



Second Progress Report on  
State Green Procurement and Agency Sustainability  
Fiscal Years 2009-10, 2010-11 and 2011-12

## MESSAGE FROM THE COMMISSIONERS

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During tough fiscal times, state government has an even greater responsibility to identify and pursue innovative and novel ways to both protect the environment and save state dollars. Executive Order No. 4 (EO 4), continued by Governor Cuomo, directed our two agencies, the Office of General Services and the Department of Environmental Conservation, to spearhead efforts to green state purchasing and make state operations more sustainable. Hailed by experts in the field as one of the most comprehensive environmentally conscious purchasing initiatives in North America, the Order positions New York to be a significant driver of green economic development and innovation.

On behalf of Governor Cuomo, and as the Commissioners of two agencies whose missions include protecting the natural resources of this great state and making state government work in the most effective and efficient manner, we wish to express our strong support for the efforts being made to green state government under EO 4. We are delighted with the progress made to date to bring a renewed emphasis on sustainability to state government and to use the purchasing power of the state to procure products that are healthier for our state workforce, the public and the environment. This success could not have been achieved without the work of dedicated staff in both our agencies, the other state entities that comprise the EO 4 Interagency Committee on Sustainability and Environmental Stewardship, and all the state organizations that have taken the provisions of EO 4 to heart and implemented them throughout their operations.

As the accompanying Second Progress Report on State Green Procurement and Agency Sustainability explains, we have made significant strides toward meeting our objectives. Much of the key infrastructure needed for agencies and authorities to green their purchasing and operations is in place, and important steps continue to be made to help New York meet its sustainability goals. Similarly, this report indicates that there has been excellent compliance with a closely related Executive Order, EO 18, which directs state agencies to eliminate purchases of bottled water.

None of this would have been possible without the vision and leadership of Governor Cuomo, the strong partnership between our two agencies, the help of our interagency team of green leaders, and the front-line work of the Sustainability and Green Procurement Coordinators designated by agencies across the state. While much more remains to be done, we continue to be committed to expanding our efforts so that government can deliver a greener, cleaner environment as well as cost savings to the people of New York.

*RoAnn M. Destito, Commissioner, Office of General Services*

*Joseph Martens, Commissioner, Department of Environmental Conservation*

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## EXECUTIVE SUMMARY

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The vision of a vibrant, innovative and sustainable economy underlies Executive Order No. 4 (EO 4), which establishes a state green procurement and sustainability program, and Executive Order No. 18 (EO 18), which restricts the purchase of bottled water by the state. In 2011, Governor Andrew M. Cuomo continued both orders, which were signed by Governor David A. Paterson in 2008 and 2009, respectively.

EO 4 directed the approximately 100 state agencies, authorities and other entities covered by the Order (“agencies” or “affected entities”) to incorporate sustainability into all aspects of their operations. To accomplish this, affected entities are required to implement a Sustainability and Environmental Stewardship Program and assign an employee to serve as Sustainability and Green Procurement Coordinator (“Sustainability Coordinator” or “Coordinator”). It also created an Interagency Committee on Sustainability and Environmental Stewardship (“Interagency Committee” or “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 the development of green specifications and lists of green products available on state contracts, and preparation of this annual report.

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*A plurality of agencies reported a reduction or no change in costs due to sustainability activities in all areas of focus, with 41% reporting savings from energy reduction and 39% reporting savings from waste reduction and reuse.*

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EO 18 charges the Commissioner of OGS with collecting plans from executive agencies for the elimination of bottled water, and, in consultation with the Commissioners of DEC and DOH, to report annually to the Director of State Operations until full compliance has been achieved. The Order specifically authorizes agencies covered by both Orders to combine EO 18 and EO 4 reporting, which was done for this report.

### PROGRESS TOWARD A GREEN NEW YORK

Overall, FYs 09-10 through 11-12 saw steady progress toward the implementation of EO 4 and EO 18 to create a greener New York. Since 2008, more than 90% of reporting agencies have had designated Sustainability Coordinators, who work to incorporate sustainability into the day-to-day operations of a diverse range of facilities, including hospitals, transit systems, group homes, and parks. Nearly half of reporting agencies had adopted or were working to develop formal sustainability plans. A number of agencies, including the City University of New York (CUNY), the New York Power Authority (NYPA), the Metropolitan Transportation Authority (MTA), the Office of Parks, Recreation and Historic Preservation (Parks), and the Office for People with Developmental Disabilities (OPWDD) have made noteworthy efforts to develop comprehensive programs.

## REDUCING AND RECYCLING WASTE

EO 4 and EO 18 have had significant impacts on how state agencies generate and handle waste. Paper use has been significantly reduced, waste generation has dropped overall, recycling rates have stayed strong, the purchase of 100% post-consumer recycled content paper has soared, and executive agencies have virtually eliminated the purchase of bottled water with an accompanying reduction in waste.

EO 4 charges the Interagency Committee with establishing explicit goals to achieve reasonable reductions in the amount of solid waste generated and paper consumed annually by agencies. The Committee established goals for each agency to reduce office waste generated per full-time employee (FTE) by 10% per year and to reduce copy paper use per FTE by 10% per year, with FY 08-09 as the baseline.

*State agencies recycled 67% of the 531,059 tons of solid waste generated in FY 11-12.*

The majority of agencies reported adopting paper use reduction practices starting in FY 08-09. A shift to double-sided printing and electronic transactions resulted in a 43% decrease in paper use, a highly encouraging trend that saved \$11.1 million in FYs 08-09 through 11-12 and will continue to save the state a minimum of \$6.2 million per year. The aggregate quantity of copy paper purchased per FTE per year across all agencies dropped 28%, from 34.5 pounds in FY 09-10 to 24.8 pounds in FY 11-12.

Several agencies quantified reductions in paper use or savings associated with reductions: the Workers' Compensation Board saved \$118,000 in paper costs between FY 08-09 and 09-10; the Department of Health (DOH) reduced paper purchases by 20% in the same year, and the Commission on Public Integrity (CPI) reduced paper costs by 24%. The New York College of Technology reported a reduction of 40% in the cost of printing supplies, including paper, in FY 11-12.

In the first year of reporting, developing an approach to measuring waste that worked for all facilities and finding a universally accepted metric for estimating FTEs proved challenging. As a result, the data for FY 08-09 could not be used to establish a baseline. In response to this challenge, the Committee fine-tuned definitions and reporting methods to establish FY 09-10 data as a meaningful baseline for assessing each agency's progress in reducing waste and paper use over time.

The aggregate quantity of solid waste generated across all agencies decreased 35%, from 815,000 tons in FY 08-09 to 531,059 tons in FY 11-12, a robust and encouraging trend. Between FY 08-09 and FY 11-12, agencies reported recycling rates close to or surpassing the statewide recycling goal of 50% established pursuant to the Solid Waste Management Act of 1988. Of the 531,059 tons of waste generated in FY 11-12, 355,865 tons (or 67 %) were recycled or composted.

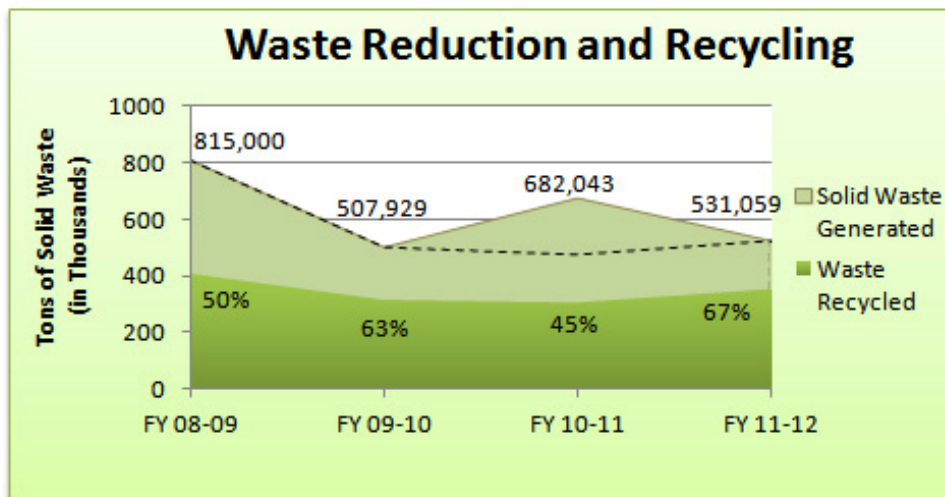
The executive agencies covered by EO 18 have virtually eliminated the purchase of bottled water. Only nine agencies continue to use bottled water under special circumstances, such as the transport of detainees for

long distances. In addition, 80% of authorities and other reporting entities not covered by EO 4 restricted bottled water use to special circumstances.

## REDUCING THE ENVIRONMENTAL IMPACTS OF OPERATIONS

A vast majority of agencies have adopted green cleaning practices, implemented policies to reduce energy use, are using low- or non-chemical means to manage indoor pests, and have an office supply reuse program. As of FY 11-12:

- 85% of agencies responsible for cleaning at their facilities used green cleaning products all or most of the time, and 71% reduced the number of cleaning products used.
- 82% implemented policies to reduce the number of vehicle miles driven by employees during the work day, and 68% encouraged carpooling and mass transit use to reduce commuting miles driven by employees.
- 80% implemented practices to reduce energy use, and 27% of total agency electricity use came from renewable sources.
- 79% have an office supply reuse program.
- 70% of agencies responsible for indoor pest management at their facilities used Integrated Pest Management (IPM) practices all or most of the time, and 52% of agencies responsible for turf and ornamental plant management used non-chemical means of pest control all or most of the time.

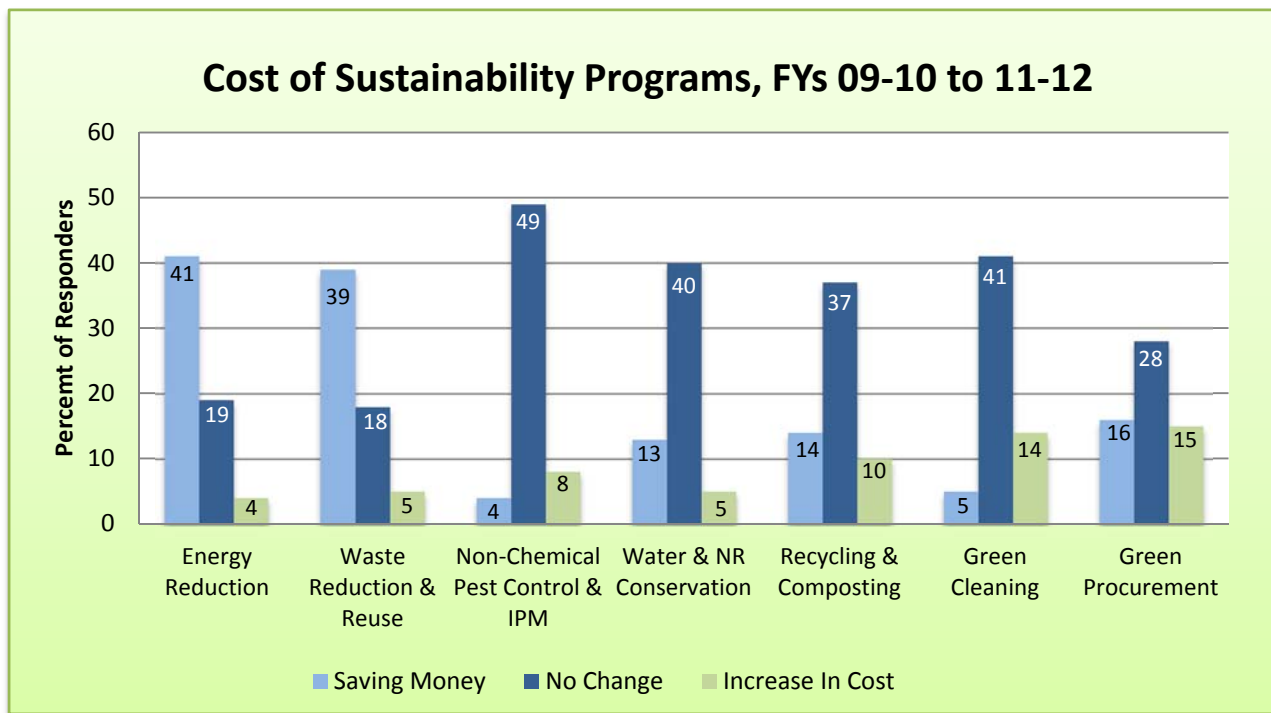


\*The large increase in waste generated and associated drop in recycling in 2010-11 is primarily due to one large generator reporting 200,000 tons more waste as compared to the previous or following year.

## SAVING MONEY AND BUYING GREEN

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 all three fiscal years, 41% of agencies reported saving money through energy reduction, and 39% saved money through waste reduction and reuse. Most reported a reduction or no change in costs due to the implementation of projects across EO 4’s other areas of focus: 53% for non-chemical pest control or IPM, 53% for water and natural resource conservation, 51% for recycling and composting, 46% for green cleaning, and 44% for green procurement. A few agencies experienced increases in costs, and some did not know if their activities had reduced or increased costs.



On average, three-quarters of agencies bought at least some 100% recycled copy paper in FYs 09-10 through 11-12, and close to half (49%) of dollars spent on copy paper in FYs 09-10 through 11-12 went to purchase 100% post-consumer recycled content, processed chlorine-free paper. This represents a 27 percentage point increase from the 22% of dollars spent on such paper in FY 08-09.

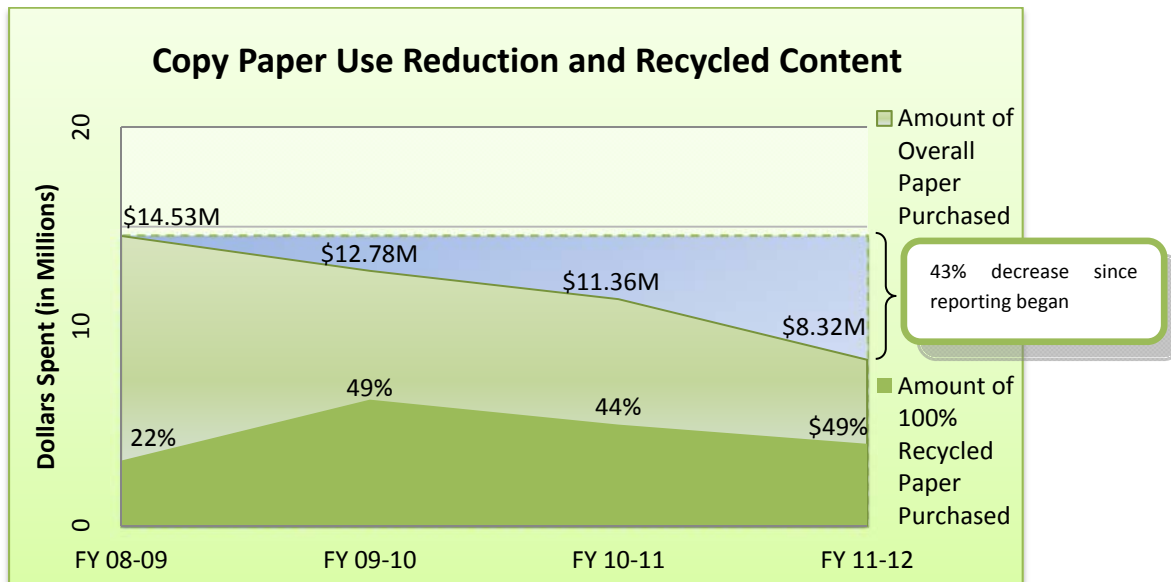
On average, close to three-quarters (70%) of dollars spent on janitorial paper in FY 11-12 went to purchase 100% post-consumer recycled content, processed chlorine-free paper. This represents a 36 percentage point increase from the 34% of dollars spent on such paper in FY 08-09. These trends (for both copy and janitorial paper) indicate widespread culture change and illustrate the power of state contracting, as they were facilitated by statewide contracts for 100% recycled paper by OGS in the summer of 2008.

While reporting on green procurement other than paper remains challenging, agencies reported spending \$10.4 million on such purchases in FY 09-10, \$7.7 million in 10-11, and \$8.2 million in 11-12. Combined with the total spent on paper with some recycled content, overall reported green purchasing by state agencies amounted to \$27.6 million in FY 09-10, \$22.3 million in 10-11, and \$21 million in 11-12.

EO 4 requires the Committee to annually select a minimum of 3 priority categories of commodities, services and technology, and at least 12 priority commodities, services and technologies within each of those categories for which to develop green specifications. To date, the Interagency Committee has finalized 28 green specifications covering a broad and diverse array of 62 products and services, including computers, cleaning products, fluorescent lamps, pest management, single-use food containers, pavement marking paint and treated road salt. Many of these specifications are among the most progressive in the country. OGS continues to offer 100% post-consumer recycled content paper on statewide contracts and issued a new state contract for green cleaning products in 2010.

*Close to one-half (49%) of dollars spent on copy paper, and 70% of dollars spent on janitorial paper, were spent on 100% post-consumer recycled content, processed chlorine-free paper in FY 11-12.*

Most reporting agencies consulted the green procurement specifications when making purchases in FYs 09-10 through 11-12, but most did not report purchases of green products other than recycled paper. As New York's green procurement program matures, more contracts are executed, and tracking systems are put into place, reporting is expected to become more robust.





## CHALLENGES AND OPPORTUNITIES

Reports from the field in FYs 09-10 through 11-12 highlighted some important successes as well as continuing challenges. As in the first reporting year, most are shared across agencies, and the state's continuing fiscal crisis has made troubleshooting and the implementation of new projects more challenging.

Successes include:

- Continued widespread commitment to sustainable solutions that save money and protect human health and the environment, such as recycling, green cleaning and energy efficiency.
- Improvement in the ability of agencies to quantify, recycle and manage solid waste, in part due to support from the Interagency Committee's Training Subcommittee and DEC.
- Significant increases in the purchase of 100% post-consumer recycled content paper, with fewer complaints reported and increased stability in price, facilitated by availability on state contracts.
- Significant reductions in paper use and the virtual elimination of bottled water purchases.
- Initial concerns about the price of some green products, such as 100% recycled paper and green cleaning products, have significantly diminished.

Ongoing challenges carried over from FY 08-09 include:

- Agencies located in leased spaces in privately owned buildings and agencies relying on contractors to purchase goods and services can find it difficult to ensure that green practices are being followed in accordance with contractual requirements.
- Innovative sustainability projects frequently include initial start-up costs that must be balanced, especially in tight fiscal times, with anticipated long-term energy and environmental savings.
- Sustainability Coordinators need resources and the continued support of senior management to do their work most effectively.
- A learning curve exists for those who have not had first-hand experience in going "green" when it comes to purchasing green products and adopting green practices; training remains important.
- It is time-consuming for purchasers to navigate the market, avoid "greenwashing," and identify green products that work effectively.
- Existing financial accounting systems do not effectively track green purchasing data to enable precise reporting; decentralized operations pose the biggest challenges.

New challenges identified in FYs 09-10 through 11-12 include:

- Challenges to donating surplus equipment for reuse outside government; OGS, which operates the surplus property program, is providing guidance on local disposition and other disposal options.
- Some agencies have found it difficult to find space for composting or locate vendors able to compost materials; concerns linger about odor and pests.
- It is hard for agencies to track the costs and savings associated with greening operations and purchasing and to capture savings for investment in additional improvements.

- A lingering perception of increased costs continues to hamper green purchasing despite documented evidence to the contrary.

The Interagency Committee, agencies and Sustainability Coordinators have identified opportunities and are working to address these challenges. Actions include:

- OGS has revised the state's boilerplate leasing documents and continues to negotiate with landlords and update their leases and contracts to include EO 4 requirements.
- The Training Subcommittee and DEC continue to help agencies perform waste audits.
- Coordinators continue to advocate for sustainable infrastructure improvements, while recognizing that some capital or labor intensive projects cannot begin until the state's fiscal picture improves.
- The Interagency Committee, agencies and coordinators continue to encourage agency executives to endorse and promote sustainability activities and messaging.
- The Sustainability and Training Subcommittees have established multiple venues for sharing experiences and troubleshooting among coordinators.
- OGS continues to offer 100% post-consumer recycled content paper on statewide contracts and issued a new state contract for green cleaning products in 2010.
- The Procurement Subcommittee continues to work with other jurisdictions and support the development of independent, third-party standards for green, effective and economical products.
- The Procurement Subcommittee and coordinators continue to share models for green procurement tracking among agencies.
- EO 18 Coordinators have addressed concerns about tap water by testing it and sharing the results, and by offering filtered water where taste is an issue. Retrofitting drinking fountains with spigots and making it easy to use refillable bottles provides convenience for employees and patrons.
- The Interagency Committee continues to make the most effective use of available staff and resources through collaboration and devising innovative approaches to training and reporting.

## SUMMARY

Overall, FYs 09-10 through 11-12 saw steady progress toward the implementation of EO 4 and EO 18 to create a greener New York. The purchase of 100% post-consumer recycled content paper has soared, paper use has been significantly reduced, meaningful baselines for measuring progress toward EO 4's waste and paper use reductions goals have been established, and executive agencies have virtually eliminated the purchase of bottled water. Agency reports document widespread commitment to sustainability in all areas of focus, from waste reduction to green purchasing. While certain challenges remain, progress to date establishes a solid promise of continuing success.

## ACHIEVING THE PROMISE OF SUSTAINABILITY

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As New York moves toward a more sustainable future, government has a unique opportunity to actively participate and serve as a role model. A sustainable economy is vibrant, innovative and healthy. New Yorkers can look forward to a time when power is generated from clean, renewable sources; when our buildings, transportation systems and vehicles are energy efficient and constructed with green materials; when products and services are designed to reduce waste, minimize the use of toxic chemicals and make reuse and recycling easy; and when our businesses have the tools they need to compete in a global marketplace that demands clean energy and green technologies.

This vision of a sustainable economy underlies Executive Order No. 4, “Establishing a State Green Procurement and Agency Sustainability Program” (EO 4), and Executive Order No. 18, “Restricting the Use of Bottled Water at State Facilities and Promoting Executive Agency Sustainability” (EO 18). In 2011, Governor Andrew M. Cuomo continued both orders, which were signed by Governor David A. Paterson in 2008 and 2009, respectively.

EO 4, available at <http://www.ogs.ny.gov/EO/4/Default.asp>, makes it a policy of the state to incorporate sustainability into all aspects of agency and authority operations. EO 18, available at <http://ogs.ny.gov/EO/18/>, requires executive agencies to develop a plan to “eliminate the expenditure of State funds for the purchase of bottled water” with a goal of eliminating such expenditures by 2010.

EO 4 directs the approximately 85 state agencies, authorities, offices, commissions, boards and public benefit corporations currently covered by the Order to incorporate sustainability into all aspects of their operations. To accomplish this, agencies are required to develop and implement a Sustainability and Environmental Stewardship Program, to implement effective recycling and waste reduction strategies, and to assign an employee to serve as Sustainability and Green Procurement Coordinator. These coordinators serve the crucial function of incorporating sustainability into the day-to-day operations of facilities across the state.

The Order also created an Interagency Committee on Sustainability and Environmental Stewardship, co-chaired by OGS and DEC, and charged it with several tasks, including the development of green procurement specifications and lists of green products available on state contracts, the adoption of waste reduction and paper use reduction goals, and the preparation of this progress report. The membership of the Committee represents diverse interests and wide-ranging expertise, including fiscal, economic development, transportation, energy, public health and the environment. Four subcommittees carry out

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*Sustainability is the simultaneous pursuit of environmental quality, economic prosperity and social well-being for present and future generations. It includes environmental justice and concern for the health of natural ecosystems and maintaining biodiversity.*

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work in the areas of green procurement, reporting, training and helping coordinators with the implementation of sustainability programs.

EO 18 charges the Commissioner of OGS with collecting agency plans for the elimination of bottled water, and, in consultation with the Commissioners of DEC and DOH, to report annually to the Director of State Operations until the Director determines that full compliance with the Order has been achieved. The Order specifically authorizes combined reporting for EO 4 and EO 18, and one form was used for agency reports under both orders in FYs 2009-10, 2010-11 and 2011-12.

Both Orders complement Executive Order No. 88 “Directing State Agencies and Authorities to Improve the Energy Efficiency of State Buildings,” signed by Governor Cuomo in December 2012. EO 88 supersedes Executive Order No. 111 (EO 111), signed by Governor George E. Pataki in 2001, which directed affected entities to reduce energy use, construct green buildings, and purchase energy efficient products, vehicles, and power from renewable sources. Implementation and quantitative reporting under EO 88 is led by the New York State Power Authority, while reporting under EO 111 was led by the New York State Energy, Research and Development Authority (NYSERDA).

Reporting has remained robust since the first year of reporting in FY 2008-09, when 69 out of approximately 100 entities covered by EO 4 submitted reports. In FY 2009-10, 74 entities submitted joint reports for EO 4 and EO 18, while 66 submitted reports in FY 2010-11. In 2011, there was a substantial consolidation among state agencies and authorities to improve government efficiency and performance. Of the approximately 85 entities now covered by the Order, 56 reported in FY 2011-12 (66%). This report compiles the individual reports submitted by affected entities and uses more recent information when necessary to provide a complete picture of progress. Overall, the enthusiasm, depth of commitment and breadth of activity described in the sustainability reports filed by Coordinators in FYs 09-10 through 11-12 is encouraging.

## THE BENEFITS OF SUSTAINABILITY

At its heart, sustainability is about creating a healthy, prosperous society that is more efficient and avoids waste. Making New York State government operations and procurement more sustainable has the potential to significantly reduce pollution and waste, while at the same time saving taxpayer dollars. In addition, it will strengthen the market for green products and services and help New York businesses compete in an increasingly green global marketplace.

Currently, New York State government:

- Operates more than 16,000 facilities (225 million square feet) with an estimated annual utility bill of \$600 million
- Generates 531,059 tons of solid waste, 56,157 of which is reported as office waste
- Operates more than 17,000 vehicles
- Spends approximately \$8 billion per year on the purchase of commodities, services and technology

Some of the key benefits of greening operations and purchasing include:

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**INTERAGENCY COMMITTEE**

(Chairs OGS & DEC) *Members:*

*DOB* - Division of Budget

*DASNY* - Dormitory Authority of the State of New York

*ESD* - Department of Economic Development and the Urban Development Corporation

*EFC* - Environmental Facilities Corporation

*DOH* - Department of Health

*NYSERDA* - NYS Energy, Research & Development Authority

*NYP&A* - Power Authority of the State of New York

*DOT* - Department of Transportation

**PROCUREMENT**

**SUBCOMMITTEE**

(Co-Chairs OGS & DEC) Tasked with: Developing Green Specifications

**TRAINING SUBCOMMITTEE**

(Chair EFC) Tasked with:

Training Sustainability Coordinators

**REPORTING SUBCOMMITTEE**

(Chair DEC) Tasked with:

Monitoring and Reporting on Progress

**SUSTAINABILITY**

**SUBCOMMITTEE**

(Chair DASNY) Tasked with:

Helping Coordinators Exchange Information and Troubleshoot Challenges

*Waste Prevention:* Eliminating or reducing waste saves money and minimizes environmental impacts by avoiding raw material harvesting, extraction, transportation and manufacturing, as well as the end-of-life management of wastes. Data gathered over the past three years documents \$11.1 million in savings from paper use reduction in FYs 09-10 through 11-12. These reductions will continue to save the state more than \$6.2 million per year. Moreover, every ton of office paper use avoided reduces greenhouse gas emissions by more than 8 metric tons of CO<sub>2</sub> Equivalent (MTCO<sub>2</sub>E). (One MTCO<sub>2</sub>E is equivalent to 110 gallons of gasoline.) Reducing by one-half the overall amount of solid waste generated over the next six years will save the state at least \$1 million annually in avoided disposal costs.

*Reuse:* Reusing the same product multiple times or remanufacturing products conserves the embedded energy and material value of the product, so that the environmental benefits and cost savings are similar to those for waste prevention. According to DEC, reusing a ton of computers reduces greenhouse gases by more than 50 MTCO<sub>2</sub>E.

*Recycling:* Diverting discarded materials for recycling and purchasing products that are easy to recycle or made with recycled content avoids the environmental impacts, energy use and cost of processing raw materials and disposing of waste. According to the U.S. Environmental Protection Agency (EPA), each ton of paper recycled saves enough energy to power the average American home for six months and reduces greenhouse gas emissions by one MTCO<sub>2</sub>E.

*Reducing the Use of Toxic Substances:* Practices that reduce or eliminate toxics use, such as reducing the use of pesticides or using green cleaners, create a healthier work environment for state employees, visitors and state facility residents, resulting in greater comfort, fewer sick days and higher productivity. They also reduce pollution and avoid the cost of managing toxics during manufacture, transportation and disposal, including the significant cost of cleaning up contaminated sites. Products made without toxics are also easier and safer to recycle.

*Conserving Energy:* Using less energy reduces the pollution, water use, greenhouse gas emissions and costs associated with energy generation. Purchasing energy efficient products can also reduce costs. According to NYSERDA, reductions in energy use achieved by state agencies since FY 01-02 are estimated to save the state at least \$50 million per year in avoided energy costs.

*Renewable Energy:* Using clean, renewable sources of energy, like wind and solar, and purchasing technologies that rely on such sources, like traffic message boards powered by solar panels, avoids the pollution and greenhouse gas emissions associated with fossil fuels. It also has the potential to make New York State less dependent on foreign sources of fuel.

*Sustainable Resource Management:* Practicing the sustainable management of resources, like water conservation and sustainable forestry, and purchasing products derived from sources that adhere to such practices, protects wildlife habitats and the long-term health of watersheds and ecosystems. Sustainable management is essential to ensuring abundant supplies of clean air, clean water, and materials—each of which is necessary for a healthy and prosperous society.

## INTERAGENCY COMMITTEE ACTIONS TO SUPPORT SUSTAINABILITY

Four Subcommittees assist the Interagency Committee in meeting the Order’s objectives and provide resources to Coordinators.

### PROCUREMENT SUBCOMMITTEE

The Procurement Subcommittee is charged with the development of green specifications and lists. Multidisciplinary teams with expertise in a wide range of areas, including purchasing, energy, transportation, health, waste reduction, toxics, sustainable resource management and water use, develop an initial draft of each specification for review by the Subcommittee and referral to the Interagency Committee for approval. Standards set by the federal government, other states, independent third-party certifiers and industry associations are carefully reviewed and considered during the development of each specification.

In December 2010, the Interagency Committee adopted a policy statement regarding the consideration of chemicals in the development of green specifications. The primary purpose of the statement is to identify chemicals to be aware of in green procurement in order to support specification development and inform the market. A copy of the statement is available at [www.ogs.ny.gov/EO/4/docs/chemFINAL.pdf](http://www.ogs.ny.gov/EO/4/docs/chemFINAL.pdf).

The activities of the Procurement Subcommittee are addressed in more detail in the “Buying Green” section of this report.

## TRAINING SUBCOMMITTEE

The Training Subcommittee has drawn on knowledgeable agency staff and used numerous low and no-cost training techniques such as forums, webinars, presentations, and an eLearnNY course to reach their target audience, including sustainability coordinators, regional or campus coordinators, facility managers and purchasing agents. Offerings include:

- *G|PRO Green Professional Training and Certification*, provided to 138 sustainability coordinators and facility managers in various locations around the state in 2012. There are several levels of G|PRO certification, and each typically costs \$500 per student. Due to collaboration among Subcommittee members and a cost-share agreement between NYSERDA and the U.S. Green Building Council – Upstate Chapter, agency sustainability coordinators and facility managers were able to register for G|PRO courses at no cost. Feedback from attendees was very positive.
- *Waste Audit training*, offered through a number of webinars and hands-on demonstrations held by the Training Subcommittee and DEC over the past four years. During an audit, the waste and recyclables generated at a site are sorted, separated and weighed. The data collected helps agencies target their efforts and progress toward EO 4's waste reduction goals.
- *Presentations on sustainability and green procurement*, given at the OGS Purchasing Forum in 2010, 2011, and 2013 to approximately 300 purchasing agents and sustainability coordinators. PowerPoints and videos were posted online.
- *Webinars on Recycling, Reuse and Reduction at State Agencies*, hosted by DASNY and EFC in 2010 and 2011. Topics included "Greening SUNY Albany" and "Cloning an eLearnNY Class on Recycling." An EO 4 representative answered questions on waste reduction and recycling at the SUNY system sustainability conference in 2011.
- *Reporting Webinars*, hosted by DASNY and EFC in 2009-2011 as EO 4 reporting was being implemented, allowing sustainability coordinators across the state to discuss the objectives of reporting, ask questions and obtain answers.
- *Coordination with Other Training Efforts Related to EO 4*. The Training and Sustainability Subcommittees work together to identify low or no-cost training and educational opportunities that directly relate to the goals of EO 4 and disseminate that information through the EO 4 contact lists. Examples include programs on the State Electronics Challenge, prescription drug take back and office supply reuse, as well as sustainability exhibits and conferences.
- *Information about Sustainability and Green Procurement for Vendors*. The Subcommittee coordinated with the New York State Pollution Prevention (P2) Institute to share information about greening the supply chain with potential New York State vendors. OGS and DEC also provided webinars for P2 Institute staff to better understand the procurement process in New York.

## SUSTAINABILITY SUBCOMMITTEE

The Sustainability Subcommittee serves as a vehicle for collaboration among Coordinators, supporting them as they prepare and implement Sustainability Programs and helping to troubleshoot obstacles as they arise. The Subcommittee works closely with the Training Subcommittee to provide training and assistance in specific areas of interest to the field. In FYs 09-10 through 11-12, the Sustainability Subcommittee issued a weekly "Green Bulletin" e-mail to all Coordinators. Information shared through the Bulletin included



announcements for national webinars on the state electronics challenge, the NYS Forum webinar on Greening IT, and on training opportunities in GPRO for state employees.

The Subcommittees on Training and Sustainability announced the creation of a list mail for Sustainability Coordinators in April 2011. The list proved to be less effective at communicating with Sustainability Coordinators than was hoped, primarily due to the challenges of updating contact information during a period of high staff turnover due to encouraged retirements in the state system. The Sustainability Subcommittee reinstated the distribution of Green Bulletins in FY 2013-14. In addition, we expect that Governor Cuomo's call for all agencies to have a Facebook and Twitter presence will afford us even better ability to promote sustainability successes throughout the state and to announce opportunities for training and resource sharing.

### **REPORTING SUBCOMMITTEE**

As EO 4 and EO 18 recognize, measuring progress is crucial to success. Demonstrating progress can be a powerful motivator to staff and management and can provide important data for assessing the environmental and economic impacts of sustainability efforts. The report form for the two Orders is distributed and completed online, both to make reporting easy and to minimize environmental impacts. The Reporting Subcommittee, with help from the Committee and Subcommittee Chairs, compiles and analyzes the results.

The goal of the Reporting Subcommittee is to gather meaningful, high-quality data and make reporting as easy for agencies as possible. In the past four years, the Subcommittee has worked to make the report form shorter, clearer and easier to use. The Subcommittee has also spent a considerable amount of time reviewing the data submitted by agencies and requesting clarification to assure that the information provided is as accurate as possible.

In FYs 2009-10 and 10-11, the Subcommittee sent out surveys asking agencies for feedback on the reporting process. Based on that feedback, the reporting form has been revised substantially. Questions have been added on green cleaning and the elimination of bottled water use, but the overall number of questions has been significantly reduced.



## OPERATING GREEN

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EO 4 establishes that Sustainability and Environmental Stewardship Programs include projects, programs and policies designed to reduce the adverse public health and environmental impacts of an agency's activities and operations. Agencies are given wide latitude to design a program that works best in the context of their unique mission. Areas of focus include: reduction, reuse, recycling and composting of solid waste; reduction or elimination of the use and generation of toxic substances; enhanced energy efficiency and use of renewable energy sources; conservation of water and other natural resources; and maximization of the use of green products, services and technology.

### LEADING THE GREEN TEAM: PEOPLE AND PLANNING

Agency sustainability programs illustrate the enthusiasm, depth of commitment and breadth of activity undertaken by employees across the state to go green. In 2008, 93 agencies formally designated Sustainability Coordinators. In FY 09-10, 93% of all agencies reporting (69 out of 74) had a designated Sustainability Coordinator. This percentage remained fairly constant in FYs 10-11 and 11-12. Coordinators serve the crucial function of incorporating sustainability into the day-to-day operations of the state.

Of 74 reporting agencies in FY 09-10, 47% (35 agencies) had a sustainability team or committee. A sizable group, 38% (28 agencies) stated that their agency had adopted a formal sustainability plan. These numbers stayed stable for the next two years. Many agencies are currently working on developing a sustainability plan, and many sustainability teams include regional participation.

A number of agencies continued their impressive efforts to implement comprehensive sustainability programs, while others reported on new noteworthy initiatives:

- *CUNY's 19 campuses* are currently implementing a ten-year sustainability plan, with goals in seven key areas: energy, water, transportation, waste and recycling, procurement, dining services and outreach and education. Each campus has a Sustainability Council comprising administrative staff, faculty and students and chaired by a senior staff member, typically the Campus' Vice President of Finance and Administration. In 2007, CUNY committed to reducing its greenhouse gas emissions 30% by 2017, and a database has been established to track progress across the system. At the end of FY 11-12, approximately 20% of CUNY's short-term goals had been implemented, and half of the mid- and long-term measures were underway or in development. Highlights include a 32% reduction in copy paper purchased in FY 11-12 and the completion of comprehensive energy audits at 13 campuses.
- *NYPA* adopted a three-year Sustainability Action Plan in 2010 covering all facets of the agency: workplace, community, environment, marketplace and operations. Goals were identified in each area, along with 41 action items to achieve those goals. Each year, NYPA has issued a sustainability report describing its progress, which is on schedule. Going forward, NYPA will integrate its Sustainability Plan into the Authority's new 2014-2017 Strategic Plan.
- *MTA Headquarters* has a Sustainability Department which coordinates implementation of MTA's internal sustainability plan in addition to working with external stakeholders on larger transit

sustainability policies. In addition, each MTA agency, including Metro-North, the Long Island Railroad and Bridges and Tunnels, has its own sustainability teams. Metro-North's Sustainability and Energy Committee, established in 2010, has broadened to include employees from virtually every department and in 2012, began offering quarterly briefings to executive staff. The Bridges and Tunnels Green Council created metrics and achievable goals that are being reached in the following areas: recycling, paper reduction, fleet sustainability, energy efficiency and green procurement.

- *SUNY Geneseo's* Sustainability Task Force was designated the President's Commission on Sustainability in 2012. It consists of 22 members from departments across campus as well as students and has six sub-committees: climate impact and monitoring; campus operations; academics and curriculum; public relations and campus/community engagement; campus food service; and finance.
- At *Parks*, regional sustainability coordinators designated by each of the agency's 11 regions participate on a statewide Sustainability Team that is charged with implementing the agency's sustainability plan, which is posted on their public website.
- *OPWDD* convened a statewide "Green Team" to develop their sustainability plan, which members agreed should be bold, comprehensive and enduring. Five strategic goals include: energy conservation, waste reduction, green procurement, toxics use reduction and corporate culture transformation.
- *The Development Authority of the North Country* has an eight-member "Sustainability Committee" drawn from all divisions. Its mission is to guide the Authority toward becoming a model of environmental stewardship. In 2009, the Board of Directors approved an Environmental Policy Statement supported by a list of community benefits, tax dollar savings and improvements to employee health resulting from sustainability. A sustainability plan was adopted in 2011.
- *The Division of Military and Naval Affairs' Facilities Management and Engineering Office* published a detailed set of energy and water conservation standard operating procedures which establish goals and metrics and assign responsibility for conservation measures at all facilities owned by, assigned to or leased by the Army National Guard.
- *The Port Authority of New York and New Jersey ("Port Authority")* has adopted a Sustainable Design Policy and a Sustainability Policy. The Authority's Sustainability Team publishes a greenhouse gas inventory every year and has launched a public online carbon calculator.
- Thirty-five organizational units are represented on *DOH's Sustainability Committee*, including all regional and district offices.

In addition to owned and leased office space, the state operates a remarkably diverse range of public use facilities, including highway service areas, transportation hubs, canal lock buildings, electricity generation facilities, armories, colleges and universities, hospitals, laboratories, group homes, fish hatcheries, golf courses, campgrounds and parks. The core mission and daily activities of each agency shape their sustainability priorities and the degree of effort required for implementation. EO 4 allows for flexibility while emphasizing the need to focus on key areas.

## WASTE AND PAPER USE REDUCTION GOALS

Preventing the generation of solid waste has been recognized by the state as the strategy with the greatest overall environmental and social benefits, but its potential remains largely untapped. In December 2010, New York adopted a new solid waste management plan, *Beyond Waste: A Sustainable Materials*

*Management Strategy.* The plan marks an important shift, from focusing on “end-of-the-pipe” waste management techniques to looking “upstream” and more comprehensively at how materials that would otherwise become waste can be more sustainably managed through the state’s economy. The plan establishes a 20-year goal of reducing the average amount of waste that New Yorkers dispose of from 4.1 pounds to 0.6 pounds per person per day. EO 4 is specifically discussed in the plan as a valuable step forward in integrating waste prevention, recycling and sustainability 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. Total waste generated is the sum of materials that are recycled, as well as materials that are 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 does not apply to non-office waste because the Interagency Committee determined that it was not advisable to devise a single one-size-fits-all metric for measuring reductions in other types of waste that would be comparable over time and across agencies. For example, agencies whose primary purpose is transportation or construction generate very large quantities of bulk metals and construction and demolition debris without relation to the size of their staff. Agencies that manage waste generated by public visitors to state facilities, such as parks, are unable to distinguish between wastes generated by employees and the public.

In the first year of EO 4 reporting, making a clear distinction between office and non-office facilities, waste and employees, as well as finding a universally accepted metric for estimating FTEs, proved challenging. As a result, the levels of waste generated per FTE reported by agencies varied from less than a pound to more than 100,000 pounds and could not be used to establish a meaningful baseline.

In response to this challenge, the Reporting Subcommittee fine-tuned the reporting form and provided clearer guidance on how to report office and non-office waste. It also adopted a more uniform standard for determining FTEs: each agency’s “authorized fill level” as set by the Division of Budget. Due to these measures, the agency reports for FY 09-10 establish a meaningful baseline for assessing each agency’s progress in reducing waste over time. While an additional purpose of the metric is to enable comparison among agencies, intractable challenges, such as the difficulty of accurately estimating office and non-office employees, warrant caution. Given the limitations of the data, the most meaningful comparisons will be among agencies with similar functions and similar percentages of office and non-office activities and staff.

Going forward, the waste reduction goal of 10% per FTE per year will continue to apply only to office facilities and office waste, including paper, plastics, metal cans and glass. Data on all materials generated—recycled and disposed—will still be collected, but waste generated by the public and wastes unrelated to staffing levels, such as C&D debris, scrap metal, and laboratory wastes, will be reported separately. While the waste generation goal applies only to state office facilities, 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 future EO 4 reports.

### 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 08-09. 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 towels use. Due to the difficulties encountered with estimating FTEs in FY 08-09, paper purchases per FTE were not calculated for that year. Due to wide variation in mission and function, paper consumption varies substantially across agencies both in absolute terms and on a “pounds per employee” basis. While the reports for FY 09-10 establish a meaningful baseline for assessing each agency’s progress in reducing paper use over time, a very large standard deviation across agencies in the amount of paper purchased per employee persists, making comparisons between agencies with markedly different functions and staff activities less than meaningful.

### WASTE REDUCTION AND REUSE

As a result of EO 4 reporting requirements, agencies are evaluating what they generate and are finding ways to reduce and recycle more. Overall in FY 09-10, 57 agencies reported generating 507,929 tons of solid waste, a 38% drop, or 307,073 tons compared to 815,000 tons generated by 53 reporting agencies in FY 08-09. Office waste represented 14% of that total, or 68,855 tons. While this potentially significant drop in overall waste generation was encouraging, it did not continue over the next two years. It is important to note that one agency, SUNY, accounted for approximately half of the reduction between the two years. In FY 08-09, SUNY reported recycling more than 120,000 tons of materials and disposing of 100,000 tons. In FY 09-10, SUNY reported fewer than 70,000 tons of total waste generated, a reduction of 150,000 tons. This drop was due to a reduction in construction activity.

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*The Worker’s Compensation Board realized \$118,000 in savings between FY 08-09 and 09-10 due to reduced paper use.*

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In FY 10-11, 51 agencies reported generating 682,043 tons of solid waste, an increase of 161,169 tons, or 32% from the previous year. Office waste represented 59,202 tons, or 11% of the total. The majority of the increase in waste generation was due to MTA’s reporting of a much larger amount of waste disposed, over 200,000 tons more than in the previous year.

In FY 11-12, 37 agencies reported generating 531,059 tons of solid waste, a decrease of 150,984 tons, or 32% from the previous year. Office waste represented 56,157 tons, or 9.5% of the total waste generation. Again, the majority of the change was due to MTA reporting a much lower amount of waste disposed, approximately 200,000 tons less than in the previous year. The overall change in solid waste generated between the first year of reporting in FY 08-09 and FY 11-12 was a decrease of 283,957 tons, or 35%, a fairly robust and encouraging trend.

The aggregate quantity of office waste generated per FTE across all agencies that consistently reported waste generation and employee data three years in a row varied from 357 pounds in FY 09-10 to 452 pounds in 10-11 and 323 pounds in 11-12. Because only 19 agencies consistently reported all three years, the pounds per FTE are somewhat variable. One relatively large agency's change in office waste generation from one year to the next has a large effect upon the average for all 19 agencies. As more agencies consistently report waste generation and employee data, the variability from year to year is expected to decrease.

**Office Waste Generated (sum of all waste disposed and recycled)**

	<b>Total Tons of Office Waste Generated</b>	<b>Pounds of Office Waste Generated per Employee</b>
FY 2009-10	4,246	357
FY 2010-11	5,123	452
FY 2011-12	3,650	323
To be included in this table, agencies must have consistently reported the amount of office waste disposed and recycled, as well as their number of employees, for all three reporting years.		

Overall, 70 agencies reported purchasing 351,292 boxes, or \$12,789,171 worth of copy paper in FY 09-10, a decrease of 12% from FY 08-09, when approximately 47 agencies reported purchasing \$14,537,991. In FY 10-11, 64 agencies reported purchasing 255,080 boxes, or \$11,368,069 worth of copy paper, a decrease of 11% over the previous year. Finally, in FY 11-12, 50 agencies reported purchasing 241,454 boxes, or \$8,329,692 worth of copy paper, a 27% decrease from the previous year, and a full 43% decrease from FY 08-09. This data documents a solid and highly encouraging trend of significant paper use reduction over four reporting years.

Agencies have indicated that because of the reporting requirements of EO 4, they are taking a hard look at the waste they are generating. Based on this, many agencies are initiating a variety of waste reduction and reuse measures. A number of agencies reported on their implementation of particularly effective and innovative paper use reduction initiatives in FYs 09-10 through 11-12, including:

- *OPWDD* launched an intranet site that allows the agency's 20,000-plus employees to access and share information without sending hard copies. *OPWDD* uses the collaborative capabilities of the Microsoft Office SharePoint Server (MOSS) to foster communication within and among project teams, and its advanced search capabilities to enable team members to find data that is currently scattered across several different computing platforms. In addition, the agency is working to encourage information and idea exchange through the social networking tools available within MOSS.

## Copy Paper Purchased

	Total Pounds of Copy Paper Purchased	Pounds of Copy Paper Purchased per Employee
FY 2009-10	16,399,607	34.5
FY 2010-11	14,711,118	31
FY 2011-12	11,445,890	24.8
To be included in this table, agencies must have consistently reported the amount of copy paper purchased, as well as their number of employees, for all three reporting years. CUNY was not included because it appears to have reported an enrollment count rather than an employee count.		

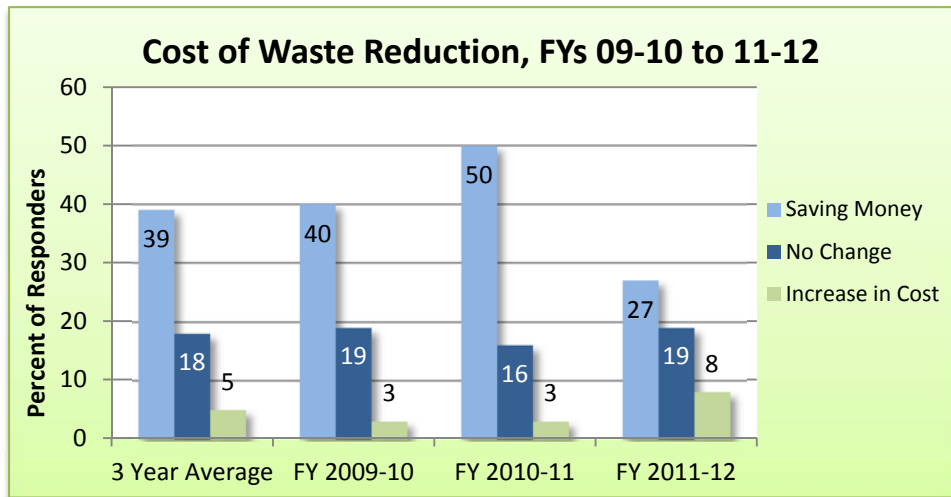
- *The Commission on Public Integrity* eliminated the printing and mailing of user identification numbers and passwords to more than 95% of Financial Disclosure Statement filers.
- *ESD* increased its use of electronic and social media to promote tourism, help small businesses and promote recycling in FY 09-10. Significantly fewer ILoveNY travel guides were printed in FY 09-10. Web posting enables the public to print full copies or just the portions that interest them. Similarly, the agency's new web-based guide, *Doing Business with NYS*, is easily accessible and revised without the need to reprint copies. The Recycling Markets Database enables users to locate and save contact information completely electronically.
- *EFC* has installed FinePrint software on all local workstations, which enables users to print up to eight pages on a single sheet, as well as print double sided.

In FY 11-12, a majority of agencies reported the use of the following waste reduction strategies:

- *91% use of two-sided printing all (8%) or most (83%) of the time.* For example, at *ESD*, all printers in Albany and most throughout the organization have been changed to default double-sided printing.
- *87% use electronic means to provide documents to the public all (15%) or most (72%) of the time.* For example, the New York City College of Technology has expanded the capacity to scan-to-e-mail and scan-to-USB, reducing the amount of photocopying by students.
- *71% use electronic means to receive documents or information from the public all (6%) or most (65%) of the time.*
- *74% use Lotus Notes, Team Rooms or other electronic means to share documents among employees all (13%) or most (60%) of the time.*

Reuse is also growing. Seventy-nine percent of agencies reporting in FY 11-12 have some type of reuse program, a 23 percentage point increase since FY 09-10. For example, the Reuse Center Program in the Corning Tower of the Empire State Plaza is a key reduction initiative within OGS. The program has been successful in reducing new office supplies purchased, as well as materials being disposed within the landfill. OGS would like to expand the program to include a virtual reuse center for the entire Plaza. SUNY campuses also reported a wide variety of innovative reuse programs. One campus conducts a "move out"

collection twice a year that includes the capture of clothing, non-putrescible food and dorm items such as lamps, fans, television sets and hangers. The items are stored and then offered to students during an event at the beginning of the fall semester called "FreeCycle." In a new project, the same campus has worked with a clothing reuse and recycling vendors to provide clothing collection bins bearing the University's logo throughout campus residences.



Overall, a significant number of agencies reported saving money through waste reduction: 40% in FY 09-10, 50% in 10-11 and 27% in 11-12. In comparison, only a small number of agencies, between 3% and 8%, reported an increase in costs. Over a third said they did not know.

Several agencies quantified a decrease in costs due to reduced paper use. The Workers' Compensation Board estimated a savings of \$118,000 in paper costs between FY 08-09 and 09-10 due to the electronic dissemination of information, reduced use of printed materials, and other reduction measures. DOH offered data showing that despite higher per case costs for recycled content paper, overall expenditures on paper decreased due to a reduction of approximately 20% in the number of cases purchased. The Commission on Public Integrity stated that paper costs decreased by 24%. At the New York College of Technology, the use of Managed Print Services has reduced the cost of printing supplies by almost 40%. The Fax Machine Reduction program has resulted in energy and paper savings.

**RECYCLING AND COMPOSTING**

In FY 09-10, 63% of the solid waste generated by state agencies was recycled or composted, compared to 50% in FY 08-09. Once again, this rate met (and exceeded) the statewide recycling goal of 50% established pursuant to the Solid Waste Management Act of 1988. The recycling rate fell to 45% in FY 10-11, primarily due to one large generator reporting a much higher amount of waste disposal, but rose to 67% in 11-12. This data documents a robust and encouraging trend of high recycling rates by state agencies.



### Total Waste Generated and Percent Recycled

	Total Tons of Waste Generated	Tons of Waste Recycled	Percent Recycled
FY 2008-09	815,000	410,500	50%
FY 2009-10	507,929	318,181	63%
FY 2010-11	682,043	308,566	45%*
FY 2011-12	531,059	355,865	67%

The large drop in the recycling rate in 2010-11 is primarily from one large generator reporting a much higher amount of waste disposal.

A number of communities in the state have moved to single-stream collection, an emerging trend in recycling that commingles all recyclables (including paper, glass, plastic and metal) in one container. This approach has proven to be an effective way to control costs and improve participation. In FY 09-12, 47% of agencies did not have access to single-stream collection. Twelve percent (12%) had single-stream available at all their facilities, and 28% had one or more facilities with single-stream recycling. In FY 11-12, 25% of agencies reporting had single stream at all of their facilities, 32% had it at some of their facilities, and 43% did not have access to single stream.

The pie chart below provides a breakdown of the total quantity of materials recycled by agencies, on average, in FY 11-12. Office recyclables amount to 13%, while non-office recyclables are 87% percent. Construction and demolition (C&D) material represents approximately 56% of all materials recycled. C&D materials include concrete, asphalt, brick and clean wood that come from building construction and renovation, demolition and highway construction and maintenance. The largest C&D recycler that reported data is the MTA.

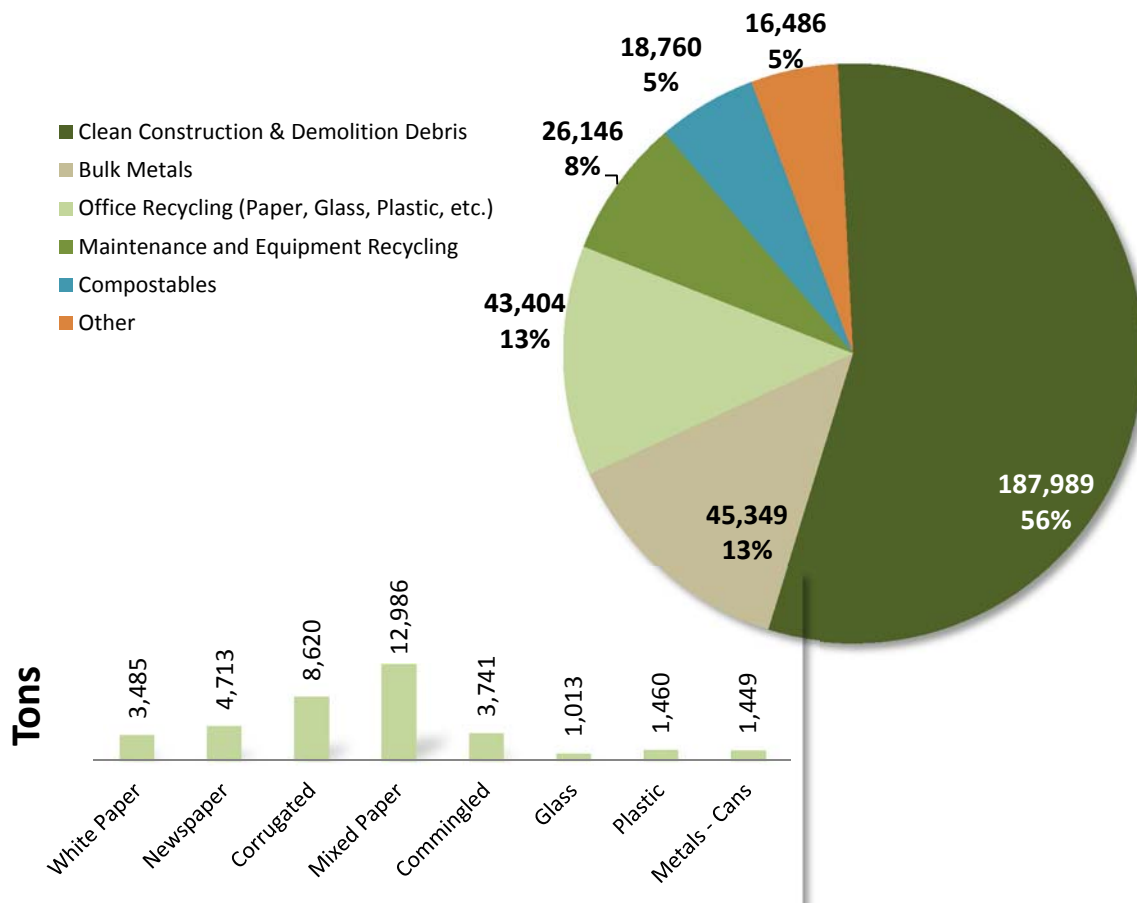
To assess recycling trends more effectively, we evaluated data from the 19 agencies that have consistently reported office waste generation and recycling data for all three fiscal years, as summarized in the table below. The recycling rate for those agencies is robust, averaging 53%, and the overall amount of office waste generated is being reduced.

Composting reduces the amount of waste that needs to be disposed by converting it into a useful soil amendment. Composting helps avoid methane generation in landfills, creates healthy soils, sequesters significant amounts of elemental carbon and may reduce the need for energy intensive fertilizers and pesticides.

Nineteen agencies reported composting at least one year during FYs 09-10 through 11-12. The amount of materials composted was steady across those years at approximately 19,000 tons. The MTA,



## Tons of Material by Type Recycled by EO 4 Reporting Entities FY 11-12



Note: 95% of the materials in the "other" category consist of miscellaneous materials recycled by the MTA.

### Office Waste Generated and Percent Recycled

	Total Tons of Office Waste Generated	Total Tons of Office Waste Recycled	Percent of Office Waste Recycled	Pounds of Office Waste Generated per Employee	Number of Agencies Reporting a Reduction in Office Waste
FY 2009-10	4,246	2,072	49%	357	9
FY 2010-11	5,122	2,983	58%	452	8
FY 2011-12	3,650	1,851	51%	323	10

To be included in this table, agencies must have consistently reported the amount of office waste disposed and recycled, as well as their number of employees, for all three reporting years.

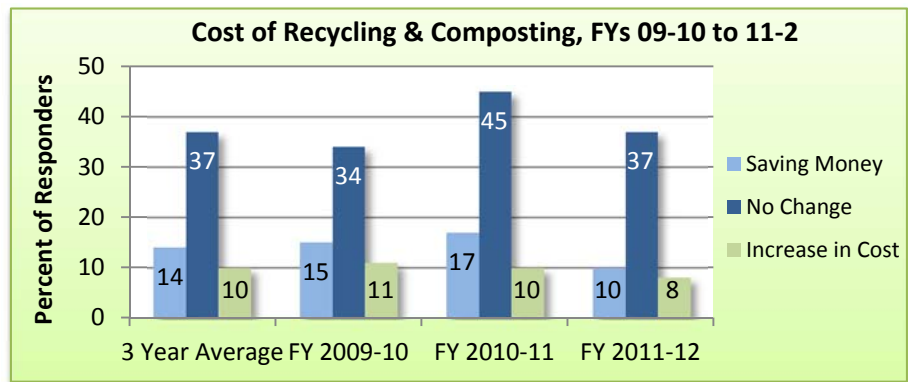
Parks, the Department of Correctional Services and SUNY collected over 90% of the wood and yard trimmings that were composted.

Eleven agencies reported composting food scraps at least once a year during FYs 09-10 through 11-12. They collected roughly 7,000 tons of food scraps for composting each year, the vast majority of which, about 6,000 tons, was collected by the Department of Corrections and Community Supervision (DOCCS). SUNY has made strong strides, collecting over 500 tons for composting in each of the last three years. Both DOCCS and SUNY manage the majority of their food scraps and other compostables on site.

Many agencies reported an interest in diverting their food scraps to composting. However, the capacity of composting facilities that accept food waste is currently limited, and many agencies do not have access to an appropriate facility.

A significant plurality of agencies reported a reduction or no change in costs as a result of recycling efforts: 59% in FY 09-10, 66% in 10-11, and 46% in 11-12. Much smaller percentages reported an increase in costs: 11% in FY 09-10, 10% in 10-11, and 8% in 11-12. Over third said they did not know. The agencies reporting savings had more comprehensive waste reduction, reuse, recycling and composting programs.

SUNY attributed its savings to the issuance of a new recycling and solid waste contract, which has resulted in lower rates for garbage removal, and to the continuing success of



its recycling program, including food waste composting, which has decreased the tonnage of materials being disposed. The Office of Temporary and Disability Assistance reported that some locations experienced a reduction in the number of trash pickups due to recyclables being kept out of the waste stream.

CUNY reports that recycling at its campuses continues to expand. Waste and recycled materials at many of the colleges are collected by New York City's Sanitation Department at no cost to the college. Other colleges have individual agreements with recycling contractors, most at a fee although some at no cost, and a few receive a payment on a weight basis for some or all of the items taken away. An increase in labor costs to expand recycling is an issue, but some innovative strategies to address this have been developed and are being adopted more widely across the CUNY system. For example, Baruch College has removed all of the garbage and recycling bins from their classrooms, instead deploying fewer bins at strategic locations around campus. This cut down the time needed to empty bins and has also improved recycling capture rates.


## REDUCING TOXIC CHEMICAL USE

Fiscal Year 2009-10 marked the first year of wide-scale toxic chemical use reduction at agencies, and reports in FYs 10-11 and 11-12 continue to paint a promising picture. Agencies undertook many successful and creative efforts to implement safer pest management practices inside buildings and on their grounds, and used a new OGS multi-state contract to purchase green cleaning products.

### PEST MANAGEMENT

In FY 09-10, of those agencies responsible (either directly or through contractors) for indoor pest management at their facilities (54% of the total agencies reporting), 70% reported using Integrated Pest Management (IPM) techniques all or a majority of the time. IPM is a set of practices that minimizes pesticide use and seeks to prevent problems by emphasizing a combination of monitoring, structural and biological controls, and sanitation, with least-toxic pesticide use as a last resort. In FYs 10-11 and 11-12, that number held steady, at 69% and 70%, respectively. OGS has been an IPM pioneer in public buildings for the past 15 years, and its example appears to have eased the transition for other agencies. In all three fiscal years, roughly 22% of agencies reported using IPM techniques sometimes, while only 7% (two or three agencies) stated that they never used IPM.

Greening exterior pest management practices has proven to be a little more challenging, but progress is still being made. Of the agencies responsible for turf and ornamental pest management at their facilities, 43% reported in FY 09-10 that they used non-chemical means of pest control all or a majority of the time. A slightly larger percentage, 48%, reported the same in FY 10-11, and that number increased to 52% in 11-12. Over all three fiscal years, only between 12-16% of agencies reported that they never used non-chemical techniques. This data indicates that facility managers have been slower to adopt least-toxic pest management for exterior turf and ornamental pest management than the use of IPM for indoor pest management. OGS has also been a pioneer in the use of organic practices to manage outdoor pests. For example, no pesticides are used to maintain the turf and vegetation at the Empire State Plaza. Hopefully, the strong models provided by OGS, the Battery Park City Parks Conservancy and SUNY New Paltz to use only organic practices will continue to inspire other agencies.



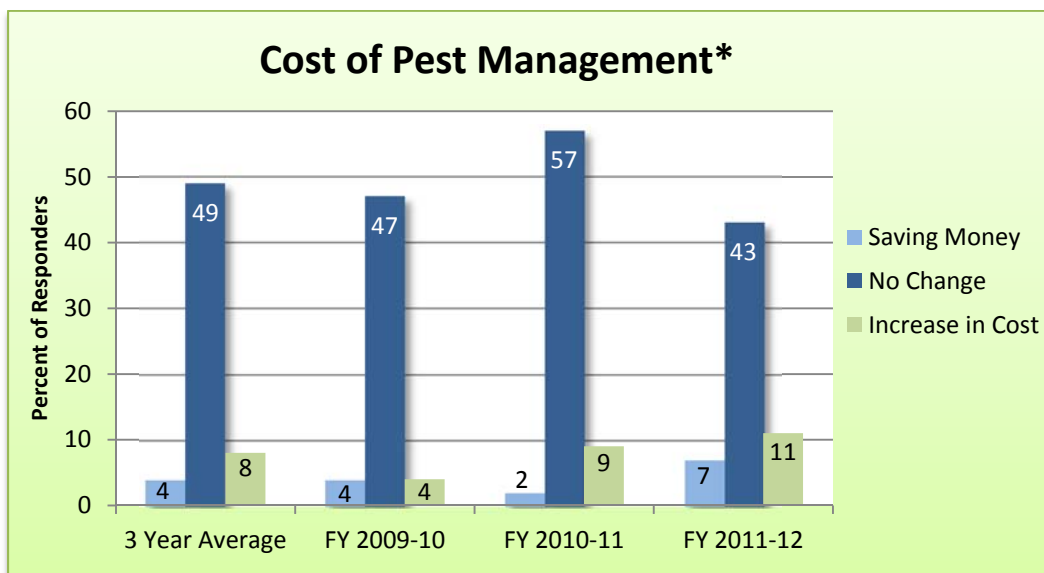
*70% of agencies responsible for indoor pest management use IPM practices all or most of the time.*

A significant plurality of agencies reported a reduction or no change in costs as a result of practicing IPM or non-chemical means of pest control: 51% in FY 09-10, 59% in 10-11, and 50% in 11-12. In contrast, a much smaller percentage reported an increase in costs: 4% in FY 09-10, 9% in 10-11, and 11% in 11-12. Over a third of affected agencies said they did not know.

Below are highlights of new initiatives implemented in FYs 10-11 and 11-12:

- *The Capital District Transportation Authority* implemented IPM on all their buses.

- Many CUNY campuses, the Office of Mental Health, the Battery Park City Parks Conservancy and Helen Hayes Hospital focused on mechanical means of excluding pests, including sealing wall openings and installing rodent-proof trash bins. It is particularly effective to focus on sealing gaps, as the Conservancy did in FY 10-11 during the construction of new buildings.



\*FY 2011-12 includes responses for green cleaning.

- The MTA implemented a pilot program at 27 subway stations in FYs 10-12 that is reducing the use of pesticides by targeting the placement of bait stations in refuse rooms, where pests congregate.
- The Department of Motor Vehicles (DMV), the College of Staten Island, Bronx Community College, and the NYC College of Technology have limited the disposal of food waste in office spaces, restricting it to designated, centralized locations. This has made it much easier to control pests, and as an added benefit, has reduced waste and labor since trash receptacles located at individual desks no longer have to be emptied on a daily basis.

## GREEN CLEANING

The adoption of green cleaning practices is one of New York State's biggest success stories. The state's Green Cleaning Program, run by OGS, helps agencies and schools adopt green practices by maintaining a list of state-approved green cleaning products and offering on-line training courses and a cost calculator, among other services (see <https://greencleaning.ny.gov>).

Of those agencies responsible (either directly or through contractors) for cleaning operations at their facilities, a significant majority (83% in FY 09-10, 88% in 10-11, and 85% in 11-12) use green cleaning products from the OGS List of Approved Products all or a majority of the time. Only 2-5% reported that they never use products from the list. Similar majorities use fragrance-free products (65% in FY 10-11 and 76% in 11-12) and concentrated products (80% in 10-11 and 89% in 11-12) all or a majority of the time.

A significant majority of reporting agencies (71% in FY 11-12) went above and beyond the use of green cleaners by adopting environmentally preferable cleaning practices, such as the use of walk-off mats at building entrances to capture dirt, and microfiber mops and cloths. These practices reduce the overall quantity of cleaners used. More than two-thirds (71% in FY 09-10, 72% in 10-11 and 74% in 11-12) reported that they had reduced the number of different kinds of cleaning products used. This is significant and can be attributed to the adoption of greener practices and the use of concentrated products, standardized dispensing systems, and general purpose cleaners for multiple applications, such as glass, bath and toilet. Standardized dilution and dispensing systems accurately meter water use and avoid the need to mix individual batches, saving time while resulting in less consumption, waste, and spills. Concentrated products also reduce the costs and environmental impacts of packaging and transportation.

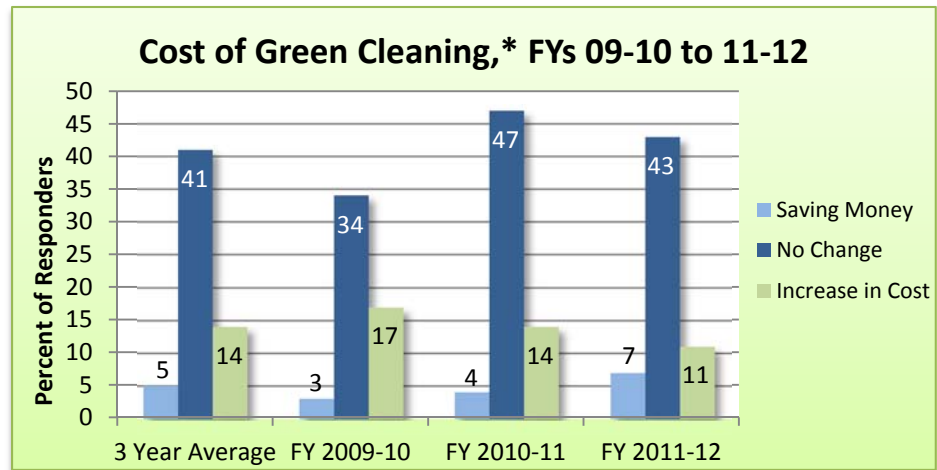
In general, the OGS Green Cleaning website was well received. Of the agencies that reported using the site, 98% found the website to be helpful, especially for identifying and locating green products. Surprisingly, the voluntary online training courses offered on the site were underused. In FY 10-11, 64% of agencies reporting said that none of their cleaning staff had completed courses on the website. Thirty-two percent (32%) said that some of their staff had completed a course, and only 4% reported that all or a majority of their cleaning staff had completed a course.

A significant plurality of agencies reported a reduction or no change in costs as a result of adopting green cleaning practices: 37%

in FY 09-10, 51% in 10-11, and 50% in 11-12.

While the percentage of agencies reporting an increase in cost was higher than in some other areas, that percentage dropped steadily over three years, from 17% in FY 09-10 to 11% in 11-12.

Over a third said they did not know.



\*FY 2011-12 includes responses for pest management.

In FY 09-10, the 11 agencies that reported an increase in cost cited both an increase in price and a need to use more product to clean effectively. This was in sharp contrast to the 41 agencies that reported reducing the number of cleaning products used. Indeed, a number of agencies attributed savings to the use of less product. One agency that reported more product use speculated that increased use may be related to a lack of comfort with the cleaning properties of green products and so may decrease over time.

The implementation of in-house training programs does appear to reduce complaints about cost. Many CUNY campuses offered such training in FYs 10-11 through 11-12. CUNY's summary of campus comments

noted that while most colleges have switched to green products, a number continue to report increases in cost as well as labor, while others report that non-toxic methods are cheaper, more effective, or both. CUNY concluded that training and education play an important part in reducing costs. This conclusion is supported by a lack of complaints about cost by agencies that have implemented training programs, including DOCCS and SUNY Potsdam and Purchase, and by the overall decrease in complaints about higher cost over the years.

This trend mirrors OGS' and the State Education Department's eight years of experience implementing New York's 2005 law requiring all schools in the state to use environmentally sensitive cleaning products. That experience, including two rounds of revising the *Green Cleaning Guidelines* and anecdotal evidence, has shown that green cleaning products cost the same or less and work as effectively as their traditional counterparts.

Two entities in the SUNY system, Upstate Medical and Buffalo College, report distinct savings from the use of uniform dispensing systems. Upstate Medical reports that such systems reduce water use and product use, as well as costs. Buffalo reports that dispensing units saved it 59% over previous cleaning costs.

Below are highlights of new initiatives implemented in FYs 10-11 and 11-12:

- *The Office of Mental Health* piloted the use of ionized water at its Hudson River facility in FY 10-11. The products were well received, and their use was included in OMH's central *Housekeeping Manual* and offered to the rest of their facilities in FY 11-12. Other agencies, including SUNY Plattsburgh, Canton, and Stony Brook, increased their use of ionized water cleaning systems in FYs 10-12.
- *MTA Bridges and Tunnels* installed green cleaner dispensing systems at all their facilities in FY 10-11. In the same year, Metro-North expanded green cleaning to all passenger cars and coaches.
- *The Higher Education Services Corporation* "greatly minimized" the disposal of plastic containers by switching to concentrates, and CUNY La Guardia reduced its supplies to just seven solutions.
- *SUNY Environmental Science and Forestry, Oswego, Buffalo and Albany* introduced or expanded their use of zinc-free or Green Seal-certified floor strippers and wax.
- A number of agencies established procedures for the review of products containing chemicals prior to purchase. *MTA NYC Transit* established a Qualified Products List Committee to evaluate and approve all green cleaning products prior to purchase. *The Development Authority of the North Country* designated and trained Subject Matter Experts in each of their divisions to review and research more sustainable options for all requests for chemical purchases. *SUNY Binghamton's* Committee for University Environment approves all chemicals used for grounds management.

## ENERGY EFFICIENCY AND RENEWABLE ENERGY

Energy efficiency and renewable energy resources are critical to sustainability. In 2012, Governor Cuomo issued Executive Order No. 88, “Directing State Agencies and Authorities to Improve the Energy Efficiency of State Buildings,” replacing EO 111.

Respondents to Executive Order 4 reported that on average, in FYs 09-10, 10-11 and 11-12:

- *80% implemented efficiency practices to reduce energy use, such as purchasing Energy Star® equipment and modifying thermostat set-points.*
- *27% of total electricity use came from renewable energy sources.*
- *A significant percentage, about 82%, has implemented policies or practices—such as videoconferencing—to reduce the number of miles driven by employees during the work day.*
- *Approximately 68% have implemented policies to reduce commuter miles driven, such as support for carpooling and mass transit.*

*80% of agencies implemented practices to reduce energy use, and 27% of total agency electricity use came from renewable sources.*

Notable examples of energy efficiency and renewable energy projects in buildings include:

- *CUNY* launched the CUNY Conserves project in 2012, following a decision by the NYS Division of Budget to give CUNY’s 13 senior colleges control of their energy budgets, permitting them to retain any surplus funds realized through energy conservation and efficiency efforts. The project has prompted CUNY to redouble its efforts to be energy conscious, and all engineering, operations, maintenance and management staff have been engaged to ensure energy savings are maximized. CUNY has completed comprehensive energy audits at 13 of its campuses since 2009.
- *The Long Island Power Authority’s* Home Performance with ENERGY STAR® Program, launched in 2011, made LIPA the first utility in the nation to partner with ENERGY STAR® for remodeling or expanding residential homes.
- *DMV* migrated over 90% of its servers to a virtual environment in FY 10-11 and phased out 1,233 desktop printers agency-wide, decreasing energy use and lowering maintenance costs. In FY 09-10, DMV implemented a desktop power management solution (Green Planet) to power down 1,904 personal computers. On average, the use of power-down software can save an organization roughly \$25-\$75 annually per PC. Potential savings for DMV range from \$47,600 to as much as \$142,800 on an annual basis.
- *DOH’s Center for Environmental Health* also reduced the power and cooling requirements in its computer center by 70% through server virtualization. This technology enables one host server to contain multiple virtual production servers, thus reducing the use of energy, materials and toxic substances.
- In FY 10-11, *NYSERDA* implemented virtual machine computers, which use 70 watts of power, compared to traditional computers, which consume 90 watts or more. In the near future, NYSERDA will deploy Thin Clients, with no hard drive, that draws less than 20 watts of power. In FY 11-12, NYSERDA performed regular building walkthroughs to identify areas for improvement. The results were shared

with staff, along with educational information on powering down computers and other equipment. In addition, NYSERDA replaced its vending machines with Energy Star® machines that use an energy saving compressor and are estimated to be 50% more efficient than conventional models.

- *DEC* continues to upgrade its facilities statewide through lighting retrofits, HVAC upgrades, and building envelope improvements. In FY 11-12, *DEC*'s building-related energy use was 41% lower than in 1990.
- *OGS* was able to decrease its statewide energy consumption in all facilities by 11.52% in FY 09-10, resulting in a 14.10% reduction of fossil fuel emissions and \$2.0 million in savings.

Notable examples of renewable energy projects include:

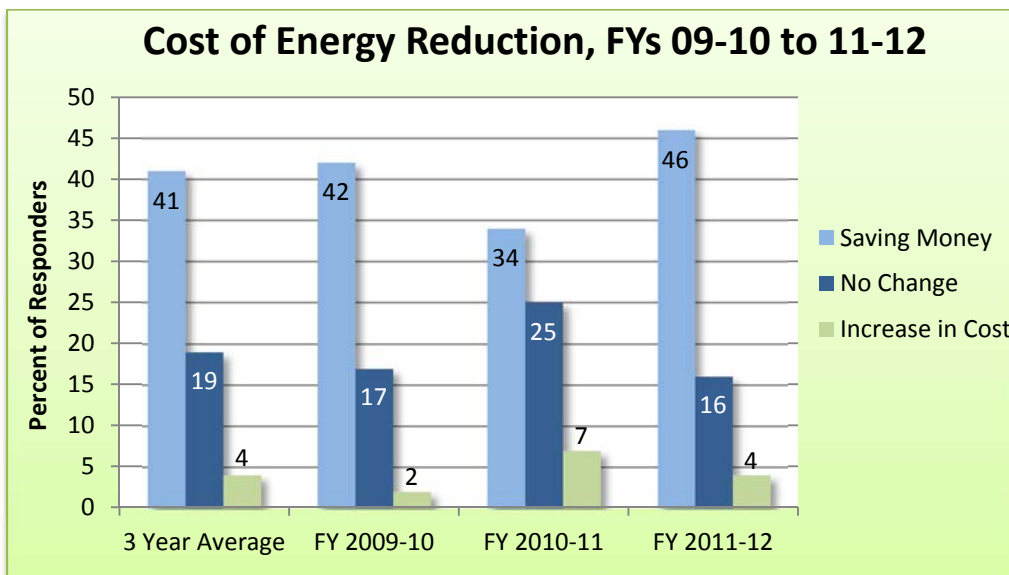
- *CUNY*, as the lead agency for the U.S. Department of Energy's SunShot Initiative, is working with city agencies, utilities and installers to advance the solar market in New York City. In addition to streamlining the permitting process and creating the world's largest interactive solar map, *CUNY* is now helping to lower system costs for solar PV, expand the data acquisition infrastructure, and develop a roadmap for the solar thermal market in New York City.
- *LIPA* launched "Cool Roofs," a Solar Thermal program for electric heat customers, in FY 10-11. It was named one of the most Solar Integrated Utilities in the United States for the third year in a row by the Solar Electric Power Association in recognition of its utility-scale solar projects and the 4,500 residential and business solar systems installed within *LIPA*'s service territory with their support. *LIPA* also broke ground on 49 megawatts of solar projects located at the Brookhaven National Laboratory and various Suffolk County government parking lots.
- *DASNY* contracted to fulfill 100% of their Corporate Headquarters' (Albany office) electric use and all of their Buffalo building's electric use for FY 10-11 and 11-12 from wind power.
- *NYSERDA* participates in National Grid's "Green Up" program and purchases 100% of their power from renewable sources. Fifty percent comes from small wind and the rest from hydropower.
- *OGS* purchased 51,022,480 kilowatt hours of Renewable Energy Credits (RECs) in FY 10-11 from a managed biomass facility, representing 21.7% of its annual electric consumption.
- *The New York City Transit Authority* installed a Solar Thermal Water Heating system at Coney Island Yard in FY 10-11 and is in the process of installing wireless control points for remote control of third-rail heaters. Phase 1 alone of the third-rail heater project is expected to save approximately 12,000 MWH/year when complete.

Notable examples of sustainable transportation projects include:

- *LIPA* created the first Plug-in Hybrid Electric Vehicle program in New York State.
- *Parks* has a fleet of more than 700 electric vehicles and a substantial number of compressed natural gas vehicles, including ten bus-size trolleys that move one million people per year around Niagara Falls State Park.
- *OGS and the Governor's Office of Employee Relations* offered a carpooling incentive program in FY 10-11 for state employees working in downtown Albany to decrease the number of vehicles on Capital District roadways, improve air quality and reduce costs for those seeking parking in *OGS*-managed lots and garages.



- *DOH* instituted a Travel Calendar program in FY 09-10 that encourages staff to coordinate trips and carpool when traveling to meetings and between *DOH* offices.
- *The majority of CUNY campuses* have doubled or tripled the number of bike racks on or around their campuses to encourage bicycling, while a handful of colleges are working with the city's Department of Transportation to improve bike lanes and access in their areas. Also, based on a university-wide survey conducted by *CUNY* in FY 10-11, 68% of *CUNY* commuters used public transportation to travel to their place of work or study.
- In FY 11-12, *NYSERDA* initiated a vehicle sign-out pilot to optimize and encourage carpooling by assigning vehicles based on fuel efficiency, trip distance, and number of riders instead of on a first-come, first-served basis.
- *OGS Parking Management* offers Albany-area state employees carpooling incentives that serve approximately 250 employees through the Grand Street Carpool lot (offering 165 two-person permits); the Swan Street Bridge (offering 68 three-person permits); and the "Carpool Incentive Program" (offering two-person permits in eight locations, including the Empire State Plaza Garage).
- *SUNY Albany* participates in a Capital District Transportation Committee carpool matching service, an electronic ride share board, a bike share program and the Capital Region's only car sharing program.



Energy efficiency clearly saves money. Overall, a significant number of agencies reported saving money by reducing energy use: 59% in FY 09-10, 59% in 10-11 and 62% in 11-12. In comparison, a much smaller percentage of agencies reported an increase in costs: 2% in FY 09-10, 7% in 10-11 and 4% in 11-12. Over a third said they did not know.

## CONSERVATION OF WATER AND NATURAL RESOURCES

### SUSTAINABLE LANDSCAPING

According to the EPA, 30% of our water use is for outdoor landscaping associated with buildings. Managing landscapes sustainably is an important action agencies can take to reduce water use and conserve natural resources. About one-third of EO 4 reporting entities are directly responsible for landscaping at their facilities. Since the implementation of EO 4, awareness and adoption of sustainable landscaping techniques has increased. Agencies responsible for significant outdoor landscaping areas, such as Parks and the Department of Agriculture and Markets (Ag and Markets), use sustainable landscaping techniques all or a majority of the time.

Sustainable landscaping starts with design and the placement of plants to fit the site's available water, soil and sun conditions. The Port Authority issued *Sustainable Guidelines* for new buildings, renovations and reconstruction projects that include credits for storm water use, landscape hydrology and water use efficiency. Agencies across the state, from MTA to the Development Authority of the North Country, choose native plants that are well adapted to local conditions, tolerate dry conditions, thrive in the local environment or provide habitat and food for local pollinators.

A variety of maintenance and operation practices can help reduce water and fertilizer use and reduce staff time over the long term. The Departments of State and Parks and the NYPA leave grass clippings in place. Other agencies use mulch or landscape fabric to reduce the need for watering. On-site composting of grass cuttings and leaves or food waste is used by several agencies to reduce or eliminate fertilizer use. To maximize the efficiency of their irrigation system, the Roosevelt Island Operating Corporation uses a lawn sprinkler system with rain sensors and timers. CUNY uses drip irrigation to conserve water and limits watering to early morning or late evening to minimize evaporation. For several years, Parks has reduced mowing, saving significant amounts of gasoline and staff time.

### GREEN STORM WATER INFRASTRUCTURE

Green infrastructure mimics natural systems to slow down and filter rainwater. Permeable pavement, bioretention and rain gardens, green roofs, stormwater street trees, riparian buffers and wetlands, and rainwater harvesting and reuse are among the types of green infrastructure that may be found at state facilities.

For example, Parks, DEC and Stewart Airport are among the agencies which use permeable pavement to manage storm water in parking areas, on walking and biking trails and on roadways. The Niagara Frontier Transportation Authority uses subsurface engineered wetlands to improve storm water runoff quality. The Development Authority of the North Country, SUNY's College of Environmental Science and Forestry and MTA all harvest rain water for washing equipment, trains and vehicles. At least 10 different state agencies have a green roof on one or more of their facilities. For example, MTA installed low-maintenance, drought-tolerant plants on the new 1,888-square foot green roof at the E. 180th Street Yard Signal Crew Quarters. OGS installed a 32,000-square-foot green roof in a building occupied by the Office of Mental Health and

OPWDD. In Parks' Niagara region, a rainwater collection system provides more than 10,000 gallons of water for nurseries and flower beds.

## WATER CONSERVATION

The simplest and most common method of water conservation is the use of low-flow fixtures, such as high-efficiency toilets, sink faucets and showerheads. All state agencies should use green specifications for low-flow toilets and showerheads for new construction and rehabilitation projects. Suffolk County Community College saved more than 20 million gallons of water by retrofitting 1,000 shower heads to low-flow fixtures. Waterless and composting toilets are used by Parks and DEC in areas where a typical septic system cannot be used and wastewater systems are not available.

Reusing water is another way to conserve. The Battery Park City Authority and the Battery Park City Parks Conservancy are among a handful of agencies that have or are planning to install graywater or blackwater collection systems. In these systems, non-potable water (untreated rainwater or treated wastewater) is reused for flushing toilets and other non-potable uses. Buildings in Battery Park City use 50% less potable water than buildings of similar size.

Agencies can also save water by taking a proactive approach to finding and fixing leaks. One SUNY campus implemented sewer and chilled water loop improvement projects that greatly reduced leaks. The Office of Mental Health has adopted a comprehensive water management program that includes daily inspections for leaks, metering devices to survey water consumption, green cleaning practices that reduce water consumption, the installation of high-efficiency fixtures, and the maintenance of boilers and heating systems to conserve water. OPWDD conducted leak audits at several locations. NYPA conducted an internal water audit and is in the process of implementing a real-time environmental monitoring system to promote statewide conservation efforts.

The use of air-cooling technology for chillers and refrigeration equipment can save up to 40 times the amount of water used in a water-cooled system. OMH specifies air-cooled mechanicals to achieve significant water savings.

## COSTS

A significant plurality of agencies reported a reduction or no change in costs as a result of implementing water and natural resource conservation measures: 51% in FY 09-10, 55% in 10-11, and 55% in 11-12. In

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### *BENEFITS OF WATER-SAVING FIXTURES\**

*Toilets meeting EO 4 green  
specifications save 4,000  
gallons per year.*

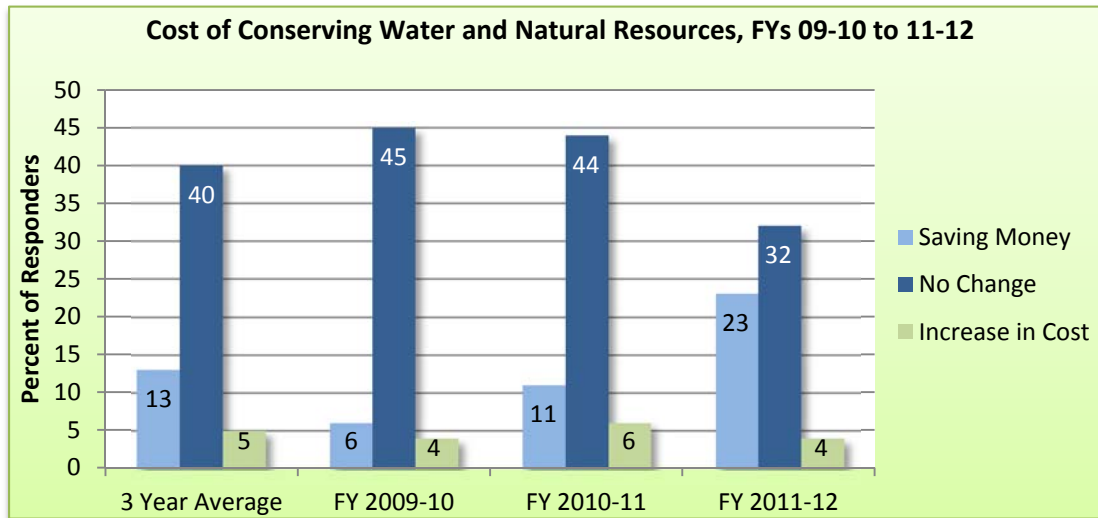
*Waterless urinals save 4,600  
gallons per year.*

*Low-flow sink faucets save 500  
gallons per year.*

*\*Estimates are for residences; for  
many institutions, the savings would  
be greater.*

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contrast, a much smaller percentage reported an increase in costs: 4% in FY 09-10, 6% in 10-11, and 4% in 11-12. Over a third said they did not know. The number of agencies reporting a reduction in costs over this time period increased markedly, from 6% in FY 09-10 to 23% in 11-12.



A number of agencies observed that although there were initial cost increases for water conservation projects (such as for restroom fixtures), they expected long-term savings. The MTA estimated a payback period of approximately seven years for its installation of low-flow fixtures. The Battery Park City Authority benefitted from a New York City program that provides a 25% discount on water bills for buildings that reuse water. SUNY reported that two campuses were able to quantify reductions in water use: one experienced a 14% reduction in water and sewer volumes, while another reported a 20% reduction in water use over five years. Barriers to assessing the fiscal impacts of water conservation projects include a lack of metering and the very low (or no) cost of some water supplies.

## EDUCATION AND TRAINING

During the period covered by this report, approximately 480,000 employees worked at the agencies, authorities and other entities covered by EO 4. To achieve EO 4’s goals, staff and other stakeholders, such as facility users, students and residents, have to be familiar with and comfortable participating in sustainable practices such as recycling or green cleaning.

More than three-quarters of agencies reported reaching out to staff to promote EO 4 activities. Even with fiscal constraints, many agencies share sustainability information with staff through simple, low- or no-cost ways that rely on existing resources, such as emailing the EO 4 *Green Bulletin* to all staff and posting information on internal websites. For agencies in leased facilities, tenant newsletters can be passed along to staff with notices about recycling updates and green cleaning.

A number of agencies have developed extensive and successful outreach programs. The most successful programs are supported by active staff participation in some form of work group, which provides the “people power” needed to regularly generate and distribute up-to-date information.

Some work groups provide presentations to staff and management teams on relevant sustainability topics (DASNY, NYSEDA, DEC, EFC, and others). The Office of the Inspector General's "Green Team" created a motto, "It's Easy Being Green," and sponsored a zero-waste holiday party to increase staff awareness. The Team continues to interact with staff on a regular basis. Another entity, the Office of Mental Health, e-mails a *Quarterly Energy Newsletter* to all staff and provides an internal web resources page with environmental compliance, pollution prevention guidelines and green cleaning updates.

Both SUNY and CUNY enjoy extensive participation by faculty, staff, students and even community members in developing and promoting sustainable activities on campus. On a number of campuses, clubs have been formed with "recycling" or "sustainability" as their driving issue. Social media, such as blogs, Facebook, YouTube and Twitter, are used very effectively to promote general activities and specific events. Campus events include Earth Day, America Recycles Day and a Think Green Fair. CUNY holds an annual NYC Solar Summit.

Several state agencies have involved public stakeholders in sustainability planning and have posted their plans or policies and information about their sustainability efforts on their public websites. For example, the Development Authority of the North Country posted its Environmental Policy Statement on the Authority's website ([www.danc.org](http://www.danc.org)).

## CHALLENGES AND OPPORTUNITIES FOR GREEN OPERATIONS

In reviewing the reports from the first four years of work under EO 4, we find many successes and achievements, including improvements in the ability of agencies to quantify and manage waste and significant integration of more sustainable approaches into the day-to-day business, operational planning and thought processes of state agencies. Awareness of the benefits associated with a "beyond waste" mentality and successful attempts to engage staff in reducing waste are now evident across all reporting entities. Agencies are demonstrably moving toward a more efficient, triple bottom line and a smarter business approach to the work of New York State. In the transitional years of implementing any significant change, challenges are to be expected. Some have been met and addressed, while others continue to make the work at hand more difficult. Some persistent challenges will require innovative solutions not yet tried.

### MEASURING WASTE REDUCTION AND RECYCLING

Overall, agencies experienced much less difficulty obtaining and reporting meaningful waste generation data in FYs 09-10 through 11-12 as compared to the first year of reporting in FY 08-09. In part, this was due to support from the EO 4 Training and Reporting Subcommittee and DEC Materials Management staff. In addition, the reporting form was enhanced to include a comprehensive data conversion calculator in FY 09-10 and significantly streamlined in FY 11-12 to make it easier for agencies to estimate quantities and report.

Some agencies are still experiencing difficulty distinguishing between office and non-office waste. The Interagency Committee recognizes that no approach to measurement will be without difficulty, and best estimates continue to be acceptable for reporting.

That said, a detailed waste audit remains the best way to obtain data on the nature and quantity of wastes generated by an agency. A number of agencies, including NYPA, conducted waste audits at their facilities in FYs 09-10 through 11-12 with the goal of obtaining more accurate measurements. A simple audit may be accomplished relatively easily in several hours depending upon the size and complexity of a facility. A *Waste Audit Guidebook* and webinar are available on the OGS EO 4 website to help agencies perform waste audits (<http://www.ogs.state.ny.us/EO/4/Docs/WasteAudit2008.pdf> and <http://www.ogs.state.ny.us/EO/4/Default.asp>), and DEC will provide technical assistance to individual agencies upon request.

### **LEASED SPACE**

Agencies located in leased spaces in privately owned buildings can find it difficult to ensure that EO 4 requirements are being followed, such as the use of green cleaners, recycling and the tracking of waste. This is especially true for properties not managed by OGS, where agencies have not yet been able to update their leases to reflect EO 4 requirements, but it can also be difficult for agencies to enforce contractual requirements. Challenges include a lack of control over operations, including contracts for waste disposal, and the sharing of space with other tenants, which makes tracking for just one tenant difficult.

From the onset of implementing EO 4, OGS has worked to establish and maintain higher standards of environmental responsibility. Through its Division of Real Estate Planning & Development, OGS currently leases approximately 580 locations throughout the state for a total of more than 14 million square feet of rented space. In spring 2008, OGS sent a letter to agencies outlining the specific clauses within agency leases that would be impacted by the requirements of EO 4 and revised the state's boilerplate lease to include specific reference to EO 4. The revised clause includes requirements for tenants to source separate all appropriate recyclables in accordance with local ordinances and for landlords to properly dispose of material in accordance with local law. OGS also revised its solicitation documents to ask prospective landlords what assistance they would be able to provide to tenants in complying with EO 4, as well as the cost of such assistance.

A number of agencies reported that the issuance of new leases containing language that supports green cleaning, waste reduction, recycling and waste tracking has gone far to address this challenge. Others were able to develop informal agreements with their landlords to adopt green cleaning or put better tracking systems in place. OGS has facilitated these discussions on request and remains committed to helping tenants troubleshoot challenges posed by greening leased space using lease provisions whenever necessary and appropriate. Greening operations in leased space will continue to prove challenging, but as lease contracts continue to be renewed and improved, implementing sustainable practices should become easier and reporting more accurate.

### **DONATION FOR REUSE**

A number of agencies, including DASNY, SUNY, CUNY, and the State Police, cite state procurement law requirements governing the disposition of surplus equipment, intended to guard against unwarranted loss

of state assets, as a significant impediment to keeping used equipment out of recycling bins or the landfill. According to these agencies, the rules are so complex and time consuming to satisfy that it is much easier to simply discard items instead of finding a legally acceptable way to donate equipment such as old desks, chairs, file cabinets and or even binders to local non-profit organizations or public schools. SUNY pointed out that many other universities, including Harvard, have had great success with donating used items to non-profit organizations around the world. OGS operates the surplus property program, and there is provision in it for local disposition. OGS will be providing guidance to affected entities to clarify their responsibilities under the law.

### **COMPOSTING**

Composting continues to increase as a percentage of waste recycled by state agencies. While a number of agencies, including the Department of Corrections, SUNY and OPWDD have implemented successful food scrap composting programs, a number of others have found their adoption more challenging. A lack of space on-site to compost materials, the difficulty of locating local vendors who will accept materials, the need to transport materials to a collection site, negative perceptions of composting, and genuine concern about odor and pests were also cited as obstacles.

Even OGS' successful composting program at the Empire State Plaza food service venues has experienced problems because cafeteria patrons often fail to properly separate compostable materials from non-compostable waste. Since October 2010, waste from the dining areas has not been composted due to contamination with non-compostable materials. OGS responded to the challenge by placing additional information and examples of how to sort disposable items in the receptacle area; however, this has not solved the problem. OGS is currently exploring additional ways to improve waste sorting by cafeteria patrons. Despite this setback, food waste from the cafeteria kitchens continues to be composted, and recyclable materials from both the kitchen areas and the dining room areas are recycled.

### **LACK OF RESOURCES FOR CAPITAL OR LABOR-INTENSIVE PROJECTS**

Lack of funding was identified by many Sustainability Coordinators as an impediment to the implementation of sustainability projects that require up-front investments of capital or labor. Even for those projects with data establishing a reasonable payback period, funds to cover up-front costs were not available to most agencies. Sustainability Coordinators have other job responsibilities, and it can be difficult to maintain staff commitment. Staff reductions in recent years have reduced capacity even further.

Given the scope of the state fiscal crisis, delay of certain projects requiring significant up-front investment is unavoidable. By remaining engaged and aware of new technologies and innovations and advocating for alternative sources of funding, such as federal programs targeted to increased government efficiency and sustainability, Sustainability Coordinators will be in a better position to secure funding and implement projects as funding becomes available.

### **TRACKING AND LEVERAGING SAVINGS**

A related obstacle cited by a number of Coordinators, in particular college campus Coordinators, is that savings achieved from water, energy, materials or other conservation measures usually do not directly



benefit or add to the budget of the agency, program, individual campus or building that implements the measure. In other words, while conservation savings generally benefit the state and taxpayers by reducing costs, it is usually difficult for savings to be captured in a way that could help to finance additional conservation measures and thus, more savings.

Part of the challenge is that costs and savings are not always tracked. Part of the power of both EO 18 and EO 4 is that they require agencies to track their use of energy and paper and the generation of waste. Savings from energy, paper and waste reduction can then also be tracked. In comparison, for many state facilities, data is not available regarding the amount of water used. Many water suppliers do not meter water use; in these areas, billing for water and sewer is not based on usage but rather street frontage, building size or some other metric. Where the cost of water is low and billing is not based on usage, there is no financial incentive to reduce water use.

Similarly, even in urban areas where stormwater is a significant water quality issue, typically there are no fees related to storm water. In such cases, the costs of water-saving systems do not have a beneficial payback period.

Agency EO 4 reports indicate that there is great value in receiving and reviewing the bills for all utilities, including natural gas, electricity and water. By reviewing the bills on a monthly basis, one Sustainability Coordinator reported being able to better analyze usage patterns and is actively planning to meter individual buildings for all utility usage.

#### **EXECUTIVE SUPPORT**

Executive support continues to be a crucial element of success for Sustainability Programs, especially in these hard fiscal times. As the state workforce has shrunk, strong support from upper level management can facilitate behavioral change and help everyone throughout the organization understand that green practices and conservation are important to the business of state government.

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*“As with any type of change, the biggest obstacle to overcome was changing the mindset of employees, but it didn’t take very long for people to adapt.”*

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#### **TRAINING AND CULTURE CHANGE**

The largest challenge by far continues to be the education and engagement of staff in sustainable action. It is also the one strategy cited most frequently by Coordinators as a potential solution to numerous challenges, especially those that involve changing behavior, such as the adoption of green cleaning or green landscape practices. Many agencies also have diverse residents and patrons in need of training. In the SUNY system, student culture is the largest obstacle, even while students are the most active green advocates on campus. As one report notes: “Independent living does not have a mechanism or incentive to reduce long showers.” Education of dorm residents was also cited as important to the success of switching over to low-flow water fixtures.



Not surprisingly, the lack of resources and staff for training was also cited frequently as an impediment to implementing successful initiatives. One agency noted that creating educational pieces and implementing plans to change behavior is time consuming and staff intensive. They learned through trial and error that proper training regarding the care of native plants is necessary for both the maintenance crew and building users to keep native perennials alive, and for staff to appreciate the changes in how the landscaping appeared.

The placement of materials by staff or patrons in the wrong bin or location was noted as a continuing challenge for reuse, recycling and composting programs. For example, visitation to state park facilities averages between 45-55 million each year. In Parks' experience, patrons will not recycle unless the bin is close to their use area. In addition, if a trash or recycling bin fills up, patrons will put materials in the wrong place. This illustrates that training has to be supported by the staff and resources needed for ongoing maintenance, or backsliding will occur.

Generally speaking, if a sustainable action is embedded in an established system (for example, the powering down of all computers at 6 p.m.), implementation is easy. Where an activity requires staff or patron participation, such as knowing what goes where for recycling, there will be a continuous need for messaging, training and the restating of goals.

Ag and Markets recommends that agencies with successful programs and the ability to conduct training sessions should make presentations to agencies that request help. This type of exchange is the mission of the Training and Sustainability Subcommittees, and agencies with tips and stories to share are encouraged to submit content for the weekly *Green Bulletin*.

Many Coordinators reported an encouraging trend that despite initial resistance, most users become accustomed to change over time. As one expressed, "We have found that perseverance and patience eventually outlast the complaints." Or "As with any type of change, the biggest obstacle to overcome was changing the mindset of employees, but it didn't take very long for people to adapt."

## BUYING GREEN

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Green procurement is a cornerstone of EO 4. Also known as environmentally preferable purchasing (EPP), it is an effort to purchase products and services that have a reduced negative impact or increased positive impact on the environment and human health compared to traditional products. Buying green products supports all of the Order's environmental priorities regarding waste, toxics, energy, water and natural resources.

Through the volume of its procurement, government can harness the energy of the market to produce products that perform better and cost less. As supply increases, prices should decrease, and high performance green products and services will become more affordable for all consumers.

In general, the Interagency Committee anticipates that green products for which specifications are approved under EO 4 will be competitively priced compared to their conventional counterparts. A number of 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. In a 2010 update to their 2007 report on Environmentally Sensitive Cleaning and Maintenance, the State Education Department and OGS note that based on more than three years of experience implementing the state's green cleaning law, 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 (see <https://greencleaning.ny.gov/Docs/GCSurveyFinalReport072707Revised030910.pdf>). This conclusion has been supported by experience and anecdotal evidence over the past three years. Similarly, soy-based ink has been used by OGS for many years, not only because it is environmentally friendly, but because it is user friendly—it is easier to lay down and prints better than older petroleum-based inks.

The price of some green products, such as any type 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. Based on recent awards under current OGS statewide contracts for truckload and less than truckload lots of recycled copy paper, the price of 100% recycled content paper was very competitive and consistent with the pricing for 50% and 30% recycled paper. In recent years, state contract pricing for copy paper sold in quantities of "less than truckload" has generally set the price for 100% recycled content paper lower than the cost of 50% recycled content paper and only slightly higher than the price for 30% recycled content paper. Virgin copy paper is not available on the "truckload" contract; however, agencies may purchase it from certain office supply vendors using the OGS "miscellaneous office supplies" contract. That contract gives agencies a very wide range of choices of brands, amount of recycled

content and paper type. The 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.

In the case of re-refined oil, the vast majority (81%) of state contracts for such oil are awarded on low bid, while 19% (due to regional differences in price) are awarded within the state's 10% price preference for recycled content products. New York State was the first state to buy re-refined motor oil in 1990. We are now in the 24<sup>th</sup> year of purchasing, and we purchase around 175,000 gallons, or \$1 million per year. It consistently meets all performance standards, and there have been very few complaints in all that time. New York has also helped build the market. In 1990, Safety Kleen re-refined approximately 30 million gallons of oil in Canada. It now re-refines 140 million gallons in the U.S. alone. State contracts include car oils, truck oils and hydraulic oils in quarts, 55-gallon drums and bulk delivery.

## RECYCLED PAPER PURCHASING

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 paper and the printing of agency publications on paper made from 100% post-consumer recycled content and copy and janitorial paper that is processed chlorine free. The phrase "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 fiscal years 09-10, 10-11 and 11-12, broken out by percentage of recycled content.

### KEY COPY PAPER FINDINGS:

- Through techniques such as double-sided printing, state agencies have significantly reduced the overall amount of copy paper that they use. In FY 2011-12, 50 agencies reported purchasing 241,454 boxes or \$8,329,692 worth of copy paper, a decrease of 42.7% from FY 2008-09, when 47 agencies reported purchasing \$14,537,991 worth of copy paper. This represents \$11.1 million in savings over the three fiscal years from 09-10 through 11-12 and at least \$6.2 million in savings per year going forward.
- By far the greatest amount, and close to one-half (49%) of dollars spent on copy paper in FY 2011-12 (or just over \$4.1 million), went to purchase 100% post-consumer recycled content, processed chlorine-free paper. This represents a 27 percentage-point increase from the 22% (or \$3.3 million) spent on such paper in FY 08-09.
- 78% of agencies in FY 09-10, 78% in 10-11 and 70% 11-12 reported buying at least some 100% post-consumer recycled content, processed chlorine-free paper copy paper.
- Approximately one-third of agencies (30%) continued to purchase some virgin copy paper in FYs 09-10 and 10-11. However, those purchases accounted for only 10% of total copy paper purchased. Starting in FY 11-12, virgin paper purchases were combined with purchases of paper with less than 30%

### Copy Paper Purchases by Amount of Recycled Content

	Number of Agencies Reporting	FY	Agencies Reporting Purchases	Percent of Agencies Reporting Purchases	Total Boxes of Copy Paper Purchased	Total Dollars Spent on Copy Paper	Percent of Expenditures by Recycled Content
<b>100% Recycled Chlorine-free</b>	69	2009-10	54	78%	159,857	\$6,320,148	49%
	64	2010-11	50	78%	141,699	\$5,071,909	45%
	50	2011-12	35	70%	109,880	\$4,105,147	49%
<b>30%-90% Recycled</b>	70	2009-10	43	61%	110,028	\$3,803,229	30%
	63	2010-11	42	67%	79,447	\$3,905,797	34%
	50	2011-12	29	58%	100,429	\$3,046,935	37%
<b>&lt;30% Recycled</b>	69	2009-10	16	23%	42,567	\$1,379,908	11%
	62	2010-11	17	27%	33,934	\$1,291,574	11%
	50	2011-12	21	42%	31,145.5	\$1,177,610	14%
<b>Virgin Copy Paper</b>	70	2009-10	21	30%	38,840	\$1,285,886	10%
	61	2010-11	18	30%	46,806	\$1,098,789	10%
	Not requested 2011-12						
<b>Total/ Overall</b>	<b>70</b>	<b>2009-10</b>	<b>N/A</b>	<b>N/A</b>	<b>351,292</b>	<b>\$12,789,171</b>	<b>100%</b>
	<b>64</b>	<b>2010-11</b>			<b>255,080</b>	<b>\$11,368,069</b>	<b>100%</b>
	<b>50</b>	<b>2011-12</b>			<b>241,454</b>	<b>\$8,329,692</b>	<b>100%</b>

### Janitorial Paper Purchases by Amount of Recycled Content

	Number of Agencies Reporting	FY	Agencies Reporting Purchases	Percent of Agencies Reporting Purchases	Total Cases of Janitorial Paper Purchased	Total Dollars Spent on Janitorial Paper	Percent of Expenditures by Recycled Content
<b>100% Recycled Chlorine-free</b>	32	2009-10	28	88%	236,139	\$7,138,622	75%
	54	2010-11	27	50%	208,776	\$5,664,690	69%
	36	2011-12	19	53%	187,586	\$5,650,217	70%
<b>1%-99% Recycled</b>	32	2009-10	22	69%	71,029	\$1,699,169	18%
	53	2010-11	20	38%	54,172	\$1,580,391	19%
	36	2011-12	15	42%	42,729	\$1,639,635	20%
<b>Virgin Janitorial Paper</b>	32	2009-10	9	28%	90,982	\$727,420	8%
	52	2010-11	9	17%	36,485	\$1,027,703	12%
	36	2011-12	5	14%	25,679	\$831,642	10%
<b>Total/ Overall</b>	32	2009-10	N/A	N/A	398,150	\$9,565,211	100%
	54	2010-11			299,433	\$8,272,784	100%
	36	2011-12			255,994	\$8,121,494	100%

#### KEY JANITORIAL PAPER FINDINGS:

- 70% of dollars spent on janitorial paper in FY 2011-12 (or \$5.65 million) went to purchase 100% post-consumer recycled content, processed chlorine-free paper. This represents a 36 percentage-point increase from the 34% (or \$1.2 million) spent on such paper in FY 08-09.
- A majority (53%) of agencies reported buying at least some 100% post-consumer recycled content, processed chlorine-free janitorial paper in FY 2011-12.
- Only five agencies (14%) continued to purchase virgin janitorial paper in FY 2011-12. Moreover, those purchases accounted for only 10% of janitorial paper purchases, with one agency (DMNA) making the vast majority of those purchases.

- Due to the difficulties associated with measuring janitorial paper purchases, the number of agencies reporting janitorial paper purchases of any kind is consistently lower than reporting copy paper purchases.

### **OTHER PAPER PURCHASES**

The EO 4 report form contained an open-ended item requesting information on other types of papers purchased, including quantities and dollar amounts. Forty-four entities reported purchasing other types of paper. Many entities reported purchasing colored paper, card stock, and bond paper. Other reported purchases include photo paper, carbonless paper, computer paper, steno pads, forms, map paper, and large rolls of paper for use in print shops (MTA and OGS). Relatively few entities reported dollar amounts for these purchases. A number of entities indicated that it was difficult—and in some cases impossible—to provide detailed information.

## **GREEN SPECIFICATIONS AND PROCUREMENTS**

### **APPROVED GREEN SPECIFICATIONS**

In FY 08-09, 19 green specifications were approved by the Interagency Committee. These cover a total of 39 different commodity, service, or technology types. For example, the computer specifications cover three types of personal computers: desktop, notebook (including laptops), and tablet. In FY 09-10, work continued, and new categories and items were identified for specification development. In December 2010, 9 new specifications covering a total of 23 different commodity types received final approval. Summaries are provided below.

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## Green Specifications Finalized in 2010

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### COMPACT FLUORESCENT LAMPS (2 TYPES)

Mercury levels of 5 mg. or less required; purchase of the lowest amount of mercury possible encouraged. ENERGY STAR® and compliance with European Restriction of Hazardous Substances (RoHS) required.

Contractors must offer recycling programs and documentation on how lamps are managed. A list of lamps and their mercury content must be posted online.

### HAND CLEANERS/HAND SOAPS (1 TYPE)

Certification or self-attestation to Green Seal standard GS-41 or EcoLogo standard CCD-104 required. Bidders are encouraged to eliminate disposable containers and use packaging with 25% recycled content.

### INDUSTRIAL & INSTITUTIONAL CLEANING PRODUCTS (6 TYPES)

Certification or self-attestation to Green Seal standard GS-37 or EcoLogo standard CCD-146 required. Bidders are encouraged to eliminate disposable containers and use packaging with 25% recycled content.

### VACUUM CLEANERS (1 TYPE)

Rating for commercial use and certification or self-attestation to the Carpet and Rug Institute's Seal of Approval/Green Label required. Carpet and Rug Institute Gold rating encouraged.

### OUTDOOR FURNITURE AND PLAYGROUND STRUCTURES (2 TYPES)

Wood-based products must be certified as harvested from a sustainably managed forest by a program acceptable to DEC.

Non-wood products must contain minimum recycled (R) and post-consumer recycled (PC) content, as specified:

- ThermoPlastic - 100% R with 90% PC
- Thermoset plastic - 50% R
- ThermoPlastic composite - 100% R with 50% PC
- Thermoset composite - 50% R
- Aluminum - 25% PC
- Steel manufactured in a basic oxygen furnace - 25% R with 16% PC
- Steel manufactured in an electric arc furnace - 100% R with 67% PC
- Concrete - 15% R

CCA-treated items cannot be burned or shredded and must be disposed in accordance with New York State law.

### SINGLE-USE FOOD CONTAINERS (5 TYPES)

Hot and cold cups, hot containers and lids must be manufactured from materials that are biobased, compostable and biodegradable; made from a polymeric material that contains at least 30% PC; or be recyclable.

All other containers must be compostable in accordance with the American Society for Testing Materials (ASTM). Certification by the Biodegradable Products Institute is encouraged. In addition for such containers:

- Bioplastic material shall meet the requirements of ASTM D6400-04.
- Bioplastic coating shall meet the requirements of ASTM D6868-03.
- Paper products shall be manufactured with chlorine-free processing.
- Inks from printing shall be vegetable based.

Packaging made from reusable or recycled materials, and paper packaging containing 30% post-consumer fiber is required. Foil, Mylar and excessive inner packaging is prohibited.

### SINGLE-USE FOOD SERVICE UTENSILS (4 TYPES)

Single-use utensils must be compostable in accordance with ASTM or, if ASTM is not applicable, be biodegradable. The purchase of compostable single-use utensils certified by the Biodegradable Products Institute is encouraged.

Packaging made from reusable or recycled materials, and paper packaging containing 30% post-consumer fiber is required. Foil, Mylar and excessive inner packaging is prohibited.

### PAVEMENT MARKING PAINT (2 TYPES)

The maximum concentration of volatile organic compounds shall not exceed 0.85 lbs./gallon, and lead, chromate, mercury, cadmium and other toxic contaminants are prohibited. Affected entities are encouraged to buy only the amount of paint needed for the job and to purchase paint with the maximum recycled content available.

### TREATED ROAD SALT (2 TYPES)

The use of treated road salt as an alternative to untreated road salt or sand is encouraged. Limits are established for phosphorus and heavy metals, and low biological oxygen demand (BOD) is encouraged.

## **SPECIFICATIONS PENDING FINAL APPROVAL**

Green specifications for seven additional types of products (listed below) have been tentatively approved by the Interagency Committee and are pending final approval. A number of them are undergoing revisions based on input received during the public comment period.

- Toilets
- Composting toilets
- Acoustical ceilings
- Carpeting
- Electric hand dryers
- Motion-sensitive light switches
- Photovoltaic systems

A complete list and copies of the specifications themselves are available at:

<http://www.ogs.state.ny.us/EO/4/ApprovedSpecs.asp>.

## **NEW MULTI-STATE CONTRACT FOR GREEN CLEANING PRODUCTS**

In May 2010, OGS issued a contract for green cleaning products—the culmination of a multi-state cooperative contract effort led by Massachusetts and including most of the northeast states. The contract covers certain cleaning supplies that comply with the requirements of Chapter 584 of the laws of 2005, codified in State Education Law 409-I and State Finance Law 163-b, which directs public and non-public elementary and secondary schools in New York State to use environmentally sensitive cleaning and maintenance products. It is also consistent with Executive Order 4 directing agencies to green their procurements and to use environmentally preferred cleaning products. Almost all cleaning chemicals awarded under Category 1 of this award are certified by either EcoLogo or Green Seal. Use of these certification organizations provides consistency and assurances to schools that the cleaning products are safe for students when used properly. In support of agency requirements under EO 4, the contract enables users to more easily identify and track which green products they purchase.

## **CENTRALIZED CONTRACTING AND STRATEGIC SOURCING**

Governor Cuomo has committed his administration to implementing enterprise-wide changes that will use modern business practices in running New York State government. This will lower the cost of government and increase efficiencies throughout state operations. New York State Procurement at OGS is part of that transformation.

Part of the ongoing initiative is an approach called Strategic Sourcing. This is a procurement process that uses a structured, market-based approach to gather data, conduct quantitative analysis and apply expert qualitative judgments to secure the best value in purchasing. Each sourcing project is unique, and while the primary goal is to achieve cost savings, a total cost of ownership (TCO) methodology is applied that looks at costs over the term of ownership, in addition to initial purchase amounts.



A Strategic Sourcing project includes the development of a category strategy to identify usage patterns and needs, including best practices, and sourcing that category to best meet the needs identified. The TCO methodology examines a broad spectrum of cost drivers, including useful life, transportation and maintenance costs, energy efficiencies, etc., which are incorporated in the evaluation of the goods or services being procured.

Strategic Sourcing and Green Purchasing are not mutually exclusive. Often the state’s buying power can move the market and force suppliers to make green products available at a competitive cost. Moreover, the TCO methodology takes into consideration certain “green” factors, such as energy efficiency and waste avoidance, which can prove both cost effective and environmentally friendly.

The aggregate purchase of green computers has resulted in some of the most notable cost savings and environmental benefits. In FYs 07-08 and 08-09, OGS negotiated lower prices on its Green Computer Aggregate Buy compared to prior years, while adding “green” specifications. In FY 07-08, \$117 million was saved off the state contract price, while specifying computers that met the Electronic Product Environmental Assessment Tool (EPEAT) Silver “Plus 6” standard (the “Plus 6” refers to EPEAT’s six optional toxics reduction credits). In FY 08-09, \$130 million was saved off the contract price, while specifying computers that met an even higher standard—the highest standard in the nation for environmental quality, EPEAT Gold “Plus 7.” The state estimates that computers purchased using these two contracts will yield \$30 million in energy savings over their expected “lives,” reduce primary material use by 1.3 billion pounds, and reduce toxic chemical use by 58,900 pounds. In FY 11-12, OGS continued these savings and environmental benefits by purchasing computers that also meet EPEAT Gold “Plus 7” through its strategic sourcing program, saving approximately \$95.6 million off the contract price between February 2012 and February 2013, while resulting in \$9.4 million in energy savings over the computers’ expected lives and avoiding 3 million pounds of solid waste and reducing toxic chemical use by 21,465 pounds.

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*The Metropolitan  
Transportation Authority  
reported expenditures of \$10.2  
million on green products in FY  
09-10.*

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#### **EFFECTIVENESS OF PROCUREMENT SPECIFICATIONS AND LISTS**

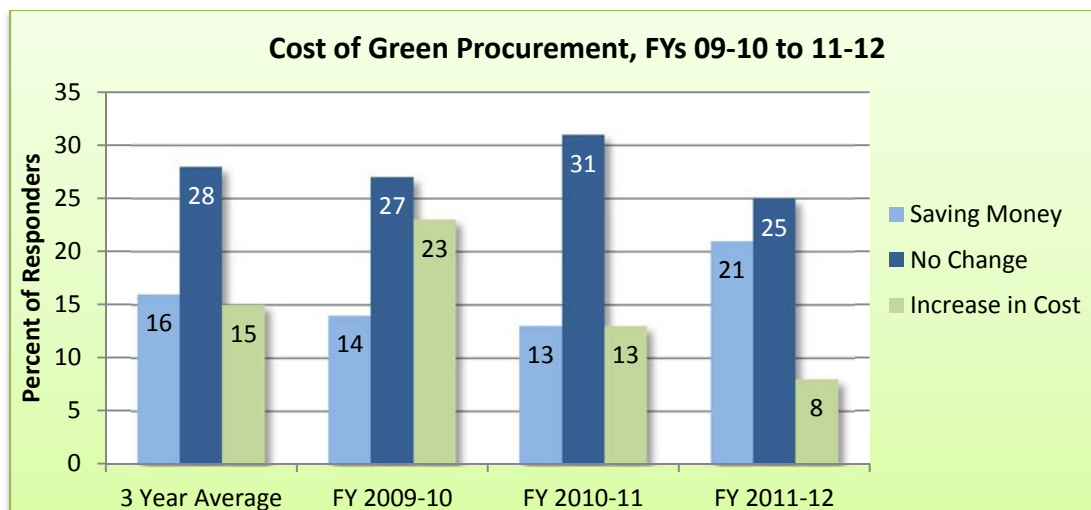
90% of agencies reporting in FY 11-12 said they had consulted the green procurement specifications and lists. This is a slight increase from FY 08-09, when 81% of respondents reported they had reviewed or used the green procurement specifications and lists.

Although agencies consult the specifications and lists, most did not report purchases of green products other than recycled paper in fiscal years 09-10 through 11-12. When asked, “If available, please provide an estimate of the overall amount spent by your agency on the purchase of products and services (other than paper) meeting the EO 4 specifications during FY11-12,” only 20 out of 55 entities answered the question.

This widespread under-reporting can be attributed to a number of causes. One is the fledgling nature of the state’s green procurement program. FY 09-10 was the first year in which green specifications were available for agencies to consult and use. Apart from copy and janitorial paper, and now cleaning products, the majority of statewide contracts are not exclusively green. In addition, and probably most important, few agencies have a system for tracking green purchases. As New York’s green procurement program matures, more green contracts are executed, and green tracking systems are put into place, reporting on green purchasing should become more robust.

The greatest reported expenditures by far were made by the MTA, which reported expenditures of \$10,204,661 on green products in FY 09-10, and the Capital District Transportation Authority, which reported expenditures of \$6,390,413 on green products in FY 10-11 and \$7,483,499 in FY 11-12.

Expenditures for green purchases among the remaining entities reporting on the question ranged from \$601 to \$29,084 for a total of \$158,869 in FY 09-10, from \$549 to \$90,476 for a total of \$1,298,824 in FY 2010-11, and from \$681 to \$563,208 for a total of \$726,713 in FY 2011-12. Combined with the overall total spent on copy paper with 30% or more recycled content and janitorial paper with 100% recycled content (\$17,261,999 in FY 09-10, \$14,642,396 in FY 10-11 and \$12,802,299 in FY 11-12), overall reported green purchasing by state agencies and authorities amounted to \$27,625,529 in FY 09-10, \$22,331,633 in FY 10-11, and \$21,012,511 in FY 11-12.



### COSTS

Overall, the data regarding the cost of green procurement is encouraging. A plurality of agencies reported a reduction or no change in costs as a result of implementing green procurement practices: 41% in FY 09-10, 44% in 10-11, and 46% in 11-12. While 23% of agencies reported an increase in costs in FY 09-10, that number dropped markedly to only 8% in FY 11-12.

A few agencies gave specific examples of cost savings. DASNY realized cost savings by retreading tires. The Department of Labor purchased 36 new alternative-fuel vehicles and increased video conferencing to reduce travel to meetings. DOH found that despite higher per case costs for recycled content paper,

overall expenditures decreased due to a 20% reduction in the number of cases purchased. Empire State Development reported that 100% recycled copy paper was less expensive than 30% recycled, and that during FY 10-11, they not only used a majority of 100% recycled paper but also purchased 260 fewer boxes. OGS reported that the agency is purchasing less, reusing more, and maintaining existing supplies and equipment for longer periods. While much of this is motivated by shrinking budgets, these are green practices which OGS anticipates will become the "new normal" and continue into the future regardless of budgets.

## CHALLENGES AND OPPORTUNITIES FOR GREEN PROCUREMENT

While the last three years of agency reports indicate significant progress by agencies to implement green purchasing practices, agencies were also asked to report on their challenges. By identifying obstacles, the Interagency Committee and Sustainability Coordinators can better troubleshoot solutions and develop strategies for continued improvement.

### TRACKING GREEN PROCUREMENT

Agencies continue to struggle with monitoring and reporting on green procurement. Indeed, as noted above, in FY 11-12 64% of agencies reporting were unable to estimate how much they had spent on green products and services. In FY 10-11, only ten agencies responded to a question asking agencies to share their green procurement tracking strategies. Most entities skipped the question (46) or indicated that they did not have a method for tracking (9). In FY 11-12, agencies continued to report that tracking was a challenge.

In general, agency accounting systems, including the new Statewide Financial System (SFS), are designed to process payments and meet accounting standards, not to capture detailed information about the type or attributes of the products and services procured. Even when systems do capture detail, the lack of standard definitions and coding systems for green products presents a challenge to tracking and reporting progress.

Another challenge is the difficulty of compiling information from decentralized procurement operations. Some entities include results for only a few of their locations. Some small agencies or offices occasionally share resources (such as printers) with other organizations and thus have trouble attributing purchases to a particular entity.

Some agencies, such as DEC, which established dedicated object codes to track green purchasing in FY 09-10, lost that ability with the adoption of the SFS in FY 11-12. At the same time, a statewide tracking system may offer an opportunity to adopt uniform data definitions and reporting requirements across the state, which would increase compliance with EO 4 reporting and help ensure consistent reporting.

Agencies with successful tracking systems that can inform the development of a successful statewide system include:

- *CUNY*, where many colleges have adopted formal systems for tracking green purchasing, including copy and janitorial paper, green computers and green cleaning products. The entire CUNY system is planning to roll out a new uniform procurement system, CUNYFirst, in 2013, which will enhance the ability to track green purchasing.
- *The Department of Ag and Markets and CUNY Law School* are both relying on a system offered by the vendor Staples to identify green products and track green purchases.
- *SUNY Albany*, which is able to track recycled product purchases from several online vendors either by running its own reports or having the vendor supply reports. SUNY Buffalo and SUNY Plattsburgh are also relying on large vendors to supply reports.
- *The Development Authority of the North Country*, which installed purchasing software in FY 10-11 that allowed staff to assign a green procurement ID field to green purchases. This system has proved to be much less labor intensive than tracking purchases after the fact.
- *The Bridge Authority* has created unique sub-ledger tracking codes within its Accounts Payable and General Ledger systems to track green procurements.

Measuring janitorial paper purchases poses special challenges. Unlike copy paper, which is sold in a few standard sizes, janitorial paper comes in many forms (folded sheets, large and small rolls). What constitutes a “case” and how much cases of each type weigh may vary substantially. Furthermore, many small agencies are in leased space and must work with their landlords to comply with reporting requirements (see discussion below). Until these obstacles are addressed, the amount of janitorial paper purchases reported may not provide a complete or comprehensive picture of such purchases for state use. Indeed, on average, only 34 agencies, including SUNY and CUNY, reported on their purchases of janitorial paper in FYs 09-10 through 11-12.

#### **PURCHASES BY CONTRACTORS**

Agencies that contract out for janitorial and other services need to work cooperatively with those contractors to achieve green procurement. For example, leases entered into by OGS contain a provision indicating that the landlord and occupying agency will work together to select green cleaning products and implement effective source-separation and recycling programs. Ideally, agencies in leased space should speak with their landlord representative regarding the EO 4 reporting requirements at the beginning of the lease term or the beginning of a reporting period and enlist the landlord’s assistance in complying with reporting requirements. For example, the Office of Children and Family Services has worked closely with OGS to ensure that green products are included in all new leases under the janitorial section, and the Office of Temporary and Disability Assistance has similarly ensured that all new leases or renewals contain requirements that cleaning supplies meet green standards.

A similar challenge exists in construction-related procurement. DASNY, which manages construction projects on behalf of other agencies, advocates taking a proactive stance in helping its customer agencies comply with EO 4, “[W]e should be providing easy avenues for [our customer agencies] to be greener in their choices up-front, and resources to ease their reporting.”

## FINDING GREEN PRODUCTS THAT WORK WELL AND AT AN AFFORDABLE PRICE

Resistance to green procurement is often based upon a lingering perception that buying green costs more and perceived or actual product performance issues. In the last five years, however, the initial price of certain green products has gone down while performance has gone up. Agency reports provide a promising picture of this trend.

As noted above, almost half of agencies reporting in FY 11-12 (46%) experienced a reduction or no increase in costs associated with green purchasing, while only 8% (4 agencies) experienced an increase in costs, a significant decrease from the 23% (15 agencies) that reported an increase in costs in FY 09-10. Unfortunately, almost half (46%) still did not know. This uncertainty, which is understandable given the current lack of established systems to track green expenditures, is probably contributing to lingering questions about cost, which will hopefully diminish over time.

Complaints about cost have diminished over time, and most have been associated with recycled content paper and cleaning products. As discussed in more detail elsewhere in this report, the price of recycled content paper is stabilizing, and no agencies complained that green cleaning products cost more in FY 11-12.

Other reported instances of increased costs were associated with initial price of items such as cleaning product dispensers, HEPA vacuums and green vehicles. In some cases, the initial price of a green product or service can be higher than that of its less environmentally friendly counterpart. Also, making the switch to green products can sometimes require an up-front investment in new equipment. Budget approvals may be difficult to obtain in these situations, but concerns may be addressed by providing a detailed explanation of the benefits of purchasing the product, including any long-term cost savings.

In addition, it can be time consuming for purchasers to navigate the market, avoid “greenwashing” and identify green products that work effectively. As consumer demand has grown, the market has responded by touting the “green” attributes of products. These claims can be misleading and often provide inadequate information to allow meaningful comparisons. Individual agencies, and even the Interagency Committee, do not have the resources to perform detailed life-cycle analyses of their own. As DASNY noted, “At this point, we are still struggling with some suppliers to get clarity on recycled content and chlorine-free information. Many manufacturers still feel that calling something ‘green’ is sufficient for our needs.” A number of agencies expressed the need to create easy ways for agency purchasers to identify and purchase green products and to inform their staff about the benefits of green procurement. Vendors also need training to help them provide the information agencies need to be EO 4 compliant and satisfy reporting requirements.

While green label programs can be helpful, they are not all transparent or easily comparable, and they have differing degrees of independence, oversight and enforcement. More than 300 environmental labels are used worldwide to identify sustainable products, including 82 in North America alone. As part of the process of developing green specifications under EO 4, the Interagency Committee sorts through these standards and determines which are the most meaningful. In general, the Committee relies heavily on independent, third-party green standard setting and certification programs such as Green

Seal and EcoLogo, but these are not available for all products. The best programs have robust stakeholder participation and monitor performance on a regular basis.

The Committee also takes price, long-term cost savings, market availability and effectiveness into account. The goal of establishing green specifications is to help state and local procurement officers buy green products that work well at an affordable price. The Committee hopes they will inform individual consumer choices as well.

The easiest way for agencies to locate and purchase green products is from statewide contracts. Currently, some products purchased by state agencies are not available on state contracts, and not all products offered on state contracts are green. OGS' statewide contracts for recycled content paper and green cleaning products, however, provide an important service to agencies and illustrate the potential of green contracting. The issuance of new contracts is time intensive and limited by the availability of resources and staff, but the number of state contracts and strategic sourcing procurements for green products can be expected to increase.

### **RECYCLED PAPER**

The continued robust purchase of 100% post-consumer recycled content paper by agencies in FYs 09-10 through 11-12 provides solid evidence of successful culture change. In FY 08-09, a number of agencies reported resistance to the use of 100% recycled content paper, including concerns about its appearance and performance in printers and copiers. As predicted in the first Annual EO 4 Progress Report, the commitment of agencies to using recycled paper has overcome these obstacles. Not only has the use of 100% recycled paper more than doubled, only three complaints about recycled content paper—two about cost and one about performance—were reported in FY 11-12.

While the price of recycled copy paper can still fluctuate somewhat, only a small percentage of agencies reported paying more for such paper in FYs 09-10 through 11-12. As noted in the first Annual Report, committed and predictable demand from large buyers, such as that currently being provided by New York State, sends a crucial and consistent message to the paper industry that investment in the infrastructure needed to offer recycled paper with a high level of post-consumer content is worth the risk. As 100% recycled office papers are more widely produced, prices should become more competitive. In the meantime, agencies kept overall costs down by instituting paper use reduction programs in FYs 09-10 through 11-12.

### **CLEANING PRODUCTS**

Acceptance of green cleaning products has followed a similar pattern. Despite widespread and enthusiastic adoption of green cleaning practices and products by most agencies over the past five years, more than six major agencies, including DEC, Parks, NYPA, MTA, CUNY and SUNY, reported lingering concerns with the cost and effectiveness of green cleaning products on the part of some facility managers in FY 09-10. Over the next two years, complaints significantly diminished, with only two complaints reported in FY 10-11 and one in FY 11-12.

Initially, several agencies reported that the time and effort it can take to test, monitor, and select effective green cleaning products was a barrier to adoption. In response to these obstacles, agencies tried a range of different products, asked suppliers to help with training and to demonstrate proper use, took advantage of OGS' online *Guidelines for Green Cleaning*, List of Approved Products and training, and provided hands-on training to enable cleaning staff to experience the advantages for themselves. CUNY found that:

“Those colleges which have made the most progress in this area adopted a phased approach involving a gradual switch. This involved testing products in only certain areas before adopting them wholesale, training custodial staff in the correct use of new products and equipment, and monitoring the effectiveness of the cleaning program.”

DASNY noted that the biggest obstacle has been training cleaning staff, who do not have access to computers and OGS' online training services. They also found that facilitating communication between cleaning staff and management was important so that everyone understands and is accepting of possible differences in results between green cleaning and conventional methods.

A widely reported obstacle was the difficulty of finding green floor finishes and strippers that work well in high-traffic areas. OGS recognized that initially, green floor finishes and strippers did not provide an acceptable level of performance. Floor finishes that powder easily or require frequent burnishing or stripping can contribute to indoor air pollution. The performance of green finishes and strippers has greatly improved, however, and a number of agencies, including the Insurance Department, NYSERDA and the Higher Education Services Corporation, reported that current offerings on the OGS List of Approved Products provide increased usability combined with green attributes. In light of the continuing challenge of finding effective finishers and strippers, OGS encourages agencies to focus on the selection of finishes that can withstand severe abuse without having to be stripped for three or more years and strippers that are able to completely lift old wax or finish without long soaking times.

### **DISINFECTANTS AND SANITIZERS**

OPWDD, the Office of Mental Health and the Westchester County Health Care Corporation all noted that their biggest challenge is the need to use registered disinfectants which are not covered by the Green Seal or EcoLogo standards adopted by the Interagency Committee for green cleaners. The OGS Green Cleaning Guidelines and website address this issue at some length. In sum, OGS recognizes that certain circumstances (e.g., blood spills) and locations (e.g., food service, swimming pool areas, health centers and day care centers) may require special cleaning or sanitation practices as prescribed by existing law, regulation or professional guidance. EO 4 does not supersede or change those requirements.

Any product that makes an antimicrobial claim must be registered by DEC and the U.S. Environmental Protection Agency (EPA). Bathroom cleaners that are also sanitizers or disinfectants can be certified under the Green Seal GS-37 standard, but EPA does not allow the use of the Green Seal symbol on the label. For routine cleaning, OGS recommends using products, including bathroom cleaners, from the



OGS List of Approved Products for green cleaning. The OGS List does not include disinfectants as a product category because they are not considered cleaners under New York’s green cleaning law.

OGS notes that the public health benefit of using disinfectants and sanitizers in routine cleaning continues to be a topic for discussion. Cleaning with soap and water removes large numbers of microorganisms from surfaces, and cleaning is a necessary first step because many soils reduce the effectiveness of sanitizers or disinfectants. To ensure effectiveness, most disinfectant labels require that surfaces first be cleaned and then kept wet with product for several minutes to sanitize the surface. Routine sanitization of all floors and surfaces is not generally considered necessary. Agencies are advised to establish a policy to explain when the use of disinfectants is necessary.

### **LOW-FLOW FIXTURES**

In FY 09-10, one agency stated that low-flow plumbing fixtures have a higher initial cost, and another stated that such fixtures reduce water pressure and create clogs and backups. While it is true that the initial replacement or installation of any fixture requires a capital investment, low-flow fixtures are not always more expensive than their counterparts. An online comparison of faucets from one manufacturer indicates that the lowest priced available faucet is WaterSense® certified. For toilets, there is a wide range of options in all price ranges that have typical flow efficiency and meet low-flow and WaterSense® standards. WaterSense® products must meet performance criteria as well. Green specifications for toilets and composting toilets finalized by the Interagency Committee in December 2010 have helped agencies purchase low-flow fixtures, and no complaints were reported about such fixtures in FYs 10-11 through 11-12.

### **SOCIO-ECONOMIC POLICY GOALS OF STATE PROCUREMENT**

State procurement serves several policy goals. These include providing increased employment opportunities for associations of individuals who are blind, mentally ill, or disabled, or who are incarcerated or have veteran status (referred to collectively as “Preferred Sources”) and encouraging participation in procurement by certified minority- and women-owned businesses. It is not always possible to achieve multiple policy goals at once. However, when feasible, Preferred Sources and certified minority- and women-owned businesses should be encouraged to offer products and services meeting EO 4 specifications. Currently, many commodities meeting EO 4 specifications are offered through the Preferred Source Program. For example, a number of Preferred Sources offer products listed on the OGS Green Cleaning website.

### **CHANGING EMPLOYEE PERCEPTIONS AND HABITS TAKES TIME AND EFFORT**

In FY 09-10, one agency observed, “Getting some staff to conform to using products that might not look as ‘nice’ has been a challenge.” In a similar vein, CUNY noted, “Time and extended exposure are needed before staff and others embrace or get used to newer ‘greener’ products.” Even in FY 11-12, a number of SUNY campuses stated that motivation, behavior, and changing the culture on campus (especially related to printing) remain challenges. Long-term outreach and training efforts continue to be needed to fully integrate green habits in government operations.



Agencies with multiple procurement units or decentralized decision-making face the challenge of training large numbers of staff. The use of procurement credit cards, which generally do not require pre-approvals or justifications for small purchases, places responsibility for EO 4 compliance on the staff making those purchases. Making sure everyone is familiar with green procurement policies and knows how to identify suitable products and services takes time, effort and the development of effective guidelines on appropriate product selection.

### AGENCY STRATEGIES FOR IMPROVING GREEN PROCUREMENT

A number of agencies responded to the challenges outlined above by introducing or improving strategies for promoting green procurement in FYs 09-10 through 11-12. The most frequently cited were:

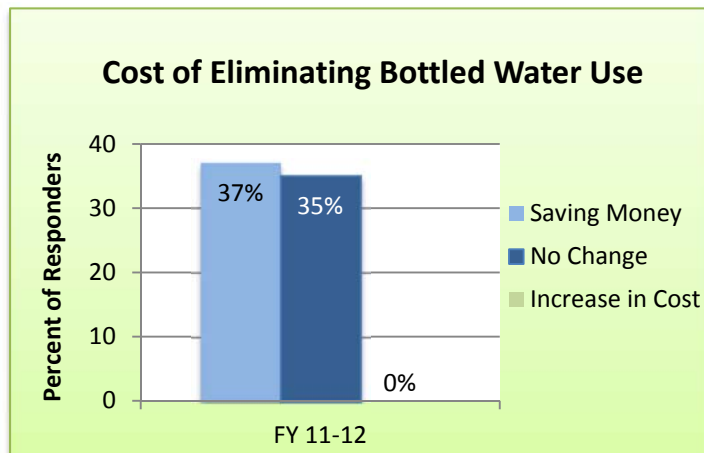
- ***Incorporate Green Criteria into Purchasing Decisions.*** A number of agencies revised procurement guidelines and policies to strengthen and support green procurement, incorporated green procurement criteria into solicitations and contract requirements, and worked to ensure that vendors able to supply green products and services were solicited for bids, RFPs, and other opportunities. At CUNY, “Policies include the replacement of computers and A/C units with Energy Star® or similarly rated items, the phasing out of polystyrene in cafeterias, purchasing Green Seal-certified cleaning products, and the exclusive purchase of recycled content copy and janitorial paper.”
- ***Routinely Share Information among Staff.*** A number of agencies engage in outreach, including training and other forms of education and communication, to ensure that staff are aware of green procurement policies and practices and know how to apply them. For example, the Development Authority for the North Country’s “Green Innovation Work Group” meets regularly “to review each division’s progress in making green procurements” and shares information on products and services.
- ***Task Procurement Staff with Maximizing Green Procurement Opportunities.*** Some entities give their procurement staff an oversight role in reviewing purchases and working with business units to identify and choose green products and services when feasible.
- ***Make it Easy for Purchasers to Identify Green Products.*** A number of agencies, including Ag and Markets, NYSEDA, CUNY and SUNY, have worked with major office supply vendors to create a customized “green shopping list” of EO 4-compliant products, making it easy for staff to purchase green products.

Adoption of these strategies has led to significant success for some agencies. Representative of this group is CUNY, which reported in FY 11-12 that “green procurement choices are now commonplace at CUNY for a range of different items and services,” including paper, cleaning supplies, energy efficient computers and even vending machine selections. The majority of food service vendors operating at CUNY have signed a contract that contains sustainable practice clauses, and many CUNY renovation projects seek to include such green products as low-flow toilets or furniture from sustainable forests.

# RESTRICTING THE USE OF BOTTLED WATER

## BACKGROUND

EO 18 applies to “executive agencies,” which it defines as, “any department, agency, division, commission, bureau, or other entity of the State over which the Governor has executive power.” While no definitive list of covered entities exists, OGS has determined that, accounting for recent agency consolidations, approximately 50 state entities are subject to EO 18’s requirements. A broader universe of state entities is subject to EO 4, which applies to agencies as well as public authorities and public benefit corporations, a majority of whose members are appointed by the Governor. In conducting initial outreach to executive agencies, OGS also reached out to the authorities and public benefit corporations subject to EO 4.



## FINDINGS

Following an outreach effort by OGS in 2009, 66 state entities designated an EO 18 coordinator. Of these, 59 submitted EO 18 plans. Among the 59 entities that submitted plans, 29 said at that time that they had already eliminated the purchase of bottled water, while 22 requested exemptions to continue purchases of bottled water under certain circumstances. The primary reasons cited

were the need for additional time to install suitable fixtures or filtration systems, maintaining bottled water supplies in keeping with emergency plans, and limited purchases of bottled water for use in locations and circumstances where tap water is unavailable (such as for toll booth staff, bus operators on unusually hot days, and clients in transit). These types of exemptions are allowed under EO 18.

For the FY 09-10 reporting year, updated information on EO 18 compliance was gathered along with agencies’ EO 4 reports. Of the 74 entities that completed EO 4 reports for 09-10, 65 entities—including 13 not subject to EO 18 requirements—answered at least some of the questions in the EO 18 section of the report. The remaining 9 entities skipped the EO 18 section on the grounds that the Order does not apply to them.

Agency reports for FY 09-10 indicated excellent compliance with the directives of EO 18. Most agencies clearly embraced the intent of EO 18, and most reported that they had been able to comply with EO 18 requirements. Some entities not subject to EO 18 nevertheless adopted the goal of operating more sustainably and detailed steps taken to eliminate purchases of bottled water. Only 19 entities (down from 22 in the initial plans) said that they still required exemptions allowing the purchase of bottled

water in one or more locations. Agencies with large centralized offices served by reliable municipal water supplies generally reported high levels of compliance without a need for exemptions. The main need for exemptions arose for agencies with staff working in remote locations or in non-office settings. Meeting the needs of clients in health-care or other non-office settings also resulted in requests for exemptions.

More specifically, 11 agencies said that suitable tap water was unavailable in some locations. In some cases, an infrastructure upgrade was pending, while in others, agencies had determined that it was not cost effective to upgrade water supply systems at certain locations (i.e., small offices in remote locations). Six agencies cited a need to continue purchasing bottled water for emergency planning purposes. Six agencies indicated that they needed to continue purchasing water to meet particular needs of clients or the public. Examples include water for detained youths during transport over long distances, supplies of bottled water in food service operations as a healthy alternative to sugary drinks for purchase by clients or the public, water for use by clients using indoor or outdoor exercise or recreation facilities, and water for performers at outdoor events.

The FYs 10-11 and 11-12 reports document that the state agencies covered by EO 18 have virtually eliminated the purchase of bottled water. No agencies are purchasing bottled water without a special exemption, and only 9 agencies (out of 35 reporting) continue to use bottled water under special circumstances, such as the transport of detainees for long distances or at remote sites where potable water is unavailable. In addition, 80% of authorities not required to eliminate bottled water use have restricted its use to special circumstances.

The main need for exemptions continues to be for staff working in remote locations or meeting the needs of clients in health-care or other non-office settings. For example, several DEC regional locations have wells with unpleasant tasting water. In several cases, an infrastructure upgrade was pending, while in several others, agencies had determined that it was not cost effective to upgrade water supply systems at certain locations that were either considered temporary or too remote.

In regard to costs, 37% of agencies and authorities reporting said they reduced costs by eliminating bottled water use, while 35% said they saw no change in costs, and none reported an increase in costs. The remainder, 28%, did not know the impact of reducing bottled water use on costs. In sum, 72% of agencies and authorities reported a decrease or no change in costs from eliminating bottled water use, and no agencies or authorities reported an increase in costs.

Several agencies mentioned the importance of education and communication as keys to the success of their EO 18 implementation efforts. The Department of State, in particular, offers a model for maximizing staff acceptance of the curtailment of bottled water purchases through transparency and proactive communication. DOS first tested the tap water for lead and bacteria and determined that no problems existed. Next, the agency notified its unions of the results, made copies of the results available, and informed staff of the date on which bottled water purchases would cease. This approach

engages staff and directly addresses potential concerns. NYPA noted that EO 18-related changes in the workplace had led some employees to rethink their bottled water use at home.

Agencies have effectively garnered employee acceptance of tap water. Where bottled water used to be provided at meetings, often pitchers of water are now provided. And where employees still prefer bottled water, in some cases employees have pooled their own resources and purchased refillable water cooler jugs from private vendors.

Generally speaking, New York State has moved to eliminate or reduce bottled water use in a quick and effective manner. While EO 18 reporting is not finely tuned enough to capture cost savings in dollars, it is clear that reducing bottled water use has not resulted in any additional costs to the state.

EO 18 empowers the Director of State Operations to make a determination that full compliance with the Order has been achieved. Agency reports indicate that most agencies have eliminated bottled water use, with significant environmental benefits in cost savings to the state. To maintain these benefits, OGS recommends that avoidance of unnecessary bottled water use be incorporated into agency sustainability programs under EO 4, and that questions on bottled water use continue to be included in the sustainability reports filed by agencies each year.

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## CONCLUSION

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The agency reports compiled and summarized for FYs 09-10 through 11-12 demonstrate widespread progress toward achieving the goals of EO 4 and EO 18. The purchase of 100% post-consumer recycled content paper has soared, paper use has been significantly reduced, meaningful baselines for measuring progress toward EO 4's waste and paper use reduction goals have been established, and executive agencies have virtually eliminated the purchase of bottled water. This progress has been made possible by a strong partnership between OGS and DEC, effective collaboration among agencies, and the hard work of Sustainability Coordinators and agency staff across the state. Agency activities show clear commitment to pursuing sustainability in all areas of focus, from waste reduction to green purchasing. While certain challenges remain, progress to date establishes a solid promise of continuing success.