



2012 ANNUAL REPORT

Prepared For The:

CITY OF BROOKLYN



CUYAHOGA COUNTY
DEPARTMENT OF PUBLIC WORKS

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CUYAHOGA COUNTY DEPARTMENT of PUBLIC WORKS

March 31, 2013

The Honorable Richard H. Albier
City of Brooklyn
7619 Memphis Avenue
Brooklyn, Ohio 44144

Dear Mayor Albier:

It is with great pride that I present to you the 2012 Annual Report for the Cuyahoga County Department of Public Works Sanitary Service. This report contains a detailed overview of the components that bring together the agency, information on work completed within your municipality, including operating expenses over the past year. As in previous reports, we have included maps displaying the following: the cleaning and inspection of system mainlines, locations of construction activity, inflow and infiltration areas of study, house visits, and the cleaning and inspection of lateral connections, as it pertains to the service in which we provide to you.

This year has been a dynamic one for Cuyahoga County. We have implemented many changes to improve our department and this can be felt by the communities we service. We are continuously striving to incorporate new and ground breaking practices into the way we perform each day, and I am confident that this agency has the tools to offer you the highest level of both customer service and innovative technologies. The Charter's creation of the Department of Public Works has afforded us the ability to utilize a larger and more diverse work force, and thus be able to better dispatch staff to your community during high-volume rain events and natural disasters. It is our obligation to provide the most effective level of water pollution control possible.

Our joined efforts here are key to promoting regionalism and play an integral role in the further development of this region. It is my honor to serve your community and to continue to diligently meet the varying needs of all of Cuyahoga County.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Bonita G. Teeuwen'.

Bonita G. Teeuwen, P.E.
Director of Public Works

OVERVIEW

Originally established in 1919, the Sanitary Engineering Division was created to administer authority in matters of wastewater, storm water, and water supply management. In 2012, the Sanitary Engineering Division (formerly CCSE) became a part of the Cuyahoga County Department of Public Works, and now operates under the County Executive Ed FitzGerald.

Our focus on needs assessment, engineering feasibility studies, maintenance and repair of aging sewer lines, as well as other infrastructure-related issues, has a direct impact on commercial and residential development, job creation, and expanded tax base in the communities served by the Department of Public Works.

This Division is a major source of information and guidance that mayors, municipal engineers, and service directors rely on when making infrastructure decisions within their community. The Division has considerable experience in the maintenance of sanitary and storm sewer lines, many of which are old and have performed beyond their design life. Moreover, the Division has much expertise with respect to wastewater treatment plants and pump stations.

Public Works directs an operation which now encompasses more than 34 communities and maintains nearly 1,200 miles of sanitary sewers, treats millions of gallons of wastewater, operates 51 sewage-pumping stations, and maintains 2 wastewater treatment plants throughout Cuyahoga County. The Division also has agreements with municipal corporations for the establishment, operation, and maintenance of sanitary sewers.

Working in cooperation with the Ohio Environmental Protection Agency (Ohio EPA), the Northeast Ohio Regional Sewer District (NEORS), the City of Cleveland Division of Water, and the Cuyahoga County Board of Health; the Division manages a Capital Improvement Program (CIP) used for upgrading or replacing the existing infrastructure and for expanding sewers to non-sewered areas. The CIP includes information about project type, location, funding, preliminary engineering, and final plan development.

All operating funds for the Division are created through fees and assessments. The Division does not receive a subsidy through the County General Fund; however, it does use the General Fund's bonding capacity.

The Department of Public Works has been in the forefront of regionalism efforts, and with services provided to over half of the 59 communities within county lines, the office continues to maintain reasonable rates and improved infrastructure throughout the area.

MISSION STATEMENT

“To provide and maintain a safe and efficient regional infrastructure system for residents, employees, businesses and visitors through innovative solutions, high-quality workmanship and superior customer service.”



- Reduce the number of flooded basements by decreasing mainline blockage, minimize the inflow/infiltration of storm water in the sanitary system, and evaluate the structural integrity of entire sewerage system;
 - Increase efficiency to reduce operating cost and produce more available funding for capital improvement projects;
 - Operate wastewater treatment plants in compliance of National Pollution Discharge Elimination System (NPDES) permit parameters;
 - Provide guidelines for new construction through use of *Uniform Standards for Sewerage Improvements*;
 - Review and approve new improvement plans; and
 - Provide infrastructure needs assessment for communities.
-
- Capital improvement planning
 - Plan review and approval of all new sewer improvements within the County sewer districts
 - Construction management
 - Geographic information systems (GIS)
 - Project design
 - Engineering analysis (required for operation of facilities and the collection system)
 - Operational checks (EPA permit compliance)
-
- Operation and maintenance of wastewater treatment plants and pumping stations
 - Inspection of new wastewater collection and transportation systems within County sewer districts
 - Issuance of connection permits
 - Issuance of sewer builders' licenses
 - Development, implementation and monitoring of safety guidelines

GOALS OF THE PUBLIC WORKS DEPARTMENT

ENGINEERING SERVICES

FACILITIES OPERATION & MAINTENANCE



ADMINISTRATIVE SUPPORT SERVICES

In addition to the extensive maintenance services we offer, our administrative support includes the following:

- Capacity, Management, Operation, and Maintenance (CMOM) Program as regulated through the US EPA to help prevent Sanitary Sewer Overflows (SSO's)
- Maps and spatial analysis for design and service management
- Geographical information systems for development and implementation
- Record keeping, as-built plans and test tee location
- Fiscal oversight of annual operating budget and capital improvement budget
- Grant and loan administration
- Licensing and permitting of over 200 contractors
- Inspection of sewers and project oversight
- Design and review of construction projects and analysis of field testing

Maintenance Services

Mainline
Sewer
Cleaning

Lateral &
Mainline
Sewer
Repair

Lateral
Cleaning
(From
Test Tee
to
Mainline)

Smoke
& Dye
Testing

Digital
Video
Inspection

Treatment
Plant &
Pump
Station
Maintenance
&
Operation

24-Hour
Call
Out
Services

SUMMARY OF SERVICE DELIVERY

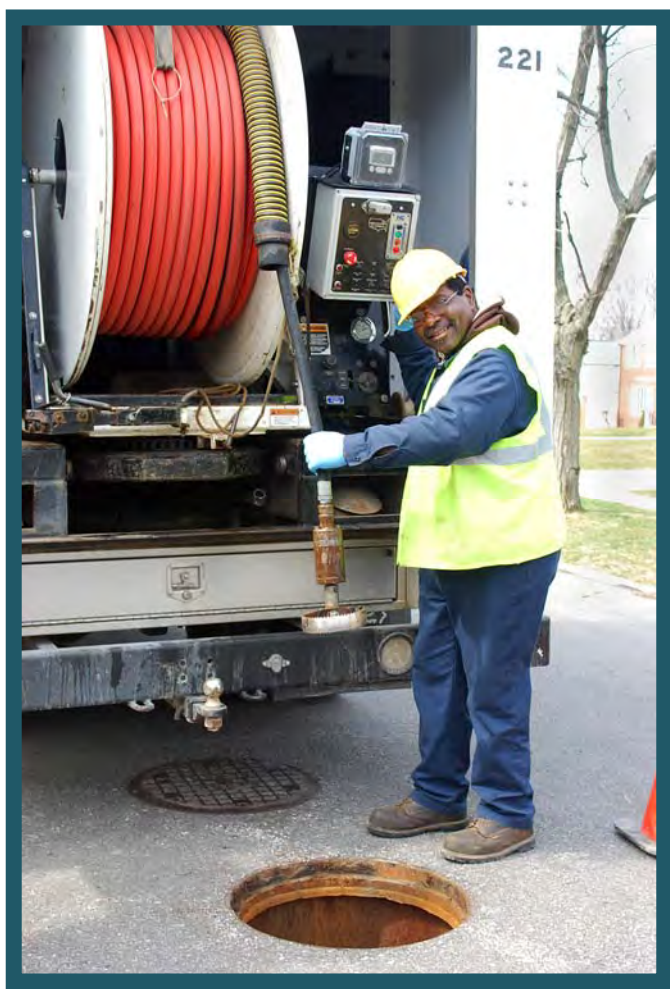
- High-pressure jetting of street sewer from the right-of-way, approximately 1,200 miles of sanitary sewers.
- Point repairs as well as capital improvement projects
- Cleaning of line from right-of-way to the house, approximately 7,500 houses annually
- Inflow and Infiltration testing and solutions
- Televising of lines for identifying possible failures or deficiencies
- Licensed wastewater operators to monitor the condition of the treatment plants and pumping stations, as well as implement upgrades and preventative maintenance.
- Emergency maintenance and 24- hour on-call team for resident issues

INTERNAL STRUCTURE OF THE DIVISION

SEWER MAINTENANCE

The Sewer Maintenance section provides a full-service program to clean, evaluate, maintain structural integrity, and perform construction on sanitary and storm sewers. The general program consists of cleaning all sanitary sewers every three years and televising all sanitary sewers every six years, which is well within the NEORSD's

"Best Management Practices" guidelines.



The Division cleans approximately 7,500 house connections annually. The goal is to reduce basement flooding through inflow/infiltration reduction, reduce blocked mains, clean service connections and maximize sewer capacity.

The Department of Public Works has an Inflow and Infiltration section within the Lateral Service Department. This section uses various tools; flow meters to monitor sanitary mainlines during both dry and wet weather conditions as well as measuring wastewater flows coming into treatment plants and water flows in storm sewers. Smoke and dye testing can isolate areas affected by excessive volumes of clean runoff into the sanitary sewer system. When used

in unison, meters can detect extraneous water while smoke and dye testing can identify illegal downspout connections. Meters can also detect rainwater infiltrating through the ground and into sanitary sewers through bad pipe joints and cracked or broken pipe.

ENGINEERING

The Engineering Section provides technical services to its customers including capital project planning, grant and loan administration, design engineering, construction management, and inspection of sanitary and storm sewers, pump stations, and wastewater treatment facilities.

This section oversees capital construction projects that include financing in the forms of grants and loans obtained from the State of Ohio, as well as saving through maintenance efficiencies. These funds are utilized for lining, repairing, replacing, and rehabilitating existing sanitary and storm sewerage systems.

The Engineering Section reviews design plans for approximately eighty-five construction projects per year on behalf of thirty-four communities. It also coordinates and analyzes the results of field testing and flow monitoring in order to detect and eliminate storm water inflow/ infiltration from the sanitary sewer system. In addition, the Engineering Section maintains files and legal libraries of pertinent federal, state, and local regulations and renders technical assistance to other sections regarding these regulations.



INSPECTION/PERMITS

The Inspection and Permit section operates in 34 suburban communities. This section's major functions include: the licensing, bonding and permitting over 200 contractors, construction inspection of sanitary and storm sewers; which includes: residential, commercial, and industrial; along with the inspection of wastewater treatment plants and pumping stations. This section also maintains the permanent records for sewerage construction projects and provides information to all County departments, engineering consulting firms, contractors, and the public.

ENVIRONMENTAL SERVICES

■ Wastewater Treatment Plants

The County operated 2 wastewater treatment package plants. These facilities treated 147 million gallons of wastewater per year. The standards are set for each facility by the Ohio EPA through the National Pollution Discharge Elimination System (NPDES) permit. The support staff consists of wastewater operators licensed by the Ohio EPA who monitor the conditions of the plants and make necessary process adjustments to meet the NPDES permit.



■ Pumping Stations

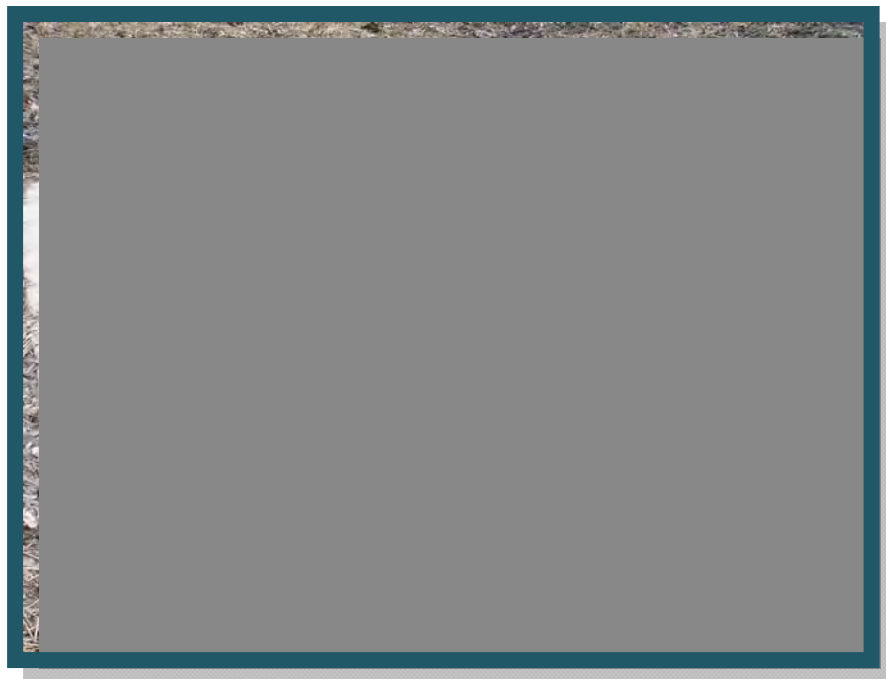
The County operates 51 pumping stations throughout the 34 service communities. A Supervisory Control and Data Acquisition (SCADA) system monitors 41 of the stations. The system provides alarms and operational status through a central computer that is accessed from a remote computer providing 24 hour monitoring. It is our goal to upgrade all County operated pump stations and to expand the SCADA system to all new projects. Our maintenance staff consists of professional mechanics enabling us to repair most problems in-house, therefore keeping costs down. Their preventive maintenance program and dedication to the job has reduced emergency call-outs and overflows.

ENVIRONMENTAL SERVICES, continued

■ Capacity, Management, Operation, and Maintenance Program (CMOM)

The CMOM Program is a set of “best management practices” that have been developed by the industry and are applied over the life cycle of the collection system. It is these general practices that are taken into consideration when a system is being reviewed by a Federal or State agency. Improvement and recommendations are provided by such agencies based on deficiencies identified in the sanitary sewer system.

The United States EPA contacted our agency in July of 2009 in response to our CMOM's Report. In general, our Management, Maintenance and Operational processes meet the standard of the United States EPA. The main issue identified by them as a deficiency relate to any sanitary sewer overflows (SSO's). As we work with the communities to eliminate these overflows, the United States EPA has notified us that we have eliminated the noted deficiencies to our CMOM's Report and that we are in compliance with these "best management practices".



INFORMATION TECHNOLOGY

The Information Technology (IT) Section provides computer and analytical support to internal end users and communities within the Department. It is responsible for the design, implementation and maintenance of geographical map-based and other relational database systems, as well as guiding data acquisition tasks throughout the Division. In addition, the computerized mapping program catalogues the location of sewer systems and performs analysis on spatial data. This ability supports the planning, designing, and maintenance of sewer systems, as well as ensuring user fees are appropriately assessed and collected. Furthermore, the mapping program now features attached permits and engineering drawings.

In 2012 the IT Section completed 24 new computer installations according to the County's cyclical replacement policy. The IT Section also assisted in the removal of multiple personal printers in favor of centralized and efficient print centers; improved the engineers' access to the Geographic Information System and related analytical tools; and continues to assist internal departments with moving to a more digital, paperless record keeping system.



FINANCE SECTION

The Finance Section provides support services to various units within the Public Works Department. Automated cost accounting programs and systems ensure accurate tracking and monitoring of expenditures, revenues, rate structures and other data that provide planning for capital projects and operational budgets. All systems and programs are operated under generally accepted accounting principles.

The Finance Section oversees an annual sanitary operating budget in excess of \$14 million and an annual capital improvement budget of \$5- \$10 million. The capital improvement plan is administered by this section and revenues, as well as expenditures, are approved and monitored for each individual improvement. Finance is responsible for accounts receivable, accounts payable, cost accounting, audit, inventory control, vehicle inventory management, capital project financing, purchasing, and the assessment of users fees.

APPENDIX DESCRIPTION*

The following appendices contain a variety of reports representing the services provided to communities in 2012. The Public Works Department follows a manhole-to-manhole, sewer segment-based accounting method for Jet Cleaning and TV Inspection maintenance services. The first two reports contain listings of the collection system cleaned and inspected for the year by street. The following report discloses the more significant projects submitted and reviewed by the Permit and Engineering sections during the year for your community. Smaller review services such as house connections or ongoing, intermittent review of large multi-phase projects spanning several years of development are not shown on this report. The final appendices are from the Finance and Billing section. These reports provide a breakdown of operating expenses, capital project costs contracted for the community, as well as additional services including house visits, inflow/infiltration studies, and construction activity. A map is enclosed showing areas where collection system mainlines were Jet cleaned and TV inspected, construction crew activity locations, house visits and if house lateral connections needed to be cleaned or inspected. The DVD provided contains a PDF file of the map, which can be copied for distribution. Adobe Corporation's free reader software is required and can be downloaded from www.adobe.com.

* Please note: These appendix reports are provided only to communities for which the specific service is provided by the Department of Public Works. For example, if regularly scheduled mainline cleaning service is not provided for your community, a map was not produced. Similarly, if project review or capital project management services are not provided to your community, then there is no corresponding report. Certain communities are provided limited maintenance on county improvement mainlines and/or facilities only.



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Section A-1

Community Streets Cleaned*

* No service provided if section is blank

Collection System Jet Cleaning - 2012

Brooklyn

STREET	NUMBER OF SEGMENTS	JET FT
AMERICAN DRIVE	4	989
ANSONIA AVENUE	8	2,303
APPLE CREEK DRIVE	3	681
ARCHMERE	5	1,606
ASSOCIATE DRIVE	6	1,459
AUTUMN LANE	9	2,320
BEECH AVENUE	18	4,534
BEHRWALD	6	1,124
BENTWOOD	4	836
BIDDULPH	15	2,561
BOXWOOD CIRCLE	2	430
BROOK HILL CIRCLE	1	300
BROOK LANE	4	1,120
BROOKSIDE DRIVE	2	660
BROOKWAY LANE	3	984
BROOKWOOD DRIVE	4	1,156
BUCYRUS DRIVE	2	273
CASCADE CROSSING	3	570
CASCADE CROSSING EASEMENT	1	182
CLINTON ROAD	21	4,572
DAWN CLIFF DRIVE	9	1,668
DEBORAH LYNN	2	639
DELLBANK DRIVE	1	289
DELORA	5	1,283
FAIRWAY DRIVE	6	1,187
FOREST EDGE	4	867
GIFFORD DRIVE	3	380
GLEN DANIEL CIRCLE	1	320
GLENCOE	10	2,699
HAMMOND	1	351
HARMONY LANE	2	479
IDLEWOOD	5	1,531
IRA	10	2,716
IVY WOOD DRIVE	6	1,471
KENNEDY	1	200
MANOA	5	1,479
MEADOW BROOK	1	260

Collection System Jet Cleaning - 2012

Brooklyn

STREET	NUMBER OF SEGMENTS	JET FT
MELODY LANE	4	1,075
MEMPHIS	21	3,691
MEMPHIS VILLA SOUTH	21	4,444
MEMPHIS VILLAS BOULEVARD	5	1,268
MICKA DRIVE	1	192
MORTON AVENUE	13	3,775
NEWBERRY DRIVE	4	1,235
NORTHCLIFFE	13	3,299
ORCHARD AVENUE	8	2,051
ORCHARD GROVE	2	242
OUTLOOK DRIVE	13	3,157
PARKSIDE	8	2,472
PELHAM	7	1,386
PEPPER RIDGE DRIVE	4	885
PLAINFIELD	6	1,490
PLAINFIELD AVENUE	1	17
RABBIT RUN DRIVE	6	1,329
RICHARD	2	383
RIDGE ROAD	2	255
ROADOAN	1	477
ROCKLAND DRIVE	4	1,236
SHADY LANE	7	1,929
SOUTH AMBER	1	306
SOUTH AMBER EASEMENT	1	325
SOUTH PARKSIDE DRIVE	6	1,427
SOUTHWOOD DRIVE	13	3,169
SPRING CREST DRIVE	7	1,635
SPRINGWOOD	2	496
SUNNY LANE	6	1,250
SUNSET OVAL	2	405
TAUTON	2	535
TIEDEMAN	27	5,306
TIEDEMAN EASEMENT	4	594
TRAIL RUN	3	439
TRAYMORE	10	2,699
VANDALIA	5	1,381
WEFEL DRIVE	1	252

Collection System Jet Cleaning - 2012

Brooklyn

STREET	NUMBER OF SEGMENTS	JET FT
WEST 71ST STREET	1	396
WEST 74TH PL.	1	215
WEST BOULEVARD	1	250
WESTBROOK DRIVE	10	2,552
WESTBROOK EASEMENT	1	395
WILLIAMSTON	3	850
WINTER LANE	20	4,556
Grand Total:	473	112,200

Section A-2

Community Streets Inspected*

* No service provided if section is blank

Collection System TV Inspection - 2012

Brooklyn

STREET	NUMBER OF SEGMENTS	TV FT
ANSONIA AVENUE	4	842
APPLE CREEK DRIVE	2	548
ARCHMERE	5	1,564
BEECH AVENUE	10	2,484
BEHRWALD	9	2,228
BENTWOOD	3	838
BIDDULPH	2	66
BROOK HILL CIRCLE	1	297
BROOKSIDE DRIVE	2	659
BROOKWOOD DRIVE	4	1,158
DAWN CLIFF DRIVE	7	1,677
DELORA	5	1,520
GLENCOE	11	3,133
HAMMOND	1	352
IDLEWOOD	8	2,182
IRA	21	5,048
IVY WOOD DRIVE	3	823
KENNEDY	3	738
MANOA	2	574
MEADOW BROOK	1	260
MEMPHIS EASEMENT	1	310
MEMPHIS VILLA SOUTH	8	1,049
MEMPHIS VILLAS BOULEVARD	2	217
MORTON AVENUE	6	1,800
NEWBERRY DRIVE	4	1,242
NORTHCLIFFE	5	1,561
ORCHARD AVENUE	8	2,048
ORCHARD GROVE	3	488
OUTLOOK DRIVE	15	3,337
PARKSIDE	3	517
PEPPER RIDGE DRIVE	4	643
PLAINFIELD	6	807
ROCKLAND DRIVE	4	988
SHADY LANE	3	891
SOUTH AMBER	1	308
SOUTH PARKSIDE DRIVE	5	1,165
SOUTHWOOD DRIVE	3	822

Collection System TV Inspection - 2012

Brooklyn

STREET	NUMBER OF SEGMENTS	TV FT
SPRING CREST DRIVE	8	1,719
TAUTON	1	356
TRAIL RUN	3	440
TRAYMORE	7	1,855
VANDALIA	5	1,387
WEFEL DRIVE	3	816
WILLIAMSTON	3	855
WINTER LANE	11	2,557
WOODHAVEN	6	886
Grand Total:	232	56,055

Section A-3

Projects Status*

* No service provided if section is blank

Section A-4

Service Program*

* No service provided if section is blank

City of Brooklyn

<u>Type</u>	<u>Community Total</u>
Sanitary Sewers	193,196 Feet
Manholes	959 (Approximately)

2012 Service Program

<u>Program</u>	<u>2012 Activity</u>
1) High Pressure Cleaning*	112,200 Feet
2) House Service	246 Calls
3) Television Inspection*	56,055 Feet
4) Construction Activities	38 Job(s)
5) Smoke and Dye Testing	2 Test(s)
6) Construction Permits Issued (Commercial)	4
(Residential)	3
7) Plan Review	0 Plan(s)
8) Capital Projects	8,484 Feet (New Sewer Lines Inspected)

*Information includes footages for sanitary (collection system) and storm sewers.

Section A-5

Community Operating Expenses

City of Brooklyn
2012 Operating Expenses

<u>Activity</u>	<u>Cost</u>
1. Maintenance of Sanitary Sewerage Systems	\$261,050
2. Pump Station Operation and Maintenance	\$ 0
3. Waste Water Treatment Plant Maintenance	\$ 0
4. Engineering and/or Inspection	\$100,232
5. Capital Expenses (See Section A-6 if any)	\$ 0
6. Sanitary Overhead	\$12,188
 Total Expenses:	 \$373,470

Section A-6

Community Capital Expenses

* No service provided if section is blank

CONTACT INFORMATION

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<i>Engineering</i> Douglas L. Dillon, P.E., P.S., Design and Construction Administrator (216) 443-8614	<i>Sewer Maintenance</i> Gary Green, Senior Supervisor (216) 443-8225
<i>Lateral Services (House Crews)</i> John Gribble, Supervisor (216) 443-8227	<i>Inflow & Infiltration</i> Suzanne Britt, Supervisor (216) 443-3533
<i>Construction</i> Mitch Holt, Supervisor (216) 443-8229	<i>Televised Inspection</i> Todd Swindell, Supervisor (216) 443-8224
<i>Sewer Jetting</i> Guy Swindell, Supervisor (216) 443-8226	<i>Pump Station Operations</i> William Applegarth, Supervisor (216) 443-8295