

*Annual Report to the Mecklenburg County Board of Commissioners
Environmental Leadership Policy Implementation
September 2008*

Executive Summary

In 2004, the Mecklenburg County Board of Commissioners adopted the Environmental Leadership Policy (Policy) prescribing the environmental principles to be adopted in daily activities conducted by the County. The Environmental Leadership Team (ELT) implementing the Policy Action Plan currently includes members from: Land Use and Environmental Services, General Services, Real Estate Services, Park and Recreation, Environmental Health, and Char-Meck Purchasing. The ELT is expanded to include representatives from Charlotte Mecklenburg Libraries (CML), Charlotte Mecklenburg Schools (CMS), and Central Piedmont Community College (CPCC) for the 2008 implementation and reporting cycle. The mission of the ELT is:

Mecklenburg County Government will operate in a manner that conserves and protects our air, water and land resources; become a model of environmental stewardship for local governments, businesses, and industry in our region, and; use and apply the County's existing and future resources wisely for the benefit of its citizens.

Programs to implement the Policy Action Plan evolve as accomplishments are realized and the ELT strives for continual improvement. The County should be proud of how it is conducting daily activities with regard to the environment, however, it is recognized that there is always room for improvement. This report identifies previous accomplishments, current projects and future plans envisioned to carry out the Policy Action Plan. The following is an overview of the information provided in the report.

Reflections Over the Past Year:

The Environmental Leadership Team worked diligently and successfully at creation of specific goals for each principle in the Environmental Leadership Policy during 2007. County departments began to work together in 2008 through the Green Purchasing and Energy Team subcommittees of the Environmental Leadership Team. The first attempt to meet Policy Action Plan Goals resulted in a successful 66% achievement, with only 7 goals left unmet. The County has challenges for 2009 with more stringent goals to meet, but the Environmental Leadership Team is up to the task.

Many County programs are resulting in reduced environmental impacts and are realizing improvements on 2008 accomplishments.

Pollution Reduced

- Reduced ozone-forming emissions from the County vehicle fleet by 13.4 tons (9.9% lower than 2006 emissions),
- Computer monitor energy management program continued to avoid 1,226 tons of carbon dioxide emissions,

- Recycling program diverted 2,400 tons of paper waste recycled equivalent to 14.1% of the total waste, ahead of our FY08 goal of 12.5%,
- Green cleaning paper products purchased resulted in saving an estimated 185 tons of virgin wood saved from being cut; 2,317 pounds of air pollutants avoided; 216,701 kilowatt-hours of energy not required; and 369,978 gallons of water from being utilized.

Programs Created

- Pilot can and bottle recycling program was expanded throughout County facilities and at selected CMS facilities, building on the 2007 effort. This pilot program resulted in 93,000 pounds of recyclables diverted from the waste stream a nearly four fold increase from the 28,000 pounds collected in 2007.
- The County became an Energy Star Partner with the US Environmental Protection Agency.

Land Stewardship

- Land Preservation was accomplished through the acquisition of 372 acres for parks and open space, greenways, and watershed protection, 15.7 acres within the floodplain, and 41 acres of easements. An increase over the 350 acres acquired in 2007.

Involvement

- CML, CMS, and CPCC accepted participation in the County's Policy Action Plan as well as adopting a place within the Environmental Leadership Team.
- Employee incentive programs have been expanded from the very successful Best Workplaces for Commuters (encouraging County employees to utilize the transit system) realizing an increase of participants to 311 (equivalent to 6.4% of County employees) in FY08, up from 5.9 % of employees in FY07. Additionally, 10 employees were recognized as Green Guardians after being nominated by their peers.

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1.0 Policy Requirements

In February 2004, the Mecklenburg County Board of Commissioners (BOCC) adopted an Environmental Leadership Policy (Policy) stating that County government should “operate in a manner that conserves and protects our air, water and land resources, become a model of environmental stewardship for local governments, business and industry in our region, and use and apply the County’s existing and future resources wisely for the benefit of its citizens.”

The policy includes twelve guiding principles related to energy conservation, waste minimization, environmentally sensitive purchasing practices, air, land and water protection, employee incentives, and directives to integrate environmental considerations into all County activities.

1.1 Environmental Leadership Team

The resolution further instructed the County Manager to appoint an Environmental Leadership Team (ELT) to identify, evaluate, prioritize and act on environmental aspects of County operations that warrant examination, modification or corrective action.

County staff appointed to the Environmental Leadership Team includes:

County General Manager – Bobbie Shields
Environmental Policy Administrator – Heidi Pruess
LUESA Director – Cary Saul
Director of Solid Waste – Bruce Gledhill
Director of Air Quality – Don Willard
Director of Water and Land Resources – Dave Canaan
Director of General Services – Leon Miller
Director of Real Estate Services – Mark Hahn
Director of Environmental Health – Bobby Cobb
Branch Manager of Park and Recreation – Michael Kirschman
Char-Meck Purchasing – Karen Ruppe

Members added to the ELT in 2008 included:

Charlotte Mecklenburg Schools - Brian Kasher
Public Library of Charlotte and Mecklenburg County - Susan Herzog
Central Piedmont Community College - Wanda Towler

The ELT also developed two sub-committees with the following membership:

Green Purchasing Team

Char-Meck Purchasing
Park and Recreation
Solid Waste
Information Services and Technology
Social Services
Sheriff
Public Library of Charlotte and
Mecklenburg County

Energy Team

Real Estate Services
Air Quality
Park and Recreation
Charlotte Mecklenburg Schools

1.2 BOCC Reporting

The Environmental Leadership Policy resolution requires that County staff report annually to the BOCC regarding actions taken in accordance with the Policy. Guiding Principles were adopted within the Environmental Policy to guide recurring activities within the County. Environmental aspects of County operations and their relation to the Guiding Principles of the Policy are identified in Appendix 1. There have been numerous accomplishments and the County continues to strive for successful implementation of the Policy through key projects.

2.0 Status of Guiding Principles

An action plan established specific goals for the Environmental Leadership Policy in 2007. This 2008 report identifies the County's first attempt to reach the established short-term goals. The County's Environmental Leadership Team and sub-committees worked diligently to implement programs that would attain the goals for each policy principle.

2.1 Comply with Applicable Regulations

The County did not identify any deficiencies in compliance with all Federal, State, and local regulations during FY08.

2.2 Energy Conservation

The County Energy Plan adopted by the ELT in 2007 is a guide for County departments to conserve energy in County operations. Both the Real Estate Services and Park and Recreation divisions have developed specific Action Plans to implement the goals of the Energy Plan. The County adopted three energy conservation goals for 2008:

- ❖ Energy Savings of 5% kWh/square footage from 2007 levels,
- ❖ Building Conditions Assessment of RES facilities 100% complete, and
- ❖ County-wide Building Energy Audits 20% complete.

The County was unable to attain the Energy Savings goal identified, reaching only a 3.7% energy savings, but did accomplish the other goals above through implementation of the action plans as identified below. Additionally, the County has become an US Environmental Protection Agency (USEPA) Energy Star Partner. This partnership with the USEPA provides tools for establishing baseline energy consumption and quantifying facility energy performance against similar facilities in our region. As the County has the opportunity to review Energy Action plans and understand the impact of above average summer temperatures on potential energy savings, it is estimated that progress toward the 2020 goal will be increased. Finally, the County conducts an annual analysis of energy usage to utility rates structure to assure that the best rate is attained for the County. The FY2008 analysis resulted in a change of rate plan for 14 County facilities.

How did we accomplish Energy Conservation?

Energy use in 2007 was on average 17.79 kWh/square foot. Energy savings were calculated through examination of utility records for 2008 and were compared to 2007 records. Only about one half of County facilities were included in this electrical usage analysis for a variety of reasons. Buildings like Criminal and Civil courthouses were not compared as they were mostly unoccupied since the opening of the New Courthouse. Carlton Watkins Center was not included because during FY 07 the lower level of the building was unoccupied while a major renovation was under way. Hal Marshall Annex was not included as it had occupancy changes, and then a portion of the building became unoccupied when Freedom Center opened. The County has realized a 3.7% kWh/square footage electric savings (average 17.13 kWh/square foot) for 2008. This savings results in approximately \$70,000 saved in the buildings studied, as well as decreased air emissions of 772 tons of carbon dioxide.

1) Energy Surveys and Benchmarking

Energy surveys have been completed on many and benchmarking has been completed for all 42 buildings under Real Estate Services responsibility as of the start of FY 08. The County will use this information to target and track improvements in energy usage over time. The facility energy audits conducted by RES account for 90% of the square footage of County facilities (managed by Real Estate Services) that are not currently undergoing major renovations. Park and Recreation has set a goal for FY2009 to execute energy audit ten (10) facilities at an expected cost of \$30,000.

2) Lighting systems

Lighting fixtures are continuing to be upgraded to be more energy efficient and less harmful to the environment.

Additional lighting retrofits from T-12 lamps to T-8 lamps and electronic ballasts completed in FY 08 include WTVI, Project Access, Fighting Back, Board of Elections, and the Wallace Kuralt Centre Cafeteria. Two hundred additional fixtures were upgraded at Sam Billings Center. This includes approximately 600 light fixtures, approximately 2000 bulbs at 8 watts savings per bulb. In addition, warehouse lighting was upgraded at Spratt Street A, and Spratt Street B. Lamps were changed from standard 400 watt lamps to 360 watt lamps with higher lumen output, resulting in a 10% energy reduction and a better working environment.

The County is also exploring solar technology use. The parking deck on McDowell Street have T5HO lamps that are now controlled by photocell on the lower levels and full solar lights on the top deck. The lighting levels are increasing to enhance safety in the facility, and the utility costs are expected to stay at or near current levels. Lamp life, and light level maintenance over time should be improved as well. Park and Recreation has set a goal of five (5) (modest) solar installations for FY09.

A number of our energy audits have pointed out the benefit of installing occupancy sensors in spaces like break rooms, conference rooms, offices, and restrooms. With FY 08 operational money we have contracted for the installation of 400 sensors that will be installed in FY 09.

3) HVAC Systems

Based on recommendations from the Energy Audits, HVAC system renovations have been completed for several County facilities including: Watkins, WTVI, Billing and Spratt B. In 2009, the County Courts Office Building's HVAC system is being replaced with a new outside air system that will improve the ventilation in the building. The system incorporates an energy wheel that will recover energy from the exhaust air stream and precondition the supply air stream to reduce the need for purchased energy. During the course of this project we will be installing additional energy saving equipment to make the cooling tower and pumping systems more efficient. The historical HVAC

system at this facility was retrofitted about 20 years ago with a type of energy recovery system that had failed and therefore had been disabled.

At the food bank warehouse located on Spratt Street, the heating system is being upgraded from the existing unit heaters to infrared heaters. Instead of heating the air, these heaters will heat the objects and people in the space, thus saving energy.

With a number of the projects that are underway, we are installing new HVAC control systems. We have worked with a control system consultant who is well known for his energy savings control strategies. To make sure these systems are used to their best advantage, they are being configured to be very user friendly. These systems will also be web based, so that in many cases, troubleshooting and setpoint changes can be done remotely, saving trips to the site.

4) Other facility efficiencies

Roofing replacement projects have been completed at Watkins Center and Tom Ray Center. Highly reflective metal roof and the most reflective granular roofing products were utilized to replace the dark shingle or granular roofs that adsorbed heat, causing additional energy requirements to cool the facilities.

A significant amount of the cost for water is the energy used to treat and distribute it. To save water and energy, we have similarly purchased 100 sensor faucets. The majority of these are being installed in FY 09. Additionally, water meters have been installed on the New Courthouse cooling towers to discover if this billed water usage for facility should be adjusted to reflect only that water that is discharged for wastewater treatment (the point at which energy savings would be realized).

An Indoor Air Quality monitoring system that allows employee control ventilation was installed in the New Courthouse during 2008. This new Aircuity System has a projected energy savings of \$156,000 annually.

5) Computers

Energy is also heavily utilized to operate the computers for County staff. Efficiencies are realized by implementation of the computer monitor energy management program endorsed by the USEPA in approximately 90% of the County's computers (~4,500 computers). During FY08 computer energy efficiencies were equivalent to: 1,226 tons of carbon dioxide emissions avoided, removing 212 cars from the road, or planting 334 acres of trees to sequester the carbon dioxide emissions. The County is continuing to realize energy savings through the computer monitor purchasing program that will eventually replace all Cathode Ray Tube (CRT) monitors with more efficient Liquid Crystal Display (LCD) monitors. The goal is for the County to solely operate LCD monitors by 2010 with an anticipated 60% increase of the efficiencies to date.

Energy Conservation Goals for 2009 include:

- ❖ Energy Savings of 7.5% kWh/square footage from 2007 levels,
- ❖ RES Building Energy Audits 90% complete, and
- ❖ Park and Recreation Facility Energy Audits 40% complete.

2.3 Waste Minimization and Recycling

A commercial waste characterization study completed in 2005 categorized the >500,000 tons disposed of by commercial entities that fell into identifiable waste streams for recycling efforts. This characterization was further refined by two additional studies in 2008, one to better understand the potential for recycling by small businesses, another to characterize the construction and demolition waste in the commercial wastestream. Since County operations are generally characterized as commercial type activities, the results of these studies help target opportunities for greater waste reduction.

The County is actively reducing the quantity of potentially recyclable waste being disposed in the landfill. Specifically, the County-wide Paperchase Recycling project has recovered and recycled approximately 2,400 tons of waste from the County operations solid waste stream in FY08. We have adopted a long term Year 2020 recycling goal of 20% of the County's waste with an interim Year 2008 Goal of 12.5% recycled. At a 14.1% recycling rate for FY08, our results for this year far exceed goal. Included in these results are both electronic waste and scrap metals collected for recycling.

The pilot program started last year for the collection of recyclable containers from County/CMS facilities has approximately doubled in the number of facilities served, from 40 to 80. In FY08 the quantity of cans and bottles recycled under this program has more than doubled, from 28,000 pounds last year to over 93,000 pounds this year.

The County's Surplus Property Re-Use program was very successful in FY08. This program diverts unwanted furniture and computer equipment from the landfill through reuse and recycling efforts. Quantities handled in FY08 doubled those from FY07 with over 1200 pieces of furniture and over 550 computers and monitors, totaling 105 tons of materials, diverted from the landfill. The bulk of the material was recycled, including an estimated 2264 pounds of lead. CompuTel, the County's vendor for this program, estimates that enough energy was saved by reusing the recycled material to power 17 typical American homes for a whole week. Additionally, this program provides a community service through donations to at-risk schools and non-profit organizations.

During FY08, the County received more than 17,000 tons of clean concrete waste at the Foxhole Landfill which, instead of being disposed, was ground into a stone aggregate replacement for constructing haul roads on the site. During the last quarter of FY08 a pilot program for recycling gypsum wallboard was started at the Foxhole Landfill. Clean wallboard is separately collected and transported from the site by a recycling contractor. The recycled gypsum is used in a number of applications including soil amendments and fertilizers. In the short period the program was operating in FY08, 73 tons of wallboard were recycled.

Waste Minimization and Recycling Goals for 2009 include:

- ❖ Realize 13% recycling of total waste stream, and
- ❖ Park and Recreation proposes to seek and establish Recycling Centers at 5 of the 9 District Parks.

2.4 Vehicle Emissions

Several tools have been developed to ensure that the County purchases and utilizes the lowest emission vehicles practical to meet County needs. The County developed NC Green Vehicle Guide ranking those vehicles available for purchase that are the cleanest (lowest emission) and most fuel efficient has been utilized to develop the County's Fleet Management Plan.

Implementation of the Fleet Management Plan over the 8 year life span of the new vehicles is estimated to prevent 87.84 tons of pollution, equivalent to avoiding over 8 million miles of travel. Although Mecklenburg County has a Fleet Utilization Analysis policy, this analysis was not conducted in FY 08 due to the fleet consolidation initiative with the City of Charlotte and the increasing unreliability of Fleet Tracker, Fleet Management's previous Management Information System (MIS). The County and City completed the consolidation effort in 2008. Transfer of vehicle data to FASTER, the City's MIS, will permit Mecklenburg County to resume the Annual Utilization Analysis process in FY 09.

The efforts listed above have resulted in less air pollution for the third year in a row. The FY08 goal was to reduce the FY07 average NOx emission rate (g/mi) within the fleet by 5%. The annual fleet analysis shows that in FY07, the average NOx emission rate for the fleet decreased 9.9% from FY06 levels (reducing ozone-forming emissions by 13.4 tons) resulting in significant NOx prevented and exceeding the goal of 5% reduction. The fleet management program realized a decrease of total NOx and VOC emissions, despite the increased 70 vehicles (5.8% increase) within the fleet.

Off-road equipment throughout the County was inventoried and analyzed in 2008 as we recognize that our vehicle fleet is not the only source of air pollutants the County operates. The three departments that operate the majority of the County's 304 off-road equipment inventory (lawn / garden and construction / industrial equipment) include Solid Waste, Park and Recreation, and Stormwater Services. Results of the air emission analysis indicate that the 304 pieces of equipment produced twice as much NOx pollutants as did the County's 1,138 car fleet. Departments will have the challenge, during 2009, to establish an off-road equipment purchasing, replacement and operational policy to address these identified air pollutant sources.

Low-Emission Vehicle Goals for 2009 include:

- ❖ Reducing average NOx emissions (g/mi) by 5% from FY07 emissions, and
- ❖ Develop a non-road fleet purchasing, replacement and operational policy for the top three departments utilizing a non-road fleet.

2.5 Green Purchasing Practices

The Environmental Preferable Purchasing Guide (EPPG) developed in 2007 was updated during 2008 to reflect additional knowledge collected by the County's Green Purchasing Team. Both products and services are described in the EPPG with items ranging from recycled paper products, to cleaning supplies, to non-invasive plant species for landscaping existing and new facilities.

The County met or exceeded each of the 2008 goals below with the exception of office supplies and ink/toner cartridges. Data below was collected from the primary vendors for the County for the items indicated.

Item	2008 Goal	2008 Result
Environmentally Preferable Purchasing Guide	Implement	2007 EPPG was updated and distributed
Invitation to Bid (ITB) and Request for Proposals (RFP)	ITB and RFP language to include environmental requirements	2008 modifications achieved and implemented
Purchase recycled paper	50%	81%
Purchase recycled office supplies	10%	8%
Purchase recycled content Park and Playground equipment and surfacing	100%	100%
Purchase of remanufactured inkjet, laser, and toner cartridges	50%	31%
Purchase recycled carpet for projects over 2,000 sq.ft.	100%	100%
Purchase of Green Seal cleaning products	25%	>25%
Purchase of Energy Star computers and monitors	60%	60%
Purchase low level VOC paints.	40%	70%

Communicating the Policy Action Plan goals and providing easy to use tools for employees with regard to recycled content office supplies is the challenge the Green Purchasing Team has recognized for 2009. The Team has educated themselves and corresponded with vendors in an effort to understand these challenges. A Green Purchasing education effort will be extended in 2009 to all County departments.

Purchase of remanufactured cartridges may not prove to be as big of a challenge in 2009 as the County has entered into a single vendor contract for purchase of these materials. The new contract was initiated mid-way through the FY08 year and early results indicate the County may meet the 2009 goals with this new vendor.

Many County facilities are currently reporting use of Green Seal products and we were able to exceed the goal for direct purchases of Green Cleaning Products with 98% compliance. Green Seal products are those that meet a neutral third party's stringent environmental standards. Purchases of Green Seal Paper Cleaning products during FY08 totaled 53 tons. These purchases

resulted in a Green Seal estimate of 185 tons of virgin wood cutting and 3,171 pounds of air pollutants avoided as well as an estimated 216,701 kilowatt-hours of energy, 369,978 gallons of water saved. Environmental savings resulting from Green Seal purchases improved over the past year. Grasping a true estimate of Green Seal Cleaning Chemicals proves to be a difficult task as the quantity and Green Seal certification of chemical products is not embedded into existing cleaning service contracts. While it is estimated that the 2008 Green Cleaning Chemicals goal was achieved, this issue will be a key focus of the County's Green Purchasing Team in 2009.

Carpet was replaced in portions of three County facilities during FY08. These carpet replacements totaled nearly 35,000 square feet of renewable and recyclable carpet including backing made of 35% recycled content. At the end of its useful life, this new carpet can be easily recycled instead of disposed in a landfill and would help to qualify the facility for LEED certification should the County chose it for a candidate of that program. Additionally all removed carpet was recycled instead of being disposed of in a landfill.

2.6 Employee Opportunities and Incentives to Practice Environmentally Sound Behaviors

The County has been successful with implementation of the Best Workplaces for Commuters program designed to reduce emissions from motor vehicles. The County signed an agreement with the United States Environmental Protection Agency (EPA) and has been designated by the EPA as one of the "*Best Workplaces for Commuters*". The County program contributes at least half of the cost of a transit pass for employees and also provides an emergency ride home for participating employees.

Monthly bus pass participation by County employees has increased annually for the past three years to an average monthly participation of 311 employees (equating to 6.4% of County staff up from 5.9% County staff participation in 2007). It is calculated that 311 vehicles off the road equates to a minimum of 9.6 pounds per day of NOx and 13.1 pounds per day of VOC emission (ozone-forming) avoidance. In addition to the participation increase, the average commute distance is increasing in Mecklenburg County (as calculated by the Charlotte Department of Transportation) from 20 miles per day to 24 miles per day. The net avoided air pollutants, due to increase participation in this program, is 2.6 pounds per day of NOx and 3.6 pounds per day of VOC avoidance from 2007 to 2008. Best Workplaces for Commuters is viewed as a proactive environmental program worthy of continued budgetary support.

A Countywide Employee Environmental Awareness campaign was initiated during the fall of 2007. Through this program, employees nominate their peers in an effort to recognize environmental stewardship leaders and acknowledge the individual efforts each staff member can make within their daily jobs to help implement the County's Environmental Leadership Policy. Overwhelming employee support has been demonstrated as the pool of candidates is deep providing some tough award choices for the selection committee. Eight Green Guardians were selected and highlighted in the County's monthly Outlook magazine during FY08.

An additional incentive for employees to become stewards of the environment is a volunteer match program. County HR Policy includes a program for "Commitment to Quality Education and Volunteer Activities" that provides a match of time away from work (up to 24 hours in a

calendar year) for participation in approved activities. The list of approved activities in this section of the HR Policy has historically included school-related activities and community service agencies. The following programs were approved in 2007 by the Board of County Commissioners for inclusion in the HR Policy volunteer activity list: Adopt-a-Highway, Adopt-a-Stream, Big Sweep, Storm Drain Marking, and Ground Water Guardian. This program remains available for employees and now the challenge is to communicate the opportunity to staff. Promotion and record keeping improvements made in 2008 are hoped to spur interest among the employees to become active in County environmental activities.

2.7 Acquire, Maintain, and Preserve Land to Protect the Natural Environment

Acquisition of land to protect the natural environment is a priority for the County. FY08 realized 372 acres acquired for parkland, greenways, watershed protection and open space.

Approximately 330 acres will be greenway and 42 acres parks and open space. The County, in addition to acquisitions, protected an additional 41 acres for greenways through easements. These acquisitions alone surpassed the County's FY08 goal for protection of 200 acres.

Hosting other programs that protect our natural environment, the County's Storm Water Services acquired 15.7 acres – most notably 13 acres on Briar Creek called the Cavalier Apartments during 2008. After relocation of the tenants and demolition of the buildings, these 13 acres will be combined with the 7 acres of Chantilly park for a 20 acre open space project that has the potential to expand the greenway system and address other recreational needs; improve water quality through the construction of a floodplain bench and water quality ponds; and provide for restoring Briar Creek. This is a significant protection of our natural environment that will provide benefits beyond calculation to the citizens of this community.

Protection of the natural environment entails restoration of County property as the funds and ability present themselves. The Water and Land Resources program has historically restored 50,000 linear feet of stream. The Little Sugar Creek, Kings Drive and Midtown redevelopment project is still in construction and is designed to restore 4,200 feet of stream and treat runoff from 31.5 acres.

The majority of projects are monitored for a period of at least 5 years after construction is complete. Various types of monitoring are conducted including: in stream water chemistry, biological (benthics, fish, habitat), geomorphological, and storm water. Through this monitoring, we are able to determine project success. Significant habitat improvement (both in stream and riparian) associated with most all of our restoration projects is being documented.

2.8 Re-use Existing Buildings and Infrastructure to Avoid Greenspace Development

Avoiding the development of greenspace results in overall natural environment preservation while continuing County daily activities. Projects identified in 2007 included development of the Elon Property Park and relocation of the Medical Examiner function. Both of these projects were substantially completed in 2008. These projects avoided greenspace development through re-use of existing facilities and infrastructure. The 2008 goal was to initiate construction on the

Freedom Mall Phase I renovation and the District Attorney Expansion. The Freedom Mall Phase I renovation was completed early in 2008 and is currently being occupied. The District Attorney Expansion is currently accepting bids for construction.

2.9 Require Environmentally Sensitive Design Options in All New Facilities and Retrofits
Leadership in Energy and Environmental Design (a.k.a. LEED or Green Building) is a voluntary standard for developing high-performance, sustainable buildings. The County has adopted an internal policy to pursue LEED certification for all building projects over \$2 million in capital costs. The County is currently pursuing LEED for several projects including the Freedom Mall Renovation, Medical Examiner Relocation, Jail North Youthful Offender Addition, and the Revolution Regional Recreation Center. Construction of the Freedom Mall Renovation is currently underway and the remaining projects are undergoing either construction document development or are within the bidding phase. Additional projects for FY 08 include Freedom Mall phase II (under construction), Freedom Mall phase III (design phase), and the Criminal Courts Renovation (recently bid).

Low Impact Development (LID) is a sister program to LEED and raises the environmental impact bar represented by rain garden installation. LID involves utilization of site design techniques and best management practices (BMPs) to store, infiltrate, evaporate, retain, and detain storm water runoff on the site to replicate pre-development runoff characteristics. LID seeks to mimic the natural and unique drainage of a site thereby preventing an increase in pollutant loads above pre-development conditions. The County has an existing 22 acres of impervious area with storm water treatment through LID implementation. Funding is continually being sought to facilitate LID techniques for the remaining eligible County impervious areas. It should be noted that the Hal Marshall rain garden has the highest nutrient removal efficiency of any bioretention BMP in the State according to NCSU.

Rain gardens are designed to collect and temporarily detain the “first flush” or 1 inch of rain fall which carries the majority of storm water pollution. The specially designed soils, selective plants, and mulch cover allow the storm water to seep through the organic mixture providing a natural treatment. This process prevents polluted runoff volume and water quality impacts in receiving streams. Rain gardens are an important way to make our cities more attractive places to live while building urban ecological health. The County installed rain gardens in the Huntersville Northcross shopping center and Carolina Medical Center during 2008. These rain gardens supplement the existing rain gardens and structural BMPs at the Nature Center, Hal Marshal, Hidden Valley, Westfield, and throughout parking lots in Mint Hill along Goose Creek. These devices are estimated to reduce pollution loads from over 200 acres of pavement runoff that enter our waterways.

Several projects are underway for completion in 2009. Real Estate Services is working closely with Charlotte-Mecklenburg Storm Water Services to retrofit nine rain gardens on the existing Freedom Mall site. Four select rain gardens treating the entire south parking lot (~5 acres) will be specially designed and constructed for monitoring the soil, vegetation, and water quality. This will allow the county to remain innovative as well as provide quality assurance and quality control for the techniques being implemented under LID.

2.10 Actively Investigate New and Innovative Products and Practices

Three projects were identified for exploration in 2008 as new and/or innovative practices:

- ❖ Low Impact Pest Management Program pilot for Real Estate Services facilities,
- ❖ Standardizing facility motors with premium efficiency electrical motors, and
- ❖ Adopting, educating and implementing Green Cleaning practices in 5% of County facilities.

Pest Management

A pilot Low Impact Pest Management Program was implemented by Gregory Pest Management at the Freedom Mall Phase I site in February 2008. Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The Gregory Low Impact Pest Management Programs incorporate:

- Sanitation practices – removing water and food sources for pests,
- Mechanical controls – traps, screening, etc.
- Cultural controls – altering cleaning schedules,
- Harborage reductions – removal of shrubs close to the building, modifying storage of equipment or materials against a building, and
- Chemical control – no toxic chemicals used inside the building, judicious use of the least toxic chemicals approved for use.

Reports to date indicate success of this pilot. The County will continue to document success of the program and evaluate the continuation and expansion to other County facilities during 2009.

Efficient Electrical Motors

The County has begun to be more aggressive with purchasing and service requirements with regard to efficient and environmentally friendly characteristics. Specifying premium efficiency motors is now a standard requirement when Real Estate Services replaces facility related motors. Unfortunately this program is not old enough to measure what impact it has had as only a small number of motors have been replaced in 2008. This innovative practice will add to those energy conservation practices already underway and help the County meet the 2020 goal of 50% energy savings overall.

Green Cleaning

Reducing the overall impacts of cleaning facilities on human health and the environment is an effort currently under evaluation by the Building and Ground Maintenance department of Real Estate Services. While cleaning product selection is important, procedures for green cleaning services are equally important, and perhaps more so. A Green Cleaning and Maintenance Operations guide and request for proposal was developed for future County cleaning contractors. This guide addresses pollution prevention strategies and provides specific opportunities to modify traditional procedures to reduce impacts on health and the environment. The 2008 goal to implement green cleaning practices in 5% of County facilities will be transferred to the 2009 goals.

Green Permit Rebate

Mecklenburg County is projected to have a 50% population increase in the next 25 years. The County has adopted the 2015 Community Vision to protect our natural resources. To achieve this goal, the County must work with the development community to undertake growth in a sustainable manner. Following the 2006 Building Development Summit in Charlotte, the Building Development Commission (BDC) along side of Mecklenburg County Code Enforcement proposed the language adopted in SL 2007-381 as a means to implement a sustainable design fee rebate program. Our intent is to encourage building projects and practices that support development projects that minimize impact on our natural resources through the use of environmentally responsible certification programs such as LEED & Green Globes. Charlotte currently enjoys 8 LEED rated facilities and 51 projects registered and awaiting a LEED certification. The first Green Permit Rebates are undergoing verification for award and 2009 projects to be a banner year for incentivizing our County community toward sustainability.

Innovative practices to improve energy conservation are also being evaluated in 2009 including:

- ❖ Installation of 450 occupancy sensors to control lighting in RES facilities,
- ❖ Installation of 100 sensor activated water faucets,
- ❖ Trials of water efficient restroom fixtures,
- ❖ Park and Recreation to seek opportunity for one (1) Green Roof and one (1) water collection system,
- ❖ Park and Recreation has set a goal of five (5) modest solar projects, and
- ❖ Park and Recreation proposes to continue to use Least Toxic Methods when installing and maintaining landscapes.

2.11 Integration of Environmental Considerations into all County Business Units through LUESA Staff Assistance

The Environmental Leadership Team has been very active in developing the environmental policy action plan so that all County business units are taken into consideration. Adoption of the action plan in January was approved by the Board of County Commissioners with the understanding that it apply to all County departments and County funded agencies. Although not all principles within this policy apply to each department, an effort is underway to educate each

department on the action plan goals and discover their needs so that each principle can be implemented to its fullest. As a result of the outreach to County departments, a Green Purchasing Team has been developed (previously described in Section 2.5 of this report).

The Environmental Leadership Team membership has also expanded to include Charlotte Mecklenburg Libraries (CML), Charlotte Mecklenburg Schools (CMS), and Central Piedmont Community College (CPCC). As a result, each of these new member organizations have developed Environmental Action Plans with similar short term goals identified for County departments and long term goals that meet or exceed the County's. The Action Plans for these organizations are included in Appendix 2.

2.12 Develop Processes for Continuous Review of County Activities to Realize Continual Improvement

The County's Foxhole Landfill successfully gained ISO 14001 certification for developing and implementing an Environmental Management System last year. Currently the ISO 14001 applies only to the landfill portion of the Foxhole site. Work is currently underway to expand the certification to include the remaining recycling and yard waste portions of the site. The County has also commenced discussions with its contract operator of the Metrolina Recycling Center on seeking ISO 14001 certification for this facility.

GHG Inventory

Mecklenburg County Government estimates that in 2006, just over 55,000 tons of greenhouse gases (GHGs) measured in Carbon Dioxide equivalents (CO₂e) were generated as a result of County operations. The major sources included in this inventory are energy usage in buildings, County vehicles, and off-road equipment owned and operated by the County. The largest contribution of greenhouse gases (85%) resulted from energy consumption in County facilities.

The inventory includes energy consumption data (gas and electric) from buildings managed by the Real Estate Services, the Library and the Parks and Recreation totaling 48,395 tons of CO₂e. The contributions from each department are as follows: Real Estate Services - 31,972, Library - 8,554, Parks and Recreation 7,869. The remaining 7000 tons of GHGs were generated by vehicles, and off-road equipment.

Mecklenburg County Government's biggest opportunity for GHG reduction is in the area of energy management within our facilities. The County's Energy Management Plan, developed by the Environmental Leadership team in 2007 should begin to address this sector and improvements are expected within the next five years. The County must continue to look for ways to reduce energy consumption while providing quality services to its citizens.

3.0 Environmental Leadership Team Status

The Environmental Leadership Team is active in its implementation of the County Environmental Leadership Policy. Comparison of the Previous Accomplishments to the Current and Future Projects indicate that the County is not only conducting its daily work in a progressively environment friendly manner, but is continuing to improve interdepartmental

relationships and develop Community Environmental Leadership status. It is anticipated that through the growing process of implementing this Policy, the ELT may discover and implement innovative practices that could further define the overall County Policy. The ELT will continue to meet on a quarterly basis to discuss Policy successes, challenges, and new horizons, any of which may result in future recommendations to the County Manager's Office or Board of County Commissioners but, at a minimum, will be reported on an annual basis. Additional information on the projects identified in this report is available upon request.