

City of Durham, North Carolina
Highlights of Efforts to Create a Sustainable City Government
May 2009

Throughout City government, all departments are making changes in their business practices to reduce our impact on the environments. The changes while large and small in impact, together add up to significant accomplishments. The City has established a Green Team, led by the City-County Sustainability Manager, that supports and promotes activities to help our government become more sustainable. This document highlights the types of activities that departments have reported engaging in to promote environmental sustainability.

General Office Procedures

Most departments have reduced their environmental impact through some basic resource conservation procedures. In November 2008, the City adopted an “Idle Reduction Policy” and in May 2009, the City adopted “Environmental Expectations for Employees” and “Environmentally Preferred Purchasing Policy” to make many of these practices standard citywide.

Double-sided copying whenever practicable

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|--------------------------------------|------------------------------------|
| • Audit Services | • Fire |
| • Equal Opportunity Equity Assurance | • Human Resources |
| • Human Relations | • Clerk |
| • City Manager’s Office | • Technology Solutions |
| • Finance | • Budget and Management Services |
| • Inspections | • Public Works |
| • Solid Waste | • Economic & Workforce Development |
| • Water Management | |
| • Parks and Recreation | |

Lights out when spaces are not in use or when external light is adequate

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Computer equipment off over nights and weekends

- Equal Opportunity Equity Assurance
- Human Relations
- Emergency Response
- Manager's Office
- Finance
- Inspections
- Solid Waste
- Parks & Recreation
- Human Resources
- Clerk
- Public Works
- Police
- Economic and Workforce Development

Paperless systems

- Audit Services (planned)
- Human Relations
- Durham One Call – Online manual for Call Center Representative training/updates and online process to follow up on past due service requests
- Inspections – Paper copies of the applications are being reduced by use of the web applications on the Land Development Office software; no longer print copies of the electrical, plumbing and mechanical permits since they are available online. This represents more than 50,000 pages of paper per year. Encourage engineers/contractors to e-mail copies of plot plans and engineering letters to eliminate paper copies.
- Parks & Recreation -- New recreation software (implementation planned July – September 2009)
 - Will reduce the use of paper – NCR receipts, cash reports, financial reports.
 - Will store all records electronically – cutting down on space need for paper files.
 - Will be able to track and report on program registration and attendance numbers.
 - Online registration will reduce the number of large after hour registrations we will need to hold. This will save on part-time staff costs as well as registrants' gas usage to drive to each center individually to register for programs.
- Human Resources
- Budget and Management -- Reduced the number of paper budget books; CDs and web used as alternatives (40,000 sheets saved)
- Neighborhood Improvement Services -- Staff created draft "Paper Waste **LESS** Policy" to reduce the consumption of paper while reducing cost - **Lessen** the **Environmental** impact and **Start Saving**. The behavioral changes of this policy will help to reduce waste and reuse material. Some include:
 - Using email to transfer information instead of paper copies.
 - Printing and copying two-sided.
 - Using print preview to review documents instead of printing hard copies.
 - Creating electronic filing systems for documents from scanned material.
 - Reusing clean sides of already printed documents for writing, etc.
 - Using SharePoint sites for electronic central storage locations.
- Public Works
- Planning
- Police -- Adopted E-cite as an electronic paperless method of sending traffic citations directly to the courts which not only saved paper but eliminated the need to hand carry citations to the courthouse.

Reduce/Reuse/Recycle

- Audit Services
- EO/EA
- Human Relations
- City Manager's Office
- Water Management
- Parks and Recreation
- Fire
- Human Resources
- Clerk
- Finance – No printed bids
- Inspections –
 - Eliminated the process of leaving a paper copy at the jobsite of any inspection that is approved. We now leave only a copy if there are code violations.
 - We are proposing a \$5 surcharge to each permit (electrical, plumbing and mechanical) that is submitted on a paper application instead of electronically on the Land Development Office software. This will additionally reduce the paper applications and the need to microfilm the application.
 - Our Department is recycling used cartridges through Children's Miracle Network, which not only recycles the cartridges, but donates to the charity for every ink jet cartridge received; they have provided collection boxes for us and will also send shipping labels/postage when we fill up a box and send it---no cost is incurred to use the recycle procedure.
 - Use of fewer envelopes by sending credit memos only once a week; mailing electrical, mechanical, plumbing permits and CO's once a week.
 - We scan building plot plans and surveys into the Land Development Office software system. This eliminates the microfilming of these documents (film is an oil-based product).
- Solid Waste -- Eliminated the need for desktop printers by linking all computers up to a central network printer thus eliminating the need to purchase replacements for ink cartridges.
- City Manager
- Neighborhood Improvement Services
- General Services
- Public works
- Police
- Economic & Workforce Development

Purchasing

- City Manager adopted Environmentally Preferred Purchasing Policy in May 2009
- Parks & Recreation - When purchasing cleaning products, we request quotes for "Green Seal certified products and we review dilution ratios of concentrates to extend use.

<p>Energy-Efficiency in our facilities (lighting, heating, water conservation, other)</p>
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- Community Development
- Emergency Communications
- Finance
- Solid Waste
- Water Management:
 - Timed lights in restrooms, file room.
 - Use of digester gas for heating and aeration at Waste Water Treatment Plants
 - Water-Wise landscaping projects at Department of Water Management facilities and public projects
 - Water audits conducted for City facilities (began several years ago)
 - Retrofitting of Parks & Recreation facilities among others
 - Sponsored retrofit of City Hall restrooms during renovation to assure use of higher water efficient toilets and fixtures
 - Landfill Gas Utilization Project about to start construction
- Parks & Recreation
 - New recreation centers are having mechanical systems synced for efficiency. – Planned (i.e. Walltown), Updated ice machines at rental facilities to newer more efficient models
 - Water Cisterns installed Holton (Planned), Bethesda (Planned) and Central Park (completed May 2009).
- Police - When negotiating new leases, we encourage landlords to do up-fits with the environment in mind. For example, using solar hot water heaters.
- Neighborhood Improvement Services and Community Development occupy a LEED Certified office space.
- General Services
 - Has an active Energy Action Committee with members from all divisions who meet frequently to pursue the continued reduction of energy use by our department.
 - Installed a Solar Water Heating System at the Fay Street facility.
 - Placed “Please Turn Off Lights when not in use” decals in many major city owned facilities such as City Hall, City Hall Annex, General Services, Police Headquarters and provided decals to both the Parks and Recreation Department and the Durham Fire Department.
 - Continued to monitor, record, chart and alert the Operations and Maintenance Division on any excessive use of natural gas and/or electrical power for the Fay Street facility.
 - Played a major role in the procurement and distribution of Compact Fluorescent Lights (CFL) during the City Employee’s Energy Reduction campaign during the winter months of this fiscal year.
 - The HVAC Section of our department has installed Cogged-Belts on a majority of our electric motor operated machinery in an effort to reduce pulley friction and improve motor energy efficiency.
- Fire
- Economic & Workforce Development

- In an effort to reduce the consumption of electrical power consumed by normal incandescent lights of Christmas Holiday street decorations the General Services Department purchased state-of-the-art Light Emitting Diode (LED) decorations for the holiday tree located at the SunTrust Plaza.
- The Facilities and Operations Division has reduced the operating Pounds Per Square Inch (PSI) from 120 psi to 80 psi on the air compressors at General Services, City Hall, City Hall Annex and the Police Headquarter which results in less electric usage since the motors run less.
- Planned activities include:
 - Implement a Lighting standard for the department. Implement an Indoor Temperature standard for the department.
 - Install modulating gas valves on the three Roof Top Units (HVAC) at the Fay Street facility in order to significantly reduce the natural gas consumption.
 - Have all lights in installed vending machines turned off at all times.
 - Establish Design criteria for new and renovated facilities that will meet LEED certification, at a minimum.
 - Establish a standard when making a Capital Project Budget Request that will include funding for studies for Life-Cycle Cost of the facility, facility Commissioning as well as Retro-Commissioning of existing buildings.
 - Implement a facilities maintenance policy that will require the replacement of any non-functional lighting fixture to be replaced with the most energy efficient fixture feasible.

Fleet/Transportation/ Fuel Use

With the adoption of an Idle Reduction Policy and aggressive efforts to reduce fuel, we have a number of departments that are making improvements in the energy efficiency of our fleet.

- Finance
- Solid Waste
- Fleet
 - All admin car purchases must meet the EPA's SmartWay classification.
 - We run ultra low sulfur diesel fuel that reduces Nitrogen Oxide and particulates by 90% in our 2007 truck fleet.
 - We place nitrogen in our vehicle tires to reduce fuel consumption.
 - We manage our own state emissions program to keep all of our vehicles operating within EPA air quality standards.
 - Our Preventive Maintenance program assures engines are operating at optimum performance.
 - We have applied for a Department of Energy air quality grant to replace older diesel trucks.
 - We have applied for a grant with Southern Research out in Treyburn to retrofit many of our older engines with particulate systems that will reduce Nitrogen Oxide emissions by 99%.
 - We are in the planning stages working with TJCOG for two E85 refueling stations. Site surveys are being completed now and we are waiting on the results for feasibility.
 - We have established a stormwater pollution prevention plan and have been monitoring discharge samples for two years.
- Inspections -- Our Building Inspectors are on a four-day work-week which is a way of reducing harmful emissions and conserving fuels for the City.
- Public Works -- Are not fueling cars on Ozone Action Days or in mornings if needed. Use of Google maps and live maps to greatly reduce need for site visits. Grouped field investigations when possible to reduce travel. Purchasing hybrid buses for DATA.
- Police - We utilize bicycles for patrol vehicles where practical, we have ordered an electric car for patrols on the trails, we downsized from the Crown Victoria to the Chevrolet Impala for use as administrative vehicles.
- Solid Waste -- Implementing Route Smart technology to develop most efficient routes and save fuel.
- Fire
- Water Management

Information Technology

Technology Solutions has implemented a number of energy and cost saving programs with the use of technology.

- Virtualization and consolidation of 51 servers to 23 servers (*implementing*)
When completed, estimate will save \$20,000 per year in energy cost and a reduction of 112 tons of green house gas emissions a year
- New HVAC for Data Center (*Implemented*) *Estimated 10% energy reduction for cooling data center*
- Assisted HR with the Telecommuting policy HRM-706 (*Implemented*)
- Consolidated 2 Xerox high speed printers located in Data Center for billing into one (*Implemented*)
- Replaced all City computers with EnergyStar compliant computers (*Implemented*)
Estimated saving of \$38,000 a year in energy cost and a reduction of 283 tons in green house gas emissions a year
- Replaced all monitors with EnergyStar compliant monitors (*Implemented*) *Estimated saving of \$59,000 a year in energy cost and a reduction of 607 tons in green house gas emissions a year*
- Create policies/procedures to place the majority of the City's computers in hibernate mode after 2 hours of inactivity and monitors in hibernate after 20 minutes of inactivity – this is equivalent to turning the computer and monitor off (*testing for implementation*)
Estimated savings of \$100,000 per year and a reduction in green house gas emissions of 1,200 tons a year
- Install airflow management system (*planned*) *Estimate reduction in energy consumption for cooling data center by 30%*
- Helped Waste Management with Route Management System implementation to reduce fuel cost (*Implemented*)
- Helping Waste Management with PinPoint GPS system implementation to reduce fuel cost (*Implementing*)
- Replaced 434 inkjet printers with EnergyStar compliant inkjet printers (*Implemented*)
Estimated savings of \$217,434 per year in energy cost and a reduction in green house gas emissions of 22 tons a year

Environmental Efforts in the Community

The City is able to influence the residents, visitors and businesses in Durham to improve their sustainable practices through our programs, policies and practices. In addition to extensive education conducted by the Sustainability Manager, Parks & Recreation, Public Works/Stormwater, Keep Durham Beautiful, Water Management and others, some of our newer efforts to make our community green are highlighted below.

Community Development

- The development of Eastway Village, a project that has been implementing green building practices in the development of affordable housing units. Currently, Community Development is looking to receive Green Building Certifications (GBC) for 14 of the housing units. There is a specific criterion that needs to be adhered to throughout the construction of the units in order to achieve a high enough score to obtain a GBC. Items such as low-flow toilets, shower heads, drought resistant plants, increased insulation, low energy efficient windows, and using recyclable environmentally friendly construction materials, are a few examples in green building development. The department created construction design specifications which will incorporate Advanced Energy's "System Vision Requirements" into the construction of our affordable housing units. The DCD participated in the annual Green Home Tour sponsored by the local Home Builders Association, which includes a tour of Eastway Village.

Inspections

- Water conservation – Our Chief Plumbing Inspector helped change the City Code of Durham to allow rain water to be used to flush toilets and urinals.
- Water conservation – Our Chief Plumbing Inspector worked with Water Management to create and implement a program for use of gray water. This program defines the requirements from metering and plumbing to meet the City Ordinances and State Building Code for a gray water system. Our Chief Plumbing Inspector has worked with several engineers on the installation of gray water systems.
 - 213 N. Gregson Street, Trinity Design Build, was the first building in Durham to use rain water to flush the toilets.
 - 704 N. Buchanan Blvd. was the first single family dwelling to use gray water to flush their toilets.
 - 1960 Ivy Creek Blvd., Blue Cross/Blue Shield, has built a new five-story building that will utilize rain water from its roof (3-30,000 gallon containers) to flush 25 toilets and 10 urinals.
- Implemented an extra inspection for the energy star certification houses (now part of green build) for the insulation around the tubs/showers.

- Using their own time and money, our Chief Electrical Inspector, Electrical Field Supervisor and Senior Electrical Inspector attended a 7-hour class on “Solar Photovoltaic Systems”. As a result of this training, they are receiving calls from across the country with questions in regard to the proper code installations of these systems. They will continue to attend more classes when available.

Solid Waste

- Increased recycling (recycling will be collected by Solid Waste staff; residents will receive a larger cart for recyclables)

Water Management

- Water Use it Wisely Campaign
- Toilet Rebate Program, Showerhead exchanges

Parks & Recreation

- Pilot recycling program in operation at West Point Park and Valley Springs Park – Underway/Ongoing
- Hosted an annual Earth Day Festival which promotes environmental responsibility to our community

Neighborhood Improvement Services

- Deconstruction as alternative to demolition of structures involved in code enforcement process. NIS in partnership with the Neighborhood PRIDE Alliance’s Preservation Committee has explored ways to encourage deconstruction as an alternative to demolition.
- NEEM at Roll Garden community initiative
 - NIS in partnership with the Neighborhood PRIDE Alliance’s Preservation Committee has established the ground work to assist NEEM at Roll Gardens to establish urban gardens throughout the City of Durham.
 - Urban gardens address issues such as food security, good nutrition and obesity, education in sustainable agriculture (growing green), reducing the carbon footprint, and rising energy and food costs.

Public Works

- Installation of LED traffic signals and pedestrian signals throughout Durham.
- Coordination of the bicycle and pedestrian program, including BPAC, Bike to Work Week, development reviews, implementation of the bike and pedestrian plans, etc.
- Participation in the Triangle Transportation Demand Management program.
- Planning activities for alternative modes of transportation – transit, bike, pedestrian, HOV, etc.
- Will have 20 hybrid buses delivered in October 2009.
- Solar lighting at shelters.
- Tightened stormwater requirements in an area of the city that was not covered by other rules

- Conducted multiple projects/programs to engage public: adopt-a-stream, stream clean-ups, labeling storm drains, education about water quality issues, etc.
- Created watershed improvement plans
- Led City's green business program

Planning

- The Planning staff is leading a city-county team of staff to propose amendments to the Unified Development Ordinance (UDO) to upgrade environmental protection, including addressing sedimentation and erosion control, water quality and stream buffers, tree preservation and protection, and site preparation and mass grading.

Economic & Workforce Development

- Administering a Brownfields Assessment Grant and have been re-funded by EPA for \$400,000 to do more assessments of potentially contaminated properties in Northeast Central Durham
- Administering a Brownfields Job Training Grant in which 60 people will be trained in Environmental Job Technology fields. Thus far, 17 individuals have graduated and 12 have been placed in 3 - 6 month work assignments within City departments or area non-profits in "green-related" jobs
- Worked with Carolina Biofuels on a \$500K grant proposal to the Walmart Foundation and U.S. Conference of Mayors for Green Jobs Training
- Working on a Biotechnology Initiative with the Durham Chamber, Durham Tech and NECD Leadership Council to get 50 NECD residents placed into bio-tech jobs with Durham companies
- Exploring "Green Jobs" as an actual high demand category that can be included as one of our Workforce Investment Act-eligible training offerings for job seekers