



January 24, 2017

To: Board of Orange County Commissioners

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RE: Orange County Sustainability and Environmental Responsibility Goal Update

BACKGROUND

Twelve years ago in December of 2005, the County adopted Environmental Responsibility Goal (ERG) for Orange County, and it remains a guiding document lowering the County's negative environmental impacts. The ERG was drafted by the Department of Environment, Agriculture, Parks and Recreation ("DEAPR") with the input of several departments.

Following from this adopted goal, in 2011 staff from Asset Management Services ("AMS") presented a comprehensive report on the County's historical use of energy, water, and fuel. Since then, a broader group of County departments have reported a more complete update on sustainability activities aligned with the Environmental Responsibility Goal in October 2012, April 2014, and June of 2015. Reporting departments are listed here:

- Asset Management Services (AMS)
- Information Technologies (IT)
- Planning and Inspections
- Department of Environment, Agriculture, Parks and Recreation (DEAPR)
- Solid Waste Management

UPDATE ON KEY SUSTAINABILITY INDICATORS AND ACTIVITIES

This report provides the latest updates on several ERG performance goals since our last report in June of 2015, including utilities reduction performance data for fiscal years 2015 and 2016, as well as current and proposed initiatives across several departments.

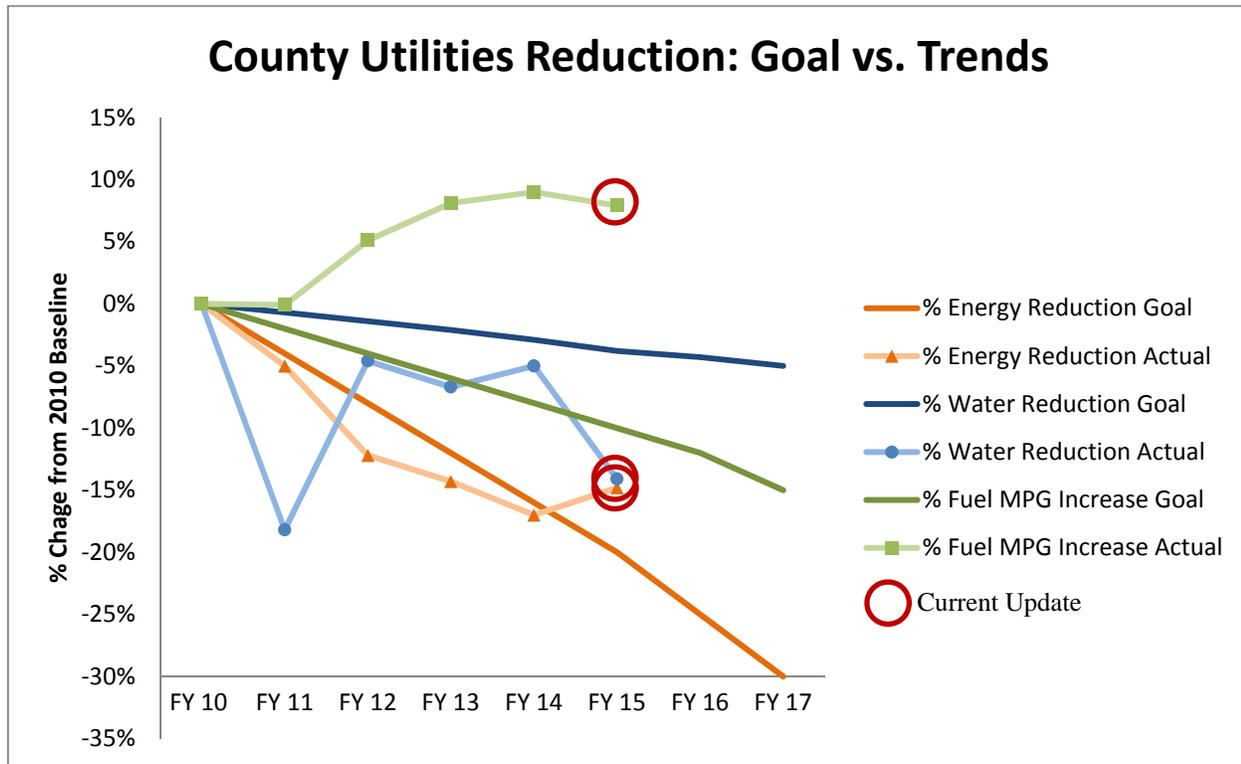
This report only covers a sample of the broad array of measurable sustainability activities and indicators that are relevant to the work of County departments and the lives of County residents. At the end of the report is a chart comparing several new sustainability tracking and reporting frameworks under consideration which may be used in the future to analyze and report on the state of sustainability in Orange County.

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- **Energy**
 - The County has fallen short of our 20% energy reduction goal for FY15 achieving only a 14.8% reduction when compared to baseline year FY10.
 - A subset of major facilities showed usage increases during this time likely due to failing infrastructure that has since been replaced.
 - Still, the cumulative effect of these reductions since 2010 is a savings of over \$778,000.
- **Water**
 - The County exceeded our reduction goals achieving a 14.1% reduction in FY15, though the savings have varied from year to year.
 - The cumulative effect of these reductions since 2010 is a savings of \$67,000.
- **Fuel**
 - The County is not on track with our fuel reduction goals, though in recent years it has shown improvement. FY15 shows an mpg increase of 7.9%, showing a 1.1% improvement from the previous year.
 - The cumulative effect of the increase in fuel usage since 2010 is a cost of \$117, 000 since FY10.
 - While the higher-than-standard average age of the County fleet is a contributing factor, the more significant cause of this increased fuel usage has been increased service levels being delivered by some of the County’s least efficient vehicles.
 - Our ambulances have some of the lowest miles per gallon figures of any vehicle in our fleet and they’ve been responding to significant increases in the volume of emergency calls.
 - **Fuel-Saving Technology Grant Projects:** To address this problem directly, County staff has collaborated on 2 grant projects piloting innovative propane bi-fuel systems and idle-reduction

battery backup units, increasing the resilience and decreasing the emissions of 7 ambulances, 10 Sheriff's vehicles and 5 Environmental Health Inspector vehicles.

- On-site refueling tank and pump installed and owned by Blossman for our convenience. In the first 6 months of each program, ambulance idling was cut in half and propane was used approximately 50% of miles travelled. Each year these projects save approximately 65 tons of CO2 and other emissions.

Throughout these updates, staff has reported on our aggressive 5-year utility reduction plan mirroring the State's utility reduction goals. We are now in the final performance year of the utilities reduction plan. A final report will be presented next year showing the final 2 years of performance data, and reporting on new possible reduction targets.

Key County Sustainability Activities and Indicators by Department

Asset Management Services (AMS, highlights by division):

- **Administration - Paperless Work Order System:** In collaboration with the Information Technologies Department and TMA Systems, AMS administrative staff is instituting a paperless work order system to increase efficiency, decrease storage space requirements, facilitate communication, and reduce paper waste.
- **Capital Projects - Single Occupancy Restrooms:** In response to Board of Orange County Commissioners' (BOCC) request to create safe and equitable restroom spaces for County staff and residents, the Capital Projects team has inventoried all County restrooms and is in the process of designing, bidding, and value engineering to ensure there are single occupancy restrooms in all County facilities. Restrooms are scheduled for installation in the Spring of 2017.
- **Custodial Services - Sealing Restroom Floors:** Sealed County restroom floors with a durable no-wax coating to better protect public health and dramatically decrease cleaning time.
- **Facilities Maintenance - In-House Construction Pilot:** During a 12-month period Facilities Maintenance Staff took on a series of electrical, plumbing, and construction projects in addition to their maintenance duties on a pilot basis. This in-house work leveraged existing labor and new skills acquired by the maintenance team, avoiding over \$48,300 in costs that would have been charged by outside vendors. AMS staff is exploring ways to continue doing this work in-house to maximize savings.
- **Fleet Maintenance - Efficiency Analysis:** Worked with a team of national fleet experts from CST Fleet Services to analyze the quality and efficiency of the County fleet and fleet maintenance divisions. A plan to implement their findings is underway and will lead to a reduction in overall fleet size, greater utilization rates per vehicle, and a more sustainable vehicle procurement procedure.
- **Sustainability Program:**
 - **Telework:** Created a new administrative Telework Policy, application process, and training program as part of a larger commuter benefits program in partnership with Human Resources and in consultation with Information Technologies, Risk Management, and the County Attorney's Office. The final program was approved by the County Manager in November 2016.

- **Comprehensive Accessibility Self-assessment:** Completed a comprehensive accessibility assessment of County facilities and sidewalks in partnership with Housing, Human Rights and Community Development and disability support groups. All 5 miles of sidewalks on County facilities were assessed for accessibility and connectivity in partnership with the Planning and Inspections department. Currently implementing plan to address all obstacles identified.
- **EV Charging Station Grant:** The County has been awarded a \$10,000 grant from Duke Energy to install 2 additional electric vehicle charging plugs at County facilities in 2017. Staff envisions this investment will supplement the well-used EV chargers at the Seymour Center in Chapel Hill. This charging capacity will be added to the current network of 16 EV chargers that county maintains to further support the adoption of clean-driving electric vehicles in Orange County.
- **Shared Vehicle System:** Developed a low-cost method to reserve, track, and maintain a new shared County vehicle pool, leveraging existing technology.
- **Sustainability Internships:** Successfully recruited and managed the work of three UNC interns, adding 320 free staff hours and 520 low-cost contract hours to amplify the work of the Orange County Sustainability Program and provide green job training for young professionals.
- **Community Geothermal:** As of June 2016, 6 buildings are connected to geothermal systems leading to 30-50% reduction in heating and cooling energy use and costs: Jail (2016), Old Courthouse (2016), Court Street Annex (2016), District Attorney's Office (2014), Link Center (2012), and Justice Center (2009). The County has saved more than \$180,000 putting us on track for a 3-5 year payback.
- **Energy Bank:** The Energy Bank is a revolving loan fund created by the Board of Orange County Commissioners in 2012. It has allowed the County to make investments in energy-saving technologies that have a good return on investment. The propane vehicle pilot project was carried out thanks to a 20% match from this fund. Even with historically low gasoline prices, the payback after the first 9 months of running the systems is over \$1,600 and each vehicle has an increased range of 100 miles before refueling.
- **Orange County Sustainability Program – Transportation Demand Management (TDM) Grant:** Applying to the Triangle J Council of Governments for a TDM Grant in partnership with Orange Public Transit to reduce traffic congestion and improve local air quality. If successful the grant would support 50% of the salary, travel, and materials costs for a new position to administer and market the newly created Commuter Benefits Program which includes the County telework program, carpool ride-matching service, a GoPerks incentive program, and the upcoming subsidized bus pass program.
- **Established the County's Sustainability website:** Visit to learn more: [http://www.orangecountync.gov/departments/asset_management_services_\(ams\)/sustainability.php](http://www.orangecountync.gov/departments/asset_management_services_(ams)/sustainability.php)

Department of Environment, Agriculture, Parks, and Recreation:

- **Commission for the Environment (CFE) Support:** Supported the enthusiastic civic participation of County residents in providing guidance and information to the BOCC on Orange County environmental

issues in collaboration with the Sustainability Program. DEAPR and the CFE participated in a substantial review and comment on a proposed amendment to the Unified Development Ordinance (UDO) that will allow for Flexible Minor Subdivisions. The CFE also has an ongoing effort to write and publish a series of educational op-ed articles on various critical environmental issues in local papers.

- **Eno River Hydrilla Management Task Force:** Completed two year pilot study to evaluate management of invasive aquatic plant Hydrilla Verticillata in a section of the Eno River.
- **Surface water quality monitoring:** Supported the efforts of the Upper Neuse River Basin Association to conduct regular water quality testing as part of the Path Forward project to determine quantities and sources of nutrients entering Falls Lake. Additional surface water quality monitoring was completed by the Triangle Area Water Supply Monitoring Project: a long-term project monitoring the quality of drinking water reservoirs throughout the Triangle region.
- **Increased inspection and maintenance of stormwater control measures:** Reviewed and improved inspection and maintenance protocols for stormwater control measures at County-owned sites based on newest best practices. These steps will increase treatment of stormwater runoff from these sites.
- **Least-toxic pesticide review:** AMS and DEAPR collaborated on development of an inventory of pesticides used on County-owned properties and reviewed their toxicity.

Information Technologies:

- **County Surplus Computer Re-use Program:** Annually diverts hundreds of surplus county computers for re-use by an Orange County student training program in partnership with the Chapel Hill Carrboro City Schools system and Orange County Sustainability Program, under the guidance of Solid Waste Management.
- **Electronic Content Management Projects:** Increasing resilience and efficiency of accessing County data, while decreasing the need to maintain on-site paper-based archives by establishing electronic content management projects that fit the needs of several County departments, e.g. the Northwoods System for the Department of Social Services, the Patagonia Health System for the Health Department, Paper Vision for back-scanning historical records and MUNIS Enterprise Content Management System.
- **Energy efficient computer fleet:** Continued replacement of older less-efficient machines with Energy Star or equivalent desktop computers and laptops for County staff.
- **Mobile workforce support:** Increased implementation of remote support functions of the Help Desk has allowed for rapid response without the need for technicians or staff to travel. Taken together with the support of laptops and other mobile devices, the IT department has facilitated high productivity levels for all County staff, including those in the field or those working under the new Telework Policy.
- **Virtualization:** Continued virtualization efforts have allowed the County to reduce the number of servers and other critical infrastructure it maintains. This practice has the additional benefit of increasing the efficient use of storage space in County buildings.

Planning and Inspections:

- **SolSmart:** Planning and Inspections staff provided critical technical guidance in the completion of Orange County's application to the SolSmart program, in collaboration with the Sustainability Program. SolSmart is a national recognition and technical support program to help governments lower the costs for businesses and residents to build solar energy systems. The Sustainability Program joined sustainability staff from Chapel Hill and Carrboro in a successful application for 6 months of additional no-cost, full-time, "SolSmart" technical assistance in 2017. Beyond working with the Advisor to review our solar-relevant codes and practices, we also plan respond to the BOCC petition on solar-ready construction and to help identify the best Orange County facility rooftops for future solar power investments. Each community is working with their Planning and Inspections staff to achieve high-level designation in the 2017 SolSmart Communities program.
- **Bike Share Program:** Orange County Transportation Planning staff is currently exploring the possibility of funding a small bike share system within the Town of Hillsborough. Working in conjunction with Chapel Hill, Carrboro, and UNC-Chapel Hill, the proposed pilot implementation for a bike share program would include all of the communities in question. In Hillsborough, the system would consist of three or four stations with a total of 15 bikes. Preliminary analysis indicates that a station in West Hillsborough near destinations on Nash Street, a station at the Gateway Center, a station on Churton Street, and a station near the County Courthouse and Eno Farmer's Market could form the basis for a system in Hillsborough.

Solid Waste Management:

- **Waste Reduction Performance:** For FY 15-16 Orange Co. achieved an overall 62% waste reduction rate, meaning that the waste landfilled per capita was 0.52 tons per person last year compared to 1.36 tons/capita per person in base year 1991. This surpassed for the third year in a row, our goal set in 1997 of 61% reduction. Orange County's performance on this metric this year was the best in NC though it was 2% less than the prior two year highs of 64% waste reduction.
- **Providing universal residential curbside recycling service:** All 41,500 homes throughout urban and rural Orange County are now eligible for curbside recycling. In the past year, the remaining homes in the rural area were added to the curbside program. Use of roll carts has improved collection efficiency such that the County has had to add only one truck and driver to the existing fleet to offer universal recycling service to all 22,000 rural residences.
- **Recycling Services:** The Orange County Solid Waste Management Department continues to provide recycling collection to all County government buildings and facilities as well as those of Chapel Hill, Carrboro, and Hillsborough. The 'government buildings program' is in reality a broad and expanding effort that encompasses many elements of 'away from home' recycling including building, parks, park and ride lots, downtown pedestrian containers now in all three Towns and convenience store gas islands at about half the convenience stores throughout the County. A total of 209 tons was collected last fiscal year at these locations.
- **Waste Audits:** Staff is conducting waste audits of major local government buildings in all jurisdictions that will evaluate the amount of recyclable material that is still being thrown away and will assess options for improving the governments' internal waste reduction performance. Follow-up audits will occur in Spring 2017.

- **Waste Reduction Projects:** Several waste reduction projects are underway including the 'Fork it Over' program which began in April 2015. This program lends out washable metal utensils (up to 200 forks and spoons, along with serving utensils) avoiding the disposal of an estimated 10,000 units in its first year. Another program is the collection of compostable food scraps at Carrboro Farmers Market, which began in July 2016 at the Saturday market. The County created an option for residents to drop off compostable food scraps during market operations. Since the program began, over 800 people have deposited over 3 tons of compostable scraps averaging over seven pounds per user. This program is staffed by volunteers managed by the County and is serviced weekly as part of commercial food waste collection program.
- **Waste Wise Events Toolkit:** Created a Waste Wise toolkit full of materials that will help County staff and residents reduce the waste generated by events that serve food in collaboration with the Sustainability Program. Ran two focus groups and incorporated feedback from County event organizers to improve the program. Program to be fully rolled out in 2017.

NEW SUSTAINABILITY SCORECARD MODELS UNDER CONSIDERATION

The Sustainability Coordinator is exploring models for a new more complete sustainability scorecard performance measurement and reporting framework in collaboration with DEAPR and in consultation with the Health Department's Health Informatics Manager. Five models are compared in the following chart:

Sustainability Tracking Model	Overall Strategy	Examples	Notes	Cost
Retrospective	Measure against past performance	Current Orange County ERG-Sustainability Reporting	Essential practice, but looks backward. Not integrated into larger plan for future.	Time
Clearinghouse	Measure and report, let users ask their own questions	Durham's "Neighborhood Compass" Quality of Life Interactive Map	Track as many relevant and available indicators as possible	Time
Dashboard + Goals	Measure against an identified ideal of sustainability	Sustainable Cities Index from Arcadis	Must agree with the subset of indicators chosen: Does this make us sustainable?	Time
Sustainability Plan	Make a plan and measure progress towards completing that plan	Carrboro Climate Action Plan Cary Strategic Energy Action Plan	Must choose subset of indicators to track: What makes us sustainable?	Time
Certification	Sign onto a recognized standard, measure progress towards standard.	STAR Community Rating System™ (STAR)	Menu of actions and indicators already identified. Charlotte, Durham, Raleigh, Cary, and Winston Salem are STAR members.	Time; Basic access = Free; Membership = \$500; Certification = \$3000

The STAR Community Rating System appears to be promising model initially as its framework of indicators and actions can be accessed and tested for free, and it is a model chosen by several neighboring local governments. After consulting with the Durham Sustainability Manager about the nationwide indicators used by STAR, County staff learned that those indicators vary in clarity and applicability on the local level. Additional analysis will be done to determine the value of this sustainability rating system for Orange County.

SUMMARY

The Environmental Responsibility Goal and its associated objectives continue to direct the work of County staff towards ever more sustainable operations and support programs for County residents. This work has been made possible through the leadership of the Board of Orange County Commissioners as well as the collaboration, hard work, and open minds of many County staff.

Thank you,

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