

Energy *and* Waste Update



City of Wilmington
Public Services Department

Prepared by
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FY2015

Executive Summary

The FY2015 Energy and Waste Update is a compilation of the efforts of several departments to minimize risk of negative environmental impacts while providing exemplary service to the citizens of Wilmington. This update builds on the 2013 Energy and Waste Reduction report which detailed the City of Wilmington's organizational energy and waste reduction efforts since 1990. This document provides an update of the energy, waste and general sustainability initiatives occurring over the past eighteen months. The Public Services department felt it necessary to collect and share this information with City leadership, staff and citizens to document the City's efforts on an annual basis.

The Public Services department recognizes energy as a controllable cost and will continually seek ways to manage environmental and economic resources in a sustainable manner. From interior and exterior lighting upgrades to the installation of GPS onto fleet vehicles, the city searches for ways to improve processes and equipment to minimize costs and maximize our long-term assurances to the citizens of Wilmington.

Waste reduction is a priority not only due to disposal costs, but the commitment to minimizing environmental degradation in our city and region. The city's residential recycling program saw an expansion this year with the grant-funded addition of recycling containers in the city's parks and public spaces as well as downtown areas. City offices and facilities are participating in recycling, reaching over 900 employees, and building on years of city-lead efforts to reduce waste. And, the FY2015 Sustainability Committee focus area is waste reduction and recycling. City employees have a great opportunity to engage in this initiative in a convenient and meaningful way.

This update provides a record for staff and the community to leverage our past efforts and knowledge gained to address the challenges certain in future energy and waste reduction efforts.

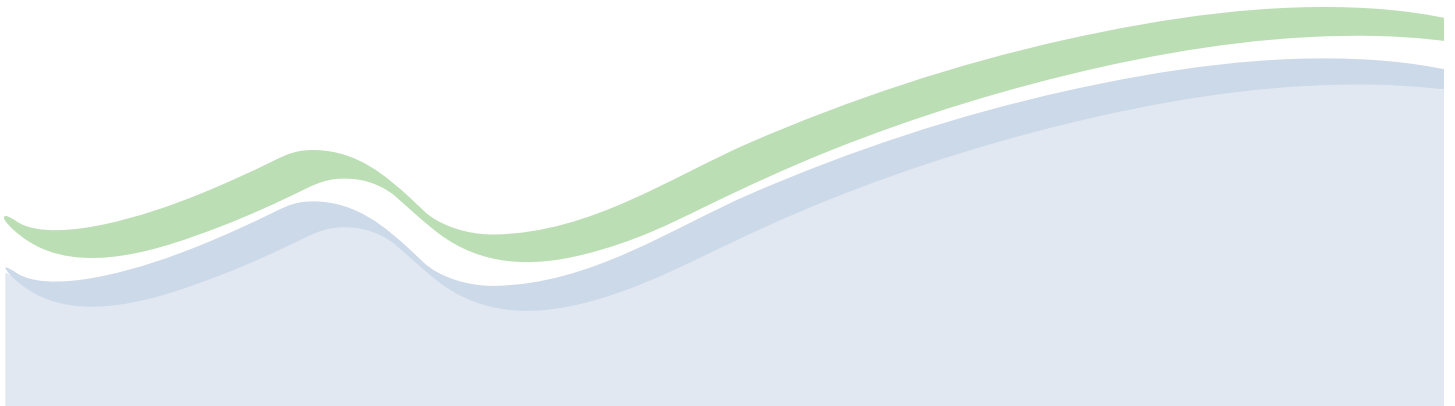
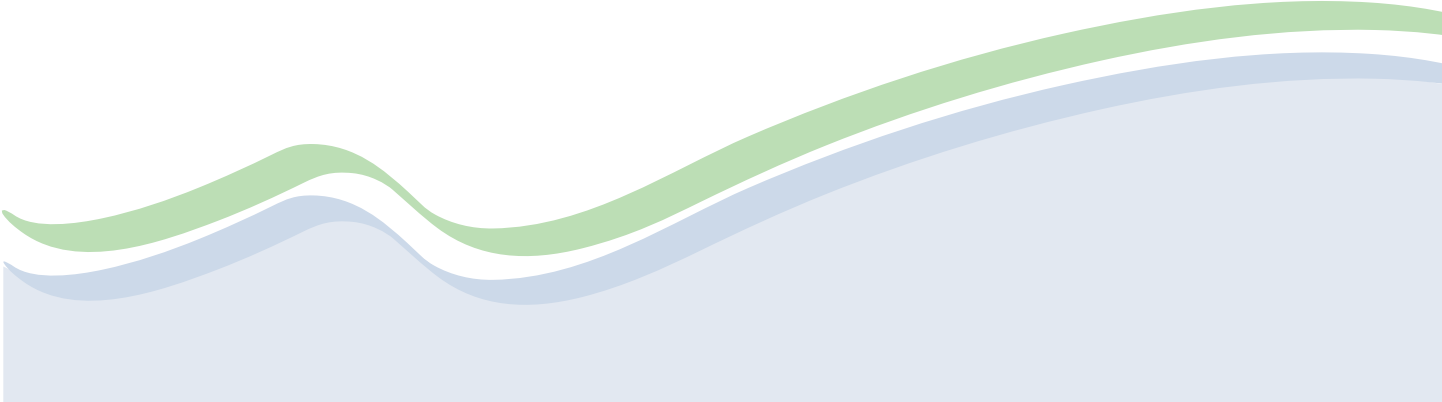


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Sustainability

The City's first internal sustainability committee began meeting in the fall of 2013. The committee distributes a quarterly newsletter on varied sustainability topics, acts as a resource to departments and develops the city's sustainability management plan. Sustainability Committee members consist of a team of representatives from multiple city areas in order to provide information and feedback on sustainability strategies.



Electricity Consumption

Public Services began using Utility Manager Pro software to track and benchmark city electricity and water consumption. The software assists Facilities Management in identifying high consumption sites, potential leaks or energy spikes and track energy project performance.

Leased streetlights and area lighting are gradually being converted to LED per Duke Energy Progress' leased lighting rates in the Public Services Administration and Traffic Engineering divisions. The LED lights provide a white, bright light, require less maintenance and are currently priced lower than traditional lights under Duke Energy Progress' leased lighting rate.

The Facilities division began replacing fluorescent fixtures at the Operations Center warehouses to LED technology. The new LED lights in the Facilities and Stormwater warehouses,

Fleet Maintenance and Police warehouse will not only reduce energy consumption, but have a 10-year warranty on replacement, saving staff time on replacing fixtures in hard-to-reach areas. With an average 5-year payback, these lights will save time and money. The estimated annual savings for the combined projects completed to date is \$3,772 with an estimated annual energy savings of 37,732 kwh. This is the equivalent to the CO2 emissions consumed by 3.6 homes' electricity use in one year or the carbon sequestered by 21.3 acres of US forests in one year (Source: <http://www.epa.gov/cleanenergy/energy-resources/calculator.htm>).

The Public Services Administration worked with the Waste Reduction Partners, a grant-funded energy auditing group out of the Triangle-J Council of Governments to schedule two major energy audits in the fall of 2014. The energy audits focused on Police Headquarters and 305 Chestnut municipal building. The energy audit provides a wealth of information to Facilities division staff in identifying measures to reduce energy consumption of the two largest buildings owned by the city. One recommendation was to install a variable fixed drive in the cooling tower at Police Headquarters. Staff completed this upgrade in the fall of 2014.

A solar photovoltaic (pv) system was donated to the Miracle Field at Olsen Park facility (9.6kW nameplate capacity). The system is tied to the grid and set up under a net-metering rate, meaning when the system is producing energy, the meter is spinning backwards. This system will help reduce the cost of electricity at the site.



Miracle Field Solar Array at Olsen Park Brax Stadium

Client Services (IT division) has historically purchased machines and monitors that are Energy Star compliant, the rating varied but the division generally attempted to purchase the highest possible available at the time. From 2014 forward, the IT division purchases computers rated with “Energy Star 5.2 Category D” compliance, meeting strict energy efficiency guidelines set by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE).

Fuel

The City manages approximately 550 fleet vehicles. Fleet Management owns and maintains 17 hybrid vehicles, including the addition of one Ford Fusion hybrid in FY2014.

The Public Services Department began utilizing Global Positioning System (GPS) technology to encourage more efficient driving. Solid Waste, Streets and Stormwater vehicles were outfitted with GPS technology, supported by software utilized by management to track vehicle routes, idling times and vehicle assets. These divisions have approximately 89 vehicles with GPS units installed in the fall of 2012.

In reviewing the impact these devices may have had on operations, staff found reductions in both mileage and fuel cost, when comparing October 2012-September 2013 to October 2013-September 2014. The three divisions with installed devices (Stormwater, Solid Waste and Streets) reduced their mileage by a combined 113,029 miles in this time frame. The fuel cost reductions hovered around \$71,462 when comparing the same years. More factors than the GPS units went into the

reductions. The winter 2014 ice storm where an independent contractor collected yard waste, as well as trucks needing repair throughout the year, contributed to the mileage reductions. The numbers are moving in the right direction. And, GPS has allowed Public Services to provide more efficient customer service, for instance, when a trash customer reports a missed stop, managers then view the GPS software and are able to communicate with the closest trucks and crews to remedy the issue. In addition to Public Services, Fleet Management has recently (FY2015) installed GPS on the traffic division vehicles.

The city operates under a Fuel Conservation Directive from the city manager, first implemented in 2005 and then updated in 2011. Idling is discouraged, route planning is encouraged and fuel conservation behaviors, such as steady acceleration and avoiding speeding are discussed. Technology combined with continued management and information on responsible driving behaviors can have positive impacts not only on fuel conservation, but also on Public Services staff as city representatives.

Fleet Management and the Solid Waste divisions teamed up to request 18 new trucks in the FY 2014-2015 budget in order to replenish an aging fleet, resulting in vehicles with more efficient mo-



tors and the use of a diesel exhaust fluid (DEF), injected into exhaust stream to neutralize harmful emissions. This process aligns with the emission requirements put forward by the Obama administration.

Built Environment

A new fire station is being built to replace two aging fire stations. The new station, located on Cinema Drive, was designed to include a host of energy and water conservation features, namely a solar thermal system to heat a radiant slab, native landscaping to eliminate the need for irrigation, energy efficient lighting and environmentally friendly materials, such as a recycled rubber floor. Construction on this building is expected to be complete by fall of 2015.

FIRE STATION NO. 3



Recycling and Waste Reduction

As the residential recycling participation rate surpassed the 80% mark, the City Solid Waste office looked to expand recycling in parks and public spaces. Enter the FY2014 Community Waste Reduction and Recycling grant. An expanded recycling program focusing on city parks

and public spaces began in 2014 with funding from the FY2014 Community Waste Reduction and Recycling grant, a NC Department of Environment and Natural Resources outreach grant. The City used the funding to purchase recycling cart garages to house 95-gallon recycling carts at five facilities throughout the city. Halyburton Park, Empie Tennis, Legion Stadium, Greenfield Amphitheater and the Municipal Golf course now offer permanent recycling options to city residents and visitors. In addition to the grant, the 'Green Spring Carnival' celebrated at Halyburton Park promoted 'away-from-home' recycling with the community with interactive games, a scavenger hunt, poster contest and a large interactive art exhibit featuring plastic bags.

The FY2015 Community Waste Reduction and Recycling grant was awarded to the city in order to purchase 19 recycling containers for the downtown area. The recycling containers needed to match the existing trash containers on Front and Third streets, chosen through a stakeholder engagement process of the North Third and Front Street streetscape projects.

These recycling containers will be available for use by spring of 2015. Front and Third streets were chosen for the grant-funded recycling containers because of the high impact potential.

The Solid Waste office also expanded upon a recently developed 'Materials Recovery Facil-



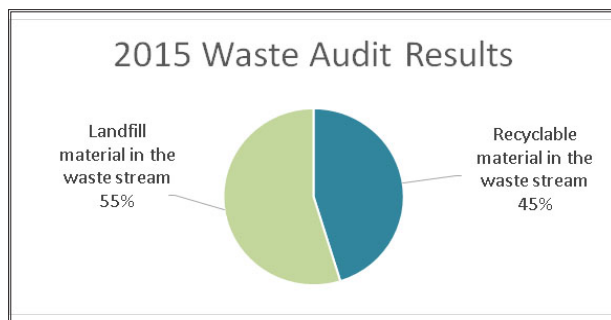
Downtown
Recycling Containers

ity (MRF) in Action' lesson by partnering with the UNCW Watson School of Education and the UNCW Center for Science, Engineering, Technology and Math (STEM) Education to offer the lesson as a kit to area teachers. The lesson builds on force and motion principles and introduces students to the complexity of a recycling sorting facility, or MRF (Material Recovery Facility). The lesson is hands-on, interactive and inquiry based. It was developed through a partnership between the City of Wilmington, New Hanover County, Keep America Beautiful and the Watson College of Education at UNCW. The lesson kit will be available for area teachers to check out and use in their own classrooms through the UNCW Curriculum Materials Center, a branch of Randall Library, in early 2015. The lesson is also offered as a part of a day-long workshop on Recycling at the UNCW STEM Education Center each fall and spring. In the long-term, Public Services may request funds, within the budget process, to fund an outreach instructor program to expand the lesson within area schools.

in the spring of 2014 and 2015, respectively. The waste audit involves collecting city office and facility trash, depositing it at a city-owned warehouse and sorting through it to determine the amount of recyclable material being thrown away by city employees. Both audits found that 45% of material placed in trash containers was potentially recyclable. To compare, in 2013, the waste audit showed 75% potential recyclable materials in city facility trash containers. After the audit, a summary report the committee shared the results through the city areas they represent, the city's City Leadership Team (CLT) and the quarterly newsletter.

Sustainability Committee

The City's Sustainability Committee focuses on internal organizational opportunities to raise awareness on a variety of sustainability topics through an annual management plan. The Sustainability Management Plan's FY 2014-2015 focus area is waste reduction and recycling. This fiscal year, the committee focused on opportunities around reducing the amount of material sent to the landfill. The committee's value statement is 'The Sustainability Committee works to ensure an environmentally responsible, resilient and quality organization by raising awareness around sustainability best practice, committing to conserving resources and reducing the organizational carbon footprint'.



2014 and 2015 Waste Audits found 45% (shown in green) recyclable items in city facility trash containers.

The committee implemented several strategies in an effort to raise awareness around waste reduction and recycling. A quarterly newsletter included information to promote and educate staff on waste reduction and recycling, including the simple, yet powerful function of setting printers to print double-

The annual organizational waste audits sponsored by the city's Sustainability Committee occurred

sided when possible. The committee partnered with the Wellness Committee to purchase and install three new water bottle filling stations in 305 Chestnut, Fire Headquarters and Police Headquarters to encourage the use of reusable containers. The committee also completed a city office inventory of the availability of office-sized recycling containers. The inventory project showed the need for 123 recycling containers throughout city offices and facilities. Those containers were delivered in the spring of 2015. The committee will choose a new focus area each year, ranging from energy efficiency in buildings, vehicle fleet, purchasing, transportation choices or water conservation.

Opportunities

As the city investigates ways to improve facility energy use in buildings, the opportunity to standardize and set policy defining expectations for occupant behavior will create a lasting impact in terms of energy use and waste reduction. The establishment of new construction standards for city-owned buildings will confirm the city's commitment to reducing energy and waste at the source and to lead by example in the community. Additionally, policies around purchasing impact the city's energy consumption and waste reduction. Purchasing is decentralized in the city, but a centralized policy around energy efficiency and recycled products will have a large impact due to economies of scale.

The Facilities division is investigating opportunities to manage building infrastructure through digital, central controls. These systems allow one group to manage many buildings and equipment types, including the ability to adjust temperature controls

and to quickly identify equipment issues in order to dispatch the appropriate staff, tools and parts.

Additionally, many communities are beginning to produce energy disclosure reports, highlighting municipal energy and water consumption trends, municipal operations emission contributions and measures taken to reduce energy consumption and emissions impacts. The City of Wilmington is investigating integrating the data being tracked in the consumption tracking software into the Energy and Waste Update as a part of this process on an annual basis and as data becomes available.

Appendix

Sustainability Timeline 1990-present

Sustainability timeline

1990-2014

1990

Traffic division begins converting city traffic signals to LED lighting, reaching full conversion in 2005.

1994

City recycling begins single-stream collection.

1995

Solid Waste division begins collecting recyclable material from city offices and facilities.

1997

Solid Waste division begins collecting electronics from city offices to recycle and divert from the landfill.

2005

(revised 2011)
Fuel Conservation, Executive Directive #2005-004
City leadership established department-specific fuel efficiency strategies compiled into a fuel conservation directive.

2008

City begins internal operations' outreach and educational effort centered on energy conservation.

2006

Mayor Saffo signed the US Mayors Climate Protection Agreement.

2009

The city builds a new streetsweeper complex designed for net zero energy performance.

2009

Solid Waste and recycling conducts a route optimization project, realizing greater staff and time efficiencies.

2010

Streets division recycling efforts include reusing and recycling asphalt millings as well as historic brick, cobblestone and granite reuse.

2010

The city was awarded the Local Energy Assurance Planning grant (LEAP). The grant funded a Sustainability Manager position to develop an energy assurance report aligned with the State Energy Office energy assurance initiative.



1990-97

1990

The City of Wilmington begins a voluntary curbside recycling program for city trash residents.



2002

IT Department committed to purchasing Energy Star Computers.



2005

Stormwater division installed a solar aerator in Greenfield Lake as part of the lake management plan.

2007

Traffic division initiated a LED streetlighting pilot project.



2002-10

2009

City Council adopted a Resolution establishing a goal for reducing greenhouse gas emissions from internal operations by 58% by 2050 in keeping with the principles of the US Conference of Mayors' Climate Protection Initiative.

2009

The city was awarded the Energy Efficiency Community Block Grant (EECBG), allowing the city to install energy efficiency upgrades to several facilities.

2010

Fleet began evaluating vehicle needs and purchasing smaller, more fuel efficient vehicles.



2010

Fleet management develops a no-idling policy and began using Ultra Low Sulfur Diesel for fueling the diesel fleet. The gasoline fleet uses E10 fuel.

2010

Wilmington Convention Center built to LEED Silver standards.



2012

City Council authorizes installation of Electrical Vehicle Supply Equipment at the Market Street parking deck in collaboration with Progress Energy (now Duke Energy Progress).



2012

LED streetlighting and signals were installed as a part of the North Third Street Improvement project.

2012

The Police Department begin using a solar powered boat lift.

2012

Public Services department hired Sustainability Project Manager to act as energy manager.

2011

Alternative Work Schedule Policy (240) approved with slight emphasis on work space sharing.

2013

The City's first Sustainability Committee was formed in an effort to develop formal educational outreach opportunities for city staff, review and recommend policies and share sustainability knowledge.

2014

Public Services begins using Utility Manager Pro software to track and benchmark city electricity, natural gas and water consumption.

2014

Facilities began replacing aging warehouse light fixtures with light emitting diode (LED) fixtures resulting in energy savings return on investments.

2014

Leased streetlights and area lighting have started being converting to light emitting diodes (LED) per Duke Energy Progress' monthly lighting rates.

2014

A 9.6 kw solar array was donated to the City of Wilmington. It is located at the Brax Stadium Miracle Field at Olsen Park.



2011-2015

2011

Solid Waste division begins recycling used and/or broken trash and recycling carts, diverting them from the landfill.

2012

Carpooling opportunities are offered to city employees in conjunction with other Transit Demand Management programs in N.C.

2012-13

Solid Waste division rolled out the Big Blue recycling program, converting the voluntary recycling collection program from an 18-gallon bin to a 95-gallon rolling cart, while transitioning to a bi-weekly collection schedule.



2013

Solid Waste division initiated the city's first internal Waste Audit to understand employee recycling behavior.



2013-14

Solid Waste division was awarded the Community Waste Reduction and Recycling grant to expand recycling in parks and public spaces.

2013

Recycling education and outreach program launched, including outreach to internal stakeholders.

2014-15

Solid Waste division was awarded the Community Waste Reduction and Recycling grant to expand recycling on Front and Third streets.

2014-15

The City's first Sustainability Management Plan was developed, goals and metrics were identified and educational strategies around *Waste Reduction and Recycling* were chosen as the FY 2014-2015 focus area (See Appendix A).

Appendix

Sustainability Management Plan FY2014-2015

2014-2015

Sustainability Management Plan



Sustainability Committee
City of Wilmington, NC
2014-2015

Organizational Sustainability Management Plan FY 2014-2015

Overview

The City of Wilmington seeks to fully understand and manage energy, water and waste, cultivating a culture of environmental stewardship throughout city operations. The efficient use of energy and water and a commitment to waste reduction and recycling is a priority to city leadership in order to preserve quality of life, promote financial responsibility and encourage employee engagement. The city recognizes energy and waste as controllable costs and will continually seek ways to minimize risk while maximizing our economic and environmental resources.

Value Statement

The City's Sustainability Committee works to ensure an environmentally responsible, resilient and quality organization by raising awareness around sustainability best practices, committing to conserving resources and reducing the organizational carbon footprint.

Purpose of the Plan

The City of Wilmington will support the efficient use and conservation of energy and water resources at all of its facilities by creating, implementing and evaluating the Sustainability Management Plan. The city's goal is a reduction in energy consumption per gross square foot for all city-owned buildings and facilities of 2% annually, reaching a 30% by 2029-2030 fiscal year based on energy consumption for 2012 fiscal year. Additionally, a waste reduction goal is established through this plan including a reduction in the amount of recyclables in the waste stream by 5% annually, reaching zero recyclables in the waste stream in city offices and facilities in 20 years time, FY 2034-2035. City staff will update the Sustainability Management Plan annually through a designated committee. The plan's success begins with support from leadership by way of endorsement by the Executive Management Team. It is a recommendation of this plan that authority to implement strategies and action items based on this plan as well as city-portfolio reduction goals be tasked to the city-wide Sustainability Committee.

There are numerous benefits to the implementation of the Sustainability Management Plan. Economic benefits include the responsible use of taxpayer dollars, maintaining an expected level of service to the citizenry and preparing for the rising cost of fuel, electricity, water and waste disposal. Environmental benefits include diversifying the city's energy portfolio with clean energy and energy efficiency, protecting indoor and outdoor air quality, reducing emissions and carbon footprint and reducing the city's resource consumption. Social benefits include maintaining employee and public thermal comfort, using the city's experience as a model for community education and outreach and reflecting the city's commitment to maintaining and strengthening quality of life efforts citizens and leaders value in our community.

The city is positioning itself as a leader in energy management and waste reduction by promoting the responsible use of resources. The Sustainability Management Plan can serve as a tool to offer education and outreach opportunities to more than 900 city employees who are informal ambassadors of the city's efforts. With the implementation and sharing of the plan, city accomplishments and challenges will serve as tools for community interaction and understanding of current energy management and waste reduction efforts.

Key Elements of the Plan

- This plan is meant to serve as a guide for consistent tracking and evaluation of internal energy and water consumption, waste reduction and recycling efforts within city operations.
- The designated committee is responsible for implementing the plan including assigning responsibility and tracking progress.
- Three toolkits have been developed to assist the Sustainability Committee with their efforts towards implementing the plan.
- An annual review by the designated committee will allow for updating, altering strategies and evaluation of success and challenges.

Plan of Action

- Creating, gaining support and publishing the plan for implementation, evaluation and annual review
- Develop and implement strategies centered on the chosen focus area. Focus areas will be chosen by the Sustainability Committee and identified through annual updated sustainability management plans.
- Utilizing the data management responsibilities of the Sustainability Project Manager position to measure and report on the goals and requirements of this plan.
- The plan and its efforts will serve as a resource and an example to the community, demonstrating the benefits of effective strategic energy and waste reduction management.

Overall Goal The Committee has developed metrics to better understand internal sustainability efforts and results. The Sustainability Committee proposes the following internal organizational city-wide goals. These goals will be measured annually and noted in subsequent Sustainability Mgmt plans.

- Energy and water use
 - 2% reduction per year; baseline FY2011-2012
 - Metrics
 - Electricity measured in kwh/gsf
 - Whole energy measured in btu/gsf
 - Water measured in kgallon/gsf
- Recyclables in the waste stream; baseline FY2011-2012

Baseline data	
FY2011-2012	
64,817	Therms of Natural Gas
11,080	Gallons of Building Heating Oil/Generator Fuel
25,370	Gallons of Water
572,040	Gallons of Vehicle Fuel
10,254,058	kWh of Electricity

Legend	
gsf= gross square feet (City-owned building size)	
Btu= British thermal unit (standard unit of energy)	
kwh= kilowatt hour	
kgal= thousands of gallons	

- 5% per year to get to zero recyclables in organizational trash in 20 years
- Metrics
 - Measured through annual waste audit % of recyclables in waste stream

Annual Focus Areas

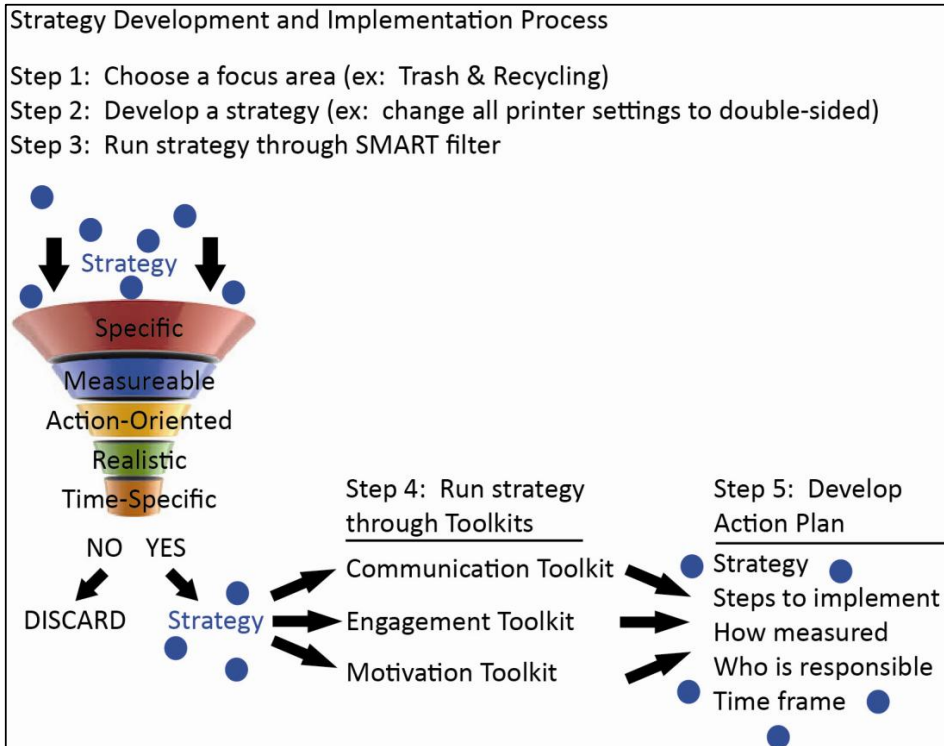
The Committee will focus on a chosen sustainability topic each year, develop strategies and implement action items. Each year, the Sustainability Committee will chose a focus area, identify it in the annual sustainability management plan and develop strategies around the focus area.

Potential focus areas include:

- Energy
- Vehicle Fuel
- Water
- Trash and Recycling
- Purchasing

Strategy Development

The Sustainability Committee has agreed upon a strategy filter and toolkits to utilize when developing strategies, ensuring effective strategy development. The Committee will evaluate each strategy using a SMART filter per the committee charter (Appendix). The SMART Filter assists the committee in determining if the strategy is specific, measurable, action-oriented, realistic and time specific. Communications, Engagement and Motivation toolkits have been developed as a part of plan development. The toolkits are available for use when developing strategies for implementation (Appendix).



Sustainability Management Plan FY 2014-2015 Focus Area
Waste Reduction and Recycling

The Sustainability Committee agreed, at their regular May 2014 meeting, to focus on waste reduction and recycling for the FY 2014-2015 sustainability management plan. Subsequent focus areas will be chosen at each May meeting.

Waste

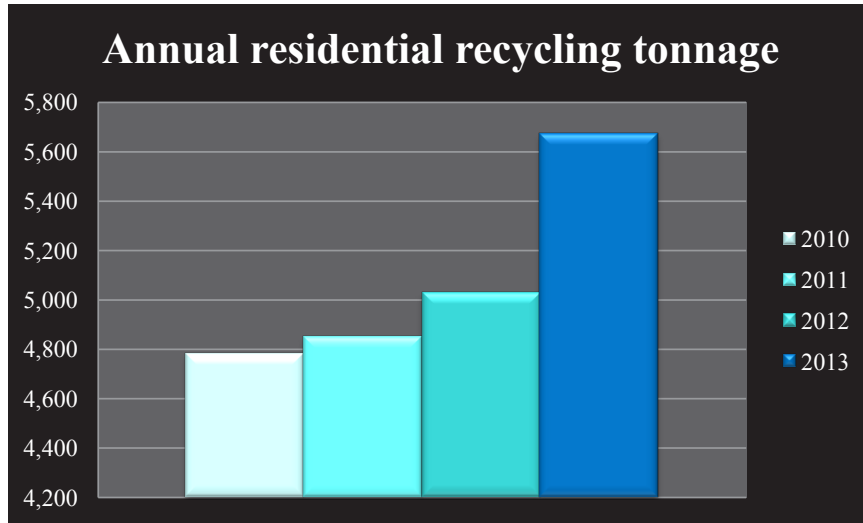
Waste, as referenced in this plan, refers to the items placed in the refuse containers in city offices and facilities and transported to the New Hanover County (NHC) landfill. These materials are collected by Solid Waste staff on a weekly basis. As of July 1, 2014, the City pays \$55 per ton to deposit refuse at the NHC landfill.



The New Hanover County landfill is permitted to grow to 170 feet in elevation. Currently, the landfill height hovers around 70 feet. In 2012, the landfill accepted approximately 205,000 tons of waste, therefore we can expect the landfill to continue to grow. The landfill is located on a 689 acre parcel in the northwestern portion of the County. More than half of the landfill parcel is natural wetlands that will never be developed. A constructed wetland sits on the property, filtering the waste water runoff. The landfill releases methane gas through methane flares. An opportunity to generate electricity exists at the NHC landfill, as identified by the Environmental Protection Agency (EPA), and the decision lies in the County's purview. Some landfills capture the methane and use it to generate electricity, reducing costs and greenhouse gas emissions. To date, the New Hanover County landfill hasn't secured funding to begin this type of project.

Existing conditions

The City of Wilmington has offered recycling collection services to the community since 1990. In 1994, the recycling collection service transitioned to single-stream collection, meaning recyclable material did not need to be sorted. City trash customers utilized an 18-gallon open top bin. In 2012, the Solid Waste office rolled out the 'Big Blue' program, where customers were offered 35-gallon or 95-gallon blue rolling carts with lids for recycling use. The city's Solid Waste office collects recycling every other week. The program is voluntary and included as a part of the trash rate.



Recycling material is transported to the Waste Management MRF, where the city pays \$20 per ton to deposit. Waste Management, transfers the material to the Waste Management Material Recovery Facility (MRF) in Wake County, NC.

City residential and CBD recycling operating conditions

The city employs approximately eight (8) staff to collect residential recycling through four (4) recycling collection routes on four collection days. Residential recycling is collected from city trash customers every two weeks. These staff collected approximately 4,000 tons of recyclable material in 2012 and 2013. The Solid Waste division’s Central Business District (CBD) section collects recycling, although they include this service in addition to many additional services offered downtown. Eight (8) CBD employees cover these responsibilities, none being solely dedicated to recycling. The CBD staff work seven days per week.

City Office and Facility Recycling conditions- Internal Operations

An active internal recycling program has existed within city operations since 1995. One staff member is tasked with city office and facility recycling. This staff person collects material from city offices and buildings each week on Thursdays. They also collect ‘special recycling items’, namely fluorescent tubes, batteries, electronics and ink cartridges. These special items are disposed of properly to avoid hazardous contamination. The facilities not included under this responsibility are parks and fire stations whose recycling is absorbed into city residential recycling routes.

Recyclable items are included on educational material in digital and print formats throughout the city. These materials are available through the Solid Waste division or the Sustainability Committee upon request.

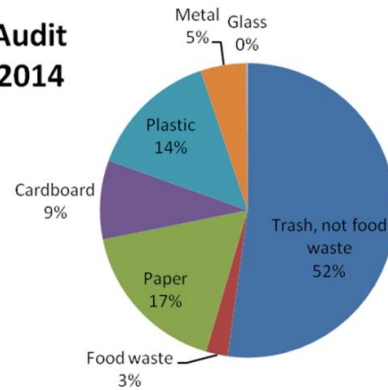


Waste Audit

City Sustainability and Public Services staff conducted the first annual waste audit in 2013. City office and facility trash was collected at random by Solid Waste staff, deposited in a city warehouse and sorted through to determine the amount of recyclables in the waste stream by volume. In 2013, 75% of items in the trash were recyclable. 2012 is also the year the recycling education and outreach program began. The waste audit and subsequent report were shared with city leadership. In 2014, the Sustainability Committee conducted the second annual waste audit. This audit shed light on individual facilities'

trash by naming the trash source in the report. The audit found 45% recyclables in the waste stream. Although this improvement is positive, the methodology of the waste audit did change from 2013 to 2014, given the named facilities. The Sustainability Committee will improve on this process and determine the 2015 methodology with the assistance of the Solid Waste Superintendent.

Waste Audit March 2014



Measuring Progress

The waste audit is a tool used to provide annual data to the Sustainability Committee and the city, measuring progress on our waste reduction and recycling efforts. The following table will be updated annually to measure progress and alter strategies as necessary.

Annual tracking	Goal	% of potential recyclables in sample waste stream
2011-2012	Baseline	75%
2013-2014	Plan development	
2014-2015	Plan endorsement - 5% reduction	
2015-2016	10%	
2017-2018	15%	
2018-2019	20%	
2019-2020	25%	
2020-2021	30%	
2021-2022	35%	
2022-2023	40%	
2023-2024	45%	
2024-2025	50%	
2025-2026	55%	
2026-2027	60%	
2027-2028	65%	
2028-2029	70%	
2029-2030	75%	
2030-2031	80%	
2031-2032	85%	
2032-2033	90%	
2033-2034	95%	
2034-2035	100%	

FY 2014-2015 Waste Reduction and Recycling Strategies

The Sustainability Committee developed strategies to address the FY 2014-2015 focus area, waste reduction and recycling. The strategies are included in tables below, separated by high, medium and low priority categorizations. Sustainability Committee leads will work with an implementation team to develop an action plan and implement the strategy over this fiscal year.

High priority strategies

Strategy	Description	Priority	Cost savings and/or impact	Sustainability Committee Lead	Timeline
Waste Audit	Conduct annual waste audit in Spring 2015	High	Potential \$ savings will depend on % of recyclables in waste stream; A dollar amount can be attached to this strategy	Suzanne Gooding	Complete waste audit and report by March 2015
Set printer defaults to double-sided printing	Work with IT to change default print settings to double-sided printing; Provide single-sided printing instructions and opt-out option for staff who consistently need to print single-sided.	High	Reduce costs for purchasing paper	Adrienne Harrington	IT meeting by October 2015; Team evaluate next steps
EMT endorse plan/strategies and committee ask EMT to promote efforts	Present plan and strategies at EMT meeting	High	Leadership support of waste reduction and recycling	Suzanne Gooding and Adrienne Harrington	Complete presentation by August 2014
Inventory of available recycling containers, gap analysis and action plan	Determine if there are enough recycling containers in office and common areas and if containers are in appropriate places	High	Increased recycling	Need leader	Plan for conducting inventory by December 2014; Conduct inventory in January and February 2015; Gap analysis and action by April 2015

FY 2014-2015 Waste Reduction and Recycling Strategies**Medium priority strategies**

Strategy	Description	Priority	Cost savings and/or impact	Sustainability Committee Lead	Timeline
Awareness and Education meetings	Develop and implement awareness and education meetings offering the basics on recycling within the organization. Topics to include recycling items, bin and cart accessibility, special recycling, collection, individual and workplace tips and city accomplishments in the waste reduction and recycling space. The Sustainability Committee will conduct the meetings with a long term goal of a 'meeting in a box' style staff can lead with departmental approval.	Medium	Increased recycling through education	Suzanne Gooding	Develop a prototype meeting kit by September 2014; Duplicate meeting kits in October 2014; Meet with divisions by May 2015
Recommend waste reduction and recycling goals be added to city-wide recognition program as it is developed.	As the city-wide recognition committee develops goals and programs to recognize all city employees, the Sustainability Committee liaison will work with the recognition committee to determine if a waste reduction and recycling goal is an appropriate addition. If so, the liaison will work to further develop these goals to fit in with the city-wide recognition committee's mission.	Medium	Create cultural reinforcement of waste reduction and recycling at the city level.	John Fortuin	Recommend waste reduction and recycling goals become a component of city-wide recognition program by October 2014.

FY 2014-2015 Waste Reduction and Recycling Strategies**Low priority strategies**

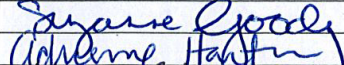
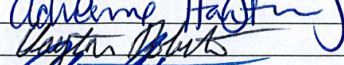
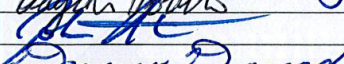
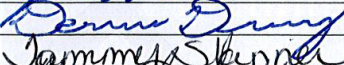
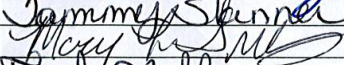
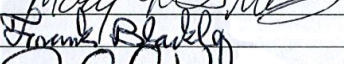
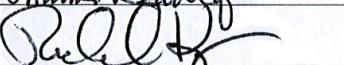
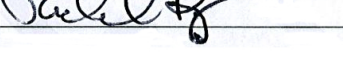

Strategy	Description	Priority	Cost savings and/or impact	Sustainability Committee Lead	Timeline
Engage Thalian Hall staff in conversations on waste reduction and recycling	Determine current level of recycle activity, understand challenges and opportunities	Low due to unpredictable conversation conclusions	Potential for increased recycling due to large amount of waste generated	Dennis Drury	Initial conversation with Thalian staff by January 2015
Research the cost impact of Water bottle station/fountain (Appendix includes photo)	City office contest to reduce waste and increase recycling; Winner receives bottle filling station	Low due to time and funding constraints	Raise awareness around plastic bottle use and provide a physical reminder of waste reduction	Suzanne Gooding	Compile cost and discuss with facilities by December 2014
Research and evaluate the possibility of transitioning to office mini-waste bins (Appendix includes photo)	Remove large office waste bins and liners, replace with the mini waste bin system	Low due to time and funding constraints	There are potential savings in terms of the housekeeping contract, given employees will empty their waste basket and purchase of waste basket liners. The mini-waste bins do not use liners. UNC Charlotte implemented a program and saved \$13,000 in liners. The university also increased overall recycling by 20%.	Suzanne Gooding	Utilize inventory information to understand costs associated with purchasing mini waste bins by June 2015

This plan is an active document and will be updated annually. In May 2015, the Sustainability Committee will choose a FY 2015-2016 focus area. This future focus area will become the next chapter in this plan. Potential future focus areas to be added as chapters to this developing plan include:

- Energy
- Vehicle Fuel
- Water
- Purchasing

Plan Support

The Sustainability Committee approves this plan. By signing this document, I understand I have a responsibility to share the plan, gain feedback on strategies, implement strategies and support plan updates as an active member of the FY 2014-2015 Sustainability Committee.

Name	City Area	Signature	Date
Suzanne Gooding	Operations Center		7/28/2014
Adrienne Harrington	Downtown Offices		7/29/14
Clayton Roberts	Downtown Offices		7/29/14
John Fortuin	Fleet and Finance		7/28/14
Dennis Drury	Facilities		7/28/14
Tammy Skinner	Community Services		8/22/14
Mary Smith	Police		8-21-14
Frank Blackley	Fire		7/31/14
Richard King	Executive Management Team		7-25-14

Appendix

Sustainability Committee Charter

Example Toolkit document

Photos of water bottle filling station and mini-waste bins

Committee Charter

City of Wilmington
Sustainability Committee

2013-2014



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1 PURPOSE OF COMMITTEE CHARTER

The City of Wilmington's Sustainability Committee charter is considered a living document and will be used to track the progress of the committee as well as provide the framework the committee works within. The charter includes the identified needs, scope, justification, and resource commitment as well as the committee's decision to proceed or not to proceed with recommendations or programs.

The intended audience of the Sustainability Committee charter is the members of the committee, city staff, and senior leadership.

2 COMMITTEE PROBLEM STATEMENT

Over the past 20 years, the City of Wilmington has successfully implemented many initiatives in the sustainability field, namely an increasingly popular curbside recycling program and a large federally-funded energy conservation project. A number of initiatives have occurred within the corporate organization. The City of Wilmington has an internal recycling collection service and energy conservation initiatives. The city has yet to neither build strong policies around sustainable practice nor develop long-lasting education and outreach opportunities geared toward city employees. Additionally, the city doesn't follow a Sustainability Management Plan, guiding employees and leadership toward measurable reduction goals and feedback. This has resulted in:

- Low awareness of past and current sustainability initiatives
- Lack of 'buy-in' from city employees and leadership
- Lack of comprehensive sustainability planning

3 COMMITTEE MISSION/GOAL STATEMENT

The Sustainability Committee will develop, gain approval, implement, assess and update the city's Sustainability Management Plan.

4 COMMITTEE SCOPE

4.1 OBJECTIVES

The primary objective of the Sustainability Committee is to organize and guide the city's internal operations' sustainability initiatives through the Sustainability Management Plan.

The team will consider internal energy conservation and efficiency, waste reduction, recycling, purchasing practices, water conservation and other sustainability focus areas as needed.

The overall sub-objectives of the Sustainability Committee are as follows:

- Create awareness around sustainable practices and behavior
- Extend sustainability knowledge to an identified target audience monthly
- Identify educational and outreach opportunities able to be implemented by the team
- Implement agreed upon strategies through the sustainability management plan
- Report on energy and water consumption, as well as waste diversion annually
- Collect data and conduct research on sustainable practice
- Provide policy recommendations to senior leadership

4.2 HIGH-LEVEL REQUIREMENTS/DELIVERABLES

The following table presents the requirements that the committee's product, service or result must meet in order for the committee objectives to be satisfied.

Req. #	Requirement Description
1	All members agree on the end process
2	An evaluation tool (SMART) should be utilized when deciding on strategies (Specific, Measurable, Action-oriented, Realistic, Time-specific)
3	An assessment and update of the Sustainability Mgmt Plan should occur annually

4.3 GUIDELINES

Sustainability Committee members should attend each monthly meeting, communicate with the appropriate departments, divisions and facilities after each meeting and report feedback to the Sustainability Committee. Committee members and city staff will have access to committee meeting minutes via the City Committee folder located in the S Drive.

4.4 BOUNDARIES

- The scope of the Sustainability Committee is to refine and streamline internal sustainability initiatives. The Sustainability Committee is not designed to implement external programs.
- The Sustainability Committee must be able to implement ideas and programs as a team.
- Sustainability Committee members should communicate openly when concerns arise, ensuring programs and recommendations are fully vetted prior to release.

5 TIMELINE

Phase 1: Draft Sustainability Management Plan (2014-2015)

Phase 2: Gain approval from Executive Mgmt Team and City Manager (2014-2015)

Phase 3: Implement Plan (2015-2016)

Phase 4: Revise and Update plan on an annual basis (2015-2016 and annually)

6 PROJECT ORGANIZATION

6.1 ROLES AND RESPONSIBILITIES

Name & Organization	Committee Role	Committee Responsibilities
Suzanne Gooding <i>Public Services Sustainability Project Manager</i>	Chair	Person responsible for acting as the committee's champion and providing direction and support to the team.
Adrienne Harrington <i>Development Services – Transportation Planner</i>	Co-chair	Person responsible for guiding the team through approval, implementation, assessment and updating the Sustainability Management Plan
Frank Blackley <i>Fire Department – Assistant Fire Chief</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from the Fire Department.
Richard King <i>Public Services Director</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from the city's Executive Management Team
Kathy Wilson <i>Information Technology – Client Services Manager</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from the downtown municipal offices.
Capt. Donny Williams <i>Police Department – Division Commander</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from the Police Department.
Tammy Skinner <i>Community Services– Recreation and Downtown Services</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from the Community Services Department.
Dennis Drury <i>Public Services – Facility Operations</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from Facilities.
John Fortuin <i>Fleet division</i>	Team Member	Person responsible for providing data and ideas, sharing information and gaining feedback from Fleet and Finance.

6.2 STAKEHOLDERS (INTERNAL AND EXTERNAL)

The following is a list of the stakeholders:

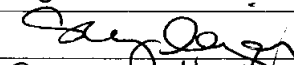

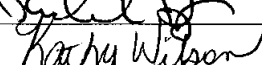
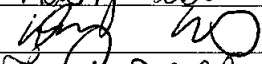


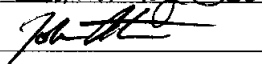


- Building and facility occupants and visitors (External)
- Citizens (External)
- City Council (Internal)
- City Staff (Internal)

6.3 GROUND RULES

- The Sustainability Committee will be on-going with rotating membership every 2 years.
- Review and approve minutes.
- Provide regular updates to EMT on Committee progress
- Attend meetings and be on time
- Complete assignments
- Provide enough time for team members to complete assignments
- Ensure the availability of resources
- Act as a team to implement strategies
- Consensus rules
- Respect each others' opinions
- Adjourn on time.

6.4 SUSTAINABILITY COMMITTEE CHARTER APPROVAL

The undersigned acknowledge they have reviewed the committee charter. Changes to this project charter will be coordinated with and approved by the undersigned or their designated representatives.

Name	Role	Signature	Date
Suzanne Gooding	Chair		1/15/14
Adrienne Harrington	Chair		1/15/14
Richard King	EMT Liaison		1-15-14
Kathy Wilson	Downtown Offices Liaison		2/6/14
Donny Williams	Police Dept. Liaison		1/15/14
Frank Blackley	Fire Dept. Liaison		1/15/14
Dennis Drury	Facilities Liaison		1/15/14
Tammy Skinner	Community Services Liaison		1/15/14
John Fortuin	Fleet Liaison		1/17/14

APPENDIX A: REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
<i>Sustainability Management Plan</i>	<i>Governing document guiding sustainability goals and strategies</i>	S:_City Committees\Sustainability Committee

APPENDIX B: KEY TERMS

The following table provides definitions for terms relevant to this document.

Term	Definition
Sustainability	Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their needs. <i>The 1987 United Nations Brundtland Commission Report, "Our Common Future"</i>

Appendix - Photos

Water bottle filling station photo

Example: ElKay water filling station



Source <http://www.elkay.com/bottle-filling-stations>

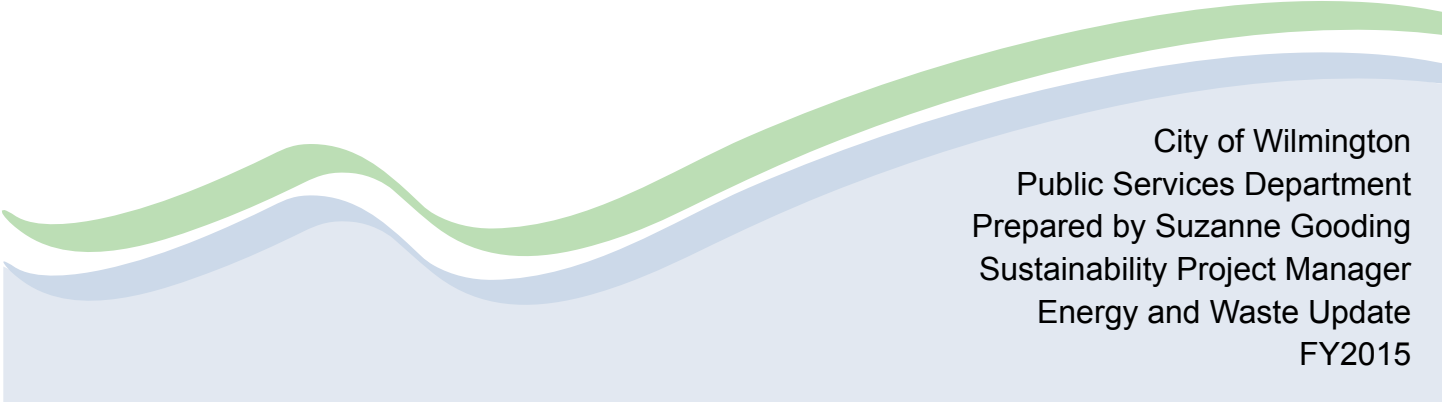
Mini-waste bin photo

Example: UNC Charlotte Facilities Management



Source

file:///U:/Sustainability%20Committee/Sustainability%20Plan_Guiding%20Document/Housekeeping%20changes.pdf



City of Wilmington
Public Services Department
Prepared by Suzanne Gooding
Sustainability Project Manager
Energy and Waste Update
FY2015