

# Camden County Municipal Utilities Authority

## 2017 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 February 12-15, 2018 has verified that the CCMUA biosolids management program meets NBP expectations and requirements and we recommend Recertifica-



tion within NBP Biosolids Management Program.

During this audit, DEKRA noted the following strengths in the CCMUA biosolids management system. Leadership by CCMUA in the Camden Collaborative Initiative is an excellent example of proactive outreach and public participation.

CCMUA has prepared corrective action plans for the six 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 ISO-14001:2004 and the NBP BMP Elements, with special attention to and management activities that directly support biosolids-related operations, processes and activities.



# Progress Towards Goals and Objectives

Camden County MUA had established objectives for 2017. These objectives and the progress made toward these have been reviewed by the EMS management Team. The objectives were:

- Maintain Effluent TSS <5 PPM
- Maintain Effluent CBOD <5 PPM
- “0” Air Permit violations per year
- Conduct an inspection of biosolids hauling destinations (i.e. landfill, land application sites) per year
- Reduce energy use from distribution grid by 10% by using solar power and proceeded with the con-

struction of the sludge digester.

- Update SOPs to reflect EMS requirements.
- Completed construction of nine new green infra-

structure projects during 2017.

- Maintained EMS certification
- Started CSO Long Term Control Plan



## 2018 Objectives

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

- Optimize Effluent TSS
- Optimize Effluent CBOD
- Minimize adverse impact from odor.
- Conduct at least one inspection of biosolids hauling destinations
- Update SOPs and EMS manual
- Reduce energy by using solar power .
- Complete the construction of five new green infrastructure projects.
- Use of Green Energy.

- Processing Ratio of Sludge.
- EMS System Certification.
- Progress on 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.”

## Regulatory Compliance

# Sludge Digester

The Authority has received approval from the Local Finance Board for the contract between the Authority and the selected vendor, Anaergia to operate an Anaerobic Sludge Digester. Funding the digester has been approved by the NJIB. A contract has been awarded and construction of the digester has begun .

The primary objectives of the Sludge Digestion System at the CCMUA are to:

- Improve the performance of the sludge drier facility.
- Reduce overall operating costs including electricity, sludge disposal, associated maintenance and chemical costs.
- Advance Camden County’s Sustainability program through the generation of renewable energy and reduction in green house gas emissions.

CCMUA’s Environmental Management System complies with all applicable federal, state, and local requirements.

The Authorities effluent concentrations of TSS and CBOD are averaging below 5 mg/l, which is significantly lower than the discharge permit requirements of 30 mg/l and 25 mg/l, respectively. Zero non-compliances occurred in the past year. The effluent quality has re-

mained at optimal levels, nearly drinking water levels throughout the year.

Biosolids produced at CCMUA met all standards required by U.S. EPA for metal concentrations.

The treatment plant’s outstanding performance captures an additional 20,000 tons of biosolids per year that otherwise would go into the Delaware River.



## Environmental Performance

One of the main priorities for CCMUA is to minimize adverse impact from odors emanating from the wastewater treatment and sludge disposal process. This is being done both through implementation of a “zero tolerance” policy for odors, and through capital improvements. The CCMUA has also been pursuing this goal through implementation of successful odor control strategies, such as assigning additional su-

pervisors, operators and maintenance staff on weekends, produce sludge cake with solids concentration of at least 27% to reduce the amount of sludge to be hauled out from plant, and minimization of off-site sludge hauling during off hours. In addition, suspended solids levels in the effluent have been reduced 35 percent from 9.3 parts per million and “0” air permit violations.



# CCMUA and Green Infrastructure Projects

During 2017 the Authority met its goals for Environmental Justice and Green Infrastructure through the Camden Smart Initiative.

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 Environmental Trust (NJEIT) to build a series of new green infrastructure projects. These projects in total manage 63 million gallons of stormwater from flooding neighborhoods each year. Below is a list of new projects. A contract to construct these features was issued at the end of 2017 and these will begin to manage stormwater during 2018. The completion of these projects will bring the total number of projects completed to 62.

**9th And Woodland Avenue City Lot** At this site, approximately 750 square feet of deteriorating sidewalk will be removed and replaced with pervious concrete that will promote groundwater recharge. A 680 square foot infiltration trench will be installed to intercept, treat, and filter stormwater runoff from a portion of S 9th Street. A portion of the vacant lot will be planted with various trees.

**Beckett Street Garden** At this site, deteriorating sidewalk will be removed and replaced with permeable surfaces that will promote groundwater recharge. Approximately 506 square feet of pervious concrete sidewalk will be installed to capture and infiltrate stormwater runoff. The remaining area will be de-paved and planted with various grasses.

**Dudley Elementary School** At this site, an approximately 900 square foot rain garden will be installed to intercept, treat, and filter stormwater runoff from a portion of the parking lot. The rain garden will have three sections, separated by check dams that will slow the flow of water through the system and further promote groundwater recharge.

**Princess Avenue Vacant Lot** At this site, approximately 3,000 square feet of deteriorating sidewalk will be removed and replaced with pervious concrete to promote groundwater recharge. Two infiltration trenches totaling 1,020 square feet will be installed to intercept, treat, and filter stormwater runoff from portions of Princess Avenue and Walnut Street. A portion of the vacant lot will be planted with various trees.

**Early Childhood Development Center** At this site, six downspout from the development centers' rooftop will be disconnected from the sewer system and routed into six downspout planter boxes in series. The downspout planter boxes will intercept, treat, and filter stormwater runoff from the rooftop. Some existing vegetation will have to be removed and relocated to incorporate the planter boxes.

# Environmental Infrastructure Trust Projects Completed

A series of 57 Camden SMART stormwater management projects have been installed in Camden City. Many of these sites have been funded by the New Jersey Environmental Infrastructure Trust. The sites manage 63 million gallons of stormwater each year on-site. Below is a description of the sites completed this year:

## Phoenix Park

Phoenix Park has transformed a five acre brownfield site into a new riverfront park that manages over five million gallons of stormwater each year. The opening ceremony was held at the park on December 12, 2017. The project was recognized by the US Environmental Protection Agency and the Environmental Council of the United States as one of the ten most innovative uses of Federal water infrastructure funding in the country.

The park's green space bridges a decades-old gap between a distressed urban residential neighborhood and the Delaware River, offering views of the skyline of Philadelphia from the heart of Camden's

industrial waterfront. The park creates an opportunity for residents of the Waterfront South neighborhood to experience a park setting on their waterfront, amidst the surrounding heavy industry. Phoenix Park includes a gravel walking path with trees, native wildflower meadows and turf grass. The site is connected to the Michael Doyle Fishing Pier with a walkway along the Delaware River. It is located just south of the Camden County Municipal Utilities Authority plant in the Waterfront South neighborhood.

## Green Infrastructure Projects

Ten smaller Green Infrastructure Projects are scattered throughout Camden. Below are photos of three of these sites. Projects include the installation of rain gardens, porous pavement, rainwater harvesting cisterns, stormwater planters and various tree and shrub plantings. The combined sites manage millions of gallons of stormwater each year helping to reduce stormwater flooding.

## Sewer Rehabilitation Project

This project has rehabilitation/reconstructed structurally and hydraulically deficient sewers, ranging from 12" – 72" in diameter, at eight locations within the City of Camden. The project includes replacement of sewers, installation/replacement of manholes/inlets and other related structures, reconnection of sewer laterals, jetting/vacuuming of adjacent existing sewers, and street/sidewalk restoration.

## Crammer Hill Nature Preserve

A 35 acre nature preserve has been completed in the Crammer Hill neighborhood of Camden with access to the Delaware River. The site is located across from Petty's island on the grounds of a former sewer treatment plant and has a conservation easement with the New Jersey Natural Lands Trust.





# Sludge Drying

During 2017, the Drying Facility was safely operated, except for one recordable injury. A fire in the dryer building led to the dryer being out of service for a short time during the year.

At full capacity the three dryers can process an average of 160 tons of sludge per day. During many months, all three dryers were operational. At least two dryers are needed to be able to process most of the sludge produced by the facility. As of the date of this report, all three dryers are operational.

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.



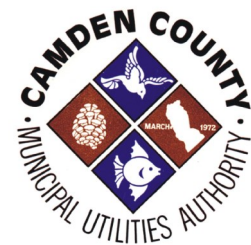
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### MISSION STATEMENT

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