

Lorain County Sanitary Master Plan and WWTP Improvements

Location: Lorain County, OH

Under direction of the Lorain County Sanitary Engineer, KEM studied the county's wastewater treatment systems and developed a five-year wastewater plan to meet the county's present and future needs.

The plan identified anticipated improvements for the County regarding wastewater issues and set goals to manage and implement the master plan. KEM believes that public participation is essential not only to increase awareness, but also to identify the need for projects, and to open channels of communication between planners and the residents.

The County wastewater collection/treatment projects completed under this plan include:

- Amherst Township Collection Sewers
- Brentwood Lake WWTP Upgrade
- Eaton Estates WWTP Upgrade
- Plum Creek WWTP Upgrade
- Cresthaven WWTP Upgrade
- Westview WWTP Abandonment
- Columbia West River WWTP Abandonment
- Marks Road Trunk Sewer

In addition plans for future projects were prepared to sewer Dunton Road, Calann Drive and several streets within the Rolling Heights Allotment.



Cardington WWTP Evaluation

Location: Village of Cardington, Morrow County, OH

A facility plan was prepared for the Village's existing WWTP with several improvements recommended to enhance the treatment performance of the plant and to deal with peak wet weather flow rates due to excessive inflow and infiltration in the collection system.



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Water and Wastewater Services

Introduction

No other area of public works exposes communities to regulatory oversight and potential litigation than environmental issues. The Clean Water Act dramatically increased water quality standards, requiring local governments to comply with environmental laws while keeping water and sewer rates affordable for customers.

K.E. McCartney (KEM) fully understands how difficult it is for communities to meet EPA mandates with very few viable funding options. KEM leads the way in finding solutions to these difficult problems through innovative designs that open

up additional funding resources resulting in projects that are constructed to minimize the financial burden on local public agencies and other residents.

The management of water resources present complex challenges and it's our job to help each community meet these challenges. This is accomplished by prioritizing the anticipated improvements, determining feasibility of said improvements, developing an innovative and cost effective solution, and most importantly finding the funds necessary to do the work.

Wastewater Treatment Operations

The KEM Team has a Class 2 Wastewater Treatment Operator/Engineer on staff to provide operational and design assistance for municipal and industrial treatment projects. Services provided include:

- Industrial/Municipal Treatment Plant Design
- Industrial/Municipal Treatment Plant Operations
- Industrial/Municipal Process Troubleshooting
- Industrial/Municipal Treatment Permitting Assistance
- Treatment Plant Operational Review
- Maintenance / Reliability Engineering
- Capital Improvement Project Management
- Vendor/Supplier Coordination
- Facilities Management

KEM
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since 1978

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KEM Services:

- Engineering Studies
- Facilities and Master Planning
- Industrial/Municipal Treatment Operations and Design
- Sewer System Evaluation Survey
- Flow Monitoring
- Smoke Testing
- Inflow & Infiltration Reduction
- Water and Sewer System Rehabilitation & Extensions
- Water & Wastewater Treatment Facilities
- Financial Planning, Grant Applications and Assessment Coordination
- Construction Plan Preparation
- Easement Acquisition
- Construction Administration
- Construction Observation



City of Ontario
Spring Valley

Shenandoah On-Lot Septic System Replacement

Location: Bloominggrove Township
Richland County, OH

KEM provided professional engineering services to construct wastewater treatment and collection facilities for Shenandoah, an unincorporated Hamlet of 35 residents.

For the preliminary engineering study KEM took an “out of the box” approach due to the high cost associated with treating a small number of households. The goal of the project was to construct an innovative sanitary collection and treatment system to open up additional funding sources, resulting in an affordable user cost.

The collection system design consisted of combination low-pressure sanitary sewers (grinder pumps) and conventional gravity sewers. Wastewater treatment was achieved through the State of Ohio’s first residential community decentralized

wastewater system. The treatment consists of primary settling tanks followed by peat biofilters and elevated sand mounds resulting in a zero discharge treatment facility.

Construction was completed with sixty-five percent of the project cost paid by state CDBG, OPWC, and OWDA grants.



Effluent from each bank of 18 peat Puraflo biofilters flows from the bottom of the modules through 1-inch Schedule 80 PVC to the 6-inch SDR 21 PVC force main.

Plymouth Water Tank Repaint

Location: Village of Plymouth
Richland County, OH

Services: KEM completed design for the existing Riggs Street elevated water storage tank repaint project. The existing structure is a 250,000-gallon pedestal spheroid water tank originally constructed in 1964. The project included preparation of existing tank surfaces (blasting removal of existing paint down to bare metal, SSPC SP-10), and application of new protective coating systems. All stripping and sand blasting wastes were collected, tested, and disposed of in accordance with applicable laws and regulations.



Bascom WWTP & Collection System

Location: Hamlet of Bascom
Seneca County, OH

The Seneca County Commissioners were under “Findings and Orders” as directed by the Ohio EPA to complete and implement a general plan for sewage improvements to abate pollution and correct the unsanitary conditions in the Bascom area. K.E. McCartney & Associates, Inc. (KEM) prepared an engineering study evaluating alternative wastewater collection and treatment systems to serve Bascom. Said study included cost estimates,

present worth values, and potential funding sources. The recommended alternative was a combination of conventional gravity collection system and a package wastewater treatment plant.

KEM prepared Construction Plans and Specifications, additional services included: bidding and construction management, easement acquisition, environmental and funding coordination.



Cardington Water Main Replacement Projects Phases I Through IV

Location: Village of Cardington,
Morrow County, OH

KEM completed a Village wide computer model for the existing potable water distribution system to determine a plan of action for the replacement of their aging water mains and hydrants. The study included an analysis of the pressures measured throughout the distribution system along with recommendations of how to gain additional pressure through looping and upsizing of the water mains. The Village undertook water main replacement in phases to minimize the financial impact on residents. KEM services included preparation of construction plans, bid documents, grant applications, and easements; KEM also provided construction administration and record drawings for each of the projects.

Ontario I/I Reduction, Phase 1 & 2

Location: City of Ontario
Richland County, Ohio

The City’s sanitary collection system consists of over 90 miles of 8 to 24-inch diameter gravity sewer pipe which experiences significant infiltration and inflow (I/I). The elimination of overflows at the Rock Road Lift Station was the City’s primary focus. Based upon data accumulated from prior reports and investigations of the Rock Road service sub-area, it was determined that a major source of excess I/I was from clay building laterals which extend from the sanitary mains in the street to residential and commercial buildings.

Working closely with the City of Ontario and its Sewer Department, KEM prepared design plans to rehab and replace the clay laterals in the older parts of the City and to abandon 75 unused lateral stub outs. KEM prepared bid documents for the rehabilitation work and provided construction administration and inspection services. The project was completed under budget. With significant improvement to the I/I rate for the area.

