

City of Wilmington Energy and Waste Reduction Report 2013





Commitment

- 2002- IT department has been purchasing Energy Star computers to be used city-wide
- 2005- Fuel Conservation Directive (revised 2011)
- 2006- Mayor Saffo signed the U.S. Mayors Climate Protection Agreement
 - City Council focused on municipal operation emissions and established a reduction target of 58% by the year 2050
- 2008- Outreach and educational efforts centered on energy conservation

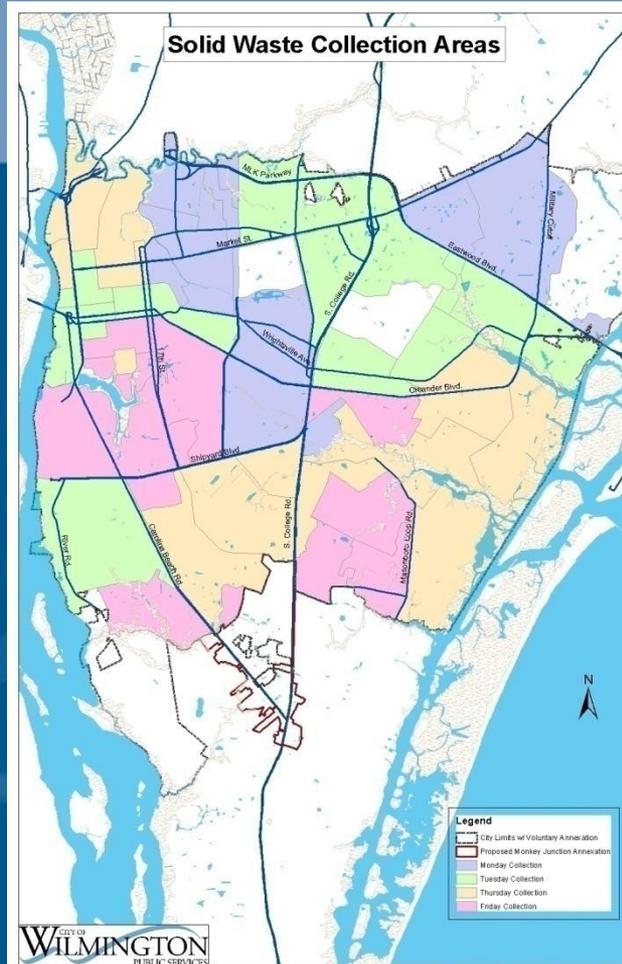
Energy Initiatives



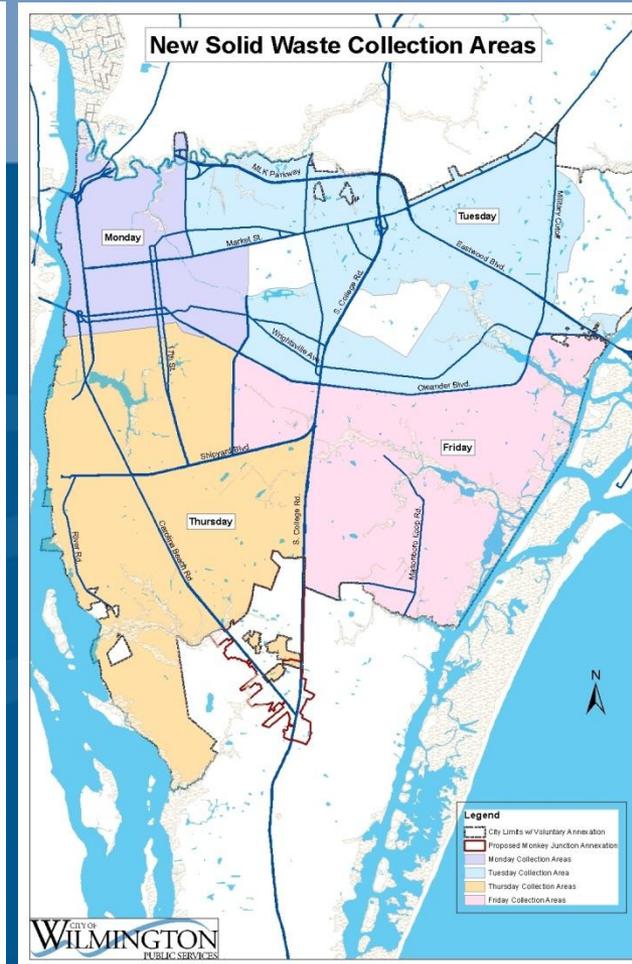
Route Optimization Project

In 2009, the Solid Waste division conducted a large-scale route optimization project, resulting in cost savings, mainly due to crew reductions and fuel efficiencies. The reduction of 11 three-man crews to 9 three-man crews resulted in an approximate \$260,000 in staff position savings annually.

Routes prior to project



New routes (2009- present)



Energy Efficiency Community Block Grant

In 2010, the City was awarded over \$1M through the Energy Efficiency Community Block Grant (EECBG) as a part of the American Recovery and Reinvestment Act of 2009 (ARRA), allowing the city to fund energy efficiency upgrades to several facilities.





Facility	2010 EECEBG Project
Fleet Maintenance	Solar PV array-73.92kW system produces annual net 89,300 kWh
Engineering building	Solar PV array-26.88kW system produces annual net 33,300 kWh
City Hall- Thalian Hall	White, reflective cool roof installation
Municipal building (305 Chestnut)	Pilot Solar Area Light in parking area
City-wide	Lighting upgrades and occupancy sensor installation
City-wide	Low-flow plumbing fixtures and water conservation upgrades
Fleet Maintenance	Fans installation to direct heat to workspace

Local Energy Assurance Planning Grant



In 2010, the City of Wilmington was awarded a Local Energy Assurance Planning (LEAP) grant. This grant funded a Sustainability Manager position directed to develop an energy assurance report aligned with the State Energy Office's statewide energy assurance initiative. The report outlines current efforts in reducing energy assurance risks as well as future recommendations. It includes electricity, propane, natural gas and vehicle fuel recommendations and research.



Streetsweeper facility- Net zero

In 2009, the City built a new street sweeper complex designed for energy performance of net zero consumption.

The street sweeper complex incorporates passive solar design, solar thermal, a solar photovoltaic array, and other energy efficiency features. In addition to the building's energy efficiency features, impervious surface and stormwater runoff impacts were significantly reduced with a bioretention unit.



The **Convention Center** was built to LEED Silver standards in 2010.

Buildings- LEED

- including redevelopment of a former industrial railroad yard
- innovative underground systems that uses sand to filter stormwater runoff
- a white roof that reflects the sun and reduces heat gain
- water efficient landscaping
- special glass that limits thermal loss
- plumbing fixtures that use about half the amount of water of traditional fixtures
- efficient lighting and HVAC systems



Energy Diversity



Hybrid ,
electric
vehicles and
the addition of
smaller, more
fuel efficient
vehicles in city
fleet



Electric Vehicle
Charging
Station



Outdoor lighting- LEDs

Traffic signals- late 1990s

North Third Street
improvements- 2012

City Hall-Thalian Hall-2013



Timeline of City of Wilmington Energy Initiatives



2002
IT department committed to purchasing Energy Star computers

2005 (revised 2011)

Fuel Conservation, Executive Directive #2005-004- City leadership established department by department fuel efficiency strategies that were compiled into a fuel conservation directive

2006
Mayor Saffo signed the US Mayors Climate Protection Agreement.

2008
City began outreach and educational effort centered on energy conservation

2009
City Council adopted a Resolution establishing a Goal for Reducing Greenhouse Gas Emission by 58% by 2050 from municipal operations in keeping with the principles of the US Conference of Mayors Climate Protection Initiative.



2010
Convention Center built to LEED Silver

2000

1990s
The City's Traffic division began converting City traffic signals to LED lighting. The City's traffic signals were fully converted to LED in 2005.

2005
Stormwater division installed a solar aerator in Greenfield Lake as a part of the lake management plan

2007
The traffic division initiated a LED street lighting pilot project.

2009
The City was awarded the Energy Efficiency Community Block Grant (EECBG), allowing the City to install energy efficiency upgrades to several facilities.

2009
The City built a new street sweeper complex designed for energy performance of net zero consumption over the annual cycle.

2009
Solid waste and recycling conducted the route optimization project, realizing greater fuel and time efficiencies.



2010

Timeline of City of Wilmington Energy Initiatives

2010

Fleet management developed a no-idling policy. Additionally, they began using Ultra Low Sulfur Diesel for fueling all of the diesel fleet and all of the gasoline fleet is currently using E10 fuel.

2010

City of Wilmington was awarded a Local Energy Assurance Planning (LEAP) grant. This grant funded a Sustainability Manager position to develop an energy assurance report aligned with the State Energy Office's statewide energy assurance initiative.

2011

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

2012

City Council authorized installation of Electrical Vehicle Supply Equipment at the Market Street Parking deck for a research project with Progress Energy

2012

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



2010

2010

The City's Fleet began evaluating vehicle needs and purchasing smaller, more efficient vehicles for replacements where feasible.



2012

Public Services department hired Sustainability Project Manager to act as energy manager and support departmental efforts to reduce energy consumption by providing educational opportunities, research best practices and track the City's energy consumption.

2012

Future Initiatives

2012

Carpooling opportunities are offered to City employees in conjunction with other TDM (Transit Demand Management) programs in NC

2012

The Police Department began using a solar-powered boat lift

Waste Reduction Initiatives



Recycling

- 1990s- Voluntary recycling program serving city trash customers
- Current 75% overall participation rate with Big Blue
- Education and Outreach
- Community Waste Reduction and Recycling grant



Recycling- Internal

In 1995, the City's Solid Waste division began collecting recycling from city-owned offices and facilities on their regular collection routes.

FY 2011-2012

100 tons of collected recycling items



The Public Services Streets division participates in paving recycling efforts including recycling asphalt millings and reusing historic brick, cobblestone and granite.



Timeline of City of Wilmington Waste Reduction efforts

1990

The City of Wilmington began curbside recycling collection

1990



1994

The City of Wilmington began utilizing single-stream recycling.

1995

The Solid Waste Management Office collects recycling from City offices and facilities.

1997

The Solid Waste Management Office collects used and broken electronics from City offices to dispose of them properly

2000



2010



2010

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

2012-2013

The Solid Waste Management Office rolled out the Big Blue recycling program, converting the voluntary recycling collection program from an 18 gallon bin to a 95-gallon roll-out cart, allowing recycling participants to increase their recycling efforts. The City also transitioned to a bi-weekly recycling collection schedule in an effort to reduce fuel consumption and staff time.

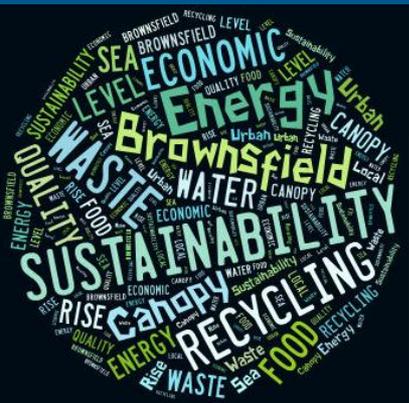
2011

Solid Waste Management Office began recycling used and/or broken trash and recycling carts, diverting them from the landfill.



Opportunities

- Report and presentation added to city's website
- Update report annually
- Sustainability Management Plan
- Sustainability Committee





Questions?

Thank you!
Suzanne Gooding, MPA
Sustainability Project Manager