

ENGINEERING DEPARTMENT

2018 ANNUAL REPORT



City Engineer: Dale Vandersommen, P.E.

3/27/2019

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DEPARTMENT'S MISSION STATEMENT

The mission of the City of Lorain (COL) 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, Professional Surveyors, Engineering Aides, a Contract and Grants Administrator, a Storm Water Manager, 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 III
- Seth Schilling, Engineering Aide
- Veronica A Newsome, P.E., Engineer III
- Jessica Potter, Civil Engineer I
- Phil Turske, Contract Administrator
- Guy Singer, P.E., Deputy Director of Engineering
- Dale Vandersommen, P.E., City Engineer



ENGINEERING DEPARTMENT RESPONSIBILITIES

The Engineering Department is responsible for approximately 285 centerline 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 is in the process of creating webpages for all roadway projects to inform citizens on current projects. These webpages are available on the COL website under Engineering.

Also, the Engineering Department maintains the COL Utilities Projects on the COL website and in the COL Engineering Department. This information provides details on current COL utilities projects, including, but not limited to project area, project schedule, project cost, and environmental reviews by agencies such as the Ohio Environmental Protection Agency (OEPA) and Ohio Department of Natural Resources (ODNR).

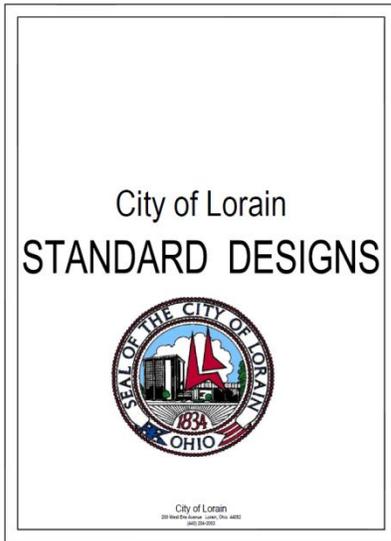
INVESTIGATIONS

Field investigations are carried out when the situation warrants it.

2018 Investigations include:

- 11 Drainage complaints, grading
- 9 Drainage complaints, alley, yard, downspout/underdrain
- 4 Sidewalk complaints
- 5 Right of Way Obstructions

STANDARD DESIGNS



The Engineering Department updates 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.

PROGRAMS AND 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 2018.

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 2018 ODOT's Urban Paving program completed construction for one project in the City of Lorain. Baumhart Road, from the City limits to West Erie Avenue, was resurfaced as part of the Urban Paving Program in 2018.

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 2018.

DIVISION OF ENVIRONMENTAL AND FINANCIAL ASSISTANCE (DEFA)

Through the Water Pollution Control Loan Fund (WPCLF), DEFA provides financial and technical assistance to public or private applicants for planning, design and construction of a wide variety of projects to protect or improve the quality of Ohio's water resources. Similarly, through the Water Supply Revolving Loan Account (WSRLA), DEFA assists applicants with projects that address human health and failing drinking water infrastructure needs.

See Exhibit C for a list of DEFA projects completed in 2018.

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

The Community Development Block Grant (CDBG) Entitlement Program provides annual grants on a formula basis to entitled cities and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974, Public Law 93-383, as amended; 42 U.S.C.-530.1 et seq.

Gary Avenue from E. 41st Street to Homewood was rehabilitated in 2018 with CDBG funding. Work included base repair, resurfacing, underdrains, new curbs, removal and replacement of sidewalk past its useful life and aprons.

SAFE ROUTES TO SCHOOL (SRTS)

The purpose of Safe Routes to School is to encourage and enable students in grades K-8 to walk or ride their bicycle to school. Projects can be either engineering (improved crossings, sidewalks, etc.) or non-engineering (education and encouragement programs). Since the program began in 2008, walking and bicycling to school has increased in Ohio communities with active Safe Routes to School (SRTS) programs. The responsibility of a safe route to school is ultimately shared by the user, government agencies, elected officials, and safety advocates.



In 2018 the City of Lorain received a grant of \$185,553.97 from the Ohio Department of Transportation (ODOT) for sidewalks on SR611-West 21st Street from Oakdale Avenue to Leavitt Road to remove and replace sidewalks past their useful life and improve non-compliant ADA curb ramps. This work is currently under design and is funded for ODOT's fiscal year 2021.

TRANSPORTATION FOR LIVABLE COMMUNITIES INITIATIVE (TLCI)

NOACA's Transportation for Livable Communities Initiative (TLCI) provides assistance to communities and public agencies for integrated transportation and land use planning and projects that strengthen community livability.

In 2018 The City of Lorain applied for a \$300,000.00 grant for bike lane improvements on SR 611 – West 21st Street and East 31st Street. Work will commence in 2020.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

The Congestion Mitigation and Air Quality (CMAQ) program provides federal funding statewide for transportation projects located in the largest urban areas of Ohio that improve congestion and air quality.

Program Purpose

The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (both PM10 and PM2.5).

The CMAQ program supports two important goals of the U.S. Department of Transportation (Department): improving air quality and relieving congestion. The CMAQ program provides funding for a broad array of tools to accomplish these goals. By choosing to fund or sponsor a CMAQ project, a State or local government, transit agency, or other eligible project sponsor can improve air quality and make progress toward achieving attainment status and ensuring compliance with the transportation conformity provisions of the Clean Air Act (CAA).

Projects are awarded at 80% federal share with 20% local share.

WASHINGTON AVENUE BIKEWAY

The City of Lorain proposes to improve bicycle and pedestrian options in the City of Lorain, Lorain County, Ohio. The work includes restriping portions of West 26th Street and Washington Avenue to add bike lanes, and constructing a 10-foot wide paved bike path along the south side of West 24th Street between Oberlin Avenue and Washington Avenue. The new bike path will run on along the north side of George Daniel Field and continue between General Johnnie Wilson Middle School and Washington Elementary School. Construction is currently scheduled to begin Spring 2021 and will last approximately six (6) months. NOACA funding awarded: \$179,500.00

LORAIN CITYWIDE TRAFFIC SIGNALS

This study area includes signalized intersections within the City of Lorain, mainly along the State Route 57 and East 28th Street corridors along with some signals additional signals located near the two (2) main corridors.

NOACA funding awarded: \$485,000.00

MISCELLANEOUS PROJECTS

OAKWOOD PARK – BASKETBALL COURTS

Surveying and Engineering was provided for the installation of new concrete basketball courts at Oakwood Park in 2018.

LORAIN BETTER BLOCK - 2018

Surveying and Engineering was provided for the installation of curb bump outs and bidirectional cycleway for Lorain Better Block in 2018.

SURVEY / RIGHT OF WAY

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 roadways to begin construction in 2019. Surveys have also been done on active job sites that were constructed in 2018 to improve design and functionality of those jobs.

The following are some additional surveys:

UTILITIES

- Oakwood Park Design and stake new waterline.
- West side waterline replacement.
- Stake water dept parking lot for resurfacing.
- Survey manhole locations @ Republic Tech for correction to GIS.
- Research and identify storm/sanitary easement Longbrook @ Yorktown eastside.
- Survey and prepare contract documents. W. 41st @ Temple regarding water valve relocation.
- Survey and obtain easement to rebuild existing storm outfall, Harborview.
- Survey and obtain easement to rebuild existing storm outfall, 1101 E. Erie.
- Survey locations of existing utility structures needed to update city GIS maps.

STREET DEPARTMENT

- Stake right of way Cottonwood regarding tile repair.
- Survey Lakeview park for proposed drainage tile drainage tile.
- Survey Oakwood Park for new basketball courts.
- W. 15 survey regarding grading for new gutter line.

SAFETY/SERVICE DIRECTOR

- Re survey Colorado Lot split Re: update lot to add new parcel split.
- Survey Baldwin Blvd fro storm rehabilitation.
- Survey of city owned parcel Access Dr. @ East Ave. to be sold.
- Survey and stake Hot Waters road realignment and new pavilion.
- Research east side parcels for properties. To correct boundary location.
- Prepare description for Colorado Industrial Park easement and lot split sale for the State of Ohio.
- Research & review Bike Path location on east side. Henderson Ave. city of Lorain Parcel stake boundary. Lake Motel lot split.

GRADING APPROVALS

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

- Preliminary Grade Approvals: 96
- Certified Grade Approvals: 62

PLAT REVIEW

The following plat reviews were performed by our Professional Surveyor:

- Corner Stone Sub #1
- Tomas Subdivision

LOT SPLITS REVIEWED

- Arizona south of E. Erie
- Arizona south of E. Erie consolidation
- Colorado Ave. e/o Root
- Oak Point Pony Trail
- Oak Point @ Mayflower
- Leavitt @ Tower
- Mallard Creek
- Columbus Park lease

EASEMENTS PREPARED

- Harborview @ North Leavitt. Storm outfall
- 1101 East Erie Ave storm outfall
- Colorado Industrial Park

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 2018 the Engineering Department performed the following inspections:

CONCRETE - INSPECTION

- Sidewalk – 615
- Apron - 229
- Handicap Ramps – 13
- Curb And Gutter – 8
- Open Pavement – 101
- Catch Basin – 51

STORM SEWER AND SANITARY SEWER - INSPECTION

- Sanitary – 177
- Storm – 119



SUBDIVISIONS – INSPECTION – SETH

The Landings at Martin's Run Subdivision No. 3

The Gardens at Morningside Subdivision No. 4

Cornerstone Farms Subdivision No. 1

PROJECTS – INSPECTION

- OPWC 31 A
- OPWC 32 A
- OPWC 32 B
- Harborview Outfall Project
- Cooper Foster Sanitary Sewer Extension Project
- Gary Ave

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 281 segments of roadway which is 150,463.74 feet (28.5) miles. This 10.18% of all city pavement.

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

2018 LORAIN COUNTY SOLID WASTE GRANT

- \$49,203.78
 - Recycled brick for baseball infield dirt at various City parks
 - Recycled playsafer mulch for various City parks
 - Recycled benches and receptacles for the Black River Lookout
 - Recycled flooring and windows for Harbor House

CONTRACTS

- Purchase of Chemicals
- Purchase of Distribution Materials
- Purchase of Street Materials
- Purchase of GAC
- Street Patching within the City of Lorain
- Lake Erie Outfall Re-Bid
- Baumhart Road Rehabilitation
- BHP Grass Cutting
- South Lorain Waterline Replacement
- West Lorain Waterline Improvement
- Cooper Foster Sanitary Sewer Extension Re-Bid
- Gary Avenue Roadway Rehabilitation
- OPWC Round 32 Contract A
- OPWC Round 32 Contract B
- 2018 Sewer Relining Project
- City Towing
- Salvage Services
- Broadway Streetscape
- Sludge Hauling for Pollution Control
- Purchase of Water Meters

AGREEMENTS

- Professional Legal Services
- Renewal of Health Care Insurance and Stop-Loss Coverage
- Professional Services Related to the Redhill Boosted Pressure Zone Improvement
- Master Lease-Purchase for LPD
- Pavement coring on multiple streets
- Stove Works Site Remediation
- Red Hill Reservoir Chlorinator Improvements
- Uniform Services
- Demolition of 4248 Leavitt Road
- Criteria Design- Fire Station 4
- Criteria Design- Fire Station 2 (West Side)
- Cyber Liability Insurance
- Baumhart Road Consultant
- Technical Assistance Capacity Assurance Plan
- Third party workers compensation services
- Construction of fuel services building at the Lorain Sailing and Yacht Club
- Demolition of 1620 Ohio
- Lorain Elyria/Sheffield Township Sewer Fee Analysis
- Demolition and Environment Cleanup of the Stovework Site
- Billing Services for Lorain Utilities
- 1101 East Erie Avenue Storm Sewer
- Martin Run Pump Station Relocation Project
- Real Estate Broker Services
- Inspection Landing 4 Subdivision
- Martin's Run Modeling
- Inspection Services Related to the Cornerstone Subdivision 2
- Primary Digester Equipment and Roof> Sale of Real estate (City owned parcels)
- Demolition and asbestos removal of Lake Motel
- Benchmark Court Case Management System
- Broadway Streetscape Consultant

- Inspection Villages at Lighthouse Point Phase 2
- 2019 Professional Legal Services
- Arbitration Services
- Scheduling and Payroll Software for the LPD

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 -

- Southview Demolition
- George Daniels Stadium
- Mercy Health
- Hawkins Cellular (Verizon)
- Jaeger Road Residential

SUBDIVISION

- Landings at Martin's Run Subdivision No. 4
- Cornerstone Farms Subdivision No. 2
- Cornerstone Farms Subdivision No. 3



- Cornerstone Farms Subdivision No. 4

WATERLINE REPLACEMENT

- Westside Waterline
- South Side Waterline

RESIDENTIAL ADDRESS ASSIGNMENTS

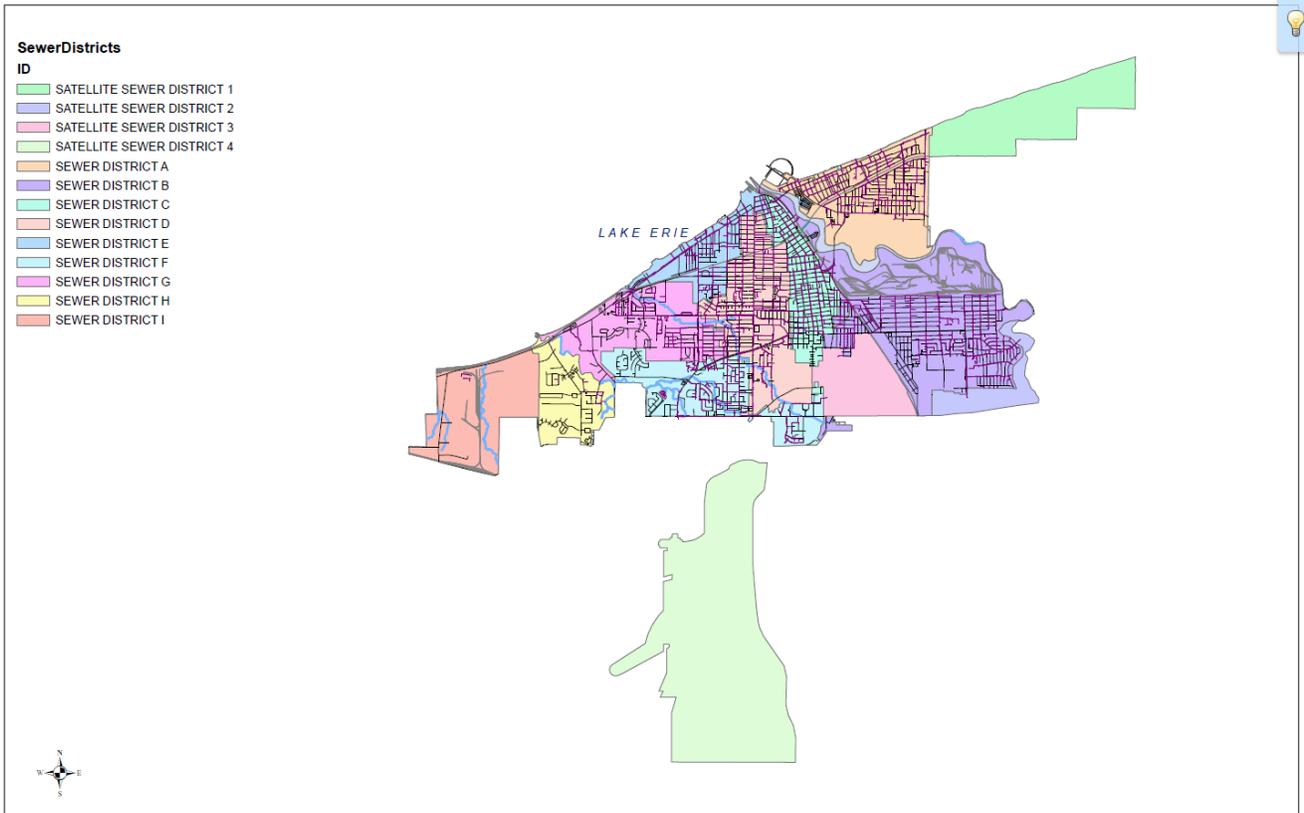
Gardens at Morningside
Subdivision No. 4

Landings at Martin's Run
Subdivision- no. 4

Cornerstone Farms Subdivision
No. 1



MAPPING



NOT TO SCALE

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 2018:

- City Cemetery Map updates
- Pavement Condition Rating Maps (GIS)
- Maps of rehabbed streets (GIS)
- Maps of city GIS points
- Ward/Precinct Maps
- LMI/CRA Maps
- Location maps for Contracts
- Location maps for OPWC applications
- Location maps for NOACA applications
- Location maps for SIB applications
- Location maps for Sewer Relining
- Project Map for Oakwood Park improvements
- Maps showing easements
- Parking area maps Bridge and culvert maps
- CDBG area maps

MAPPING – CONT

- ZCA maps for zone change applications
- Zoning change updates (GIS)
- Maps for various petitions (paving, assessing, vacations)
- Urban Renewal Area maps
- Maps requested by Council Members
- Entertainment District maps
- Central Business District Maps
- Active Transportation/TLCI maps
- Water distribution areas map
- Creation of Pressure Zone Maps
- Lead Service Line Maps
- Water Main Break Analysis
- Towing district maps for Police
- Location map of Columbia Gas Projects (GIS)
- Safe Routes to Schools map
- Miscellaneous maps upon request for outside entities

STORM WATER MANAGEMENT

- Performed 585 storm water inspections on 142 sites within the City.
- Performed quarterly site inspections of the following City properties: Compost Facility, Street Department Complex, and Sewer Department Complexes.
- Implementation of the City of Lorain Stormwater Management Program, as required by Ohio EPA Permit #OHQ000004.
- Provided storm water training to employees in the following departments/divisions: Sewer, Landscaping, Water Distribution, and Public Properties.
- Administered the Long Term Operation and Maintenance standards for all existing post-construction BMPs. Landowners 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 2018 Kayak-a-Thon to raise awareness on water quality work being performed by the City.
- Continued implementation of the Martin's Run Ecological Restoration Project Phase I, a project aimed at identifying and assessing a location for approximately 100 acre/feet of upstream storage to reduce downstream peak flows.
- Oversaw a study aimed at identifying peak flow reduction alternatives for Martin's Run.

- Developed Composting and Illegal Dumping standards which were incorporated into Lorain Codified Ordinances as Chapter 1547 and 1549, respectively.

ENVIRONMENTAL RESTORATION PROGRAM

- Coordination of the 2019 Black River Summit to be held on March 21, 2019
- Grant management and restoration projects active in 2018 include:
 - Martin's Run Ecological Restoration Project Phase II application submitted for funding consideration.
 - Lakeview Beach Grant - Federal EPA Funding: Completed biweekly, wet weather, and dry weather water sampling and laboratory analyses. In addition, microbial source tracking sampling and analyses were completed, and a database of analytical results was compiled. The nearshore or site-specific lake water circulation model was created. (\$300,000 project award)
 - Martin's Run Ecological Restoration Project Phase I - Ohio Department of Natural Resources Funding: The project investigated the installation of a wetland complex south of Cooper Foster and west of Broadway with the goal of reducing peak flows in Martin's Run. The assessment identified the approximate size of detention available at the site and indicates the site is a viable location for the wetland complex. The funding provided 50% of the assessment cost, with the remaining 50% to be funded from the Storm Fund. (\$60,000 project award; \$120,000 project cost)
 - Black River Concern Remediation and Restoration Program - Federal EPA Funding. The funding has provided for the following 2018 activities (\$15,184,138 project award):
 1. Continued management of the groundwater treatment system to address contaminate entry into the Black River.

2. The completion of 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.
3. Project design and engineering for the Black River Reclamation Site restoration work. Bidding and construction to begin in early 2019.

LORAIN BLACK RIVER RECLAMATION FACILITY

- Onsite staff oversaw the processing of 1750 ton of reclaimed steel mill byproduct material by the City's contracted Facility Manager. The 2018 Reclamation effort generated approximately \$170,000 in revenue for the City of Lorain.
- Onsite staff worked to manage and produce leaf humus, topsoil, and mulch.

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 2018

- Apron and Sidewalk – 826
- Sanitary and Storm– 290
- Open Pavement – 77
- Water Services (150)
 - Manifolds – splitting services
 - Meter downsizing
 - Water taps & Meters

FINANCES

2018 Engineering Collections

Sewer Permits	\$22,720.00
Miscellaneous Sales	\$0.00
Parkland Trust Fund	\$56,430.00
Sewer License Fees	\$1,980.00
Deposit Held Trust Fund	\$72,757.00
Reimburse Engineering Service	\$47,165.00
Inspection Fees Allotment Improvement Fund	\$104,303.86
Contract	\$5,150.00
Storm Sewer Deposit	\$132,480.00
Tap in Fee	\$127,580.00
Pollution Cap. Improv. Fee	\$95,092.54
Water Pollution Control Interceptor Fees	\$16,885.47
Water - Capital Improvements	\$68,507.42
Water - New Main Frontage	\$0.00
Service Connection Taps	\$112,260.00
Meter Charge	\$37,206.00
Manifolds	\$0.00
Street Excavation	\$8,550.00
Water Works Inspection	\$14,410.00
Building Water	\$5,482.10
Total Collections	\$928,959.39

EXHIBIT A

2018 OPWC RD 32 WORK PERFORMED							
	Street	From	To	Scope	Street Rating	Funding Source	Estimated Total Cost
1	Clinton Ave	E. 31st	E. 28th	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps	67	OPWC	\$ 196,780.80
2	Oakwood Ave	E. 31st	E. 28th	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps	63	OPWC	\$ 156,954.00
3	Collins Ph. 2	640' East of Meister	Meister	Concrete Replacement	61	OPWC	\$ 131,951.25
4	Euclid Ave	Wilson	G Street	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps	73	OPWC	\$ 193,814.88
5	Woodstock	Sherwood	Brookview	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps, Curb Replacement	45	OPWC	\$ 123,895.98
6	E. 23rd	BROADWAY	ELYRIA AVE	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps	54	OPWC	\$ 72,727.20
7	Camden	Goble	Fairless	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps, Curb Replacement	58	OPWC	\$ 143,766.09
8	Euclid Ave	G Street	E. Erie	Mill/Fill, Pvmt Repair, Casting Adj, Curb Ramps	73	OPWC	\$ 206,992.80
9	W. 29th St	Oberlin Ave	Utica	Concrete Replacement	46	OPWC	\$ 328,571.10
10	Narragansett	Williamsburg	Seven Pines	Concrete Rehabilitation	63	OPWC	\$ 392,640.30
11	N Nantuckett	Narragansett	Revere place	Concrete Rehabilitation	38	OPWC	\$ 299,783.25
13	Kolbe Road	South Corp	W. Erie	Full Depth Reclamation	55	OPWC	\$ 618,809.90
						ENTIRE TOTAL	\$ 2,866,687.55

EXHIBIT B

2018 - OWDA - West Lorain Waterline Improvements					
	Street	From	To	Length (feet)	Estimated Total Cost
1	W. 8th St	Oberlin	Allison	1,335	
2	Oberlin Ave	Meister	Tower	3,070	
3	Skyline Dr	Leavitt	Oberlin	4,672	
4	Rita Dr	Winger	W. 38th St	1,335	
5	Leavitt Rd	Cooper Foster	Jaeger	2,670	
				ENTIRE TOTAL	\$ 4,368,513.00

EXHIBIT C

2018 - DEFA - South Lorain Waterline Improvements					
	Street	From	To	Length (feet)	Estimated Total Cost
1	Vine and Fulton			1,250	
2	E. 31st St	Clinton	Grove	2,000	
3	E. 34th St	Grove	Tacoma	2,750	
4	E. 35th St	Grove	Tacoma	2,500	
5	Homewood	Oakwood	Grove	1,125	
6	Riverside Dr	Fairless	Tacoma	3,500	
7	E. 40th Court			250	
8	Black River Circle			1,000	
9	Grove Ave	E. 34th St	E. 36th St	500	
				ENTIRE TOTAL	\$ 3,153,843.00