

NACWA 2014 Excellence in Management Recognition Program
DC Water
Product Quality

Since its establishment in 1996, the District of Columbia Water and Sewer Authority (DC Water) has strived for excellence in wastewater treatment operations and in the quality of effluent discharge to the Potomac River as well as the quality of biosolids generated at the Blue Plains Advanced Wastewater Treatment Plant. DC Water's reputation as a leader in product quality is recognized by a number of performance awards received from industry peers and the Environmental Protection Agency (EPA).

NACWA Peak Performance Awards

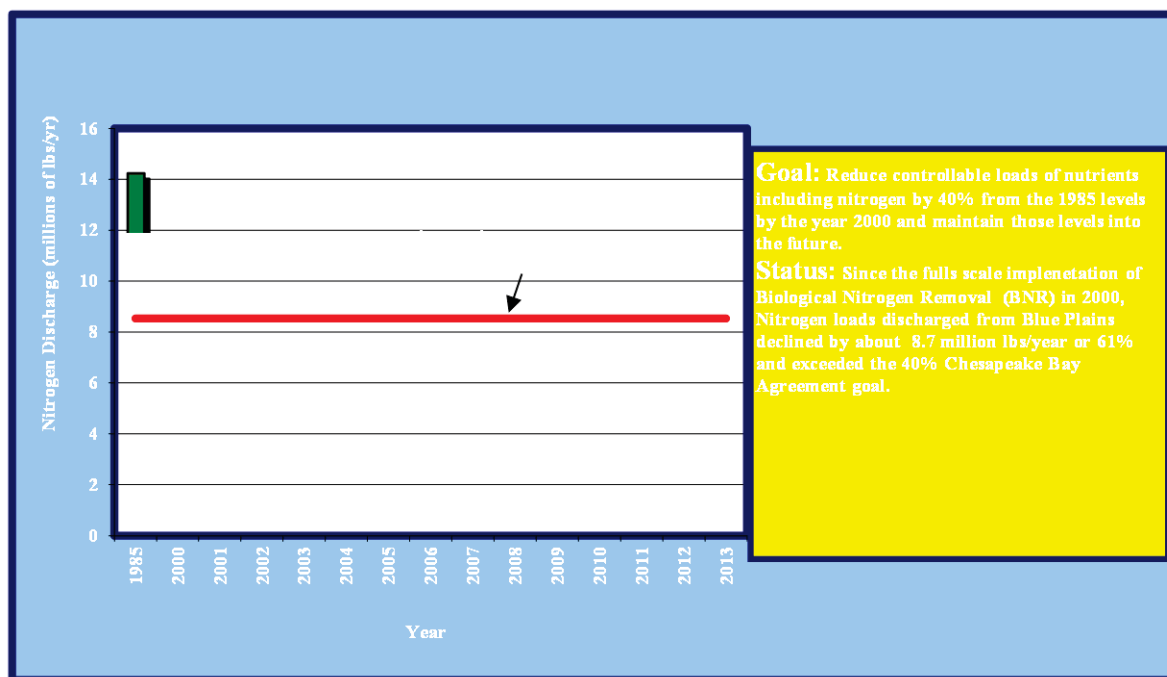
Every year since 1997, DC Water has received the prestigious *Peak Performance Awards* from the National Association of Clean Water Agencies (NACWA). Six platinum, six gold and four silver awards were received for high level of compliance with federal standards for effluent discharges from Blue Plains into the Potomac River. The Authority has submitted to NACWA an application for gold award for outstanding effluent quality and compliance with its National Pollutant Discharge Elimination System (NPDES) permit limits during the 2013 calendar year.

National First Place Clean Water Act Recognition Award

The EPA honored DC Water's Biosolids Management Program with a *National First Place* award for *Exemplary Biosolids Management for Large Operating Projects* for biosolids research, innovation, and the Environmental Management System (EMS) program.

Commitment to Product Quality: Reducing Nitrogen Discharge to the Chesapeake Bay

DC Water was the first entity to meet the Chesapeake Bay Agreement (CBA) goal to reduce controllable loads of nutrients including nitrogen by 40% from 1985 levels by the year 2000. Since beginning full scale Biological Nitrogen Removal in 2000, nitrogen loads from Blue Plains declined by more than 8.7 million pounds per year or 61% and exceeded the 40% CBA goal.



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Financial Viability

DC Water's financial viability is sustained by a strong ten-year financial plan and a proven track record of conservative budgeting and revenue forecasting, resulting in annual operating surpluses. The financial plan serves as the framework to support the Board's strategic plan, policies, priorities and guidance in several key financial areas. This financial plan is one of management's key tools to monitor progress in meeting financial goals and to proactively address future financial and operational issues. Given DC Water's substantial future borrowing needs, adherence to these Board policies is crucial to cost-effectively access capital markets and retain credibility with customers and regulators. DC Water's financial plan objectives focus on 1) minimizing rate increases while meeting all financial obligations; 2) satisfying all indenture requirements and Board policies; and 3) maintaining DC Water's current credit ratings of AA+/Aa2/AA. The ten-year financial plan projects revenue requirements, operating & maintenance expenses, capital expenses, debt service charges and rate increases. It also ensures meeting or exceeding indenture and the Board's coverage requirements and providing sufficient liquidity to meet all obligations.

DC Water's financial planning process is guided by several key Board documents including, 1) Blue Horizon 2020 Strategic Plan, 2) Statement of Investment Policy, 3) Financial Policies, 4) Pay-As-You-Go Policy, 5) Retail Rate Setting Policy, 6) Rate Stabilization Fund Policy, 7) Operating Reserve Policy; and 8) Water and Sewer Facilities Plan.

DC Water continues to maintain exceptional financial and credit strength because it is: 1) an essential service monopoly, 2) has a stable customer base and proven rate-setting process, 3) has strong debt service coverage, 4) has strong billing and collections; and 5) undertakes comprehensive budget process and monitoring.

DC Water ensures a reliable and predictable revenue stream to meet funding requirements of current and long-term liabilities and debt obligations. The rate setting process considers affordability and benchmarking against major cities. The process requires Board approval, publication of proposed rates, public outreach and hearing, and Board's review and approval before final rates publication in the District of Columbia Municipal Regulations (DCMR).

DC Water's strong financial position is evident from the metrics listed below:

Metric	Target	FY 2013	FY 2012	FY 2011
Subordinate Debt Service Coverage	1.0x	2.08	1.83	1.82
Senior Debt Service Coverage	1.4x	4.27	3.50	3.21
Combined Debt Service Coverage	1.2x	1.66	1.48	1.45
Operating Cash Reserves	Greater of 120 days of O&M costs or 125.5 million	\$141.52m	\$140.25m	\$150.04m
Rate Stabilization Fund Balance	Help to avoid spikes in rate increases for retail customers	\$28.95m	\$27.95m	\$16.70m

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Customer Satisfaction

DC Water's customer service mission is to provide every customer the best service possible and make the experience informative, beneficial and productive. Our professionals are committed to leaving a lasting impression, realizing this one contact may be the only direct interaction a customer will have with us. Customer calls are either an emergency or something with their service doesn't seem right. We respond with urgency and a sense of importance and let every customer know we care. DC Water's customer service practices are designed to provide safe, reliable and affordable service. For more than eight years, we have measured and managed key performance indicators and consistently met or exceeded these. They are:

- Call Center and Emergency Command Center service level (85% of calls answered within 40 seconds). We strive for immediate answer in our emergency center and more than 90% are answered on the first ring.
- First call resolution -handle customer concerns on the first call 75% of the time.
- Emergency Response – Respond to emergencies within 45 minutes 90% of the time.
- Fire Hydrant Availability and Replacement – have less than 1% of fire hydrants out of service at any time, and replace 250 per year.
- Permit Processing – each construction permit has a specific service level in terms of number of days for processing and these are met.
- Credit and Collections – DC Water's target is to have delinquent accounts receivable below 3% of revenues and is consistently below 1.7%.
- Customer Assistance – We support customers who need help paying their DC Water bill through the SPLASH and CAP programs. SPLASH is a grant program to help customers pay past due water bills. Funded by contributions from DC Water customers and employees, we consistently exceed our target of \$100,000 in contributions. DC Water employees contributed more than \$20,000 last year.
- The Customer Assistance Plan (CAP) is a discount that provides up to 4 CCF of water for free per month, and is for customers who qualify for fuel assistance. DC Water consistently exceeds our target of serving at least 5,000 customers a year in this program.

We changed our collections practices and reduced accounts receivable arrears to \$4.8 million out of more than \$250 million in revenues, the lowest in our history as DC Water, all while rate increases more than doubled our average bill. We did it through intelligent use of customer data and technology, persuasion skills and helping customers apply for assistance benefits.

Our pioneering HUNA (high usage notification alert) system saves customers money. By reading meters daily through advanced metering technology, we can detect if water usage exceeds a normal amount for the household. That triggers an alert—a phone call, email or text message. An average of 12,000 HUNA alerts is sent annually.

We instituted a call monitoring system and measure a sample every month against a 500 point quality assurance chart for qualities like tone of voice, how we address the customer, if the right data is used in answering a customer's question, and how we follow up to make sure a concern was addressed. We use this tool to train and coach staff.

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Employee and Leadership Development

DC Water's Blue Horizon 2020 Strategic Plan states the following as its very first goal: "Develop, Maintain, and Recruit a high performing workforce." This goal is tied to several objectives and initiatives focused on creating robust licensing and certification programs, creating professional and leadership development programs, implementing succession planning and increasing employee engagement and satisfaction.

DC Water's Executive Team supports employee development through a dedicated Learning and Development branch within the Human Capital Management Department that focuses on a myriad of training initiatives linked to professional development, technical expertise, safety compliance, and information technology literacy.

The Learning and Development Branch is modifying its approach to proactively assess training needs by department and then plan for the delivery of training sessions in a way that is productive, beneficial and cost-efficient.

The implementation of the **Leadership Development Program**, supported by the Office of the General Manager, is the vehicle by which leaders are offered the opportunity to receive vital training that is tied directly to performance competencies observed as they lead themselves, their teams, and the organization. These competencies were recently identified and training will be provided for leaders to develop strength in them.

Examples of other employee development initiatives include:

1. **Education Assistance/Reimbursement Program**
2. **Career Development Program**
3. **Safety Training**
4. **Policy and Compliance Training**

To optimally support the learning and development initiatives at the Authority, DC Water invested in a Learning Management System (LMS) to offer a blended learning environment that moves away from the current traditional classroom-only style of instruction. Web-based events, as well as e-learning programs, are offered. Moreover, DC Water is empowered to facilitate informal and social learning across the Authority 24 hours/7 days a week.

In 2013, DC Water began an affinity group called WOW (Women of Water) to cultivate and support a network for women at DC Water where all employees can share best practices, education, and experience; to afford women from every level within DC Water opportunities to seek mentorship and exposure; and to cultivate leaders. Men are invited to attend.

DC Water also offers a paid internship program to college students that incorporates learning about the water sector and the environment, as well as professional skills training and opportunities.

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DC Water
Operational Optimization

DC Water's Wastewater Treatment Operations programs strive to achieve performance optimization by implementing industry best practices across key cross functional areas within the organization. Main elements of the programs include concerted process improvements and control, operator cross-training, cutting-edge research, and commitment to environmental sustainability in liquid and biosolids treatment processes. Through this effort, the wastewater treatment operation at Blue Plains has achieved process efficiency and reliability, improved productivity and O&M costs reduction, and high effluent quality complying with the federal National Pollution Discharge Elimination System (NPDES) permit requirements.

Process Efficiency and Reliability Improvement: Controlling & Reducing Energy Use (example)

One of the overarching missions of the operations excellence program is sustainable process improvement. Ongoing capital improvement projects focus on advanced treatment processes and include rehabilitation and upgrade of existing equipment and process units. The nitrification and denitrification upgrade project included replacing the existing coarse bubble aeration system with more efficient fine bubble diffusers and new energy efficient mixers. The upgrade resulted in 60,000 kW-hour per day reduction in power requirements translating into an annual energy cost savings of approximately \$2M.

Productivity Improvement Programs - Using Computerized Control Systems (example)

Since its inception, DC Water has implemented an aggressive plan to automate the plant and improve productivity. DC Water's interactive Process Control System (PCS) facilitates centralized process control, troubleshooting, and decision making. The PCS monitors plant equipment, process units, and real time energy consumption across the plant, and utilizes a plant-wide process feedback-loop to alert and alarm as conditions change. The Central Control Room (CCR), shown below, is the hub of this remote operation and some 60 process cameras report to it, monitoring operation in critical unattended areas. To ensure quick response and resolution to problems in the field, the CCR is equipped with an interface to the plant maintenance management system.

O&M Cost Reduction Programs - Employee Skills and Productivity Improvement and Cross Training Programs (example)

A plant wide cross training and proficiency demonstration program was initiated to further enhance the skill level of wastewater treatment plant operators at Blue Plains. The program uses a combination of class room and on the job training where employees are rotated between the three major treatment process areas of the plant. The program is one of the key strategies adopted by DC Water to improve work force productivity and meet the internal improvement plan staffing goals. The wastewater treatment plant operator training and certification program has allowed DC Water to reduce operator staffing by approximately 45% of the level in 1996.

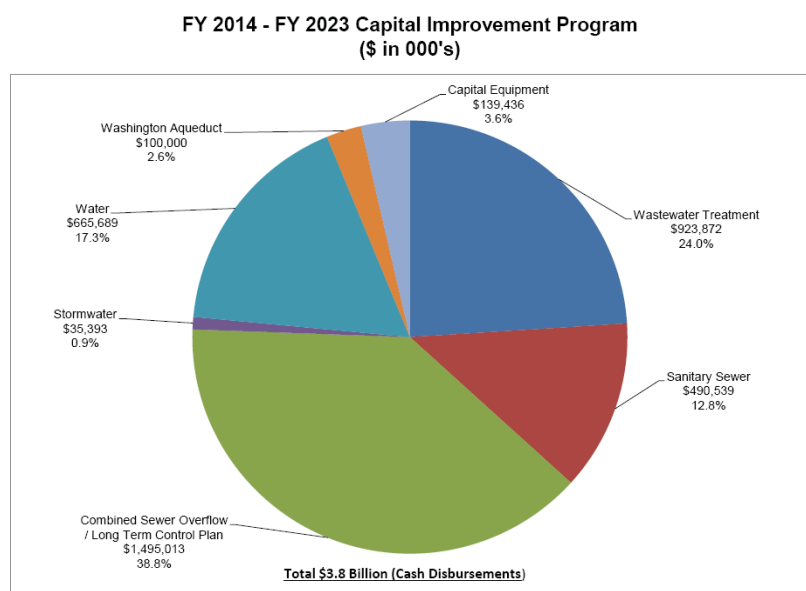
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DC Water
Infrastructure Stability

The DC Water Board of Directors has established a strategic plan called Blue Horizon 2020, which serves as a blueprint for achieving the DC Water vision, mission, and values. There are 9 goals which comprise the plan with “Optimally Manage Infrastructure” listed as one of these goals. A key underpinning of DC Water’s infrastructure management is the 10-year, \$3.8 Billion Capital Improvement Program. Within this program, DC Water has created a \$20 Million budget specifically targeted toward Asset Management, and is broadening and expanding our existing asset management efforts.

We have been successfully capturing asset attribute data as part of commissioning of new assets, and have begun to backfill existing asset information into our database. There have been several business process changes to our workflows as we have hired and incorporated work planners and schedulers under our maintenance services areas. An entirely retooled material management division will support just-in-time procurement of replacement assets and parts, maintaining inventory minimums/maximums, and ensuring that all costs associated with a given work order are rolled up to the correct asset so that the true costs of buying and maintaining assets over their lifetime can be calculated.

For ongoing asset management efforts, DC Water looks to its maintenance division which has embraced preventative and predictive maintenance activities, versus the more expensive and less stable corrective/reactive maintenance activities. We incorporate recognized predictive technologies such as vibration analysis, oil analysis, ultrasound and thermography. By monitoring our systems and assets using such methods, DC Water has started to minimize emergency maintenance, extend equipment life and reduce long-term capital replacement costs.

DC Water operates and maintains over 3,000 miles of aging water and sewer infrastructure, and has implemented an aggressive condition assessment and rehabilitation program for those assets, including closed circuit television inspection of 75 to 100 miles of sewer pipeline and replacement of 1% of small diameter water mains annually.



NACWA 2014 Excellence in Management Recognition Program
DC Water
Operational Resiliency

DC Water has made resiliency activities the priority of many of its programs and has worked to integrate operational facility into non-traditional departments. DC Water has an Office of Emergency Management (OEM) with personnel identified and trained to support DC Water and ensure preparedness and response. Annually, grants are submitted to access funds from DHS (Department of Homeland Security), (Federal Emergency Management Agency), EPA, and the District of Columbia. This funding improves or maintains DC Water's operational resiliency.

Infrastructure resiliency projects

Blue Plains Advanced Wastewater Treatment Plant is DC Water's most valuable asset and one that is most vulnerable to flooding. Under severe flooding and hurricane storm surge predictions DC Water would expect flooding of Blue Plains. As a consequence the plant is being protected to a 500 year flood level by a sea wall. Portions of the seawall are already completed, and the remainder of the seawall was approved as part of the 2013 budgeting cycle.

DC Water is working with Pepco Energy Services to build its own combined heat and power plant at Blue Plains to meet most of the plant's critical needs in emergency situations.

Vulnerability resiliency projects

DC Water completed its Vulnerability assessments of all DC Water Facilities and the results were incorporated into the DC Water CIP process and operational SOPs. The Authority has partnered with Department of Homeland Security to conduct Site Assessment Visits of DC Water assets to identify both procedural and infrastructure improvements.

Planning resiliency projects

DC Water has a NIMS compliant Incident Management Team that activates to respond to emergencies that impact the region. All team members are required to attend nationally recognized ICS classes and refresher sessions. The OEM ensures that the appropriate personnel are identified for critical roles and updated response plans guide actions. DC Water developed its training and exercise plan, which helps identify and measure the IMT's performance while providing a quantitative gap analysis for future training and exercise needs. To maintain the continuous improvement program, DC water has a mandatory Lessons Learned and After Action Reporting program for all IMT activations, providing a follow up report to identify CIP projects, plan updates, modify procedures and identify training needs.

In 2012, DC Water formalized the Continuity of Operations Plan (COOP) to identify critical functions and personnel to bolster DC Water's recovery when returning to normal operations. The COOP is updated and exercised annually, and implementation is completed. It is compliant with FEMA/DHS guidelines and conforms to the DC Government COOP requirement.

DC Water participates in the DC HSEMA Hazard Mitigation work group. This is a multiagency workgroup ensuring mitigation projects are identified and accessing federal funding.

DC Water has an Emergency Liaison Officer Program with 25 trained liaison officers who support the city when the Emergency Operations Center is activated. ELO's provide the critical information link between DC Water and the District/Federal Government during an emergency.

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Water Resource Adequacy

DC Water and other organizations collaborate in planning for the region's drinking water needs to ensure there is adequate supply, even during severe droughts. An important part of the process is periodically forecasting the region's future needs, assessing the current water supply system's ability to serve a growing population, and identifying potential new efficiencies or water sources. The three major water suppliers associated with the Washington, DC Metropolitan Area (WMA), are identified as DC Water working with the Washington Aqueduct Division of the Army Corps of Engineers (WA), Fairfax County Water Authority (Fairfax Water) and the Washington Suburban Sanitary Commission (WSSC), and have a long history of cooperation. This collaboration was formalized in a set of agreements signed more than 30 years ago, including the Low Flow Allocation Agreement (LFAA), which allocates the amount of water each supplier can withdraw from the Potomac River in the event that total flow is not sufficient to meet all needs, and the Water Supply Coordination Agreement (WSCA), which provides for coordinated operations of the major water supply facilities in the region during low flow conditions.

During periods of time when the Potomac River has low flow conditions, WMA suppliers coordinate their operations with the assistance of the Section for Cooperative Water Supply Operations on the Potomac (CO-OP) to optimize available resources and maintain adequate flow downstream of their intakes to protect aquatic habitats. To ensure water resource adequacy and to augment the natural flow of the river, water storage has been added at two locations, Jennings Randolph Reservoir and Little Seneca Reservoir, both upstream of the WMA intakes. Together, these reservoirs add over 17 billion gallons of storage to the basin. Additionally, a study is being conducted that has identified four other potential water supply alternatives for the region, as well as investigating the potential impact of global climate change on system resources.

In conjunction with the agreements listed above, DC Water has been a partner in support of the three goals set forth by the Interstate Commission on the Potomac River Basin, ICPRB. Those goals are: 1) to promote watershed-based management protective of ecosystems and water resources; 2) to foster development of engaged and knowledgeable citizens and stakeholders and 3) to acquire resources to achieve recognition of Interstate Commission on the Potomac River Basin as a vital link in the basin's health and future.

DC Water recognizes the importance of providing public outreach about water conservation. The Office of External Affairs provides materials, leak detection kits and counsel at more than 150 community events per year. At some events, DC Water brings the water conservation unit, a mobile bathroom that connects to a water supply to demonstrate the reduction in water use by installing low-flow aerators, toilet tank tubbies and other methods. DC water also created a popular video on how much a leaking toilet can cost in just one month that includes information on detecting and correcting leaks. DC Water has a landscaping guide promoting the use of native plants to reduce the need for water and the customer newsletter prints conservation tips several times per year. The Authority also offers a home audit to help detect leaks or plumbing problems that may be wasting water and developed the High Use Notification Application (HUNA) to alert customers to high usage that could be caused by leaks or plumbing problems.

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Stakeholder Understanding and Support

DC Water values input from our customers, stakeholders, and regulators. The Authority invests significant resources to ensure that stakeholders can communicate with the utility through a variety of different channels.

Specifically, DC Water has a 24-hour Command Center where residents and businesses can report water emergencies and receive updates on DC Water projects. Service requests can also be placed using DC Water's mobile report-a-problem webform that includes a photo upload feature and GPS location capabilities. The Authority employs a construction outreach coordinator whose primary job function is to communicate with the public to inform them of the impact of DC Water projects conducted in public space. This individual works within the Office of External Affairs and proactively engages stakeholders on major projects through the use of community meetings, pre-and post-construction surveys and door hangers.

During business hours, customers can reach DC Water through its multi-lingual customer service hotline. We also offer a transit accessible centrally located walk-in customer service center. DC Water also operates a satellite job center that rotates between three different locations to serve residents interested in employment opportunities with DC Water and its contractors.

DC Water engages customers and seeks input from stakeholders continuously through its info@dcwater.com email address, active Twitter (6,670 followers) and Facebook (1,500 likes) accounts, Pinterest, and Instagram social media accounts. DC Water's monthly Board of Directors meetings are open to the public and available to watch live online on dcwater.com. Board meetings dating back to 2009 are also archived and accessible 24/7 on the website.

For the past four years, DC Water's General Manager has co-hosted Town Hall meetings in each of the eight wards of the District of Columbia. In these meetings, the General Manager discusses how rates are set and what is funded by ratepayer dollars. He also addresses DC Water's environmental programs, future water and sewer projects and issues facing local communities. The meetings feature information on water quality, construction projects, employment, and customer service. Specific discussion topics will include water and sewer rates, drinking water, infrastructure, job opportunities and efforts to help clean local rivers. Mr. Hawkins personally invites many DC residents to the meetings through a robocall of individuals who have contacted DC Water with questions or concerns in the past. The evening meetings are promoted via local media ad buys. In addition to the General Manager, the meetings are staffed by subject matter experts from each of the major DC Water departments. The eight meetings last year attracted over 300 participants.

DC Water recently exhibited extensive engagement with stakeholders through the release of a proposed modification for the Long Term Control Plan to include green infrastructure. The 90-day public comment period allowed DC Water to hold a Green Infrastructure Summit to explain the proposal which attracted over 100 participants from a diverse group of industry, environmental, and neighborhood groups. Moreover, DC Water conducted over 20 public meetings to explain the proposal and gather input from interested parties.

NACWA 2014 Excellence in Management Recognition Program
DC Water
Energy Management

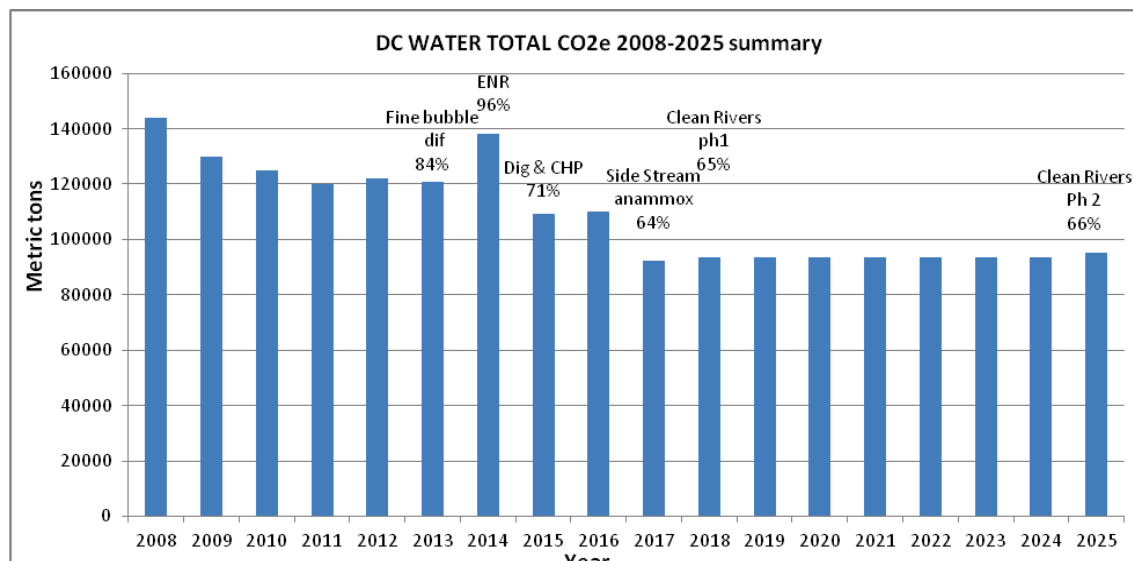
DC Water conducted a twelve month comprehensive energy audit in 2010 which captured energy usage data across all major processes and facilities. The energy audit was a key part of establishing a more focused energy and carbon footprint analysis and management process. The data confirmed that DC Water had reduced its electrical consumption by five percent from 2007 to 2009 as a result of implementing process improvements and equipment upgrades.

The audit identified minor, but quick, energy improvement opportunities as well as major projects for additional evaluation. In light of the findings, DC Water implemented more than 3200 lighting fixture replacements resulting in reduction of 378,000 KWH annually. DC Water also worked with the District of Columbia Sustainable Energy Utility (DCSEU) prior to implementing the changes, which yielded more than \$350,000 in energy rebates.

In 2013, significant construction and installation took place on DC Water's Biosolids Class A Management Project and associated Combined Heat and Power Plant. This project will generate 13 MWs (10 MWs net) using extract biogas from the waste stream thus further reducing greenhouse gas emissions.

Planning began in 2013 for the installation of solar energy panels at the Blue Plains Advanced Wastewater Treatment Plant to capitalize on the 153 acres, most of which hold treatment processes that do not require open air above.

As a result of increased focus on energy efficiency and actions taken DC Water has used 169,500 (9.5%) fewer megawatt hours of electricity over the last seven years. DC Water has developed the below carbon footprint equivalent summary for 2008 through 2025 to assist in maintaining the focus on energy and carbon footprint efficiency and impact.



NACWA 2014 Excellence in Management Recognition Program
DC Water
Water Resource Recycling & Stormwater Management

The District of Columbia Water and Sewer Authority (DC Water) is implementing its Long Term Control Plan (LTCP) through the DC Clean Rivers (DCCR) Project to control combined sewer overflows (CSOs) to the District's waterways. The DCCR Project is comprised of multiple projects designed to meet CSO control objectives and water quality standards in the District. Over the course of a 20-year period, DCCR will design and construct large-diameter underground

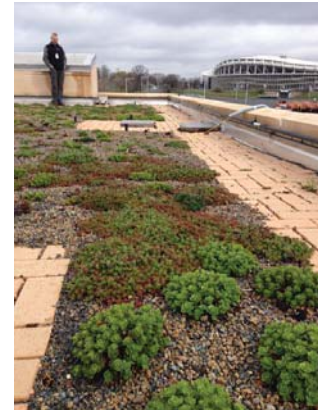
storage tunnels to capture CSO flows during storm events. In addition to the grey infrastructure, in 2013, DC Water implemented Green Infrastructure (GI) retrofits at existing DC Water facilities:

- At Fort Reno Reservoir, a 42,390 sf green roof was installed in addition to 8,363 sf of pervious pavers;
- At Anacostia Water Pumping Station, a 1,453 sf bioretention area and 1,044 sf of pervious pavers were installed; and
- At East Side Pumping Station a 6,576 sf green roof was installed.

The GI measures will be evaluated for their effectiveness by comparing pre- and post-construction water quality (Total Nitrogen, Total Phosphorus, Total Suspended Solids, Fecal Coliform, and Carbonaceous Biochemical Oxygen Demand) and water quantity (flow metering) data. In addition to the lessons learned regarding GI implementation and effectiveness, the projects will serve to create public awareness about the benefits of GI and how it can be implemented successfully in the District at a large scale.

In 2013, DC Water also hosted a GI Challenge competition to advance the state-of-the-art in GI implementation with a focus on: innovation, performance, practicality, and triple bottom line benefits. The Challenge was launched on April 18, 2013 and an award ceremony was held to announce the Planning Phase winners on January 9, 2014. A subset of the Planning Phase designs will be awarded construction funding with construction anticipated for 2015. All the projects will be located within the combined sewer areas of the District providing benefits to this system through reductions in stormwater volumes.

Lastly, in 2013, DC Water advanced the effort to modify the LTCP to implement \$90 Million of GI in the Rock Creek and Potomac River combined sewer drainage areas. The LTCP Modification public comment period was held from January 12 - April 14, 2014. If approved by the EPA and DOJ, the first GI project will be constructed in 2015.



**Green Roof at
East Side Pumping Station
(7 months post construction)**



**Pervious Pavers at
Anacostia Water
Pumping Station**

NACWA 2014 Excellence in Management Recognition Program
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Pretreatment

DC Water has a multi-jurisdictional collection system and receives industrial flow from Virginia (Loudoun Water and Fairfax County) and Maryland (the Washington Suburban Sanitary Commission or WSSC) as well as the District of Columbia at the Blue Plains AWTP. DC Water has overall responsibility for ensuring the industrial users in the area jurisdictions comply with Blue Plains AWTP requirements, but each jurisdiction is responsible for permitting and managing their industrial users within their respective pretreatment programs. Area jurisdictions must report to DC Water on a quarterly and annual basis with information on their programs, including the status of compliance and enforcement actions.

DC Water has an approved pretreatment program through EPA Region III and is fully compliant with 40 CFR Part 403. In DC, the required provisions of the Pretreatment Streamlining Rule were adopted in February 2012 in the wastewater discharge regulations, 21 DCMR Chapter 15.

DC Water currently has 52 Significant Industrial Users (SIUs) in the Blue Plains service area, including 16 in the District, 30 from WSSC, four (4) from Fairfax County, and two (2) from Loudoun Water. Inspections and compliance monitoring are done in the District and area jurisdictions in accordance with 40 CFR 403 and approved pretreatment programs to determine compliance with discharge standards and permit requirements. Enforcement actions are taken, when required, in accordance with approved Enforcement Response Plans.

Compliance status among all SIUs in DC and the area jurisdictions was 67% in full compliance in 2013, 71% in 2012, and 75% in 2011. Total number of enforcement actions was 35 in 2013, 32 in 2012, and 38 in 2011. One SIU was assessed a fine in 2013. No fines were assessed in 2012 or 2011. Most of these violations were non-significant reporting or pH violations. Only 2% of SIUs were in Significant Noncompliance (SNC) for 2013, 2% in SNC in 2012, and 8% in SNC in 2011.

In 2012, WSSC awarded an SIU recognition for implementing an innovative pollution prevention program and for maintaining consistent compliance with pretreatment requirements and standards. This is the fifth year for this award and a 2013 recognition award is also planned.

Additional pollution prevention initiatives include development of Best Management Practices for healthcare facilities and dental facilities in both the District and Maryland jurisdictions. In 2013, WSSC initiated an Oil/Water Separator Initiative to address gasoline stations and vehicle repair shops that are not maintaining their separators. In DC, SIUs are evaluated for pollution prevention initiatives every other year with those in the combined sewer area given special focus on minimizing and controlling batch discharges during wet weather.

DC Water submits an annual pretreatment program report to EPA Region III and has received excellent pretreatment program ratings for the last three years, ranging from 93% to 98%. The average rating among POTWs in Region III is 87.2%.

Biosolids Management - *THERE IS NO SUCH THING AS WASTE, ONLY WASTED RESOURCES.*

DC Water is investing in a new solids treatment technology that will produce green energy, reduce the carbon footprint, and produce a soil product for restoration, tree planting, and green infrastructure. The DC Water thermal hydrolysis and digestion project is a \$470 million capital investment and will dramatically transform the way in which wastewater solids are processed at Blue Plains and managed within the US, making an economical biosolids cake product with greatly enhanced characteristics for beneficial reuse. The project will produce a digested, Class A soil amendment, while converting half the organic matter to digester gas. This project alone will reduce power draw off the grid at Blue Plains by more than 40 percent, and reduce the carbon footprint of DC Water by more than a third (approximately 57,000 metric tons per year).

Impact — Quantifiable Improvements of the Project (see diagram below for reference)

- **Renewable power production** to generate up to 13 MW (net 10 MW) of electricity, paving the way to supply over a third of Blue Plains' power — the largest point source power user in the District of Columbia, and a savings on power purchase of about \$10 million per year.
- **Climate Change Impacts.** Reducing greenhouse gas (GHG) emissions from DC Water facilities is a major criterion for the program. Emission calculations show large reductions due to renewable power offsets, reduced trucking fuel use, and carbon sequestration in soils resulting in GHG reductions of 58,000 metric tons (40%) of CO₂-equivalents per year. Reducing Blue Plains' greenhouse gas emission inventory will significantly improve the District's overall effort to voluntarily reduce its carbon footprint.
- **Greatly enhanced characteristics and value of the biosolids.** This includes a low-odor material, EPA Class A status (no detectable pathogens), screened of extraneous debris, and dewatered to 30 percent solids. The potential uses of the product will be expanded dramatically, and when blended into a soil product, it is suitable for use in an urban setting. Plans are already underway to develop a marketable soil fertilizer product within the Washington DC metro area. We can then use this valuable asset in the DC Water service area for tree planting and green infrastructure, which will help green the city, reduce urban temperatures, and limit the runoff that makes its way to the sewer system.
- **Biosolids quantity reduced** by more than 50 percent (compared with the current lime-stabilization system), saving \$10 million per year in trucking (nearly 2,000,000 truck miles) and related costs for handling the biosolids material.
- **Operations & Maintenance (O&M) cost savings** of about \$28 million per year when the facility comes on-line. This Biosolids Program will pay for itself over time. Customer rates are not increased for this project.
- **Digestion Performance and Site Efficiency.** Maximum organic solids destruction along with maximum digester gas production is highly desirable with the least tankage volume and footprint while leaving space for expanded capacity in the future. Site constraints limit the facilities to less than six acres, an extremely small footprint for such large-capacity systems.
- **Off-the-grid-Power.** Provide backup power (from the CHP) in the event of utility power failure, to power the most critical processes for environmental protection.

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DC Water
Climate Change Adaptation or Mitigation

Many of DC Water's facilities are located and operate in areas vulnerable to climate change - such as flooding, extreme precipitation and weather. The Authority is developing a Climate Change Adaptation Framework, which will be expanded into an Adaptation Plan, to assess vulnerability to impacts of climate change. The conclusions will be included in planning and budgeting. DC Water staff participate in a Climate Change Task Force—an internal working group that coordinates capital and operational activities and informs budgeting and project selection.

Due to both the historical development of the sewer system and the fact that water flows are dictated by topography and gravity, our most critical asset, the Blue Plains Advanced Wastewater Treatment Plant, is located on the Potomac River. Under severe flooding and storm surge predictions, flooding of Blue Plains is expected, causing washout of the beneficial bacteria, and therefore little treatment (primary treatment only until secondary and nitrification bacteria populations are reconstituted) for weeks. Options were analyzed as part of the operational vulnerability assessment, and the construction of a seawall at the 500 year flood level plus 3' of freeboard, was then selected. There are portions of the seawall that are already completed, and the remainder was approved as part of the 2013 budgeting cycle at a cost of \$13 million.

Vulnerability assessments for the Potomac Interceptor, and Pumping & Distribution Systems are complete, while Collections Systems and other facilities are ongoing. The Engineering and Technical Services Planning Branch will be incorporating IPCC climate change data on projected Sea Level Rise into their analysis of critical facilities which will ultimately inform the Water & Sewer System Facilities Plan Update, a 20 year planning document.

The seawall protecting the Historic Main Pumping Station and O Street Pumping Station is being evaluated and may be modified. Operational Preparedness & Response activities throughout the distribution system include 1) A DC Water Flood Response Plan for all facilities and operations; 2) Specialized deployment plans for areas with critical facilities or known flooding challenges; and 3) DC Water is supporting the update of the District Flood Response Plan.

DC Water is the largest electricity user in DC. Extreme weather events can knock out the 25 megawatts of power DC Water relies on for wastewater treatment. The combined heat and power project has the potential to meet most of the plant's critical needs in emergency situations.

Our community outreach and coordination efforts have resulted in DC Water being a key player in about a dozen local/regional climate change initiatives and activities. Just a few of those are:

- Mayor Gray's Sustainable DC Plan
- District Department of the Environment (DDOE)/DC Office of Planning (OP)/Center for Clean Air Policy (CCAP) Workshop – Severe Weather & Critical Infrastructure Resilience
- Metropolitan Washington Council of Governments (MWCOG) Workshop – Drought Monitoring in the Metropolitan Washington Region
- Institute for Sustainable Communities (ISC) Climate Leadership Academy on Adaptive Water Resource Management & Infrastructure