

ANNUAL REPORT

2017

North Olmsted Wastewater Department:

Prevention, Conveyance, Treatment, Analysis, and Maintenance

December 16, 2017

Message from the Superintendent

In 2011 the North Olmsted Wastewater Department started the process of upgrading the North Olmsted Wastewater Treatment Plant which provides service to the residents of North Olmsted, as well as residents in Fairview and Olmsted Township. It was my pleasure to highlight those changes at the OWEA technical conference on June 29th, 2017. (http://www.ohiowea.org/docs/Farina-Blum_OWEA_Annual_Conf_slides_2017-06-29_8am_final.pdf) During the planning and construction of the treatment plant, an equally important process was started in the collection system, to add additional storage capacity and upgrade the five lift stations that provide service to residents in North Olmsted. This process was fully completed in 2017, with the final lift station upgrade, to Bradley Lift Station.

In addition to the complete rebuild of the Bradley Lift Station in 2017, the Wastewater Department continued to make improvements to infrastructure throughout the City of North Olmsted with various programs targeted at stormwater conveyance, inflow and infiltration reduction, commercial and industrial investigations through the departments pretreatment program and, programs aimed at protecting, monitoring, and sampling one of Northeast Ohio's most valuable resources, which is replenished in part by the high quality water discharged from the City of North Olmsted Wastewater Treatment Plant.

Program Description

The Wastewater Department is responsible for the collection and treatment of domestic and industrial wastewater generated in the City of North Olmsted and surrounding service area. Administration, maintenance, operation, monitoring, testing, and prevention are the primary functions of the divisions. These activities are conducted under the National Pollution Discharge Elimination System (NPDES) permit issued by the by Ohio EPA (OEPA) under the authority of The United States Environmental Protection Agency (USEPA) and the Clean Water Act. Additionally, the Division strives for beneficial reuse of residual by-products of wastewater treatment.

The Wastewater Department is separated into five division:

- Wastewater Collection (Includes stormwater maintenance)
- Wastewater Treatment
- Wastewater Maintenance
- Wastewater Special Services (Pretreatment / Laboratory)
- Wastewater Administration

Annually each division reviews the accomplishments for that year and sets goals to better define the level of service necessary to meet the expectations of the City of North Olmsted, the contributors to the system (the residents), and the needs of the environment.

Accomplishments for the year 2017

Sanitary Sewer System Operations (Collections)

Along with normalized duties found in the Sewer Master Plan; as well as, specialized service during rain events, the collection crews completed the following, in 2017:

- Responded to 195 sewer service requests – there are approximately 12,000 total sanitary sewer system connections in North Olmsted.
 - Sanitary mains televised 26.59 miles.
 - Sanitary laterals televised, Lateral Launch - 104.
 - Sanitary laterals televised See Snake - 54.
 - Sanitary mains cleaned with sewer jet - 34.64 miles.
 - Sanitary manhole sealed - 132 manholes.
 - Sanitary manholes rebuild, repaired, or lined - 27.
 - Trenchless Sewer Main Pipe Patch Repairs - 22.
 - Lined Sewers - 1,281 feet.
 - Cleaned and inspected 33.59 miles of stormwater conveyance.
- Assisted and supervised the construction and upgrade of the Bradley Lift Station.
- Completed an upgrade to the Broxbourne Pump Station- upgrading the soft start motor controls and installed new automation and controls, via an HMI interface.
- Cleaned and inspected wet wells at Bradley, Moen, and Broxbourne Lift Stations and equalization tanks at Dover and Clague Park both, old and new tanks (the Lebern service area).
- Rebuilt and replaced one DIP sewer drop lines, located inside a manhole on Fitch Road with PVC lines, work done by collection system staff.
- Sewer mains cracks, offsets, breaks, and repairs were located by our CCTV crews. All repairs were done in-house with our trenchless technology patching equipment. Additional CIP sewer lining done along Stoneybrook Drive by Pipevision Products Inc.
- Limited Sewer System Overflows SSOs to one in the month of November, 0.563MG.

Accomplishments for the year 2017

Sanitary Sewer System Operations (continued)

- Completed a full upgrade of the Bradley Lift Station, including Pumps, Motors, Valves, Controls, and Communications, and added new sewage grinders.
- Installed new (replacement) generator at Dover Lift Station.
- Chemically treated 4,600 LF of sanitary sewer for roots. (Dukes Root Control Inc.)
- Tested new technology to chemically line and cure in place the interface between the lateral connections to the sewer main. (Pipe Vision Products)
- Rebuilt and sealed (top to bottom) 18 manholes, for I and I rehabilitation (Lake County Sewer)
- Re-built the sanitary manhole connection for the North Olmsted High School on Burns Road.
- Checked 230 stormwater locations after each of the 24 significant rain events from December 1, 2016 to December 1, 2017, providing service to inlet and inlet protection devices as needed. (significant rain event is defined by 0.5 inches of rain or greater in a 24 hour period).

Accomplishments for the year 2017

NOWWTP Lab

- All reports were prepared and submitted on time to the Ohio EPA as mandated under our current NPDES permit:
 - Completed Priority Pollutant Scan including enforcement of local industrial user limitations to prevent the introduction of pollutants into the WWTP which will interfere with the operation of the WWTP, pass-through the WWTP, or limit sludge application.
 - Completed the USEPA thirty DMRQA Study – USEPA determined that the City’s Laboratory performance was accurate for all tested parameters.
 - Assist with all monthly EDMRs and noncompliance follow-up reports.
 - Assist with all pretreatment quarterly and annual reports
 - Assist with all quarterly and annual collection system reports

- Normal QC/QA study was completed to generate defensible data.

- Performed Chronic and Acute Toxicity tests to determine compliance with OEPA WET testing.

- Assisted with process control sampling for plant profiles on Orthophosphate and Ammonia to help best determine plant optimization.

- Used gram staining and microorganisms counts to help monitor foaming issues in the plant.

- Updated laboratory SOPs to stay current with OEPA requirements.

- Began the process of updating QA/QC manual for the laboratory compliance.

- Updated aging or broken equipment:
 - Purchased a new manual autoclave
 - Purchased a new top balance
 - Purchased a new sample refrigerator
 - Purchased a new auto-sampler for the plant influent



Accomplishments for the year 2017

NOWWTP Treatment

Roof repairs building 16

The roof repairs consisted of removing the prior patch (a product of damage caused by GLCC during the removal of the air handler) and making a proper repair. After repairs, a uniform U.V. protective coating was applied to the entire roof surface, with the goal of extending the life of the roof

Roof repairs Building 14

The roof repairs consisted of patching all seams around the parapet walls and covering with a U.V. protective coating with the goal of extending the life of the roof

Building 10

Completed the erection of the new pre-engineered steel building for cold storage, and heavy equipment maintenance. New structure adjoins the current Maintenance Building.

Building 15

Finished interior men's locker room. The work consisted of, rough framing, electrical and lighting installation, drywall installation and finishing, painting, installation of flooring (systems), assembly and installation of lockers (systems) assembly and installation of benches. Completed the men's shower room. The work in the shower room consisted of rough framing, electrical and lighting, plumbing, drywall installation and finishing, painting, finish carpentry and porcelain tile installation.

Building 19

Replaced old casement windows with glass block, see notes in maintenance below.

Various Goals and Optimization Efforts Completed in 2017

- Perfect the B.N.R. process by alternating operational conditions in the complete Activated Sludge Process. Specific goals are listed below:
 1. Achieve Phosphorous removal without feeding Sodium Aluminate (2017 is the first year we have NOT fed Sodium Aluminate and the first year in recent history we have NOT exceeded the numerical limit for phosphorous)
 2. Achieve Ammonia removal while reducing electricity usage.
 3. Closely monitor O.R.P. values, including the regular cleaning and calibrating of O.R.P. sensors, including extra cleaning anytime sensors show an out of range value.
 4. Achieve proper oil and grease removal while avoiding biological upset

Accomplishments for the year 2017

NOWWTP Treatment (continued)

- Monthly cleaning and rotating of the clarifiers while operating a single clarifier to aid in storm flow retention
- Tertiary filtration optimization to avoid 605 bypasses and elevated T.S.S. Permit numbers this is accomplished by:
 1. Regular cleaning and inspection of all filter panels
 2. Chemical cleaning before expected large rain events with the goal of increasing flow through the filters. In 2017, a peak flow of 33 MGD was briefly recorded as passing through the filters, this flow greatly exceeds the design capacity of 20.5 MGD.
 3. The proper usage of retention areas in the plant. Accomplished by closely monitoring flow through the Tertiary filters and only sending as much flow to retention as needed.
- U.V. System optimization with the goals reducing electricity usage and maximizing e-coli kill, accomplished by:
 1. Running the minimum number of banks necessary for ultra-low bacteria counts.
 2. Keeping T.S.S. low to allow the U.V. system to work as efficient as possible
 3. Setting the U.V.T. as high as possible allowing more efficient dosing rate
- Sludge Thickening optimization with the goal of reducing odors, reducing the amount of electricity used, reducing the total amount of material needed to be run through the centrifuge, raise the % solids in the feed sludge to aide centrifuge operation, accomplished by:
 1. Alternating decant times, speeds and lengths (partly in response from residents surrounding the treatment plant)
 2. Running blowers at the minimum speed needed to reduce odors and achieve aerobic digestion
- Centrifuge operation and optimization, with the goals of reducing run time, sludge dewatering, reduction of odors and reduction of polymer usage, reduction of overtime. This is accomplished by:
 1. Pre-thickening the sludge being fed to the centrifuge
 2. Properly adjusting and operating the polymer makeup unit
 3. Continually running boxes / no idle time between boxes
 4. Not filling overtime shifts when sludge storage levels are low, having the Operations Laborer run the centrifuge as opposed to filling overtime with an operator.

Accomplishments for the year 2017

NOWWTP Treatment (continued)

- Vactor Unloading Station, having the goal of no odors, no tracking out of the dump pit, and achieving the most efficient dewatering of debris dumped into the pit. This is accomplished by:
 1. Routine cleaning to avoid odors, always a cleaned site at the end of the day
 2. Routine hauling, to avoid odors and overweight boxes
 3. Weighing of all hauled boxes, no over or underweight boxes
 4. Routine stacking of debris throughout the day, aids in dewatering, reduces tipping fees, reduces odors

- Odor Control Systems and odor control, it is our goal to have “0” odor complaints, the items listed below are some of the practices done to reduce or remove odor.
 1. Properly operate the Odor control systems including preventive maintenance
 2. Investigate any odors or odor complaints, find solutions to these
 3. Haul all sludge as produced, in a timely fashion
 4. Clean sludge boxes after each use, inside and out
 5. Keep any full boxes tarped and indoors if possible
 6. Keep doors closed when centrifuge is in use
 7. Keep dumpster storage area clean at all times
 8. Keep Vactor upkeep as listed in prior section
 9. Regularly haul Rag hopper
 10. Regularly haul Grit hopper
 11. Keep doors closed in the P.T.F.
 12. Use deodorizers when odor solutions are not available
 13. General good housekeeping procedures
 14. Cleaning of any and all empty tanks
 15. Flushing of any static tank areas around the plant on a weekly basis

- All dewatered biosolids, street sweepings, grit and rags were hauled in-house. This was mainly handled by Operation Laborer Tom Stipek. Tom has managed to keep up with all of the City’s hauling needs while spending the extra time to clean the biosolids hoppers after each use. The main goals in doing this are to reduce tipping fees, reduce odors and extend the life of the biosolids hoppers.



Accomplishments for the year 2017

NOWWTP Maintenance

2017 Projects and Accomplishments for the Maintenance Division references only special projects, regular repairs and preventative maintenance are not included in the list of items below:

- LED Lighting upgrades throughout the Plant. Goals of energy reduction
- Window Replacement w/glass block, bld. 14&17, cost per unit for \$110 asbestos abatement, \$660 for new glass block. (Building 14 included broken windows only)
- Concrete repairs around the Plant
- Investigate Odors around P.T.F. with smoke testing. Design and fabricate flexible flaps around all openings, where visible smoke was noticed.
- Design, fabricate & installation of vent system into the P.T.F. Launder Room. This solved an excessive moisture problem. Estimated savings of \$3,500, done in-house.
- Design and fabricate mobile crane to aid in the repairs to the V.D.A. systems. This has an estimated savings of \$ 1,500.00 per use in crane rental fees.
- Rebuild V.D.A. gearbox 2-1. Estimated savings of \$ 5,000 in rebuilding fees, all work done in-house.
- Rebuild N.P.P. pump #511, savings of \$ 6,000, work done in-house.
- Bi-annual service is done to 3 emergency generators at the Plant, a total saving of over \$ 10,000, work done in-house.
- Installation of Hach ORP probes and integration into Profibus and SCADA system. Savings of \$40,000 w/ majority of work done in-house.
- Conversion of the old boiler room into Grounds Maintenance Storage Area.
- 1 Sludge hopper purchase and 1 refurbished, it was determined to be more cost effective to only sandblast and repaint used sludge hoppers. Time and material costs dictate the purchase of new hoppers.
- Assist in the Bradley Lift Station upgrade including addressing all items unforeseen issues in the construction project, P.L.C. implementation, Pump installation and orientation, seal water system.
- Addressed all issues and minor modifications to Bradley Lift Station, not addressed in final punch (items not part of contract or not addressed by the contractor)
- Dover Lift Station, design fabrication, and installation of grinder lift crane, (estimated savings of \$2,000 per grinder removal)
- Dover Lift Station, aided in generator installation, (installation of high voltage wiring, related conduits and penetrations)
- Assorted repairs to the Ques Camera system including troubleshooting not performed by the vendor
- Assorted emergency repairs to the GapVaxx vacuum truck
- Assisted with the cleaning of Clague Park retention.



Accomplishments for the year 2017

Permitting / Biosolids / Flow

- During the period of Dec 1, 2016, to Dec 1, 2017, the City of North Olmsted WWTP treated 2.1241 billion gallons of wastewater from North Olmsted, Olmsted Township, and Fairview Park, for an average daily flow of 5.819 million gallons per day.
- Flow from Fairview Park during this period accounted for approximately 120.9 million gallons.
- Flow from Olmsted Township (measured at Vita, Mackenzie, Elizabeth, Pebble Brooke) accounted for approximately 307.4 million gallons.
- The estimated peak (24-hour) flow at the WWTP was 23.080 Million Gallons per Day (MGD), on February 7, 2017.
- During 2017, the average cost to treat 1 gallon of wastewater at the NOWWTP was just over a half-cent per gallon at (\$0.0051/gal) which includes transportation and maintenance costs.
- During 2017, 392.23 dry tons of biosolids were hauled to the landfill; 501.64 dry tons were transferred to Quasar's French Creek and Collinwood (Methane Generation) Green Waste Facilities, we hauled 100% of all biosolids internally.
- In 2017 we spent \$182,278.81 on disposal of biosolids and \$23,336.94 on transportation costs.
- Flow at the wastewater plant Achieved 100% compliance with the current National Pollutant Discharge Elimination System permit from December 1, 2016, through December 1, 2017.
- There were no permit modifications to the NPDES operating permit 3PD00016*MD for the year 2017.

Accomplishments for the year 2017

NOWWTP Pretreatment

- Inspected 20 of the 30 dental offices (some facilities not inspected as they are excluded from dental amalgam inspection program), and 36 of the 41 automotive shops or oil exchange shops. Inspections included locations in the City of North Olmsted and Olmsted Township.
- Inspected all Significant Industrial Users (SIUs).
- Assisted 4 restaurants with compliance after exceeding the pretreatment standard of 100mg/l of FOG. Including the retrofit and installation of a new grease trap at Fragapane's Bakery (Included Red Robin, Fragapane's, Nuevo Acapulco, Charley Biggs).
- Additional training: On April 20, 2017, the North Olmsted Pretreatment program attended an Ohio EPA hosted pretreatment meeting. Topics included: Production Based Standards and the Combined Waste-stream Formula, Part 1 & 2, and a presentation by Ohio EPA's Office of Compliance Assistance and Pollution Prevention.
- Assisted the Stormwater Division with autumn leaf and green waste inspections, by writing volitions letters, two stormwater violation for the fall of 2017.

Staffing for 2018

All staffing for the Wastewater Department is overseen by the Superintendent, with the help from division managers and one part-time administrative assistant.

Sanitary Sewer System Operations

Staffing remained constant for the collections division in 2017. The staffing for 2018 is projected to remain the same as the previous year, with one employee reaching retirement age (Jay Schemrich). Current staffing for this division is 1 manager, 1 supervisor, and 2 maintenance technicians and 6 Collection System Operators.

NOWWTP Lab

Staffing remained constant for the Laboratory Division in 2017. The staffing for 2018 is projected to remain the same, with one employee reaching retirement age (Terry Hass). Current staffing for this division is 1 Chemist/Manager and 1 Laboratory Technician.

Pretreatment/Inspections

Staffing remained constant for the compliance division in 2017. The staffing for 2018 is projected to remain the same as the previous year. Current staffing for this division is 1 part-time seasonal inspector, 1 part-time pretreatment technical assistant.

NOWWTP Treatment

Staffing remained constant for the Treatment Division in 2017. The staffing for 2018 is projected to remain the same as the previous year. Current staffing for this division is 1 Manager, 1 Operations Laborer, 6 Certified Operators.

NOWWTP Maintenance

Staffing remained constant for the maintenance division in 2017. The staffing for 2018 is projected to change with the retirement of Russ Catcher who will have provided the City of North Olmsted with 39 years of service, at retirement. A replacement for Russ Catcher is currently being trained by maintenance staff and management. Staffing for this division is 1 Manager, 1 Lead Mechanic, 1 Maintenance mechanic, 2 Maintenance helpers



General Goals & Objectives 2018

Wastewater Collection Goals and Objectives

- Maintain clean and free-flowing conditions in all sanitary sewer mains at all times.
- Inspect (CCTV) and or Clean (Jet) all sewer mains every 6 years.
- Administer root control via cutting or chemical application to sewers, as needed.
- Minimize Inflow and Infiltration (I & I) of groundwater into sewer lines to minimize unnecessary hydraulic flows to the treatment facility and prevent sewer surcharging.
- Repair (sewer patch) or replace compromised sewers mains as part of the effort to minimize I & I.
- Rehabilitate and seal manholes for both I & I reduction and maintenance of City of North Olmsted's infrastructure.
- Implement new, proven technologies for maintenance and improvement of the system as they become available.
- Identify large projects and assist the Engineering Department in planning and implementing programs to increase the transportation and treatment of wastewater plant.
- Provide around the clock emergency response to all sewer emergency calls.

Wastewater Treatment Goals and Objectives

- Comply at all times with the requirements of the NPDES permit.
- Exceed the water quality requirements in the discharge permit, for all parameters.
- Assist with preventive maintenance to all treatment facility equipment.
- Provide around the clock staffing for the treatment facility, 24/7/365.
- Involve all treatment staff in process control, maintenance, and improvements made to the facility.
- Implement new technologies for improved water quality and maintenance management as they become available.
- Provide educational outreach of the treatment facilities for area schools and other interested citizens.

Wastewater Pretreatment / Laboratory Goals

- Perform permit required in-house sampling and analysis including and arrange for outside contract analysis.
- Prepare NPDES monthly reports and assist with other quarterly and annual reports.
- Perform maintenance and calibration of lab and plant process equipment.
- Maintain a QA/QC (quality assurance/quality control) program to ensure analytical accuracy.
- Research new equipment and methods.
- Support wastewater treatment process control with accurate sampling and analysis.



General Goals & Objectives 2018 (continued)

Wastewater Administration Goals and Objectives

- Provide oversight supervision and direction for the entire Wastewater Department.
- Provide clear directives for the safe operation of the all departmental processes.
- Identity, plan, and oversee improvement projects including evaluations of alternative treatment strategies or technologies.
- Provide training opportunities for all staff, emphasizing communication, teamwork, leadership, management, and safety.
- Provide employees with the correct information to make informed decisions.
- Participate with Federal, State EPA bodies with regards to future changes to NPDES permits, such as Total Maximum Daily Load, anti-degradation, and local limits.
- Participate with local and regional environmental organizations such as OWEA, WEF, NOACA, OUPS, Cuyahoga County Soil and Water Conservation District, Cuyahoga County Board of Health, Cleveland Water, and other public utilities.
- Implement new NPDES permit requirements in accordance with compliance schedules as mandated by each new permit cycle.

Pretreatment Program Goals

- Comply with Environmental Protection Agency mandates as they relate to the pretreatment of wastes accepted at the wastewater facilities.
- Prevent interference with treatment, operations, pass through, and contamination of sludge through
 - Maintaining legal authority and an enforcement response plan
 - Annually review local limits
 - Prepare annual pretreatment and sludge reports
 - Identify, permit, monitor, and inspect all Significant Industrial Users (SIU)
 - Develop programs to monitor critical Industrial Users (IU)
- Work with other City departments concerning SIU and IU.
- Investigate reported issues concerning SIUs, IUs, overflows, and dumping.
- Identify all new SIUs and IUs
- Sample sectors of the collection system to identify localized conditions.
- Provide sampling, support, and collection as necessary to monitor SIUs.
- Provide plant data to the public through requests and the City's web page.

Specific Divisional Goals 2018

In addition to general goals, each WWTP group develops specific annual goals targeted at improving the performance of their division. In many cases, these goals include a projected cost which has been incorporated into the 2018 annual budget.

Pretreatment/Inspector:

- Send out Wastewater Discharge Disclosure Declaration (WDDD) forms to all car washes and then inspect or assist them as necessary.
- Assist dental facilities with the OEPA new One Time Compliance Dental reporting form, compile and submit this to OEPA by year's end.
- Send out FOG modified WDDD forms to all Nursing homes and then inspect or assist them as necessary.
- Send out FOG modified WDDD forms to all new restaurants that came into the NOWWTP service area in 2017, and then inspect them in 2018.

Treatment Plant and SWPPP:

- Demo existing (old) Micro screens, fill each bay with gravel, or low-pressure grout for future poured floor (25-50K)
- Install a second overhead roll-up door in building number 7 (17K)
- Continue with current asbestos abatement projects (20K)
- Replace Car 44, a Crown Victoria with 120K miles, the optimal replacement vehicle would be lightweight truck, F-150 or 1500 (25K)
- Sandblast & Paint of 1 sludge hopper (5K) [Not Capital, 54]
- Purchase 1 new sludge hopper (7.5K)
- Purchase Bowl and back drive planetary for centrifuge (150K)
- Improvements to the exterior of the admin building, building 15, to repair damage from the removal of the former carbon storage silo, brickwork outside of current mudroom Area (10K)
- Continue with annual upgrades to LED lighting Plant (5K)
- Misc. concrete repairs, including the replacement of 2 staircases around the maintenance building (currently unusable due to failed concrete) and the addition of a pathway on the NW side of the PTF. (20K max)
- Purchase 1 channel of U.V. lamps (35K)
- P.E.B. New fabricated spare pump, built from spare parts but requires a new motor and various parts (10K) [Not Capital, 53]
- Purchase Kruger Filter Drum Rebuild Parts, includes the sprockets and possible chain drive. Parts are for 1 of 3 machines (25K)
- Contract for the inspection and thermal imaging for MCC electrical rooms at the WWTP, Projected vendor >>Harrington Electric, price includes 4 rooms (20K)

Specific Divisional Goals 2018 (continued)

Lab:

- Purchase second / replacement spectrophotometer/ 5K.
- Purchase new BOD Incubator/ 5k.
- Purchase VersaStar Meter/ 3K.

Maintenance

- Assist Bowen and Associates with the design and specifications for the new Pre-engineered steel building (The East Maintenance Building), located on the site of former primary tank number 2. After design oversee and supervise the construction of this building, projected cost. 100-150k
- Based on early assessments by architects at Bowen and Associates: assist with the design and construction of a new steel roof for the existing maintenance building number 10. This building was projected for a new roof in 2016 but this project was delayed for construction of the 2 pre-engineered steel buildings (2017 & 2018). A new steel roof for building 10 will tie together all three of these buildings under one uniform structure. (100K)

Collections

- Continue with the 2017 manhole sealing program, which is aimed at coating and sealing manholes from bottom to top, (Line item group 6844655). 40K
- Replace Truck 53, 1 2005 pickup with 106,500 miles with a (GMC 1500 or 2500) or equal, approximate value 35K (includes tow package and full-size cab).
- Oversee the replacement of both roof and gutters at the Broxbourne Lift Station. 10-15k
- Continue with chemical root control as needed, based on CCTV work done by collection system staff. 10k [Not Capital, 54]
- Purchase of new transporter for the Cues Camera truck to aid in Closed Circuit Television Inspection (CCTV), this equipment expands our range of available inspections for larger diameter sewers. 100K
- Assist with phase 2 of the South Interceptor Study including the installation of rented meters, rain gauges, and data collection. 50-90K
- Assist with phase 3 of the South Interceptor Study including following up with additional data request and feedback to the model calibration to be performed by CT Consultants. Modeling and Calibration. 100K
- Assist with emergency dig jobs as needed. 75K