

2013 ANNUAL REPORT

Prepared For The:

CITY OF MIDDLEBURG HEIGHTS



CUYAHOGA COUNTY
DEPARTMENT OF PUBLIC WORKS

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CUYAHOGA COUNTY DEPARTMENT of PUBLIC WORKS

March 31, 2014

The Honorable Gary W. Starr City of Middleburg Heights 15700 E. Bagley Road Middleburg Heights, Ohio 44130

Dear Mayor Starr:

It is with great pride that I present to you the 2013 Annual Report for the Cuyahoga County Department of Public Works Sanitary Division. This report contains a detailed overview of services performed and 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.

Overall, this year we have cleaned 1,689,015 feet of sewer; video inspected 1,486,118 feet of sewer; made 9,316 house calls; performed 159 smoke/dye tests and completed 2,778 construction repairs on community sewer systems.

Though our labor, material and equipment costs have risen, we have maintained our rates for over five years by improving our efficiencies. We have saved the cities, villages and townships over \$1 million through our increased efficiencies. These savings can be funneled to much needed capital improvement projects.

Respectfully submitted,

Bonita G. Teeuwen, P.E.

Director of Public Works

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."



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 (NEORSD), 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.

- 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

Treatment Lateral Plant & Lateral & 24-Hour Cleaning Mainline Smoke Digital Pump Mainline Call (From Sewer & Dye Video Station Test Tee Out Sewer Maintenance Inspection Cleaning Testing to Services Repair Mainline) Operation

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 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

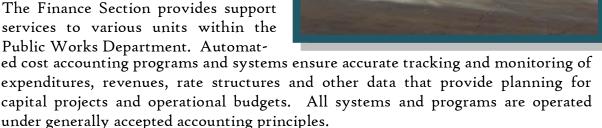
The Information Technology (IT) Section provides computer and analytical support to internal end users and communities within the Department. It is responsible for the design, implementation and maintenance of geographical map-based and other relational database systems, as well as guiding data acquisition 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. Automat-



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 2013. 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 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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Community Streets Cleaned*

* No service provided if section is blank

Collection System Jet Cleaning - 2013Middleburg Heights

STREET	NUMBER OF SEGMENTS	JET FT
BAGLEY EASEMENT	17	3,595
BAGLEY ROAD	5	762
BALDWIN CREEK DRIVE	31	6,062
BEACHDELL DRIVE	3	371
BELFAIR DRIVE	6	1,246
BELMEADOW DRIVE	4	658
BENNINGTON BOULEVARD	2	538
BIG CREEK EASEMENT	2	290
BRIARCLIFF PARKWAY	6	1,027
BRINBOURNE	1	180
BRINBOURNE AVENUE	1	185
BUCKINGHAM COURT	1	151
BUNKER HILL	8	2,214
BUNKER HILL ROAD	5	1,480
CANYON CIRCLE	1	340
CHEROKEE EASEMENT	1	361
CHEROKEE TRAIL	29	8,235
CLAREMONT	21	3,884
CONCORD TRAIL	13	2,483
DELAWARE	1	364
EASTLAND	2	650
EDEN LANE	3	455
ELMDALE	10	3,907
EMERY EASEMENT	2	617
ERWIN COURT	1	214
FAIRWEATHER DRIVE	6	1,318
FARNUM	1	200
FIRST AVENUE	4	1,199
FIRST STREET	2	287
FRANKE	1	359
FRY	19	5,549
FRY EASEMENT	3	689
GERALD DRIVE	3	567
HEATHER LANE	14	2,921
HINSDALE COURT	1	98
HYDE PARK DRIVE	3	601
HYDE PARK EASEMENT	1	275
INDIAN CREEK DRIVE	32	7,300

Collection System Jet Cleaning - 2013Middleburg Heights

STREET	NUMBER OF SEGMENTS	JET FT
IVY COURT	1	255
JAMES DRIVE	6	1,377
KINGMAN DRIVE	1	402
KIWANIS DRIVE	7	1,293
LANIER DRIVE	2	743
LARES LANE	2	329
LAUREL TRACE	1	300
LOGAN DRIVE	1	240
MIDDLEBROOK BOULEVARD	2	698
MIDDLEBURG HEIGHTS BOULEVARD	1	236
MOHAWK TRAIL	18	4,441
NETHERSOLE DRIVE	1	300
NEWTON	23	4,152
OLD PLEASANT VALLEY	11	2,764
PAWNEE TRAIL	29	7,424
PEARL ROAD	31	7,924
PINEVIEW COURT	3	766
PINEWOOD DRIVE	12	2,299
ROBERT DRIVE	5	1,378
SARATOGA ROAD	19	2,871
SENECA TRAIL	5	1,345
SHAWNEE TRAIL	9	2,722
SHELBURNE DRIVE	1	230
SHELDON EASEMENT	2	661
SMITH	35	6,926
SMITH EASEMENT	2	545
SPRINGDALE DRIVE	7	1,493
STONYBROOK DRIVE	14	6,694
SUNRISE OVAL	1	380
TIMBER LANE	5	855
UHLIN DRIVE	21	5,782
WEST 130TH STREET	4	1,098
WEXFORD LANE	3	419
WINONA CIRCLE	3	431
YORKTOWN LANE	1	295
Grand Total:	555	131,700

Community Streets Inspected*

* No service provided if section is blank

Collection System TV Inspection - 2013Middleburg Heights

STREET	NUMBER OF SEGMENTS	TV FT
ALDERSYDE DRIVE	3	817
ARROWHEAD TRAIL	8	1,666
BAGLEY ROAD	7	1,250
BALDWIN CREEK DRIVE	40	7,281
BARDBURY	5	1,525
BARTHOLOMEW DRIVE	3	579
BEACHDELL DRIVE	2	350
BELFAIR DRIVE	3	710
BELMEADOW DRIVE	5	885
BENEDICT COURT	7	2,035
BENNINGTON BOULEVARD	10	1,854
BIG CREEK EASEMENT	1	167
BLUE SPRUCE OVAL	1	240
BRIARCLIFF PARKWAY	11	1,760
BRINBOURNE	8	1,935
BRINBOURNE AVENUE	1	180
BUCKINGHAM COURT	3	294
BUNKER HILL	13	3,085
BUNKER HILL ROAD	5	289
CANYON CIRCLE	1	341
CHEROKEE TRAIL	45	11,349
CHIPPEWA EASEMENT	1	127
CHIPPEWA TRAIL	13	3,443
CLAREMONT	17	3,054
CLAREMONT AVENUE	1	31
CONCORD TRAIL	19	3,351
COTTONWOOD OVAL	1	210
CRAIGMERE DRIVE	2	319
CRANBROOK CIRCLE	1	239
DARWIN PLACE	8	1,512
DELAWARE	6	1,313
EASTLAND	2	427
EATON COURT	2	290
EDEN LANE	2	276
ELISE DRIVE	2	588
ELMDALE	7	1,576
ERWIN COURT	1	220
FAIRWEATHER DRIVE	6	1,319

Collection System TV Inspection - 2013Middleburg Heights

STREET	NUMBER OF SEGMENTS	TV FT
FIRST	1	114
FIRST AVENUE	7	1,747
FOREST OVAL	4	735
FOWELS ROAD	1	281
FOXHALL LANE	8	1,018
FRANKE	11	3,289
FRANKE ROAD	1	174
FRY	15	4,480
GALEMORE DRIVE	6	1,791
GERALD DRIVE	17	4,310
GLENRIDGE	10	2,316
GLENRIDGE AVENUE	1	5
GRANT BOULEVARD	1	75
GUILFORD LANE	2	519
HEATHER LANE	6	1,353
HEMLOCK LANE	1	350
HICKOX BOULEVARD	8	2,281
HINSDALE COURT	2	364
HUMPHREY	1	310
HYDE PARK DRIVE	2	471
INDIAN CREEK DRIVE	38	8,395
JAMES DRIVE	3	539
KINGMAN DRIVE	1	404
KIWANIS DRIVE	7	1,310
KLEIN DRIVE	3	705
LANIER DRIVE	3	797
LARES LANE	1	222
LAUREL TRACE	1	303
LEXINGTON GREEN	3	746
LOGAN DRIVE	2	574
MAUREEN DRIVE	4	873
MIDDLEBROOK BOULEVARD	19	5,290
MIDDLEBURG HEIGHTS BOULEVARD	1	241
MOHAWK TRAIL	10	2,101
NETHERSOLE DRIVE	2	244
NEWPORT LANE	4	371
NEWTON	22	3,993
OLD PLEASANT VALLEY	8	2,360

Collection System TV Inspection - 2013Middleburg Heights

STREET	NUMBER OF SEGMENTS	TV FT
PACKARD	4	755
PACKARD CIRCLE	5	770
PARKLAWN	9	2,075
PARKLAWN DRIVE	1	36
PAULA DRIVE	2	482
PAWNEE TRAIL	32	8,031
PEARL ROAD	1	168
PECAN OVAL	1	215
PINEVIEW COURT	3	770
PINEWOOD DRIVE	13	2,745
PRINCETON PLACE	2	569
QUINEBAUG COURT	1	191
RAGALL PARKWAY	1	305
RAMONA DRIVE	6	1,307
ROBERT DRIVE	5	1,391
ROXBORO DRIVE	2	369
SANDALHAVEN DRIVE	6	1,661
SARATOGA ROAD	24	3,384
SENECA TRAIL	5	1,351
SHAWNEE EASEMENT	1	2
SHAWNEE TRAIL	9	2,712
SHELBURNE DRIVE	4	681
SHELDON	1	126
SHELDON EASEMENT	2	672
SMITH	26	5,248
SPRAGUE EASEMENT	1	91
SPRINGDALE DRIVE	6	1,166
STONYBROOK DRIVE	12	3,355
STROUD	5	1,670
SUNRISE OVAL	1	382
SUTTON PLACE	2	205
TIMBER LANE	5	750
TRENTON TRAIL	11	2,495
UHLIN DRIVE	11	2,969
WENGATZ DRIVE	3	854
WEST 130TH STREET	4	861
WEXFORD LANE	6	844
WINONA CIRCLE	3	435

Collection System TV Inspection - 2013

Middleburg Heights

STREET	NUMBER OF SEGMENTS	TV FT
WOOD CREEK DRIVE	7	1,255
YORKTOWN LANE	3	922
Grand Total:	756	166,608

Projects Status*

* No service provided if section is blank

CCSE PROJECT REVIEWS

Project Id	Project Name	Project Begin	Municipality	Approved
13-059	MINOR SUBDIV PRELIM LAYOUT	1-Oct-13	MIDDLEBURG HEIGHTS	NO

Service Program*

* No service provided if section is blank

City of Middleburg Heights

<u>Type</u> <u>Community Total</u>

Sanitary Sewers 343,986 Feet

Manholes 1,506 (Approximately)

2013 Service Program

<u>Program</u>	2013 Activity
1) High Pressure Cleaning*	131,700 Feet
2) House Service	576 Calls
3) Television Inspection*	166,608 Feet
4) Construction Activities	123 Job(s)
5) Smoke and Dye Testing	16 Test(s)
6) Construction Permits Issued (Commercial) (Residential)	2 17
7) Plan Review	1 Plan(s)
8) Capital Projects	0 Feet (Sewer Lines Inspected)

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

Community Operating Expenses

City of Middleburg Heights

2013 Operating Expenses

	<u>Activity</u>	Cost
1.	Maintenance of Sanitary Sewerage Systems	\$677,553
2.	Pump Station Operation and Maintenance	\$ 0
3.	Waste Water Treatment Plant Maintenance	\$ 0
4.	Engineering and/or Inspection	\$26,770
5.	Capital Expenses (See Section A-6 if any)	\$246,009
6.	Sanitary Overhead	\$21,649
	Total Expenses:	\$971,981

Community Capital Expenses

* No service provided if section is blank

City of Middleburg Heights

2013 Capital Expenses

Lucerne Storm Culvert Reimbursement

\$ 246,009

Total Capital Expenses:

<u>\$ 246,009</u>

CONTACT INFORMATION

<u>Address</u>

Cuyahoga County Department of Public Works 6100 West Canal Road Valley View, OH 44125

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David E. Marquard, P.E.,P.S Design	gn & Construction Administrator
Michael W. Dever, MPA	Maintenance Administrator
Michael W. Chambers, CPA	Fiscal Officer
Bryan J. Hitch	Maintenance Superintendent

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Administration	Inspection & Permits
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Engineering	Sewer Maintenance
Hugh Blocksidge, P.E., Chief Engineer	Gary Green, Senior Supervisor
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Lateral Services (House Crews)	Inflow & Infiltration
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Construction	Televised Inspection
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