

# ENGINEERING DEPARTMENT

*2016 ANNUAL REPORT*



City Engineer: Dale Vandersommen, P.E.

2/28/2017

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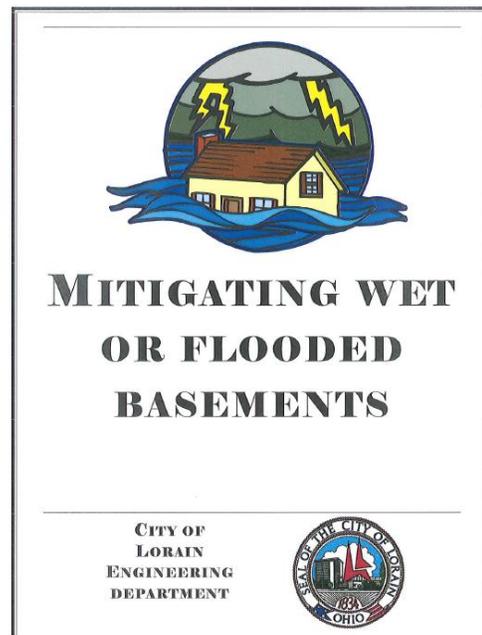
## DEPARTMENT'S MISSION STATEMENT:

The mission of the City of Lorain Engineering Department is to provide expedient technical engineering services and advice to all city departments, the administration, and the general public. Generally the technical support is related to design, inspection, and contract administration of public improvements and subdivisions, plan review, grading, draining and general construction information.

## ENGINEERING DEPARTMENT STAFF

The Engineering Department is comprised of Professional Engineers, Engineer Interns, Professional Surveyors, Engineering Aides, Contract and Grants Administrator, and a Technical Administrative Assistant.

- Georgene Gedling, Technical Administrative Assistant
- Kathryn Golden, Storm Water Manager
- Doug Hasel, P.S., Engineer III
- Katie McGannon, Engineering Aide
- Veronica A Newsome, E.I., Engineer III
- Jessica Potter, Engineering Aide III
- Daniel Rodriguez, P.E., Deputy Director of Engineering
- Phil Turske, Contract Administrator
- Dale Vandersommen, P.E., City Engineer



## ENGINEERING DEPARTMENT RESPONSIBILITIES

The Engineering Department is responsible for approximately 262 miles of public right-of-way, bridges, and culverts. The Engineering Department's responsibilities include design, construction management, permitting, and construction inspection of roadways, bridges, culverts, and sewer systems in the City of Lorain.

## CITIZEN INFORMATION

Citizens can request information from the COL Engineering Department. Including the grading of their property, drainage concerns, main sewer and lateral locations back up information, etc.

The Engineering Department created the Mitigating Wet or Flooded Basements pamphlet to inform citizens and answer frequently asked questions. It is available on the COL website and in the COL Engineering Department.

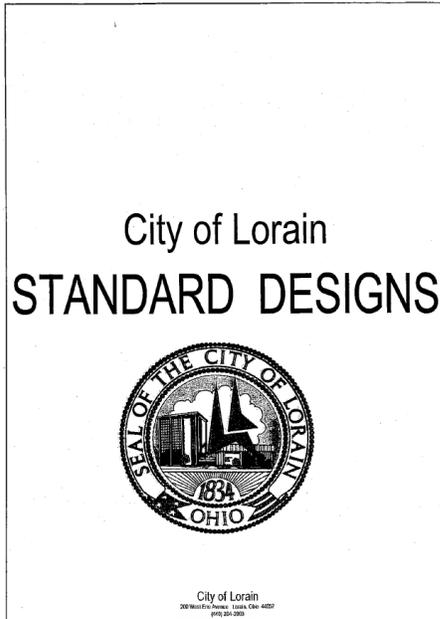
## INVESTIGATIONS

Field investigations are carried out when the situation warrants it.

2016 Investigations include:

- 11 drainage complaints, grading
- 21 drainage complaints, roadway
- 16 drainage complaints, alley, yard, downspout/underdrain
- 11 drainage complaints, storm/sanitary issues
- 6 flooding complaints
- 10 Apron complaints
- 2 Sump pump discharge complaints
- 9 Catch Basin
- 12 Sidewalk complaints
- 6 Right of Way Obstructions
- 4 Apron complaints
- 1 Illicit Discharge complaints
- 1 Working without a permit

## STANDARD DESIGNS



The Engineering Department updated the City of Lorain Standard Designs and Specifications to provide guidance to developers, engineers, surveyors, contractors, public and private utilities, various city departments, and private property owners. Design standards include sanitary, storm, pavement, and miscellaneous items that those mentioned are expected to follow designs.

Contract work shall be governed by all provisions set forth in the State of Ohio Department of Transportation Construction and Material Specifications, current version, and any other supplemental specifications per

individual project contract documents.

## PROJECTS

### OHIO PUBLIC WORKS COMMISSION (OPWC)

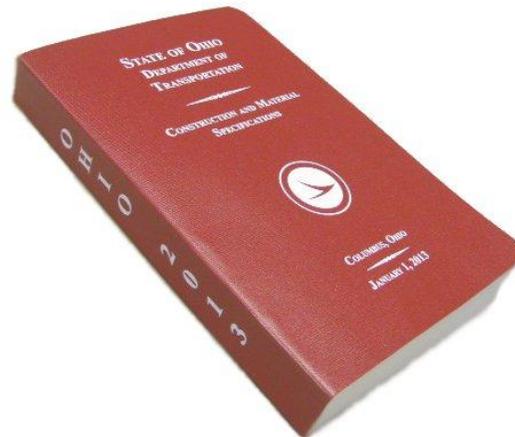
OPWC provides financing for local public infrastructure improvements through both the State Capital Improvement Program (SCIP) and the Local Transportation Improvement Program (LTIP). SCIP is a grant/loan program for roads, bridges, water supply, wastewater treatment, storm water collection, and solid waste disposal. LTIP is a grant program for roads and bridges only. See Exhibit A for a list of projects completed with OPWC funding in 2016.

## OHIO DEPARTMENT OF TRANSPORTATION (ODOT)

We are collaborative partners with ODOT who oversees Interstate, State and US routes. ODOT oversees the planning, engineering, and construction of many of the major roadways, bridges, and culverts on the state transportation system. In 2016 ODOT's Urban Paving program completed construction for one project in the City of Lorain. State Route 57, from East 36<sup>th</sup> Street to south of W. 9<sup>th</sup> Street, was resurfaced as part of the Urban Paving Program in 2016.

## OHIO WATER DEVELOPMENT AUTHORITY (OWDA)

OWDA provides financial assistance for environmental infrastructure from the sale of municipal revenue bonds through loans to local governments in Ohio and from issuance of industrial revenue bonds for qualified projects in Ohio. See Exhibit B for a list of OWDA projects completed in 2016.



## MISCELLANEOUS PROJECTS

### WEST ERIE AVENUE STORM SEWER OUTFALL

The project involved the replacement of an existing deteriorated storm sewer outfall pipe which runs below ground at 3222 W Erie Avenue beginning at a manhole approximately 200' north of West Erie Avenue and ending approximately 250' north at an existing manhole. The cost of the project was \$58,452.00

### EAST ERIE AVENUE STORM SEWER OUTFALL

The project involved the replacement of an existing deteriorated 60' storm sewer outfall pipe which runs below ground at 1101 East Erie Avenue beginning at a manhole on the south side of East Erie Avenue at Lake Erie. The cost of the project was \$162,000.

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#### NARRAGANSETT BLVD STORM SEWER

The project involved the construction of a 12” reinforced concrete storm sewer extension on Narragansett Blvd. This project included apron and roadway removal and replacement. The cost of the project was \$ 25,818.

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#### CATCH BASIN REPAIR AND RECONSTRUCTION

The project involved the repair and reconstruction of various catch basins throughout the City of Lorain. The cost of the project was \$149,205.

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#### SOUTH LAKEVIEW PARK SIDEWALK ACCESSIBILITY INSTALLATION

This project consisted of the installation of sidewalks and handicapped accessible curbs/ramps at Lakeview Park South. This project was paid for by utilizing Community Development Block Grant funds.

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#### BLACK RIVER WWTP RESURFACING OF PAVEMENT

The Engineering Department performed the planning, engineering, and construction inspection for the resurfacing of the Black River WWTP Parking Lot. This was phase 2 of the project. The cost of the project was \$93,578.00.



### SURVEYING

The Engineering Department performs construction, topographic, hydrographic, boundary, quantity, right of way, obstruction, and GPS surveys.

Surveying is required for all engineered plans and is the first step in a properly designed project. Surveys performed for the city have assisted in settling legal issues, clarified right of way, determined boundary limits for city owned properties, and have accelerated

the timeline of public works projects allowing both city employees and hired contractors to complete public works projects on time.

Larger surveys have been completed on several of the street repair levy improvements to begin construction in 2017. Surveys have also been done on active job sites that were constructed in 2016 to improve design and functionality of those jobs.

The following are some additional surveys:

### UTILITIES

- Falbo and W. 34<sup>th</sup> waterline replacement survey.
- Broadway, W. Erie to W 9<sup>th</sup> research and survey waterline replacement and basements
- All road, storm, sanitary surveying, engineering regarding contract 6WC Broadway, Skyline and Jaeger Rd.
- Survey Narragansett for storm drainage issues
- Survey and set right of way Oak Point Rd at Old Lake Rd.
- Survey Boundary and Right of way 5078 Clinton Ave.
- 1101 E. Erie 60" storm replacement.
- Locate right of way for 3946 Reid for water meter location.
- Locate right of way Broadway @ W. 25<sup>th</sup> St. west side for water dept.
- W. 8<sup>th</sup> @ Broadway prepare estimate for storm tile and catch basin replacement.

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#### UTILITIES (CONT.)

- 5780 W. Erie Ave. survey and obtain right of entry onto private property for ditch cleaning.
- Dayton at W. 38<sup>th</sup> storm ditch cleaning right of entry and wetlands research.
- W. 37<sup>th</sup> St west of Broadway ditch survey, profile and right of entry for ditch cleaning.
- W. 37<sup>th</sup> Livingston to Dayton storm ditch cleaning right of entry.
- Crehore waterline installation.
- Stake utility location for right of way clearing south or SR 2 east of Oberlin Rd.
- Black River Waste Water Treatment plant parking lot survey.
- Broadway at 18<sup>th</sup> St. new waterline.
- Lexington Ave. and W. 18<sup>th</sup> St. waterline replacement 6WC Phase II.
- Drainage on rear lot line of Oberlin Ave. east side north of Cooper Foster Park Rd..
- Two storm outfalls into Lake Erie 1) Harborview 2) Kolbe

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#### STREET DEPARTMENT

- Survey W. 37<sup>th</sup> St. Broadway to Livingston for drainage and repaving.
- Survey Colorado encroachment of city property in Sheffield Village.
- Survey for lot split parcel on Colorado at Root Rd. (Pizza Hut).
- Survey for Black River Lane Lot Split.
- Site plan for Iowa Ave. Impound Lot

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#### SAFETY/SERVICE DIRECTOR

- Broadway streetscape
- W 10<sup>th</sup> St. west of Brownell

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#### GRADING APPROVALS

Preliminary Grade review for drainage. Certified Grade review for occupancy.

- Preliminary Grade Approvals: 59
- Certified Grade Approvals: 53

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## PLAT REVIEW

The following plat reviews were performed by our Professional Surveyor:

- Deerfield Estates Subdivision No. 6
- Manors of Morningside Phase 2

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## LOT SPLITS REVIEWED

- Colorado and Root Rd.
- Cooper Foster west of Oberlin Ave.
- East 28<sup>th</sup> St. at Charleston Ave
- Leavitt Rd north of Cooper Foster Park Rd
- Pearl Avenue north of North Ridge Rd.
- West 5<sup>th</sup> St. west of Washington Ave.

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## LOT SPLITS PREPARED

- Black River Lane.
- East Erie Ave at Illinois Ave.
- USX Rear Lot
- Pizza Hut at Root Rd.
- Oberlin Ave. tree easement

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## EASEMENTS REVIEWED

- Black River Substation (First Energy)
- East 36<sup>th</sup> St. at Tacoma (First Energy)
- East 36<sup>th</sup> St. at East 28<sup>th</sup> St. (First Energy)
- Lighthouse Village Phase 1 & 2

## INSPECTIONS

Inspection services validate that the work performed complies with the scope detailed in the permit description. The types of inspections vary depending on the nature of the project.

Before a permit can be completed and closed, all required inspections must be approved.



In 2016 the Engineering Department performed the following inspections:

### CONCRETE - INSPECTION

- Sidewalk – 303
- Apron - 222
- Handicap Ramps – 3
- Curb And Gutter – 10
- Sidewalk Evaluations – 6
- Open Pavement – 94
- Catch Basin – 5

### STORM SEWER AND SANITARY SEWER - INSPECTION

- Sanitary – 48
- Storm – 86
- Inlet – 23



## SUBDIVISIONS - INSPECTION

- Deefield Estates No. 6 and The Landings at Martin's Run Subdivison No. 2

## PROJECTS - INSPECTION

- Crehore Avenue Reconstruction
- Jaeger Rd- 6 WC
- Skyline Dr.6 WC
- Broadway- 6 WC
- West 33<sup>rd</sup> St. - 2015 SRL
- OPWC 29 A
- OPWC 29 B
- OPWC 29 C
- OPWC 30

## PAVEMENT MANAGEMENT RATINGS

Pavement ratings are constantly being updated in an effort to have the most current information. Information obtained from these ratings is used in the assessment of current roadway conditions, the determination of needed maintenance, repairs, and/or reconstruction. Pavement ratings are used as a tool to aid in the process of prioritizing roadway work within the City of Lorain. This year the inspectors rated 26 segment of roadway which is 18,879 feet (3.28) miles.

## CONCRETE TESTING

Concrete testing is performed on all capital improvement projects. Testing is done in accordance with applicable American Society for Testing and Materials (ASTM) standards by an American Concrete Institute (ACI), Certified Concrete Field Technician. A sample is obtained in the field, then allowed to cure, then compression tested in a lab. Concrete samples are obtained in the field during paving operations as well as other operations where a substantial volume of concrete is being used. Samples are cured for at least 7 days before first compression test is performed. Multiple samples are taken so that compression testing can also be performed at 28 days.

Multiple samples are taken so that compression testing can also be performed at 28 days.

Concrete is said to be fully cured and have developed the majority of its strength at 28 days.

Testing is performed to make sure that what is being specified in plans and contract documents is what is being constructed in the field.



## ASTM TESTING PERFORMED

- ASTM C172 - Sampling
- ASTM C143 - Slump
- ASTM C438 - Density
- ASTM C231 - Air Content
- ASTM C31 - Cylinders

## CONTRACT MANAGEMENT

## GRANTS

### 2016 LORAIN COUNTY SOLID WASTE GRANT

- \$10,271.00
  - Recycled brick used as baseball infield dirt to enhance fields at various City Parks (\$9,056.40)
  - Recycled Dock Bumpers (\$1,214.60)

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## 2016 BWC SAFETY INTERVENTION GRANT

- \$8,170.62
  - Bigs Easy Lift (\$2,538.12)
  - Rock Mills Lifter Plus (\$5,632.50)

## CONTRACTS

- The City of Lorain Repair and Reconstruction of Various Catch Basins
- The City of Lorain OPWC Round 29 Contract B
- South Lakeview Park Accessibility Installation
- Crehore Street Waterline Replacement
- South Grass Cutting 2016: High Grass Complaints
- South Grass Cutting 2016: Chronic
- 2016 BHP Grass Cutting
- East Erie Avenue Storm Sewer Outfall Rehabilitation
- City of Lorain Street Repair Levy 2016 West 33<sup>rd</sup> Street
- West Erie Avenue Storm Sewer Outfall Rehabilitation
- Cleaning of Digesters at the PQM Wastewater Treatment Plant
- Resurfacing of Pavement at the Black River WWTP
- City of Lorain OPWC Round 30
- City of Lorain Black River AOC Remediation and Restoration Project: Remedial Treatment System
- City of Lorain OPWC Round 29 Contract C Crehore
- HVAC Maintenance
- Waterline Replacement – Contract 6Wc – Phase 2
- Purchase of Chemicals for Utilities 2017
- Purchase of Materials for Public Properties 2017
- Purchase of Distribution Materials 2017

## AGREEMENTS

- Professional Legal/Labor Services
- To sell and/or lease of Department of Building, Housing and Planning Owned Eligible Properties
- AMCAD Build
- Purchase and supply of office furniture
- City of Lorain Storm Sewer Rehabilitation – Narragansett Boulevard
- Indigent burials for a period of two (2) years with an optional one (1) year extension
- City of Lorain Hauling of Street Sweepings
- Residential Street Sweepings Disposal Services
- Completion of a citywide comprehensive land use plan and zoning ordinance update
- Inspection Services related to the Deerfield 6 Subdivision
- Demolition of 3915 Windsor Court
- Sewer Rate Review and other general engineering services
- Inspection services related to the Landings 2 Phase 1 Subdivision
- Merchant Card Services
- Baumhart Road Resurfacing Project, Consultant
- Jail Food Services
- Hydraulic Study at Beaver Creek
- The purchase and installation of one splash pad
- Professional legal services
- 2017 Contract for Customer Service Maintenance agreement for LPD Equipment and peripherals
- To purchase continued maintenance for scheduling and payroll support services to the LPD Telestaff Software
- Oakwood Park Phase 2 Environmental Assessment
- Redesign of the City's Website

## AGREEMENTS (CONT.)

- Abatement of Erieview Motel located at 2800 West Erie Avenue
- Abatement of Shoreway Motel located at 3945 West Erie Avenue
- Asbestos survey of the front portion of the Erieview Motel
- Asbestos survey of the trailers located in the rear portion of Shoreway Motel
- Purchase services to install 5,000 live stake tree planting along the Black River Restoration Area
- CCTV Upgrade for Lorain Municipal Courts

## PLAN REVIEW

The Engineering Department is responsible for plan reviews. Plans related to any of the following areas must be submitted and reviewed, depending on the nature of the project:

- Residential and Commercial Development
- Sanitary and Storm Sewers
- Street Construction
- Storm Water Management
- Waterline replacements

## RESIDENTIAL AND COMMERCIAL

- Village at Lighthouse Point – Jaeger Road
- Dollar General – East 28<sup>th</sup> St.
- Giovanni's Pizza – Grove Avenue
- Multi-Tenant Retail – Leavitt Road
- USS Substation
- Camaco
- Burger King – Cooper Foster Park Rd.
- Charleston Substation



## RESIDENTIAL AND COMMERCIAL PLAN REVIEW (CONT.)

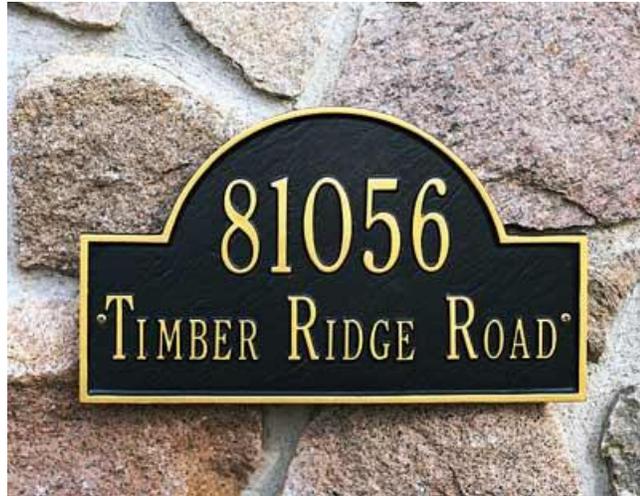
- Clover Communities Senior Living – North Pointe Pkwy
- First Energy Plan Station
- First Evangelical Lutheran Church

## SUBDIVISION

- Deerfield Estates No. 6
- Landings at Martin's Run  
Subdivision No. 2

## WATERLINE REPLACEMENT

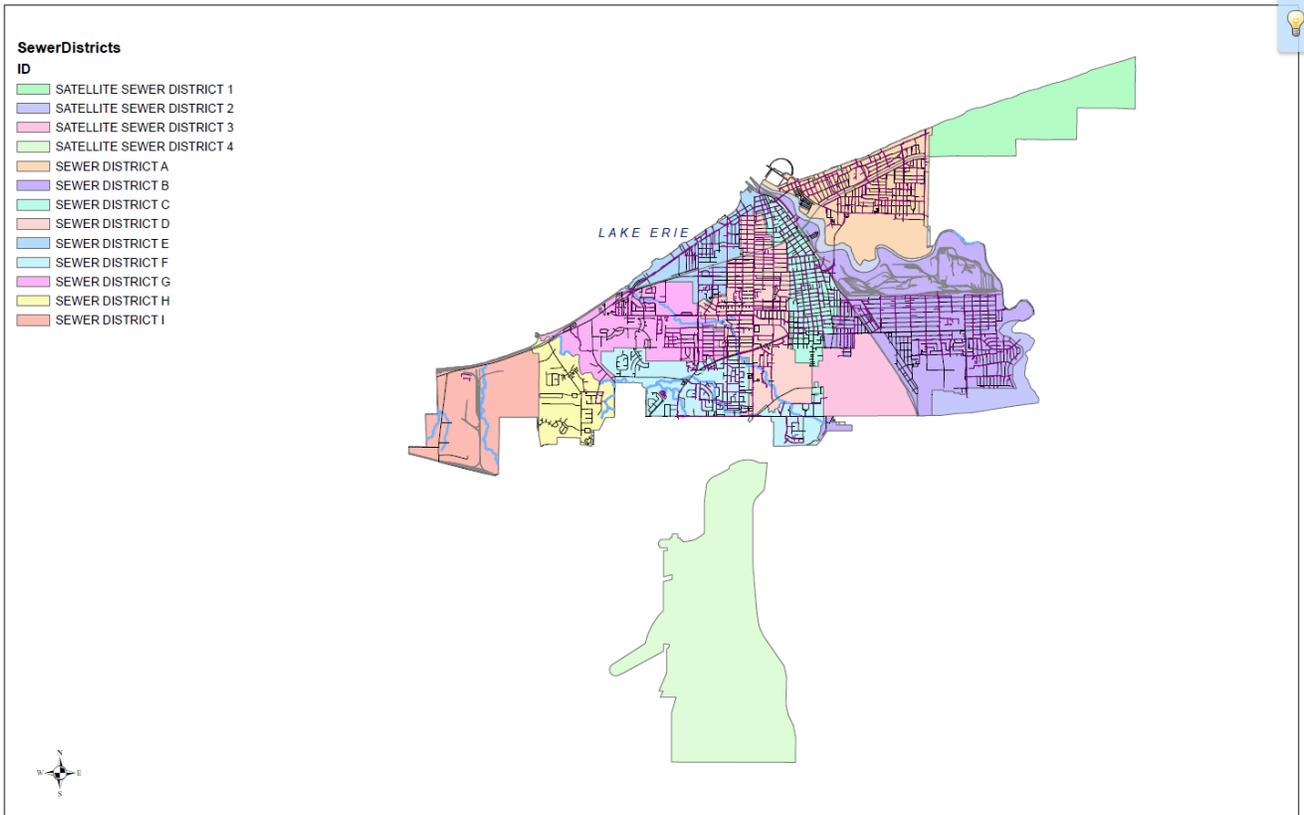
- Crehore Ave. waterline
- Skyline Dr., Broadway Jaeger  
waterline



## RESIDENTIAL ADDRESS ASSIGNMENTS

### DEERFIELD ESTATES SUBDIVISION- NO. 6

## MAPPING



Mapping is also a function of the Engineering Department. Maps are requested by citizens, other city departments, and the Administration. Listed below are maps that were provided to various city departments in 2016:

- City Cemetery map updates ( 60% complete on the GIS map)
- Pavement Condition Rating maps (95% complete on the GIS map)
- Maps showing roads rehabbed according to program (OPWC, Street Repair Levy, ODOT, etc.)
- Maps showing City GIS points
- Wards/Precincts
- Sex offender address check maps
- Location maps for contracts
- Location maps for OPWC applications
- Location maps for NOACA applications
- Location maps for SIB applications
- Snow plow zone maps
- Maps showing easements
- Maps showing city septic systems

## MAPPING (CONT.)

- Maps for other city entities; walking tour maps for the Community Reinvestment Area maps for Community Development
- Maps for Roverfest
- City Parking Maps
- CDBG Area Maps
- ZCA maps for Zoning Changes
- Fire Station radius maps
- Maps for various petitions (paving, assessment, vacations)
- Outfall Maps
- MS4 Map
- Unimproved Street Maps shown Pavement Rating Map
- Maps of vacated streets/alleys
- Watershed maps
- Police District maps
- Zoning maps

## STORM WATER MANAGEMENT

- Performed 514 storm water inspections on 144 sites within the City.
- Performed annual site inspections of the following City properties: Street Department Complex, and Sewer Department Complexes.
- Developed the City of Lorain Stormwater Management Program, as required by Ohio EPA Permit #OHQ000003.
- Developed Stormwater Pollution Prevention Plans for the City of Lorain Street Department, Sewer Department, and Compost Facility, as required by Ohio EPA Permit #OHQ000003.
- Provided storm water training to employees in the following departments/divisions: Sewer, Landscaping, Water Distribution, Garage, and Street.
- Administered the Long Term Operation and Maintenance standards for all existing post-construction BMPs. Land owners are required to submit certified inspection reports annually by May 1.
- Continued communication with City departments and facilities to ensure all facilities within the City are brought into compliance with minimum storm water standards.
- Hosted the 2016 Kayak-a-Thon to raise awareness on water quality work being performed by the City.
- The City of Lorain and PIPE, the Lorain County Stormwater Outreach Committee, secured 298 educational advertising spots running consistently from 5/18/16-10/20/16. The City of Lorain contributed a total of 125 spots to this regional educational outreach effort (100 PIPE focused spots and 25 Lorain focused spots).

## STORM WATER MANAGEMENT (CONT.)

- Continued implementation of the Martin's Run Drainage Improvement Plan Phase I Project, to improve water conveyance within Martin's Run. The program includes the expansion of the flow path/creation of floodplain at Willow Park and channel cleaning at culverts from W.35th upstream to Ashland. Culvert cleaning from W. 35th Street to Tower Boulevard began in December 2015 and was completed in mid-2016.
- Began data collection for the Martin's Run Drainage Improvement Plan Phase 2, a project aimed at identifying and assessing a location for approximately 100 acre/feet of upstream storage to reduce downstream peak flows.

## ENVIRONMENTAL RESTORATION PROGRAM

- Grant management and restoration projects active in 2016 include:
  - Black River Landing and Heron Rookery Restoration Project - Awarded \$1,347,644 to stabilize portions of stream bank and restore in-stream habitat at the Heron Rookery and Black River Landing (NOAA funding). Project completed in 2016.
  - Lower Black River Heron Rookery Restoration Phase II Assessment - Awarded \$175,000 to determine the presence and extent of subsurface contamination at the "BOP Pond", an area adjacent to the Heron Rookery, and to establish recommendations for restoration of the six-acre riverside area (NOAA funding). Project completed in 2016.
  - Near-shore Re-vegetation in the Lower Black River AOC - Awarded \$88,000 for the planting of approximately 4,000 willows along the Black River in order to filter storm water runoff, reduce turbidity, stabilize substrates, and provide habitat for fish, wildlife, and macro invertebrates (US Forest Service funding). Project completed in 2016.
  - Drum Removal and Restoration Project: Assessment and Design Phase - Awarded \$284,500 to delineate and assess a drum disposal area location within the floodplain of the Black River and prepare remedial and restoration designs (US Fish and Wildlife funding). Project completed in 2016.

## ENVIRONMENTAL RESTORATION PROGRAM (CONT.)

- Black River Area of Concern Remediation and Restoration Program – Award \$15,184,138.00. The funding has provided for the following 2016 activities:
  - The installation of a groundwater treatment system to address contaminate entry into the Black River.
  - The installation of new sheet pile and fish shelf at River Mile 0.3, located at City property leased to the Lorain Sailing and Yacht Club.
  - The assessment of the hydrology at the Lorain Black River Reclamation Facility and its affect on the Black River. The future design and installation of a system to address the results of the assessment will be designed following completion of the assessment.
- Lakeview Beach Gull Control Pilot Program - In order to better understand water quality concerns at Lakeview Beach, the City of Lorain, Lorain County Metro Parks, and Lorain County General Health District received funding from Ohio EPA to study the water quality effects bird control affords at Lakeview Beach. The study was completed in the summer of 2015 and includes the utilization of border collies (dogs) to control the gull population. (Ohio EPA funding)

## LORAIN BLACK RIVER RECLAMATION FACILITY

- Onsite staff oversaw the processing of 9350 ton of reclaimed steel mill byproduct material by the City's contracted Facility Manager. The 2016 Reclamation effort generated approximately \$212,000.00 in revenue for the City of Lorain.
- Onsite staff worked to manage and produce leaf humus, topsoil, and mulch. These efforts generated approximately \$11,000 in additional revenue for the City of Lorain.
- Secured a Facility Manager for the City's reclamation operation and began processing reclaimed steel mill byproduct material for reuse.

## PERMITTING

A permit authorizes a homeowner or contractor to begin the work described on the permit. The Engineering Department issues permits for aprons, sidewalks, open pavement, and sanitary and storm sewers. The following number of permits were issued in 2016:

- Apron – 168
- Sidewalk – 201
- Sanitary – 127
- Storm – 30
- Open Pavement - 63

## FINANCES

### 2016 Engineering Collections

Sewer Permits	\$20,640.00
Miscellaneous Sales	\$14.00
Parkland Trust Fund	\$15,670.00
Sewer License Fees	\$1,680.00
Deposit Held Trust Fund	\$107,498.00
Reimburse Engineering Service	\$43,265.00
Inspection Fees Allotment Improvement Fund	\$64,510.82
Contract	\$2,920.00
Storm Sewer Deposit	\$265,245.00
Tap in Fee	\$280,445.00
Pollution Cap. Improv. Fee	\$142,680.31
Water Pollution Control Interceptor Fees	\$8,980.58
Water - Capital Improvements	\$84,011.72
Water - New Main Frontage	\$0.00
Service Connection Taps	\$107,157.41
Meter Charge	\$38,340.00
Manifolds	\$1,996.85
Street Excavation	\$14,363.00
Water Works Inspection & Building Water	\$16,422.50
Total Collections	\$1,215,840.19

# EXHIBIT A

2016 OPWC WORK PERFORMED						
Contract #	Street	From	To	Scope	Funding Source	Cost
OPWC RD 30	Mildred Ave.	W. 11th St.	S. Lakeview Blvd.	Mill/Fill asph, Pymt repair, Casting Adj, Curb Ramps	OPWC/SIB	\$ 210,581.84
OPWC RD 30	Surf Ave.	Meister Dr.	Frontage	Concrete Rehabilitation	OPWC/SIB	\$ 220,580.30
OPWC RD 30	Goble Dr.	Palm Ave.	Riverside Dr.	Mill/Fill asph, Pymt repair, Casting Adj, Curb Ramps	OPWC/SIB	\$ 328,634.64
OPWC RD 30	Oakdale Ave.	W. 34th St.	W. 30th St.	Mill/Fill asph, Pymt repair, Casting Adj, Curb Ramps	OPWC/SIB	\$ 254,144.67
OPWC RD 30	W. 12th St.	Oberlin Ave.	Washington Ave.	Mill/Fill asph, Pymt repair, Casting Adj, Curb Ramps	OPWC/SIB	\$ 228,170.59
OPWC RD 30	Lexington Ave.	W. 32nd St.	W. 23rd St.	Mill/Fill asph, Pymt repair, Casting Adj, Curb Ramps	OPWC/SIB	\$ 424,160.84
OPWC RD 30	E. 40th St	Homewood Dr.	Tacoma Ave.	Concrete Rehabilitation	OPWC/SIB	\$ 142,255.41
						<b>\$ 1,808,528.29</b>

EXHIBIT B

<b>CITY OF LORAIN, OHIO</b>			
<b>WATERLINE REPLACEMENT EVALUATION SUMMARY</b>			
<b>3/15/2017</b>			
<b>Road</b>	<b>Limits</b>	<b>Lengths (ft.)</b>	<b>Cost</b>
Broadway	W. Erie Ave to W. 9th St.	5832	
Skyline	Leavitt to Oxford	3550	
Jaeger	3610 to 4217	1955	\$ 4,000,000.00
E. 40th St	Homewood to Tacoma	600	\$ 120,000.00
			\$ 4,120,000.00