

Sewer Collection System Annual Performance Report

City of Eden, North Carolina

July 1, 2021 to June 30, 2022

I. General Information

Facility/System Name: City of Eden, Sewer Collection and Treatment System

Responsible Entity: City of Eden, Jon Mendenhall, City Manager

Person in Charge/Contact: Collection System and Pump Stations, Mike T. Vernon
Operator-in-Responsible Charge, 336-791-3145
Mebane Bridge Wastewater Treatment Plant, Chris Powell
Operator-in-Responsible Charge, 336-627-1009
New Street Wastewater Treatment Plant, Ron Wright
Operator-in-Responsible Charge, 336-627-1009

Applicable Permits: Sewer Collection System – WQCS00018
Mebane Bridge Wastewater Treatment Plant – NPDES Permit NC0025071
Land Application of Wastewater Residuals – NC Permit WQ0003035
New Street Wastewater Treatment Plant – NPDES Permit NC0001643

Description of Collection and Treatment Process:

The collection system consists of 161+ miles of gravity and 19.4 miles of force main sewer pipelines. The pipelines are composed of a mixture of clay, PVC, RCP, steel and ductile iron pipe, ranging in size from 6 to 36 inches. Age of the sewer pipelines range from new to more than 60 years old. Collection is accomplished by gravity from homes and businesses until it is necessary to pump from low elevations in force main sewer lines that transport the sewage to the treatment plant. There are 20 pump stations in the collection system. These range in size from pumping a few thousand gallons per day to more than five million gallons a day (MGD). The City has one primary collection drainage area. All of the city sewer drains, collects, or is pumped to the Mebane Bridge Wastewater Treatment Plant (MBWWTP), which can treat 13.5 MGD.

The MBWWTP has treated on average about 2.867 MGD this past year. This is a decrease from last year because of Mohawk Industries closing the Karastan division. Currently, the Mebane Bridge plant is operating at one quarter of its capacity. The plant has mechanical barscreens to remove larger inert material, a grit removal system following the bar screens, and a fine screen after the grit removal system to further remove any material that is missed by prior treatment systems. Extended aeration using activated sludge is the next process to reduce and remove biochemical oxygen demand and ammonia. The sludge is separated from treated water by circular clarifiers. Collected sludge or biosolids are wasted to a CleanB treatment system or returned to the aeration system. The biosolids from the CleanB are then dewatered and land applied on permitted sites. Treated water to the effluent leaves the clarifiers and is disinfected with chlorine and then dechlorinated. We are currently in a trial using Peracetic Acid as a replacement for disinfection. The treated effluent is then returned to the Dan River meeting all State Permit Discharge requirements.

The New Street WWTP was purchased in July 2020, and we officially began managing it in August 2020. It only receives a small flow from a local industry, so most months have no discharge. We only had one month of discharge during this period. The average flow was 0.045 MGD.

II. Maintenance

Collection System

The City of Eden is presently under an administrative order on consent reissued by the Environmental Protection Agency to eliminate sanitary sewer overflows that continue to occur from its sewer collection system. We have received a Modification to the Administrative Order of Consent until December 31, 2024 to complete all improvements.

The City has Collection & Distribution (C&D) field personnel to respond to emergencies in order to maintain the sewer collection system. Their job is to repair broken lines, installation of new sewer line, mow and maintain sewer outfall lines, and respond to, rectify and mitigate sewer bypasses. Personnel are on call nights and weekends year round to respond to emergency problems in the collection system. The City's 20 pump stations are monitored by 2 C&D Operators 24 hours per day, 7 days per week, by remote telemetry (Mission Communications) and physically checked on normal workdays by C&D personnel for proper operation. Maintenance crews along with C&D personnel perform scheduled preventative maintenance on each of these pump stations to protect the equipment and insure long life. An extensive warehouse of supplies and parts are maintained to address emergency breakdowns and failures in the pump stations and the sewer lines.

The following was accomplished during fiscal year 2021-2022:

A total of 2 Inflow & Infiltration (I&I) problems were responded to and repaired. (Many more were repaired by contractors)

A total of 5 laterals and 15 sewer mains were responded to and unstopped.

A total of 10.92 miles (57,659.6 linear ft.) of sewer mains throughout the City of Eden were cleaned by sewer jet or rodder

A total of 16.15 miles (85,293.01 linear ft.) of sewer mains throughout the City of Eden were inspected by CCTV.

Treatment Plants

Treatment Plant Operators are on duty 24 hours per day, 7 days per week, to ensure proper treatment of all incoming wastewater. They monitor plant equipment and do inspections during each shift to insure process control and the mechanical operation of the equipment. Maintenance personnel are available each day to service equipment and are on call nights and weekends for emergency repairs in case the treatment equipment suffers failure. A large parts inventory is maintained of the items that have historically been prone to failure.

III. Performance

Collection System Operations

During the past 12 months, there have been 7 events in which 8 incidents occurred where raw sewage overflowed or bypassed from the gravity collection system to surface waters. The overflows from these gravity flow pipelines in the collection system totaled 11,170 gallons, with 6,720 gallons reaching surface waters. Of the 8 incidents, 2 were caused by I&I directly from storm water runoff and the resulting flood waters flowing into the gravity sewer mains. The main cause of these issues have been resolved.

There were 6 overflows that were not caused by I&I. Of these, one incident was caused by roots in a mahole that was previously unknown to us. One was caused by a failed air relief valve that was damaged when a check valve failed at a pump station. One was from damage by a contractor hitting the force main while trying to dig around it. The remaining 2 were forcemain failures. Gravity sewer line losses account for 2,620 gallons, while force mains account for 6,870 gallons of the sewage lost in the last 12 months.

Of our 20 sewer pump stations, 2 pump stations had sanitary sewer overflows during the last 12 months in 1 event. These were as follows: 1 overflow occurred at Covenant Branch Pump Station

releasing a total of 1,080 gallons and 1 overflow occurred at Railroad Pump Station releasing a total of 600 gallons. The cause for these overflows was I&I of storm water and flood water.

When overflows or bypasses occurred, the affected sites were evaluated, cordoned off from or otherwise isolated from the public and/or receiving streams and monitored for environmental impacts as conditions dictated.

*Numerous sources of I&I continue to be identified and repaired.

**Force Main evaluations are now being pushed.

Treatment Plants Operations

Compliance with North Carolina NPDES (National Pollution Discharge Elimination System) Permit is based on meeting discharge parameters set forth in the NPDES Permit. This information is reported monthly to the North Carolina Department of Environment and Natural Resources through self-monitoring reports. The following is a summary of our plant permit compliance for the last 12 months:

<u>Reporting Month</u>	<u>Mebane Bridge Plant</u>	<u>New Street</u>
July 2021	Compliant	Compliant
August 2021	Compliant	Compliant
September 2021	Compliant	Compliant
October 2021	Compliant	Compliant
November 2021	Compliant	Compliant
December 2021	Compliant	Compliant
January 2022	Compliant	Compliant
February 2022	Compliant	Compliant
March 2022	Compliant	Compliant
April 2022	Compliant	Compliant
May 2022	Non-Compliant	Compliant
June 2022	Compliant	Compliant

- In May, the plant experienced a coliform violation due to complications with the peracetic acid trial. The problems were corrected with no other issues.

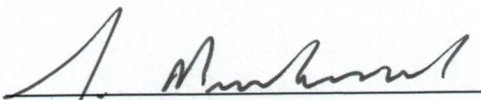
IV. Notification

This report will be submitted to the State Division of Water Quality and be released to the local news media and posted on the City's internet web site at www.edennnc.us.

V. Certification

"I certify, under penalty of law, that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violation."

Jon Mendenhall


Signature of City Manager

8/29/22
Date