



Sustainability & Environmental Responsibility in Orange County

June 16, 2015

Purpose and Background:

- To receive updates from multiple County departments on sustainability initiatives, including:
 - Environmental Responsibility in County Government (ERG) goal
 - FY 14 Utility and Fuel Scorecard



Sustainability Activities Across the County

- Dept. of the Environment, Ag., Parks & Recreation
 - David Stancil
- Information Technologies
 - Jim Northrup
- Planning, Inspections, Orange Public Transit
 - Craig Benedict
- Solid Waste
 - Blair Pollock
- Asset Management Services
 - Brennan Bouma



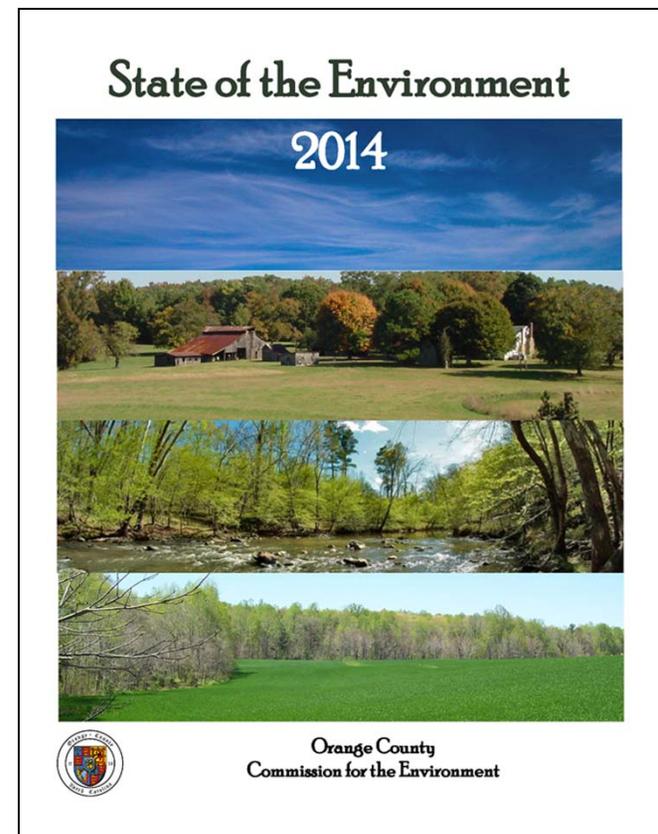


Department of Environment,
Agriculture, Parks & Recreation
(DEAPR)

Conserving and managing the natural
and cultural resources of Orange
County

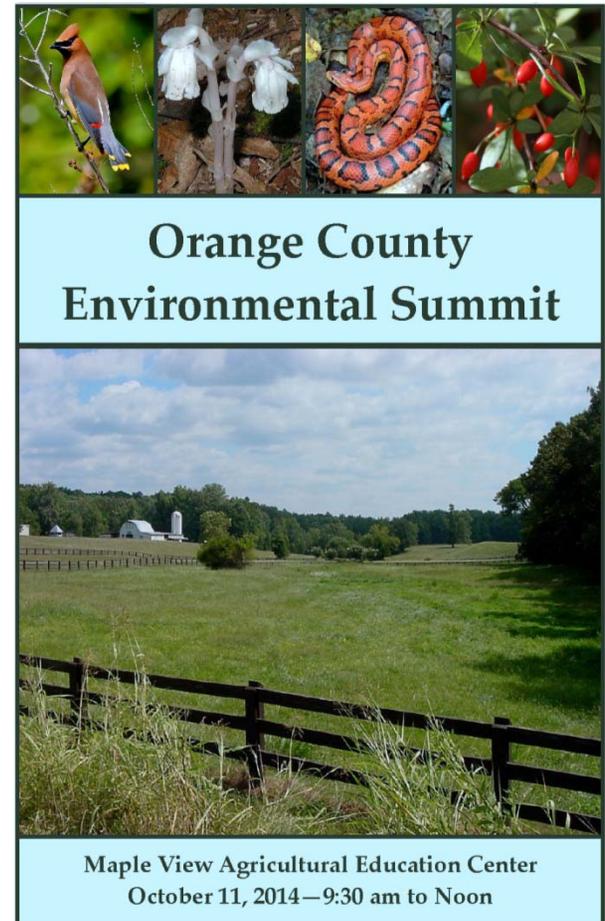
State of Environment Report 2014

- SOE Reports prepared every 4-5 years
- Uses trends, indicators and benchmarks to assess 23 environmental indicators
- Indicators assessed status and trend
- 14 of 19 indicators show good or fair status
- Critical and emerging issues addressed



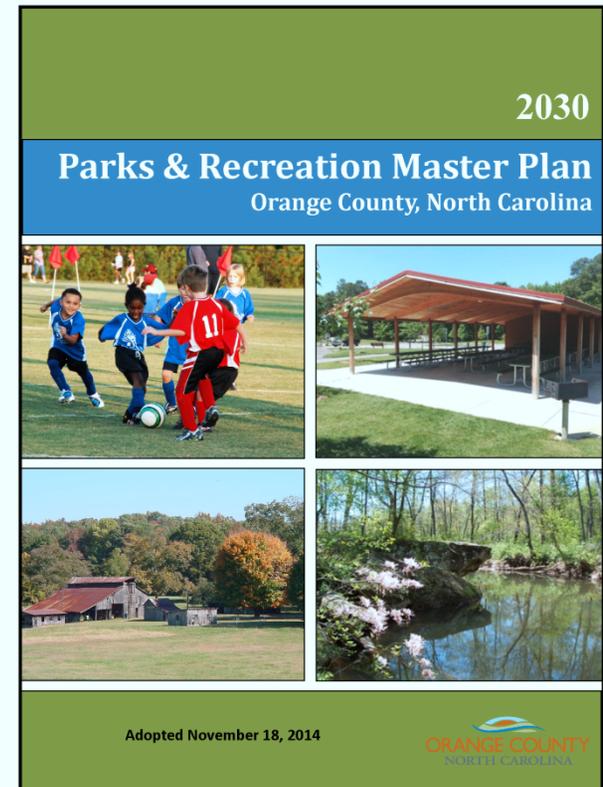
Orange County Environmental Summit

- Held October 2014 - Maple View Education Center
- Presentation of SOE 2014 Report
- Guest Speakers on
 - Invasive Species (Johnny Randall)
 - Future of Jordan Lake (Don Francisco), and
 - “Lessons from the Land”
(Dr. Norm Christenson, keynote)



Environment and Nature Education

- Continue to offer series of environmental education and nature programs
- High interest expressed in P&R Master Plan
- Programs include:
 - Little River Nature Programs
 - Farm to Table Event
 - “Earth Evening”
 - Arbor Day Celebrations and Earthwalk (with OC Schools)
 - Booths at “Last Fridays”
 - Others



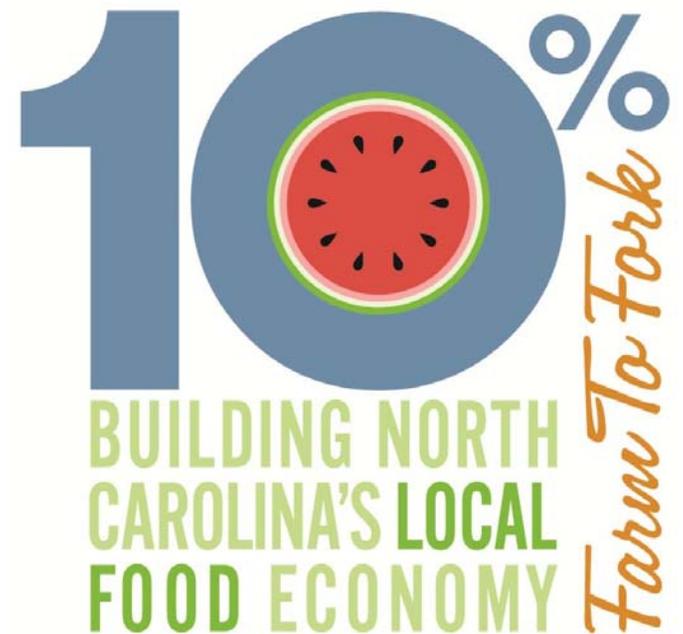
Existing ER Goal Objectives - Actions

- Replaced damaged orchard trees - Blackwood Farm Park (No Net Loss of Woodlands policy)
- Completed two xeriscaping projects on County grounds
- Continue Groundwater Guardian Status and Recognition (“Green Sites”)
- Forest Management Planning (with NCFS)
- Sustainable energy component, more-efficient park lighting



New and Emerging Activity Areas

- Commission for Environment and OWASA on energy conservation
- Implementation of Sustainable Landscaping Plan
- 10% Campaign
- Sustainability Coordinator / CFE Energy Committee



Information Technologies

Reliable, cost-effective and efficient
IT solutions for Orange County



Ongoing Initiatives:

- Energy efficient computer fleet
- Mobile workforce
- Virtualization
- Storage Consolidation
- Remote support



Future Initiatives

- CHCCS Computer Reuse and Training Program
 - Not just e-waste recycling
 - Public – Private
 - Tech Career Training Program
 - Expandable





**Planning, Inspections,
Engineering/Erosion Control, &
Orange Public Transportation (OPT)**

Promoting stable and quality
development while protecting the
environment

Green Building Standards

Ongoing:

- Representation on Durham-Orange-Chatham Home Builders Association Board of Directors and NC Building Inspectors Association BoD
- Volunteer incorporation of practices

Planned/Proposed Initiatives:

- Representation on NC Building Code Council



Waste Water Technologies That Lessen Environmental Impacts

Current Year Initiatives:

- Research with Environmental Health on siting and alternatives to on-site septic systems

Planned/Proposed Initiatives:

- BOCC consideration of siting/zoning alternatives and innovations to on-site septic systems

Local and Regional Air Quality:

Ongoing:

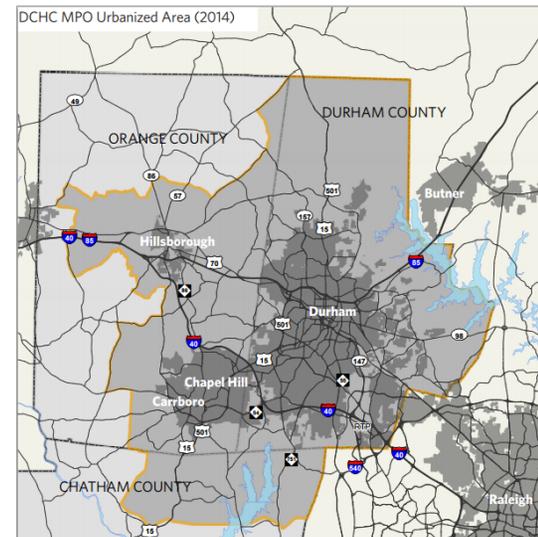
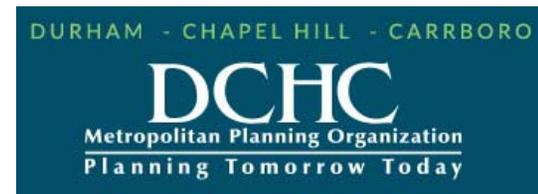
- Seated staff on Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (MPO) Technical Committee

Current Year Initiatives:

- Collection of data for 2045 Metropolitan Transportation Plan (MTP) and Air Quality Analysis Report
- Draft Mobility Report Card for MPO

Planned/Proposed Initiatives:

- Propane conversion for OPT's new buses
- 2045 MTP and Air Quality Analysis Report
- Congestion Mitigation Air Quality (CMAQ) grant funding for OPT



Promote Public Transportation/Decrease Dependence on Personal Vehicles

Ongoing:

- OPT -- Outreach and education
- Comprehensive Transportation Plans (CTPs)
- Southern Human Services Center Special Use Permit compliance and Travel Demand Management

Current Year Initiatives:

- Design of OPT's expanded bus services
- Pursuing funding opportunities for bus capital and operations
- Efland-Hillsborough Commuter Loop tour and Earth Evening

Planned/Proposed Initiatives:

- Expanded OPT services
- Rebranding of OPT



Increase Connectivity

Ongoing:

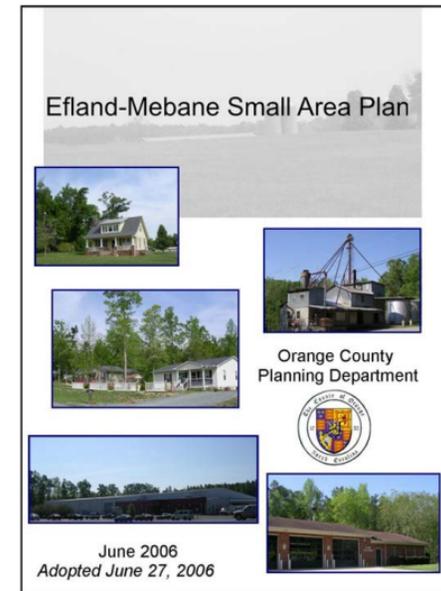
- Subdivision administration
- Access Management Plan implementation

Current Year Initiatives:

- Adopted Efland zoning overlay districts including connectivity standards
- Consultant environmental analysis in Buckhorn area for access management planning

Planned/Proposed Initiatives:

- Efland/Buckhorn/Mebane Access Management Plan amendment promotes funding and economic activity



Protecting Groundwater

(Also Surface Water)

Ongoing:

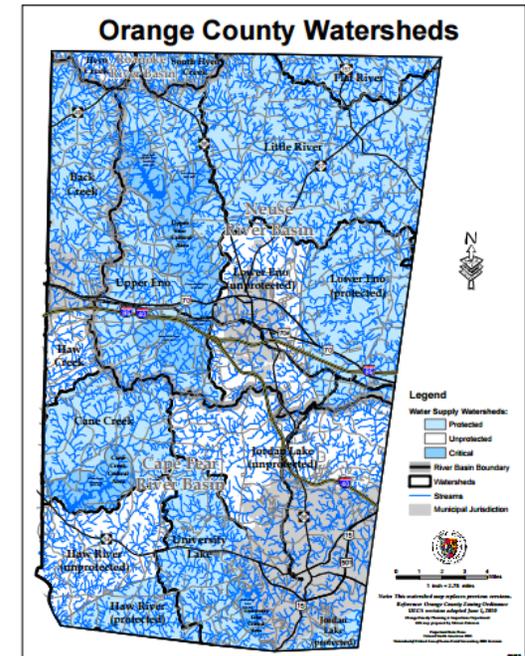
- Unified Development Ordinance (UDO) -- Watershed regs
- Erosion Control and Stormwater Ordinances
- Surface Water Identification (SWID)

Current Year Initiatives:

- Agricultural Support Enterprises included standards that in some cases will require groundwater studies

Planned/Proposed Initiatives:

- UDO amendment to provide incentive for implementing infiltration type Best Management Practices (BMPs)
- Additional public education and outreach promoting infiltration type BMPs , Low Impact Development, and buffer preservation/environmental stewardship
- State changes (unfunded mandates) to Falls and Jordan Lake nutrient management programs are pending
- Maintain appropriate staffing levels for meeting the BOCC Environmental Responsibility Goal



Directing Development to Appropriate Areas

A photograph of a residential street. In the foreground, there is a paved road with double yellow lines. A large, leafy green tree stands on the right side of the road. In the background, a brick house with a chimney is visible. The sky is overcast.

Ongoing:

- 2030 Comprehensive Plan and UDO/zoning
- Protection of open space within subdivisions
- Water and Sewer Management Planning and Boundary Agreement

Current Year Initiatives:

- Adopted Efland zoning overlay districts seek to direct development to an identified growth area served or to be served by public water/sewer systems

Planned/Proposed Initiatives:

- Clustering of residential lots to preserve additional open space and protect significant environmental site attributes



Solid Waste Department

Solid Waste Goal and Results for FY 13-14

	State of NC	Orange County
Reduction Goal	40%	61%
Reduction Achieved	13%	64%
Pounds landfilled per person	1,860	980

Rural & Urban Curbside Recycling Performance: Tonnage Comparison 2014 vs. 2015

URBAN	July 2013 – April 2014	July 2014 – April 2015	% Increase	Comments
Tons	3,933	4,365	11%	100% residences have carts by July 2014
RURAL	Feb 2014 - April 2014	Feb 2015 – April 2015		
Tons	396	533	34%	55% of currently eligible rural residences using carts by April 2015 (rest use bins or go to convenience sites or don't recycle)

Solid Waste Current Initiatives

- Cart- based recycling instituted for:
 - ~ 100% of 18,300 urban residential customers by July 2014**and**
 - 7,800 of 14,500 eligible rural residential customers by April 2015 (300 more ordered to meet additional demand)
- Complete Interlocal Agreement for Solid Waste Management with Towns, UNC and UNC Healthcare -- December 2015
- Eubanks Road Solid Waste Convenience Center design completed; construction anticipated beginning -- August 2015
- Municipal solid waste to Durham Transfer Station continues for 2015-16
- Single, County-wide Solid Waste Programs Fee adopted for FY 2015-16 (no more 3-R Fees or convenience center fees)



Solid Waste Future Initiatives

- Three year phase-in of roadside recycling to remaining unserved ~7,000 rural single family households, in bins or carts as desired, Beginning FY 2015-16. Completion projected Spring 2018
- Continue modernization of Solid Waste Convenience Centers
 - High Rock site renovation projected per FY 16-17 C.I.P.
- Continue considering alternatives to Durham City Transfer Station
- Evaluate commercial recycling improvement options
- Examine program consolidation and cooperation opportunities with UNC and UNC Health Care
- Continue to explore long-term regional solid waste collaborative opportunities outside of Orange County



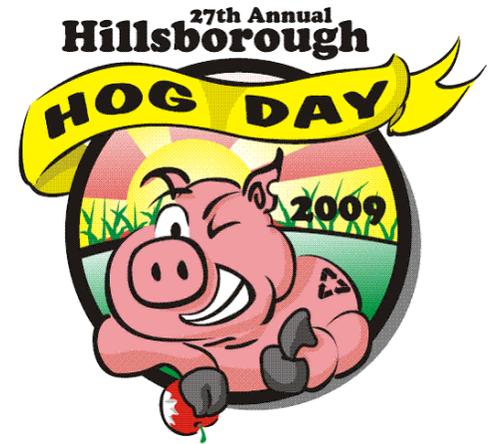
Orange County Leads the Way in Special Event Recycling

Hillsborough Hog Day

- Most environmentally improved
- From 0% to 85% waste reduction in 10 years
- **Farm-to-Fork and Terra Vita**
- 99% waste diversion

Carrboro Music Festival

- Recycles a ton of bar glass. Literally.
- Over 300 volunteer hours.



Many Benefits

- GREAT education opportunities
 - Local government collaboration
 - Community outreach
 - Food service industry involvement
 - Student volunteers
- Sponsor status for OC
- Saves money on disposal
- Reduces waste
- Models “Going Green”



Orange County provides waste reduction assistance to public & private events

- **Technical assistance** for recycling, food waste diversion, and source reduction for vendors and organizers
- **Containers, collection, equipment and staffing** for large events where we also host an information booth
- **Loan, delivery and pick-up of recycling and/or food waste containers** for events where organizers agree to collect, manage and separate materials
- **Information booth** and outreach at public events



New This Spring!

“Fork It Over”

- 200 stainless steel utensil sets from PTA Thrift Store and other donors.
- Loan, wash, return!



Now in development:

The Orange County Green Events Guide

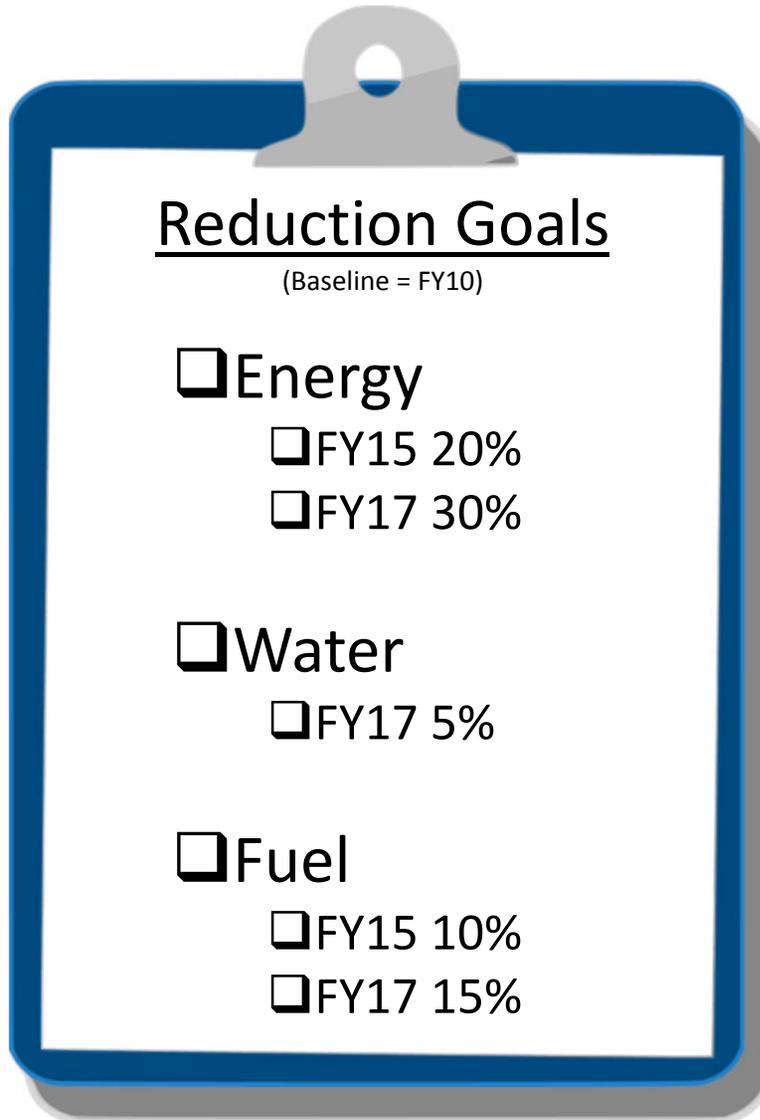
- Conduct focus groups to identify strengths, barriers and solutions:
 - Invite representatives from each department
 - Schedule several groups over the summer
- Tools to help Orange County Government entities reduce waste at events where food is served.
 - Waste reduction checklist
 - Purchasing guide for recyclable and compostable serving ware
 - Collections protocol



Asset Management Services

Providing and maintaining facilities and vehicles that are safe, reliable, sustainable, clean and comfortable

FY 14 Utility and Fuel Scorecard

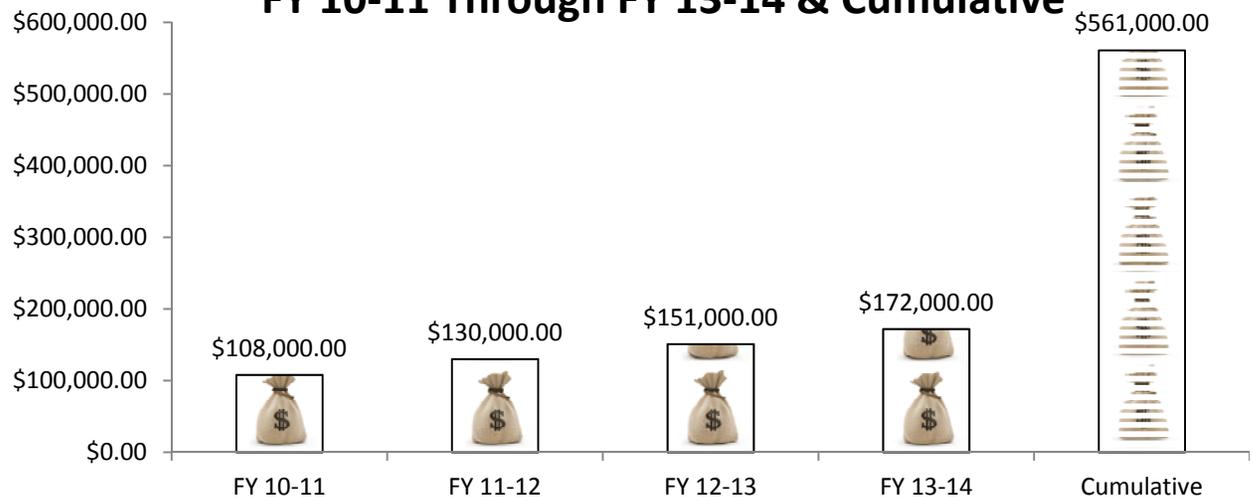


- Parameters held constant
 - AMS facilities and vehicles only
- Have not included:
 - SportsPlex;
 - Animal Services
 - Solid Waste facilities or vehicles
 - Eno River Parking deck
 - Outdoor lighting
- Future reports to include all buildings and vehicles

Energy Scorecard

Energy Use (MMBTU/ 1,000 Sq. FT of Occupied Space)				
	Goals		Actuals	
	MMBTU/ 1,000 Sq. Ft.	% Change from Baseline	MMBTU/ 1,000 Sq. Ft.	% Change from Baseline
FY 10	96.2		96.2	
FY 11	92.4	4%	91.4	5.0%
FY 12	88.5	8%	84.5	12.2%
FY 13	84.7	12%	82.4	14.3%
FY 14	80.8	16%	79.7	17%
FY 15	77.0	20%		
FY 16	72.2	25%		
FY 17	67.3	30%		

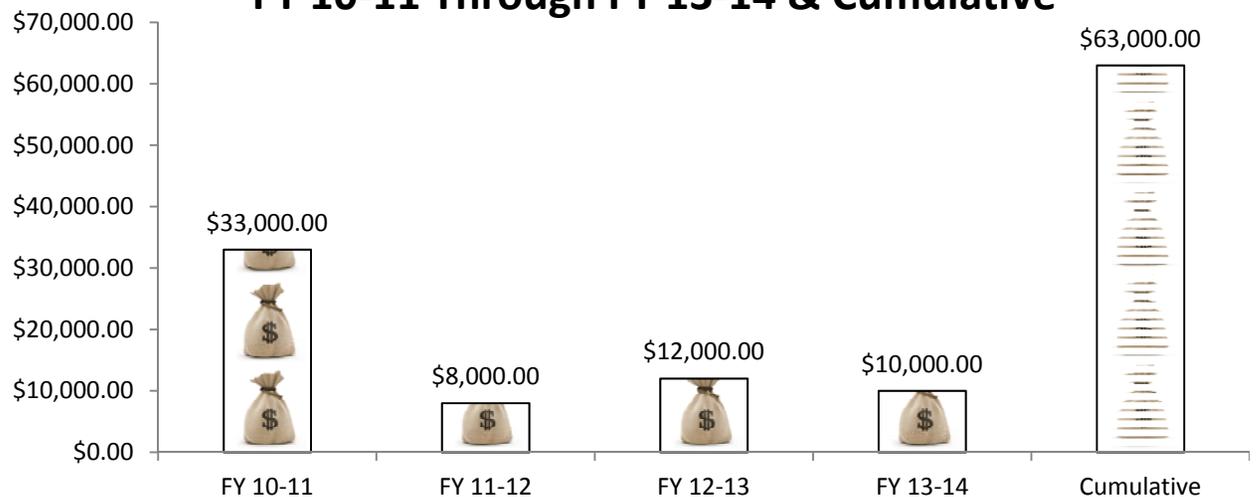
**Energy Cost Avoided
FY 10-11 Through FY 13-14 & Cumulative**



Water Scorecard

Water Consumption (Total Gallons)				
	Goals		Actuals	
	Gallons/ Sq. FT.	% Change From Baseline	Gallons/ Sq. FT.	% Change From Baseline
FY 10	15.93		15.93	
FY 11	15.82	0.7%	13.03	18.2%
FY 12	15.71	1.4%	15.19	4.6%
FY 13	15.59	2.1%	14.87	6.7%
FY 14	15.48	2.9%	15.07	5%
FY 15	15.36	3.8%		
FY 16	15.25	4.3%		
FY 17	15.13	5.0%		

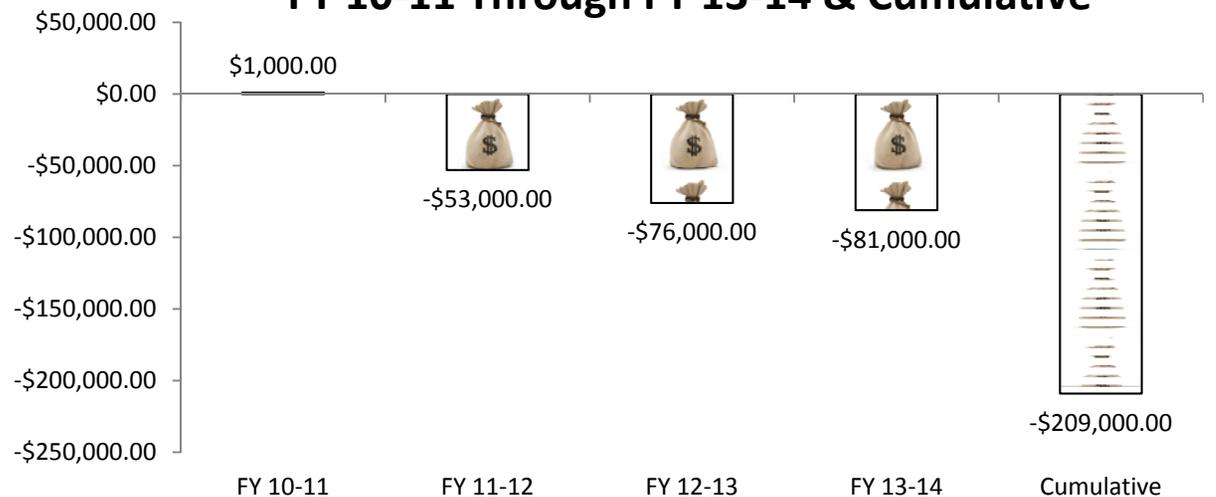
**Water Cost Avoided
FY 10-11 Through FY 13-14 & Cumulative**



Fuel Scorecard

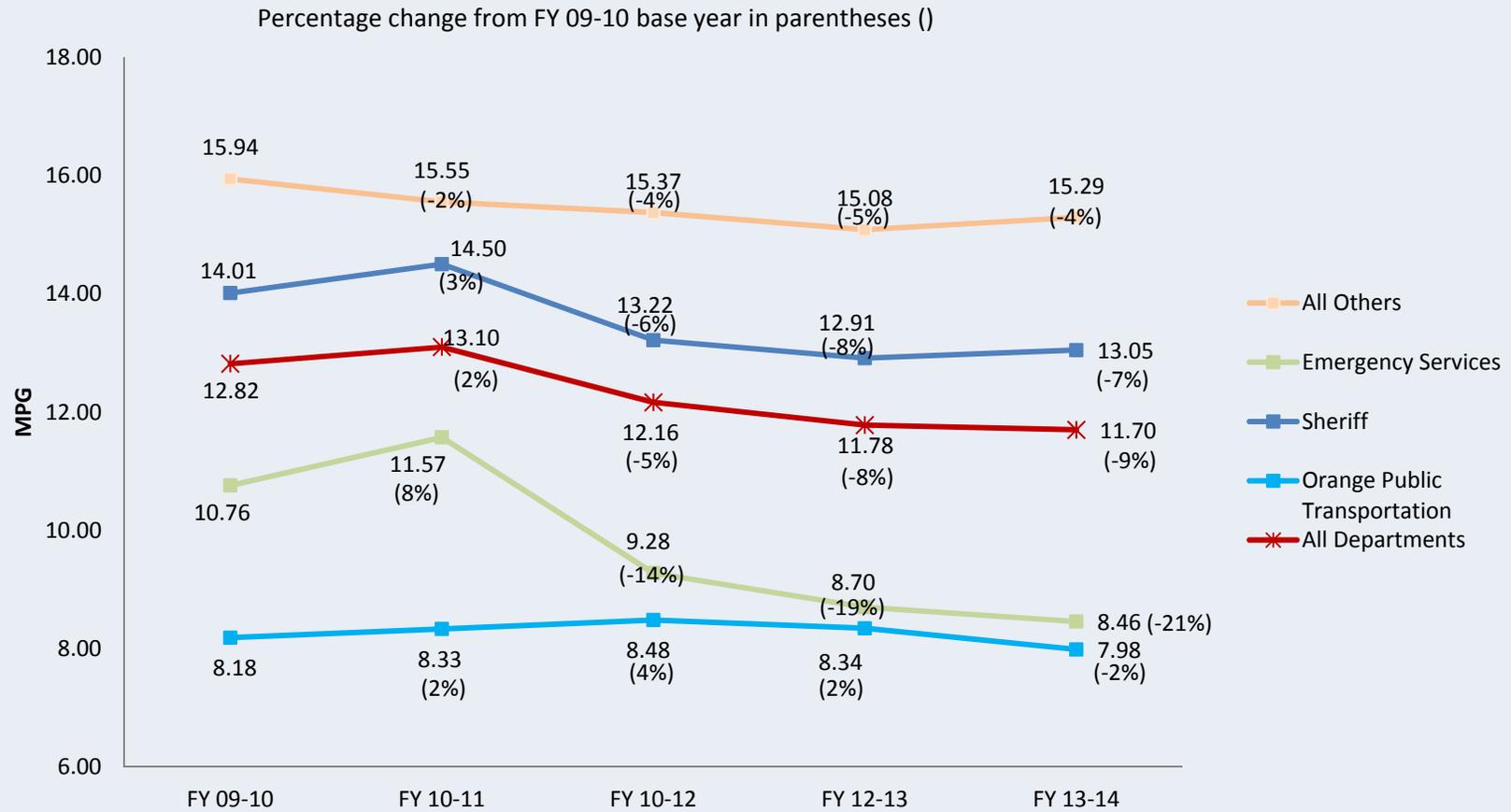
	Fuel Consumption (Total Gallons)				Fuel Efficiency (MPG)			
	Goals		Actuals		Goals		Actuals	
	Gallons	% Change From Baseline	Gallons	% Change From Baseline	MPG	% Change From Baseline	MPG	% Change From Baseline
FY 10	240,813		240,813		12.82		12.82	
FY 11	235,997	2%	251,382	-4.4%	13.07	2%	12.83	0.1%
FY 12	231,180	4%	252,708	-4.9%	13.33	4%	12.16	-5.1%
FY 13	226,364	6%	260,039	-8.0%	13.59	6%	11.78	-8.1%
FY 14	221,548	8%	259,321	-8.0%	13.84	8%	11.70	-9.0%
FY 15	216,732	10%			14.10	10%		
FY 16	210,711	12%			14.42	12%		
FY 17	204,691	15%			14.74	15%		

**Fuel Cost Avoided
FY 10-11 Through FY 13-14 & Cumulative**



Miles Per Gallon

Miles Per Gallon by Department - FY 09-10 Through FY 13-14

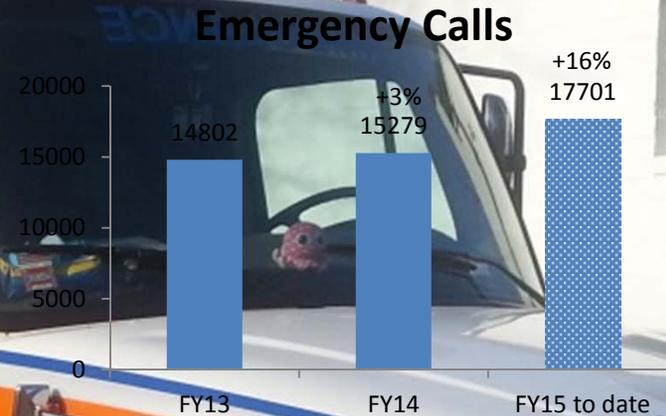


Fuel Scorecard Comments

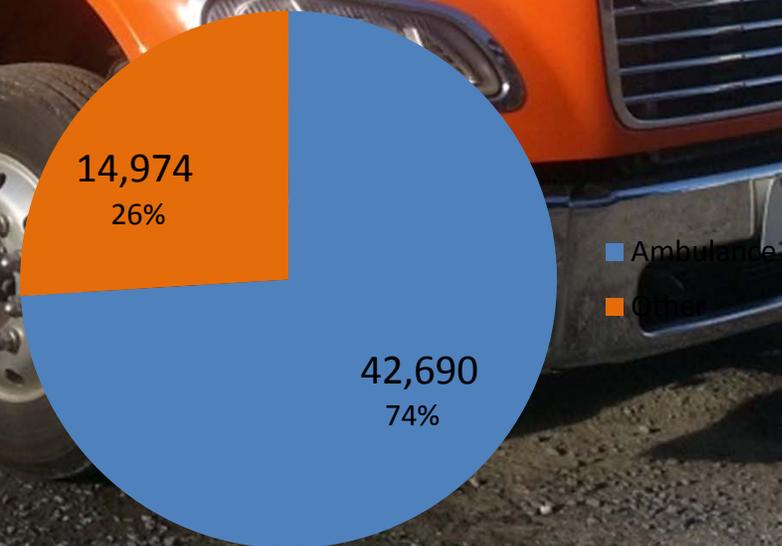
- Increased fuel use attributed to:
 - Increased emergency response vehicle miles
 - Driver behavior including idling, hard acceleration, hard braking, speeding

- ***Solution:***

- *Ambulance idle reduction pilot*
- *Propane fire inspection vehicles*
- *Active vehicle replacement program;*
- *Higher fuel efficiency standards;*
- *Driver behavior training and education*



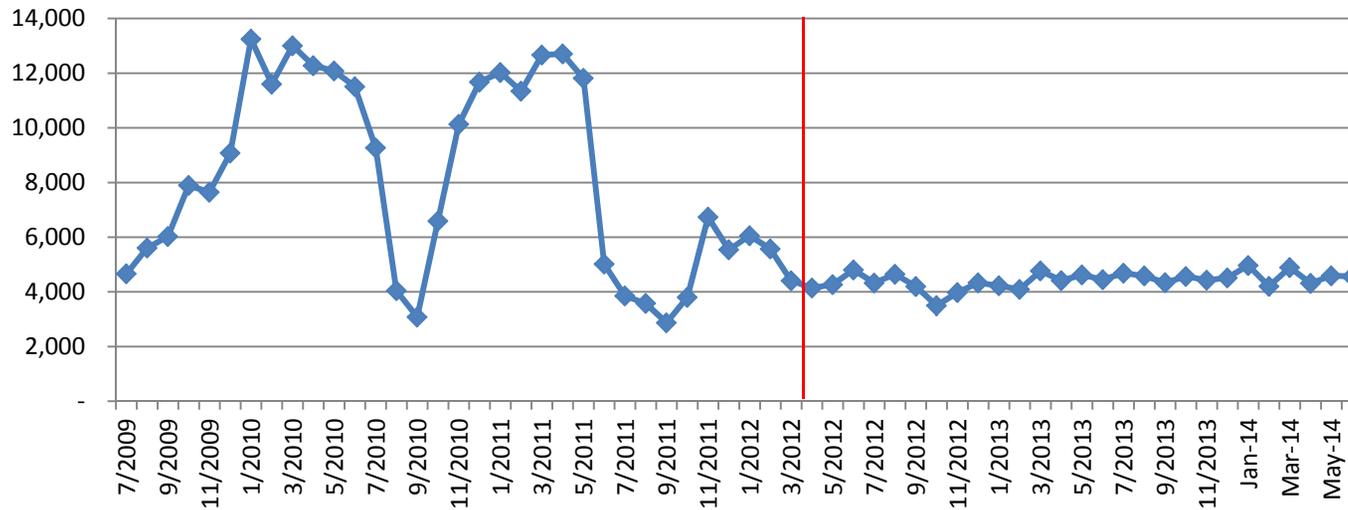
**FY14 Fuel Usage
Emergency Services**



Current year initiatives

Geothermal Project

Normalized Energy Intensity (BTUs/sf) - Link Center



All Buildings

Energy Saved To Date (MMBTUs)	Cost Avoided To Date
11,000	\$ 185,000



Investments and Priorities

- Current
 - Energy Bank

Total Initial funds:	\$100,000
Invested Funds To Date:	\$41,220
FY16 Proposed Projects:	\$47,700
Estimated Project Savings To Date:	\$17,000

- Future



5.6 years



9 years



<1 year

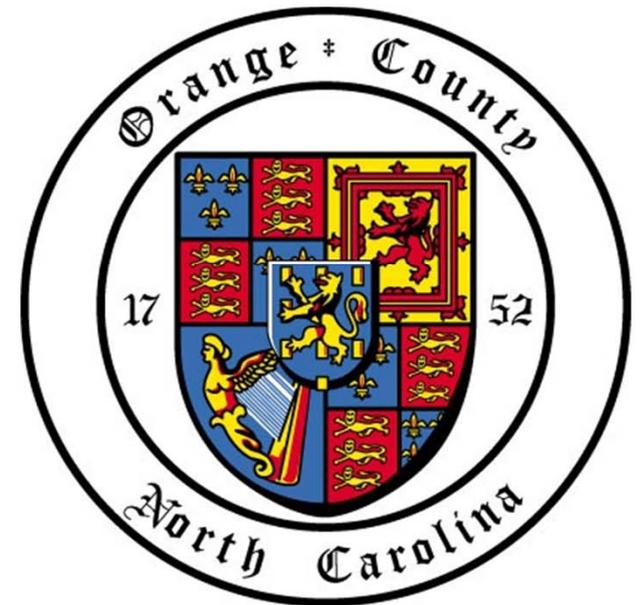


<1 year

- Energy Bank project contest
- Studying decentralizing utility payments
- Underserved community target area analysis

Other Initiatives

- Current
 - Space study
 - Sustainable commute survey
 - Green and reflective roofing
 - Solar power pilot project
 - EV charging stations
 - Ambulance idle reduction
- Future
 - HVAC controls optimization
 - Telework policy
 - Energy storage assessment
 - Event waste reduction guide
 - Computer reuse partnership
 - GPS vehicle efficiency monitoring
 - Propane vehicle conversions
 - Vehicle pooling



Other Initiatives

- Current
 - Space study
 - **Sustainable commute survey**
 - **Green and reflective roofing**
 - Solar power pilot project
 - EV charging stations
 - Ambulance idle reduction
- 78% interested in telework
- Telework committee formed
- Summary on AMS website
- Future
 - HVAC controls optimization
 - Telework policy
 - Energy storage assessment
 - Event waste reduction guide
 - Computer reuse partnership
 - GPS vehicle efficiency monitoring
 - Propane vehicle conversions
 - Vehicle pooling



- Thank you
- Questions?

