Camden, New Jersey Uses Green Infrastructure to Manage Stormwater

Camden County Municipal Utilities Authority (CCMUA) provides wastewater services (80 million gallons per day) to approximately 500,000 people in 37 municipalities in Camden County, New Jersey. Historically, CCMUA has experienced combined sewer flooding during intense rain events due to the age of their system and the lack of available funding for infrastructure replacement. Realizing that climate change is expected to increase the frequency and intensity of storms, CCMUA's utility operators decided to better understand the utility's current and future vulnerability.

Working with the EPA, CCMUA used the Climate Resilience Evaluation and Awareness Tool (CREAT) to gain greater appreciation of the magnitude of its Combined Sewer Overflow (CSO) and other vulnerabilities and identify potential adaptation strategies. CCMUA's operators formed a partnership.

Camden SMART Initiative, consisting of:

- the local municipality
- state environmental protection agency
- local university
- local non-profits

This partnership enabled the municipality to integrate water conservation and promote a comprehensive network of green infrastructure programs and projects that can help Camden adapt to future conditions. Building off of the success of Camden SMART, EPA partnered with the City of Camden, CCMUA, Cooper's Ferry Partnership and NJ DEP to form the Camden Collaborative Initiative to use the collective impact model to address air quality, solid waste, and neighborhood revitalization concerns, in addition to flooding.

While the site's operators did not explicitly use climate models to projected vulnerabilities, the actions taken increase resiliency to current flooding threats and adapted the site to better manage risks associated with projected increases in the frequency and intensity of future storms, including flooding. Overall, the site has adapted to climate change by repairing and raising critical areas of the site to handle increased precipitation and flooding threats and reduce threat of contaminant release now and into the future.

- Camden SMART Initiative <http://www.camdensmart.com/>
- Camden Collaborative Initiative <http://www.camdencollaborative.com/>

How did they do it?	Applicable EPA Tools
Assessed climate vulnerability • Camden used the Climate Resilience Evaluation and Awareness Tool to understand the magnitude of climate vulnerability, particularly for CSO vulnerability to projected precipitation changes.	The Climate Resilience Evaluation and Awareness Tool helps utilities determine climate risk and assess vulnerability to projected climate changes. Climate Resilience Evaluation and Awareness Tool <https://epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool>
Developed adaptation response recommendations to improve water quality and reduce CSO's • Identified adaptation actions including: enacting a water conservation ordinance to reduce water inputs into the sewer system; reducing impervious surface and runoff through promoting rain gardens and parks; "daylighting" streams; converting buildings to parkland; and cleaning inlets and replacing netting systems. • One SMART project disconnected a library's rooftop runoff from the combined sewer system by designing two rain gardens to capture, filter, and infiltrate the first one-inch of rainfall.	The Creating Resilient Water Utilities Adaptation Strategies Guide assists utilities identify in identifying potential next steps to adapt to expected climate vulnerabilities. Creating Resilient Water Utilities Adaptation Strategies Guide <https://epa.gov/crwu/resilient-strategies-guide-water-utilities>

Formed local partnership to implement adaptation • Camden formed a partnership group, SMART, to help implement its network of green infrastructure adaptation measures.	Enhancing Sustainable Communities With Green Infrastructure Guide provides a framework to engage the community in implementing green infrastructure projects that improve quality of life and prepare for climate change impacts. Enhancing Sustainable Communities With Green Infrastructure Guide <https://epa.gov/smartgrowth/enhancing-sustainable-communities-green-infrastructure>

Similar Cases and More Information

To see how another northeastern community analyzed the impact of sea level rise on a water utility, view Manchester-by-the-Sea. For a community that recognized the prohibitive cost of protecting a highly vulnerable facility and decided to move to a safer facility, see Iowa City. To see how Washington, D.C. is using green infrastructure to reduce stormwater impacts and combined sewer overflows view the DC Consent Decree.

- Manchester-by-the-Sea, Massachusetts Assesses Climate Vulnerability <https://epa.gov/arc-x/manchester-sea-massachusetts-assesses-climate-vulnerability>
- Iowa City, Iowa Closes Vulnerable Wastewater Facility <https://epa.gov/arc-x/iowa-city-iowa-closes-vulnerable-wastewater-facility>
- DC Utilizes Green Infrastructure to Manage Stormwater <https://epa.gov/arc-x/dc-utilizes-green-infrastructure-manage-stormwater>

References

- Learn How to Plan for Climate Change with the Adaptation Strategies Guide for Water Utilities <https://epa.gov/crwu/resilient-strategies-guide-water-utilities>
- Camden Pictures <http://www.camdencollaborative.com/>
- Stormwater Management And Resource Training's (SMART) Green Infrastructure Projects <http://www.camdensmart.com/projects.html>

Climate Change Adaptation Resource Center (ARC-X) Home <https://epa.gov/arc-x>

Your Climate Adaptation Search <https://climateadaptation.epa.gov/>

- Implications of Climate Change <https://epa.gov/arc-x/implications-climate-change>
- Adaptation Planning <https://epa.gov/arc-x/planning-climate-change-adaptation>
- Adaptation Strategies <https://epa.gov/arc-x/strategies-climate-change-adaptation>
- Case Studies <https://epa.gov/arc-x/searchable-case-studies-climate-change-adaptation>
- Tools <https://epa.gov/arc-x/tools-climate-change-adaptation>
- Training <https://epa.gov/arc-x/climate-change-adaptation-training>
- Federal Funding & Technical Assistance <https://epa.gov/arc-x/federal-funding-and-technical-assistance-climate-adaptation>
- Library <https://epa.gov/arc-x/library-climate-change-adaptation>
- Underlying Science <https://epa.gov/arc-x/underlying-science-climate-change-adaptation>
- EPA Contacts & State Websites <https://epa.gov/arc-x/epa-regional-climate-adaptation-contacts-state-websites>

Contact Us <https://epa.gov/arc-x/forms/contact-us-about-climate-change-adaptation-resource-center> to ask a question, provide feedback, or report a problem.

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