

MECKLENBURG
COUNTY

ENVIRONMENTAL SUSTAINABILITY
PLAN



With the purpose of protecting its air, water and land resources for the benefit of its citizens, Mecklenburg County Government has created The Mecklenburg County Environmental Leadership Team (ELT) for facilitating implementation of an Environmental Sustainability Plan. In 2004, the Environmental Sustainability Plan was developed along with the creation of the County's goal of 85% environmentally sound operations by 2020. Four focus groups and their strategies were established in order to achieve the County's goal. 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.

The four focus areas are Air Emission Reduction, Resource Conservation, Commitment, and Stewardship Enhancement.

Due to the importance of clean air and natural resources, Air Emission Reduction and Resource Conservation are prioritized over Commitment and Stewardship Enhancement. The ELT determines the overall success with a heavy emphasis on Air Emission Reduction and Resource Conservation. This FY2013 ELT report indicates compliance has successfully reached 89% of its goal. While some of the strategies did not meet the annual goal; overall strategy achievement, particularly in Air Emission Reduction and Resource Conservation did lead to "green light" success.

At the end of the fiscal year each strategy is evaluated using a scorecard based on percent compliance. The adoption of a scorecard approach to measuring overall progress toward the County's Environmental Leadership Policy was piloted in 2008 and continues today. (See Table 1 Scoreboard Legend). The FY2013 strategies' compliance is laid out with a scored light. (Figure 1). This report highlights the progress of strategies within each focus area, on the active goals being achieved, and the adjustments that were made to maintain challenging and reasonable goals. Annual performance goals become more and more stringent as we stretch to exceed our 2020 long-term goals. See [Appendix](#).

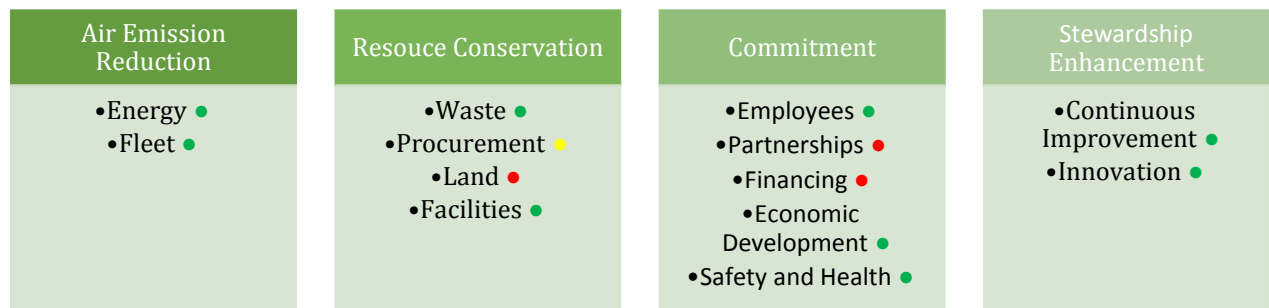


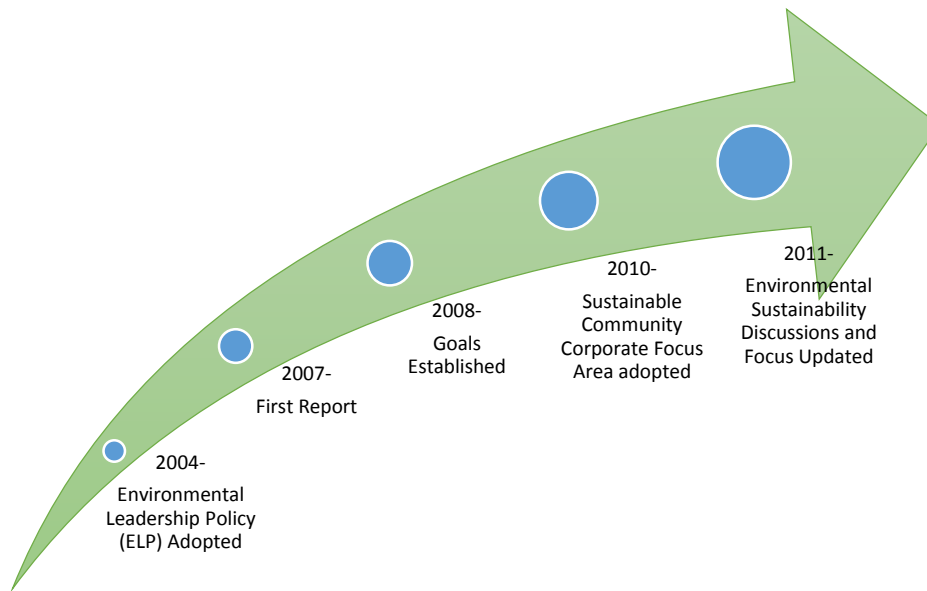
Figure 1. FY 2013 Strategy Scorecard

Performance Legend	
●	A green light indicates a goal has either been achieved or performance is at least 85% of the short-term target
●	A yellow light indicates performance is between 65 and 84% of the short-term target
●	A red light indicates performance is below 65% of the short-term target

Table 1 Scoreboard Legend

PLAN STRUCTURE

The Environmental Leadership Policy adopted by the Mecklenburg County Board of Commissioners has evolved since 2004.



The information presented in this report is a compilation of actions and dedication of the Environmental Leadership Team.

Environmental Leadership Team

The 2004 Policy 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.

The Environmental Leadership Team includes at least one member of each agency in the diagram on the right.



FOCUS AREAS AND STRATEGIES



The Environmental Leadership Team (ELT) established four focus areas for the Environmental Sustainability Plan that considered the biennial [State of the Environment Report](#), the county operational footprint, and business case alignment with our Corporate Strategic Plan. The ELT conducted a SWAT analysis of sustainability areas and those with High Concern and High Influence comprise the four focus areas of this plan:

- Air Emission Reduction
- Resource Conservation
- Commitment
- Stewardship Enhancement

Each focus area has a suite of strategies developed to meet annual short-term and long-term 2020 goals. Focus areas are consistent year after year while strategies are reviewed annually to assess continued appropriateness, progress, and/or challenges.

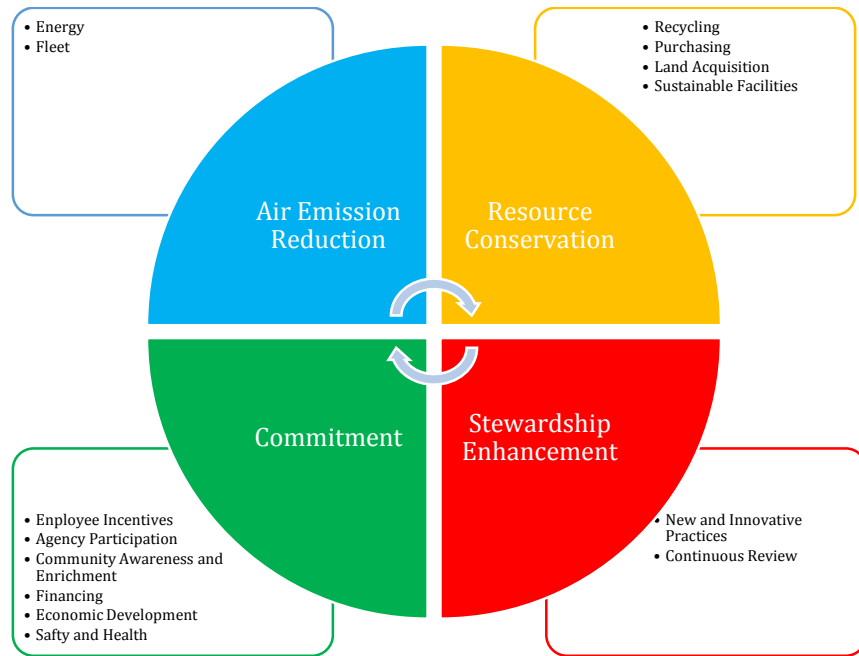


Figure 2. Environmental Sustainability Plan Focus Area and Strategies

PROGRESS TOWARD GOALS

The Environmental Leadership Index shown in the Mecklenburg County [Corporate Strategic Report](#) captures a portion of the information presented in this report. The Environmental Leadership Index emphasizes Emission Reduction and Resource Management as higher priorities over the Commitment and Stewardship

Enhancement goals and therefore, results for this index may not capture the overall accomplishment described in this report. County departments have adopted action plans designed to meet the County’s long-term Environmental Sustainability Plan goals and as a result, the ELI indicates 89% of goals were met in 2013. The 2013 result is a marked increase from the 79% of goals met in 2012, and 65% of goals met in 2011. This 2013 result is equivalent to a “green light” within the County’s scorecard system as the target for this index is: *To have 85% or more of the County’s annual operations performed in a manner that conserves and protects our air, water and land resources* (See Figure 3 and Table 2). The ELT continues to set stringent and challenging goals where the target was met, and to readjust unachievable targets into practical goals.

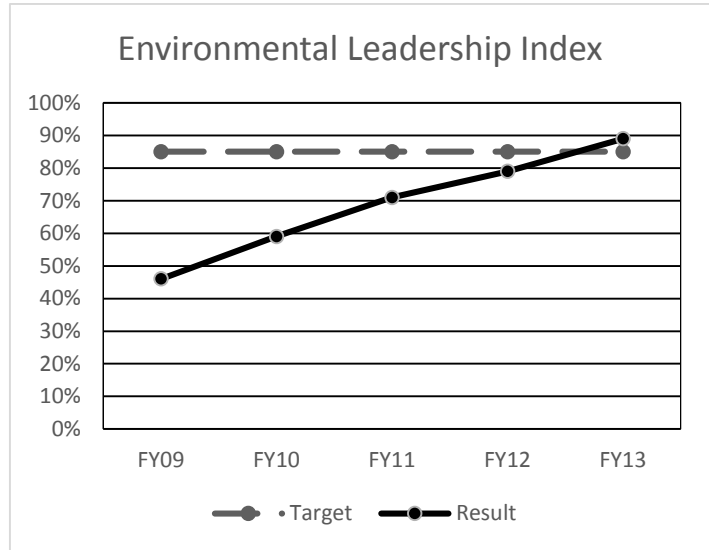


Figure 3. Environmental Leadership Index

	FY2009	FY2010	FY2011	FY2012	FY2013
Result	46%	59%	71%	79%	89%

Table 2. Annual Progress

For more information, contact Mecklenburg County’s Community Plan and Sustainability Officer, Heidi Pruess, CEP at heidi.pruess@mecklenburgcountync.gov.

APPENDIX

Air Emission Reduction

Clean healthy air is a vital natural resource and a priority of Mecklenburg County. Increased usage of electricity and natural gas consumption or motor vehicles intensified the ozone and particulate pollution, the two biggest air quality concerns in Mecklenburg County. The County's Air Emission Reduction strategy aims at energy use reduction in all facilities and fleet make-up and efficiency.

Strategies

- ***Air Pollution Reduction*** - Reducing emissions contributing to ozone creation and air quality issues through management of on and off road fleet vehicles and other emission sources identified through regular emission inventories.
- ***Energy Management & Conservation*** - Initially concentrating on electrical energy use reduction, this strategy is aimed at reducing greenhouse gas emissions generated by the production of energy subsequently utilized in all County facilities.

Clean Air Policy - 2001

Climate Protection Resolution - 2005

Green House Gas Inventory - 2008

[*Green House Gas Action Plan - 2009*](#)

Green House Gas Inventory Update - 2013

Greenhouse Gas Emissions Inventory - Mecklenburg County Air Quality (MCAQ) conducts Greenhouse Gas (GHG) emission inventory collecting data using unified measurement of carbon dioxide equivalents (CO₂e). The initial inventory in 2006 was updated in 2009 and again in 2012. The inventory includes Mecklenburg County operating facilities. The inventory helps the County to focus on potential emission reductions and possibly reduce costs of government operations.

Emission Reduction - According to MCAQ Greenhouse Gas (GHG) Emissions Inventory, Mecklenburg County Government Utilities generated 7.8% less GHG emission compared to 2009 with 75,140 tons of Carbon Dioxide Equivalents (CO₂e) in 2013. Government buildings and facilities are the largest GHG emitting sector accounting for 71.5% of all emissions. For 2014, a list of target facilities was established listing the seven highest CO₂e generating buildings.

Energy Conservation

[*Energy Use Plan - 2007*](#)

Energy Star Partner - 2008

Facility Indoor Air Temperature Policy - 2009

[*Strategic Utility Plan Framework - 2012*](#)

Energy Baseline - The ELT set a new baseline following the Strategic Utility Plan to monitor and conserve the electrical energy usage of all the County facilities. The initial Strategic Utility Plan Framework incorporated 17 properties to conserve its electrical energy usage. The previous Plan successfully launched saving \$200,000 by reducing 12% electrical power consumption between the years 2007 and 2009. The new strategy now takes in 181 utilities/locations along with monitoring electrical consumption as well as natural gas and water utilities usage for all properties. The collective data include electricity, natural gas, water consumption and cost which were compiled to compare and to track energy conservation. Further specifications for performance indicators

and measures of success will be formulated in 2014. The plan was derived to achieve 15% savings (kW/ft²) from the new FY 13 baseline for the 2020 long-term goal.

Completion of Utility Manager Pro Installation - Mecklenburg County utilizes the Utility Manager Pro software to track facility energy consumption, provide utility reporting, and to identify anomalies within its data.

Air Pollution Reduction

Idle Reduction Policy - 2005
Fleet Management Plan - 2007
On-Road Low Emission Vehicle Policy - 2010

On Road Vehicle Fleet LEV - 81% of Mecklenburg County vehicles are now Low Emission Vehicle (LEV), the County on-road NO_x emissions decreased in 2013 by 5.3% from the previous year. Mecklenburg County Air Quality’s annual assessment of fleet emissions shows persistent improvement of on-road fleet decreases in NO_x emission for the eighth consecutive year. Conforming to the assessment, Heavy Duty diesel vehicles generate 61% of the on-road NO_x emissions despite comprising 12% of all on-road fleet. The 2014 plan focus on substituting old heavy-duty diesel vehicles to newer versions.

Vehicle Class	% Compliant
Light Duty Gas Vehicles	82%
Heavy Duty Gas Vehicles	93%
Heavy Duty Diesel Vehicles	64%

Table 3. On Road LEV Compliance

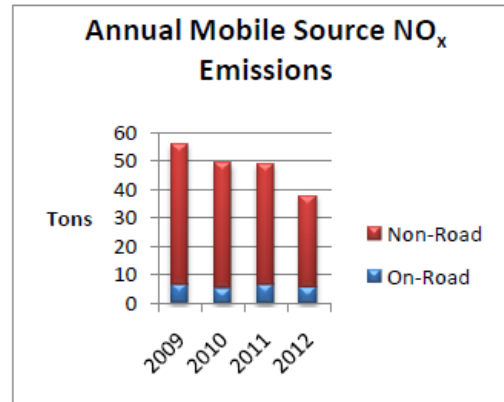


Figure 4. County Fleet Emission Data

Non-Road Vehicle Fleet LEV Policy - Non-Road Vehicle compliance continues to improve showing a reduction of 10.74 tons of NO_x from the previous year, see Fig 4. Mecklenburg County’s Non-Road Equipment Inventory indicates that 95% of NO_x emissions are generated from Solid Waste Management. The emission tier categorizes equipment with a rating from 1 to 4, 4 being cleanest. Solid Waste Management was able to achieve prominent emission reduction replacing high use pieces of equipment with tier 3 or 4 equipment. Among the equipment, the average NO_x emission tier has increased from 1.6 to 3 and non-road LEV compliance has improved (Table 4 and Figure 3).

Non Road Diesel Class	%Compliant
75 ≤ hp < 100	38%
100 ≤ hp < 300	82%
hp ≥ 300	100%

Table 4. Non-Road LEV Compliance

Resource Conservation

It is the responsibility of every individual to protect air, water and soil quality as well as using our natural resources efficiently for the benefit of future generations. Mecklenburg County has sought to track resource conservation within its operations in Waste Management, Procurement of Goods and Services, Land Preservation, and Asset and Facility Management.

Strategies

- **Waste Minimization** - providing environmentally sound and economically solid waste management and recycling solutions for waste materials.
- **Environmentally Preferable Purchasing** - inclusion of environmental considerations in purchasing decisions for goods and services.
- **Land Preservation** - acquisition, maintenance and preservation of land to protect the natural environment, ecosystems, and habitat.
- **Facility Management** - construction activities, land disturbing activities, facility development, operation, and renovation conducted in an environmentally sustainable fashion.

Waste Minimization

*Recycled Product and Waste Reduction Policy - 2001
Waste Reduction and Recycling Policy - 2013*

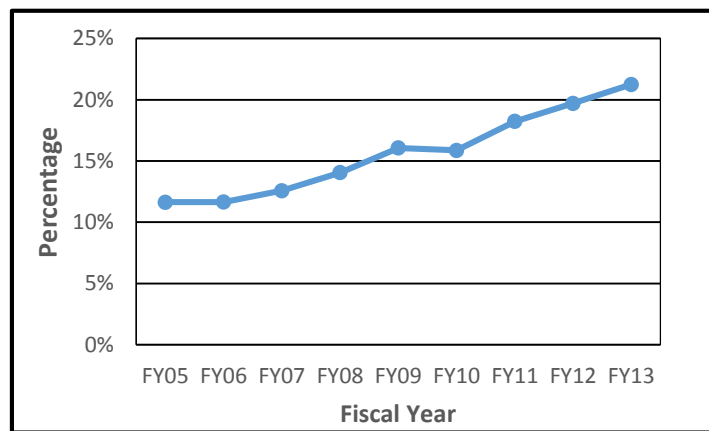


Figure 5. Annual Office Waste Recycling Percentage Rate for County Operations

Recycling Achievement 2013 -Mecklenburg County Recycled 21.2% of its office waste during FY 2013. Office waste is inclusive of paper, cardboard, plastic, glass, and metal produced as a part of normal business operations. The recycling trend shows steady increase toward the long-term goal of 35% recycled material from the total waste stream.

The County’s Surplus Property Re-Use Program, supplementing office waste recycling, has been continuously successful. The eCycleSecure Recycling Services reported in FY 2013 that over 60 tons (120,639 pounds) of materials were diverted from landfills. Recovered materials comprised 130 pounds of lead; 213 LCD Monitors; 586 PCs, servers and laptops; 13 televisions; 810 printers and peripherals and 415 pieces of furniture. The eCycleSecure plans to recover other varieties of reusable equipment based on specific needs of the area in the future.

Recycling Policy 2013 – The 2012 Mecklenburg County Waste Composition Study indicates that 59.6% of the County’s waste stream was recyclable materials. In an effort to increase recycling and develop guidance for County staff, a new Waste Reduction and Recycling Program was established in 2013. The new policy expands its perimeter focusing on waste reduction, reuse, and proper management of organic materials. The policy imposes strict measurement within the County Offices. Each department and its employees are responsible for taking action accordingly and reporting recycled or composted materials by weight or volume.

Environmental Purchasing

Paper Product and Cleaning Product Policy - 2005
[*Environmentally Preferable Purchasing Guide - 2010 updated*](#)
County Procurement Policy inclusion of EPPG -2011

Environmental Purchasing - Overall environmental purchasing for Mecklenburg County facilities continued to improve. The Environmentally Preferable Purchasing Guide (EPPG) was updated in 2013. The Green Purchasing Team continues to evaluate the “light, mid, and dark green” purchase indication created by Office Depot.

Supply Item	% Compliant
Recycled Paper	98%
Office Supplies	29%
Remanufactured ink and toner	36%
Green Seal Cleaners	80%
Low VOC Paint	80%

Table 4 Environmentally Preferable Purchasing 2013 Compliance

Land Preservation

Creek Use Policy - 1996
[*Park and Recreation Master Plan - 2008*](#)

Land Acquisition –Mecklenburg County’s Land Acquisition goal is an aggressive one based on the findings of the 2008 Park and Recreation Master Plan. Successful Land Acquisition is highlighted in Table 6. The Land Acquisition goal of 460 acres, however, was not met with only 189.63 new acres added during 2013.

Locations	Acres
Greenway	31.45
Park	151.25
Nature Preserve	3.0
Flood Mitigation	3.93
Total	189.63

Table 5. Land Acquisition 2013

Facility Management

Leadership in Energy and Environmental Design (LEED) policy adopted - 2007
[Sustainable Facilities and Development Policy - 2010](#)

Sustainable Facilities – During the 2013 fiscal year, four facilities under renovation implemented LEED standards. Approximately 1,000 square feet of the Business Court’s interior was up fitted using a LEED approach. Two levels of the Arrest Processing Center went under 28,000 square feet of renovation increasing the buildings’ exhaust capacity and security. The District Attorney’s Office located in the historic courthouse continues its expansion and relocation; however, being a historic estate limits using a LEED approach. A major update includes an upgrade of a mechanical and an electrical system and a reconfiguration to relieve overcrowding. The project is an ongoing process due to the difficulties of renovating a historic building. Finally, a small scale relocation of the Business Support Service Agency was executed.

Commitment

Mecklenburg County’s interest in sustaining and enhancing the environment by protecting our natural resources requires an “all hands on deck” approach. County employees, government agency partners, residents, businesses, institutional entities and visitors should be engaged in environmental stewardship so that we can all enjoy the benefits. As a part of being the best local government service provider, Mecklenburg County strives to show commitment to environmental sustainability via several strategies:

Strategies

- ***Employee Participation*** – Employees are encouraged to volunteer and attend educational workshops to apply sustainability in everyday life. It is the County’s long-term goal to increase participation hours to 3,000 hours annually.
- ***Partnerships*** – County funded agencies have been obligated to partake in the Environmental Sustainable Plan. Agencies such as Charlotte Mecklenburg Schools, Central Piedmont Community College, and the Charlotte Public Library fosters sharing of best management practices to address and solve community problems.
- ***Community Awareness and Enrichment*** - Increasing community awareness of environmental issues through partnerships, educational campaigns, and program advancements that enable community stakeholders to maximize resources for identifying and addressing environmental challenges
- ***Financing Environmental (non-regulatory) Programs*** - Aimed at reducing the risk and cost of County operations due to environmental factors through a continuous funding strategy for environmental sustainability programs.
- ***Sustainable Economic Development*** - fostering community advancement toward implementation of sustainability practices by incorporation of environmental sustainability considerations into County financing tools; working to avoid the unintended consequences of regulation and provide a more informed basis for policymaking through a collaborative approach with businesses
- ***Workplace Safety and Health Support*** – It is one of the County’s goal to provide a safe and healthy environment for employees. The plan involves improving the quality of life for employees through consideration of healthy food choices, to promote outdoor activities available, and to

handle wastes and chemicals properly; such that employees and customers are not vulnerable to environmental disturbances that may affect basic human wellbeing.

Employment Incentives

Development of Green Guardian employee recognition program - 2007
Employee Work Green Program - 2009

Employee Incentives 2013 - Employees participated in 2,493 hours of volunteer and education in environmental programs. The 2013 goal of 2,800 hours was not met; however, various topics and events were available for employees. Educational and volunteer programs included: composting, Green Streams / Green Lawns, Green Cleaning, Ride CATS, Sustainable Homes, B-Cycle, Fireplaces and Air Quality, Natural History, Green Purchasing Training, and Recycling Team participation.

Partnerships

County corporate focus area "[Sustainable Community](#)" inclusive of Environmental Leadership Index - 2009
Charlotte Mecklenburg Schools (CMS) adopted an Environmental Stewardship Policy - 2009
Charlotte Mecklenburg Library adopted environmental action plan - 2009
County Department Environmental Action Plan Implementation Guide - 2010

Partnerships Achievement –During 2013, 67% of county’s department action plans received a “Green Light” for progress toward their individual department goals. This is a significant improvement from the 40% of departments in compliance during 2012. To reach 100% participation goal of 2020, the County is progressing to attain 85% during 2014.

Central Piedmont Community College (CPCC) Partnership – CPCC is extending its sustainable plan. The institution recycled 20.63% of its waste, deploying 275 recycling containers during 2013. A second performance contract was developed establishing \$6.4M towards infrastructure improvements that will cut utility expenses by \$600,000/year for the next 14 years. CPCC plans to include an emission inventory and six renovation projects utilizing a Duke Energy Rebate.

Charlotte Mecklenburg Schools (CMS) Partnership – CMS is excelling in its sustainability plan. In August 2013, CMS opened the first LEED certified school in the Mecklenburg County school district, Pineville Elementary school. Renewable energy was initiated in J.V. Washam Elementary school utilizing solar hot water heating system and in South Mecklenburg High School installing 7 panels of solar photovoltaic system. Installing private meters on cooling towers and having accurate reading allowed a reduction of water usage saving \$50,000. There has been a successful resource recovery effort with a pilot program in two elementary schools that reduced cafeteria waste by composting. The pilot program reduced the cafeteria waste by one third. Finally, a Resource Recovery Six Sigma Team was initiated in 2013, with a goal to reduce waste going into the landfill by 50%.

Community Awareness and Enrichment

Community Survey and Participation – The community awareness approach is under revision. In past years, the ELT has conducted biennial survey to examine the changes in community awareness and participation by asking if they are aware of environmental educational programs. Instead of inquiring awareness about the program, evaluating [Quality Of Life Dashboard](#) (QOL) data which provides 80 variables of 464 neighborhood profile areas is under consideration. Variables include participation rate of some of educational programs, energy usage and recycling rate. The website provides each divided areas' participation rate and overall Mecklenburg County rate. Utilizing QOL data will allow focus on particular communities regarding environmental awareness and education needs. For information that are not covered in QOL website, different surveys from other department such as LUESA will be extracted to measure the success and improve progress.

Sustainable Economic Development

Financing Environmental (Non-Regulatory) Programs - Phase I of the analysis for energy efficiency and waste reduction was completed. Phase I includes Funding Risk analysis and funding opportunities exploration. Phase II of this assessment, the cost benefit analysis of the Environment Sustainability Plan, is pending completion.

Sustainable Economic Development- The County Code Enforcement's Technical Advisory Board (TAB) has been working with both residential and commercial citizen groups to evaluate sustainable economic development incentives. A new incentive program would replace the former Green Permit Rebate Program that incentivized Sustainable Facilities Development but was discontinued during the most recent economic downturn.

Workplace Safety and Health Support

[Healthy Vending Policy - 2011](#)

Healthy Vending – As to support a safe and healthy work place environment, the Healthy Vending Policy (HVP) was adopted in 2011 and further review proceeded. The restrictions allow products meeting nutrient standards to be priced at least 0.05-0.10 cents less and regulate 50% of beverages to be products containing less sugar and additives in order to comply with the standard. The vendor baseline was completed with 23% of all products meeting HVP standards. Also, an acceptable vending product list is available.

Stewardship Enhancement

One of the County's [Critical Success Factors](#) is Sustainability. Success will be defined as setting priorities and other decision making is inspired by values that sustain the community for future generations. As technology and community values can change rapidly, it is necessary to review frequently and analyze our strategies and goals in a structured manner.

Strategies

- Continuous Improvement: Support a program of continuous review to ensure reduction of adverse environmental impacts of County operations and evaluation of new opportunities to achieve sound environmental practices.
- New and Innovative Products and Practices: Actively explore the feasibility of implementing new and innovative products and/or practices that provide environmental benefits, and inform elected officials of new opportunities.

Continuous Improvement

Foxhole Landfill achieved ISO 14001 certification – 2007
NC Environmental Stewardship Initiative Program member - 2010
Internal Environmental Assessment Program - 2011

Internal Environmental Assessment Team Progress - The Mecklenburg County Environmental Leadership Team (ELT) initiated the Internal Environmental Assessment Program (IEAP) in June 2011. In late January and early February 2013, the second round of assessments was conducted at selected facilities and progress toward improving internal operations continues. The County as whole remains in “good standing” status with NC Environmental Stewardship Initiative and continues to evaluate current practices and operations for compliance of internal and external requirements.

ISO 14001 certification – Foxhole Landfill continues to enjoy its ISO 14001 certification. The Metal and Tire Recovery Facility commenced ISO 14001 Certification in June 14, 2013 joining the existing Foxhole Landfill and Recycling Center certifications.

New and Innovative Products and Practices

Environmental Awareness through Art – Storm Water Management is collaborating with the McColl Center to incorporate environmental art to be part of storm water project. The candidate site selected was the Briar Creek Stream Restoration’s Water Quality Improvement Project located between Monroe Road and Independence Boulevard. With the conceptual plan completed, the construction began in summer 2013 and is scheduled for completion by summer 2015.