility which requires being outdoors. May be exposed to various weather conditions, fumes, odors, dust, and noise. May be required to be on-call, twenty-four (24) hours a day, seven (7) days a week for emergencies.

**MINIMUM QUALIFICATIONS:** High school diploma and seven (7) years experience in the field of mechanical engineering with three (3) of the seven (7) years in a supervisory capacity; or any combination of experience or training which enables one to perform the essential job functions. Must have a valid Tennessee driver's license.

**SPECIAL REQUIREMENTS:** Must successfully pass written examination and obtain State of Tennessee Wastewater Collection License (grade II) within twenty-four (24) months of employment as a condition of continued employment.

\*\*\*\*\*

*Denise Nelson* 4-23-98  
 WRITTEN BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED FOR ADA: *(R203)*  
 \_\_\_\_\_  
 4-23-98

*Tom White* 5/7/98  
 EEO REVIEW: \_\_\_\_\_ DATE: \_\_\_\_\_

*[Signature]* 5/5/98  
 DIVISION APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_

JOB TITLE: Stationary Engineer  
DIVISION: Public Works  
BUREAU:  
FLSA: Non-exempt

JCC#: F551SE  
DATE: 1-29-93

JOB SUMMARY: Works under the direction of an assigned supervisor at the pumping stations in the Public Works Division. Performs more complex task in operating, maintaining, and repairing stationary and mechanical equipment used in and around a flood control pumping station and sewer lift station: Reads and monitors meters and gages to verify operating conditions; adjusts manual controls or overrides automatic controls to regulate equipment according to water levels and prescribed operating ranges; directs crew in the technical maintenance and repair of equipment such as air compressors, pumps, motors, valves, fork lifts, etc.; fabricates equipment and parts using a variety of welding equipment; inspects equipment to detect malfunctions and to perform preventative maintenance; examines and repairs flood walls and levees by repairing and rebuilding broken and weakened sections; and interprets blueprints and operation manuals to determine location, size and type of parts. Operates with appreciable latitude for unreviewed action or decision.

OTHER FUNCTIONS:

1. Performs additional functions (essential or otherwise) which may be assigned from time to time.

TYPICAL PHYSICAL DEMANDS: Must be able to read blueprints and manufacturer's manuals. Requires visual and physical inspections of mechanical systems, and have ability to detect unusual characteristics. Requires walking and the ability to climb ladders and stairs. Requires heavy lifting (approx. 100 lbs.), stooping, balancing, crouching and reaching.

TYPICAL WORKING CONDITIONS: Majority of work is performed in a machine shop environment. Some work is performed outdoors. May be exposed to dust, noise, high voltages, confined spaces, and hot and cold temperatures.

MINIMUM QUALIFICATIONS: High school graduate or equivalent and five (5) years experience in industrial plant maintenance or similar work; or any combination of experience and training which enables one to perform job functions. Some supervisory experience preferred.

\*\*\*\*\*

Mary Dennison  
WRITTEN BY:

1-29-93  
DATE:

Cliff P. R. J.  
EEO REVIEW

1-29-93  
DATE:

REVIEWED FOR ADA RAY 1/29/93

## Appendix B

# Procedures for Updating the Critical Spare Parts and Equipment Inventories

## **Procedures for Updating the Critical Spare Parts and Equipment Inventories**

### **Critical Spare Parts**

- Environmental Maintenance uses an Excel spreadsheet stored on the City's computer server as its spare parts inventory management system.
- Spare parts purchased or removed (as applicable) are updated in the spare parts inventory management system by storeroom staff.
- Parts are only removed from the inventory upon approval of storeroom staff.
- Storeroom staff re-order supplies as necessary in order to maintain an appropriate inventory.
- Storeroom staff conduct inventory audits quarterly to verify spare part quantities.

### **Equipment**

- Environmental Maintenance uses an Excel spreadsheet stored on the City's computer server as its equipment inventory management system.
- Equipment purchased or removed (as applicable) is updated in the equipment inventory management system.
- Equipment is only removed from the inventory upon approval of Environmental Maintenance staff.
- Environmental Maintenance staff initiate the purchase equipment as necessary in order to maintain an appropriate inventory.
- Verification of equipment quantities will take place quarterly to help ensure data integrity.

## Appendix C

### List of Available Equipment, Critical Spare Parts, and Vendors

**Gravity Sewer and Force Main  
List of Equipment**

<b>ITEM</b>	<b>Purpose</b>
6 WRAP AROUND MH SHIELD"/EM-20	Trench Safety
6 WRAP AROUND MH SHIELD"/EM-21	Trench Safety
6 WRAP AROUND MH SHIELD"/EM-22	Trench Safety
6 WRAP AROUND MH SHIELD"/EM-23	Trench Safety
AIR COMPRESSOR/SM- 156	Air For Tools
AIR COMPRESSOR/SM- 157	Air For Tools
AIR COMPRESSOR:AT COP/SM- 158	Air For Tools
ATVEHICLE/	Moving in Woods
BABCAT CAT/PW__259B	Excavation
BACKHOE CAT/ PW_(420E)	Excavation
BACKHOE JOHN DEERE/ PW_410J	Excavation
BACKHOE JOHN DEERE/ PW_410J	Excavation
BACKHOE/590SM/ N6C420596	Excavation
BACKHOE: CASE/PW-804	Excavation
BACKHOE: CASE/PW-806	Excavation
BACKHOE: CASE/PW-807	Excavation
BACKHOE: FORD/PW-654	Excavation
BACKHOE: FORD/PW-690	Excavation
BACKHOE: FORD/PW-691	Excavation
BACKHOE: FORD/PW-693	Excavation
BACKHOE: FORD/PW-695	Excavation
BACKHOE: FORD/PW-802	Excavation
BACKHOE: FORD/PW-803	Excavation
BREAKOUT HAMMER	Sewer Maintenance
BUCKET MACHINE/PW-1700	Dragging
CCTV INSPECTION VANS (3 TOTAL)	Sewer Maintenance
COMPACTOR: ALLIED/PW-1310	Excavation
COMPRESSOR	Air For Tools
COMPRESSOR PTO/	Air For Tools
DIAGONISTIC SCANNER/TESTER/P-X	Auto Diagonsis
DRAG MACHINE / PW_____	Sewer Cleaning
EASEMENT MACHINE	Sewer Maintenance
EASEMENT MACHINE	Sewer Maintenance
ELECTRIC EEL/PW-629	Sewer Cleaning
FORKLIFT/PW-704	Material Handling
FRONT END LOADER: CAT/PW-801	Excavation/Earth Moving
FUSION MACHINE	Weld HDPE Pipe
GEORGIA BUGGY	MAINTENANCE
GEORGIA BUGGY/PW-1330	Earth Moving
HYDRAULIC HAMMER/PW-1372	Cutting Asphalt Roads
JACK FOUR POST FOR SHOP	Truck Maintenance
LOADER: HYUNDAI/PW812	Earth Moving
MINI EXCAVATOR (HYUND)/PW-805	Earth Moving
PIPE CUTTER: REED/PW-1380	Pipe Fabrication
PIPELINE WELDER/PW-632	Welding Pipes
PNEUMATIC PIPE CUTTER/PW-1320	Pipe Fabrication
PORTABLE COMPRESSOR/	Air For Tools
ROOT CUTTER (HYD.)/PW-1503	Pipe Fabrication
ROOT CUTTER (HYD.)/PW-1504	Pipe Fabrication
SEWER CLEAN M/C ELEC EEL/P-X	Sewer Cleaning
TRACKHOE-CAT 329D/PW811	Earth Moving

ITEM	Purpose
TRAILER LOW BOY	Transport CAT Trackhoe
TRAILER/PW_____	Transport Backhoe
TRAILER/PW-671	Transport Backhoe
TRAILER/PW-672	Transport Backhoe
TRAILER/PW-687	Transport Backhoe
TRAILER/P-X	Transport Backhoe
TRAILER: 22' HD W/GO_NK/PW-709	Transport Backhoe
TRAILER: BOAT, MOTOR, /PW-1400	Transport Backhoe
TRAILER: GOOSENECK /PW-703	Transport Backhoe
TRAILER: GOOSENECK /PW-704	Transport Backhoe
TRENCH BOX XLAP 8'x10'(12dP)/EM-26	Trench Safety
TRENCH BOX XLAP 8'x10'(16dP)/EM-25	Trench Safety
TRENCH BOX XLAP 8'x10'(16dP)/EM-25	Trench Safety
TRENCH BOX XLAP 8'x10'(16dP)/EM-27	Trench Safety
TRENCH BOX XLAP 8'x10'(16dP)/EM-29	Trench Safety
VACTOR COMBO TRUCK	Sewer Maintenance
VACUUM TRUCK	Sewer Maintenance
WASH TRUCK (10 TOTAL)	Sewer Maintenance
WASH TRUCK WITH CCTV CAMERA	Sewer Maintenance

**Gravity Sewer and Force Main  
List of Critical Spare Parts and Vendors**

ITEM NAME	Category	Type	Diameter 1	Diameter 2	Diameter 3	Degree	Vendor
FERNCO CPLG CONC x CI_PL	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PL	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PL	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PL	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PLST	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG CONC x CIPVC	Coupling	Concrete					HUGHES; METER; PATTON
FERNCO CPLG PVC x PVC 12in	Coupling	PVC	12				HUGHES; METER; PATTON
FERNCO CPLG PVC x PVC 6in	Coupling	PVC	6				HUGHES; METER; PATTON
FERNCO CPLG PVC x PVC 6inx4in	Coupling	PVC	6	4			HUGHES; METER; PATTON
FERNCO CPLG PVC x PVC 8in	Coupling	PVC	8				HUGHES; METER; PATTON
FERNCO SADDLE TEE 6in	Hardware		6				HUGHES; METER; PATTON
FERNCO SS CLAMPS	Clamp						HUGHES; METER; PATTON
FERNCO SS CLAMPS	Clamp						
FERNCO SS CLAMPS	Clamp						
FERNCO SS CLAMPS	Clamp						
PIPE SEAL W_TPF	Hardware						HUGHES; METER; PATTON
MH_CASTING_6_COVER ONLY	Casting						HUGHES; METER; UNIVERSAL
MH_CASTING_7_1_1_2in RISER	Casting						HUGHES; METER; UNIVERSAL
MH_CASTING_7_2ft RISER	Casting						HUGHES; METER; UNIVERSAL
MH_CASTING_7_COVER & RIM ASSY	Casting						HUGHES; METER; UNIVERSAL
MH_CASTING_7_COVER ONLY	Casting						HUGHES; METER; UNIVERSAL
MH_CASTING_7_FRAME ONLY	Casting						HUGHES; METER; UNIVERSAL
M_HOLE BARREL CONC. VARIOUS SIZES	Hardware						CHOCTAW
M_HOLE CONE 48in x 36in	Hardware						CHOCTAW
M_HOLE FLAT TOPS	Hardware						CHOCTAW
M_HOLE PLUGS	Hardware						CRETEX
QUADEX QUAD PLUG	Hardware						HUGHES; METER; PATTON;Trench Safety
DUCTILE IRON FTGS VARIOUS SIZES	Hardware						CONSOLODATED
MECH JOINTS DUCTILE LONG SLEEVE	Joint						HUGHES; METER; PATTON
MECH JOINTS 4in x 7 1_2in DI SLEEVE W_ACC	Joint		4	7			PATTON
MECH JOINTS 6in LONG SLEEVE W_ACC	Joint		6				HUGHES; METER; PATTON
MECH JOINTS TRANS GASKETS	Joint						PATTON
D_1 FTG BLK SQ HD PLUG 2 1_2in	Hardware		2				CONSOLODATED
VALVES BRONZE	Hardware						CONSOLODATED
FERNCO CPLG CLAY x CI_PVC 12in	Coupling	Clay	12				HUGHES; METER; PATTON
PIPE JOINT LUBRICANT 1 QT	Hardware						HUGHES; METER; PATTON
PIPE JOINT LUBRICANT 2 LB	Hardware						HUGHES; METER; PATTON
PIPE JOINT LUBRICANT 27	Hardware						A WINNELSON
PVC ELL 221_2 SW 10in	Ell		10			22	HUGHES; METER; PATTON
PVC ELL 221_2 SW 4in	Ell		4			22	HUGHES; METER; PATTON
PVC ELL 221_2 SW 6in	Ell		6			22	HUGHES; METER; PATTON
PVC ELL 221_2 SW 8in	Ell		8			22	HUGHES; METER; PATTON
PVC CEMENT GAL	Hardware						WINNELSON
PVC CPLG SEWER 12in	Coupling	PVC	12				HUGHES; METER; PATTON
PVC CPLG SEWER 3in	Coupling	PVC	3				HUGHES; METER; PATTON
PVC CPLG SEWER 4in	Coupling	PVC	4				HUGHES; METER; PATTON
PVC CPLG SEWER 6in	Coupling	PVC	6				HUGHES; METER; PATTON
PVC CPLG SEWER 8in	Coupling	PVC	8				HUGHES; METER; PATTON
PVC CPLG SEWER 10in	Coupling	PVC	10				HUGHES; METER; PATTON
PVC CPLG_REDUCER SEWER 8inx6in	Coupling	PVC	8	6			HUGHES; METER; PATTON
PVC CPLG_REDUCING SEWER 6 x 4	Coupling	PVC	6	4			HUGHES; METER; PATTON
PVC CPLG_REDUCING SEWER 8 x 6	Coupling	PVC	8	6			HUGHES; METER; PATTON
PVC DWV CTSK HD C_OUT PLUG	Hardware						WINNELSON
PVC DWV HXFIPT FEM ADAPTOR 4in	Hardware		4				HUGHES; METER; PATTON
PVC DWV SQ HD C_OUT PLUG	Hardware						WINNELSON
PVC ELL 221_2 SEWER 12in	Ell	PVC	12			22	HUGHES; METER; PATTON
PVC ELL 221_2 SEWER 4in	Ell	PVC	4			22	HUGHES; METER; PATTON
PVC ELL 221_2 SEWER 6in	Ell	PVC	6			22	HUGHES; METER; PATTON
PVC ELL 221_2 SEWER 8in	Ell	PVC	8			22	HUGHES; METER; PATTON
PVC ELL 45 SEWER 10in	Ell	PVC	10			45	HUGHES; METER; PATTON
PVC ELL 45 SEWER 12in	Ell	PVC	12			45	HUGHES; METER; PATTON
PVC ELL 45 SEWER 4in	Ell	PVC	4			45	HUGHES; METER; PATTON
PVC ELL 45 SEWER 6in	Ell	PVC	6			45	HUGHES; METER; PATTON
PVC ELL 45 SEWER 6in	Ell	PVC	6			45	HUGHES; METER; PATTON
PVC ELL 45 SEWER 8in	Ell	PVC	8			45	HUGHES; METER; PATTON
PVC F_ADAPT C_O PLUG W_CAP DWV 4in	Hardware		4				HUGHES; METER; PATTON
PVC PIPE F679 13 Ft LENGTHS 36in	Pipe	PVC	36				HUGHES; METER; PATTON
PVC PIPE F679 21in LAR. DIA. SEWER PIPE	Pipe	PVC	21				HUGHES; METER; PATTON
PVC PIPE SCH40 ___ Ft LENGTHS ___	Pipe	PVC					HUGHES; METER; PATTON
PVC PIPE SCH40 ___ Ft LENGTHS 12in	Pipe	PVC	12				HUGHES; METER; PATTON
PVC PIPE SCH40 ___ Ft LENGTHS 18in	Pipe	PVC	18				HUGHES; METER; PATTON
PVC PIPE SCH40 ___ Ft LENGTHS 21in	Pipe	PVC	21				HUGHES; METER; PATTON
PVC PIPE SCH40 20ft Ft LENGTHS 4in	Pipe	PVC	4				HUGHES; METER; PATTON
PVC PIPE SCH40 20 Ft LENGTHS 6in	Pipe	PVC	6				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 10in	Pipe	PVC	10				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 12in	Pipe	PVC	12				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 12in	Pipe	PVC	12				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 15in	Pipe	PVC	15				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 18in	Pipe	PVC	18				HUGHES; METER; PATTON

ITEM NAME	Category	Type	Diameter 1	Diameter 2	Diameter 3	Degree	Vendor
PVC PIPE SEWER 13 Ft Lg 21in	Pipe	PVC	21				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 4in	Pipe	PVC	4				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 6in	Pipe	PVC	6				HUGHES; METER; PATTON
PVC PIPE SEWER 13 Ft Lg 8in	Pipe	PVC	8				HUGHES; METER; PATTON
PVC PIPE 12 DR18 C900	Pipe	PVC					HUGHES; METER; PATTON
PVC SEWER PLUG RAISED HD 4in	Hardware		4				HUGHES; METER; PATTON
PVC VALVE BACKWATER 4in	Hardware		4				HUGHES; METER; PATTON
PVC VALVE BACKWATER 6in	Hardware		6				HUGHES; METER; PATTON
PVC WYE SEWER 4in x 4in x 4in	Wye		4	4	4		HUGHES; METER; PATTON
PVC WYE SEWER 6in x 6in x 6in	Wye		6	6	6		HUGHES; METER; PATTON
PVC WYE SEWER 8in x 8in x 8in	Wye		8	8	8		HUGHES; METER; PATTON
PVC WYE SEWER 10inx10inx6in	Wye		10	10	6		HUGHES; METER; PATTON
PVC WYE SEWER 10inx10inx8in	Wye		10	10	8		HUGHES; METER; PATTON
PVC WYE SEWER 12inx12inx10in	Wye		12	12	10		HUGHES; METER; PATTON
PVC WYE SEWER 6in MULTI HUB	Wye		6				HUGHES; METER; PATTON
PVC WYE SEWER 6in x 6in x 4in	Wye		6	6	4		HUGHES; METER; PATTON
PVC WYE SEWER 6in x 6in x 6in	Wye		6	6	6		HUGHES; METER; PATTON
PVC WYE SEWER 6inx4in 45 DEG	Wye		6	4		45	HUGHES; METER; PATTON
PVC WYE SEWER 8in x 8in x 6in	Wye		8	8	6		HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 514 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 696 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 894 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 939 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 939 x 15	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 1104 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 1302 x 12	Clamp						HUGHES; METER; PATTON
CLAMP FULL CIRCLE F1 473 x 12	Clamp						HUGHES; METER; PATTON
FERNCO CI_PL CI_PL 3in	Coupling		3				WINNELSON
FERNCO CPLG CI_PL CI_PL	Coupling						HUGHES; METER; PATTON
FERNCO CPLG CI_PL CI_PL	Coupling						HUGHES; METER; PATTON
FERNCO CPLG CI_PVC x CI_PVC 10in	Coupling	PVC	10				HUGHES; METER; PATTON
FERNCO CPLG CI_PVC 6in	Coupling	PVC	6				HUGHES; METER; PATTON
FERNCO CPLG CI_PVC 4in	Coupling	PVC	4				HUGHES; METER; PATTON
FERNCO CPLG CI_PVC 6in	Coupling	PVC	6				HUGHES; METER; PATTON
FERNCO CPLG CI_PVC 6inx4in	Coupling	PVC	6	4			HUGHES; METER; PATTON
FERNCO CPLG CI_PVC 8in	Coupling	PVC	8				HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PLST	Coupling	Clay					HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PLST	Coupling	Clay					HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PLST	Coupling	Clay					HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PVC 6	Coupling	Clay	6				HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PVC 10in	Coupling	Clay	10				HUGHES; METER
FERNCO CPLG CLAY x CI_PVC 10in	Coupling	Clay	10				HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PVC 8	Coupling	Clay	8				HUGHES; METER; PATTON
FERNCO CPLG CLAY x CI_PVC 4in	Coupling	Clay	4				HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PVC 10in	Coupling	Concrete	10				HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PVC 12in	Coupling	Concrete	12				HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PVC 4in	Coupling	Concrete	4				HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PVC 6	Coupling	Concrete	6				HUGHES; METER; PATTON
FERNCO CPLG CONC x CI_PVC 8	Coupling	Concrete	8				HUGHES; METER; PATTON
HDPE PIPE 24in	Pipe		24				
HDPE PIPE 36in	Pipe		36				
HDPE PIPE 42in	Pipe		42				
CONCRETE PIPE 36in	Pipe	Concrete	36				
CONCRETE PIPE 42in	Pipe	Concrete	42				
IPS 18in X 50ft dr 32.5 IND	Pipe		18				
102-1515 15in RUBBER COUPLING CLAY TO PVC	Coupling	Clay	15				
106-1515 15in RUBBER COUPLING CONCRETE TO PVC	Coupling	Concrete	15				
15in 45 DEGREE ELL	Ell	PVC					
15in 22 1_2 DEGREE ELL	Ell	PVC	15				
102-1818 18in RUBBER COUPLING CLAY TO PVC	Coupling	Clay	18				
106-1818 18in RUBBER COUPLING CONCRETE TO PVC	Coupling	Concrete	18				
18in PVC COUPLING	Coupling	PVC	18				
24in FULL CIRCLE CLAMP	Clamp						
24in X 15in PVC REDUCER	Coupling	PVC	24	15			
20in PVC COUPLING	Coupling	PVC	20				
32in MECHANICAL COUPLING (SLEEVE)	Coupling		32				

Appendix D

Sewer Repair Record Form

# SANITARY REPAIR RECORD

Loc Info: Date: _____ #: _____
-----------------------------------

Utilities To Be Notified: \_\_\_\_\_

LOCATION: \_\_\_\_\_ MAP PAGE: \_\_\_\_\_

DATE RECEIVED: \_\_\_\_\_ DATE COMP \_\_\_\_\_ # DAYS/HRS \_\_\_\_\_

REC'D FROM: \_\_\_\_\_

POTENTIAL EMERGENCY

SSO

OTHER

WORK PERF: \_\_\_\_\_ COMPLAINT: \_\_\_\_\_

REPAIRED M/L

REPAIRED CONN

STABILIZED

M/H REPAIRED

M/H RAISED/LOWERED

OTHER: \_\_\_\_\_

FOREMAN: \_\_\_\_\_

ST CUT SIZE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7300.56 (Front)

Rev. 09/14.

CONCRETE TO REPLACE: S/W: _____ D/W: _____ CURB: _____
---

TAP LOCATION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

MATERIALS/WORK: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

C/O INST: YES NO \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

F-7300.56 (Back)

Rev. 0914

## Appendix E

# Gravity Sewer O&M Procedures

# Procedures for Gravity Sewer Operations and Maintenance Program

## General Blockage Removal Procedure

When a blockage is reported, the following activities are conducted:

- A crew with wash/jet truck cleaning capabilities (wash crew) responds and checks the mainline at the location of the reported blockage. The crew determines where the mainline may be restricted or fouled by checking manholes downstream on the line. The condition is reported to Dispatch.
- If the mainline is blocked, the wash crew attempts to clear the line by jetting the line using the wash truck first (refer to the Wash/Jet Truck Cleaning Operations procedure). If jetting the line does not appear to be feasible or is unsuccessful, the crew uses a rod truck to clean the mainline (refer to Rod Truck Cleaning procedure).
- If the mainline is inspected and found to be clear, the first cleanout on the customer lateral within the right-of-way is checked.
- If the cleanout is not flowing freely, using the wash truck, the sewer between the first cleanout and the mainline is jetted/washed.
- If the first cleanout from the mainline is behind a building, on private property, or if the cleanout is known to contain bends or elbows, it is not cleaned and at that point becomes the responsibility of the property owner.
- Once the blockage incident has been resolved, the field report is completed and pertinent personnel are notified that the blockage has been cleared.
- Field crews shall notify the supervisor of unusual conditions.

## Wash/Jet Truck Cleaning Operations

Cleaning operations utilizing a wash / jet truck consist of the following:

- At the address requiring cleaning, the first manhole downstream of the blockage is located. If the cleaning is not related to a blockage but is routine cleaning, this is the downstream manhole of the segment to be cleaned.
- The field crew connects the appropriate hosing for clearing a mainline or lateral, as appropriate, and installs the appropriate type of cleaning nozzle for the type of problem suspected.
- The cleaning hose is fed into the manhole's upstream pipe opening, the pressure switch is turned on, and the pressure is adjusted as appropriate.
- The downstream manhole is opened to assess flow conditions to confirm the blockage has been cleared and there is a free flow of water in the mainline.

- To the extent possible, materials, such as debris, sand, root balls, and grease, are trapped and removed from each sewer segment and not passed from one sewer segment to another.
- Upstream and downstream manholes are opened to assess flow conditions to confirm the blockage has been cleared and there is a free flow of water in the mainline.
- Once the cleaning operation is complete, the work is documented in the operator's diary and the length of mainline cleaned is recorded.
- Observations of the following should be reported to a supervisor for additional corrective action:
  - A sewer line that appears to be broken.
  - A sewer line or manhole that cannot be located.
  - A broken, missing, or damaged manhole.
  - If the nozzle becomes stuck in the line.

## Rod Truck Operations

Cleaning operations utilizing a rod truck consist of the following:

- Once on site, the crew checks the mainline first to determine if/where the mainline is blocked.
- If the mainline is determined to be blocked and jetting the line does not appear to be feasible or was unsuccessful, the first manhole downstream of the blockage is located and the rod truck equipment is utilized to clear the blockage. The final length of rod used to clear the blockage is recorded along with observations of the debris to determine what caused the blockage (e.g., grease, roots, debris, etc.).
- Using marker paint, the approximate location where the blockage occurred is marked (using the measurement of rod used to clear the blockage). That location is evaluated for depressions in the road/ground or other evidence indicating a possible pipe failure.
- Upstream and downstream manholes are opened to assess flow conditions to confirm the blockage has been cleared and there is a free flow of water in the mainline.
- Once the cleaning operation is complete, the work is documented in the operator's diary and the length of mainline cleaned is recorded.
- Observations of the following should be reported to a supervisor for additional corrective action:
  - A sewer line that appears to be broken.
  - A sewer line or manhole that cannot be located.
  - A broken, missing, or damaged manhole.
  - If the rod becomes stuck in the line.

## Interceptor Inspections

Interceptor inspections are typically conducted in the late fall/early winter or the late winter/early spring when vegetation die back allows easier access to the interceptor. They consist of the following:

- The interceptor sewer to be inspected is located.
- Inspection crews observe the surface conditions between manholes on the interceptor and the external structural condition of the manholes. During the inspection, special attention is paid to aerial or subsurface creek crossings and stream bank encroachment towards the sewer system.
- Observations are documented, as appropriate, through photographs and inspection sheets, utilizing the City's Sewer Easement and Manhole Inspection Form, included as an appendix to the Gravity Sewer Operations and Maintenance Program.
- If warranted by the extent of defects or other problems, an internal manhole inspection is performed. If required, this inspection follows the manhole inspection procedure.
- Structural issues in need of corrective action are reported to the Repair Bureau. Surcharged or slow flow conditions are reported to the Stoppage Bureau.

## Manhole Inspections

Manhole inspections consist of the following:

- The manhole is located and the external condition is observed.
- If an internal inspection is required, the manhole cover is removed, and the internal visual inspection is conducted from the ground surface (without man entry).
- Observations are documented, as appropriate, through photographs and inspection sheets, utilizing the City's Sewer Easement and Manhole Inspection Form, included as an appendix to the Gravity Sewer Operations and Maintenance Program.
- Structural issues in need of corrective action are reported to the Repair Bureau. Surcharged or slow flow conditions are reported to the Stoppage Bureau.

## Closed Circuit Television (CCTV) Inspection

Closed circuit television inspection consists of the following:

- The pipe segment undergoes light or preparatory cleaning by hydraulic sewer pipe cleaners or combination hydraulic/vacuum cleaners from manhole to manhole.
- If light cleaning proves insufficient to remove the debris or roots as required to conduct CCTV inspections, the segment undergoes heavy cleaning by hydraulic sewer pipe cleaners, combination hydraulic/vacuum cleaners, or mechanical sewer pipe cleaners from manhole to manhole. Tap cutting and root removal is performed on an as needed basis.
- Materials are trapped and removed from each sewer segment and not passed from one sewer segment to another.

- An internal closed circuit television (CCTV) camera is inserted into the line segment to digitally inspect and record existing conditions. The camera moves through the line at a maximum speed of 30 feet per minute stopping to record lateral connections, mainline connections, defects, features, and points of interest. Locations of defects are measured along the mainline.
- Video of the gravity sewer pipe is typically evaluated in the field and if additional information is needed, it will typically be collected at the time of initial inspection.
- CCTV inspection logs are kept to document the location of structural defects, corrosion, sources of infiltration, and other unusual or suspect conditions.

## Smoke Testing

Smoke testing of sanitary sewer manholes, sewer pipes, sewer laterals, and interceptors are conducted as follows:

- Public notices via door hangers are issued in the affected areas prior to starting the work.
- The Memphis Police and Fire Departments are notified of the upcoming smoke testing prior to starting the work.
- Necessary barriers are installed around access points.
- Access to the sewer pipes is secured, and adjoining manholes are temporarily plugged.
- Blowers and smoke generators are stationed adjacent to one of the manholes. The smoke is then introduced into the WCTS.
- The area around the test site is observed for smoke discharges. Smoke discharges are documented photographically and, where accessible, with GPS and pertinent information is logged on smoke testing forms.
- Upon completion of the test, temporary plugs are removed from the manholes, and equipment is moved to the next test setup.

## Dyed Water Flooding Testing

Dyed water testing is conducted as necessary to confirm illegal connections and structural defects (i.e., cross-connections) identified during smoke testing and CCTV inspections. Testing is performed following classification of the suspected source as a Type 1, 2, or 3.

Type 1 – Suspected Private Property Cross-Connections

- Water is poured (5 gallons or less) in the immediate vicinity of the suspected source where smoke was observed. Due to the close proximity of the source location and entry point into the WCTS, non-dyed water may be used.
- Discharged water is observed using CCTV or by direct visual observations. Use of CCTV is a site specific determination.
- Observations and photographs are documented, as necessary.

Type 2 – Suspected Lateral Sources Covered with Soil

- Dyed water is injected, for a minimum of 5 minutes duration, into soil at the location where smoke was observed.
- The injection may be achieved by using a root fertilizing type spike attached to a garden hose or pressure injecting the water into the ground.
- Discharged water is observed using CCTV or by direct visual observations. Use of CCTV is a site specific determination.

#### Type 3 – Suspected Large Public Storm Sewer Cross Connections

- These are generally public sector sources.
- A plug is installed in the downstream storm sewer pipe. This includes the catch basin or storm sewer pipe segment that smoked. The plugged pipe segment is filled with dyed water.
- The downstream sanitary sewer manhole is observed for presence of dyed water by direct visual observations. CCTV inspection of the sewer is a site specific determination.
- Photographs of the downstream manhole are collected to document the presence, or absence, of dyed water.

## Appendix F

### Preventive Maintenance Cleaning List

S.No.	ADDRESS	MAP	INT
1	3912 DENVER ST	2-P	90
2	2263 DURHAM DR	2-M	90
3	4127 DENVER COVE	2-P	90
4	4164 SLUMBER LN	2-M	90
5	2080 ELMO ST	2-P	420
6	3862 BALFOUR RD	2-O	365
7	3960 THOMAS ST	2-N	60
8	3995 STEELE ST	2-O	120
9	ALINE HAWKINS MILL	3-E	90
10	4527 BEACON HILL DR	3-F	90
11	3228 SHERRYCREST DR	3-H	90
12	2619 MAVERICK AVE	3-B	90
13	2516 LABONTE DR	3-J	90
14	CORAL GRUBER	3-O	90
15	3825 AJANDERS DR	3-P	90
16	3910 ONYX COVE	3-O	90
17	4085 KNOB DR	3-N	90
18	2447 E WELLONS AVE	3-J	120
19	3237 FLOWER VALLEY DR	3-D	90
20	3237 FLOWER VALLEY RD	3-D	90
21	3242 FLOWER VALLEY RD	3-D	365
22	4215 MT TERRACE	3-J	90
23	2550 HAWKINS MILL RD	3-E	90
24	3229 EGYPT CENTRAL RD	3-H	90
25	4508 SUNCREST DR	3-E	90
26	3189 RIDGEMONT RD	3-H	365
27	4427 HOWARDCREST DR	3-H	365
28	ELK POINT SPRING VALLEY	3-D	90
29	2447 RAMMESSES AVE	3-J	90
30	2520 REDVERS AVE	3-J	180
31	RANGELINE SMITHRIDGE	3-E	120
32	3214 KEYSTONE AVE	3-M	180
33	3903 AJANDERS DR	3-P	120
34	4345 ELYSIAN	4-H	90
35	4295 SHADCREST COVE	4-E	90
36	3776 WALSINGHAM COVE	4-F	420
37	E BOLEN HUSE OF RAL MILLINGTON	4-D	60
38	3780 WALSINGHAM DR	4-F	90
39	ST ELMO WINDERMERE ST	4-O	365
40	4346 ELYSIAN	4-H	120
41	3656 RIDGEMONT RD	4-F	420
42	3368 RIDGEMONT RD	4-E	420
43	4070 TESSLAND RD	4-L	90
44	4715 NEW ALLEN RD	4-B	90
45	4059 SOCORRO COVE	4-R	90
46	4058 SOCORRO DR	4-R	420
47	4422 BRADCREST COVE	4-E	90
48	4338 ROSSWOOD DR	5-K	90
49	4707 ALLENDALE	5-K	90
50	3950 AUSTIN PEAY HIGHWAY	5-P	90
51	4010 AUSTIN PEAY HIGHWAY	5-P	365
52	AUSTIN PEAY COVINGTON PIKE	5-P	90

S.No.	ADDRESS	MAP	INT
53	4348 COLEMAN RD	5-J	90
54	4500 CEDAR RIDGE LN	5-E	90
55	4372 WINDING HILL DR	5-N	365
56	4134 MONTEREY DR	5-K	365
57	5626 HEARTWOOD	6-F	90
58	5689 REDFORD	6-O	90
59	3175 MORNINGSIDE ST	7-O	90
60	925 PAR DR	7-G	60
61	FRAYSER HARVESTER	7-J	90
62	1200 CRESTON AVE	7-D	90
63	954 CRESTON AVE	7-C	365
64	3131 MADEWELL ST	7-M	90
65	1214 DARM AVE	7-R	90
66	902 DAWN DR	7-G	90
67	3315 N THOMAS	7-L	90
68	939 FRAYSER BV	7-L	90
69	HARVESTER MARSH	7-O	90
70	3379 RIDGECREST RD	7-R	420
71	3208 MADEWELL DR	7-M	90
72	3350 FRAYSER MANOR DR	7-L	90
73	1497 GOWAN DR	8-F	90
74	2238 STEPHANIE AVE	8-H	90
75	3338 ADAIR ST	8-L	90
76	3070 SIGNAL ST	8-N	90
77	3309 PARHAM ST	8-L	90
78	1983 CORNING AVE	8-G	90
79	3076 SIGNAL ST	8-N	90
80	3157 STEELE MANOR	8-N	90
81	1660 GOWAN DR	8-F	90
82	DELLWOOD STEELE	8-N	90
83	3073 CLAUDINE COVE	8-P	90
84	3340 BEECHMONT ST	8-L	90
85	3553 HALLBROOK ST	8-G	90
86	1510 CORNING	8-A	90
87	3552 DENVER ST	8-G	365
88	3325 UNIVERSITY ST	8-M	90
89	D/E OF FRAYSER VIEW	8-L	90
90	3691 STEELE ST	8-A	90
91	3822 DENVER ST	8-C	420
92	DELLWOOD RINEY	8-O	90
93	2380 FRAYSER BV	8-M	90
94	3087 RAINIER ST	8-N	90
95	3706 OVERTON CROSSING RD	8-D	90
96	2192 SLOCUM AVE	8-R	420
97	1967 DRIFTWOOD AVE	8-P	420
98	3158 STEELE ST	8-J	365
99	1979 TULSA AVE	8-G	90
100	DALEWOOD WILLIAM TELL	9-O	90
101	3183 DUMBARTON DR	9-R	120
102	3401 REDCOAT RD	9-L	365
103	3195 SCOTLAND RD	9-R	90
104	3337 WILLIAM TELL DR	9-K	90

S.No.	ADDRESS	MAP	INT
105	3317 LOCKMEADE DR	9-J	180
106	3661 DEBBY ST	9-E	180
107	2672 NORTHMEADE AVE	9-B	90
108	2930 ELBERT DR	9-C	90
109	3132 TARANSAY RD	9-R	90
110	3108 NEW ALLEN RD	9-R	90
111	3822 AJANDERS DR	9-C	90
112	3677 BROOKMEADE ST	9-A	180
113	3710 N TREZEVANT AVE	9-A	180
114	3112 DUMBETH CV	9-R	420
115	CELESTE MT TERRACE	9-A	90
116	3105 RALEIGH MILLINGTON	10-R	90
117	3552 HANNA DR	10-H	90
118	3706 WOLF TRAIL DR	10-A	90
119	3131 RALEIGH MILLINGTON RD	10-R	90
120	4283 FORTNER DR	10-D	90
121	3879 KERWIN DR	10-C	90
122	3109 RALEIGH MILLINGTON	10-R	90
123	3688 BARBERRY ST	10-C	90
124	3311 COLEMAN RD	10-M	420
125	4040 S LAKEWOOD DR	10-P	420
126	3706 EDGEFIELD COVE	10-F	90
127	3499 RALEIGH FRAYSER	10-E	90
128	3176 AUSTIN PEAY HIGHWAY	10-R	365
129	3976 TIMBERWOOD DR	10-G	90
130	DORADO DORADO COVE	10-E	90
131	3338 LESCHALLAS DR	10-M	120
132	CRAIN FAIRBANKS	10-M	90
133	3152 OVERBROOK RD	10-R	90
134	3755 TWINMONT ST	10-C	90
135	HAWKINS MILL HOBSON	10-B	90
136	3860 AUSTIN PEAY HIGHWAY	11-C	90
137	4958 YALE RD	11-L	90
138	SCHEIBLER YALE	11-L	90
139	3633 LAKEHURST DR	11-F	420
140	4830 YALE RD	11-L	90
141	5345 BANBURY AVE	11-H	420
142	LAKEHURST MOZELLE	11-F	90
143	COVINGTON YALE PIKE	11-L	90
144	3277 POWERS RD	11-J	90
145	4594 YALE RD	11-E	90
146	DOWNS LYNCHBURG	11-D	90
147	5317 SUNNYSIDE COVE	12-E	90
148	3730 RIPPLING CREEK LN	12-A	420
149	5439 LOCKBAY LN	12-A	365
150	FIELDCREST OLD BROWNSVILLE	12-N	120
151	3169 OLD BROWNSVILLE RD	12-N	180
152	5344 FIELDCREST AVE	12-N	120
153	3187 RUSKIN RD	12-N	420
154	1280 HALCOMB LN	13-D	90
155	2969 N THOMAS ST	13-C	90
156	1298 STAGE AVE	13-H	90

S.No.	ADDRESS	MAP	INT
157	1916 WHITNEY AVE	14-C	90
158	2056 WHITNEY AVE	14-C	365
159	DELANO STAGE	14-E	90
160	2811 GLASGOW ST	14-E	90
161	2608 OVERTON CROSSING RD	14-K	120
162	OVERTON CROSSING PORTLAND	14-G	365
163	BEECHMONT OVERTON CROSSING	14-F	90
164	2535 STEELE ST	14-J	90
165	GLASGOW ROOSEVELT	14-E	90
166	1744 DUPONT AVE	14-K	90
167	CAPEWOOD TREZEVANT	15-A	90
168	BIRCHFIELD JAMES	15-G	120
169	2865 W LAKE SHORE DR	15-F	90
170	2881 RANGELINE	15-E	90
171	2784 MT TERRACE	15-E	90
172	3211 CYPRESS RD	15-M	420
173	2926 N TREZEVANT ST	15-A	90
174	2380 JAMES RD	15-E	90
175	2496 JAMES RD	15-E	90
176	4310 CREEKWOOD DR	16-H	365
177	3040 WOODHILLS DR	16-B	120
178	4136 REENIE RD	16-P	90
179	2872 COACH DR	16-H	30
180	3547 SCENIC HY	16-E	90
181	4135 RAWDON RD	16-R	365
182	4337 CREEKWOOD RD	16-H	60
183	3356 JAMES RD	16-J	90
184	W RALEIGH LAGRANGE OF COVINGTON PIKE	17-P	90
185	5113 STAGE RD	17-D	90
186	4900 RALEIGH LAGRANGE	17-L	90
187	2836 HAMMOND DR	17-E	365
188	3145 OVERBROOK RD	17-A	90
189	S COVINGTON OF RAL LAGRANGE PIKE	17-P	60
190	2443 CHISWOOD RD	17-M	420
191	2795 BEVERLY HILLS	17-E	90
192	HOOVER TOEHILL	17-E	120
193	E HOOVER OF COLEMAN	17-E	60
194	4795 HOOVER DR	17-F	90
195	BATTLECREEK COVINGTON PIKE	17-G	90
196	4635 BUFFER DR	17-F	90
197	4417 RALEIGH LAGRANGE RD	17-E	90
198	4616 SCOTT CROSSING DR	17-K	90
199	COVINGTON STAGE PIKE	17-C	90
200	4661 FAIRLANE DR	17-O	90
201	HOOVER NORTHFIELD	17-F	90
202	4779 HOOVER	17-E	120
203	3057 COVINGTON PIKE	17-C	90
204	4611 BUFFER DR	17-F	90
205	2811 BEVERLY HILLS RD	17-E	60
206	4387 STAGE RD	17-A	180
207	2850 S COOPER RIDGE COVE	18-E	180
208	S STAGE PARK D E OF STAGE RD	18-E	60

S.No.	ADDRESS	MAP	INT
209	5931 STAGE RD	18-G	90
210	2845 STAGE COACH DR	18-J	120
211	2831 STAGE COACH DR	18-E	90
212	2722 DROMEDARY DR	19-L	120
213	7104 BEARTOWN COVE	19-P	420
214	2773 W JUANITA CIR	19-G	365
215	7296 COUNTRYSIDE RD	19-M	90
216	TM HENDERSON WOODLAWN	20-P	90
217	1173 TULLY	20-O	90
218	S BELLEVUE OF VOLLINTINE	20-R	60
219	954 N SECOND ST	20-N	60
220	992 MARBLE AVE	20-M	90
221	LOUISVILLE NEW CHICAGO	20-H	365
222	1017 N THIRD ST	20-O	90
223	N SECOND OF MARBLE	20-K	60
224	747 CHELSEA AVE	20-P	90
225	1007 PEARCE ST	20-P	90
226	809 CHELSEA AVE	20-P	90
227	1118 FIRESTONE AVE	20-M	90
228	186 CALDWELL AVE	20-O	90
229	CHELSEA COPPOCK	20-R	365
230	CHELSEA MANASSAS	20-P	120
231	999 PEARCE	20-P	90
232	1061 LEATH ST	20-P	90
233	932 N SEVENTH ST	20-O	365
234	994 ELDRIDGE AVE	20-M	90
235	MANASSAS WELLS	20-L	120
236	BELLEVUE VOLLINTINE	20-R	120
237	HICKORY THIRD	20-O	90
238	MANASSAS T M HENDERSON	20-P	120
239	1736 BROWN AVE	21-P	60
240	1127 N WATKINS ST	21-K	90
241	1630 N MICHELLE CIR	21-O	90
242	1180 BROWN AVE	21-N	120
243	1221 SYLVAN ST	21-J	90
244	1254 BROWN AVE	21-N	90
245	CYPRESS CREEK WATKINS	21-K	90
246	1223 SMITH AVE	21-J	90
247	1192 BROWN AVE	21-N	90
248	2138 HUBERT CIR	21-R	365
249	1947 EDWARD COVE	21-P	365
250	1335 AUSTIN ST	21-M	90
251	1617 ELDRIDGE AVE	21-K	365
252	2109 HOWELL AVE	21-R	120
253	1734 BROWN AVE	21-P	120
254	1149 N MCNEIL ST	21-O	365
255	1162 N MCNEIL ST	21-O	90
256	HUNTER SPRINGDALE	22-N	60
257	1431 LOCUST ST	22-M	365
258	1487 ORIOLE ST	22-H	90
259	2392 MIDWAY RD	22-A	365
260	1650 ASH ST	22-M	90

S.No.	ADDRESS	MAP	INT
261	2550 HEARD AVE	22-F	90
262	1601 N TREZEVANT ST	22-E	120
263	1495 ORIOLE RD	22-M	90
264	2412 GENTRY AVE	22-N	90
265	1767 ASH ST	22-H	90
266	1534 SUNSET ST	22-M	120
267	2399 HUBBARD AVE	22-K	90
268	3078 CALVERT RD	22-H	90
269	1540 SUNSET ST	22-M	90
270	1331 BOXWOOD ST	22-J	90
271	3046 CHELSEA AVE	22-M	120
272	2367 HUBBARD AVE	22-J	365
273	1479 HARRISON ST	22-E	90
274	3089 SHANNON AVE	22-H	60
275	2324 HUBBARD AVE	22-J	90
276	1547 SUNSET ST	22-M	365
277	1604 MAPLEWOOD ST	22-E	365
278	3855 JACKSON AVE	23-G	90
279	HELSLEY LEROY	23-L	30
280	1396 STACEY ST	23-P	90
281	3894 BERKSHIRE AVE	23-G	30
282	3205 JACKSON AVE	23-N	120
283	4044 DEBBIEDAN COVE	23-R	90
284	3870 GREY RD	23-L	60
285	BAYLISS DUKE	23-P	90
286	1696 VILLA CIR	23-F	90
287	3324 CHELSEA AVE	23-J	90
288	3840 BERKSHIRE AVE	23-G	60
289	3860 PIKES PEAK	23-G	90
290	3975 JACKSON AVE	23-C	90
291	1475 ZELIN ST	23-P	365
292	3975 LEROY AVE	23-L	90
293	LEROY SAILORS	23-L	90
294	N RALEIGH LAGRANGE OF THOMAS	24-D	60
295	5290 ELMORE RD	24-C	365
296	5120 ELMORE RD	24-D	30
297	5275 RALEIGH LAGRANGE RD	24-D	240
298	6191 SUMMER AVE	25-H	90
299	1910 SYCAMORE VIEW RD	25-F	90
300	1706 N SHELBY OAKS DR	25-R	120
301	D/E OF JOE BROOKS DR	25-F	90
302	SYCAMORE RIDGE WAGON GAP	25-F	60
303	2115 SYCAMORE VIEW RD	25-B	90
304	1970 SYCAMORE HEIGHTS LN	25-F	90
305	RALEIGH LAGRANGE SYCAMORE VIEW	25-F	90
306	6081 SUMMER AVE	25-G	60
307	5933 SUMMER AVE	25-L	90
308	CHARLES BRYAN GOODLETT FARMS	26-L	90
309	2072 GOLDBRIER LN	26-E	60
310	TULIP TRAIL	26-C	90
311	2334 BOBOLINK COVE	26-B	90
312	2198 BROMLEY RD	26-A	90

S.No.	ADDRESS	MAP	INT
313	6470 BIRKENHEAD RD	26-A	90
314	6543 BIRKENHEAD RD	26-A	90
315	2155 HILLSHIRE CIR	26-B	120
316	126 MONROE AVE	27-R	90
317	102 N SECOND ST	27-R	15
318	505 N PARKWAY	28-F	90
319	JACKSON THOMAS	28-F	90
320	342 WASHINGTON	28-O	90
321	1257 LARKIN AVE	28-R	90
322	296 WASHINGTON AVE	28-N	90
323	289 N MANASSAS ST	28-L	90
324	638 JEFFERSON AVE	28-O	90
325	130 N DANNY THOMAS BV	28-J	90
326	672 ALABAMA AVE	28-L	90
327	409 AYERS ST	28-P	365
328	600 JEFFERSON AVE	28-O	120
329	JEFFERSON NEELY	28-O	365
330	118 MONROE AVE	28-N	90
331	BELLEVUE JACKSON	28-H	60
332	547 N MANASSAS ST	28-G	90
333	PAULINE POPLAR	28-P	120
334	E JACKSON OF BELLEVUE	28-H	60
335	383 MADISON AVE	28-N	30
336	926 N BELLEVUE BV	28-D	120
337	295 WASHINGTON AVE	28-N	30
338	1029 LEWIS ST	28-D	365
339	981 FORREST AVE	28-M	90
340	N THIRD & WINCHESTER	28-J	90
341	348 DECATUR ST	28-H	90
342	640 ALABAMA	28-K	90
343	1060 MERRIWEATHER	28-P	90
344	ALABAMA LAUDERDALE	28-J	90
345	333 ADAMS AVE	28-O	90
346	334 ASHLAND	28-L	90
347	DECATUR POPLAR	28-P	90
348	591 WASHINGTON AVE	28-O	120
349	319 AYERS ST	28-G	90
350	KEEL SEVENTH	28-B	90
351	783 WOODLAWN ST	28-C	90
352	JACKSON MANASSAS	28-G	90
353	PAULINE POPLAR CIR	28-P	30
354	842 N BELLEVUE BV	28-D	90
355	1194 GRANT PL	28-D	365
356	611 EXCHANGE	28-P	90
357	303 MADISON	28-O	60
358	316 N BELLEVUE BLVD	28-H	180
359	871 N DUNLAP ST	28-C	90
360	718 KEEL AVE	28-C	90
361	1036 GREENLAW AVE	28-H	60
362	73 MONROE AVE	28-N	365
363	928 JOSEPH PL	28-D	90
364	612 N MAIN	28-A	90

S.No.	ADDRESS	MAP	INT
365	1349 AUTUMN AVE	29-J	60
366	1331 FAXON AVE	29-E	90
367	668 N IDLEWILD ST	29-G	180
368	906 N BELLEVUE BV	29-B	60
369	823 N CLAYBROOK ST	29-A	60
370	842 N CLAYBROOK ST	29-A	60
371	843 ANNIE PL	29-A	90
372	KEEL SPEED	29-A	120
373	135 N CLEVELAND ST	29-N	90
374	768 N MONTGOMERY ST	29-A	90
375	1282 SNOWDEN AVE	29-E	30
376	760 N MONTGOMERY ST	29-A	90
377	825 ALASKA ST	29-A	90
378	839 ALASKA ST	29-A	90
379	1448 SNOWDEN AVE	29-E	30
380	794 SPEED ST	29-A	90
381	1883 AUTUMN AVE	29-L	365
382	757 OLYMPIC ST	29-A	90
383	E AUTUMN OF CLAYBROOK	29-J	60
384	836 N CLAYBROOK ST	29-A	90
385	1327 FAXON AVE	29-E	60
386	804 SPEED ST	29-A	90
387	835 N CLAYBROOK ST	29-A	120
388	1033 RAMONA ST	29-D	120
389	1350 SNOWDEN AVE	29-E	90
390	VOLLINTINE WATKINS	29-A	90
391	215 N GARLAND ST	29-N	120
392	903 CHARLES PL	29-D	60
393	ALBANY RAMONA	29-D	30
394	1753 LAWRENCE PL	29-O	60
395	940 N MONTGOMERY ST	29-A	365
396	1672 CARRUTHERS PL	29-O	60
397	305 N MONTGOMERY ST	29-H	60
398	1331 AUTUMN AVE	29-J	90
399	1455 LYNDAL AVE	29-E	90
400	HENRY REAR OLD RR TRACKS	29-D	60
401	AUTUMN CLAYBROOK	29-J	60
402	1864 SNOWDEN AVE	29-G	120
403	309 N WILLETT ST	29-O	60
404	852 ANNIE PL	29-A	90
405	1663 PEACH AVE	29-O	90
406	1367 SNOWDEN AVE	29-E	60
407	212 N EVERGREEN ST	29-O	60
408	GUERNSEY HOLMES	30-H	90
409	1104 HOLMES ST	30-D	60
410	750 N MERTON ST	30-F	60
411	3033 LYNDAL AVE	30-H	90
412	3050 BROAD AVE	30-R	120
413	343 N HOLLYWOOD ST	30-N	90
414	CYPRESS JACKSON	30-E	60
415	245 TILLMAN ST	30-P	90
416	HOLLYWOOD VOLLINTINE	30-B	160

S.No.	ADDRESS	MAP	INT
417	HOLLYWOOD PRINCETON	30-N	120
418	BALTIC MANHATTEN	30-M	90
419	COLEMAN TILLMAN	30-G	365
420	BROAD MALCOMB	30-R	90
421	873 POPE ST	30-H	90
422	JACKSON MACON	30-D	90
423	3057 PRINCETON AVE	30-R	90
424	685 HARRELL RD	30-L	420
425	3036 SUMMER AVE	30-R	120
426	SCOTT TUTWILER	30-L	365
427	549 BON AIR ST	30-R	90
428	3070 SUMMER AVE	30-R	30
429	857 KIPPLEY ST	30-H	90
430	COLLINS PRINCETON	30-O	365
431	FAXON HARRELL	30-L	90
432	1094 ATLANTIC ST	30-D	90
433	MALCOMB SAM COOPER BLVD	30-R	90
434	2403 PRINCETON AVE	30-R	90
435	HOLLYWOOD BTWN AUTUMN BROAD	30-N	90
436	1073 ATLANTIC ST	30-D	90
437	2590 FAXON AVE	30-O	90
438	2562 SAM COOPER BLVD	30-O	60
439	456 TILLMAN ST	30-P	120
440	3030 JACKSON AVE	30-D	60
441	725 MCCONNELL AVE	30-J	90
442	N NORTH TREZEVANT	30-E	90
443	TILLMAN TUTWILER	30-L	120
444	2854 FAXON AVE	30-L	365
445	3063 POWELL AVE	30-H	90
446	HARDIN HOLMES	30-D	365
447	E UNDER JACKSON BRIDGE OF BINGHAM AVE	30-F	90
448	ATLANTIC HARDIN	30-D	90
449	667 BALTIC ST	30-M	365
450	BALTIC GUERNSEY	30-H	90
451	N CENTER	30-E	60
452	516 SHARON DR	31-P	60
453	3633 GUERNSEY AVE	31-F	90
454	1031 NATIONAL ST	31-E	90
455	1044 NATIONAL ST	31-E	120
456	3340 LAMPHIER AVE	31-E	90
457	3645 MACON	31-B	90
458	3781 MACON RD	31-C	420
459	NATIONAL SUMMER	31-N	60
460	837 FREEMAN ST	31-K	60
461	611 NATIONAL ST	31-N	60
462	4239 SUMMER AVE	31-R	90
463	HIGHLAND ROSAMOND	31-A	90
464	543 ESTRIDGE DR	31-R	90
465	1185 WRIGHT RD	31-D	60
466	3339 GUERNSEY AVE	31-E	60
467	4045 SUMMER AVE	31-R	90
468	547 GERALD RD	31-R	120

S.No.	ADDRESS	MAP	INT
469	961 N HIGHLAND ST	31-E	90
470	LYNNCREST SUMMER	31-P	365
471	N HIGHLAND OF GIVEN	31-E	120
472	GUERNSEY HOMER	31-E	90
473	842 EASTERN DR	31-M	60
474	4520 MACON RD	32-A	90
475	BERCLAIR TUTWILER	32-J	120
476	4584 SUMMER AVE	32-O	60
477	BARTLETT WHITE STATION	32-G	365
478	4718 LYNN RD	32-K	60
479	1188 GARDEN RD	33-H	90
480	5565 SHELBY OAKS DR	33-A	90
481	1188 HEATHCLIFF	33-D	90
482	6081 SHELBY OAKS DR	33-B	90
483	6068 MACON COVE	33-C	90
484	BUTLER TENNESSEE	34-G	365
485	327 S MAIN ST	34-D	60
486	339 S FRONT ST	34-G	120
487	276 ALLEN	34-H	90
488	540 S THIRD ST	34-M	90
489	294 HERNANDO ST	34-D	90
490	145 S MAIN	34-D	60
491	164 BEALE ST	34-D	60
492	608 S MAIN	34-M	60
493	150 PEABODY PL	34-D	30
494	145 W LT GEORGE LEE AVE	34-D	90
495	ALLEN VANCE ST	34-H	90
496	555 S THIRD ST	34-M	90
497	N POLK OF EH CRUMP	35-K	60
498	316 EH CRUMP BV	35-N	90
499	750 S LAUDERDALE ST	35-N	90
500	GEORGIA ORLEANS	35-K	90
501	EH CRUMP POLK	35-O	60
502	256 S CAMILLA ST	35-G	365
503	CAMILLA VANCE	35-H	120
504	711 LINDEN AVE	35-F	90
505	361 S ORLEANS ST	35-F	90
506	777 COURT ST	35-B	120
507	LAUDERDALE MONROE	35-A	90
508	800 VANCE AVE	35-G	365
509	588 VANCE AVE	35-F	30
510	407 S ORLEANS ST	35-F	90
511	751 EH CRUMP	35-K	60
512	394 VANCE AVE	35-E	90
513	699 LINDEN AVE	35-F	365
514	SLEDGE WALDRAN	35-R	90
515	576 VANCE AVE	35-F	365
516	172 BEALE ST	35-A	90
517	IOKA MCKINLEY	35-K	60
518	21 NEELY ST	35-B	90
519	1172 LAMAR AVE	35-M	120
520	CAMILLA LINDEN	35-G	120

S.No.	ADDRESS	MAP	INT
521	644 MADISON	35-B	90
522	660 E GEORGIA AVE	35-K	60
523	BELLEVUE LAMAR	35-R	90
524	530 VANCE AVE	35-F	90
525	734 WILLIAMS AVE	35-O	90
526	987 UNION AVE	35-C	365
527	PORTER PROVINE	35-O	240
528	COOPER WASHINGTON	36-D	90
529	25 BELLAIRE	36-C	120
530	23 S EDGEWOOD ST	36-H	120
531	88 N TUCKER ST	36-G	60
532	1899 POPLAR AVE	36-C	90
533	CLEVELAND HARBERT	36-J	90
534	LAMAR MELROSE	36-N	365
535	2080 LEE PL	36-D	120
536	2094 MADISON AVE	36-C	90
537	2036 LINDEN AVE	36-G	60
538	TRIMBLE PL S OF MADISON	36-G	60
539	42 S DIANA	36-G	90
540	2013 COURTLAND AVE	36-L	90
541	DIANA VINTON	36-L	60
542	770 S WILLETT ST	36-N	60
543	1378 UNION AVE	36-E	30
544	1325 JEFFERSON AVE	36-A	90
545	87 N STONEWALL ST	36-A	60
546	46 BELLAIRE DR	36-C	60
547	2043 LINDEN AVE	36-G	90
548	2095 POPLAR AVE	36-C	60
549	1316 MADISON AVE	36-B	120
550	W WASHINGTON D E OF COOPER	36-D	60
551	756 MELROSE ST	36-J	90
552	1359 GOODBAR AVE	36-J	365
553	DIANA MONROE ST	36-G	90
554	1437 CENTRAL AVE	36-N	365
555	2012 MADISON AVE	36-D	90
556	2040 MADISON AVE	36-G	60
557	1596 MADISON AVE	36-A	90
558	1516 UNION AVE	36-E	90
559	585 LEMASTER ST	36-K	90
560	2193 JEFFERSON AVE	36-D	60
561	W POPLAR OF COOPER	36-D	60
562	2156 JEFFERSON AVE	36-D	120
563	S EDGEWOOD OF MADISON	36-H	60
564	COOPER POPLAR	36-D	60
565	DIANA & TRIMBLE	36-G	120
566	2083 WASHINGTON AVE	36-D	120
567	154 ANGELUS ST	36-B	120
568	147 STONEWALL ST	36-A	420
569	106 N MCLEAN BV	36-C	30
570	COX MADISON	36-H	120
571	HARBERT WILLETT	36-J	90
572	2082 WASHINGTON AVE	36-D	120

S.No.	ADDRESS	MAP	INT
573	1471 CENTRAL AVE	36-N	365
574	2110 MADISON AVE	36-H	90
575	2176 JEFFERSON AVE	36-D	60
576	2092 JEFFERSON AVE	36-C	60
577	N COX OF MADISON	36-H	90
578	2224 MADISON AVE	36-H	120
579	2033 VINTON AVE	36-L	60
580	1301 GOODBAR AVE	36-J	365
581	1433 PEABODY AVE	36-E	365
582	COOPER MADISON	36-H	90
583	2096 ELZEY AVE	36-P	90
584	1624 HARBERT AVE	36-K	90
585	2038 LINDEN	36-G	120
586	BELVEDERE HARBERT	36-K	365
587	769 S COOPER ST	36-R	120
588	1544 MADISON AVE	36-A	60
589	1366 GOODBAR AVE	36-J	365
590	251 W CHICKASAW PKY	37-P	240
591	CYPRESS CREEK JOHNSON	37-D	90
592	AVERY FLICKER	37-K	90
593	87 CHEROKEE DR	37-L	90
594	41 N LARCHMONT DR	37-F	90
595	189 EASTVIEW DR	37-H	30
596	HOLMES WALNUT GROVE	37-M	90
597	353 S FENWICK ST	37-O	60
598	NATHAN VANDALIA	37-D	90
599	372 GRACEWOOD	37-C	90
600	3172 HIGHLAND PARK PL	37-H	60
601	196 E PARKWAY N	37-A	60
602	185 N MERTON ST	37-A	365
603	COLLINS WESSELLY	37-F	45
604	393 POPE ST	37-D	90
605	219 TILLMAN ST	37-C	365
606	3094 JOHNSON AVE	37-C	120
607	3107 NATHAN AVE	37-D	90
608	CENTRAL CHICKASAW	37-P	60
609	CENTURY HIGHLAND PARK	37-H	120
610	2893 POPLAR AVE	37-G	90
611	241 EASTVIEW ST	37-D	90
612	367 BUNTYN	37-O	90
613	212 E CHICKASAW PKY	37-L	60
614	70 E CHICKASAW PKY	37-L	240
615	CHICKASAW IROQUOIS	37-L	60
616	287 EASTVIEW ST	37-D	90
617	223 TILLMAN ST	37-G	90
618	3030 WALNUT GROVE RD	37-G	90
619	3639 S GALLOWAY DR	38-K	45
620	4347 CHARLESWOOD AVE	38-D	90
621	3422 PLAZA AVE	38-J	30
622	139 MAGNOLIA DR	38-G	90
623	144 E GALLOWAY DR	38-L	30
624	93 S ROSE RD	38-L	90

S.No.	ADDRESS	MAP	INT
625	3971 WALNUT GROVE RD	38-L	30
626	141 S REESE ST	38-N	180
627	4390 CHICKASAW RD	38-D	60
628	4339 GWYNNE RD	38-M	120
629	4307 WYNTUCK PL	38-M	365
630	3571 S GALLOWAY DR	38-J	420
631	42 WYCHWOOD DR	38-M	365
632	CHARLESWOOD HILLDALE	38-D	90
633	4361 CHARLESWOOD AVE	38-D	120
634	CENTRAL ZACK CURLIN	38-O	90
635	337 ELLSWORTH ST	38-N	420
636	E POPLAR OF RIDGEFIELD	38-N	60
637	3440 POPLAR AVE	38-J	90
638	3615 WAYNOKA AVE	38-F	30
639	5272 SHADY GROVE RD	39-R	90
640	4470 TUCKAHOE RD	39-N	90
641	4540 NORMANDY AVE	39-E	90
642	W WALNUT GROVE OF FERNWAY	39-L	60
643	273 LORECE LN	39-F	365
644	5360 SHADY GROVE RD	39-R	60
645	CHARLOTTE MARY ANN	39-M	90
646	87 CHERRY RD	39-J	120
647	247 LORECE LN	39-G	90
648	E GOODWAY D	39-J	60
649	327 PINEWOOD COVE	39-C	90
650	5740 SHADY GROVE RD	40-O	365
651	5465 MASON RD	40-A	365
652	276 S PARKWAY E	41-K	365
653	358 S PARKWAY E	41-L	90
654	1012 ESPLANADE PL	41-B	90
655	1620 RIVERSIDE BLVD	41-K	90
656	1588 PATTON ST	41-M	90
657	269 BOND AVE	41-M	90
658	1356 S RIVERSIDE	41-E	90
659	LATHAM S PARKWAY	41-M	90
660	KENTUCKY OLIVE	41-G	90
661	PENNSYLVANIA TRIGG	41-F	420
662	1074 FLORIDA ST	41-C	90
663	FIELDS RIVERSIDE	41-K	90
664	1598 S THIRD ST	41-M	90
665	1295 KENTUCKY ST	41-G	90
666	1307 LATHAM ST	41-H	365
667	80 W OLIVE AVE	41-G	60
668	KENTUCKY & S PARKWAY	41-L	90
669	1491 HUMBER ST	42-J	90
670	1361 GAITHER PKY	42-L	90
671	GREENWOOD SAXON	42-D	90
672	1333 DRIVER ST	42-E	60
673	1309 LAUDERDALE ST	42-E	60
674	KERR MISSISSIPPI	42-L	90
675	MARJORIE PERSON	42-O	90
676	1662 CLANCY ST	42-P	90

S.No.	ADDRESS	MAP	INT
677	1400 MISSISSIPPI BLVD	42-K	90
678	1333 SOUTH	42-R	90
679	1327 S LAUDERDALE ST	42-E	60
680	338 LACLEDE ST	42-A	365
681	1667 S LAUDERDALE	42-N	90
682	MARJORIE TAMPA	42-O	120
683	1320 S LAUDERDALE	42-E	120
684	TAMPA W OF MARJORIE	42-O	90
685	AZALIA CUMMINGS	42-L	365
686	718 LUCY AVE	42-F	90
687	1160 S BELLEVUE BLVD	42-D	90
688	1348 RIDGEWAY ST	42-G	60
689	1604 HAVANA ST	42-K	90
690	NEPTUNE WALKER	42-C	90
691	1650 SHAWDOWLAWN	42-N	365
692	1338 RIDGEWAY ST	42-G	90
693	1520 GABAY ST	42-K	420
694	1184 KERR AVE	42-M	90
695	1363 PERSON	42-R	90
696	BELLEVUE SAXON	42-D	90
697	1507 VICTOR ST	42-K	90
698	CASTALIA GOFF	43-P	90
699	1036 ROZELLE ST	43-B	90
700	2212 S PARKWAY E	43-H	90
701	1393 S PARKWAY E	43-J	90
702	1840 GLENVIEW AVE	43-K	30
703	1483 NETHERWOOD AVE	43-E	90
704	1420 E MCLEMORE AVE	43-A	90
705	1902 WALKER AVE	43-C	60
706	FELIX SEATTLE	43-B	120
707	1069 S MCLEAN ST	43-B	90
708	PERSON RAGAN	43-N	120
709	E LAPALOMA S PARKWAY	43-L	120
710	BARKSDALE CANE CREEK	43-L	30
711	1446 S COOPER ST	43-P	120
712	1638 NETHERWOOD AVE	43-F	90
713	E LONGSTREET OF PKY	43-H	60
714	N RAGAN OF PERSON	43-N	30
715	1662 KENDALE	43-E	120
716	LAMAR PARK	43-M	90
717	1891 CLOVERDALE DR	43-O	240
718	1755 HOLMAN AVE	43-B	120
719	COOPER S PARKWAY	43-L	90
720	CASTALIA LAMAR	43-G	90
721	EMMIE LAMAR	43-B	120
722	1271 NETHERWOOD	43-F	90
723	PHILADELPHIA YOUNG	43-D	40
724	2017 E PERSON AVE	43-P	90
725	1489 NETHERWOOD AVE	43-E	90
726	1673 RAGAN AV	43-N	420
727	LAMAR & S PARKWAY E	43-J	120
728	1235 E PARKWAY S	43-D	90

S.No.	ADDRESS	MAP	INT
729	968 SEATTLE ST	43-B	90
730	SILVER WALDORF	43-J	90
731	2270 S PARKWAY E	43-H	90
732	1987 W DIANNE CIR	43-P	365
733	964 EMMIE ST	43-B	90
734	1453 S BARKSDALE ST	43-L	120
735	1466 KERR ST	43-J	90
736	1580 E PERSON AVE	43-N	120
737	1856 KENDALE AVE	43-F	60
738	1415 LAPALOMA CIR	43-L	90
739	BARKSDALE BTWN BARKSDALE QUINN COVE	43-L	30
740	1409 LAPALOMA CIR	43-L	60
741	1900 QUINN AVE	43-L	90
742	MEDA SOUTHERN	43-D	365
743	1686 SILVER ST	43-N	60
744	NEW YORK SOUTHERN	43-G	365
745	1980 WABASH AV	43-P	120
746	1566 FOSTER AVE	43-F	90
747	1844 OLIVER ST	43-C	60
748	PERSON SILVER	43-N	120
749	COX SOUTHERN	43-D	365
750	1301 LAPALOMA ST	43-L	120
751	1585 W DIANNE CIR	43-P	90
752	MIDLAND WEST OF LUNDEE	44-B	60
753	2728 SUPREME AVE	44-O	90
754	748 MOON ST	44-L	90
755	1083 POPPEN	44-P	90
756	3133 CHISCA AVE	44-M	90
757	1109 PARKLAND RD	44-R	90
758	396 JOSEPHINE ST	44-B	420
759	2984 N RADFORD RD	44-P	90
760	457 JOSEPHINE ST	44-B	90
761	1219 HAMILTON ST	44-N	365
762	BELT LINE YOUNG	44-B	120
763	375 BOSTON ST	44-B	365
764	1298 SEMMES ST	44-P	365
765	1150 SEMMES ST	44-L	90
766	2635 SPOTTSWOOD AVE	44-F	90
767	483 BOSTON ST	44-B	90
768	3294 SPOTTSWOOD AVE	44-H	90
769	2766 MIDLAND ST	44-B	120
770	477 BUNTYN AVE	44-B	120
771	2775 WAVERLY AVE	44-F	90
772	3060 RADFORD RD	44-P	90
773	DAVID DEADRICK	44-N	90
774	469 BOSTON ST	44-O	120
775	3357 SOUTHERN AVE	44-H	90
776	BARRON SEMMES	44-P	90
777	1021 HOSKINS LN	44-P	90
778	2788 MIDLAND	44-B	90
779	CHISCA MAXEY	44-M	90
780	2719 SPOTTSWOOD AVE	44-F	365

S.No.	ADDRESS	MAP	INT
781	490 S BUNTYN ST	44-B	90
782	385 S HIGHLAND ST	45-A	60
783	845 S GRAHAM ST	45-L	120
784	3872 SPOTTSWOOD AVE	45-F	365
785	3886 PARK AVE	45-L	90
786	845 WATSON ST	45-L	120
787	CHERRY POPLAR	45-D	90
788	842 S GRAHAM ST	45-L	90
789	600 PATTERSON ST	45-E	90
790	3824 PARK AVE	45-L	120
791	PARK PRESCOTT	45-J	60
792	GOODLETT PARK	45-L	365
793	3833 DOUGLASS AVE	45-K	120
794	400 S HIGHLAND ST	45-A	90
795	3408 PARK AVE	45-J	60
796	3834 MARION AVE	45-K	90
797	GOODMAN PARK	45-K	30
798	S HEALEY OF STUART RD	45-O	60
799	4220 BURGUNDY RD	45-R	365
800	3529 DOUGLASS AVE	45-J	90
801	648 WATSON ST	45-G	365
802	709 S GOODLETT ST	45-G	90
803	3910 STUART	45-P	90
804	460 S HIGHLAND ST	45-A	90
805	KELLEY KELLEY CIR	45-O	60
806	4060 PARK AVE	45-L	90
807	989 ESTATE POPLAR	46-M	90
808	ERIN WILLIAM ARNOLD	46-G	90
809	5259 POPLAR AVE	46-L	90
810	4851 PARK AVE	46-K	30
811	5094 POPLAR AVE	46-G	90
812	5100 POPLAR AVE	46-L	90
813	436 PERKINS EXT	46-A	90
814	4700 POPLAR AVE	46-F	90
815	4984 PARK AVE	46-L	90
816	4894 POPLAR AVE	46-F	90
817	521 ERIN RD	46-G	90
818	4745 POPLAR AVE	46-F	60
819	565 W CLOVER	46-M	120
820	5000 POPLAR AVE	46-G	30
821	5672 HERALD SQUARE	47-B	420
822	5909 REDFEARN COVE	47-G	420
823	715 S YATES RD	47-E	60
824	607 HARWOOD COVE	47-F	365
825	545 HARWOOD COVE	47-F	420
826	5902 REDFEARN COVE	47-G	120
827	709 S YATES RD	47-E	90
828	5510 N SUGGS DR	47-E	90
829	5941 POPLAR PIKE EXT	47-P	90
830	6037 SHADY GROVE RD	47-C	90
831	801 S YATES RD	47-J	60
832	6758 BRIARMEADOWS DR	48-F	120

S.No.	ADDRESS	MAP	INT
833	6426 RIVER TIDE DR	48-A	90
834	1730 HUNTERS TRACE DR	48-O	90
835	CORSICA KIRBY	48-F	365
836	COTTINGHAM LANCASTER	48-J	90
837	1545 W MASSEY	48-N	90
838	1489 PINE SHADOWS DR	48-K	90
839	1465 E MASSEY RD	48-J	90
840	6314 E SHADY GROVE RD	48-A	365
841	1537 EASTRIDGE DR	48-K	90
842	280 W FRANK RD	51-G	365
843	360 W MALLORY AVE	51-F	90
844	2104 BENFORD ST	51-F	90
845	GAGE PENNSYLVANIA	51-K	120
846	129 W MCKELLAR AVE	51-F	90
847	88 E BODLEY AVE	51-L	90
848	154 W MCKELLAR AVE	51-G	90
849	324 W MALLORY AVE	51-F	90
850	2271 S THIRD ST	51-M	90
851	RIVERSIDE VOLUNTEER	51-A	90
852	142 W DAVANT AVE	51-G	120
853	150 PRETORIA AVE	51-B	90
854	60 E MALLORY AVE	51-C	90
855	106 E NORWOOD AVE	51-G	90
856	2183 PENNSYLVANIA ST	51-K	120
857	151 W GAGE	51-G	90
858	2100 BENFORD ST	51-F	30
859	1930 S THIRD ST	51-D	90
860	1890 BENFORD ST	51-F	90
861	2200 SHELBY ST	51-G	90
862	102 E NORWOOD AVE	51-G	90
863	35 W MCKELLAR AVE	51-F	90
864	ALIDA MARJORIE	52-B	120
865	510 E MCKELLAR AVE	52-E	365
866	MARJORIE NORFOLK	52-C	120
867	MARJORIE WOODLAND	52-C	120
868	995 PALERMO AVE	52-C	90
869	MARJORIE ROSEWOOD	52-C	120
870	1370 ALCY	52-R	90
871	1373 ELLISTON RD	52-M	90
872	1853 MARJORIE ST	52-C	120
873	EFFIE ELVIS PRESLEY	52-M	60
874	419 E NORWOOD AVE	52-E	90
875	538 E DAVANT AVE	52-E	90
876	MARYWOOD TAMPA	52-B	90
877	1001 ROSEWOOD AVE	52-C	90
878	ELLISTON HERNANDO	52-M	90
879	538 JACKLYN AVE	52-A	90
880	2020 ALTON AVE	52-E	90
881	MARJORIE PALERMO	52-C	120
882	WOODLAND W OF MAJORIE	52-C	60
883	883 WOODLAND AVE	52-B	90
884	N ELVIS PRESLEY OF MENAGER	52-D	60

S.No.	ADDRESS	MAP	INT
885	1355 E ALCY RD	52-R	90
886	1839 BENNING ST	52-A	90
887	752 E DEMPSTER AVE	52-K	90
888	1836 NORFOLK ST	52-C	90
889	2457 W BALL RD	52-O	90
890	BODLEY ORLEANS	52-K	60
891	795 E MCKELLAR AVE	52-F	60
892	947 COLGATE RD	52-P	90
893	1354 ELOISE ST	53-J	90
894	2010 ALCY	53-P	90
895	ALCY SPARKS	53-N	90
896	2190 KETCHUM RD	53-R	120
897	2302 WARREN ST	53-N	90
898	1430 ELLISTON AVE	53-J	120
899	AIRWAYS I 240	53-R	365
900	1467 SILVER PL	53-A	60
901	1902 FREEMONT RD	53-B	90
902	CARVER & HAYS	53-B	90
903	2341 DWIGHT RD	53-M	90
904	2109 PERRY RD	53-J	90
905	2418 JOHANNA DR	53-O	60
906	1805 KELTNER CIR	53-C	90
907	1477 MERLIN ST	53-E	365
908	2309 WARREN ST	53-N	90
909	2299 WARREN RD	53-N	90
910	BALL KETCHUM	53-P	420
911	1902 CARVER AVE	53-B	90
912	2095 SPARKS ST	53-E	120
913	3225 KIMBALL AVE	54-D	90
914	1851 JOHN PAUL DR	54-P	120
915	1728 WILDROSE RD	54-L	90
916	KETCHUM PENDLETON	54-O	90
917	PRESCOTT RHODES	54-H	90
918	LAMAR PRESCOTT	54-R	30
919	2335 IMOGENE ST	54-J	420
920	2428 KETCHUM RD	54-N	365
921	1918 FILMORE CIR	54-E	90
922	2110 PENDLETON ST	54-K	90
923	2664 BURNS AVE	54-F	90
924	3039 LAMAR AVE	54-L	60
925	FOX HARRIS	54-H	90
926	2903 KIMBALL RD	54-C	90
927	GALVESTON SHARPE	54-L	90
928	PINECREST SHARPE	54-M	60
929	ALAMO KIMBALL	54-G	60
930	1886 PENDLETON ST	54-F	90
931	2344 PENDLETON ST	54-O	90
932	3087 SHARPE AVE	54-M	365
933	3267 STANDARD DR	54-D	90
934	2921 KETCHUM RD	54-O	90
935	2769 BURNS AVE	54-E	90
936	3125 SHARPE AVE	54-M	120

S.No.	ADDRESS	MAP	INT
937	2335 PENDLETON ST	54-O	90
938	CHEROKEE PRESCOTT	54-M	90
939	2434 KETCHUM RD	54-N	90
940	1500 S PRESCOTT ST	54-H	30
941	LOUNETTE WILDROSE	54-P	60
942	2967 KIMBALL AVE	54-C	365
943	LAMAR SOUTHWALL	54-L	90
944	3389 STEVE RD	54-M	120
945	2727 KETCHUM RD	54-O	90
946	2930 KIMBALL	54-C	90
947	3885 FIZER AVE	55-B	90
948	4068 KIMBALL AVE	55-G	120
949	MCDUFF PATTERSON	55-J	90
950	GETWELL KIMBALL	55-G	120
951	3648 MIAMI COVE	55-E	365
952	1136 GOODMAN ST	55-B	90
953	3927 BARRON AVE	55-B	120
954	3659 KIMBALL AVE	55-F	60
955	GOODLETT WILLOWVIEW	55-M	60
956	W FIZER OF GETWELL	55-C	60
957	3725 NORRIS RD	55-O	90
958	W KIMBALL OF GETWELL	55-G	60
959	1800 ROBINHOOD LN	55-K	90
960	3780 ELLISTON RD	55-K	90
961	1481 REBECCA ST	55-H	180
962	1618 STRIBLING ST	55-K	90
963	1594 HARVILLE ST	55-K	120
964	W BARRON OF GETWELL	55-B	90
965	1574 PATTERSON AVE	55-J	120
966	4218 FREDERICKS AVE	55-H	90
967	1919 WATSON RD	55-R	90
968	3905 FIZER AVE	55-C	90
969	3593 MCDUFF AVE	55-J	90
970	FIZER GETWELL	55-C	120
971	3887 ELLISTON RD	55-K	30
972	3430 KIRBY AVE	55-J	90
973	1755 CHERRY	55-M	60
974	4172 NEW WILLOW RD	55-L	90
975	3909 FIZER AVE	55-C	90
976	4079 WILLOWVIEW AVE	55-L	90
977	3640 BARRON	55-A	90
978	4006 FIZER AVE	55-C	90
979	4235 WILLOWVIEW RD	55-L	60
980	1515 MINK ST	55-G	90
981	1526 MINK ST	55-G	180
982	3898 PHILSDALE AVE	55-F	90
983	3916 RHODES AVE	55-C	60
984	3918 FIZER AVE	55-G	120
985	1869 GOODLETT ST	55-R	90
986	1587 CHERRY RD	55-H	120
987	3639 MIAMI COVE	55-E	30
988	4069 KIMBALL AVE	55-G	60

S.No.	ADDRESS	MAP	INT
989	GETWELL RHODES	55-C	90
990	4125 WILLOWVIEW AVE	55-L	120
991	1005 S PERKINS RD	56-F	90
992	1585 S WHITE STATION RD	56-L	60
993	4557 DEE RD	56-A	120
994	4427 QUINCE RD	56-E	90
995	4780 FLAMINGO RD	56-B	365
996	2543 LOVITT DR	57-O	90
997	5902 GROSVENOR AVE	57-P	90
998	5438 QUINCE RD	57-E	120
999	6191 PARK AVE	57-D	60
1000	6080 PRIMACY PKY	57-C	90
1001	1285 RIDGEWAY RD	57-C	90
1002	5603 GLENWILD RD	57-E	90
1003	6041 MACINNESS DR	57-O	90
1004	1755 LYNNFIELD RD	57-O	90
1005	1611 ARCADIA ST	57-J	90
1006	5445 LYFORD AVE	57-J	90
1007	6560 POPLAR	58-A	90
1008	2300 HICKORY CREST DR	58-K	60
1009	1770 KIRBY PKY	58-B	90
1010	INTERNATIONAL PL POPLAR AVE	58-A	90
1011	HICKORY CREST MESSICK	58-O	90
1012	1754 RANDOLPH PL	58-A	90
1013	3388 OUTLET RD	61-O	90
1014	658 W MITCHELL RD	61-R	90
1015	636 HARAHAH RD	61-M	90
1016	614 W PEEBLES RD	61-H	60
1017	3082 SAX RD	61-M	90
1018	3388 CHARLOTTE RD	62-O	90
1019	116 SHOP RD	62-F	120
1020	PEEBLES THIRD	62-G	90
1021	348 FLYNN RD	62-J	120
1022	336 DIXIE RD	62-J	120
1023	3476 W HORN LAKE RD	62-J	365
1024	BROOKS THIRD	62-L	90
1025	3331 LUCIBILL LN	63-P	180
1026	3373 REGAL PLAZA DR	63-N	90
1027	3065 FLEETBROOK DR	63-K	90
1028	DIRECTORS CV DIRECTORS ROW	64-L	30
1029	1471 E BROOKS RD	64-J	90
1030	CLEMENTINE SPARKS	64-A	90
1031	3446 KNIGHT ARNOLD RD	65-M	120
1032	3001 GOODLETT RD	66-R	90
1033	3199 S GOODLETT RD	66-R	120
1034	DEVEL GOODLETT	66-R	30
1035	COCHESE WATSON	66-C	365
1036	3542 LAMAR AVE	66-E	365
1037	KNIGHT ARNOLD AT HOLIDAY INN GATE	66-K	90
1038	CAMELOT SOUTHBRIDGE	66-L	90
1039	KNIGHT ARNOLD TEN MILE BAYOU	66-K	60
1040	3751 LAMAR AVE	66-K	60

S.No.	ADDRESS	MAP	INT
1041	4282 SHEFFIELD AVE	66-M	90
1042	3896 CHIPPEWA ST	66-G	90
1043	4179 FOREST VIEW DR	66-P	365
1044	COTTONWOOD GOODLETT	66-H	365
1045	JULIUS LEWIS KNIGHT ARNOLD	66-K	30
1046	3040 ASHWOOD ST	66-L	365
1047	2757 GETWELL RD	66-C	120
1048	3755 KNIGHT ARNOLD RD	66-K	120
1049	LAMAR OLD GETWELL	66-O	90
1050	GETWELL KENOSHA	66-F	90
1051	4093 COCHESE AVE	66-C	90
1052	3897 LAMAR AVE	66-O	60
1053	3919 AMERICAN WAY	66-C	120
1054	3192 FOREST BROOK DR	66-L	90
1055	3341 S GOODLETT	66-R	90
1056	3839 LAMAR AVE	66-O	120
1057	3933 ALLENBROOKE COVE	66-B	90
1058	2875 PHYLLIS COVE	66-H	90
1059	3988 ASHVIEW COVE	66-P	90
1060	3295 WOODHOLLOW DR	66-R	90
1061	3355 GOODLETT RD	66-R	120
1062	2962 GETWELL RD	66-C	90
1063	4088 COCHESE AVE	66-C	90
1064	2854 DANVILLE COVE	66-H	90
1065	3227 DOTHAN ST	67-R	90
1066	CASTLEMAN CHERON COVE	67-H	365
1067	3083 ARRENDALE ST	67-J	90
1068	4419 CHUCK AVE	67-N	90
1069	BLUFFDALE BONDALE	67-K	90
1070	3265 STARS DALE ST	67-O	90
1071	KNIGHT ARNOLD MENDENHALL	67-M	90
1072	DOTHAN KNIGHT ARNOLD	67-R	60
1073	CASTLEMAN KITTY LEE	67-P	365
1074	CASTLEMAN KNIGHT ARNOLD	67-L	120
1075	CASTLEMAN DARLINGTON	67-C	365
1076	CASTLEMAN SCOTTSDALE	67-P	365
1077	2987 EGAN DR	67-M	90
1078	3306 S MENDENHALL RD	67-R	90
1079	3091 KNIGHTWAY RD	67-J	30
1080	CASTLEMAN CASTLEMAN COVE	67-H	365
1081	CASTLEMAN COTTONWOOD	67-H	120
1082	SCOTTSDALE STARS DALE	67-O	90
1083	COTTONWOOD JOHNS CREEK	67-H	60
1084	3216 DOTHAN ST	67-M	365
1085	4623 AMERICAN WAY	67-E	365
1086	3233 TENA REA COVE	67-P	90
1087	4865 KNIGHT ARNOLD RD	67-K	90
1088	5267 KNIGHT ARNOLD RD	67-R	90
1089	3296 CLEARBROOK ST	67-P	90
1090	AMERICAN CLEARBROOK WAY	67-B	90
1091	CASTLEMAN JESSIE LEE	67-P	365
1092	CURTIS MELANIE	67-G	90

S.No.	ADDRESS	MAP	INT
1093	2724 CLEARBROOK ST	67-B	90
1094	CARVEL COLEWOOD	67-G	365
1095	2983 DOTHAN ST	67-H	90
1096	3293 STARSDALE ST	67-O	90
1097	CASTLEMAN COLEWOOD	67-H	365
1098	COTTONWOOD ESTES	67-H	90
1099	3327 S MENDENHALL RD	67-R	90
1100	3239 STARSDALE ST	67-O	14
1101	CASTLEMAN CHRISTOPHER	67-L	365
1102	FAIRBROOK FAIRBROOK COVE	67-C	365
1103	3039 DOTHAN ST	67-M	90
1104	5558 FORSYTH DR	68-J	90
1105	2983 KIRBY M LISS COVE	68-M	90
1106	3350 HICKORY HILL RD	68-O	90
1107	3316 HICKORY HILL RD	68-O	365
1108	6324 RIDGE MANOR DR	68-R	120
1109	6060 MISSION RIDGE RD	68-L	90
1110	6170 PEBBLE BEACH AVE	68-K	90
1111	2680 MT MORIAH RD	68-B	365
1112	6271 RIDGELINE DR	68-R	90
1113	3315 HICKORY HILL RD	68-O	90
1114	6141 BELLE FOREST DR	68-L	90
1115	6100 KNIGHT ARNOLD EXT	68-P	90
1116	5882 OAKLAND HILLS LN	68-F	120
1117	2972 RIDGEWAY RD	68-G	90
1118	HICKORY HILL KNIGHT ARNOLD	68-O	90
1119	6332 RIDGE MANOR DR	68-R	90
1120	KNIGHT ARNOLD RIDGEWAY	68-P	90
1121	1266 CHICKAMAUGA AVE	70-K	90
1122	1404 WAGON TRAIL LN	70-N	90
1123	4264 ARROW RD	70-R	90
1124	843 PAWNEE AVE	70-R	120
1125	900 LEACREST AVE	70-P	90
1126	LEVI MARSONNE	70-M	90
1127	1136 CANARY LA	70-F	90
1128	4196 WANATAH ST	70-R	90
1129	661 DEERSKIN DR	70-H	90
1130	4260 ARROW RD	70-R	60
1131	4182 CLYDESDALE DR	70-O	90
1132	3636 WEAVER AVE	70-C	90
1133	1034 CANARY LN	70-F	90
1134	4011 SWANBROOK ST	70-L	420
1135	4164 DOUBLE TREE ST	70-K	90
1136	4167 DEERLAND ST	70-R	90
1137	634 W LEVI RD	70-M	90
1138	3955 LEECH RD	71-J	90
1139	3746 HORN LAKE RD	71-F	90
1140	LEECH LEECH COVE	71-K	90
1141	538 GAINSVILLE	71-E	90
1142	3995 S THIRD ST	71-K	90
1143	HILLBROOK HILLVIEW	71-G	90
1144	173 SULLIVAN DR	71-R	90

S.No.	ADDRESS	MAP	INT
1145	433 DEERSKIN DR	71-E	90
1146	259 GLENCOE RD	71-A	90
1147	3466 W HORN LAKE RD	71-B	90
1148	255 GLENCOE RD	71-A	90
1149	322 LEECH COVE	71-J	90
1150	FAIRWAY HORN LAKE	71-F	60
1151	4113 WELLWOOD ST	71-P	90
1152	596 DEERSKIN DR	71-E	90
1153	3704 HILLBROOK RD	71-G	90
1154	3534 MILLARD RD	71-B	90
1155	3543 W HORN LAKE RD	71-C	90
1156	3638 HILLRIDGE ST	71-H	90
1157	194 BONITA RD	71-R	90
1158	3987 MAYNARD DR	71-J	90
1159	3680 HILLBROOK RD	71-G	90
1160	136 HILLVIEW	71-G	90
1161	3710 TULANE RD	72-A	90
1162	4006 E WHITEHAVEN PARK CIR	72-L	30
1163	4200 MCCORKLE	72-N	90
1164	1300 WESLEY	72-R	130
1165	4138 SHIRLEY DR	72-N	120
1166	1332 E RAINES RD	72-R	420
1167	1198 OLD HICKORY RD	72-D	90
1168	3890 S ORLEANS ST	72-K	90
1169	ELVIS PRESLEY RAINES	72-P	90
1170	1040 E RAINES RD	72-P	90
1171	3938 ROYAL OAKS DR	72-M	90
1172	4063 HERMITAGE DR	72-M	90
1173	1316 E RAINES RD	72-R	90
1174	1400 WINCHESTER RD	72-D	90
1175	4074 AUBURN RD	72-K	90
1176	1212 OLD HICKORY RD	72-D	90
1177	3568 MILLBRANCH RD	73-B	90
1178	S RAINES OF A MACEO WALKER SCHOOL	73-O	60
1179	1624 KENT RD	73-E	90
1180	1718 GRACELAND COVE	73-K	90
1181	2064 E RAINES RD	73-P	90
1182	3551 DALEBRANCH PL	73-A	90
1183	1960 E RAINES	73-P	365
1184	4032 PAULA DR	73-J	90
1185	1547 OLD HICKORY RD	73-E	90
1186	3944 PAULA DR	73-J	90
1187	1962 LYDGATE COVE	73-L	90
1188	1971 FRANCISCO BLVD	73-P	365
1189	MILLBRANCH WINCHESTER	73-B	90
1190	3981 MARY LEE DR	73-J	90
1191	1761 DALE LAVERN RD	73-K	120
1192	3540 HAZELHEDGE DR	73-A	90
1193	3750 MILLBRANCH RD	73-K	90
1194	1938 E RAINES RD	73-O	90
1195	AIRWAYS RAINES	73-R	90
1196	3556 MILLBRANCH	73-B	90

S.No.	ADDRESS	MAP	INT
1197	4104 HARTZ DR	73-P	90
1198	3595 MILLBRANCH RD	73-B	90
1199	4077 DELSA CIR	73-P	90
1200	3616 TCHULAHOMA RD	74-H	90
1201	3181 CHRISTINE RD	74-L	30
1202	3015 EDGEWARE	74-C	240
1203	3174 BEAUCHAMP DR	74-L	90
1204	3050 CROMWELL AVE	74-G	90
1205	3665 ELM PARK ST	74-G	60
1206	3716 WINCHESTER RD	75-B	60
1207	3463 WINGOOD CIR	75-C	90
1208	4344 WINCHESTER RD	75-D	90
1209	4035 SENATOR ST	75-O	90
1210	3515 GOODLETT ST	75-C	90
1211	4232 WINCHESTER RD	75-D	90
1212	OLD LAMAR RAINES	75-M	90
1213	4033 LAMAR AVE	75-C	60
1214	5300 MENDENHALL PARK PL	76-M	90
1215	3707 CLEARBROOK ST	76-G	90
1216	4105 S MENDENHALL RD	76-R	60
1217	S MENDENHALL OF FLOWERING PEACH	76-M	30
1218	5299 MENDENHALL PARK PL	76-M	90
1219	5431 JASMINE COVE	76-M	90
1220	3458 STARSDALE ST	76-B	365
1221	3820 JASMINE DR	76-H	90
1222	3713 CLEARBROOK ST	76-G	90
1223	3526 CLEARBROOK ST	76-C	90
1224	5446 JASMINE COVE	76-M	90
1225	5354 FONTANA AVE	76-D	365
1226	CASTLEMAN SIMSBURY	76-L	365
1227	5363 FONTANA AVE	76-D	90
1228	MCKENZIE WOODDALE COVE	76-C	365
1229	OUTLAND WINCHESTER	76-B	90
1230	CLEARBROOK WINCHESTER	76-C	90
1231	5285 FLOWERING PEACH DR	76-M	90
1232	3505 S MENDENHALL RD	76-D	90
1233	5252 WINCHESTER RD	76-H	60
1234	3596 CLEARBROOK	76-C	90
1235	CLEARBROOK WOODDALE	76-C	365
1236	3540 S MENDENHALL RD	76-D	90
1237	4080 BERRYBROOK RD	77-P	90
1238	6330 KINGS CREST LN	77-R	90
1239	4020 QUEST WAY	77-O	90
1240	3779 WHITE BIRCH DR	77-E	90
1241	5757 MAPLE TREE DR	77-J	90
1242	3747 FIRETHORNE DR	77-F	365
1243	5117 FOX BEND	77-B	90
1244	5567 WINCHESTER RD	77-E	60
1245	5506 APPLE BLOSSOM DR	77-E	90
1246	3466 FOX HUNT DR	77-B	90
1247	3748 FIRETHORNE DR	77-F	90
1248	4031 MINGLE COVE	77-P	90

S.No.	ADDRESS	MAP	INT
1249	HICKORY HILL WINCHESTER	77-C	90
1250	6330 WINCHESTER	77-H	90
1251	3637 HICKORY HILL RD	77-G	90
1252	3700 HYACINTH DR	77-J	420
1253	3809 RIDGEWAY RD	77-M	90
1254	6012 WINCHESTER RD	77-G	90
1255	3756 FIRETHORNE DR	77-F	90
1256	870 BRAMBLEWOOD LA	79-G	60
1257	4877 MANSON RD	79-R	90
1258	5082 CORO RD	79-N	90
1259	4961 WEAVER AVE	79-P	365
1260	4480 WESTMONT ST	79-C	90
1261	DELTA THIRD	79-M	90
1262	SHELBY DR & THIRD ST	79-H	120
1263	4328 BLUEBELL ST	79-G	90
1264	375 HONDURAS AVE	80-N	30
1265	265 BYRON DR	80-D	90
1266	4690 APPLESTONE ST	80-G	90
1267	285 HONDURAS AVE	80-O	90
1268	4782 MONTEE RD	80-L	90
1269	4817 MONTEE RD	80-L	420
1270	300 STONEHAM DR	80-H	90
1271	38 W PAXTON LN	80-L	90
1272	8 E BYFIELD ST	80-L	90
1273	344 STONEHAM ST	80-H	60
1274	4777 HORN LAKE RD	80-K	90
1275	4832 APPLESTONE ST	80-L	90
1276	GILL SHELBY	80-M	90
1277	32 GLENARM ST	80-P	90
1278	NEELY SHELBY	80-M	90
1279	4700 HILLBROOK RD	80-L	90
1280	203 CHARTER AVE	80-K	60
1281	5026 LONGBRANCH DR	80-R	90
1282	4696 GILL RD	80-M	90
1283	APPLESTONE SHELBY DR	80-L	90
1284	980 CHAMBLISS RD	81-C	90
1285	4359 ELVIS PRESLEY BLVD	81-C	240
1286	4299 ELVIS PRESLEY BV	81-C	240
1287	576 SHOFNER AVE	81-A	120
1288	KASSEL MCCORKLE	81-F	90
1289	1279 FINLEY RD	81-D	90
1290	4987 TULANE RD	81-N	90
1291	1076 CHAMBLISS RD	81-C	60
1292	566 SHOFNER RD	81-A	120
1293	955 MOSBY AVE	81-C	90
1294	913 HALE RD	81-F	365
1295	4374 RIDGEWOOD RD	81-D	420
1296	1402 OAKWOOD DR	81-H	30
1297	1368 JANIS DR	81-D	60
1298	HALE MCCORKLE	81-F	90
1299	972 CHAMBLISS RD	81-C	90
1300	4801 FARRIS CT	81-J	90

S.No.	ADDRESS	MAP	INT
1301	4867 SHAYNE LN	81-N	90
1302	4427 BEATTY RD	81-D	90
1303	4439 ELVIS PRESLEY BV	81-C	90
1304	1457 OAKWOOD DR	81-H	90
1305	1412 OAKWOOD DR	81-H	90
1306	4603 WHITE FOX ST	81-E	90
1307	W SHELBY OF MICKEY IN MEDIAN DR	82-J	120
1308	4633 GARDEN OAKS WAY	82-G	90
1309	5018 MILLBRANCH RD	82-N	90
1310	4171 MILLBRANCH RD	82-A	90
1311	4492 HUDGINS DR	82-F	90
1312	MILLBRANCH SHELBY	82-J	90
1313	1505 BUTTERWORTH RD	82-N	365
1314	4475 HUDGINS DR	82-F	90
1315	DAYS CREEK THIRD GREEN	82-K	365
1316	AIRWAYS WILSON	82-R	90
1317	2115 ST JAMES DR	82-F	90
1318	HANCOCK BTWN SUSSEX GOODHAVEN	82-G	60
1319	4498 MICKEY DR	82-E	90
1320	DIANNE I 55	82-G	60
1321	N AIRWAYS OF WILSON	82-P	60
1322	4907 AIRWAYS BLVD	82-R	120
1323	FINLEY GRACELAND	82-A	90
1324	4969 LOCHINVAR DR	82-N	90
1325	4396 MILLBRANCH RD	82-A	90
1326	1980 WILSON RD	82-P	90
1327	4852 FARMWOOD DR	82-N	90
1328	1500 E SHELBY DR	82-J	90
1329	1485 FINLEY RD	82-A	90
1330	4912 CHEVRON RD	83-R	365
1331	CHEVRON SHELBY	83-M	90
1332	3372 SPRING SHADOWS	83-R	90
1333	4783 DAPHNE	83-M	365
1334	3210 MORNINGVIEW DR	83-P	90
1335	3410 BURGESS DR	83-M	90
1336	4973 CHEVRON RD	83-R	90
1337	3384 KENIE AVE	83-M	60
1338	4730 TCHULAHOMA RD	83-M	15
1339	4428 MEDLEY LN	83-H	365
1340	4575 SUMNERS WELLS RD	83-H	60
1341	4593 SUMNER WELLS RD	83-H	90
1342	493 SWINNEA RD	83-G	90
1343	3455 DAWNRIERGE DR	83-R	90
1344	2931 MORNINGVIEW DR	83-O	90
1345	3496 POINT PLEASANT AVE	84-E	90
1346	DISTRIPLEX SHELBY	84-E	90
1347	LAUGHLIN SHELBY DR	84-J	90
1348	DAMASCUS SHELBY	84-G	60
1349	4696 LAUGHLIN RD	84-J	90
1350	3648 E SHELBY DR	84-J	90
1351	4538 SUGAR CREEK RD	84-E	90
1352	5021 HIGHWAY 78	85-K	90

S.No.	ADDRESS	MAP	INT
1353	4255 CEDARTREE DR	86-C	90
1354	5986 WHISPER VALLEY DR	86-L	90
1355	CRUMP RUNNINGBROOK	86-D	60
1356	4548 TROUT VALLEY RD	86-H	90
1357	5665 JARDIN	86-B	90
1358	5982 VALLEYDALE ST	86-H	90
1359	5987 WHISPER VALLEY DR	86-L	365
1360	4221 CRUMP RD	86-C	60
1361	4198 WILLOW PARK DR	86-D	365
1362	4261 CEDARTREE DR	86-C	90
1363	5832 SUNNY MORNING DR	86-F	90
1364	TROUT VALLEY VALLEYDALE	86-H	365
1365	4901 SOUTHRIDGE BV	86-R	60
1366	SUNNYSLOPE VALLEYDALE	86-H	90
1367	6368 STONE PARK COVE	86-H	365
1368	RAINES TRILLUM TRAIL	86-D	90
1369	6128 BRIARBEND LN	86-L	90
1370	6228 VALLEYDALE DR	86-H	365
1371	BISHOPDALE CLOUDBURST COVE	86-G	90
1372	4275 CARY HILL DR	86-B	90
1373	4398 SANDY PARK DR	86-H	90
1374	4250 RUNNINGBROOK CIR	86-D	365
1375	5072 GULL RD	87-D	60
1376	5175 VALDAZ RD	87-D	120
1377	5325 GEMSTONE WAY	88-H	90
1378	1241 MARGARET RD	88-B	60
1379	727 BIRTHSTONE AVE	88-D	90
1380	5119 CLINTON RD	88-B	120
1381	5130 ALFORD ST	89-D	90
1382	330 E HOLMES RD	89-D	90
1383	GILL HOLMES	89-D	90
1384	481 BONNELL DR	90-A	365
1385	488 PICKETT DR	90-A	90
1386	617 BROCKWOOD AVE	90-E	90
1387	5494 ELVIS PRESLEY BV	90-G	90
1388	ELVIS PRESLEY SCAFIE	90-L	60
1389	5345 HALEVILLE DR	91-E	90
1390	5470 HALEVILLE RD	91-E	90
1391	1694 WINFIELD AVE	91-E	90
1392	5087 HORNSBY DR	91-C	365
1393	5581 SANTA MONICA ST	91-K	365
1394	E MCKELLAR HILLS D	91-C	90
1395	1628 LEWELLEN DR	91-A	90
1396	2111 MCKELLAR HILLS	91-C	90
1397	1717 CRIMSON CIR	91-E	60
1398	1632 BUXTON AVE	91-J	90
1399	2116 MCKELLAR HILLS AVE	91-C	90
1400	5375 MILLBRANCH RD	91-E	60
1401	5309 LOCH LOMOND DR	91-E	365
1402	5369 HICKMAN ST	91-F	90
1403	1640 BUXTON AVE	91-J	420
1404	5333 LOCH LOMOND DR	91-E	365

S.No.	ADDRESS	MAP	INT
1405	5395 COSMOS COVE	92-G	90
1406	5307 SOLAR LN	92-G	365
1407	5316 SPUTNIK DR	92-G	365
1408	3189 APPLEWOOD COVE	92-C	90
1409	3115 MAPLE HILL DR	92-C	90
1410	6384 N HAYFIELD LN	95-H	90
1411	6666 LAKE VALLEY	96-B	90
1412	EASTERLY LAKE VILLAGE LN	96-M	90
1413	5045 COTTAGE LN	96-C	90
1414	5006 LAKE VALLEY COVE	96-B	90
1415	4996 PHEASANT RUN LN	96-B	90
1416	5225 S AUTUMN FORREST DR	96-D	365
1417	7255 GERMANTOWN TRAIL	96-D	90
1418	5561 APRIL FOREST DR	96-J	90
1419	5389 ROCKY RIDGE DR	96-J	90
1420	5262 TIMBER RIDGE	96-E	365
1421	5382 CRYSTAL OAKS DR	96-E	365
1422	5028 BARTONWOOD	96-A	90
1423	5447 AUTUMN BROOK	96-K	365
1424	HOLMES SHADY RIDGE	96-E	90
1425	5346 RIVERDALE	96-L	90
1426	HARVEST PARK HOLLY VIEW	97-A	90
1427	7463 CHARLESTON RUN COVE	97-J	90
1428	BOWDOIN & NORTH CIRCLE	118-F	90
1429	674 NORTHAVEN DR	118-K	90
1430	855 N CIR	118-L	365
1431	5159 BROKEN OAK DR	118-F	90
1432	851 ELM RIVER COVE	118-G	365
1433	5134 CHANTILLY	118-G	60
1434	681 NORTHAVEN DR	118-K	365
1435	895 N CIR	118-L	90
1436	505 ELMFIELD COVE	118-J	45
1437	5139 BOWDOIN DR	118-G	90
1438	687 SAGAMORE COVE	118-B	90
1439	4968 WILLIAM CAREY	118-K	365
1440	5286 BRADEN ST	118-F	90
1441	848 ELM RIVER COVE	118-G	90
1442	912 BRANDYWINE	118-C	365
1443	5259 CEDAR BLUFF	118-C	90
1444	855 ELM RIVER COVE	118-G	365
1445	5064 BOWDOIN	118-G	365
1446	5163 BRECKENWOOD	118-L	90
1447	4792 BLUFFWOOD COVE	121-O	90
1448	4912 RALEIGH MILLINGTON RD	121-R	60
1449	3624 ROYAL WOOD DR	121-O	90
1450	PATRICIA ELLEN PEMBROKE ELLIS	133-L	90
1451	BURNSTOWN PATE	134-N	60
1452	2661 COUNTRYWOOD PKY	134-R	90
1453	APPLING REESE	134-N	90
1454	BARTLETT CORPORATE FLETCHER CREEK	134-A	30
1455	DEERFIELD KATE BOND TERRACE	134-K	90
1456	2646 COUNTRYWOOD PKY	134-R	90

S.No.	ADDRESS	MAP	INT
1457	9330 GROVE RD	135-M	90
1458	3023 ETON COVE	135-D	90
1459	8671 THORNCLIFF FAIRWAY	135-O	90
1460	2000 APPLING RD	136-E	90
1461	7629 W DEXTER RUN RD	136-N	90
1462	APPLING GOODLETT FARMS	136-E	30
1463	1645 GERMANTOWN PKY	136-R	90
1464	1849 WINSHIP DR	136-M	90
1465	8342 CREEK FRONT DR	136-D	90
1466	KING WILLIAM WESTBRIAR	136-H	90
1467	BOHEMIA DEWBERRY	137-L	90
1468	2182 BURLINGATE DR	137-B	90
1469	CHIMNEYROCK DEXTER	137-K	90
1470	8446 KING WILLIAM ST	137-J	420
1471	2210 HICKORY PATH DR	137-B	420
1472	8952 VORLICH COVE	137-L	90
1473	CHIMNEYROCK KINGS CROSS	137-E	90
1474	8515 KETTERING DR	137-E	90
1475	8359 KINGS TRAIL COVE	137-J	60
1476	2136 BRACKENBURY LN	137-F	90
1477	7050 COUNTRY WALK DR	138-L	90
1478	958 DUSTY COVE	138-M	90
1479	1413 BAYBERRY HILL	138-D	365
1480	6927 BRADY HILL DR	138-G	60
1481	6416 LLANO ST	138-J	90
1482	7029 COUNTRY WALK	138-L	365
1483	1511 BRIDGEWATER CHURCH RD	138-D	90
1484	6416 GILLHAM DR	138-A	90
1485	6441 CHEEKWOOD AVE	138-A	90
1486	BELLE TREES DEXTER	138-C	90
1487	8110 COUNTRY VILLAGE DR	139-G	90
1488	8120 COUNTRY VILLAGE DR	139-H	90
1489	1311 SANDY STONE LA	139-D	90
1490	1024 HAWKVIEW DR	139-L	90
1491	8170 VALLEY RIDGE TRAIL	139-D	120
1492	1509 BEAVER TRAIL DR	139-D	90
1493	1010 GERMANTOWN PKY	139-L	90
1494	CORDOVA CLUB WINTERGREEN	139-E	90
1496	1022 GERMANTOWN PKY	139-L	90
1497	8282 CRIMSON CREEK DR	139-H	420
1498	7970 MACON RD	139-P	90
1499	BENDING PINE THOR	140-J	90
1500	8852 RIVER PINES	140-G	90
1501	1277 ANISE COVE	140-F	90
1502	8183 WALNUT GROVE RD	142-M	90
1503	GERMANTOWN TRINITY	142-C	365
1504	381 N GERMANTOWN PKY	142-G	90
1505	176 CHERRY LEAF COVE	143-P	90
1506	6401 KNIGHT ARNOLD	146-N	90
1507	3165 PLANTATION COVE	146-R	90
1508	2989 MCVAY TRAIL DR	146-G	90
1509	6788 BAINBRIDGE DR	146-F	90

S.No.	ADDRESS	MAP	INT
1510	2943 MCVAY TRAIL DR	146-G	365
1511	2953 MCVAY TRAIL DR	146-G	90
1512	MCVAY WHITTENHAM COVE	146-C	90
1513	3250 KIRBY PKY	146-N	90
1514	3169 KIRBY PKY	146-J	90
1515	7019 DASHWOOD DR	146-G	90
1516	KNIGHT ARNOLD RIVERDALE	146-R	90
1517	ISHERWOOD ISLEWORTH	149-M	90
1518	3900 INNSBROOK DR	149-L	90
1519	7144 WINCHESTER RD	149-H	365
1520	6466 KIRBY TREES DR	149-A	90
1521	RIVERDALE WINCHESTER	149-G	60
1522	4258 ROSS RD	149-N	90
1523	3381 KIRBY MEADOWS DR	149-B	90
1524	3501 KIRBY TERRACE DR	149-C	90
1525	7060 WINCHESTER RD	149-G	365
1526	3535 KIRBY RD	149-A	90
1527	3787 SELFRIDGE COVE	149-M	365
1528	6616 KIRBY CENTER COVE	149-A	90
1529	6642 SPLIT OAK DR	149-A	90
1530	3790 LOWNDES COVE	149-K	365
1531	7280 HOLLORN LN	149-M	90
1532	3793 CARAVEL DR	149-K	90
1533	6669 RED BIRCH DR	149-O	90
1534	6590 KIRBY CENTER COVE	149-A	60
1535	6671 BIRCH RUN LN	149-O	365
1536	3790 OLD GERMANTOWN RD	149-M	90
1537	7425 DONCASTER LA	150-J	90
1538	4915 BLUE WING DR	152-N	365
1539	4837 BLUE WING DR	152-N	365
1540	FRIENDLY WAY & RAINES	152-A	90
1541	7080 E SHELBY DR	152-K	90
1542	4915 HARVEST KNOLL	152-R	365
1543	APPLE CREEK TIMBERISE	152-G	90
1544	6370 KINSTON PARK DR	152-E	365
1545	4360 CREEK MANOR	152-D	90
1546	CHARDONNAY WINTER PARK COVE	152-J	90
1547	GLENEAGLES RIVERDALE	152-P	90
1548	4364 CASTLE HEIGHTS DR	152-E	365
1549	4436 LAIRD RD	152-F	90
1550	4593 WINTER PARK DR	152-E	90
1551	6591 S PINE TOP CIR	152-J	90
1552	BORDEAUX RIVERDALE	152-L	90
1553	6752 ROCKINGHAM DR	152-G	90
1554	4379 BUNKER HILL	152-H	90
1555	4715 HARVEST KNOLL	152-M	90
1556	4942 BRADFIELD RUN	152-R	90
1557	ROCKINGHAM TIMBER RISE	152-G	90
1558	6596 SHAKER LN	152-J	90
1559	4312 ROSS RD	152-B	90
1560	6905 E SHELBY DR	152-L	90
1561	4410 TIMBER RISE RD	152-G	90

S.No.	ADDRESS	MAP	INT
1562	7307 DOUBLE SPRINGS COVE	152-D	90
1563	4848 MALLARD NEST DR	152-J	365
1564	KIRBY RAINES	152-A	90
1565	6644 ROCKY PARK DR	152-B	365
1566	7150 MARKET SQUARE	152-H	420
1567	4847 GADWELL DR	152-N	90
1568	4482 GERMANTOWN RD	152-D	365
1569	4551 ROSS RD	152-F	90
1570	6553 GOLDENEYE DR	152-N	90
1571	LONG CREEK LOWRANCE	153-B	90
1572	4340 BARREN BROOK	153-D	90
1573	4845 CALLAWAY HILLS	153-O	365
1574	7624 BREEZE WOOD LN	153-O	90
1575	LOWRANCE THUNDERSTONE	153-B	365
1576	BREEZEWOOD NOEL MISSION COVE	153-O	90
1577	7502 HEDGINGTON	153-E	90
1578	4533 PINEGATE DR	153-J	365
1579	7914 MARSHA WOODS	153-C	90
1580	3202 GLADE VERDE	157-N	365
1581	9469 ROCKY GLEN COVE	160-N	90
1582	5842 LAKEPORT	201-K	60
1583	5765 GARDEN RIDGE	201-O	90
1584	5777 CEDAR BAY	201-N	90
1585	SPRING HARBOR WILLOW SPRINGS	201-K	90
1586	5893 WILLOW SPRINGS	201-K	90
1587	5818 GARDEN RIDGE	201-O	90
1588	5827 GARDEN RIDGE	201-K	90
1589	8267 LEIGHTON RD	312-F	420
1590	8157 ROBENA LN	312-F	180
1591	E BETTY LU D	312-F	90

## Appendix G

# Sewer Easement and Manhole Inspection Report

**CITY OF MEMPHIS  
SEWER EASEMENT AND MANHOLE INSPECTION**

**Date:** \_\_\_\_\_  
**Sub-Basin:** \_\_\_\_\_  
**Map Page:** \_\_\_\_\_  
**Street #:** \_\_\_\_\_  
**Street Name:** \_\_\_\_\_  
**Manhole #:** \_\_\_\_\_  
**Inspector(s):** \_\_\_\_\_  
 \_\_\_\_\_  
**Weather:** \_\_\_\_\_  
**River Stage:** \_\_\_\_\_

**Is there evidence of an overflow?** Yes / No  
**If yes, document in photographs and describe:**  
 \_\_\_\_\_  
 \_\_\_\_\_

**Location Information**  
**Indicate the type of surrounding surface:**  
 \_\_\_ Asphalt                      \_\_\_ Grass/Dirt  
 \_\_\_ Concrete/Pavement       \_\_\_ Gravel  
 \_\_\_ Concrete Collar           \_\_\_ Other \_\_\_\_\_  
**Vehicular access if not in public roadway via:**  
 \_\_\_ Easement                    \_\_\_ Private road  
 \_\_\_ Private trail                \_\_\_ Other \_\_\_\_\_  
**Distance from stream / creek / wetland (ft):** \_\_\_\_\_  
**Condition of Easement/Access:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Special Structures**  
**Is this manhole the access point for:**  
 \_\_\_ Inverted Siphon  
 \_\_\_ Aerial Crossing  
 \_\_\_ Other \_\_\_\_\_  
**If so, describe the condition:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Additional comments/observations:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**External Condition**  
**Indicate the type of cover:**  
 \_\_\_ Solid                                \_\_\_ Watertight / Inner Cover  
 \_\_\_ Vented / Pick Holes           \_\_\_ Hatch  
 \_\_\_ Bolted                                \_\_\_ Other \_\_\_\_\_  
**Indicate the condition of the cover:**  
 \_\_\_ Sound                                \_\_\_ Missing  
 \_\_\_ Defective                            \_\_\_ Other \_\_\_\_\_  
**Height from manhole rim to grade:**  
 Above \_\_\_\_\_ inches    Below \_\_\_\_\_ inches  
**Is vent stack present:** \_\_\_\_\_ Yes / No  
 If so, describe condition: \_\_\_\_\_  
**Is exterior masonry damaged:** \_\_\_\_\_ Yes / No  
 If so, describe: \_\_\_\_\_  
**Will damage allow water to enter:** \_\_\_\_\_ Yes / No  
 If so, describe: \_\_\_\_\_  
**Are there any significant depressions, suspected inflow sources, or other concerns between this manhole and the upstream manhole:** Yes / No  
 If so, sketch and describe: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*Sketch of conditions, if needed*  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Is additional maintenance required?** Yes / No  
**If yes, describe:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

