A Carder Bee patrolling its territory of native plants at Rockefeller State Park. Based on recommendations in Governor Cuomo’s *Pollinator Task Force Report*, State agencies are adopting practices to protect pollinators. In 2017, the Department of Transportation earned a NYS Environmental Excellence award for its efforts to create pollinator habitat along highway corridors.
Message from the Commissioners

Through the leadership of Governor Andrew M. Cuomo, New York has experienced steady progress toward the adoption of sustainable practices and operations by State government. GreenNY, the State’s Green Procurement and Agency Sustainability program, is an ambitious effort led by our two agencies, the Department of Environmental Conservation (DEC) and the Office of General Services (OGS), working together to implement Executive Order No. 4 (EO 4), which was continued by Governor Cuomo in January 2011. This Sixth Progress Report documents the achievements that have been attained thanks to the work of dedicated staff in agencies and authorities across the State.

New York State is a national leader in “green” or environmentally preferable purchasing. Buying green products supports all of EO 4’s environmental priorities including reductions in waste, toxics, energy, and water use. The EO 4 Interagency Committee, led by DEC and OGS, has increased its emphasis on making purchasing easier, and last year OGS Procurement Services created a “Green Procurement” team that focuses on the issuance of contracts with green offerings. New York’s success received national recognition in 2017, when it was awarded the Sustainable Purchasing Leadership Council’s highest honor for establishing a comprehensive sustainable purchasing program. Also in 2017, OGS received a national award for excellence in sustainable electronics procurement from the Green Electronics Council. The State’s green procurement program has built a solid track record of moving the market toward green products and services, all while helping the State save money through lower energy costs, less waste generation, and a healthier environment for workers and residents.

Considerable strides have also been made to incorporate sustainability into State operations. In 2017, DOT earned a New York State Environmental Excellence Award from Governor Cuomo for an innovative pollinator protection project along Interstate 1-390 in Livingston County. The new GreenNY website, launched by OGS in April 2017, is a clearinghouse for information, resources, contacts and stories related to agency sustainability and green procurement. The intent is for active, frequent use by Sustainability Coordinators and anyone working to green New York government operations, including municipalities and school districts.

New York is leading the nation under Governor Cuomo’s comprehensive policy for a clean, more affordable and resilient energy system, called Reforming the Energy Vision. Governor Cuomo announced that state-supported solar power in New York increased nearly 1,000% from December 2011 to December 2017. In 2017, OGS announced the award of a centralized contract for power purchase agreements for solar energy, including technical assistance from the New York Power Authority. The contract includes a “model” Power Purchasing Agreement that agencies or municipalities can modify to meet their own project needs. The contract has nine pre-qualified vendors which will help streamline the procurement process.

These successes are made possible by the dedicated work of Sustainability Coordinators designated by agencies and authorities across the State, who tirelessly advocate for the adoption of sustainable practices within their organizations, and tailor projects to fit their agency’s unique mission. They also keep track of the information necessary to produce this Progress Report. We are committed to supporting their efforts and we are proud that New York State, at Governor Cuomo’s direction, is leading the way toward a more sustainable future for all.

RoAnn M. Destito, Commissioner, Office of General Services

Basil Seggos, Commissioner, Department of Environmental Conservation
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Executive Summary

The vision of a vibrant, innovative, and sustainable economy underlies GreenNY, the State’s Green Procurement and Agency Sustainability program. The program’s most remarkable characteristic is that it is holistic, covering all aspects of the State’s ability to positively impact public health, the environment, and the economy through its own operations and purchasing. Areas of focus include avoiding waste, recycling, reducing toxic chemical use, conserving energy, switching to clean, renewable energy sources, greening transportation, conserving water, and using green infrastructure and sustainable landscaping to prevent pollution and protect natural resources.

The program began with the issuance of Executive Order No. 4 (EO 4) in 2008, which establishes a State Green Procurement and Sustainability Program, and Executive Order No. 18 (EO 18) in 2009, which restricts the purchase of bottled water by the State. Governor Andrew M. Cuomo continued both orders in 2011.

EO 4 directs the approximately 73 State agencies, authorities, and other entities covered by the Order (“agencies”) to incorporate sustainability into all aspects of their operations. To accomplish this, agencies are required to implement a Sustainability and Environmental Stewardship Program and assign an employee to serve as Sustainability and Green Procurement Coordinator (“Sustainability Coordinator”). EO 4 also created an Interagency Committee on Sustainability and Green Procurement (“Interagency Committee”) co-chaired by the Commissioners of the Office of General Services (OGS) and the Department of Environmental Conservation (DEC), and charged it with several tasks, including preparation of this report.

EO 18 directs executive agencies to eliminate the purchase of bottled water. Agency reporting under EO 18 has been combined with reporting under EO 4. Both are summarized in this report.

Progress Toward a Green New York

The past nine reporting years, from fiscal year 2008-09 (“FY 08-09”) to FY 16-17, have seen steady progress toward a greener New York. Overall paper use and waste generation levels declined in FY 16-17, continuing the State’s encouraging downward trend. A significant majority of agencies continue to embrace a wide range of practices to reduce their use of materials, toxic chemicals, energy and water, and many are embracing innovative means to generate on-site renewable energy, protect pollinators, and green employee travel.

The backbone of sustainability is collaborative work. Collaboration is enhanced when Coordinators or teams have a recognized, formal role in an agency’s structure that enables them to cut across silos – i.e. across all agency program areas – and engage up and down the hierarchy – i.e. connect with both operations staff (“boots”) and policy makers (“suits”).

Experience has shown that the most successful agency sustainability programs have staff formally dedicated to the work, be it a full-time Sustainability Coordinator or a multi-staff coordination team, who enjoy enthusiastic executive support and the resources needed to continually review their operations, embrace innovation, and overcome challenges. They have established meaningful metrics and welcome the annual reporting process as a powerful tool for measuring performance.
Of the 66 entities reporting in FY 16-17, 83% have a designated Sustainability Coordinator or coordination team. At seven agencies, the Coordinator serves in a full-time capacity. These are among the agencies with the strongest sustainability programs: the Office of Parks, Recreation and Historic Preservation ("Parks"), the Jacob K. Javits Center ("Javits Center"), the Metropolitan Transportation Authority ("MTA"), DEC, the Development Authority of the North Country, the City University of New York ("CUNY"), and many SUNY campuses.

Reducing and Recycling Waste

The GreenNY program has significantly impacted how State agencies generate and handle waste. Agencies have significantly reduced paper use, decreased waste generation, increased recycling rates, and purchased 100% post-consumer recycled content copy paper at high levels. Executive agencies have virtually eliminated the purchase of bottled water.

Most agencies adopted paper use reduction practices in the past nine years. A shift to double-sided printing and electronic transactions resulted in a 57% decrease in paper use through FY 16-17, a highly encouraging trend. These actions saved $27.84 million in FYs 11-12 through 16-17, a total of $49.14 million since reporting began in FY 08-09, and will continue to save approximately $8 million per year going forward. By far the greatest amount ($3.2 million), and more than one-half (52%) of dollars spent on copy paper in FY 16-17 went to purchase 100% post-consumer recycled content, processed chlorine-free copy paper. This represents a 30 percentage point increase from the 22% (or $3.3 million) spent in FY 08-09.

*The modest increase in paper purchased in FY 14-15 is primarily due to a 20 percentage point increase in agencies reporting compared to previous years. In FYs 15-16 and 16-17, paper use declined even though the number of reporting agencies remained higher than 14-15.

FY 16-17 saw a decrease in overall waste generated to 513,412 tons, an 11% decrease from 15-16. This total includes 275,167 tons of construction and demolition (C&D) debris generated by two large entities, MTA and the Department of Transportation (DOT), which is 6,392 tons less than the amount of C&D they generated in FY 15-16, but still 182,878 tons more than the amount they generated in 14-15. When this latter number is subtracted from the total, the overall amount of waste generated in FY 16-17 drops to 330,534 tons, a decrease of 68,361 tons (or 17%) from the 398,895 tons of waste generated in 14-15, and a 59% decrease from 08-09, which maintains the State’s encouraging waste reduction trend.
The encouraging story told by the data again this reporting year is the remarkable progress made in recycling C&D debris. In FY 10-11, the State saw a similar increase of 200,000 tons of C&D debris generated by MTA. Although MTA additionally generated and recycled an impressive total of 151,000 tons of C&D debris in that year, none of the 200,000-ton bump in C&D debris generated was recycled, which caused a dip in the overall State recycling rate to 45%, its lowest recorded level.

MTA adopted an ambitious C&D recycling goal in 2014. Due to their continuing efforts, all of the additional 140,427 tons of C&D debris they generated in FY 16-17 compared to FY 14-15 was recycled. In FY 16-17, DOT reported 20.1 lane miles of cold in place asphalt recycling, or 42,451 tons of recycled C&D material. Together, these two figures add up to 182,878 tons more C&D debris generated than in FY 14-15, all of which was recycled.

In the last five reporting years, 70% or more of the solid waste generated by State agencies was recycled or composted, compared to a 50% rate of recycling in FY 08-09. In the last two reporting years, that percentage rose to the highest levels recorded, 78% and 77%, due to impressive increases in the recycling rate of C&D debris.

Office waste accounted for only 7% of the total waste generated in FY 16-17 (non-office waste accounted for 93%), and the amount of office waste generated fell by 18% compared to the previous year. Overall, office waste generation has decreased by 30,124 tons, or 43%, since FY 09-10, an encouraging downward trend.

The total amount of organic material composted in FY 16-17 dropped slightly by 495 tons (or 3%), from that reported in the previous year, to 18,124 tons. Food scrap composting, a subset of this number, rose slightly by 70 tons (or 1%) to 7,927 tons. These numbers still represent a robust increase of 24% over the 14,625 tons of total organic material composted in FY 14-15, and a 7% increase over the amount of food scraps composted in 14-15.

The executive agencies covered by EO 18 have virtually eliminated the purchase of bottled water. Eleven executive agencies continue to use bottled water under special circumstances, such as for soldiers on active duty. 76% of authorities and other reporting entities not covered by EO 18 have elected to comply anyway, restricting bottled water use to special circumstances.
Greening State Operations

Overall, agency reports document the widespread adoption of green practices that are helping to reduce energy use, waste, water use, and the use of toxic chemicals. Other initiatives, such as the use of renewable energy, the purchase of Zero Emission Vehicles (ZEVs) and the adoption of employee workplace charging programs, are still in their infancy but promise growth in future years.

In FY 16-17, agencies reported the following levels of sustainable activity:

- **92%** use electronic means to provide documents to the public **all or a majority of the time**, and **89%** use electronic means to receive documents or information **from** the public **all or a majority of the time**.

- **89%** set weather-appropriate building temperature control ranges to conserve energy **at all or a majority of their facilities**.

- **85%** use two-sided printing **either all or a majority of the time**, and the number using it all the time increased by 11 percentage points.

- **82%** of agencies responsible for performing or contracting for cleaning at their facilities use green cleaning products **all or a majority of the time**. The number of agencies practicing green cleaning at all of their facilities increased by 8 percentage points.
- 80% of agencies responsible for indoor pest management use integrated pest management (IPM) at all or a majority of their facilities, an increase of 9 percentage points.

- 77% of agencies have installed ENERGY STAR® equipment and appliances at all or a majority of their facilities.

- 69% reduced vehicle miles traveled.

- 52% of agencies responsible for turf and ornamental pest management use non-chemical means of pest control at all or a majority of their facilities.

- 36% of agencies responsible for pest management at exempted outdoor facilities, such as golf courses and rights-of-way, reported using IPM or IVM at all or a majority of such facilities.

- 36% of agencies responsible for turf and ornamental management reported avoiding nursery stock treated with insecticides at all or a majority of their facilities.

- 17% of agencies generated renewable energy on-site, totaling 68.4 million kWh of energy, enough to power more than 6,300 homes for one year.

- 96% use webinars or videoconferencing at least some of the time to reduce employee travel, with 29% using them all of the time, an increase of 9 percentage points.

- 87% of agencies use carpooling and fleet management practices at least some of the time to reduce employee vehicle miles traveled.

- 77% use high efficiency plumbing fixtures in at least some of their facilities.

- 62% of agencies have an office supply reuse program in place in at least some of their facilities.

- 30% of all agencies, including those in leased spaces and not directly responsible for landscaping, use, or are located in facilities that use, practices that preserve or maximize the use of native vegetation to support pollinators and reduce water, energy, and toxic chemical use at least some of the time.

Buying Green

New York’s green purchasing program received national recognition in May 2017, when the State earned the highest honor awarded by the Sustainable Purchasing Leadership Council for putting in place a comprehensive purchasing program that exemplifies the qualities defined in the Council’s “Principles for Leadership in Sustainable Purchasing.” It also earned a national award for excellence in sustainable electronics procurement from the Green Electronics Council, for requiring that all microcomputers purchased through OGS’s aggregate buy meet EPEAT requirements, a global environmental rating system managed by the Council.

The tracking of green purchasing improved significantly in FY 16-17. OGS Procurement Services was able to calculate the amount spent on green products through State centralized contracts in eight product categories, including EPEAT certified computers, recycled content copy and janitorial paper, environmentally preferable cleaning products, energy efficient lighting, photovoltaic systems, re-refined motor oil, green carpet and carpet tile, and recycling and composting services. That total was $111.9 million.

In response to an improved format for capturing what each agency spent on green products and services in this year’s reporting form, both the number and quantity of purchases reported increased significantly. Compared to FY 15-16, the number of respondents increased from 9 (14%) to 33 (50%) in FY 16-17, and the reported amount of green spending increased from approximately $200,000 to $32.9 million. Taking the two sets of data together, and subtracting agency reports from centralized contract reports where applicable, the total spent on green products by state entities, local governments, and authorized users of state contracts was estimated to be $131.3 million in FY 16-17.
Almost two-thirds (63%) of dollars spent on janitorial paper in FY 16-17 went to purchase 100% recycled content paper, a significant increase from the 34% spent on such paper in FY 08-09. The encouraging trends for both copy and janitorial recycled paper purchasing indicate widespread culture change and illustrate the power of state contracting, as they were supported by statewide contracts for 100% recycled paper issued by OGS in 2008.

EO 4 requires the Interagency Committee to annually select a minimum of three priority categories of commodities, services, and technologies, and at least 12 priority commodities, services, and technologies within each category for which to develop green specifications. To date, the Committee has finalized 52 green specifications covering a broad and diverse array of 90 products and services, including computers, cleaning products, lighting, pest management, and sustainable landscaping. Many of these specifications are among the most protective in the country.

Currently, green products are offered on more than a dozen centralized state contracts, including Recycled Copy Paper, Environmentally Preferable Cleaning Products, and Photovoltaic Systems. In 2017, OGS issued a new contract for motor oil that includes re-refined oil, awarded a new contract for Solar Power Purchase Agreements (PPAs), which provides a streamlined process to purchase solar power, and created a “Lighting Hot List” for the Industrial and Commercial Supplies contract which offers increased discounts for frequently purchased items, including those that meet the State’s green specifications for lighting.

Green products are also available from preferred sources, such as recycled content paper towels and toilet tissue from the New York State Industries for the Disabled (NYSID), and a wide range of cleaning products from NYSID, Corcraft, and NYS PSP for People Who Are Blind.

In April of 2017, OGS established a new Green Procurement Team to focus on the development of green contracts, the identification of green products offered through contracts or Preferred Sources, and to help contract users find green products. The team is currently developing contracts for Environmentally Preferable Lighting and Photovoltaic Systems. A list of state centralized contracts and Preferred Sources which offer green products is available at https://www.ogs.ny.gov/greenny/green-contracts.asp.

Close to all agencies reporting (95%), consulted GreenNY specifications when making purchases at least some of the time in FY 16-17, and 62% did so all or a majority of the time.
Saving Money

Overall, New York’s experience has shown that sustainable practices do not cost more and can even save money, especially energy and waste reduction.

On average for FY 09-10 through FY 16-17, 34% of agencies reported saving money through energy reduction, 31% saved money by eliminating the purchase of bottled water, and 30% saved money through waste reduction and reuse. Most reported either a reduction or no change in costs due to the implementation of projects across EO 4’s other areas of focus: 49% for water and natural resource conservation, 50% for non-chemical pest control or integrated pest management (“IPM”), 50% for recycling and composting, 46% for green cleaning, and 41% for green procurement. Significantly fewer agencies (3% to 16% depending on the activity) experienced increases in costs. More than one-third did not have estimates for changes in costs due to their activities.

Success Stories, Challenges and Lessons Learned

Agencies take different approaches to sustainability work that vary according to their size and structure, as well as the nature of their facilities. Each is achieving success and results, but the work is not without challenges. Former challenges being met include:

**OGS’ creation of a team dedicated to developing green contracts**, the growing list of green specifications and green products available on contract, and the increased profile of green purchasing on OGS’ website and GovBuy, is making it easier for agencies to identify green products and purchase them at a competitive price.

**Purchases of 100% post-consumer recycled content copy paper have increased** and remain robust, despite initial concerns about price and performance. Data for the last nine years shows that 100% recycled copy paper, on average, costs the same or less than other papers, and only one agency reported concerns about the performance of such paper in FY 16-17.

**Green cleaning continues to be widely practiced**, despite initial concerns about price and performance. The *Environmentally Preferable Cleaning Products* contract, as well as robust green offerings by preferred sources, continue to make it easier for agencies to identify and purchase effective green cleaning products at competitive prices. Only three agencies reported concerns about the performance of such products in FY 16-17.

**Improved education and training is the strategy cited most frequently as a potential solution to numerous challenges**, especially those that involve changing behavior. For example, SUNY Canton states that “a well-done employee training program is key to an effective green cleaning program.”

**The new GreenNY website, launched in April 2017, provides a wealth of resources** for sustainability coordinators and anyone interested in promoting sustainability. The GreenNY Forum convenes agency coordinators on a yearly basis to exchange information and provide mutual support.
Issues that are the focus of troubleshooting efforts include:

**Location in leased space continues to raise unique challenges.** The need to work with OGS, as well as a landlord, adds additional layers of personnel who must be consulted with and ultimately sign-off on projects. One key to success is communication. Agencies in leased space are encouraged to set up regular opportunities for consultation with facility managers and OGS real property staff on sustainability projects.

**Tracking solid waste remains a challenge, especially for smaller agencies.** Conducting a waste audit continues to be the most effective way to obtain data on the type and quantity of waste generated. A Waste Audit Guidebook is available on the GreenNY website. DEC invites agencies to participate in its yearly audits as a training exercise, and will provide technical assistance upon request.

**Starting and maintaining a surplus property program can be challenging.** Investments of time or money may be required, and identifying the appropriate and most efficient avenue for donation can be challenging. State authorities have more leeway to donate property according to their own guidelines, while state agencies have restrictions on donation to outside organizations pursuant to the State Finance Law. Parks, DEC, EFC, the Development Authority of the North Country, CUNY and many SUNY campuses are pioneers in this area.

**Staff, funding, and high-profile senior management support.** The most successful agency sustainability programs have a full-time Sustainability Coordinator, a multi-disciplinary team, enthusiastic executive level support, effective methods for tracking progress, and a reliable source of funding. It is often easier to implement sustainability projects when they are piggybacked onto new construction, upgrades, or broad changes in policy that can accommodate innovative, sustainable outcomes.

**Most financial accounting systems used by agencies do not track green purchasing.** Barriers include a lack of standard definitions and a coding system for green products. The Interagency Committee continues to work on approaches to track green purchases in OGS’s e-catalog and the Statewide Financial System.

**Renewable energy use is poised to increase.** A series of ambitious initiatives launched by Governor Cuomo in the past two years, including the goals of sourcing 50% of New York’s electricity from carbon-free renewables by 2030 and sourcing 100% percent of SUNY’s electricity from zero-net carbon sources, as well as the creation of a centralized contract for solar PPAs, promise to increase renewable energy use significantly in future years.

**New and Noteworthy Initiatives in FY 16-17**

**People, Planning, and Money**

- After hiring a full-time energy manager in the summer of 2016, SUNY College of Environmental Science and Forestry completed six efficiency projects in one year, leading to $190,000 in expected annual savings.

- The Erie County Medical Center Corporation began providing waste reduction and recycling training to all new hires during orientation.

- CUNY held a sustainability competition and awarded small grants to three campuses for food waste projects.

**Waste Reduction**

- Civil Service increased their use of on-line examination filing to reduce paper and postage costs.

- MTA developed a Waste Management Calculator to encourage reuse and recycling by contractors and make it easy to track the total amount of diverted materials.

- The Development Authority of the North Country (DANC) established a virtual reuse center on their computer network.

- Parks started diverting food scraps from one its educational centers to a local pig farm.
Recycling

- DANC successfully implemented a new recycling program at the City of Ogdensburg’s waste water treatment plant. With the support of the City, DANC is also educating staff about proper recycling practices.
- Parks had in-house carpenters build recycling containers to be placed throughout the park system.
- SUNY Binghamton implemented a new pallet recycling program, which has diverted 64,000 pounds of material from the landfill, decreased down time for workers, and cut disposal costs by 75%.
- DEC is composting food scraps in eight out of nine regions.

Reducing Pesticide Use

- The United Nations (UN) Development Corporation’s use of IPM enabled them to eliminate the use of toxic pesticides.
- Several CUNY campuses used cryogenic pest control systems to eliminate bedbugs without toxic chemicals.
- SUNY New Paltz banned the use of pesticides on their grounds, with the exception of weed control in some athletic fields.

Green Cleaning

- The Port Authority of NY/NJ instituted a policy requiring contractors to use green cleaning products.
- Westchester County Health Corporation started using a floor cleaning technology that electrically converts water into a solution of microscopic bubbles.

Energy Efficiency

- The Niagara Frontier Transportation Authority began a project to replace over 900 lights at Buffalo Niagara International Airport with more energy efficient alternatives.

Renewable Energy

- The Olympic Regional Development Authority announced the completion of Gore Mountain Ski Resort’s 5.3 mW solar array in Washington County, the largest dedicated to a ski resort in the nation.
- SUNY announced the installation of four new geothermal systems on campuses across the State.
Sustainable Transportation

- The *Environmental Facilities Corporations* ("EFC") lowered their vehicle miles traveled ("VMT") by another 26%, bringing their decline in VMT to nearly 50% in three years.

- The *Buffalo Fiscal Stability Authority* offers staff the option of a public transit reimbursement in lieu of a parking pass.

Water Conservation and Reuse

- The *UN Development Corporation* installed water conservation fixtures in 26 restrooms as part of a renovation project at 2 UN Plaza.

Green Infrastructure and Sustainable Storm Water Management

- *CUNY Bronx Community College* constructed a new campus quad with native plantings irrigated by storm water from an adjacent building.

Sustainable Landscaping

- *DOT* earned a NYS Environmental Excellence Award for an innovative pollinator protection project along Interstate 1-390 in Livingston County.

- DANC used native trees and shrubs as landscaping at their new materials management facility.

Green Procurement

- The *Division of Housing and Community Renewal* began purchasing only 100% recycled content copy paper.

- The *Department of Motor Vehicles* practices green cleaning by using NYSID as a janitorial contractor.

Restricting the Use of Bottled Water

- *SUNY Cortland* installed six more filling stations on campus, this time nearby and within dining facilities.

- The *Niagara Frontier Transportation Authority* installed bottle filling stations at the Buffalo Niagara International Airport.
Achieving the Promise of Sustainability

A sustainable economy is healthy, vibrant, innovative, resilient, and diverse. Building a sustainable future requires persistent innovation as New Yorkers work together to shift from the inefficient use of energy and materials toward a new paradigm that emphasizes efficiency, closed-loop and cradle-to-cradle product purchasing, toxic-free products and practices, and the protection of natural resources and ecosystems. Government protocols are informed by efforts in the private sector (e.g., by the winners of New York State’s Environmental Excellence Awards), and these leadership practices provide a business model for others, giving businesses, institutions, and individuals the inspiration and information they need to incorporate sustainability into their business operations.

There are approximately 73 State agencies, authorities, offices, commissions, boards, and public benefit corporations (“agencies” or “affected entities”) currently covered by EO 4. Under the Executive Order, each are directed to incorporate sustainability into all aspects of their operations. EO 18 requires agencies to “eliminate the expenditure of State funds for the purchase of bottled water.” To accomplish these goals, agencies are required to develop and implement a Sustainability and Environmental Stewardship Program, implement effective waste reduction and recycling strategies (including eliminating the use of bottled water), and assign an employee to serve as Sustainability Coordinator. These coordinators serve the crucial function of incorporating sustainability into the day-to-day operations of their agency.

Both Orders require the Commissioners of OGS and DEC to report regularly on progress, in consultation with members of the Interagency Committee on Sustainability and Green Procurement, on which they are co-chairs. EO 18 authorizes combined reporting for the two Executive Orders, and one form has been used for agency reports since FY 09-10.

Reporting has remained robust since the first year of reporting in FY 08-09, when 69 EO 4 reports were filed by the roughly 100 entities covered by the Order at that time. In 2011, Governor Cuomo initiated a consolidation effort among State agencies and authorities in order to improve government efficiency and performance. Taking into account joint reporting, approximately 73 reporting entities are now covered by the Order. A record number of agencies, 66, or 90% of all covered entities, filed reports in both FY 15-16 and FY 16-17. This summary compiles those individual reports and uses their most recent information, when necessary, to provide a complete picture of progress.
The Benefits of Sustainability

The goal of shifting government operations and procurement toward a sustainable framework is to achieve a win-win for the environment and the economy by significantly reducing pollution and waste while saving taxpayer dollars. New York is comparable in size to a Fortune 500 company, with a considerable environmental footprint and remarkable purchasing power. Currently, New York State government:

- Operates more than 16,000 facilities totaling 225 million square feet, with an estimated annual utility bill of $600 million.
- Generates approximately 400,000 tons of solid waste, more than a quarter of which is office waste.
- Operates more than 24,000 vehicles.
- Spends approximately $8 billion per year on the purchase of commodities, services, and technology.

Some of the key benefits of greening State government include:

**Reducing Materials Use.** Reducing materials use and reducing or eliminating waste cuts pollution, energy use, greenhouse gas emissions, water use, and labor costs all along the supply chain, from raw material extraction through transportation, manufacturing, and end-of-life management. Greenhouse gas emissions can be reduced by more than 8 metric tons of CO$_2$ equivalent (MTCO2e) by reducing office paper use by just one ton. Reusing, upcycling, or sustainably remanufacturing a product conserves the energy, labor, and materials embedded in the product, effectively closing the loop and reducing waste.

**Recycling.** Diverting materials from landfill to recycling and purchasing products with recycled content avoids environmental impacts associated with raw material harvesting and the disposal of waste, including habitat loss, energy use, water use, and pollution. Each ton of paper recycled saves enough energy to power the average American home for six months and reduces greenhouse gas emissions by 1 MTCO2e. Recycling also creates jobs. According to the Institute for Local Self-Reliance, every 10,000 tons of waste kept out of the landfill can create 10 recycling jobs or 75 material reuse jobs. The depletion of natural resources may also weaken the economy and hinder economic growth because raw material scarcity can alter market prices.

**Reducing Toxic Chemical Use.** Reducing or eliminating toxic chemical use (e.g., by reducing the use of pesticides or utilizing green cleaning products) creates a healthier indoor and outdoor environment for State employees, visitors, and facility residents, resulting in long-term health benefits for all users, as well as fewer sick days and higher productivity for state employees. It also reduces chemical bioaccumulation and biomagnification in the environment, toxic exposures to manufacturing employees, and the costs of managing toxic materials during use, transportation, and disposal, including the significant cost of remediating contaminated sites. Products made without toxic chemicals are also easier and safer to recycle and reuse.

**Conserving energy.** Using less energy reduces the pollution, greenhouse gas emissions, materials use, water use, and costs associated with energy generation. Redirecting our energy sources away from fossil fuels and toward clean, renewable energy, such as wind and solar, is creating jobs in New York State. Over time, renewable energy technologies create a net-positive, regenerative effect on the environment, allowing air, water, and land to return to a healthy state.

**Conserving Water and Other Natural Resources.** Conserving water and practicing sustainable resource management protects water quality, biodiversity, and habitats. It also reduces energy inputs and costs associated with the treatment and delivery of potable water. Sustainably managed ecosystems provide many services to New Yorkers, including the purification of water and air, waste decomposition and detoxification, CO$_2$ sequestration, pollination, local sources of timber, areas for hunting, fishing, recreation, ecotourism, and wildlife viewing, and the use of natural systems for scientific education.

Sustainability projects reduce pollution and waste, save taxpayer money, and foster innovation. They also support a wide range of New York State goals and initiatives.
Holistic Thinking and Multiple Benefits. When project teams consider a wide range of opportunities and potential impacts, they are better able to achieve multiple benefits. For example, an energy efficiency project that embraces the additional goal of improving indoor air quality avoids a potential pitfall and increases project benefits. Lean efforts to streamline licensing projects can reduce paper use and help government respond more quickly. A regulation that requires large manufacturers to reduce the use of solvents with high levels of VOCs should also ensure that manufacturers do not switch to solvents that are more toxic but emit less VOCs.

Reducing Silos and Fostering Innovation. The State’s sustainability efforts have increased communication across agencies and authorities, and allowed for the sharing of best practices and results. In turn, successful programs are serving as role models for local governments and the private sector. Green procurement specifications provide a clear market signal that drives innovation and helps build a more diverse, resilient, and stable economy. The GreenNY website is a great example of silo-breaking work implemented by the EO 4 team.

State Initiatives Supported by Agency Sustainability and Green Procurement

Here are a few New York State initiatives directly supported by the work occurring under EO 4:

A Healthy Environment and Economy

- **The Environmental Protection Fund** supports land acquisition, waterfront revitalization, municipal recycling, and pollution prevention.

- **The DEC Environmental Excellence Awards** program honors innovative businesses and organizations in NY that go above and beyond regulatory requirements to incorporate sustainable practices.

- **The DEC New York Green Business** program helps to break barriers between the public and private sector by providing recognition and incentives to businesses with sustainable practices.

- **Taste NY** and **Buy NY** expand the market for food and beverages produced in New York State.

- **New York FreshConnect Farmers’ Markets** provide fresh foods in high need neighborhoods while supporting locally sourced foods and local farmers.

- **Green Jobs – Green NY** provides access to training for energy efficiency, renewables, and other green-collar careers.

Materials Management

- New York’s **Beyond Waste** sustainable materials management plan establishes a goal of reducing waste disposed from 4.1 to 0.6 pounds per person per day by 2030.

- The **2017 DEC Organic Waste Initiative** provides $3.5 Million in grants to increase donation of wholesome food and divert food scraps from landfills.

- The **DEC Product Stewardship Program** helps NYS residents to recycle Electronic Waste, Rechargeable Batteries and Mercury Thermostats.
Toxics Use Reduction

- New York’s **Green Cleaning Program** *(Chapter 584 of the Laws of 2005)* requires elementary and secondary schools to use environmentally preferable cleaning products.
- The DEC **Household Cleansing Product Information Disclosure Program** requires manufacturers to disclose the ingredients in consumer and commercial cleaning products.
- The DEC **Hazardous Waste Reduction Planning Program** requires generators of large amounts of certain hazardous wastes to create and implement hazardous waste reduction plans.
- The **Pollinator Task Force** issued recommendations in 2016 to address pollinator population loss in New York State.
- The **Environmental Monitoring** program at DEC helps NY to understand the presence of toxic chemicals and pesticides in the aquatic environment which influences regulation.
- The **New York State Pollution Prevention Institute** helps NY residents and businesses to implement cost-effective, sustainable solutions.

Energy

- **Executive Order No. 88** drives improvements in energy efficiency in State buildings, with the goal of reducing energy-use intensity (EUI) 20% by 2020.
- **Executive Order No. 166** redoubles New York’s fight against the economic and environmental threats posed by climate change and affirms the goals of the Paris Climate Agreement.
- Under the **Regional Greenhouse Gas Initiative**, multiple states are working together to cap and reduce CO₂ emissions from the power sector.
- The **2015 New York State Energy Plan, Reforming the Energy Vision**, and **The Clean Energy Standard** call for ambitious action to meet clean energy goals, such as 50% of electricity from renewables by 2030.
- The **Clean Energy Fund** is a 10-year, $5 billion commitment to implement the State Energy Plan.
- **NY-Sun** helps make solar energy affordable for all New York residents, with the goal of adding more than 3 GW of installed solar capacity across the State by 2023.
- **K-Solar** helps public schools lower their energy costs through clean, local power.
- The **Multi-State ZEV MOU and Action Plan** is a collective commitment by New York and seven other states to have at least 3.3 million ZEVs operating on their roadways by 2025.
- In 2015, New York joined the **International ZEV Alliance** to work with partners across the globe to expand the electric vehicle market and phase out fossil fuel vehicle sales by 2050.
- **Clean Fleets NY** requires that at least 50% of new, administrative-use vehicles purchased by select State agencies be ZEVs, including battery electric, plug-in electric hybrid, or hydrogen fuel cell vehicles.
- Through **ChargeNY**, the State is investing toward the goal of installing 3,000 electric vehicle charging stations across the State to support 40,000 new plug-in electric vehicles on the road by 2018.
- **The Drive Clean Rebate, Truck Voucher Incentive Program, Clean Pass Program**, and **Green Pass Discount** help to incentivize the use of battery electric, plug-in electric hybrid, or hydrogen fuel cell vehicles.
- **The Charging Station locator** helps New Yorkers to find charging stations throughout the state.
Water and Other Natural Resources

- The **Governor’s Office of Storm Recovery, NY Rising**, and the **Community Risk and Resiliency Act** help impacted communities with reconstruction following storm events.

- EFCs **Green Innovation Grant Program** enables most types of state entities to receive grants for green infrastructure such as Green Roofs, Riparian Buffers, Bioretention, and permeable pavement.

- The **NY State Excelsior Conservation Corps** provides internships and volunteer opportunities that educate and allow participants to gain hands-on stewardship experience in parks and other natural areas.

- **Adventure NY** was announced by Governor Cuomo in 2017 which helps to protect NY Natural Resources.

- The **NYS Soil & Water Conservation Committee** is a partnership among many NY state agencies to advance comprehensive natural resources management through the support of local Soil and Water Conservation Districts.
Operating Green

New York enjoys the services of a wide range of government agencies. Facilities include office space, highways, hospitals, group homes, prisons, parks, forests, fish hatcheries, golf courses, railroads, power plants, and universities. Each are required to adopt a sustainability program to reduce the adverse public health and environmental impacts of their operations by designing programs that work best in the context of their unique mission.

New York’s sustainability program is remarkably holistic, covering all aspects of environmental impact. Areas of focus include materials use reduction, reuse, recycling and composting; toxics use reduction; energy efficiency; renewable energy; transportation; water conservation; green infrastructure; sustainable storm water management and landscaping; and the purchase of green products, services, and technology.

An overarching theme of sustainability work is “continuous improvement.” As the chart below illustrates, the process of implementing a sustainability program is circular, with “Define and Commit” as the first step. It is a continuous feedback loop of vision, effort, measurement, troubleshooting, reporting, improvement, and building on success. A healthy system continuously innovates to identify solutions that elegantly address challenges without creating new problems.

Sustainability reporting makes New York’s efforts more effective by helping agencies assess their progress and share lessons learned. Sharing obstacles allows for collaborative problem solving, while sharing successes inspires further innovation.

The sections below present performance metrics and cost information for each area of focus of sustainable activity. They summarize the challenges experienced by agencies, share how some have navigated those challenges to achieve even greater success, and highlight noteworthy new initiatives begun, underway or completed in the reporting period. Each achievement rests on years of effort and brings us closer to the vision of operating green.
Engaging the Green Team: People, Planning and Money

Experience has shown that the most successful agency sustainability programs have staff formally dedicated to pursuing the work, be it a full-time Sustainability Coordinator or a multi-staff coordination team. Those coordinators enjoy enthusiastic executive level support, as well as the support of a multi-disciplinary sustainability team, and have resources to carry out their work. Their agencies have established metrics and an effective method for measuring progress, and embrace the EO 4 and EO 18 reporting process as a powerful tool for measuring performance. Successful agencies also provide regular opportunities for engagement and training to make staff aware of the agency’s sustainability goals and encourage active involvement in sustainable practices, such as zero waste events, recycling, or green cleaning.

The backbone of sustainability is collaborative work. Collaboration is enhanced when Coordinators or teams have a recognized, formal role in an agency’s structure that enables them to cut across silos and engage all levels of management and operations. We have found, through the years, that improvements can be achieved in every agency, yet the agencies with two or more of the following structural elements are making the most significant progress:

- A designated Sustainability Coordinator or team of coordinators (Coordinator)
- A sustainability plan, program or metrics of some type (Plan)
- Employee engagement, often through a sustainability team structure (Engagement)
- Robust, ongoing education and training programs (Training)
- A reliable source of sustainability funding (Funding)

Agencies with strong sustainability programs include CUNY, MTA, Parks, DEC, the Javits Center, the Development Authority of the North Country (DANC), and many SUNY campuses. Sustainability plans for CUNY, MTA, DANC and many SUNY campuses, as well as a list of New York agency sustainability coordinators, can be accessed [here](#). We encourage agencies to reach out to each other for support and more information.

Findings

In FY 16-17, 66 agencies reported the following about their sustainability structure:

- 55 entities (83%), have a designated sustainability coordinator or team.
- At 7 agencies (11%), the Sustainability Coordinator serves in a full-time capacity as coordinator only. They are: CUNY, MTA, Parks, the Port Authority of NY/NJ, Tax and Finance, NYPA and the Javits Center.
- The clear majority of agencies (71%), have a Sustainability Coordinator that serves only part time in that role.
- 33 agencies (50%) are working on or have finalized a formal sustainability plan, up from 29 (44%) the previous year.
- Two agencies (3%) have a dedicated budget or fund for sustainability initiatives.

Sustainability Coordinators have a variety of functions throughout the state. Most (91%) are directly responsible for statewide data gathering and providing information for this report. One third help set sustainability goals for their organization, monitor and evaluate areas for improvement, and brief management on progress. Just over 40% help implement new sustainability initiatives.

In the areas of engagement and training, agencies reported that:

- 26% are taking advantage of the training offered by the EO 4 Training Subcommittee.
• 29% participated in the Green NY Forum, an annual event that brings together Sustainability Coordinators and staff working on sustainability issues from across the state to network and share ideas.

• 42% are provide engagement and training opportunities to staff about sustainable practices or green procurement.

• 18% provide outward facing sustainability education or communication to the public at large.

Success Stories, Challenges and Lessons Learned

Agencies take different approaches to sustainability work that vary according to their size and structure, as well as the nature of their facilities. Each is achieving successful engagement and results, but the work is not without challenges.

One challenge is that improvement frequently involves a shift in effort, requiring more labor and attention to how a task is done, at first, to achieve greater sustainability. For example, it is easier to throw all types of waste into one bin than it is to figure out what should be placed where, and arrange for different types of removal services. Sustainability can also spur agencies to optimize in ways that may be outside their experience. For example, sustainable landscaping may require learning about different types of plants and ways to maintain grounds apart from mowing.

Some challenges may require new policies or culture change, and may take years to yield a solution. Each employee who changes their printing habits, asks for a pitcher of water at meetings instead of bottled water, or seeks carpoolers to a meeting, is moving New York State in the right direction. The key is to be committed, persistent, and process-oriented to maintain traction and momentum.

Staff and Engagement

A designated Sustainability Coordinator or coordination team serves as a point of contact for management and staff, and provides a point of focus that can identify opportunities, support projects, and gather data consistently. Once an opportunity or problem is identified, they also enjoy a relationship with other Coordinators in the State, from whom they can receive guidance and encouragement. Agencies without a coordinator lack these benefits. In cases where a Coordinator exists, but sustainability is just a small fraction of their work, changes, though positive, tend to be narrow instead of systemic.

As with any long-term initiative, changes in staff can significantly impact the quality of initiatives or reporting. Whenever an agency’s designated Sustainability Coordinator leaves or retires, agencies are strongly encouraged to quickly designate a replacement.

The engagement of employees is also critical to success. Interacting with a broad cross-section of staff enhances the ability of Coordinators to identify where improvements can be made, as well as the steps necessary to achieve them. Staff with boots on the ground can help Coordinators set achievable goals and design a workable approach to implementation. For change to occur successfully, the people tasked with making changes need to know “why” in a way they can relate to and “how” in a way they can reasonably implement.
Here are some good examples of effective staff structures at State agencies:

- **DANC**’s sustainability committee is made up of 10 employees, with members from each division. Approximately 6 additional employees provide data collection and purchasing tasks associated with sustainability. The Authority’s sustainability plan was developed in 2011 and is reviewed and updated annually. A standard operating procedure for EO 4 tracking and reporting provides clear direction to employees and minimizes data collection errors. Staff engagement takes place at regular staff meetings, where a sustainability update is generally provided by a committee member from the facility.

- **DEC**’s collaborative, multi-disciplinary sustainability structure, launched in 2016, is highly effective at “silo-busting” and completing successful projects. In lieu of a single coordinator, agency sustainability efforts are co-led by two staff, one drawn from Operations and one from program staff, supported by 3 additional Sustainability Leadership Team members from central office, the regions and executive. Each of DEC’s 9 regions has also established an interdisciplinary sustainability team led by the Region’s Sustainability Coordinator and Operations Supervisor.

- **MTA** headquarters has 5 dedicated full-time staff who work in the Sustainability & Environmental Compliance Department on energy and environmental policies and initiatives, including EO 4, EO 18, and EO 88. In addition, each MTA agency has begun implementing their own, agency specific, sustainability efforts.

- The Sustainability Coordinator at NYSERDA has convened an informal sustainability team that includes the Director of IT, the Facilities Manager, the EO 88 Energy Manager, and the EO 88 Day-to-Day Manager. The Team meets quarterly (or more frequently as needed) to discuss new projects, policies, and compliance. Starting in 2018, the Legal Department will also be involved in team meetings, and their role in overseeing compliance should help move projects forward.

### Education and Training

Employees are often unaware of the cumulative effects of their daily choices. Seemingly innocent behaviors can add up to waste, health and safety issues, and unnecessary expense. For any agency to meet its sustainability goals, staff and other stakeholders, such as facility users, students, and residents, must all be aware of those goals and be familiar and comfortable with sustainable practices.

If a sustainable action is embedded in an automatic system (for example, the powering down of all computers at 6 p.m.), implementation is relatively easy. Where an activity requires staff or patron participation, such as recycling, there will be a continuous need for messaging, training, and the restating of goals over time. The intentional integration of best practices into an agency’s way of doing business and reinforcement by upper level management is essential to continued progress.

Agencies are encouraged to provide basic sustainability awareness training, continuously encourage better practices in the workplace, and empower employees to change their behaviors. Engagement and education should separately target staff who conduct purchasing or manage facilities or fleets, providing them with guidance on green specifications and the availability and optimization of new technologies.

Improved education and training is the strategy cited most frequently by Sustainability Coordinators as a potential solution to numerous challenges, especially those that involve changing behavior. For example, SUNY Canton states that “a well-done employee training program is key to an effective green cleaning program.”

Most agencies share sustainability information with staff through simple, low- or no-cost ways that rely on existing resources, such as posting information on internal websites, convening workgroups or green teams, emailing a Green Bulletin to all staff, and holding events on Earth Day, America Recycles Day, or Green Your Commute Day. For agencies in leased facilities, tenant newsletters may be passed along to staff with notices about recycling updates and green cleaning. The goal of these activities is not just to educate; they also shine a light on accomplishments and help Coordinators build on each other’s work.
For example, for the last three years, at least one State agency or authority has earned a New York State Environmental Excellence Award from Governor Cuomo. In November 2017, DOT earned the award for an innovative pollinator protection project along Interstate 1-390 in Livingston County. Prior winners have included the Javits Center and Parks. We strongly encourage you to assess your agency’s activities for submission for the award. Participation in the program not only benefits the honorees, it helps promote sustainability to a wider audience.

For brief descriptions of exciting engagement and education activities being pursued by State entities, see the entries under “New and Noteworthy Initiatives,” below.

The GreenNY Website

The new GreenNY website was launched in April 2017. The public-facing site, hosted by OGS, is a clearinghouse for information, resources, contacts, and stories related to agency sustainability and green procurement in the State. The intent is for active, frequent use by Sustainability Coordinators and anyone working to green New York government operations, including municipalities and school districts. It should also be of value to the private sector and anyone with an interest in sustainability across the country or the world.

The site includes the text of approved and proposed green specifications and links to centralized State contracts and Preferred Sources that offer green products. It has annual progress reports, tip sheets on how to sign up for a paperless paystub or green your commute, case studies on green buildings at DASNY and green computer purchasing by New York State, and additional resources on every area of focus covered by EO 4, from food waste composting to pollinator protection. A full listing of agency Sustainability Coordinators is also provided, along with sustainability plans for numerous agencies and university campuses.

The GreenNY Forum

The GreenNY Forum is a yearly event focused on increasing communication between Coordinators and staff. In December 2017, more than 65 attendees gathered to participate in a round table discussion, a nuts-and-bolts session on sustainability planning, and an inspirational session on successful storytelling. The round table featured the experiences of DEC, OGS, and DOH and highlighted the benefits of having a Coordinator, a Plan, and a Team. It included discussions on greening leased spaces, electric vehicles, solar power, and carpooling.

The session on planning was presented by the New York State Pollution Prevention Institute (P2I), a statewide research and technology transfer center with extensive experience helping businesses find cost-effective sustainability solutions. Trish Donahue laid out the process for developing an effective sustainability plan, along with the importance of using the right language and providing evidence to achieve buy-in from decision makers. The Institute shared contact information with the group, and is willing to assist any State agency in development of their Plan.

The session on storytelling was delivered by Wolf and Heron with financial support from DASNY. Participants were encouraged to identify stories about their work that will resonate with listeners, build engagement, clarify goals, and celebrate success. A good story can help change happen if it is told in a way that triggers empathy and an emotional response from the listener. This is important, as so much of sustainability work requires the bridging of silos or making the case for changes that require up-front investments of time or money.
After the Forum, several agencies identified stories they want to tell. These will be developed and used on the GreenNY website to inform and inspire.

**Leased Space**

Location in leased space continues to raise unique challenges. Agencies reporting difficulty implementing sustainable practices in spaces managed or leased by OGS or another entity include DEC, the Department of Financial Services, Information and Technology Services, the Justice Center, and the Long Island Power Authority. The challenge can be particularly acute for small agencies with few employees, such as the Nassau County Interim Finance Authority and the Financial Control Board, who have limited power to advocate for sustainable practices in rented space located in large, shared office buildings.

OGS has developed boilerplate lease language which contains standard provisions on a number of sustainable practices, including green cleaning and integrated pest management. When DEC’s sustainability coordination team began meeting with each of their regional offices, a common theme was the difficulty associated with implementing sustainable practices in leased space. The team is working with OGS to enhance the ability of agencies to operate sustainably in leased space.

One key is communication. The need to work with a separate agency, OGS, as well as a landlord, added additional layers of personnel who must be consulted with and ultimately sign-off on proposed sustainability projects. This added need for communication and buy-in can lead to delay or even the failure of projects, especially where opportunities for communication are sporadic or non-existent. Sustainability Coordinators are encouraged to work with their facility managers and OGS real property staff to establish regular opportunities for consultation and problem solving.

**Planning**

Formal Sustainability Plans or Programs can provide a clear road map to an agency’s desired, more sustainable, future state. A well-conceived Plan can set expectations, identify opportunities, invite employees to engage, help measure success, and keep an agency on track, even when conditions or leadership change. Most importantly, the process of creating a Plan can itself be a means for engaging staff more deeply, communicating with management, and securing visible buy-in from agency leadership, be that a Board or Commissioner.

**Funding**

This reporting year has again shown that sustainable practices do not typically cost more money, and are saving agencies money through reductions in energy use and waste (see table on page vii). While many energy projects require up-front, capital investment, most save money over time. Other types of projects, including reducing water and toxic chemical use, green cleaning, and green procurement, do not cost more and often yield important co-benefits, such as improved health and comfort of staff, visitors or residents. It is often easier to implement sustainability projects when they are aligned with a facility or service that is being upgraded and is able to accommodate better, more sustainable outcomes.

Many agencies still find it challenging to measure and capture the savings associated with sustainability improvements. One stellar example of an innovative approach to addressing this challenge is CUNY’s Sustainable Investment Fund, now in its fourth year. It was started with a philanthropist’s $1 million donation, and has been set up as a revolving loan fund for energy conservation projects that include a short-payback period, rapid implementation, and operations and maintenance (O&M) studies.

**New and Noteworthy Initiatives in FY 16-17**

**Staff and Engagement**

- **NYPA** hired a new project analyst to focus on sustainability initiatives relating to supply chain and waste management, a core program element not sufficiently addressed in the past. Moving forward, NYPA will be better able to collect waste stream data, use EO 4 specifications in purchasing, and benchmark suppliers.
MTA hired a person responsible for materials disposition, who is tasked with finding outlets for the reuse or resale of excess materials.

SUNY Potsdam expanded their zero-sort recycling efforts by hiring and training a Recycling Coordinator student intern and developing a waste management plan.

SUNY New Paltz hired student sustainability ambassadors to help with student engagement.

SUNY Environmental Science and Forestry learned that small staffing increases to their sustainability team, made up of highly motivated and skilled personnel from other internal departments, had a strong positive impact, and enabled engagement and awareness activities which weren't previously possible.

CUNY rolled out “Boots & Suits,” a focused communication program designed to allow building operators and senior campus administrators to “speak the same language” and understand each other’s perspective on issues such as demand response, peak load management, resource allocation and other issues.

NYSERDA began holding regular sustainability team meetings where they discuss projects, policies, and compliance.

Education and Training

For the first time, NYPA’s sustainability group conducted “tailgates,” or sustainability training, for employees at all sites. The presentations included an overview of company-wide sustainability programs and facility-specific projects. Emphasis was given to collaboration.

At CUNY, campus sustainability committees have launched campus Ecofests, sustainability newsletters, sustainability competitions and environmental film festivals, and also participate in CUNY’s Daylight Hour which is held each June. Campus teams submitted plans for a 30-minute video that will demonstrate to incoming students the breadth and depth of CUNY’s commitment and contributions to sustainability and combating climate change.

The New York State Police put up posters promoting green practices in most of their facilities.

The New York State Bridge Authority relied on its team of directors and facility managers to advance sustainable purchasing, source reduction and recycling through direct communication with staff, memos and sharing useful e-mail information provided by GreenNY and others.

The Erie County Medical Center Corporation committed to educating 100% of their population on sustainable practices from this point forward. All new hires receive information during orientation on waste generation, waste reduction, recycling and proper waste management. Waste stream separation flyers placed throughout the hospital have helped educate the staff and patients about proper ways to recycle and dispose of waste.

SUNY Environmental Science and Forestry and SUNY Potsdam established and published their first sustainability newsletters to share campus sustainability news with faculty, staff, and students.

SUNY Environmental Science and Forestry provided training to students and staff on the benefits of LED lights, as well as the safe handling, labeling and disposition of old fluorescent bulbs.
- SUNY Cortland provided training for their HVAC technicians on variable frequency drives and methods to trouble-shoot and perform periodic maintenance on HVAC equipment. They also provided basic training on HVAC building automation systems for newer employees.

Planning and Measurement

- MTA revised its Sustainable Design Guidelines, which were used in their annual refresher training in November 2017 and became effective in January 2018. The guidelines provide best management practices for green building technologies that can be incorporated into capital projects.

- CUNY Conserves is working on a computerized maintenance management system, designed to track the maintenance needs of the equipment, ultimately saving energy, extending the life of the equipment, and saving money the college can spend elsewhere.

Funding

- Last years’ Sustainability Competition at CUNY received more than two dozen entries. Several teams were encouraged to submit detailed plans for implementing their projects, and three (Queens College, the College of Staten Island, and CUNY Law) were awarded small grants to achieve their goals. All three deal with food waste from dining services and campus gardening.

Waste and Paper Use Reduction Goals

New York’s Beyond Waste sustainable materials management plan, adopted in 2010, establishes a 20-year goal of reducing the average amount of waste New Yorkers dispose of from 4.1 to 0.6 pounds per person per day. The plan marks a shift from focusing on “end-of-the-pipe” waste management to looking “upstream” at how materials that would otherwise become waste can be avoided or better utilized as part of an efficient, vibrant economy. EO 4 is specifically discussed in the plan as a valuable step forward in integrating waste prevention and recycling into State operations.

Waste Reduction Goal

Given the importance of prevention, the EO 4 Interagency Committee established a waste reduction goal of reducing total office waste generated by 10% per full-time employee equivalent (FTE) per year, starting with the baseline year of FY 09-10. Office waste includes paper, plastics, metal and glass generated by office facilities. Total waste generated is the sum of materials that are recycled, as well as materials sent to disposal. The purpose of estimating waste generation per FTE is to enable agencies to compare their performance from one year to the next by avoiding the variation associated with changing staffing levels.

The goal was applied to office waste only because the Interagency Committee determined that a single metric for measuring reductions in other types of waste would be not be comparable over time. Agencies whose primary purpose is transportation or construction generate very large quantities of bulk metals and construction and demolition debris regardless of the size of their staff. Agencies that manage waste generated by the public, such as Parks, SUNY and CUNY, also experience variation unrelated to staff size. For these reasons, the goal should be viewed as a meaningful way for agencies to measure their own performance, but not as a way to compare performance across agencies.

While the waste reduction goal of 10% per FTE per year applies to office facilities and office waste only, data on all materials generated—recycled and disposed—is still collected, but waste generated by the public and wastes unrelated to staffing levels, such as C&D debris, scrap metal, and laboratory wastes, is reported separately wherever possible. The Interagency Committee encourages agencies to develop meaningful waste reduction goals for wastes specific to their own operations and to report on progress made toward reaching those goals in their agency’s EO 4 report.

Paper Use Reduction Goal

The goal established for paper use reduction is a 10% reduction in copy paper purchased per FTE per year by weight, starting with the baseline year of FY 09-10. In addition, the Committee asks agencies to report the
quantities of all janitorial paper purchased, and to identify steps taken to reduce the use of janitorial paper, such as paper towel use. As with waste reduction, the paper use goal provides a meaningful way for agencies to assess their progress in reducing paper use over time. Comparison between agencies is discouraged, given the large variation in paper use across agencies based on mission.

**Waste Reduction and Reuse**

Overall, waste generation data continued to indicate a favorable downward trend, recycling rates stayed strong, and executive agencies have increased their adoption of reuse strategies. Additionally, agencies report that the sustainability reporting process encourages them to take a more detailed look at the waste they generate and develop more effective materials management practices.

**Findings**

FY 16-17 saw a decrease in overall waste generated to 513,412 tons, an 11% decrease from FY 15-16 (see chart on page ii of this report). This waste generation takes into consideration 275,167 tons of construction and demolition (C&D) debris generated by MTA and DOT, which is 6,392 tons less than the amount of C&D they generated in 15-16, but still 182,878 tons more than the amount generated in FY 14-15. When the latter increase is subtracted, the total amount of waste generated in FY 16-17 drops to 330,534 tons, a decrease of 68,361 tons (or 17%) from the 398,895 tons of waste generated in FY 14-15, and a 59% decrease from FY 08-09, which maintains the States encouraging waste reduction trend. A significant portion of this decrease, 42,548 tons (or 48%) is due to a decrease in the amount of miscellaneous non-office waste generated and recycled as compared to the previous year (these types of materials are referred to as “other recyclables” in the EO 4 reporting form).

The encouraging story told by the data and agency reports again this reporting year is the remarkable progress made in recycling C&D debris. In FY 10-11, the State saw a similar increase of 200,000 tons of C&D debris generated by MTA. Although MTA additionally generated and recycled an impressive total of 151,000 tons of C&D debris in that year, none of the 200,000-ton bump in C&D debris generated was recycled, which caused a dip in the overall State recycling rate to 45%, its lowest recorded level.

MTA adopted an ambitious C&D recycling goal in 2014. Due to their continuing efforts to recycle, all of the additional 140,427 tons of C&D debris they generated in FY 16-17 compared to FY 14-15 was recycled. In FY 16-17, DOT reported 20.1 lane miles of cold in place asphalt recycling, or 42,451 tons of recycled C&D material. Together, these two figures add up to 182,878 tons more C&D debris generated than in FY 14-15, all of which was recycled. MTA and DOT’s efforts to recycle C&D debris continue to account for the significant percentage of overall waste recycled, which was 77% in FY 16-17.

Office waste accounted for only 7% of the total waste generated in FY 16-17 (non-office waste accounted for 93%), and the amount of office waste generated fell by 18% compared to the previous year. Overall, office waste generation has decreased by 30,124 tons, or 43%, since FY 09-10, an encouraging downward trend.
With the adoption of waste conservation techniques, such as double-sided printing and the use of electronic documents, agencies have significantly reduced the overall amount of paper purchased and consumed. This has led to reductions in the amount of office waste generated, as reported above, as well as purchasing costs. In FY 16-17, 61 agencies reported purchasing 198,150 boxes of copy paper worth $6.3 million, a 12% drop in the quantity purchased from the previous year. The amount spent on copy paper has fallen by an impressive 57% since FY 08-09, when agencies reported spending $14.54 million on copy paper. This reduction adds up to $27.84 million in savings in FYs 11-12 through 16-17, $49.14 million in savings since reporting began, and approximately $8 million in savings per year going forward. (See chart on p. ii, and more detailed discussion under “Buying Green,” below.

In FY 16-17, agencies reported use of the following waste reduction strategies:

- 85% agencies use two-sided printing either all (38%) or most (47%) of the time, an increase of eleven percentage points in the number of agencies reporting such use all the time.

- 92% of reporting agencies use electronic means to provide documents and information to the public either all (24%) or most (68%) of the time.

- 89% use electronic means to receive documents and information from the public either all (18%) or most (71%) of the time, an increase of seven percentage points.

- 77% use electronic means, other than email, to share documents and information with and among employees either all (17%) or most (61%) of the time, an increase of four percentage points.

- 62% have an office supply reuse program in place in at least some of their facilities; 36% have them in place at all (20%) or a majority (17%) of their facilities, an increase of six percentage points in the number of agencies reporting reuse programs in place at all of their facilities.

**Savings and Costs**

On average over the past eight years, a significant number of agencies (30%) reported saving money through waste reduction, and 25% reported no change in costs. Only 3% have reported an increase in costs.

**Success Stories, Challenges and Lessons Learned**

**Surplus and Used Property**

There has been a strong commitment across the agencies and authorities to reuse and donate surplus or used property, such as furniture, office supplies, technology, clothing, and more. Such items are distributed internally with the help of email list-serves and centralized networks. For instance, CUNY maintains an internal email list-serve to share information regarding the availability of discarded items for reuse across their campuses, while the Development Authority of the North Country established a reuse center on their computer network, which is available to all divisions within the agency.
Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

Other agencies and authorities use external means to advertise surplus property. For example, Parks uses the website Yammer to share information about materials and equipment available for reuse across Parks facilities. Parks also advertised used property externally to other agencies and the public through OGS’s Surplus Property program. EFC diverted 0.7 tons of electronics from landfills and sent them for reuse through OGS’ Surplus Property Program, as well as donated other items to a local public school.

Donating to local charities was a common theme across the state. SUNY Potsdam donated over 10,000 pounds of goods collected through their campus Move Out program to local organizations (an impressive 6 tons increase over the previous year), while SUNY Canton donated over 8,000 pounds. The Javits Center reuses construction materials acquired from building construction projects and reclaims items after shows to be reused or donated.

As another reuse example, NYSDEC supplements their internal central office reuse exchange (office supplies, materials, books and other small office items) with a program entitled DECycle. DECycle is available for larger personal items that a person no longer needs, but is still usable, and is offered for free. Examples include garden hoses, toasters, printers, and chairs.

Despite progress in reusing surplus and used property, agencies have seen a few challenges. MTA reported that they routinely purchase materials in bulk to save purchasing costs, however, this sometimes results in excess or expired products that can be difficult to reuse or donate. Starting and maintaining a surplus program requires some investment of staff time and money, and identifying the most efficient and appropriate avenue for donating used items can be challenging. For instance, while the OGS Surplus Property Program enables agencies to redistribute their surplus property, the donating agency may have to provide transportation for the items, which can be cost-prohibitive. Agencies also stated that it can be difficult to track items set aside for reuse and to measure the amount of waste diverted through surplus programs. Finally, while State authorities have more leeway to donate property according to their own guidelines, State agencies have restrictions on donating surplus property to outside organizations pursuant to State Finance Law.

Waste Audits

Conducting a detailed waste audit continues to be the most effective way to obtain data on the composition and quantity of waste generated. Every year, agencies report positive experiences with audits, claiming that the data gathered has given them valuable insight into their waste management practices. A Waste Audit Guidebook and other resources are available on the GreenNY website.

NYPA implemented a waste audit to determine better methods of tracking, collecting, and reporting waste data to improve accuracy and efficiency. DEC continues to perform a waste audit at least once a year at its Albany headquarters, and has expanded their waste audits efforts to include some of their regional offices.
Representatives from other agencies are welcome to participate as a training exercise, and DEC will also provide technical assistance to individual agencies to conduct waste audits upon request.

**New and Noteworthy Initiatives in FY 16-17**

Among the waste reduction strategies introduced in FY 16-17, there is a trend toward the expansion of reuse initiatives, a shift towards electronic means of filing and document management, and improvement in waste data reporting. Sustainability Coordinators are encouraged to contact the agencies listed below to better understand the potential for adopting these actions in their own operations.

**Paper and Materials Use Reduction**

- **NYPA** expanded its electronic bidding system and cloud-based platform, thereby reducing its consumption of copy paper by 14,290 pounds.

- **NYSERDA** eliminated the need for printing and storage of bulk marketing material and invoicing by utilizing electronic means of distributing information to the public and vendors.

- **Civil Service** increased their use of on-line examination filing to reduce paper and postage costs.

- **PERB** initiated an electronic-filing system to reduce paper entering the waste stream.

- **CUNY Baruch** reduced lamp waste and expenses by utilizing longer lasting LED lamps.

- **NYPA** is encouraging employees to find alternatives to single-use items and is equipping kitchens with reusable plates, utensils and mugs. NYPA is also promoting zero waste events at work.

**Improved Measurement**

- **The Javits Center** improved their data reporting capabilities to track the number of items diverted from the waste stream.

- **MTA**’s Capital Engineering group developed a Waste Management Calculator to encourage reuse and recycling by contactors and make it easy to track the total amount of diverted waste.

**Reuse**

- The **Development Authority of the North Country** established a virtual reuse center on their computer network and made it available to all divisions, creating an electronic record of materials diverted from the waste stream for future reporting.

- The **Central New York Regional Transportation Authority** generates tons of used oil. They recycle some of the oil, but also store about 5,000 gallons and use it to fuel an oil burning heater, which provides heat for most of the winter.

- **SUNY Albany** is cleaning, filtering, and reusing oil as part of their new contract on kitchen grease management.

**Food Waste Diversion**

- **Parks** started a food scrap collection program at one of the educational centers in the Taconic region, which has been very successful. Food scraps are given to a local farm to feed their pigs.
Recycling and Composting

SUNY ESF generates revenue by recycling scrap metal and uses it to fund further improvements in its recycling program.

Reports for FY 16-17 continue to document a robust and encouraging trend of high recycling rates by State agencies. There was a significant decrease in the amount of materials recycled due to a significant drop in the amount of C&D materials generated and recycled. Even so, the recycling rate remained high at 77%, only slightly lower than the highest recycling rate recorded to date, in FY 15-16, of 78%.

In addition, while less than last year, excess food diversion as well as composting and anaerobic digestion continue to be important components for waste reduction and recycling. Diverting excess food and food scraps from disposal has many potential benefits, including the support of food insecure populations. Diverting food scraps and other organic waste that cannot be donated to composting or anaerobic digestion reduces methane generation in landfills and sequesters significant amounts of elemental carbon, all while producing a beneficial soil amendment that contributes to healthy soil and reduces the need for energy-intensive fertilizers and pesticides.

Findings

In the last five reporting years, 70% or more of the solid waste generated by State agencies was recycled or composted, compared to a 50% rate of recycling in FY 08-09. In the last two reporting years, that percentage rose to the highest levels ever recorded, over 76%, due to impressive increases in the recycling rate of construction and demolition (C&D) debris by DOT and MTA (see the chart on page ii, and more detailed discussions under “Waste Reduction and Reuse,” above).

The total amount of organic material composted in FY 16-17 dropped slightly by 495 tons (or 3%), from that reported in the previous year, to 18,124 tons. Food scrap composting, a subset of this number, rose slightly by 70 tons (or 1%) to 7,927 tons.¹ These numbers still represent a robust increase of 24% over the 14,625 tons of total organic material composted in FY 14-15, and a 7% increase over the 7,415 tons of food scraps composted in FY 14-15.

¹ A data error by one agency in FY 15-16 resulted in an over-reporting of the amount of food scraps composted in that year by 1,028 tons. When that discrepancy is accounted for, the actual amount of overall organic material composted in 15-16 is 18,619, not 19,647 as reported for that year, and the actual amount of food scraps composted is 7,827, not 8,885 as reported for that year.
In FY 16-17, the number of agencies that reported composting dropped to 14 from 16 in the previous reporting year. SUNY, DEC and the Department of Corrections and Community Supervision (DOCCS) accounted for 86% of all material composted in FY 15-16. The Javits Center significantly increased the amount of food scraps being composted, to 87 tons in FY 16-17 from 14 tons in 14-15. Large generators of food scraps in New York City are now required by legislation to divert their food scraps from disposal.

**Total Waste Generated and Percent Recycled**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Tons of Waste Generated</th>
<th>Tons of Materials Recycled</th>
<th>Percent Recycled</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2008-09</td>
<td>815,000</td>
<td>410,500</td>
<td>50%</td>
</tr>
<tr>
<td>FY 2009-10</td>
<td>507,929</td>
<td>318,181</td>
<td>63%</td>
</tr>
<tr>
<td>FY 2010-11</td>
<td>682,043*</td>
<td>308,566</td>
<td>45%*</td>
</tr>
<tr>
<td>FY 2011-12</td>
<td>531,059</td>
<td>355,865</td>
<td>67%</td>
</tr>
<tr>
<td>FY 2012-13</td>
<td>501,125</td>
<td>355,226</td>
<td>71%</td>
</tr>
<tr>
<td>FY 2013-14</td>
<td>389,510*</td>
<td>273,712</td>
<td>70%</td>
</tr>
<tr>
<td>FY 2014-15</td>
<td>398,895</td>
<td>280,172</td>
<td>70%</td>
</tr>
<tr>
<td>FY 2015-16</td>
<td>580,015**</td>
<td>452,962</td>
<td>78%**</td>
</tr>
<tr>
<td>FY 2016-17</td>
<td>513,412***</td>
<td>393,136***</td>
<td>77%</td>
</tr>
</tbody>
</table>

*The large drop in the recycling rate in FY 10-11 is due to one large generator reporting a much higher amount of C&D generation and disposal. **The large increase in FY 15-16 for waste generated and materials recycled is due to two large generators reporting a much higher rate of C&D generation, however, unlike FY 10-11, the increase was fully recycled, driving up the recycling rate to its highest reported level. ***The drop in the amount of waste generated and materials recycled between FY 15-16 and 16-17 is largely due to a decrease in the amount of miscellaneous non-office waste generated and recycled.

The pie chart above provides a breakdown of the total quantity of materials recycled by agencies, on average, in FY 16-17. Because waste types are split out by weight, “office recyclables” (paper, bottles and cans) amount to significantly less than non-office recyclables, which weigh more. C&D material includes concrete, asphalt, brick and clean wood that come from building construction, renovation and demolition, as well as highway construction and maintenance.
Savings and Costs

On average over the past eight years, a significant plurality of agencies (50%) reported a reduction (15%) or no change (35%) in costs as a result of recycling efforts. A much smaller number (7%) reported an increase in costs. The agencies reporting savings had more comprehensive waste reduction, reuse, recycling and composting programs.

As agencies divert more waste via recycling and composting, opportunities are being created to save on avoided waste disposal costs:

- The New York State Bridge Authority identified an electronics recycling firm that will pick up their e-waste at no cost to the authority, saving on internal labor and transportation costs.
- SUNY Oneonta’s recycling contract has saved them $260,000 over the past three years. In addition, they have received $2,799 for their cardboard.
- SUNY ESF’s recycling program generates revenue through their scrap metal collection program. That money then goes into a small recycling fund to be used for improvements in signage, bins etc.
- SUNY Binghamton’s new pallet recycling program has saved 75% of the costs directly related to the disposal of wooden pallets.
- The Niagara Frontier Transportation Authority saved money on the transition to high efficiency LED lights at the Buffalo Niagara International Airport by taking advantage of rebates.

Some agencies have faced an increase in costs or a decrease in revenue despite best efforts to recycle and compost. SUNY Cortland has begun providing additional containers for trash and recycling during the opening and closing of dorms, resulting in increased costs. SUNY Maritime’s recycling program costs them approximately $15,000 each year, including costs for additional containers, pickups, and solar compactors.
Success Stories, Challenges, and Lessons Learned

Recycling Improves Through Education and Signage

It has been proven that better signage, bin type and color, and bin placement go a long way in making recycling more convenient, getting better materials from bins, and increasing recycling. Many agencies are focusing on these improvements as an easy way to boost and improve recycling.

- **CUNY** has recycling programs at all campuses and makes improvements each year. Recycling education is now part of new staff and student orientations.
- **Erie County Medical Center** has begun providing recycling education for all employees.
- The **Javits Center** puts up “please recycle” messages on their displays throughout public areas.
- **NYPA** is installing new user-friendly waste and recycling bins.
- **NYSERDA** is procuring new, consistently colored waste and recycling bins with matching signage.
- **Parks** has implemented new signage and improved access to recycling containers.
- The **Port Authority of NY/NJ** increased their recovery of recyclables by placing additional collection bins in offices, public buildings, and maintenance facilities.
- **SUNY Poly** has been working with the Oneida-Herkimer Solid Waste Authority Recycling Educator to implement improvements for collection stations, bin labeling, outreach communications and posters.
- **SUNY Environmental Science and Forestry** implemented a waste and recycling bin re-labeling initiative to increase consistency of messaging across facilities.

These improvements will help address challenges faced by agencies including education of staff and users about the proper ways to recycle materials, how to reduce waste contamination within recyclables, and how to improve employee engagement and participation. We continue to encourage all agencies to collaborate with other agencies for input on how to overcome this challenge and to contact DEC for advice and guidance.

Waste Audits

NYPA, NYSERDA, and SUNY Potsdam are a few of the agencies that are planning to or have conducted waste audits to obtain baseline data, improve tracking, and identify more waste reduction opportunities. Waste audits are a proven method to learn significant information on an entity’s waste management program that can then be used to reduce waste generation and develop better recycling and waste management programs.

E-Waste Recycling

DASNY, NYS Bridge Authority, and the MTA are just some of the agencies that reported about their successful e-waste recycling programs. However, some agencies have continued to note difficulties in implementing e-waste recycling efforts and dealing with surplus requirements. This area continues to need attention and clarification.

Composting

A number of agencies, including Parks, DEC, and numerous SUNY and CUNY campuses, have started new composting programs or improved upon programs that are already in place.

SUNY Fredonia indicated that composting continues to be a difficult project on campus. SUNY Cortland also notes that providing composting in more buildings such as offices and residence halls would be great, but the additional management and service associated with the work remains an impediment to progress.
Above and Beyond

Many agencies are working to identify more ways to reduce their waste that go beyond the regularly collected recyclable items from their haulers. These agencies report recycling items such as glasses, DVDs, Tyvek envelopes and water filters as well as used oil, antifreeze, scrap metal, used tires, automotive batteries and lightbulbs.

Some agencies are also using new and more efficient technologies to help cut back on waste in creative ways. For example, DEC recently installed high efficiency hand dryers to cut back on paper towel waste as well as retrofitting existing water fountains with bottle filling stations to cut back on single-use plastic water bottles.

Agencies that find creative ways to deal with materials that may be hard to recycle can serve as inspiration to other agencies who are experiencing challenges with dealing with difficult to handle materials. This report helps agencies share ideas and efforts.

New and Noteworthy Initiatives in FY 16-17

Among the strategies introduced in FY 16-17, increased educational opportunities and tools to make recycling and composting easier and more convenient were themes throughout.

New or Improved Recycling Programs

- **DANC** successfully implemented a new recycling program at the City of Ogdensburg’s waste water treatment plant. With the support of the City, DANC is also educating staff about proper recycling practices.

- **Parks** had in-house carpenters build recycling containers for bottles and cans to be placed throughout numerous parks. The containers are durable and effective and over the next 5 years staff expect to place 1,500 recycling bins in our State Parks.

- **SUNY Maritime** implemented a new recycling program that includes mixed glass, plastic, and aluminum.

- The **Justice Center** recently implemented a new recycling program for used toner cartridges.

- **SUNY Binghamton** implemented a new pallet recycling program, which has diverted approximately 64,000 lbs of materials from the landfill, reduced roll-off service requests by 33%, increased work hours available to expeditors, and decreased down time for workers. Since introduction of the program, costs directly related to the disposal of wooden pallets have been cut 75%.

- The **Javits Center** identified several new materials for diversion or recycling during this fiscal year, including carpet, confidential paper, and centerplate fry oil (which was converted to biogas).

- **SUNY Stonybrook** refined their collection strategies and improved signage, leading to higher efficiency and better recycling rates.
New Composting Programs

- **CUNY Lehman** has established different methods for composting, including a “rocket” composter, bins for drop off sites, and an open pile for food scraps from the cafeteria kitchen.
- **DEC** is composting food scraps in eight out of nine regions.
- **SUNY Albany** has seen a 15% increase in the number of offices participating in their office composting program.
- **SUNY Buffalo** expanded their composting program to include daycare classrooms as well as the kitchen.
- The **CUNY College of Technology** implemented a composting pilot program at their Culinary School.

Reducing Toxic Chemical Use

Reducing toxic chemical use continued to be a priority for the state in FY 16-17. More sustainable cleaning and pest management methods continued to be practiced by many agencies, with some agencies adopting green practices and policies for the first time.

**Pest Management**

Most agencies continue to use Integrated Pest Management (IPM) to prevent indoor pests. IPM is a set of practices that minimize pesticide use and focus on prevention through monitoring, good sanitation, and structural and biological controls, with least-toxic pesticide use as a last resort. OGS has been a leader on the use of IPM in public buildings for the past 27 years.

A majority of agencies continue to use solely mechanical, sanitary, cultural, or biological means to control pests on their lawns and grounds, as required under New York’s green specification for “Turf and Ornamental Management.” Currently, many specific types of facilities and uses are exempt from that specification, including golf courses, land in agricultural production, and utility rights of way. The Governor’s Pollinator Task Force Report, issued 2016, recommends a specification amendment requiring the avoidance of nursery stock treated with insecticides, including a special class of insecticides known as neonicotinoids, and requiring exempt uses to practice IPM or Integrated Vegetation Management (IVM).

Least-toxic and non-toxic pest and vegetation management practices help to protect public health, promote healthy ecosystems, and increase natural species diversity along rights-of-way. Both practices also help to increase the diversity of local pollinators, including honeybees, native bees, and the endangered Karner Blue butterfly.
Findings

In FY 16-17:

- 80% of agencies responsible (either directly or through contractors) for indoor pest management reported using IPM at all (54%) or a majority (26%) of their facilities. This represents an increase of nine percentage points from the 71% of agencies reporting that rate of use in FY 15-16, driven by an increase of 12 percentage points in agencies using IPM at a majority of their facilities. Only 3% do not practice IPM at any of their facilities.

- 52% of agencies responsible for turf and ornamental pest management reported using non-chemical means of pest control at all (20%) or a majority (32%) of their facilities. Only 16% do not follow such practices at any of their facilities.

- 36% of agencies responsible for pest management at exempted outdoor facilities, such as golf courses and rights-of-way, reported using IPM or IVM at all (24%) or a majority (12%) of such facilities. Only 20% did not practice IPM or IVM practices at any such facilities.

- 36% of agencies responsible for turf and ornamental management reported avoiding nursery stock treated with insecticides at all (20%) or a majority (16%) of their facilities.

Savings and Costs

On average over the past eight years, a significant plurality of agencies (50%) reported a reduction or no change in costs by practicing IPM, IVM, or non-chemical means of pest control. In contrast, a much smaller percentage (9%) reported an increase in costs.

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of no change in costs compared to increases in cost.

Success Stories, Challenges, and Lessons Learned

Agency reports documented widespread and enthusiastic adoption of IPM, IVM, and non-chemical means of pest management over the past nine years, with some agencies reporting the exclusive and successful use of such approaches, including OGS, Parks, and the Battery Park Parks Conservancy. Only a handful of agencies (five in FY 16-17) received reports from one or more of their facilities that less toxic or non-toxic means of pest control can be more expensive or less effective.

- SUNY Brockport reports saving money due to using less pesticides.

- The United Nations Development Corporation reports that using IPM enabled them to eliminate the use of toxic pesticides.
SUNY Empire State College uses proper fertilization and irrigation, which includes avoiding pesticide and fertilizer use on ornamental plantings, omitting herbicides on lawns unless an abundance of pests is reported, and replacing invasive plants around campus with native ones. This has improved the health of the grass, rendering weed control unnecessary.

Parks continues to lead on the use of organic alternatives and IPM. All the golf courses in Parks’ system have adopted a progressive model for the use of IPM on turf grass, first developed in collaboration with the New York State IPM Program and Cornell University at the world-famous Bethpage State Park golf facility in 2009. The program has reduced the overall number of pesticide and fertilizer applications as well as the size of treated areas, and led to the use of less toxic products with higher efficacy and lower costs. The program has resulted in cost savings, water conservation, and improved water quality in surrounding areas.

New and Noteworthy Initiatives in FY 16-17

- Several CUNY campuses which experienced bedbug outbreaks report that cryogenic pest control systems remain highly effective in eliminating bedbugs without toxic chemicals.
- The Department of Financial Services uses IPM in all their indoor facilities.
- SUNY New Paltz has banned the use of pesticides on their grounds, with the exception of annual weed control in some athletic fields.
- Westchester County Health Corporation partners with a third-party vendor for pest management services. This vendor partnered with the Cary Institute in a five-year study called “The Tick Project.” The vendor has been treating surrounding neighborhoods with “Met52 Spray.” This spray is non-toxic to humans, cats, dogs, and most other mammals.
- Many CUNY campuses have begun using pesticide-free landscapers.

Green Cleaning

New York is considered a national leader in the use of greener, healthier cleaning products. Over the last nine years, agencies have adopted practices to reduce the quantity of cleaning products they use, as well as eliminate the use of products containing toxic chemicals. Schools have also adopted green cleaning practices under the State’s Green Cleaning Law, and as a result have improved indoor air quality throughout the State.

Findings

In FY 16-17, agencies responsible for performing or contracting for cleaning services at their facilities reported that:

- 82% use green cleaning products that meet the State’s green specifications (see OGS’s List of Approved Products) at all (46%) or a majority (35%) of their facilities. Only 6% of agencies reported that they don’t use these products at any of their facilities. The number of agencies using green cleaning at all of their facilities increased by 8 percentage points.
- 80% use concentrated products at all or a majority of their facilities.
- 80% reported the use of walk-off mats and microfiber mops and cloths at all or a majority of their facilities in order to reduce the overall amount of chemicals used.
- 75% reported that they reduced the number of different kinds of cleaning products used at all or a majority of their facilities.
- 71% use fragrance-free products at all or a majority of their facilities.

These responses are consistent with those from previous years, and demonstrate a strong commitment toward reducing the use of toxic products for cleaning. Several agencies reported the introduction or continuation of systems of inventory management that allow them to purchase fewer cleaning products, or to phase out the purchase of toxic cleaners altogether. Non-chemical cleaning methods were also adopted, which reduces the purchasing of cleaning chemicals like floor strippers.
Savings and Costs

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

The percentage of agencies reporting a reduction or no change in costs as a result of adopting green cleaning practices has held close to the period average of 46% since reporting began in FY 09-10. The number of agencies reporting an increase averaged 12%.

- *Parks* saved money by streamlining the use of concentrated cleaning chemicals throughout their facilities, leading to less waste and lower costs associated with waste disposal.

Success Stories, Challenges, and Lessons Learned

Numerous agencies were able to maintain their momentum in implementing the use of green cleaning products in FY 16-17. In general, agencies report that green cleaning products perform well and do not cost more compared to conventional products. After nine years of experience under EO 4, only three agencies in FY 16-17 reported that green cleaning products were not as effective as conventional cleaners. This corresponds to the State Education Department's 2010 survey of schools, which found that green cleaning products "cost the same or less," and work as effectively as their traditional counterparts. The biggest challenge, as described by NYSERDA, is "training staff to properly use green cleaning chemicals when they are accustomed to using other chemicals that may have worked better in their opinion."

- The *Port of Oswego Authority* has switched to green products and noted that they seem to be cleaning as well as the conventional cleaning products which they replaced.

- Several *SUNY* and *CUNY* schools have continued to implement green cleaning practices, with *SUNY Fredonia* noting that they have removed bleach and ammonia from their inventory of cleaning products.

- The *Development Authority of the North Country* continued their practice of reviewing chemical inventories prior to making purchases, to see if something already in stock can be used instead, or if there are less toxic alternatives. This has resulted in a 72% reduction in chemical inventories since tracking began in 2011.

- The *Office of People with Developmental Disabilities (OPWDD)* has reduced the number of different types of cleaning chemicals used and substituted chemicals that are less toxic.

OPWDD also noted that green cleaning products were not effectively disinfecting for blood-borne pathogens in their housing spaces. This may be due to confusion between general purpose cleaners, which are certified by Green Seal and UL Ecologo, and disinfectants and sanitizers, which must be registered by the U.S. Environmental Protection Agency as pesticides. Agencies are encouraged to consult New York’s new green specification on "Disinfectants and Sanitizers" which establishes criteria to reduce adverse impacts on public health and the environment while ensuring efficacy and high performance. Examples of active ingredients meeting those criteria include hydrogen peroxide, citric acid and lactic acid, which the specification recommends.
agencies use in place of conventional ingredients such as chlorine bleach (sodium hypochlorite) and quaternary ammonium chloride compounds. Products meeting the specification are available at good prices on OGS’ Environmentally Preferable Cleaning Products contract.

New and Noteworthy Initiatives in FY 16-17

- The Port Authority of New York and New Jersey has instituted a policy requiring the contractors responsible for cleaning at all of its facilities to switch to green cleaning products. The policy allows for the use of green products to be phased in gradually, but after 2018, 100% of cleaning products purchased meet green standards.

- Westchester County Health Corporation started using a floor cleaning technology that electrically converts water into a solution of microscopic bubbles. This method has been shown to have a reduced environmental impact compared to using floor chemicals daily.

- SUNY Brockport reduced the use of floor strippers by using a surface preparation pad system that removes the layers of finish on the floors via friction without adding chemicals.

Energy Efficiency

If energy-efficiency improvements have never been made in a building, or have not been made in the last couple of years, rapidly changing technologies can offer significant opportunities to upgrade existing systems to save energy and money. It is often possible to reduce energy use by 5-10% just by implementing simple changes, especially when coupled with employee education that includes purchasing, maintenance and fleet staff. Simple changes include low and no cost actions, such as adjusting temperature set points and putting procedures in place to ensure lights are off during vacant hours. These practices must be embraced and visibly endorsed as a priority by the highest levels of management to foster a workplace culture of sustainability. After simple changes have been made, an energy study can help building managers identify opportunities for deeper cost-savings.

Findings

In FY 16-17, agencies reported that:

- 77% have installed ENERGY STAR® equipment and/or appliances at all (48%) or a majority (29%) of their facilities.

- 57% used motion detectors to reduce unnecessary lighting at all (29%) or a majority (28%) of their facilities. Only 9% did not use them.

- 89% set weather-appropriate building temperature control ranges to conserve energy at all (61%) or a majority (28%) of their facilities. Only 2% did not regulate building temperature control ranges.

Compared to FY 15-16, the percentage of agencies reporting that they implemented these simple changes increased 4 percentage points for the purchase of ENERGY STAR® equipment and 4 percentage points for the setting of temperature control ranges, while declining 3 percentage points for the use of motion detectors. All data reflects purchases within the current fiscal year and is often indicative of the lack of a need to make upgrades, or significant progress made in the last reporting period.
Savings and Costs

On average over the past eight years, a significant number of agencies (35%) reported a reduction in costs as a result of their energy use reduction efforts. 19% reported no change in costs, and only 4% reported an increase in costs. More than one third said that they did not know. This uncertainty may be due to the challenge of tracking energy use and correlating changes in use to a specific project.

Agency experience shows that energy efficiency can have a positive impact on agency budgets, and it is important to emphasize that the savings are realized in the agency’s operating budget – where it can most easily be redirected to other agency priorities. However, the potential for saving money is still too often overlooked. Some agencies provided specific examples of cost savings due to the adoption of energy efficiency measures:

- The Javits Center reported saving energy through its energy management/conservation program which resulted in the reduction of energy purchased by 6,631,524 kilowatt hours (kWh) over 3 years, a projected reduction of 26% per year. This program includes a 6.75-acre green roof, improvements in HVAC efficiency, and improvements in lighting.

Challenges and Success Stories

While the data is positive, achieving efficient energy practices can be challenging. Success requires not only initial project implementation, but re-evaluation, the consideration of new initiatives, and periodic employee education to ensure that best practices (e.g. turning off computers at the end of the day) are imbedded in an organization’s culture. Without all these components, backsliding may occur, and sustainability projects may not be pursued, be halted, or be ineffective.

Agencies that have been able to bring these pieces together successfully are reaping the benefits of sustainability:

- **SUNY College of Environmental Science and Forestry (ESF)** hired a full-time energy manager in the summer of 2016. In one year, SUNY ESF successfully completed six energy efficiency projects that are expected to provide over $190,000 in annual savings.

- The Javits Center has trained five of their staff members to use thermographic imaging in support of their energy management program. This will allow staff to identify unrecognized issues with the electrical, mechanical, and roof systems, and enable engineers to implement preventative maintenance measures to reduce energy and equipment replacement costs.
• NYSERDA completed a variety of facility upgrades since 2010, including a recent LED lighting upgrade. In total, these projects resulted in an electric energy savings of 224,359 kWh (a roughly 25% reduction) when the 2017 year is compared to the baseline of 2010, representing nearly $65,000 in cost savings.

• NYPA has had difficulty in accurately metering specific buildings due to the complex electric infrastructure at NYPA generating facilities. To address this problem, they have worked with metering engineers to install additional meters to expand building energy load tracking and capabilities to produce more granular data.

New and Noteworthy Initiatives in FY 16-17

- DEC installed a geo-thermal heating and cooling system at its Godfrey Point Sign Shop. The shop also generates solar power on-site.

- CUNY’s Queens College made operational changes to reduce the running times of mechanical equipment during weekends and when buildings are not in use.

- Niagara Frontier Transportation Authority began a project to replace over 900 lights at Buffalo Niagara International Airport with more energy efficient alternatives.

- NYPA implemented a Heating Ventilation and Air Conditioning (HVAC) project which optimized the operation of a major chilled water air conditioning system, resulting in a 25-30% reduction in energy consumption and demonstrated financial savings.

- The Javits Center installed LED’s in 47 janitor closets, 13 data closets, and 8 IT closets, and added occupancy sensors to reduce the “on” hours from 24 hours to one hour per day, saving 28,327 kWh of electricity.
Renewable Energy

New York State continues to lead the nation under Governor Cuomo’s comprehensive policy for a clean, more affordable and resilient energy system. The Clean Energy Standard, adopted in 2016, is the most comprehensive and ambitious clean energy goal in the State’s history and requires that 50% of New York’s electricity come from renewable energy sources by 2030. New York is aggressively moving forward to meet this goal.

There are several ways in which agencies can participate in renewable energy technology, including purchasing renewable energy credits (RECs) and building or leasing on-site renewable energy systems. Some agencies are doing both: purchasing green power and generating on-site renewable energy. Projects are being deployed across the state.

Recently, Governor Cuomo announced that state-supported solar power in New York increased nearly 1,000% from December 2011 to December 2017. The Governor said, "Solar is a vital part of this state’s clean energy future and we have experienced unprecedented growth in this new sector. We will continue to support the development of solar, helping to spur economic growth, creating new jobs and helping to build a cleaner, greener and more sustainable New York for all."

Two of the most notable accomplishments within state government include CUNY’s installation of a solar array with battery storage on one of its dorm buildings that will allow the building to remain open during a grid failure; and the completion of a 144kW solar array at Peebles Island State Park, the first installation in the State on the roof of a building listed on the National Historic Register. The electricity generated at Peebles will cover 25% of the annual usage of the facility.

Renewable Energy Use by State Agencies

<table>
<thead>
<tr>
<th></th>
<th>Total kWh FY 15-16</th>
<th>Total kWh FY 16-17</th>
<th>% Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Site Wind</td>
<td>130,054</td>
<td>64,076,300</td>
<td>+491%</td>
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<tr>
<td>Off-Site Wind</td>
<td>110,104,873</td>
<td>260,272,015</td>
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<tr>
<td>On-Site PV</td>
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<tr>
<td>Off-Site PV</td>
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<td>3,333,988</td>
<td>-42%</td>
</tr>
<tr>
<td>On-Site Solar Thermal</td>
<td>0</td>
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<td>+8844%</td>
</tr>
<tr>
<td>Off-Site Solar Thermal</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Findings

Several agencies took advantage of renewable energy opportunities in FY 16-17:

- 35% either purchased Renewable Energy Credits (RECs) (12%), generated on-site renewable energy (17%), or did both (6%). The number of agencies generating renewable energy on-site increased by 6 percentage points compared to FY 15-16.

- According to the U.S. Energy Information Administration, the average home uses 10,812 kWh of energy per year. Affected entities reported generating 68,401,114 kWh of energy through on-site renewable energy generation alone in FY 16-17, a slight increase from FY 15-16 reporting, and enough to power more than 6,300 homes for one year.
**Savings and Costs**

On average over the past two reporting years, 39% of agencies reported a reduction (19%) or no change (21%) in costs due to their renewable energy generation or purchasing efforts. The number of agencies reporting an increase in costs declined 13 percentage points, from 25% to 12%.

![Savings and Costs: Renewable Energy FY 14-15 to FY 16-17](image)

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

**Success Stories, Challenges and Lessons Learned**

The upfront cost of renewable energy projects continues to be a barrier to implementation. However, with tools like power purchase agreements (PPAs), where a developer arranges for the design, permitting, financing, and installation of a solar energy system on a customer or host site property for little to no cost, these projects are becoming more achievable for state agencies.

In May of 2017 OGS announced the completion of a centralized contract for the installation of solar panels and equipment, including technical assistance from the New York Power Authority, and the purchase of solar generated electricity through a PPA between a solar developer and an agency. The contract provides a clear path forward for agencies to use PPAs and includes a “model” PPA that agencies can modify to meet their own project needs. The contract has nine pre-qualified vendors which will help streamline the procurement process.

Training is critical. One agency noted that by training staff in renewable energy installation and energy efficiency, projects came to the forefront that most likely would have never been identified without the training. The training programs have paid for themselves in direct savings to the agency.

**New and Noteworthy Initiatives in FY 16-17**

- **NYPA** announced that they now have 48 executed power purchase agreements for more than 23 megawatts of capacity in their K-Solar Program.

- State Parks announced the three projects totaling 211kW to be completed in FY 17-18 and 420 kW scheduled for FY 18-19. All projects will be installed by State Park staff.

- **SUNY** announced the installation of 4 new geothermal systems on campuses across the state.

- The **Olympic Regional Development Authority** announced the completion Gore Mountain Ski Resort’s 5.3 mW solar array in Washington County, the largest solar installation dedicated to a ski resort in the nation. The array will power 85% of the resort’s operations, and was built without capital expenditure through a 25-year power purchase agreement.

- **DANC** announced that their Landfill Gas to Energy Facility utilized 596,292,268 standard cubic feet of gas to generate 30,570,000kWh of electricity which is enough to power 2,827 homes.
Findings

In FY 16-17, agencies reported that:

- 96% used webinars or videoconferencing at least some of the time to reduce employee travel, with 29% using them all of the time.

- 87% used carpooling and fleet management practices at least some of the time to reduce employee vehicle miles traveled (VMT).

- Of the 39 agencies reporting VMT data in the last two fiscal years, 27, or 69%, reduced VMT between FY 15-16 and 16-17. Total VMT reported by 53 agencies in FY 16-17 was 165.1 million miles.

- The average fuel efficiency of agency light duty fleets (including SUVs, trucks, vans, and sedans) was 22.75 miles per gallon (MPG), a slight increase of 0.18 since the last reporting period.

- 3% of the current light duty fleet is made up of Zero Emission Vehicles (ZEVs) (492 out of 16,866 vehicles), and 1.5% of light duty vehicles acquired in FY 16-17 were ZEVs (25 out of 1,574 vehicles).

- A increasing number of agencies promote and support policies to reduce employee commuter miles all or a majority of the time, including carpooling (52%) and public transportation (61%).

- Two agencies, NYSERDA and NYPA, (3% of those reporting) have a workplace charging program in place.

- Some agencies promote and support the use of compressed pay periods (11% all or a majority of the time, 49% at least some of the time, and 51% never), telecommuting (5% all or a majority of the time, 55% at least some of the time, and 45% never), and co-location (5% all or a majority of the time, 31% at least some of the time, and 64% never).

In addition to agency level initiatives to reduce commuter miles, the State encourages the use of public transportation by its employees through the NYS-Ride program, which lowers the cost of commuting by transit by allowing employees to purchase public transportation fare using pre-tax dollars.
Savings and Costs

On average over the past two reporting years, 38% of agencies reported a reduction (16%) or no change (22%) in costs due to their efforts to green transportation practices. Only 7% experienced an increase in costs.

Success Stories, Challenges and Lessons Learned

Multiple agencies stated that a major obstacle to utilizing more fuel-efficient vehicles was the higher cost premium. A few agencies stated that the lack of public transportation options in rural areas made it difficult for them to promote its use by employees. In addition, some work schedules do not align with public transit options, or with the vagaries in timing in public transit options.

In order to address the cost premium of fuel efficient vehicles, DEC and OGS have begun leading aggregate purchases of plug-in hybrid and battery electric vehicles for State agencies, authorities, and local governments through the New York State Vehicle Marketplace. Aggregate purchasing has led to significant discounts for purchases ranging from 11% to 34% off the list price (i.e. the Manufacturer’s Suggested Retail Price), per vehicle.

New and Noteworthy Initiatives in FY 16-17

Reducing VMT

- **EFC** lowered their VMT by another 26%, bringing their decline in VMT to nearly 50% since FY 14-15.
- **NYSERDA** upgraded most of their video-conferencing endpoints, which has improved the equipment’s reliability and ease of use, and enables them to offer high definition video-conferencing authority-wide. This is expected to decrease VMT for intra-authority meetings.
- The **Department of Financial Services** has their offices located in urban centers, which eliminates the need for smaller car trips and allows more overall trips to be taken by public transportation.
- The **Office for the Aging** provided additional webinars to employees in FY 16-17. They also opted to reduce the amount of traveling their employees do for business.
Improving Fleet Efficiency

- **SUNY Cortland** “right-sized” two of the buses in their fleet by switching from full size to half size buses, as they meet current demand and use less fuel.

- **NYSERDA** revised their travel policy to state that employees should seek travel options that align with the State’s clean energy goals.

- **Battery Park City Parks Conservancy** utilizes neighborhood electric vehicles for park operations. In addition, they also utilize electric lawn mowers and other lawn care equipment.

- **Queensborough Community College** eliminated two gasoline powered vans by replacing them with electric work carts. This saves 1,200 gallons of gasoline per year.

- The **Javits Center** utilizes over 60 pieces of electric equipment to move people and supplies around the facility.

Greening Commutes

- **SUNY Stony Brook** installed the Wolf Rides bike sharing system, which gives students access to 78 bicycles at 12 stations around campus to reduce car trips around campus.

- **Parks** has installed electric vehicle charging stations at Robert Moses and Crabtree State Parks that are powered by onsite solar, giving drivers the ability to travel carbon free.

- **NYSERDA’s** workplace charging program is powered by 100% renewable energy, allowing employees to commute carbon free.

- **NYPA** expanded their workplace charging program to include electric vehicle chargers at their power plant in Astoria, Queens.

- More than 1,700 employees from multiple agencies and authorities across the State walked, biked, took public transit, carpooled or drove an electric vehicle to work as part of “Green Your Commute Day” in May 2017, doubling participation from the previous year. Organized by **DEC**, the event reduced CO2 emissions by 19.5 tons in just one day, the equivalent of 1,579 gallons of gasoline.

- **NYSERDA** amended their telework policy to eliminate the waiting period before an employee begins teleworking, expanding the program’s reach and reducing emissions further.

- **SUNY ESF** worked with the City of Syracuse to identify a bike corridor where students and staff would be able to more easily bike to campus and the City is now installing bike lanes on it.

- At the **Department of Civil Service**, green initiatives are circulated throughout the agency by the Sustainability Coordinator, and employees are encouraged to participate. The results from the 2016 Green Your Commute Day were shared with employees and the challenge to break last year’s number was well received, sparking excitement and increasing participation from 13 to 40 employees in 2017.

- At the **Buffalo Fiscal Stability Authority**, staff are offered the option of a public transit reimbursement in lieu of a parking pass. This has allowed for greener commuting while lowering overall expenses.
Water Conservation and Reuse

Without water, life as we know it would not exist. Every living organism from tiny single-celled organisms to 300-foot trees, and everything in between – including humans – depends on water for survival. As New York has abundant water resources, it can be easy to forget that clean water is, in fact, a limited resource worldwide. Potable water is a critical resource that takes energy and money to treat and deliver to users. Now is the time for New York State to advance water conservation measures that will save energy and money, protect ecosystems, ensure continued access to clean water for everyone, and maintain healthy, vibrant and resilient communities, able to respond effectively to water challenges in the future.

Findings

Many agencies are already implementing indoor water conservation measures. In FY 16-17, agencies reported that:

- 77% use high-efficiency plumbing fixtures in all (10%), a majority (32%), or some (35%) of their facilities.
- 16% use grey water collection in all (2%) or some (14%) of their facilities. Grey water is gently used water from drinking fountains, kitchen or bathroom sinks, dishwashers, tubs and showers.

Savings and Costs

On average over the past eight years, a significant plurality of agencies (50%) reported a reduction (15%) or no change (35%) in costs as a result of implementing indoor water conservation measures. In contrast, a much smaller percent (4%) reported an increase in costs.

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

Success Stories, Challenges and Lessons Learned

State agencies are making remarkable strides in water conservation and reuse. Agencies experiencing challenges continue to make advances through dialogue, problem solving, and seeking innovative solutions.

The installation of high efficiency fixtures is a success shared among many agencies. CUNY has installed touchless faucets, DEC has installed waterless urinals and automatic flush valves and faucets, the Department of Public Service has installed high efficiency plumbing, the NYS Insurance Fund uses only sustainable plumbing fixtures, Parks has installed water reducing fixtures in bath houses and buildings, and SUNY Oneonta and SUNY Potsdam have installed low flow shower heads.

For other agencies, the up-front cost of new fixtures has been a barrier to achieving water and cost savings. It can be especially hard to justify changes when no new construction or renovation is planned. For example, while
CUNY City University has successfully replaced many fixtures with low-flow devices, they note that installing new fixtures throughout campus would cost a substantial amount of money up-front. DEC also notes that automatic flush valves and faucets are expensive upfront, that waterless urinals need to be flushed out on a regular basis to prevent clogs, and that automatic flush valves and faucets require more time from maintenance staff than more conventional fixtures.

The age of facilities can make it hard to justify the installation of new fixtures and other water saving measures. In some cases, a building’s age can make the installation of new and better technologies prohibitive due to underlying infrastructure challenges. The Niagara Frontier Transportation Authority’s aging facilities and lack of new builds in the last fiscal year have made it difficult to implement more high-efficiency fixtures. Retro fitting high efficiency plumbing is also cost-prohibitive for NFTA based on the age of some of its structures. SUNY Purchase reports that the installation of new, low-flow fixtures can lead to increased maintenance for pipes in older buildings with plumbing that is not well designed such a change in flow. DASNY employs conservation measures in their construction projects for other state entities; however, they have not built or renovated any of their own facilities in more than ten years.

On the other hand, it is often easier to recommend the installation of more efficient fixtures when renovation and new construction is planned, especially when EO 4’s green procurement specifications are used as leverage. A number of agencies realized significant savings through the complete replacement of inefficient systems:

- The Erie County Medical Center Corporation replaced a hospital air vacuum system that used water flowing 24 hours per day with a new system that does not use any water.
- The Office of People with Developmental Disabilities saved water and energy by replacing aged, underground pipes that were leaking steam into the ground.
- SUNY College of Optometry installed new cooling towers in the winter of 2017; these towers are high efficiency and are expected to save both energy and water.

Apart from the installation of new fixtures, proper maintenance and repair can also reduce water loss. The Development Authority of the North County’s Water Quality Division identified and repaired a major leak in the main line from the water well at the facility. The Department of Financial Services maintains existing hardware in good condition to avoid unnecessary water consumption.

Agencies are also harvesting rainwater for plumbing and wash water. MTA vehicle maintenance facilities continue to harvest rainwater and recycle the water used to wash buses, and SUNY New Paltz installed a rainwater-to-graywater retention tank in their new Science Building.

Some agencies have experienced difficulty measuring water use. The Javits Center reports that it’s difficult to assess changes in water use due to variables including the variety of different events held at their facility, varying numbers of attendees, foodservice menus, bathroom use, and potable water consumption. The Port Authority of New York/ New Jersey also finds it difficult to track water use at their larger facilities and does not have automated metering infrastructure.

Complaints about low-flow or high-efficiency fixtures can occur when occupants are adjusting to change. For example, SUNY Canton and SUNY Potsdam students complained about low-flow shower heads following installation.

Even in the face of these challenges, the success stories regarding water conservation at State agencies are numerous. These growing success stories demonstrate a commitment to sustainability and provide examples and inspiration to other agencies looking to improve their conservation measures.
New and Noteworthy Initiatives in FY 16-17

- The United Nations Development Corporation installed water conservation fixtures in 26 restrooms as part of a renovation project at 2 UN Plaza, with low-flow toilets and high efficiency automatic faucets. High efficiency lighting and occupancy sensors were also installed.

- SUNY Purchase replaced their cooling tower, providing increased water efficiency throughout the campus.

- SUNY ESF decommissioned an old, leaking, water-cooled air conditioner at their physical plant, saving approximately 525,000 gallons of water in a year.

- Battery Park City Authority/Parks Conservancy collects grey water and uses it for irrigation in Teardrop Park.

- The Niagara Frontier Transportation Authority is in the preliminary stages of an evaluation of the potential to use grey water for landscaping at Buffalo Niagara International Airport.

Green Infrastructure and Sustainable Storm Water Management

Green infrastructure solutions can be applied on different scales. New York State’s Forest Preserve, parks, and other State-owned lands include large, natural tracts of forests, floodplains, and wetlands. These naturally occurring ecosystems are critical to providing the benefits of green infrastructure. Other structures, such as street trees and rainwater collection systems, have been installed in smaller or more urban settings.

Green infrastructure applications, both large and small scale, reduce the negative impacts of storm water runoff, water pollution, sewer overflows, and flooding. Green infrastructure practices can be more economically viable than building new storm water and sewage infrastructure, or expanding existing traditional infrastructure. They also have numerous additional positive benefits, including expanded wildlife habitat, energy savings, urban cooling, climate change mitigation, improved air quality, increased opportunities for recreation, and more beautiful places in which to live, work and play.

Sustainable storm water management is an important subset of green infrastructure. It uses both the natural environment and engineered systems to help manage storm water in a way that conserves, protects, and sometimes enhances ecosystem values and functions. These practices can include rain gardens, green roofs, vegetated swales, bio retention areas, rain barrels, and permeable pavement. Examples of large and small green infrastructure and sustainable storm water management projects can be found on a variety of state properties.

Findings

In FY 16-17, agencies reported that:

- 22% follow or implement large scale green infrastructure practices, which preserve or restore natural landscape features, such as forests, riparian buffers, floodplains, and wetlands, at some of their facilities. One agency, Corrections, follows or implements such practices at a majority of their facilities.

- 23% use smaller-scale green infrastructure and storm water management practices to maintain or restore natural storm water infiltration at some of their facilities. Such practices include rain gardens, urban trees, green roofs, and green walls. One agency, Corrections, uses such practices at a majority of their facilities.
- 17% use smaller-scale green infrastructure and stormwater practices to collect and reuse rainwater and minimize the use of potable water at some of their facilities.

**Savings and Costs**

49% of agencies also reported a reduction (14%) or no change (35%) in costs due to implementing storm water management measures. Only 4% reported an increase in costs.

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

Beginning in FY 16-17, agencies reported changes in costs for large-scale green infrastructure projects and practices separately. No agencies reported savings in costs, but a quarter reported no change. Only 5% reported an increase in costs. The remaining 70% did not know.

**Success Stories, Challenges and Lessons Learned**

FY 16-17 was the first reporting year that all agencies were asked questions about green infrastructure and storm water management practices, as compared to only those responsible for landscaping at their facilities in prior years. While the new configuration of this question resulted in an understandable drop in the percentage of agencies reporting the implementation of such practices, the goal is for all agencies, no matter their situation, to be aware of the potential for the use of such practices to conserve water, prevent pollution, and avoid flooding. They will then be empowered to reach out to the decision makers responsible for the maintenance of buildings and grounds at their facilities to advocate for the adoption of such practices.

Reporting agencies have encountered some challenges when trying to implement green storm water infrastructure practices. Understandably, agencies in leased spaces are often not able to directly control the installation and use of green storm water infrastructure, as landlords may not have an interest and the lease language does not require these practices. The first step is to engage landlords in a discussion about the value of such practices.
New and Noteworthy Initiatives in FY 16-17

- **Parks’ Humphrey Nature Center**, in the Genesee Region, is collecting rainwater and using it to water gardens.

- **Port of Oswego Authority’s** rail project includes green buffer zones to control runoff.

- **SUNY ESF** repaired a set of bioretention basins to restore the beneficial functions of retaining and treating storm water before it enters the City of Syracuse’s storm water drains.

- **SUNY New Paltz** used permeable materials and installed bio-swales in several parking lots to better manage storm water and allow for increased percolation. The campus also installed a rainwater-to-graywater retention tank in the new Science Building.

- **CUNY Bronx Community College** recently constructed a new campus quad with native plantings that is partially irrigated by a LEED compliant irrigation system utilizing storm water from an adjacent building.

- **CUNY City University of New York** completed an extensive storm water runoff mitigation project at their South Campus.

- **CUNY College of Staten Island** installed gutters and leaders on seven buildings that empty into detention tanks. The water is used in the sprinkler system.

Sustainable Landscaping

Sustainable landscaping enhances the beauty of a property while conserving water, energy and soil, and providing needed habitat for wildlife and pollinators, which have experienced an alarming drop in population in recent years. Many State facilities have some form of outdoor space with landscaping to ensure that the grounds are aesthetically pleasing to visitors and employees. With the advent of sustainable landscaping, the green space associated with the diverse facilities operated by New York State (which range from highways to college campuses and office buildings) is beginning to serve a greater purpose: protecting the environment and natural resources, all while saving money and reducing maintenance time.

Conventional landscaping requires watering and fertilizing, and sometimes annual re-planting and the application of pesticides. Non-native plants are also frequently used, which can lead to the inadvertent planting of invasive species that spread to wild, native ecosystems with devastating consequences. Sustainable landscaping uses native, low-maintenance plants that are adapted to New York’s specific climate conditions. Perennial plants require less time to establish each season than annual plants, and can be chosen to be more drought tolerant than traditional landscaping plants. This saves water and reduces staff maintenance time. Lawn clippings are left on lawns, or composted on-site along with other yard waste to nurture the soil, reducing the need for chemical fertilizers. Sustainable landscaping also creates learning opportunities for New York residents and showcases the beauty of our native species.
Findings

In FY 16-17, agencies responsible for landscaping at their facilities reported that:

- 25% use practices that preserve or enhance soil (e.g. creating wind breaks or using compost made on site) at all (5%) or some (20%) of their facilities.

- 30% use practices that preserve or maximize the use of native vegetation to support pollinators and reduce water, energy, and toxic chemical use at all (3%), a majority (8%), or some (19%) of their facilities. Such practices include low- or no-mow policies, and the planting of xeric, native, or pollinator-friendly plants.

- 32% implemented green infrastructure, sustainable storm water and landscaping practices in the design and construction of new facilities at all (10%), a majority (3%) or some (19%) of their facilities, while a comparable number, 30%, implemented such practices when renovating existing facilities (all 9%; a majority 3%; or some 18%).

Savings and Costs

* Fluctuations in the percentage of agencies reporting are due to changes in the ability of agencies to track savings and costs from year to year. There is steady reporting of savings or no change in costs compared to increases in cost.

On average over the past eight years, of agencies that contract for landscaping or manage it themselves, a significant plurality (49%) reported a reduction (14%) or no change (35%) in costs as a result of implementing sustainable landscaping. In contrast, a much smaller number (5%) reported an increase in costs. Over a third said they did not know.

As sustainable landscaping becomes a more well-known and accepted practice, agencies continue to report on successes. One area of increased activity is the inclusion of native and drought tolerant plants in landscaping. Queens College started to include native plants in their landscaping and use rain gardens to decrease the need for irrigation. The State Police use sustainable, low-maintenance plants that don’t require additional watering at all. Parks has installed pollinator gardens and implemented invasive species removal projects across the State.

Success Stories, Challenges and Lessons Learned

As with the questions on green Infrastructure and sustainable storm water management, for the first time in FY 16-17, all agencies were asked questions about sustainable landscaping practices, not just those directly responsible for landscaping at their facilities. Again, the goal is for all agencies, no matter their situation, to be aware of the potential benefits of sustainable landscaping, and be empowered with the knowledge they need to reach out to decision makers responsible for the maintenance of the grounds around their facilities to advocate for the adoption of such practices.
Recycling grass clippings back into the soil reduces the need for fertilizer and reduces waste and energy use. NYSERDA’s landscaping subcontractor reports that they have a very small operation and most of their conservation success comes from recycling clippings back into the grass. This practice returns nitrogen and other nutrients back into the soil, reduces the need for excessive fertilizers and weed control, and reduces the amount of waste destined for the landfill.

Agencies reported challenges and barriers to sustainable landscaping mainly regarding leased spaces and the location of facilities. Eleven agencies reported that leased spaces not managed by the agency pose challenges to sustainable landscaping. Two agencies reported that their small number of staff, located in a shared office building, gave them less say in how sustainable practices could be integrated into the exterior management plan. DOH reports that there are no opportunities to practice sustainable landscaping at facilities located in city settings.

Transportation safety is a unique concern for agencies like the Niagara Frontier Transportation Authority, which operates airports. Landscaping must be properly groomed near runways to discourage animals from using it as habitat.

New and Noteworthy Initiatives in FY 16-17

- **DOT** earned a NYS Environmental Excellence Award for an innovative project along Interstate I-390 in Livingston County. Changes to the mowing schedule along six miles of the highway allow monarch butterflies and other pollinators to successfully complete their lifecycle without disruption. DOT Region 4 worked in partnership with the Seneca Park Zoo Society to establish interpretive gardens at two rest areas in the area, which serve the nearly 13,300 vehicles that travel the highway each day. Signs give visitors information about the plight of pollinators and provide tips on how to protect them.

- **Parks** has implemented no-mow practices throughout the parks system in thoughtfully designated areas, reducing labor hours, equipment use, and fuel consumption.

- **SUNY Stony Brook** discourages the use of fertilizers and prefers to use organic solutions when planting on campus and especially when working in the SBU greenhouse.

- **CUNY’s Bronx Community College**’s new campus quad uses native plants that require little watering.

- The **Development Authority of the North Country** used native trees and shrubs as landscaping around the new materials management facility administration entrance and truck scales.

- **BPCA – Battery Park City Authority/Parks Conservancy** is using drip irrigation to water their gardens which reduces water consumption.

- **Port of Oswego Authority** has reduced the number of days they mow.
Buying Green

Green purchasing, also known as environmentally preferable purchasing (EPP), involves the selection of goods and services that positively impact or have less harmful impacts on public health and the environment compared to conventional products. Buying green products supports all of New York State's environmental priorities regarding waste, toxics, energy, water, and natural resources.

New York State is a national leader in green purchasing. In May 2017, the State earned the highest honor awarded by the Sustainable Purchasing Leadership Council, for putting in place a comprehensive purchasing program that exemplifies the qualities defined in the Council's "Principles for Leadership in Sustainable Purchasing." In April 2017, New York earned a national award for excellence in sustainable electronics procurement from the Green Electronics Council, for requiring that all microcomputers purchased through OGS's aggregate buy meet EPEAT requirements, a global environmental rating system managed by the Council.

Through the volume of its procurement, New York is harnessing the energy of the market to produce products that perform better and cost less. As supply increases, prices have decreased, and high-performance green products and services are becoming more affordable for all consumers.

In general, experience has shown that green products are competitively priced compared to their conventional counterparts. Many green products, such as traffic safety equipment made from recycled plastic, glass beads in reflective paint made from recycled glass, and remanufactured toner cartridges, are consistently less expensive than conventional products. Many others, including 100% recycled content janitorial paper, green computers, green cleaning products, and soy-based ink, are consistently comparable in price to conventional products. Fuel-efficient vehicles and appliances may be more expensive up front but result in lower life cycle costs over time due to energy savings.

Green products also generally perform well compared to conventional products. After nine years of experience using green cleaning products, only a handful of agencies (three in FY 16-17) reported that green products were sometimes not as effective as conventional cleaners. To put this in perspective, a clear majority of agencies, 53 (or 82%) reported using green cleaners all or a majority of the time, mostly without complaint. This result corresponds to the State Education Department's 2010 survey of schools, which found that green cleaning products "cost the same or less," work as effectively, and last longer (because they are concentrated and have more accurate dispensing systems) than their traditional counterparts.

The price of some green products, such as various types of recycled content copy paper or re-refined oil, while generally competitive, may still be higher than conventional products in response to fluctuations in market demand or regional supply. Under current OGS statewide contracts for "truckload" and "less than truckload" lots of recycled copy paper, the price of 100% post-consumer recycled content paper is very competitive, with bulk purchases having the lowest pricing. For copy paper sold in quantities of "less than truckload" lots, pricing for 100% post-consumer recycled content paper is only slightly (8%) higher than the price for 30% post-consumer recycled content paper.
The OGS “miscellaneous office supplies” statewide contract also gives agencies a very wide range of choices of brands, amount of recycled content and paper type, and vendor catalogs make it easy to compare prices and product specifications. Agencies willing to shop around should have no difficulty finding cost-effective recycled content paper. Only four agencies reported that 100% recycled content copy paper was more expensive than paper with lower recycled content in FY 16-17, and the number of agencies reporting concerns with the performance of such paper was very low – only one.

In the case of re-refined oil, a majority (70%) of the products awarded for conventional motor oil (Lot 1) under the new motor oil contract (award 23012) are products with re-refined content, with approximately one-quarter of the awards for re-refined products being for the lowest product bid, and three-fourths of the awards (due to regional differences in price) awarded within the State’s 10% price preference for recycled content products. New York was the first state to buy re-refined motor oil in 1990, and helped build the market. The oil consistently meets all performance standards, with few reported problems over 25 years.

**Purchasing Recycled Paper**

Paper is an essential commodity purchased in large quantities by the State. Paper manufacturing uses significant amounts of energy and natural resources and is a major source of pollution and greenhouse gas emissions. To reduce these impacts, EO 4 requires the purchase of copy paper and the printing of agency publications on paper made from 100% post-consumer recycled content that is processed chlorine free. The intent of OGS is to award janitorial paper contracts requiring 100% post-consumer content, processed chlorine free. Where this is not practicable, OGS aims for 100% recycled janitorial paper (containing 100% total recovered fiber), with a lesser amount of post-consumer fiber content.

The term “processed chlorine free” (PCF) refers to recycled paper in which the recycled content and any virgin material is unbleached or bleached without the use of chlorine or chlorine derivatives. Post-consumer material has completed its life as a consumer item and will be disposed of as solid waste if not recovered. The higher the post-consumer content, the more materials were diverted from the waste stream. The tables below present data on the amount of copy and janitorial paper purchased in five out of the past seven fiscal years, broken out by percentage of recycled content.

**Key Copy Paper Findings**

By far the greatest amount, and more than one-half (52%) of dollars spent on copy paper in FY 16-17 ($3.2 million), went to purchase 100% post-consumer recycled content, processed chlorine-free paper. This represents a 30 percentage point increase from the 22% (or $3.3 million) spent on such paper in FY 08-09.

64% of agencies in FY 16-17 reported buying at least some 100% post-consumer recycled content, processed chlorine-free copy paper, and only 38% of agencies reported buying less than 30% recycled content copy paper.

Slightly more than one-third of agencies (38%) continued to purchase paper with less than 30% recycled content in FY 16-17. Those purchases accounted for 18% of total copy paper purchased, up 7 percentage points from the total percentage of such paper purchased in FY 15-16, and only 3 percentage points less than the 21% of such paper purchased in FY 9-10.
Analysis of paper purchasing data reveals that 100% post-consumer recycled content copy paper is not more expensive than copy paper with little to no post-consumer recycled content. On the contrary, over the past four fiscal years, agencies paid almost the same amount for 100% post-consumer recycled content copy paper (at $31.75 per box) as for 30-99% recycled paper (at $30.75 per box), and significantly less than for copy paper with less than 30% post-consumer recycled content (at $35.75 per box).

**Key Janitorial Paper Findings**

63% of dollars spent on janitorial paper in FY 16-17 (or approximately $4 million) went to purchase 100% recycled content paper. This amount represents a 29 percentage point increase from the 34% (or $1.2 million) spent on such paper in FY 08-09.

Only seven agencies continued to purchase unrecycled janitorial paper in FY 16-17. Such purchases accounted for only 10% of all janitorial paper purchases.

Due to the difficulties associated with measuring janitorial paper purchases, the number of agencies reporting such purchases, of any kind, is consistently lower than that reporting for copy paper.
<table>
<thead>
<tr>
<th>Agencies Reporting Purchases</th>
<th>FY</th>
<th>Percent of Agencies Reporting Purchases</th>
<th>Total Cases of Janitorial Paper Purchased</th>
<th>Total Dollars Spent on Janitorial Paper</th>
<th>Percent of Expenditures by Recycled Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Recycled Chlorine-free</td>
<td>28</td>
<td>09-10</td>
<td>88%</td>
<td>236,139</td>
<td>$7,138,622</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>13-14</td>
<td>50%</td>
<td>178,652</td>
<td>$3,433,252</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>14-15</td>
<td>51%</td>
<td>183,775</td>
<td>$3,622,217</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>15-16</td>
<td>72%</td>
<td>138,048</td>
<td>$4,253,639</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>16-17</td>
<td>76%</td>
<td>147,803</td>
<td>$3,982,996</td>
</tr>
<tr>
<td>1%-99% Recycled</td>
<td>22</td>
<td>09-10</td>
<td>69%</td>
<td>71,029</td>
<td>$1,699,169</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>13-14</td>
<td>33%</td>
<td>33,088</td>
<td>$1,167,095</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>14-15</td>
<td>41%</td>
<td>45,275</td>
<td>$1,394,914</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>15-16</td>
<td>75%</td>
<td>85,395</td>
<td>$1,909,007</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>16-17</td>
<td>64%</td>
<td>59,284</td>
<td>$1,730,950</td>
</tr>
<tr>
<td>Unrecycled Janitorial Paper</td>
<td>9</td>
<td>09-10</td>
<td>28%</td>
<td>90,982</td>
<td>$727,420</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>13-14</td>
<td>20%</td>
<td>31,541</td>
<td>$752,227</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>14-15</td>
<td>13%</td>
<td>28,719</td>
<td>$781,307</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>15-16</td>
<td>28%</td>
<td>33,188</td>
<td>$814,128</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>16-17</td>
<td>21%</td>
<td>28,103</td>
<td>$640,311</td>
</tr>
<tr>
<td>Total Agencies Reporting Purchases</td>
<td>32</td>
<td>09-10</td>
<td></td>
<td>398,150</td>
<td>$9,565,211</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>13-14</td>
<td>N/A</td>
<td>243,281</td>
<td>$5,352,574</td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>14-15</td>
<td></td>
<td>257,769</td>
<td>$5,798,438</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>15-16</td>
<td></td>
<td>256,631</td>
<td>$6,976,774</td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>16-17</td>
<td></td>
<td>235,190</td>
<td>$6,354,257</td>
</tr>
</tbody>
</table>

### Other Paper Purchases

The EO 4 reporting form contains an open-ended item requesting information on other types of papers purchased, including quantities and dollar amounts. 36 entities reported purchasing other types of paper in FY 16-17. Agencies reported purchasing colored paper, card stock, plotter paper, graph paper, bond paper, map paper, steno pads, and rolls of engineering paper. Several agencies reported dollar amounts for these purchases, while some did not have detailed information available.

### Green Specifications and Centralized Procurements

#### Green Specifications

In April 2017, nine green specifications were approved by the Interagency Committee, including: *Disinfectants and Sanitizers, Floor Finishes and Finish Removers*, “Furniture,” “General Purpose Cleaners,” “Hand Cleaners, Hand Soaps, Hand Sanitizers, and Personal Care Products,” “Lighting,” “Monochrome Printer Cartridges,” “State Funded Travel,” and “State Funded Food.” The Committee also adopted a new process for the final approval of green specifications that allows for the automatic approval of specifications posted for public comment if no suggested edits or negative comments are received within 90 days of posting.
One new green specification, “Batteries (AAA, AA and D)” and one amended green specification “Amended Single Use Food Containers” were tentatively approved by the Committee in April 2017. The “Batteries” specification was finalized following the new approval process in September 2017. Multiple comments were received on the amended “Food Containers” specification. Those comments were discussed and recommendations regarding amendments to the specification were considered when the Committee met on April XX, 2018.

A total of 52 specifications are currently approved for use in state procurement. They cover approximately 90 different commodity, service, or technology products (e.g., the “Desktop and Laptop Computer” specification covers three types of devices: desktops, notebooks (including laptops) and tablets). A summary of the new specifications adopted by the Committee is provided below. A complete list of approved specifications, as well as their full text, is available on the New York State OGS website.

Centralized Green Procurements

OGS Procurement Services is the State’s centralized procurement office, establishing and managing over 1,500 contracts for commodities, services and technology, including many contracts containing environmentally friendly products and services. Procurement Services is dedicated to helping customers meet their green procurement goals by providing environmentally preferable purchasing contracts which are driven by four major directives:

- The New York State Green Cleaning Law (State Education Law § 409-i)
- Executive Order No. 4 (Green Procurement and Agency Sustainability)
- Executive Order No. 18 (Eliminate State Purchases of Bottled Water)
- Executive Order No. 142 (Diversify Transportation Fuel and Heating Oil in State Vehicles and Buildings)

In April of 2017, Procurement Services established a new Green Procurement Team to focus on the development of green contracts, the identification of green products offered through contracts or Preferred Sources, and to assist contract users with finding green products. The team is currently developing contracts for Environmentally Preferable Lighting and Photovoltaic Systems.

A list of OGS centralized contracts and Preferred Source offerings which contain green products is available at https://www.ogs.ny.gov/greenny/green-contracts.asp. Examples of key environmentally preferable procurements developed, issued, or maintained by Procurement Services in FY16-17 include the following:

Solar Power Purchase Agreements

In May of 2017 OGS awarded a new contract for Solar Power Purchase Agreements which provides contract users with a streamlined process to have a solar system installed at no upfront cost and to purchase the solar electricity generated by the system through a power purchase agreement. The contract includes six lots for solar systems including on-site and remote net metered ground systems, on-site and remote net metered pole systems, on-site net metered parking canopy systems and on-site net metered roof systems. All lots include options for battery storage. Several agencies are currently developing projects through this contract with Mini-Bids expected to be released in the Spring of 2018.

Microcomputer and Related Systems

Users of the OGS centralized contracts for microcomputers continue to realize both savings and environmental benefits by purchasing computers that meet EPEAT requirements. With the issuance of award 22802 (Information Technology Contract – Manufacturer Based) users now have the option of using either the Aggregate Buy Program conducted by Procurement Services or issuing their own mini-bid for computers, and during FY 16-17 Procurement Services issued a new aggregate buy with a one-year term. For the period between January of 2016 and June of 2017, approximately $101.7 million was spent on the purchase of EPEAT registered computers.
through a combination of both the 16-17 aggregate buy program and user issued mini-bids. Since 2008, New York government entities have purchased more than 1.5 million microcomputers meeting the highest environmental standard in the country, EPEAT Gold “Plus 6” – meaning that the products meet all EPEAT criteria for the reduction or elimination of toxic materials.

<table>
<thead>
<tr>
<th>Number of EPEAT Registered Microcomputers Purchased, 2008-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>April 2008 through March 2009</td>
</tr>
<tr>
<td>April 2009 through June 2010</td>
</tr>
<tr>
<td>June 2010 through January 2012</td>
</tr>
<tr>
<td>February 2012 through January 2014</td>
</tr>
<tr>
<td>April 2014 through December 2015</td>
</tr>
<tr>
<td>January 2016 through June 2017</td>
</tr>
<tr>
<td>Totals</td>
</tr>
</tbody>
</table>

Notes: *Spend represents the total amount spent by users of the aggregate buy program. **Savings represents the difference between the price of the computers purchased through the aggregate buy compared to the prices on the state contract. ***Data unavailable at the time of publication.

Recycling and Trash Removal Services

In December of 2015, OGS Procurement Services awarded a procurement for Recycling and Trash Removal Services which offers contract users a centralized contracting vehicle for meeting the recycling and composting requirements contained in the EO 4 specification for Solid Waste Recycling and Management Services. The procurement includes eleven lots for the recycling of materials including single stream materials, comingled materials, metal food containers, glass, plastics, cardboard, mixed paper, white office paper, shredded paper, scrap metal, and construction and demolition materials, and also two lots for composting – one for green waste and one for organics. The contract contains requirements for reporting so that contract users can track the amount of materials being recycled and disposed of and includes recycling revenue for some of the recycling lots. Reported sales for recycling and composting lots on this contract is approximately $325,000 annually.

Recycled Copy Paper, Envelopes, and Opaque Rolls

OGS continues to offer copy paper, envelopes and opaque rolls containing recycled content through the following centralized contracts:

- Recycled Copy Paper, Less than Truckload Lots (Group 50211, Award 23078) (100% and 30% post-consumer recycled content)
- Recycled Copy Paper, Truckload Lots (Group 50213, Award 23064) (100% post-consumer content)
- Recycled Opaque Rolls (Group 50208, Award 22551) (30% post-consumer content)
- Envelopes, Wove, Kraft (Group 50030, Award 22988) (30% post-consumer content)

All paper available on these contracts that has 100% post-consumer recycled content is also processed chlorine free. These contracts provide users with the opportunity to purchase paper with recycled content that meets the specifications for copy paper and janitorial paper contained in EO 4 itself and the green specification for printing. Reported sales for these contracts was approximately $6.2 million in 2016.
Green Cleaning

OGS continues to offer green cleaning products through its Environmentally Preferable Cleaning Products, Programs, Equipment, and Supplies contract that was awarded in March of 2015. This contract includes 12 lots covering general purpose cleaning, floor maintenance, disinfectants and sanitizers, vacuum cleaners, hand soaps, de-icing, compostable bags, entryway mats, and a full range of microfiber products. This contract also includes products that meet New York’s green cleaning law for schools and the EO 4 specifications “Industrial and Institutional Cleaning Products,” “Hand Cleaners,” “Electric Hand Dryers,” and “Vacuum Cleaners.” Provisions for training, tracking purchases, and record keeping are also included, many at no extra charge. Sales of green products through this award were estimated to be approximately $2.25 million in 2016-2017, and OGS is currently working to extend this contract through March of 2019.

Floor Coverings and Related Services

In 2017, Procurement Services replaced the existing Floor Covering contract with a new piggyback contract with the National Joint Powers Alliance. The contract continues to offer carpet meeting the GreenNY specification for “Carpet and Carpet Tile.” Green products are highlighted in yellow in the contractors’s price lists, making it easy for authorized users to identify and purchase carpet that meets the specification. Through the contract, users can also recycle their existing carpet and prevent used materials from being disposed of in landfills. Sales of carpet and carpet tile that meet the EO 4 specification were approximately $330,000 in FY 16-17 and $1.73 million throughout the life of the old contract.

Lubricating Oil, High Detergent (Motor Oil)

In June of 2017 OGS issued a new award for Motor Oil that includes re-refined motor oil. This contract provides users with the opportunity to purchase re-refined motor oil that meets the EO 4 specification Lubricating Oil, High Detergent, which requires State entities to purchase lubricating oil that meets or exceeds a minimum percentage of post-consumer material content by weight of 55%. In FY 16-17 approximately $450,000 dollars of sales took place through the previous award for Motor Oil (Award 22300) for a total of $7.15 million dollars spent on re-refined oil since inception of the award.

Electric Lamps

In 2017 OGS moved its offering of energy efficient lighting from its piggyback contract with NASPO/Value Point’s Facilities MRO contract (#1862) to the OGS contract for Industrial and Commercial Supplies (Group 39000, Award 22918). Included in this contract is a “Lighting Hot List” which contains increased discounts for frequently purchased lighting items. The list includes items which meet the EO 4 specification Compact Fluorescent Lighting and additional environmentally preferable lighting products. Similar to the Floor Coverings and Related Services contract, this contract also includes a guide to assist users in identifying products that meet the EO 4 specification. Also in 2017, the OGS Green Procurement Team began work on a new contract for Environmentally Preferable Lighting which will offer a variety of lighting products that meet the EO 4 specification Lighting Fixtures, Ballasts, and Lamps. This procurement is currently in the evaluation phase, with contract awards expected to be made in the spring of 2018. Approximately $1.5 million dollars of EPP lighting products are purchased through this contract each year including products such as reduced wattage bulbs and DLC certified bulbs and fixtures.
Photovoltaic Systems

Since 2009, solar powered photovoltaic systems have been offered through the OGS contract for *Photovoltaic Systems* (Group 05302, Award 21806), which is a statewide piggyback contract off of GSA’s contract GS-07F-0108J. In 2016, sales of solar products were approximately $1.1 million dollars through this contract. OGS is currently developing a replacement for this award, and plans to issue a new contract for Photovoltaic Systems in the fall of 2018.

Summary

On OGS contracts the green products with the greatest amount of sales were microcomputers, recycled paper, green cleaning products, lighting and photovoltaic systems, with the total sales for all green products being approximately $113,900,000. The estimated sales for all green products are shown in the following table:

<table>
<thead>
<tr>
<th>Green Product Type</th>
<th>Estimated Annual Spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPAT Certified Computers</td>
<td>$101,700,000</td>
</tr>
<tr>
<td>Recycled Paper (copy paper, opaque rolls &amp; envelopes)</td>
<td>$6,200,000</td>
</tr>
<tr>
<td>Environmentally Preferable Cleaning Products</td>
<td>$2,250,000</td>
</tr>
<tr>
<td>Lighting</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Photovoltaic Systems</td>
<td>$1,100,000</td>
</tr>
<tr>
<td>Re-refined Motor Oil</td>
<td>$450,000</td>
</tr>
<tr>
<td>Carpet and Carpet Tile</td>
<td>$325,000</td>
</tr>
<tr>
<td>Recycling and Composting Services</td>
<td>$325,000</td>
</tr>
<tr>
<td>Solar Power Purchase Agreements</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$113,850,000</strong></td>
</tr>
</tbody>
</table>

*No sales have occurred under this contract to date, however several mini-bids are currently in the development stages

**Green Specifications Finalized in 2017**

**Batteries (AAA, AA and D)**

This specification encourages agencies to purchase electronic products that do not need to be powered by batteries. Where an electronic product does need to be powered by a battery, agencies are encouraged to purchase a model that includes a multi-use rechargeable battery which uses NiMH chemistry, retains at least 75% of its charge after 3 years of storage, and has a minimum power rating of 2,000 mAh for AA, 800 mAh for AAA, and 8,000 mAh for D.

Agencies are required to properly dispose of batteries at the end of their life, and guidelines are provided for proper storage, use and disposal.

**Disinfectants and Sanitizers**

This specification encourages agencies to purchase disinfectants and sanitizers which avoid:
- Ingredients known to cause cancer, birth defects, or other reproductive harm;
- Ingredients classified as asthmagens; and
- Chemicals in the class nonyl phenol ethoxylates or other alkyl phenol ethoxylates (APEs).

It encourages the purchase of products with active ingredients approved by the Massachusetts Toxics Reduction Task Force, including:
- Hydrogen peroxide;
- Citric acid;
- Lactic acid; or
- Caprylic acid.

In addition, the purchase of products certified by Green Seal or UL Ecologo, and offered in concentrates delivered through closed-loop dilution-control systems, are encouraged.
### Green Specifications Finalized in 2017

#### Floor Finishes and Finish Removers

This specification sets standards for floor maintenance chemicals and covers products such as concentrated and ready-to-use floor polish, finish and wax and floor strippers and removers. It requires the purchase of products certified to either Green Seal standard GS-40 (Floor Care Products for Industrial and Institutional Use) or UL EcoLogo standard 2777 (Sustainability for Hard Floor Care Products). It also requires dilution equipment to be offered free of charge and prohibits products in aerosol containers.

#### Furniture

This specification sets environmental standards for furniture, including office furniture, residence hall furniture, household furniture and school furniture. It requires the purchase of products that meet one of the three following criteria:
- high recycled content;
- sustainably sourced; or
- low emitting.

It establishes limits on certain materials, including polyvinyl chloride (PVC), lead, perfluorinated chemicals (PFC), formaldehyde, and added antimicrobials. It encourages purchasers to avoid phthalates, intentionally added flame retardants, and other chemicals of concern, as well as to request specific information from vendors regarding the chemical ingredients present in a product.

#### General Purpose Cleaners

This specification was revised to include product categories covered by Green Seal specifications GS-34 (Cleaning and Degreasing Agents), GS-8 (Cleaning Products for Household Use), GS-53 (Specialty Cleaning Products for Industrial and Institutional Use), UL EcoLogo 2791 (Drain and Grease Trap Additives: Biologically Based), UL EcoLogo 2792 (Cleaning and Degreasing Compounds: Biologically Based) and UL EcoLogo 2795 (Carpet and Upholstery Care Products).

Certification to Green Seal or UL EcoLogo is required.

#### Hand Cleaners, Hand Soaps, Consumer Antiseptic Hand Washes and Hand Rubs, and Personal Care Cleansing Products

The existing specification for “Hand Soap” was updated to cover consumer antiseptic hand washes, consumer antiseptic hand rubs and cosmetic hair shampoos and body washes, in addition to hand soaps and hand cleaners.

Hand cleaners and soaps may not contain antimicrobial agents, and must be certified by either Green Seal or UL EcoLogo. Consumer antiseptic hand washes may not contain added antimicrobial agents.

Agencies are encouraged to purchase consumer antiseptic hand rubs that are certified to UL EcoLogo 2783, or which contain only ethyl alcohol or isopropanol. Both hand washes and hand rubs must be legally marketed and not misbranded under the FDA Monograph for Consumer Antiseptic Hand Wash Products.

Agencies are encouraged to purchase personal care cleansing products certified to either Green Seal GS-41, UL EcoLogo 2845 or UL EcoLogo 2784.

#### Lighting

The goal of this specification is to eliminate the purchase of inefficient lighting and high mercury content lighting in New York State facilities and require highly efficient lighting, including the use of mercury-free LED technology when possible. The purchase of LED lights listed by the Design Lights Consortium (DLC) is highly recommended, due to their superior lighting quality, energy efficiency, and avoidance of mercury.

All fixtures, ballasts and lamps must comply with the European Restriction on Hazardous Substances (RoHS). All fixtures must be certified by Energy Star or listed by DLC. Additional requirements are tailored to the type of product being purchased. Linear fluorescent lamps must be on CEE’s Qualified Product List, may contain no more than 3.5 mg and must have a minimum rated life of 30,000 hours.

#### Monochrome Printer Cartridges

This specification encourages the purchase of high yield remanufactured toner cartridges that meet or exceed OEM cartridge standards for quality and performance, meet ASTM standards, and are certified by UL EcoLogo, Blue Angel, Nordic Swan, or an equivalent standard.

Third party performance testing is strongly encouraged. In addition, the specification requires vendors to provide a declaration of the standards being met and sets limits on intentionally added mercury, lead, cadmium, chromium, azo-colorants and other hazardous materials.
Green Specifications Finalized in 2017

**State Funded Lodging**

This specification encourages State employees traveling for business to use lodging establishments that are either members of the New York Environmental Leaders program or the Trip Advisor Green Leaders program.

**State Funded Food**

This specification encourages State employees traveling for business to purchase food from providers that have either taken the Taste NY Pledge, are a member of the Green Restaurant Association, or are a member of the New York Environmental Leaders program.

**Buying Green**

95% of agencies reporting in FY 16-17 said that they reviewed and utilized GreenNY’s procurement specifications when making purchasing decisions at least some of the time. 62% said that they reviewed and used the specifications all (26%) or a majority (35%) of the time. These rates are in line with the rates reported in FY 15-16.

To improve the quality of data regarding green spending, this year’s survey used a new format compared to previous reports. As a result, both the number of responses and dollar values reported increased significantly. Compared to the previous year’s report, the number of responses increased from 9 in FY 15-16 (14% of respondents) to 33 in FY 16-17 (50% of respondents), and the reported amount of green spending increased from approximately $200,000 in 15-16 to almost $33 million in 16-17. In this year’s report, the survey asked respondents to provide an estimate of the dollars spent in FY 16-17 by their agency on twelve categories of products and services that meet EO 4 specifications. The responses are summarized in the table below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Furniture</td>
<td>$14,543,215</td>
<td>19</td>
</tr>
<tr>
<td>Computers</td>
<td>$10,100,957</td>
<td>19</td>
</tr>
<tr>
<td>Green Cleaning Products</td>
<td>$2,001,723</td>
<td>19</td>
</tr>
<tr>
<td>Lighting</td>
<td>$1,821,140</td>
<td>15</td>
</tr>
<tr>
<td>Carpeting</td>
<td>$1,732,640</td>
<td>8</td>
</tr>
<tr>
<td>Photovoltaic Systems</td>
<td>$1,435,136</td>
<td>2</td>
</tr>
<tr>
<td>Recycling or Composting</td>
<td>$581,794</td>
<td>13</td>
</tr>
<tr>
<td>Integrated Pest or Vegetation Management Services</td>
<td>$335,954</td>
<td>11</td>
</tr>
<tr>
<td>Re-refined Motor Oil</td>
<td>$183,392</td>
<td>9</td>
</tr>
<tr>
<td>Non-Chemical Pest Management Services</td>
<td>$86,679</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>$74,501</td>
<td>3</td>
</tr>
<tr>
<td>Zero Emission Vehicles</td>
<td>$48,742</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$32,945,873</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>
The greatest reported expenditures were made by SUNY, CUNY, and the New York State Insurance Fund, which reported spending $14.5 million, $8.6 million, and $2.7 million on green products, respectively. Reported expenditures for green purchases among the remaining entities ranged from $1,853 to $942,000 with the total for all entities being $32,945,873. The top 10 state entities with the highest reported green spending are shown in the following table.

<table>
<thead>
<tr>
<th>Top 10 Green Purchasers, FY 2016-17</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>State University of New York (SUNY)</td>
<td>$14,455,158</td>
</tr>
<tr>
<td>City University of New York (CUNY)</td>
<td>$8,615,561</td>
</tr>
<tr>
<td>NYS Insurance Fund</td>
<td>$2,673,117</td>
</tr>
<tr>
<td>Department of Motor Vehicles (DMV)</td>
<td>$942,000</td>
</tr>
<tr>
<td>Department of Health (DOH)</td>
<td>$931,464</td>
</tr>
<tr>
<td>New York Power Authority (NYPA)</td>
<td>$642,847</td>
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<tr>
<td>Office of Parks, Recreation and Historic Preservation (Parks)</td>
<td>$380,177</td>
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<tr>
<td>Division of Housing and Community Renewal</td>
<td>$369,250</td>
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<td>Thruway Authority (Thruway)</td>
<td>$346,200</td>
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<tr>
<td>NYS Energy Research and Development Authority (NYSERDA)</td>
<td>$229,635</td>
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**Savings and Costs**

In FY 16-17, 43% of agencies reported either a reduction (3%) or no change (40%) in costs as a result of buying green, while approximately half of the agencies (51%) reported that they did not know. Only 6% reported an increase in costs.

Overall, data regarding the cost of green procurement is encouraging. On average over the past eight years, a plurality of agencies (41%) reported a reduction (13%) or no change (28%) in costs as a result of implementing green procurement practices. Only 12% reported an increase, while more than a third did not know.

A few agencies gave specific examples of cost savings:

- **MTA** and **SUNY New Paltz** reported reducing energy costs through the purchase of LED lighting.
- **CUNY** reported that the purchase and use of print management software and the installation of hand dryers were important factors in reducing costs, by reducing the amount of copy and janitorial paper purchased.
Success Stories, Challenges, and Lessons Learned

The long-term success of green procurement depends on changing the culture of an agency, office, or facility to consider the sustainability of goods and services during the purchasing process, and making it as easy as possible for them to do so. Although culture change often happens slowly, New York has seen some outstanding shifts in focus this year. The most important is the creation of a team of staff within OGS Procurement Services which is dedicated to the issuance of wholly green contracts and making it easier for agencies to identify green products on conventional contracts. Others are the inclusion of green purchasing modules into the routine training offered to purchasing agents, and inviting vendors of recycled and remanufactured commodities to promote their offerings at NY GovBuy, an annual conference for state and municipal purchasers.

Additional encouraging developments include a vote by the SUNY New Paltz Foundation to divest from fossil fuel investments, a decision applauded as both environmentally responsible and fiscally sound, and NYPA’s decision to focus their sustainability efforts on green procurement training, with the goal of helping staff better understand what to look for when seeking to buy green goods and services.

Challenges that remain include the development of tools for agencies to identify green offerings available through the new State e-catalog system, and the adoption of more effective methods for agencies to track green purchases. Three agencies reported difficulty understanding green specifications and discerning which products on contract are compliant.

Finding Green Products that Work Well at an Affordable Price

Most statewide contracts are not exclusively green, and it can be time consuming for purchasers to navigate offerings and identify green products. As consumer demand has grown, the market has responded, and more green products with high levels of performance are available than ever before. Unfortunately, however, some companies have resorted to “greenwashing,” which is the making of green claims that are intentionally misleading, or provide too little information to allow meaningful comparison.

NYPA is continuing to respond to this challenge and strengthen their green procurement efforts by expanding on the sustainability survey that suppliers must complete when submitting a bid. They are planning on incorporating green procurement criteria into their RFP bidding process, which will enable them to score bids that consider the sustainability of the product or service. They also plan to annually distribute a sustainability survey to their strategic suppliers and will use the results to benchmark suppliers.

Tracking Green Procurement

Few agencies have a system for tracking green purchases, and the Statewide Financial System (SFS) does not currently track them. OGS and DEC are working together to develop standard definitions and a coding system for green products. Over time, building the capability of the SFS and the e-catalog to track green purchasing will support more consistent methods of reporting across the State. Two agencies are currently developing tracking mechanisms for green procurement, and the Development Authority of the North Country’s tracking system remains the best model for other agencies to follow.
Purchases by Contractors

Agencies that contract out for janitorial and other services must work with those contractors to ensure green procurement. It is often more expensive to make off-contract green procurement requests than when they are included in the contract, so when NYSERDA was updating the contract with their cleaning service they included language requesting that 100% post-consumer recycled content janitorial products be used.

Recycled Paper

Only a handful of agencies (four in FY 16-17) reported that 100% recycled content copy paper is more expensive than paper with lower recycled content. The issuance of statewide contracts for 100% post-consumer recycled content copy paper and 100% janitorial paper in 2008 has kept prices low for the past nine reporting years, as documented by data showing that on average, over the past four fiscal years, agencies paid almost the same amount for 100% post-consumer recycled content copy paper (at $31.75 per box) as for 30-99% recycled paper (at $30.75 per box), and significantly less than for copy paper with less than 30% post-consumer recycled content (at $35.75 per box). In order to take advantage of the best pricing opportunities, agencies are encouraged to shop around and provide as much lead time as possible, especially for large purchases. The number of reports raising issues about the performance of 100% post-consumer recycled copy paper was very low (one in FY 16-17).

New and Noteworthy Initiatives in FY 16-17

- The Division of Housing and Community Renewal completed a transition to procuring exclusively 100% recycled content copy paper during FY 16-17.
- The Department of Motor Vehicles uses NYSID as a janitorial contractor to achieve their sustainability goals through the use of green products.
Restricting the Use of Bottled Water

Background

EO 18 directed all executive agencies to “develop and implement a plan to eliminate the expenditure of State funds for the purchase of bottled water for use at executive agency facilities within 180 days of May 5, 2009, with each agency’s goal being “to eliminate such expenditure by May 1, 2010.” EO 18 defines “executive agencies” as “any department, agency, division, commission, bureau, or other entity of the State over which the Governor has executive power.”

Following an outreach effort by OGS in 2009, which included the broader universe of public authorities and public benefit corporations covered by EO 4, 66 State entities designated an EO 18 coordinator. Of these, 59 submitted EO 18 plans, under which 29 stated that they had already eliminated the purchase of bottled water and 22 requested exemptions to continue purchasing under certain circumstances. The primary reasons cited were the need for additional time to install filtration systems, maintaining emergency supplies, and locations and circumstances where tap water was not potable or unavailable. EO 18 allows such exemptions.

Findings

Agency reports for FY 16-17 continue to indicate excellent compliance with the directives of EO 18. All 37 executive agencies required to comply with EO 18 report that they are in compliance. In addition, of the 29 authorities and other entities reporting not covered by EO 18, 23 (76%) nonetheless adopted the goal of eliminating bottled water use and reported compliance.

Eleven executive agencies covered by EO 18 and 13 entities not covered by EO 18 (but nonetheless in compliance) said they require exemptions allowing the purchase of bottled water in one or more locations. Entities with large centralized offices served by reliable municipal water supplies generally reported no need for exemptions. The main need for exemptions arose for entities with staff working in remote locations where a source of potable tap water is unavailable, and for agencies that require supplies in case of emergencies.

In brief, the report for FY 16-17 continues to document that the executive agencies covered by EO 18 have virtually eliminated the purchase of bottled water.

Savings and Costs

Since reporting began in FY 11-12, an average of 31% of agencies saved money by eliminating the purchase of bottled water, and 38% reported no change in costs. Only 4% reported increases in costs. The remaining agencies did not know.

Of the six agencies reporting an increase in costs, two of them are the university systems, SUNY and CUNY. Several CUNY campuses noted that water bottle refilling stations have upfront costs; the station itself costs around $1,000 and filters are about $143 each. The SUNY Cortland campus reports that filter changes cost approximately $100 each, which adds up for stations that are used more often than others. Both university systems report that the installation and maintenance of water bottle refilling stations is costing more than they used to spend on bottled water.

This makes sense, since both university systems are doing much more than reducing their own purchases of bottled water—they are going above and beyond by significantly reducing the expense and environmental impact of the purchase of bottled water from vendors by their students. CUNY, however, has also found that transitioning from the purchase of large cooler bottles to water filtration systems has reduced costs. They were also able to reduce the cost of filtration systems by 50% by purchasing from a preferred source.
Most agencies report that their spending on bottled water isn’t declining further because they are either spending no money on bottled water or they only spend on exempt purposes, which aren’t changing significantly on an annual basis. Most report that the majority of savings occurred in the first year of implementation of the Order.

Although EO 18 reporting does not require quantified cost savings, entities are asked to report the amount they have spent on bottled water purchases over the past year. An estimated $149,000 of State funds were reportedly spent on bottled water in FY 16-17, compared to the estimated $169,000 in FY 15-16. The most significant expenditures were:

- The *Division of Military and Naval Affairs* spent approximately $54,000 to supply bottled water to “State active duty soldiers serving on missions which require them to perform duties in areas where it would be impossible to bring water in.” This spending is an increase from last fiscal year’s amount of $49,000, due to more soldiers being on active duty in FY 16-17.

- *NYPA* spent $25,500 to supply crews working on remote power lines and facilities without currently available potable water, a slight increase from $24,200 in FY 15-16. They are in the process of replacing water coolers with water service stations in facilities that are capable of new water service connections.

- *Parks* spent $10,200 on bottled water for facilities that have old pipes, lead pipes, or other water supply issues, compared to $18,300 in FY 15-16. This improvement was a result of encouraging visitors to refill their reusable water bottles at fountains within parks.

- *CUNY* spent approximately $20,000 on bottled water in FY 16-17, an improvement from the $29,300 spent on bottled water in 15-16. The reduction was a result of campuses installing more water bottle refilling stations. Since they are not required to comply with EO 18, some of their schools continue to purchase bottled water, although they are encouraged not to. Some of that bottled water is used at events. Other spending includes supplying Medgar Evers College, which doesn’t have sufficient water fountains.

- *SUNY* spent $28,860 on bottled water due to the Farmingdale Campus being exempt from EO 18. Although the campus strives to reduce water bottle purchases where they can, exceptions are made.
Challenges and Success Stories

- 12 entities (up from 8 in FY 15-16) said that potable water was unavailable at certain facilities. The majority of these are sites operated by DOT and Thruway, while some are remote facilities operated by NYPA, DEC, and Parks. In a number of these instances, upgrades continue to be implemented.

- Six entities continue to purchase bottled water for emergency use. One of these entities is the Department of Financial Services, which did not purchase any bottled water in FY 16-17 because they only replace the water bottles in their “emergency go bags” every two years.

- Six entities indicated they needed to continue purchasing water to meet the special needs of employees, clients, or the public. Examples include water for detained youths during transport over long distances, soldiers on active duty, transit employees working in remote locations, and patients.

- Only seven entities not covered by EO 18 continue to purchase bottled water for uses not exempt under the Order. For example, the Central New York Regional Transportation Authority purchases five-gallon bottles of water for water coolers at two locations, but has installed tap water filters at a third location and is considering doing the same at the other locations.

There are still some instances of convenience usage, especially for meetings or conferences. SUNY Empire State College reported that while they are very supportive of the no bottled water policy, they have run into some instances where bottled water may be a good option. One is where the University is providing a boxed lunch to people who are traveling, for example on a field trip or tour. If water is not offered, people must choose soda or a sugared beverage instead. Another is when speakers are using a podium, where a cup of water is more likely to spill. The Capital District Transportation Authority has reported giving bus mechanics individual bottles of water on hot days when the larger cooler bottled water system cannot keep up with demand for fresh, cold water.

These challenges are real, because while the use of reusable water bottles would be the ideal solution in both scenarios, culture change is slow, and not everyone has adopted the habit of traveling with their own reusable bottle. At the same time, the meeting culture of providing water to participants has been one of the harder traditions to break. As CUNY Hunter College notes, “convenience and paradigm shifting” are important as we work to eliminate bottled water purchasing. The most innovative initiatives are working to change this culture and reduce the amount of bottled water purchased by caterers or sold by State vendors to students and other clients. Successes include:

The Niagara Frontier Transportation Authority installed bottle filling stations at the Buffalo Niagara International Airport.
• OGS has installed bottle filling stations in many of the buildings it operates across the State. OGS has also added spigots to regular drinking fountains for employees and visitors to alternatively fill their bottles up at.

• Most SUNY campuses, including most recently the Old Westbury campus, have installed water bottle filling stations and continue to add more. The Oneonta campus continues to give incoming freshmen reusable water bottles to fill up at the stations. The New Paltz campus has ended the sale of bottled water in dining facilities, in favor of their 50 “gooseneck” retrofits that were installed on old water fountains around campus last FY.

• Most CUNY campuses have installed water bottle filling stations and are using signage and educational videos to encourage their use instead of the purchase of bottled water. Stations are constantly being added, especially at campuses that currently do not have bottle filling stations, which are encouraged to make installation of the stations a future project. Funding for new stations often competes with installation of energy-saving projects.

• The Division of Military and Naval Affairs continues to buy only what is needed for a specific mission, thereby eliminating stockpiling and potential waste. The challenge was that FY 16-17 saw more emergency missions than FY 15-16, which required more bottled water use.

• The Division of Human Rights was forced to purchase bottled water after several water fountains stopped working. The executive agency wanted to replace the bottled water with filtered water, but received opposition from landlords who were concerned that the broken fountains were connected to the same water supply which the water filtration devices would use.

New and Noteworthy Initiatives in FY 16-17

• Parks received a grant from DEC to install hydration stations in a number of parks to reduce litter from plastic water bottles. The stations will be installed in 2018.

• NYPA is promoting a zero-waste campaign in the work environment, to encourage the use of reusable kitchen items, including alternatives to bottled water. They have also installed bottle filling stations at a number of facilities to reduce packaging waste.

• SUNY Cortland installed six more filling stations on campus, this time nearby and within dining facilities to effectively decrease demand for bottled water within the facilities.

• The Niagara Frontier Transportation Authority installed bottle filling stations at the Buffalo Niagara International Airport, where passengers may refill empty water bottles.

Conclusion

The agency reports compiled and summarized for FY 16-17 demonstrate continued and encouraging progress toward the adoption of sustainable practices and purchasing by New York State government. Through the leadership of Governor Cuomo, agencies continue to reduce paper use, energy use, toxic chemical use, and waste, recycling remains high, and practices are being adopted to avoid pesticide use and protect pollinators. Model agencies are leading efforts to generate on-site renewable energy, capture rainwater, and manage storm water. Through continued focus on achieving the goals of sustainability and green procurement, the progress made by State agencies to date has established a solid promise of continuing innovation and success.