

Cuyahoga County Together We Thrive

# 2016 ANNUAL REPORT

# Prepared For The: City of Mayfield Heights

By the DEPARTMENT OF PUBLIC WORKS









Department of Public Works

# **OVERVIEW**

Established in 1919, the office of the Cuyahoga County Sanitary Engineer was created to provide administrative 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 County Executive Armond Budish.

Our focus on maintenance and repair of aging sewer lines, needs assessment, engineering feasibility studies, 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, repair, and rehabilitation of sanitary and storm sewer lines. Moreover, the Division has much expertise with respect to the operation and maintenance of pump stations.

The Sanitary Engineering Division currently operates in 38 communities. It maintains more than 1,200 miles of sanitary sewers, operates 56 sewage-pumping stations, and maintains two wastewater treatment plants. The Division performs these services on county-owned facilities and through community agreements. Storm sewer maintenance is also provided in a number of communities.

Working in cooperation with the Ohio Environmental Protection Agency (Ohio EPA), the Northeast Ohio Regional Sewer District (NEORSD), various communities, and the Cuyahoga County Board of Health; the Division works to maintain water quality through the identification and investigation of illicit discharges as well as the construction of new sanitary sewers.

All operating funds for the Division are generated through fees and assessments. The Division does not receive a subsidy from the County's general fund.

The Sanitary Engineering Division of the Department of Public Works has been in the forefront of regionalism efforts. With services provided to more than half of the county's 59 communities, the Division continues to maintain reasonable rates and improve infrastructure throughout the area.



## **GOALS**

The Sanitary Division has three (3) major goals.

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- 1. Operate and maintain the sanitary sewerage systems within the communities to meet the goals and objectives of the EPA Capacity Management Operation and Maintenance (CMOM) guidelines.
- 2. Provide guidelines for the design and construction through the *"Uniform Standards for Sewerage Improvements"* and the *"Rules and Regulations."*
- 3. Issue sewer connection permits and provide construction inspection for new sanitary sewers and new connections to existing sanitary sewers.

The goals of the Division are attained through the activities of our three (3) main groups working together: Maintenance Services; Engineering and Construction Services; and, Administrative Services.

### MAINTENANCE SERVICES

- 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 the sewerage system;
- Increase efficiency to reduce operating costs and provide more available funds for capital improvement projects;
- Operate wastewater treatment plants in compliance of National Pollution Discharge Elimination System (NPDES) permit parameters;
- Maintain and inspect the existing collection system to meet EPA CMOM maintenance goals;
- Operate and maintain pumping stations; and operational checks (EPA permit compliance).

## ENGINEERING AND CONSTRUCTION SERVICES

- Task Order preparation for repairs and rehabilitation;
- Plan review and approval of all new sewer improvements within the county service area;
- Engineering analysis (required for operation of facilities and the collection system);
- Capital improvement planning;
- Construction management and inspection;
- Provide guidelines for new construction through use of Uniform Standards for Sewerage Improvements;
- Provide infrastructure needs assessment for communities;
- Project design;
- Construction inspection of new wastewater collection systems within the county service area; and,
- Record keeping, as-built plans and test tee location.



Department of Public Works

## **ADMINISTRATIVE SERVICES**

- Issuance of connection permits;
- Issuance of sewer builders' licenses;
- Mapping and spatial analysis for design and service management;
- Geographical Information Systems (GIS) for development and implementation;
- Fiscal oversight of annual operating budget and capital improvement budget;
- Grant and loan administration; and,
- Licensing and permitting of more than 200 contractors

# SUMMARY OF MAINTENANCE SERVICES

#### Sewers

- High-pressure jetting of sewers in the right-of-way, approximately 320 miles of sewers;
- Point repairs of sewers, force mains, and structures;
- Cleaning of service laterals, more than 8,000 houses annually;
- Inflow and Infiltration testing;
- Televising of lines to identify possible failures or deficiencies, approximately 280 miles of sewers;
- Licensed operators to monitor the condition of the treatment plants and pumping stations, as well as implement upgrades and preventative maintenance; and,
- Emergency maintenance and 24-hour on-call team for resident issues.



The Sewer Maintenance section provides a full-service program to clean, evaluate, maintain structural integrity, and perform construction on sanitary and storm sewers. The objective of the program is the cleaning of all sanitary sewers every three years and performing video inspection every six years which is well within the NEORSD's *"Best Management Practices"* guidelines.

The Division cleans more than 8,000 house connections annually. The goal is to alleviate sewer backups by clearing blocked mains and cleaning service connections to restore sewer capacity.

The Department of Public Works has an Inflow and Infiltration (I&I) section within the Lateral Service Department. This section uses flow meters to monitor sanitary mainlines during both dry and wet weather conditions to quantify wastewater flow in the system. Smoke and dye testing is used to identify sources of clean water into the sanitary sewer system. When used in unison, the flow quantification and source identification can identify sewers in need of rehabilitation or capacity enhancement.



#### PUMPING STATIONS

The County operates 56 pumping stations throughout the 38 service communities. A Supervisory Control and Data Acquisition (SCADA) system monitors the stations. The system provides alarms and operational status through a central computer that is accessed from a remote computer providing 24-hour monitoring. New pump stations are added to the SCADA as they come on-line. Our maintenance staff consists of experienced mechanics and electricians 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.



#### • WASTEWATER TREATMENT PLANTS

The County operates two package wastewater treatment plants. 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.

### - 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.

We continue to work with the NEORSD through their community discharge program and the Ohio EPA to ensure that our department's best practices meet the CMOM goals.

Department of Public Works

## SUMMARY OF ENGINEERING AND CONSTRUCTION SERVICES

This 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.

A sewer repair and rehabilitation program is managed through in-house personnel supplemented with two outside contractors. Task orders for repair and rehabilitation are issued based on video inspection information and requests from the communities.

A specific Engineer is assigned to each community to provide an individual contact for collection system related issues.

Design plans are reviewed for more than 50 construction projects per year on behalf of member communities. Engineering 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 and illicit discharges to the storm sewer system. Record drawings are prepared, then scanned and filed for record keeping. Information on the new sewers and service connections are provided to our IT personnel for incorporation in the GIS.

These departments also oversee capital construction projects and develop financial packages in the form of grants and loans obtained from the state of Ohio. These funds are utilized for lining, repairing, replacing, and rehabilitating existing sanitary and storm sewerage systems.

The construction staff provides inspection for all new sanitary sewers and service laterals connecting to existing sewers. The Inspectors ensure that projects are constructed in conformance to design plans and specifications and the *"Uniform Standards."* 







## SUMMARY OF ADMINISTRATIVE SERVICES

#### PERMITS

This department operates in 38 member communities and its major functions include the licensing, bonding, and permitting of more than 200 contractors. They also maintain the permanent records for sewer construction projects and provide information to all county departments, engineering consulting firms, contractors, and the public.

#### FINANCE

Finance 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 financing for capital projects and operational budgets. All systems and programs are operated under generally accepted accounting principles.

The Department of Public Works oversees an annual storm and sanitary sewer operating budget in excess of \$15 million. Finance is responsible for accounts receivable, accounts payable, cost accounting, audit, inventory control, capital project financing, purchasing, and sewer assessment revenue management for member communities.

#### INFORMATION TECHNOLOGY

Information Technology (IT) 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. The computerized mapping program catalogues the location of sewer systems and performs analysis on spatial data. This ability supports the planning, design, and maintenance of sewer systems, and ensures user fees are appropriately assessed and collected. Furthermore, the mapping program now features attached permits and engineering drawings.

Our Geographical Information System (GIS) is continually being expanded to include information on repair and rehabilitation activities as well as system maintenance and inspection activities. Information is shared between the county, member communities, and the NEORSD to better identify areas of responsibility.





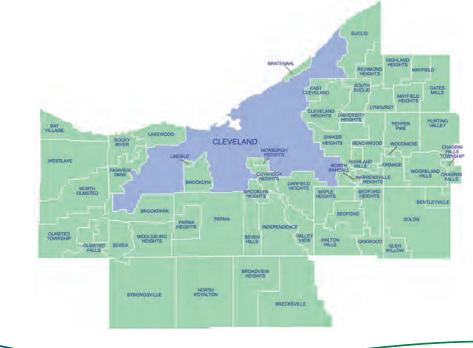
Department of Public Works

## **APPENDIX DESCRIPTION\***

The following appendices contain a variety of reports representing the services provided to communities in 2016. The Public Works Department follows a manhole-to-manhole, sewer segmentbased accounting method for jet cleaning and TV (video) 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 and Construction Departments 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 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 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 is available on our website at <a href="http://publicworks.cuyahogacounty.us/en-US/Sewer-Maintenance-Services.aspx">http://publicworks.cuyahogacounty.us/en-US/Sewer-Maintenance-Services.aspx</a>. A CD containing the map with the Annual Report is available upon request.

\* **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\***

## **Collection System Jet Cleaning** MAYFIELD HEIGHTS

	STREET	NUMBER OF SEGMENTS	JET FT
ΤΥΡΕ	SANITARY	Street Count 35	
	ANNANDALE ROAD	7	1,249
	ASHDALE ROAD	10	1,817
	BONNIE LANE	2	510
	CEDAR ROAD	3	832
	CORDOVA ROAD	5	1,084
	CREEKSIDE DRIVE	14	2,228
	DUVAL ROAD	1	160
	EASTONDALE ROAD	14	2,647
	ENFIELD DRIVE	7	1,611
	FAIRHAVEN ROAD	11	2,140
	GATES MILLS BOULEVARD	28	8,012
	GENESEE AVENUE	1	296
	HANSFORD ROAD	2	529
	HIDDEN WOODS TRAIL	6	1,736
	INDIANA AVENUE	4	1,054
	IROQUOIS AVENUE	11	3,291
	KINGSWOOD DRIVE	6	1,326
	LARCHMONT DRIVE	6	1,436
	LONGRIDGE ROAD	11	2,372
	MARSHFIELD ROAD	12	1,840
	MARSOL ROAD	4	722
	MAYFIELD ROAD	3	562
	MONTEREY DRIVE	8	2,329
	PARKER DRIVE	10	2,813
	QUEENS PARK AVENUE	10	2,259
	RIDGEBURY BOULEVARD	8	961
	RIDGEVIEW ROAD	8	2,034
	SOM CENTER ROAD	15	3,978
	STAFFORD DRIVE	5	1,308
	SUFFIELD ROAD	6	750
	SUMMIT DRIVE	1	336
	VALLEVISTA DRIVE	7	1,737
	WINDSOR DRIVE	11	1,382
	WOODHAWK DRIVE	15	4,066
	WORTON BOULEVARD	3	1,046

## **Collection System Jet Cleaning** MAYFIELD HEIGHTS

	STREET	NU	JMBER OF SEGMENTS	JET FT	
		Total:	275	62,453	
ТҮРЕ	STORM		Street Count	28	
	ANNANDALE ROAD		2	477	
	CEDAR ROAD		3	830	
	CORDOVA ROAD		6	1,399	
	DUVAL EASEMENT		3	443	
	ENFIELD DRIVE		1	321	
	FAIRHAVEN ROAD		11	2,120	
	GATES MILLS BOULEVARD		27	7,959	
	HANSFORD ROAD		2	535	
	HIDDEN WOODS TRAIL		8	1,689	
	INDIANA AVENUE		5	1,320	
	IROQUOIS AVENUE		11	3,818	
	KINGSWOOD DRIVE		9	1,720	
	LARCHMONT DRIVE		6	1,425	
	LONGRIDGE ROAD		17	3,182	
	MARSHFIELD ROAD		13	1,773	
	MARSOL ROAD		4	693	
	MONTEREY DRIVE		6	1,218	
	PARKER DRIVE		8	2,244	
	QUEENS PARK AVENUE		6	1,153	
	RIDGEBURY BOULEVARD		14	2,806	
	SOM CENTER ROAD		19	4,862	
	STAFFORD DRIVE		7	1,583	
	SUFFIELD ROAD		9	1,018	
	VALLEVISTA DRIVE		10	1,944	
	WINDSOR CIRCLE		1	156	
	WINDSOR DRIVE		3	500	
	WOODHAWK DRIVE		19	4,109	
	WORTON BOULEVARD		2	362	
		Total:	232	51,659	
Annual Report Jet Clean	ing	Grand Total:	507	114,112	

## **Community Streets Inspected\***

## Collection System TV Inspection MAYFIELD HEIGHTS

	STREET	NU	JMBER OF SEGMENT	S TV FT
TYPE	SANITARY		Street Count	33
	ANNANDALE ROAD		5	784
	ASHDALE ROAD		5	888
	BELLINGHAM ROAD		1	215
	BONNIE LANE		2	125
	CORDOVA ROAD		5	1,090
	DUVAL ROAD		2	396
	EAST MINER ROAD		1	148
	EASTONDALE ROAD		8	1,434
	ENFIELD DRIVE		4	994
	FAIRHAVEN ROAD		12	2,077
	GATES MILLS BOULEVARD		28	6,762
	HANSFORD ROAD		3	528
	HIDDEN WOODS TRAIL		6	1,763
	INDIANA AVENUE		3	716
	KINGSWOOD DRIVE		5	603
	LANDER LANE		1	183
	LARCHMONT DRIVE		6	1,437
	LONGRIDGE ROAD		11	2,368
	MAPLEWOOD ROAD		1	306
	MARSHFIELD ROAD		11	1,613
	MARSOL ROAD		4	740
	MAYFIELD ROAD		1	280
	MONTEREY DRIVE		4	1,170
	PARKER DRIVE		4	1,164
	QUEENS PARK AVENUE		5	1,170
	RANCHLAND DRIVE		1	309
	RIDGEVIEW ROAD		4	780
	STAFFORD DRIVE		5	1,136
	SUFFIELD ROAD		5	534
	VALLEVISTA DRIVE		6	1,524
	WINDSOR DRIVE		5	601
	WOODHAWK DRIVE		14	3,727
	WORTON BOULEVARD		3	588
		Total:	181	38,153
ΤΥΡΕ	STORM		Street Count	22

## **Collection System TV Inspection** MAYFIELD HEIGHTS

STREET		NUMBER OF SEGMENTS	TV FT
ANNANDALE ROAD		2	479
ASHDALE ROAD		5	901
CORDOVA ROAD		5	1,077
DUVAL ROAD		1	243
EASTONDALE ROAD		8	1,413
FAIRHAVEN ROAD		12	2,113
GATES MILLS BOULEVARD		26	7,589
HANSFORD ROAD		2	543
INDIANA AVENUE		5	1,043
KINGSWOOD DRIVE		5	654
LONGRIDGE ROAD		21	3,099
MARSHFIELD ROAD		11	1,133
MARSOL ROAD		5	733
MAYFIELD ROAD		1	214
MONTEREY DRIVE		5	1,199
PARKER DRIVE		1	292
QUEENS PARK AVENUE		6	1,114
RANCHLAND DRIVE		1	255
SUFFIELD ROAD		5	653
VALLEVISTA DRIVE		7	1,343
WOODHAWK DRIVE		14	3,649
WORTON BOULEVARD		2	193
	Total:	150	29,932
Annual Report TV Inspection	Grand Total:	331	68,085

## **Projects Status\***

### Mayfield Heights Project Review

Project ID	Project Name	Approval Date
16-030 (1)	ASHLEY FURNITURE	3-Aug-2016
16-043 (1)	WINKING LIZARD TAVERN RESTAURANT	16-Aug-2016
16-058 (1)	CLEVELAND PLASTIC SURGERY INSTITUTE	29-Dec-2016

## Service Program\*

### City of Mayfield Heights

**Community Total** 

249,591 Feet 1,099 (Approximately)

<u>Type</u>

Sanitary Sewers Manholes

2016 Service Program	
<u>Program</u>	2016 Activity
1) High Pressure Jet Cleaning Sanitary – 62,453 Feet (54.7%) Storm – 51,659 Feet (45.3%)	114,112 Feet
2) House Service	585 Calls
3) Television Inspection Sanitary – 38,153 Feet (56%) Storm – 29,932 Feet (44%)	68,085 Feet
4) Construction Activities	268 Job(s)
5) Smoke and Dye Testing	- Test(s)
6) Construction Permits Issued (Commercial) (Residential)	7 5
7) Plan Review	3 Plan(s)
8) Construction Inspection a) Main Lines Inspected b) Service Laterals Inspected	- Feet 948 Feet
9) Catch Basin Cleaning	59

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**Community Operating Expenses** 

### **City of Mayfield Heights**

#### 2016 Operating Expenses

	Activity	<u>Cost</u>
1.	Maintenance of Sanitary Sewerage Systems	\$840,415
2.	Pump Station Operation and Maintenance	\$17,958
3.	Waste Water Treatment Plant Maintenance	\$ 0
4.	Engineering and/or Inspection	\$48,617
5.	Capital Expenses (See Section A-6 if any)	\$231,315

Total Operating Expenses:

\$1,138,305

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## **Community Capital Expenses**

## City of Mayfield Heights

## 2016 Capital Expenses

Lander Road Repair	\$ 21,459
Marnell Avenue Grouting	\$ 79,873
Gates Mills Boulevard Lining	\$ 114,448
Mayfield Road Repair	\$ 15,535

Total Capital Expenses:	\$ 231,315

# CONTACT INFORMATION

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

> Email: Publicworks@cuyahogacounty.us Website: Publicworks.cuyahogacounty.us

Michael W. Dever, MPA	Director of Public Works
David E. Marquard, P.E., P.S	. Design & Construction Administrator
Michael W. Chambers, CPA	Finance & Operations Administrator
Bryan J. Hitch	Sewer Maintenance Superintendent
Hugh Blocksidge, P.E.	Chief Engineer Sanitary Design

### Department of Public Works Administrative Headquarters 2079 East Ninth Street – 5th Floor Cleveland, Ohio 44115

Dispatch Office		(216) 443-8201
Dispatch Email	PWDispate	ch@cuyahogacounty.us
Administration		(216) 348-3867
Inspection & Permits		(216) 443-8211
Sewer Maintenance	. Gary Green, Senior Supervisor	(216) 443-8225
Lateral Services (House Crews).	. Suzanne Britt, Supervisor	
Inflow & Infiltration	. Suzanne Britt, Supervisor	
Construction (East)	. Mitch Holt, Supervisor	(216) 443-8229
Construction (West)	. John Gribble, Supervisor	(216) 443-8229
Sewer Jetting	. Guy Swindell, Supervisor	(216) 443-8226
Pump Station Operations	. William Applegarth, Supervisor.	
Televised Inspection	. Todd Swindell, Supervisor	

