

# Camden County Municipal Utilities Authority 2020 Environmental Management System Performance Report

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The National Biosolids Partnership (NBP) is an alliance of the National Association of Clean Water Agencies (NACWA) and WEF, with advisory support from the U.S. Environmental Protection Agency (EPA).

## Results of Audit: CCMUA meets NBP Expectations and Requirements

DEKRA Certification, Inc. conducted an independent third party audit of the environmental management system used by the Camden County Municipal Utility Authority (CCMUA) in managing its biosolids program.

The results of the audit determined that: Use of a management system approach is generating positive outcomes for CCMUA's biosolids program in the areas of regulatory compliance, environmental performance, quality practices and relations with interested parties.

CCMUA biosolids practices are consistent with NBP expectations and meet requirements of the NBP BMP Elements, with minor exceptions.

All non-conformances from prior DEKRA audits have been effectively corrected.

This audit conducted on March 11-12, 2020 has verified that the CCMUA biosolids management program meets NBP expectations and requirements and recommends continuing certification within NBP Biosolids Management Pro-



gram.

During this audit, DEKRA determined that use of a management system approach is generating positive outcomes for CCMUA's biosolids program in the areas of regulatory compliance, environmental performance, quality practices and relations with interested parties.

CCMUA has prepared corrective action plans for the three nonconformance identified and those plans have been approved by the Lead Auditor.

The audit was consistent with NBP requirements for Reverification Audits and the Scope of Work agreed by CCMUA and DEKRA. It was conducted as an integrated audit covering requirements of the NBP BMP Elements, with special attention to management activities that directly support biosolids-related operations, processes and activities.



Making It Better, Together.

# Progress Towards Goals and Objectives

- Camden County MUA had established objectives for 2020. These objectives and the progress made toward these have been reviewed by the EMS management Team. The objectives were:
  - Optimize Water Quality
  - Maximize Volumetric Capture on wet days
  - “Minimize adverse impact from odor.
  - Use of green energy
  - Conduct an inspection of biosolids hauling destination (i.e. landfill, land application site)
- Update SOPs as needed.
- Processing Ratio of Sludge
- Completed constructed of new green infrastructure projects.
- Start CSO Long Term Control Plan
- Community Service



“ Be a good neighbor to the surrounding community with a view to not only doing no harm, with respect to odor impacts, but also to undertake initiatives to improve the quality of life for our neighbors.”

## 2021 Objectives

Each year CCMUA establishes objectives to help achieve its main goals and continually improve its Environmental Management System:

- Optimize Water Quality
- Maximize Volumetric Capture on wet days
- Minimize adverse impact from odor.
- Use of renewable energy
- Complete the construction of four new green infrastructure projects.
- Update SOPs as needed.
- Processing Ratio of Sludge.
- Progress on CSO Long Term Control Plan.

- Obtain approval for Long Term Control Plan.
- Community Service



# Construction Projects Status:

## Sludge Digester

**Contractor:** NE Remsco, **Construction Manager:** D&B/Guarino Engineers

**Description:** Project to convert 4 existing liquid sludge storage tanks into 4 anaerobic digesters. Creation of new, significantly smaller liquid sludge storage tanks.

**Benefits:** The volume of sludge for disposal or beneficial re-use will be biologically reduced by nearly half thereby reducing cost and odor potential. Biogas produced from this biological digestion process will be used to power the CHP. Potentially, the biogas available for use in the CHP will generate up to 50% of wastewater plant's electric demand.

**Status:** New liquid sludge storage tanks have been completed and placed in service during 2019. Conversion of the liquid sludge storage tanks has been completed and are in start-up operations with only final acceptance testing to be completed. Estimated to be complete in Summer of 2021.

## CHP Design/Build & Supply of Digester Equipment

**Contractor:** Anaergia/Camden Bio-Energy, **Construction Monitor:** D&B/Guarino Engineers

**Description:** The first component of the work was to design and build a combined heat and power system (CHP) which will run on biogas or natural gas. The CHP system can produce 90% to 95% of the wastewater plant's power on a dry weather day. The second component is the supply of digester equipment which will enhance the production of biogas.

**Benefits:** The CHP allows the CCMUA to produce most of its electricity needs on-site at reduced costs which will provide sustainability and resiliency benefits. Procuring the digester equipment through Anaergia allows for a performance guarantee across the digester and CHP Systems.

**Status:** The CHP is complete with operations beginning on October 14, 2019. All significant components of the digester have been delivered by Anaergia and installed, with only the performance guarantee to be provided after final acceptance testing.

## Junction Chamber

**Contractor:** NE Remsco, **Construction Manager:** JMT

**Description:** Separation of Camden City and suburban lines at the head of the wastewater treatment plant.

**Benefits:** There was a hydraulic bottleneck in the interceptor junction chamber at the wastewater treatment plant's headworks. During wet weather, this bottleneck required the plant operators to throttle the Camden City gate to ensure that the County sewage did not back up and overflow. This project eliminates the bottleneck and accordingly, the need to throttle the Camden City Interceptor gate. This project is a critical component which reduces combined sewage overflows and flooding in Camden City.

**Status:** Beneficial use of the project began in early January 2020 and full operation commenced in March 2020.

## Raw Sewage Pump Upgrade

**Contractor:** Eastern Environmental, **Construction Manager:** JMT

**Description:** Upgrades and improvements to the wastewater treatment plant's raw sewage pumps.

**Benefits:** Installation of new pumps, motors and variable frequency drives (VFDs) on all four raw sewage pumps (RSPs). This work will increase the reliability and storm event pumping to 180 MGD (from 150 MGD) and ultimately to 240 MGD with all four RSPs in operation. The VFDs can provide a more reliable pump station control and operation than the outdated magnetic drives installed 30 years ago. This project is a critical component in the expansion of the plant to 180 MGD for the CCMUA Long Term Control Plan and to 240 MGD if needed. This project is also a critical component for reducing combined sewage overflows and flooding in Camden City.

**Status:** Work is well underway. Completion and acceptance of the first pump is expected in spring of 2021 due to long lead time of pumps and start up testing. Beneficial use (Ability to pump 30 more MGD than current) expected to be achieved in December of 2021.

## Wet Weather Expansion

**Contractor:** Eastern Environmental, **Construction Manager:** JMT

**Description:** Upgrades and improvements to the wastewater treatment plant conduits, tank influent gates and outfall conduits which would allow the full flow and treatment of up to 185 MGD through the plant during wet weather.

**Benefits:** Hydraulic bottlenecks were modelled and identified throughout the plant. Removal of these restrictions was necessary for the plant to maximize flow through the plant for LTCP requirements. This project allowed the plant to increase its capacity by 35 MGD during wet weather events. Conveyance of more combined sewage to the plant and a corresponding reduction in combined sewage overflow and flooding in Camden City was achieved.

**Status:** The project was completed and made operational during 2020.

# CCMUA and Green Infrastructure

During 2020 the Authority met its goals for Environmental Justice and Green Infrastructure through the Camden Smart Initiative, part of the Camden Collaborative initiative (CCI).

Camden SMART is a collaboration between the City of Camden, Camden County Municipal Utilities Authority, Cooper's Ferry Partnership, Rutgers Cooperative Extension Water Resources Program, New Jersey Tree Foundation, NJ Department of Environmental Protection. The purpose of Camden SMART is to develop and implement a comprehensive network of green infrastructure programs and storm water management in the City of Camden.



As a founding member of Camden SMART, the Authority has received funding from the New Jersey Infrastructure Bank to build a series of new green infrastructure projects. These projects in total manage 64 million gallons of stormwater from flooding neighborhoods each year. Below is a list of new projects under construction.

***Molina School*** At this charter school site, two rain gardens, a porous play area and porous pavers will promote groundwater recharge. These rain gardens will receive runoff from roadways and surrounding impervious areas via trench drain inlets and surface flow, and will utilize overflow structures for conveying discharge to the existing combined sewer. The Trust for Public Land is partnering with our Authority for this project.

***Coopers Poynt School*** At the school site three rain gardens will be installed to intercept, treat, and filter stormwater runoff from roadways and surrounding impervious areas. The rain garden will promote groundwater recharge and will utilize overflow structures for conveying discharge to the existing combined sewer. The Trust for Public Land is partnering with our Authority for this project.

***Camden County Historical Society*** Three rain gardens will be constructed to receive rain water from an adjacent building and surrounding impervious areas. A pervious stone pathway will be installed, leading to the former Camden High School Spire.

***Gateway Bioswales*** At this large park owned by our Authority, two bioswales will be installed next to walking paths. These bioswales will manage stormwater from the pathway and surrounding areas. The bioswales will capture, filter and infiltrate stormwater prior to discharge to the Cooper River.



# Sludge Drying

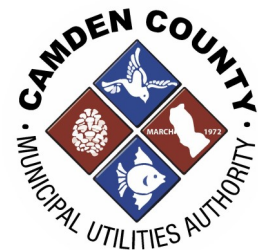
During 2020, the Sludge Drying Facility was safely operated by Synagro under contract.

The CCMUA treatment plant produced a total of 71,455 wet tons of dewatered sludge. Of this, 28,802 wet tons or 40.3% went to the sludge dryers with the remaining 42,653 tons or 59.7% hauled off site.

At full capacity the three dryers can process an average of 160 tons of sludge per day. One dryer was operational for the entire year and a second one came online during August. The third dryer came online in January 2021. At least two dryers are needed to be able to process most of the sludge produced by the facility.

These dryers reduce odors as a result of the reduction in truck traffic. This reduction in odors helps to improve the quality of life for the surrounding neighborhood.

New disposal options for the dried Class A Biosolids are currently being explored. These new options will have a lower cost for each ton received. In 2020 171.7 tons were used for Class A land application.



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### MISSION STATEMENT

The Camden County Municipal Utilities Authority is committed to protecting water quality, odor minimization, cost efficiency, minimizing carbon footprint, and community service.