

# AGENDA

## Commission for the Environment December 8, 2014 7:30 p.m.

Orange County Solid Waste Administration Building  
1207 Eubanks Road, Chapel Hill

<u>Time</u>	<u>Item</u>	<u>Title</u>
7:30	I.	<b>Call to Order</b>
7:32	II.	<b>Additions or Changes to Agenda</b>
7:35	III.	<b>Approval of Minutes – November 10</b> (Attachment 1)
7:40	IV.	<b>Introduction of New CFE Member and Staff</b> The CFE will welcome new member Sheila Thomas-Ambat and also Brennan Bouma, Orange County's new Sustainability Coordinator. (Attachments 2–3)
7:55	V.	<b>2015 Meeting Calendar</b> The CFE will consider approval of its meeting calendar for 2015 (Attachment 4)
8:00	VI.	<b>Potential action items from CFE/BOCC dinner meeting</b> The CFE will review the subjects that were raised during the October 14 dinner meeting with the BOCC and discuss how to proceed. (Attachments 5-6)
8:30	VII.	<b>Updates and Information Items</b> Staff and/or CFE members will provide updates on the following items: <ul style="list-style-type: none"><li>➤ CFE Annual Report and Work Plan (2014-15) (Attachment 7)</li><li>➤ Orange County adopts resolution on climate change (Attachment 8)</li><li>➤ Potential for solar energy at County-owned buildings (Attachment 9)</li><li>➤ Orange Well Net update (Attachment 10)</li><li>➤ Chapel Hill approves incentives for green construction (Attachment 11)</li><li>➤ Chapel Hill/Carrboro Schools divert trash from landfill (Attachment 12)</li><li>➤ Improvements at Mason Farm Wastewater Treatment Plant (Attachment 13)</li><li>➤ Carrboro's Energy and Climate Protection Task Force (Attachment 14)</li><li>➤ Orange County adopts parks and rec master plan (Attachment 15)</li><li>➤ Duke Energy plans for removing coal ash from four NC sites (Attachment 16)</li><li>➤ Dan River spill damage could exceed \$300M (Attachment 17)</li><li>➤ EPA proposes lower ozone standard (Attachment 18)</li><li>➤ Duke Forest newsletter – Fall 2014 (Attachment 19)</li><li>➤ NC Mining and Energy Commission submits rules needed for fracking permits to the Rules Review Commission (Attachment 20): <a href="http://portal.ncdenr.org/web/mining-and-energy-commission/home">http://portal.ncdenr.org/web/mining-and-energy-commission/home</a> and <a href="http://portal.ncdenr.org/c/document_library/get_file?uuid=46665883-863e-4880-b8b8-12e22bcd25cc&amp;groupId=38334">http://portal.ncdenr.org/c/document_library/get_file?uuid=46665883-863e-4880-b8b8-12e22bcd25cc&amp;groupId=38334</a></li></ul>
8:45	VIII.	<b>Committee Meetings</b> (if time allows) The CFE may break out into its standing committees (Air and Energy, Land, Water Resources) to initiate discussion of issues assigned to each committee.
9:00	IX.	<b>Adjournment</b>  <i>Next meeting:</i> January 12 (Richard Witted Meeting Facility - Hillsborough)

## CFE Meeting Ground Rules

1. Keep to agenda topic under discussion
2. Share relevant information
3. One person speaks at a time after recognition by the Chair
4. Everyone is invited to participate in discussions / no one person should dominate discussions
5. Strive to reach consensus first before voting

**Orange County  
Commission for the Environment**

**DRAFT Meeting Summary**

**November 10, 2014**

**Orange County Central Recreation Center, Hillsborough  
[relocated from the Richard Whitted Meeting Facility]**

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PRESENT: Jan Sassaman (Chair), May Becker, Loren Hintz, Donna Lee Jones, Cliff Leath, David Neal, Bill Newby, Jeanette O'Connor, Rebecca Ray, Lydia Wegman

ABSENT: Peter Cada, Steve Niezgod, Gary Saunders, David Welch

STAFF: Rich Shaw and Tom Davis

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- I. **Call to Order** – Sassaman called the meeting to order at 7:38 pm.
- II. **Additions or Changes to Agenda** – O'Connor and Shaw asked to make some announcements. Sassaman added both items to the updates. No other changes.
- III. **Minutes** – Sassaman asked for a motion on the September 8 meeting summary. O'Connor motioned to approve as written; Leath seconded. Approved unanimously.
- IV. **Review of the Environmental Summit/SOE** – The CFE reviewed the venue, format, and discussions from the Environmental Summit, and considered what improvements could be made for future meetings of this kind.

CFE members agreed that the facility and refreshments were good choices. They also agreed that the speakers were excellent; however it would have been better if they had engaged the audience in a conversation. Hintz said he had hoped to see high school students and teachers. Newby said he had hoped to see more environmental advocates.

Sassaman said he felt the meeting went well for a Saturday morning event. He asked what others thought about holding an annual or biennial summit and including social justice issues on future summit agendas. Sassaman said summits could be held without there having to be a state of the environment report, and pointed out the on-line version of the SOE report could be updated as new information and data became available. Finally, Sassaman suggested the CFE develop better methods of public outreach, including an improved webpage, newspaper articles, and an electronic newsletter. Wegman said she likes the idea of the annual or biennial summit, but pointed out the difficult work of putting the program together.

Ray said she would like to see the next edition of the state of the environment use a web-based format that enables people to access information more easily. She noted the Mecklenburg County report is available in a web-based format.

CFE members discussed how best to engage high school science teachers and whether they could incorporate the SOE status and trends in their classroom teaching. Hintz said it would be difficult to include this in an already-crowded science curriculum. Sassaman suggested the idea of a contest for students to find information in the SOE report. Jones

said the US EPA includes something like that in its citizen outreach efforts. Wegman suggested combining something like that with the annual photography contest.

Shaw reported on other current and planned outreach efforts for State of the Environment report, including another news release, direct contact with school teachers and other interested parties, and publishing two-sided flyers with the “What You Can Do” information and web links for handing out at exhibits and street fairs.

- V. **Review of the CFE/BOCC dinner meeting** – The CFE reviewed its discussion of issues with the BOCC that occurred October 14. Hintz said he was disappointed the discussion of solid waste management issues was limited to commercial food waste, however he hopes the CFE will follow the work of Solid Waste Advisory Group in hopes that the County find a better long-term alternative to trucking its waste to Durham. He also noted that Commissioner Dorosin’s interest in locating transportation hubs near low-income communities would be difficult for residents living in rural areas and that this issue may be more suited for the County’s transportation advisory board (Orange Unified Transportation Board, or OUTBoard). Shaw will contact the OUTBoard staff to inform them of this interest; Sassaman offered to contact the OUTBoard chair. Neal asked if the CFE has a liaison to the OUTBoard; Shaw reported that Saunders is in that role.

Wegman noted Commissioner Jacobs would like to see renewed support for the County’s Lands Legacy program as a common goal, and for the CFE to have a role in educating the public about the need to protect natural areas and open space should that become part of a bond package for the citizens to consider.

O’Connor noted Commissioner Gordon’s interest in the CFE working on updating the County’s inventory of greenhouse gas emissions and working with the towns to reduce those emissions. She also pointed out Commissioner Jacobs’ announcement that the County was hiring a sustainability coordinator who could help address this matter.

O’Connor also reported that BOCC members seemed to like the CFE’s proposal to reduce building permit fees or provide partial rebates for construction that meets or exceeds energy efficient design and construction principles.

Sassaman noted Commissioner Dorosin said the SOE report is outstanding, but recommended that the CFE also look at environmental matters from social justice perspective. Sassaman suggested the CFE find ways to incorporate this viewpoint in the SOE report and to update the on-line version of the report.

Sassaman asked the staff to prepare a list of potential action items resulting from the dinner meeting discussion and to include on the December meeting agenda for CFE consideration, prioritization, and delegation to the committees.

Finally, Sassaman explained his written response to Commissioner Rich’s question to the CFE of what solution would be better than trucking solid waste to Durham. He said it was difficult for him to express matters adequately during the meeting so he prepared a more thoughtful response after conferring with the Solid Waste Management staff.

- VI. **Annual Report and Work Plan (2014-15)** – Sassaman offered some new ideas for the CFE’s draft annual report and work plan, including a) holding a biannual environmental summit independent of there being a State of the Environment report, b) developing more public outreach including an electronic newsletter, and c) updating the County’s greenhouse gas inventory. O’Connor reminded members of Commissioner Dorosin’s

interest in the CFE looking at environmental matters from social justice perspective and Commissioner Gordon's interest in the CFE addressing energy conservation and the lack of data on for assessing ground and surface water quality/quantity. Neal suggested applying for funds from the National Rural Electric Cooperative Association (NRECA) to help tackle energy issues. Newby noted that the USEPA maintains an inventory of greenhouse gas emissions, which may provide useful information for Orange County.

Shaw introduced the CFE's draft annual report and work plan prepared by the staff. CFE members suggested edits to the list of concerns and emerging issues, as well as the addition of social justice considerations and supporting the work of the Solid Waste Advisory Group to improve the County's handling of solid waste. Shaw said he would make those changes and asked for further ideas over the next week before the plan is finalized for submittal to the BOCC Clerk by November 30.

- VII. **Election of Officers** – Sassaman reviewed the process for electing officers as provided in the CFE policies and procedures. Hintz nominated Sassaman to remain as chair for a second one-year term. Wegman seconded the nomination; approved unanimously. Sassaman said Hintz informed him earlier that he could no longer serve as vice chair. Sassaman noted he prefers that the next vice chair be willing to assume the chair's role in the future. Sassaman nominated Wegman as vice chair, seconded by O'Connor. There were no other nominations. Hintz motioned the nominations be closed; seconded by Newby. The motion carried. Wegman was approved as vice chair by acclimation.

- VIII. **Updates and Information Items** – Information on the following subjects was provided and selected items were summarized by staff: a) Chapel Hill-Carrboro schools begin composting lunch, b) fracking study finds no water pollution, c) review of local solar facilities permitting in NC, d) McDougle Middle School's new solar array, e) potential for solar at closed landfill, f) ozone layer recovering, g) UNC trustees look at clean energy investments, h) US Dept. of Energy issues green building certification system, i) OWASA recognized for sustainable water utility management, j) Duke Forest's deer management program, k) Hydrilla threatens Falls Lake, and l) Orange County received "NC Smart Fleet" award.

O'Connor notified CFE Members the Town of Carrboro has formed an Energy and Climate Protection Planning Task Force that will meet over the next nine to twelve months. She said some members of the task force hope to find ways to reduce Carrboro's year 2000 carbon emissions by 40 percent.

Shaw announced the BOCC has appointed Sheila Thomas-Ambat to the CFE and re-appointed five current members to another three-year term: Becker, Cada, O'Connor, Wegman, and Welch.

Shaw also announced the County's hiring of its first sustainability coordinator, Brennan Bouma. He noted Bouma's responsibilities will include providing staff support to the CFE, and especially the Air and Energy Resources Committee.

- IX. **Adjournment** – Hintz motioned to adjourn the meeting; seconded by Neal. The motion was voted on and approved unanimously. Sassaman adjourned the meeting at 9:05 pm.

# Orange County COMMISSION FOR THE ENVIRONMENT

(updated December 2014)

NAME OF MEMBER HOME ADDRESS/TELEPHONE	POS #	DATE OF APPOINTMENT COMMITTEE (Representation)	TERM ENDS	BUSINESS TELEPHONE E-MAIL	TOWNSHIP OF RESIDENCE
May Becker 511 Cotton Street Chapel Hill, NC 27516	#1	9/21/10 & 11/6/14 Air & Energy Resources (At Large)	12/31/17	919-969-7439 tomatocutter@yahoo.com	Chapel Hill
Peter Cada 420 Coach House Lane Hillsborough, NC 27278	#10	9/21/10 & 11/6/14 Water Resources (At Large)	12/31/17	919-485-2071 peter.cada@tetrattech.com	Eno
Loren Hintz 804 Kings Mill Rd. Chapel Hill, NC 27517	#4	1/27/09 Land Resources (Biological Resources)	12/31/16	919-933-8987 ldhintz@bellsouth.net	Chapel Hill
Donna Lee Jones 3035 Carriage Trail Hillsborough, NC 27278	#5	5/21/13 Water Resources (Water Resources)	12/31/15	919-541-5251 donnaleejones13@hotmail.com	Eno
David Neal 323 West Queen Street Hillsborough, NC 27278	#13	9/21/10 Air & Energy Resources (At Large)	12/31/15	919-732-2156 David.L.Neal@gmail.com	Hillsborough
William Newby 2821 Becketts Ridge Road Hillsborough, NC 27278	#2	5/20/14 Air & Energy Resources (Air Quality)	12/31/16	919-541-5296 newby.william@epa.gov	Hillsborough
Steven Niezgoda 524 Patriot's Pointe Dr. Hillsborough, NC 27278	#14	5/21/13 Land Resources (At Large)	12/31/15	716-998-1490 steve.niezgoda@gmail.com	Hillsborough
Jeanette O'Connor 117 S Peak Dr. Carrboro, NC 27510	#9	5/21/13 & 11/6/14 Land Resources (At Large)	12/31/17	703-678-6893 jeanette.oconnor@gmail.com	Chapel Hill
Rebecca Ray 5617 Jomali Drive Durham, NC 27705	#15	11/19/13 Water Resources (At Large)	12/31/15	919-383-0685 rebecca.ray@nc.rr.com	Eno
Jan Sassaman (Chair) 201 Bolinwood Drive Chapel Hill, NC 27514	#7	12/13/11 Air & Energy Resources (At Large)	12/31/16	919-933-1609 jan.sassaman@gmail.com	Chapel Hill
Gary Saunders 103 Woodshire Lane Chapel Hill, NC 27514	#12	1/27/09 Air & Energy Resources (Engineer)	12/31/15	919-707-8413 gary.saunders@ncdenr.gov	Chapel Hill
Sheila Thomas-Ambat 103 Hunter Hill Place Chapel Hill, NC 27517	#8	11/6/14 Water Resources (At Large)	12/31/16	919-225-4744 staemail@yahoo.com	Chapel Hill
Lydia Wegman (Vice Chair) 5704 Cascade Drive Chapel Hill, NC 27514	#3	11/19/13 & 11/6/14 Land Resources (At Large)	12/31/17	919-886-8775 lnwegman@gmail.com	Chapel Hill
David Welch 20 East Drive Chapel Hill, NC 27516	#11	9/21/10 & 11/6/14 Land Resources (At Large)	12/31/17	919-406-2101 davwelch@hotmail.com	Chapel Hill
VACANT	#6	(At Large)	12/31/16		
David Stancil Rich Shaw Tom Davis Brennan Bouma	245-2522 245-2514 245-2513 245-2626	Director, Dept. of Environment, Agriculture, Parks & Rec. Land Conservation Manager Water Resources Coordinator Sustainability Coordinator		dstancil@orangecountync.gov rshaw@orangecountync.gov tdavis@orangecountync.gov bbouma@orangecountync.gov	

## COUNTY HIRES FIRST SUSTAINABILITY COORDINATOR



Orange County Asset Management Services has hired Brennan Bouma as the County's first Sustainability Coordinator. Mr. Bouma will come on board on November 17, leading the integration and effectiveness of the County's sustainability efforts. Additionally, Brennan will provide staff support to the Commission for the Environment.

Mr. Bouma comes with more than 14 years of experience in the Sustainability field, most recently with the Triangle J Council of Governments Energy and Environment Program, where he served as a regional energy and environmental planner.

"We're very fortunate to attract a talent of Brennan's caliber. We are looking forward to him advancing and synthesizing the County's diverse sustainability efforts across environmental, organizational, and social lines," said Jeff Thompson, director of Asset Management Services.

Mr. Bouma's most recent role assisted public and private organizations to improve the sustainability of their operations, vehicle fleets and the commute patterns of their employees. He also co-authored a report on coordinating affordable housing and transit investments and Electric Vehicle Readiness Plans for the Triangle Region and North Carolina.

Brennan holds a Bachelor of Science degree in biology and a Master's in City and Regional Planning from the University of North Carolina at Chapel Hill.



# Orange County Commission for the Environment

# 2015

Department of Environment,  
Agriculture, Parks & Recreation  
306-A Revere Rd.  
Hillsborough, NC 27278  
Phone: 919-245-2510  
[www.orangecountync.gov/deapr/](http://www.orangecountync.gov/deapr/)

*\*All meetings begin at 7:30 p.m.*

## MEETING DATES

- January 12
- February 9
- March 9
- April 13
- May 11
- June 8
- *July – No Meeting*
- August 10
- September 14
- October 12
- November 9
- December 14

## LOCATIONS

Hillsborough  
Chapel Hill  
Hillsborough  
Chapel Hill  
Hillsborough  
Hillsborough  
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Chapel Hill

## MEETING LOCATIONS:

Chapel Hill: Solid Waste Mgmt. Admin. Building, 1207 Eubanks Rd., Chapel Hill, NC  
Hillsborough: Richard Whitted Meeting Facilities, 300 W. Tryon St., Hillsborough, NC

### JANUARY

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**Joint Meeting of the  
COMMISSION FOR THE ENVIRONMENT and  
ORANGE COUNTY BOARD OF COMMISSIONERS**

**October 14, 2014**

**Orange County State of the Environment 2014 Report / Environmental Summit**

Jan Sassaman reviewed the critical issues and recommendations listed at front of SOE report.

Commissioner Gordon

- The quantity and quality of Orange County surface and ground water is a critical issue, and she hopes the County will do what it can to monitor this. **[Water]**
- Educate the public on pros & cons of fracking; make them aware of the options. **[CFE]**
- It is important to educate people about climate change. Things can be done locally. Orange County has done many things to be proactive in this area. **[Air & Energy]**
- The greenhouse gas emissions inventory study should be completed. **[Air & Energy]**

Commissioner Rich

- Chapel Hill has updated its greenhouse gas inventory data. Urges staff to get this information. **[Air & Energy]**
- Asked what the solution or option would be to the trucking of solid waste to Durham. [Hintz responded that Durham transfer station should only be short-term solution]. **[CFE]**

Commissioner Pelissier

- What specific suggestions does CFE have to address its Air and Energy rec #2: *Orange County should collaborate with its citizens and with civic organizations that are organizing for clean energy policy at the local, state, federal, or international level.* **[A&E]**
- Is CFE aware of other places where incentives for green building techniques have been implemented successfully? [Neal said he would respond to this later on agenda.]
- Are there any priorities of the CFE that the Board of County Commissioners should address first? [Sassaman said he would like to the CFE and the Board to jointly come up with priorities.] **[full CFE]**

Commissioner McKee

- Does the recommendation that the County and its partners protect at least 12% of county land area by 2020 include farms enrolled in the voluntary agricultural districts and the conservation easements? [Hintz provided background on the numbers.] **[Land]**

Commissioner Jacobs

- Would like to see renewed support for the Lands Legacy program listed as a common goal, and hopes this would be part of the planned bond package for 2015 or 2016. If so, he would like the CFE to take the lead in educating the public about why protected space and natural areas are important for Orange County. [Commissioner Gordon agreed CFE should participate in bond discussion, lend its support to Lands Legacy program.] **[Land]**
- A lot of the things the CFE is recommending are being worked on or discussed by the BOCC. The County's new sustainability coordinator will help to address a lot of the issues that have been raised. **[CFE]**

#### Commissioner Dorosin

- Challenged everyone to look at environmental issues through the lens of equity and social justice. Recommends CFE look at the impacts of these issues on vulnerable, low-wealth communities. The flooding that occurred last year had a clear disparate impact on the most vulnerable people in the community. It would be interesting to take the groundwater contamination maps and overlay basic census data on whether these contaminated areas are concentrated in low-wealth areas. **[CFE]**
- Transportation hubs should be in and around communities that have affordable housing.
- Conservation land should be distributed equitably throughout the County so that everyone has reasonable access to enjoy these areas. **[Land]**

#### **Incentives for Energy Efficient Construction and Renovation**

David Neal reviewed the proposal that the CFE brought to the BOCC's attention in 2012, but was dropped at the Planning Board level. This is allowed by NC statute, and a program is being implemented in Catawba County. Neal offered to contact Catawba County to see if there is enough data to show if this incentive program has been effective. He does not know what budgetary implications this would have had for the Planning Department. He said it would not be hard to write a model ordinance for how a system like this would work.

Neal said another recommendation is the idea of partnering with Duke Energy and Piedmont Electric to create affordable on-bill financing options for energy efficient upgrades. This might be appealing for lower income individuals. The USDA rolled out a program this year that allows rural electric coops to do on-bill financing programs. If Piedmont Electric could be encouraged to take advantage of this, it would be a great way to bring money into the county to do energy efficiency work in a way that reaches low income individuals. See page 12 of SOE report.

#### Commissioner Rich

- The WISE program in Chapel Hill was offered to everyone, but it was specifically targeted to older homes and lower income residents, as this is where the program would make the most impact. She wondered if there is data there that could be shared. This is a great idea, but it needs to be worked into the budgeting somehow. **[Air & Energy]**

#### Commissioner Jacobs

- There is sufficient interest among BOCC members to warrant talking to Catawba Co.
- He has raised the idea of incentives in the past for businesses that want to become more energy efficient. It would be good to have a comprehensive vision of where this could be taken and what is legal in N.C.
- Information should be brought back that includes the budget implications for including this, starting it, seeding it, and funding it in a timely manner, which would be March.
- Piedmont Electric would be receptive to this; it is just a matter of getting their attention.
  - Neal said it would be helpful if someone at the County level who could talk to someone in management at Piedmont Electric.

**[Air & Energy]**

## **Promoting Energy Conservation and Greater Use of Renewable Energy Sources (e.g., Solarize Orange, Geothermal, Biogas, Biodiesel, Wood)**

Loren Hintz provided overview of alternative energy projects in Orange County, including solar and geothermal installations. Suggested there are ways the County can help facilitate. Asked whether permit for geothermal wells should be the same as for regular wells.

Commissioner Jacobs

- County has geothermal wells at the Justice Facility and the Link Center.
- Asset Mgmt. Services dept. is assessing opportunities for solar at County facilities.
- There has not been much talk about incentivizing individuals; sees no reason this can't be done.

Commissioner McKee

- There needs to be an educational component for all of these concepts.

Commissioner Rich

- We would need to act soon before some federal incentives for solar homes expire.
  - Hintz said there are also state incentives for geothermal, although he believes that these are running out in 2015 as well.
  - O'Conner noted lower income residents could benefit most from alternative energy. It would help if County could find ways to educate and form partnerships.

Commissioner Jacobs

- Cooperative Extension will provide free energy efficient light bulbs, but many people don't know about this.
- If this gets into bond package it would be a good opportunity for the non-profit affordable housing entities in the County and lobby for next generation of energy efficiency.

Commissioner Price

- Asked if Solarize Orange County is modeled after the program in Durham.
  - Neal said it's a little different; the Durham program was a neighbor-to-neighbor program for implementing home energy efficiencies. Commissioner Price said this was a good program where neighbors were helping each other, and experts were doing energy audits of the homes.

**[Air and Energy]**

## **Solid Waste Issues**

### **County's Handling of Solid Waste; Support for Solid Waste Advisory Group**

Jan Sassaman provided overview of the CFE's interest in solid waste issues.

Commissioner Rich provided an update on the Solid Waste Advisory Group (SWAG)

- SWAG has met several times; still working on an interlocal agreement.
- Other issues will be prioritized after the interlocal agreement is completed.
- UNC and UNC Hospitals are at the table and seem interested in partnering with them.

Commissioner Jacobs

- A report will be given at the Assembly of Governments meeting on November 14th.

### **Diverting More Food Waste from Solid Waste Stream Through Composting**

May Becker provided an overview of the CFE's interest in this issue—especially an interest in expanding the collection of organic food waste from commercial establishments for compost.

Commissioner Jacobs

- Once the County gets past the recycling program discussion there is an interest in discussing this in the SWAG.
- This is one of the low-lying fruits in solid waste, and he hopes the SWAG will tackle this.
- It is a breakthrough to have the university partners at the table. The chancellor is very interested in the idea of UNC being a zero waste university.

Commissioner Price

- There needs to be more publicity, education, outreach
- Many commercial establishments are already using vendors to collect their food waste, and this needs to be publicized more. More farmers would be interested.

Commissioner Rich

- Asked if any CFE members attended the Local Food Council meeting. If not, someone may want to contact them about participating on the proposed ad hoc committee.

\* \* \* \* \*

**Commissioner Jacobs said he hopes the BOCC can follow through on items the CFE has brought forward.**

APPROVED 11/18/2014

**MINUTES**  
**ORANGE COUNTY BOARD OF COMMISSIONERS**  
**JOINT MEETING WITH COMMISSION FOR THE ENVIRONMENT**  
**October 14, 2014**  
**5:30 p.m.**

The Orange County Board of Commissioners met for a joint meeting with the Commission for the Environment on Tuesday, October 14, 2014 at 5:30 p.m. at the Whitted Building in Hillsborough, N.C.

**COUNTY COMMISSIONERS PRESENT:** Chair Jacobs and Commissioners Mark Dorosin, Alice M. Gordon, Earl McKee, Bernadette Pelissier, Renee Price, and Penny Rich

**COUNTY COMMISSIONERS ABSENT:**

**COUNTY ATTORNEYS PRESENT:** John Roberts

**COUNTY STAFF PRESENT:** County Manager Bonnie Hammersley, Assistant County Manager Clarence Grier, Cheryl Young and Clerk to the Board Donna Baker (All other staff members will be identified appropriately below)

**COMMISSION FOR THE ENVIRONMENT MEMBERS PRESENT:** Chair Jan Sassaman, Vice Chair Loren Hintz and members May Becker, Peter Cada, Steve Niezgoda, Jeanette O'Connor, David Neal, Rebecca Ray and Donna Lee Jones

**COMMISSION FOR THE ENVIRONMENT MEMBERS ABSENT:** William Newby, Lydia Wegman, Clifford Leath, David Welch, Gary Saunders,

**DEPARTMENT OF ENVIRONMENT, AGRICULTURE AND PARKS AND RECREATION**

**(DEAPR) STAFF PRESENT:** Dave Stancil, Rich Shaw and Tom Davis

**Welcome/Introductions and Opening Remarks**

Chair Jacobs called the meeting to order at 5:43 p.m.

Jan Sassaman said this is an auspicious time to get together with the Board of County Commissioners, as the Commission for the Environment (CfE) presented the 5<sup>th</sup> edition of the State of the Environment report last weekend. He said he would like to get the Board of County Commissioners' feedback on this.

Introductions were made.

Chair Jacobs said the fact that the Board has not previously met with the CfE does not diminish their importance to the County.

**1. Orange County State of the Environment 2014 Report (Attachment 1)**

Jan Sassaman said this report was given on this past Saturday at their Summit. He said this report has come a long way in its evolution, and he showed a comparison of the first report to the current one. He noted that as of this weekend the report is online.

Jan Sassaman said this edition of the report is dedicated to Commissioner Gordon, who has served Orange County for 24 years as a County Commissioner. He expressed appreciation for Commissioner Gordon and said the CfE owes their existence to her, as she played an integral part in its creation. He said she also played an integral part in creating the Department of Environment, Agriculture, Parks and Recreation (DEAPR).

*Commissioner Dorosin arrived at 5:50 p.m.*

Jan Sassaman said the report is included in attachment 1, and it raises many critical issues. He said the report is divided into sections that highlight different areas. He reviewed the following issues as outlined in the abstract materials:

## **Critical Issues**

- Invasive, non-native, plant and animal species threaten the biological diversity of Orange County's aquatic and terrestrial ecosystems. Non-native species replace natives, threatening critical ecosystem services such as plant pollination and posing risks to livestock, land, and public health.
- Important data on the quality and quantity of Orange County's surface water and groundwater will remain unknown as reductions are made in State-led data collection efforts.
- If drilling for natural gas begins in the Deep River basin, nearby Orange County residents could experience negative impacts to air quality, water quality and supply, and infrastructure.
- We need to do more to improve our air quality, chiefly by making changes that result in less reliance on cars. Locally, this can be achieved by: (1) increased availability and use of transit alternatives, including bus, rail, bicycle, and pedestrian pathways; and (2) town and county planning that fosters denser, walkable communities, reduces sprawl, and allows the clustering of development in urban buffers. The installation of ozone monitors could help track air quality more accurately.
- Orange County should continue to support the responsible deployment of clean and appropriately-sited renewable energy.
- Reducing energy use is the first step in fighting climate change. Orange County has made great strides in improving the energy efficiency of the buildings under its management. We can build on this progress by investing more in energy efficiency programs for residential, commercial, and other government buildings.

Jan Sassaman reviewed the following air and energy recommendations from the second page of the report:

### **Highlighted Recommendations from the Orange County State of the Environment 2014 Air and Energy Resources**

1. Orange County should work with Carrboro, Chapel Hill, and Hillsborough to update the 2005 Greenhouse Gas Emissions Inventory and Forecast for the county, and assess our progress toward the emissions-reduction goals recommended in the 2005 Greenhouse Gas Emissions report.
2. Orange County should collaborate with its citizens and with civic organizations that are organizing for clean energy policy at the local, state, federal, or international level.
3. Orange County should incentivize green building techniques by offering reduced building permit fees for commercial and residential buildings that achieve demonstrable energy savings.
4. Orange County should continue to reduce the amount of solid waste sent to landfills by implementing a "pay-as-you-throw" system and stop trucking Orange County solid waste to the Durham transfer station.

### **Land Resources**

1. Orange County should work with its partners to protect at least 12% of county land area by 2020, with focus on Natural Heritage Areas, and develop a comprehensive conservation plan for a network of protected space throughout the county.

2. Orange County should continue educating and assisting the agricultural community with the Voluntary Agricultural District and Present Use Value Taxation programs.
3. Orange County should increase efforts to encourage homeowners and businesses to choose regionally native species for landscaping.

### **Water Resources**

1. Orange County should increase efforts to gather information related to water resources in Orange County; including data about surface water and groundwater quality, as well as concerning groundwater quantity. State-led efforts in these areas continue to decline due to budget and staff reductions.
2. Orange County should undertake a campaign to inform the public about invasive aquatic species, including their current extent in our waterways, the likely ramifications of the occurrence of these species in Orange County, and what steps can be undertaken to slow their spread or eliminate them locally.
3. Orange County should continue to increase public awareness and understanding of water supply sources, related concerns, and what steps can be undertaken to improve or maintain the quality and quantity of our water supply resources.

Jan Sassaman said one thing that comes out of this report is the importance of thinking globally and acting locally.

Rich Shaw said each of the above recommendations is spelled out throughout the report. He staff tried to incorporate any references to the 2030 comprehensive plan, and there was more emphasis on providing information regarding what citizens can do to address the issues.

Commissioner Gordon said the CfE and staff did a great job presenting this report at the summit. She said the quantity and quality of Orange County's surface water and ground water is a critical issue, and she hopes the County will do what it can to monitor this. She said surface water and groundwater are important for life.

She said one thing to do about the fracking issue is to educate the public about the pros and cons and make them aware of the options.

Commissioner Gordon said climate change is a serious issue, and something needs to be done soon. She said things can be done to think globally and act locally.

Commissioner Gordon said it is important to educate people about climate change. She also said Orange County has done many things to be proactive in the area of energy efficiency and conservation.

Commissioner Gordon referred to the recommendations page, and she noted that there was a study about greenhouse gas emissions that should be completed.

Commissioner Gordon said it is important to protect the County's natural and cultural resources, and the Lands Legacy Program has done a good job of this.

Commissioner Gordon said this is overall a wonderful report.

Commissioner Rich referred to the recommendations on air and energy, and she said Chapel Hill has updated some of their data on this. She urged staff to get this information.

Commissioner Rich referred to recommendation #4 and questioned what the solution or option would be to the trucking of solid waste to Durham.

Loren Hintz said the last item will go into that issue in more detail. He said the short answer is for all entities that supported the solid waste group to come up with the ideas. He said there is a lot of sentiment that the County has a responsibility to better figure out what to

do with its solid waste. He said the Durham transfer station should only be a short term solution, but there is no long term answer.

Commissioner Pelissier said it is great to see how these summits and reports evolve with the times. She referred to recommendation #2 under air and energy and the collaboration with civic organizations, and she asked for specific suggestions for undertaking this.

Commissioner Pelissier referred to recommendation #3 on the incentives for green building techniques. She asked if staff is aware of other places that have done this successfully.

David Neal said there will be discussion of this later on the agenda.

Commissioner Pelissier asked if there are there any priorities of the CfE that the Board of County Commissioners should prioritize to address first.

Jan Sassaman said with regard to priorities, he would like to the CfE and the Board to jointly come up with priorities.

Commissioner McKee said he is impressed by this report, and he commended the CfE for an excellent job. He referred to the first item regarding land resources and the 12 percent protection goal. He asked if this includes farmers in the voluntary agricultural districts and the conservation easements. He said 12 percent of the County is a huge portion of acreage, and he would like an opportunity to discuss why this percentage was chosen.

Loren Hintz said the report 10 years ago set this number at 10 percent, and the County is already at 9 percent protected at one level or another. He said this is why 12 percent was chosen. He said there are a number of ways to protect these areas. He said you need to have corridors from one protected area to another, and many of these corridors are waterways. He said no one has the specifics for reaching this number, and it is just a dream now.

Commissioner McKee said it is good to dream. He said the efforts of soil conservation personnel to educate the farming community have resulted in an exponential increase in farms enrolling in the voluntary agricultural district.

Steve Niezgoda said the maps he is referring to are shown on pages 27 and 28.

Chair Jacobs said he would like to see renewed support for the Lands Legacy program listed as a common goal. He said he would hope that this would be part of the bond package, and if so, that the CfE would take the lead in educating the public about why protected space and natural areas are important for Orange County. He said there have been no decisions yet about what would be on the proposed bond, and a committee will be put together to determine this.

Chair Jacobs said Clerk to the Board Donna Baker was able to provide information on past bonds, which showed that schools received 59.2 percent of the vote; the bond for parks, open space and recreational facilities got 54.8 percent of the vote; the bond for senior centers got 54.2 percent; and affordable housing got 52.4 percent of the vote. He said parks and open spaces are typically the most popular bonds in the United States, and in Orange County, schools are the most popular bonds, and parks and open spaces are second.

Chair Jacobs said a lot of the things the CfE is referring to are being worked on or discussed by the Board. He said interviews are ongoing for a sustainability coordinator for Orange County government, and that position will systemically address a lot of the issues that have been raised. He said someone has to take a leadership role, and he is pleased that the CfE is so dedicated.

Commissioner Dorosin said the report is outstanding, but he would challenge everyone to take a broader view of what environmentalism is as it relates to the impact on social justice issues. He said these things are interrelated, and he would push for them to look at the impacts of these issues on vulnerable low wealth communities. He said the flooding that occurred last year had a clear disparate impact on the most vulnerable people in the

community. He said it would be interesting to take the groundwater contamination maps and overlay basic census data on whether these contaminated areas are concentrated in low wealth areas.

Commissioner Dorosin said this is a strong committee, and they provide a real resource to help the Board put together the different priorities of the County. He said he would like to look at these issues through the lenses of equity and social justice. He said one of the elements that is not on list is the fact that transportation hubs should be in and around communities that have affordable housing. He said it is also important to look at whether conservation land is distributed equitably throughout the County so that everyone has reasonable access to enjoy these areas.

Jan Sassaman said these are good comments. He said one of the benefits of this report is that it is electronic, and it can be updated as needed.

Commissioner Price said this is a great report, and she recognized Commissioner Gordon for her contribution.

Commissioner Gordon said the CfE should be a part of the bond discussion and should lend their support to the Lands Legacy program.

**2. Orange County Environmental Summit - October 11 (Attachment 2)**

This discussion was combined with item 1 above.

**3. Incentives for Energy Efficient Construction and Renovation (Attachment 3)**

David Neal said this was a proposal that came up in 2012 and was brought to the Board of Commissioners and the Planning Board. He said this was dropped at the Planning Board level. He said this is allowed by N.C. statute.

David Neal reviewed the following information from the abstract:

The Orange County Commission for the Environment (“CFE”) invited the Orange County Planning Board to consider a Low Energy Construction Permitting Incentive ordinance in 2012. N. C. Gen. Stat. § 153A-340 allows counties to charge “reduced building permit fees or provide partial rebates of building permit fees for buildings” that meet or exceed recognized energy efficient design and construction principals. Members of CFE are available to work with the Planning Board and county staff to review similar ordinances enacted pursuant to this statute (for example, from Catawba County) and from around the country, then to draft an ordinance for consideration by the Orange County Board of Commissioners.

Neither the current level of carbon in the atmosphere nor projected increases in greenhouse gas emissions are sustainable. Costly and potentially irreversible adverse climate effects are likely unless mitigation measures – such as increased energy efficiency investments and decreased fossil fuel consumption – are taken in the near future. In Orange County, we cannot wait for policy changes at the state and federal level to encourage increased energy efficiency. Steps taken now to improve efficiency and decrease or eliminate our reliance on fossil fuels for energy production will help lock-in reduced energy use for years to come.

Since 2003, Orange County has been a member of Local Governments for Sustainability, an international membership association committed to a sustainable future. Creating incentives for energy efficiency in construction is consistent with Orange County’s commitment to a sustainable future. The 2005 Greenhouse Gas Inventory revealed that nearly fifty percent of greenhouse gas emissions in Orange County come from residential and commercial buildings (consistent with national data<sup>1</sup>). Orange County, Chapel Hill, and Carrboro, in conjunction with

Hillsborough, are currently working on a revised inventory of greenhouse gas emissions and attempting to identify reduction measures.

Making use of the authority granted by the General Assembly to incentivize energy efficient construction is a straightforward way to reduce greenhouse gas emissions at the county level for the long term.

CFE would like to explore crafting an incentive program that would be attractive to lower-income residents, for whom savings on utility bills would provide a particularly important benefit.

To give an example of how such an energy efficient construction incentive might function, below is a summary of the Catawba County incentives enacted pursuant to N. C. Gen. Stat. §153A-340:

Catawba County is providing incentives to encourage the construction of sustainably built homes and commercial buildings. Rebates on permit fees and plan reviews are available for certain qualifying structures and renewable energy projects. Buildings designed and constructed in accordance with the US Green Building Council's Leadership in Energy and Environmental Design (LEED), NC HealthyBuilt Homes, Energy Star, or the National Association of Home Builders' Model Green Home Building Guidelines can receive a 25% blanket permit fee rebate, not to exceed \$500. Catawba County will also rebate 50% of fees related to plan review or express plan review for commercial buildings seeking LEED certification.

Additionally, existing one and two family homes and commercial buildings can receive a 50% rebate on the permitting fees associated with the installation of geothermal heat pumps, photovoltaic (PV) systems, solar water heating systems, and gray/rain water collection for flushing fixtures.

Regular fees must be paid in full at time of plan review or permit issuance. Fee rebates will be refunded upon project completion and certification by third party inspection agency.<sup>2</sup> Rebates or reduced fees for efficient construction could be structured on a sliding scale, with zero energy construction receiving the most robust incentives. Given the current level of permitting fees, rebates or reductions in Orange County could be designed here that could provide a substantial incentive for efficient construction.

The CFE looks forward to working with the Planning Board on crafting an efficiency incentive program for consideration by the Orange County Board of Commissioners. We would appreciate the opportunity to have this item included on an upcoming agenda and to work with you on completing a draft proposal in the next few months.

David Neal said this program is also in Catawba County, and he is happy to contact them to see if there is enough data to show if this has been effective. He does not know what budgetary implications this would have had for the planning department. He said otherwise it would not be hard to write a model ordinance for how a system like this would work.

He said another recommendation is the idea of partnering with Duke Energy and Piedmont Electric to create affordable on-bill financing options for energy efficient upgrades. He said this might be appealing for lower income individuals. He said the USDA rolled out a program this year that allows rural electric coops to do on-bill financing programs. He said if Piedmont Electric could be encouraged to take advantage of this, it would be a great way to

bring some money into the County to do energy efficiency work in a way that reaches low income individuals. He said this information is listed in the bullet points on page 12 of the report.

Commissioner Rich said the Wise program in Chapel Hill was offered to everyone, but it was specifically targeted to older homes and lower income residents, as this is where the program would make the most impact. She wonders if there is data there that could be shared. She thinks this is a great idea, but it needs to be worked into the budgeting somehow.

Chair Jacobs suggested talking to Catawba County. He said there is interest among the Board of County Commissioners in getting more information. He said he has raised the idea of incentives in the past for business that want to become more energy efficient. He said it would be good to have a comprehensive vision of where this could be taken and what is legal in N.C. He said information should be brought back that includes the budget implications for including this, starting it, seeding it, and funding it in a timely manner, which would be March.

Chair Jacobs said he thinks Piedmont Electric would be receptive to this, and it is just a matter of getting their attention.

David Neal said if there was someone at the County level who could talk to someone in management, it would be helpful.

#### **4. Promoting Energy Conservation and Greater Use of Renewable Energy Sources (e.g., Solarize Orange, Geothermal, Biogas, Biodiesel, Wood) (Attachment 4)**

Loren Hintz said attachment 4 refers to Solarize Orange. He said the biggest thing in the news right now is solar energy. He said for private home owners who have enough income to be able to use a tax deduction, solarizing can work.

He said there are other options that the County can help facilitate. He said geothermal is a good investment for heating and cooling a home, but it is a large investment. He said one question is whether the permitting process and fees should be the same for geothermal wells as for regular wells.

Loren Hintz said a memo was sent several years ago regarding the rules and regulations related to solar panels. He said those types of regulations are something that the Commissioners might look at.

Chair Jacobs said the County has geothermal wells at the Justice Facility and the Link Government Services Center. He said Asset Management Services is looking at solar applications for County facilities. He said there has not been much talk about incentivizing individuals, but there is no reason this can't be done.

Loren Hintz said Orange County government has been doing a lot and has policies in place.

Commissioner McKee said it is going to be critical to build in an educational component for all of these concepts.

Commissioner Rich said some of the federal incentives for solar homes are getting ready to run out. She said something needs to be done quickly.

Loren Hintz said there are also state incentives for geothermal, although he believes that these are running out in 2015 as well.

Jeanette O'Conner said it is frustrating to know that the lower income residents could benefit the most from these energy alternatives. She said it would be beneficial if the County could find ways to educate and form partnerships to help with this.

Chair Jacobs said Cooperative Extension will provide free energy efficient light bulbs, but many people don't know about this. He said if this gets to a bond package it would be a

good opportunity to address the non-profit affordable housing entities in the County and lobby for the next generation of energy efficiency.

Commissioner Price asked if Solarize Orange County is modeled after the program in Durham.

David Neal said it is a little different, and the Durham program was a neighbor to neighbor program for implementing energy efficiencies in the home.

Commissioner Price said this was a good program where neighbors were helping each other, and experts were doing audits of the homes.

## **5. Solid Waste Issues**

- **CFE Interest in the Direction the County Will Go In Handling Solid Waste; Support of the 'New Solid Waste Advisory Group (SWAG)**

Jan Sassaman said when the Solid Waste Advisory Board (SWAB) phased out a couple of years ago, a lot of the solid waste issues came before the CfE, and the group began to make some recommendations.

He said at this point, given the changes that have happened and the formation of the Solid Waste Advisory Group (SWAG), the CfE has an interest in understanding what the Board is thinking and how the CfE can assist them. He suggested that a couple of the Commissioners could attend the next CfE meeting to discuss this.

Chair Jacobs suggested that Commissioner Rich could give an update on where the SWAG stands.

Commissioner Rich said the group has met several times, and they are still working on an interlocal agreement. She said other issues will be prioritized after the interlocal agreement is completed. She said it has been a very detailed process, and there will be some discussion of finances at the next meeting. She said UNC and UNC Hospitals are at the table and seem interested in partnering with them.

Chair Jacobs noted that a report will be given at the Assembly of Governments meeting on November 14<sup>th</sup>.

- **CFE Interest in Diverting More Food Waste from the Solid Waste Stream Through Composting (Attachment 5)**

May Becker said the CfE Air and Energy Committee has put together a resolution regarding diversion of solid waste food waste from the landfill, and they would like the Board of County Commissioners to consider adopting this. She said the resolution specifically addresses commercial food waste.

She asked the Board of County Commissioners to ask the solid waste department to expand their commercial collection of organic food waste. She said a lot of the waste is being trucked away, but a lot of the material is organic and can be re-used and treated so that it does not occupy more space. She said this organic waste could be taken away from landfill and be composted. She said there has not been a lot of controversy around this, and she asked the Board to adopt this resolution.

Chair Jacobs said once the County gets past the recycling program discussion there is an interest in discussing this in their work group. He said this is one of the low lying fruits in solid waste, and he hopes the advisory group will tackle this. He said it is a breakthrough to have the university partners at the table.

Commissioner Price said this gets back to the issue of education and awareness. She said many commercial establishments are already using vendors to collect their food waste, and this needs to be publicized more. She said this might make other farmers more interested in moving this along.

Chair Jacobs said the chancellor is very interested in the idea of being a zero waste university.

Commissioner Rich asked if anyone in this group attended the food council meeting. She said if not, someone may want to contact them about participation on the proposed ad hoc committee. .

Jan Sassaman expressed appreciation to the Board on behalf of the CfE for their willingness to listen and provide input.

Chair Jacobs said a lot of engaging things have been discussed, and he hopes the Board can follow through on the things that have been brought forward.

The meeting was adjourned at 6:56 p.m.

Barry Jacobs, Chair

Donna Baker, Clerk to the Board

**NAME OF BOARD/COMMISSION:** Commission for the Environment

**Report Period:** 2014 - 2015

**ORANGE COUNTY ADVISORY BOARDS & COMMISSIONS  
ANNUAL REPORT / WORK PLAN FOR THE COUNTY COMMISSIONERS**

The Board of Commissioners welcomes input from various advisory boards and commissions in preparation for its annual planning retreat. Please complete the following information, limited to the front and back of this form. Other background materials may be provided as a supplement to, but not as a substitute for, this form.

**Board/Commission Name:** Commission for the Environment

**Persons to address BOCC at work session and contact information:**

Chair:	Jan Sassaman	919-933-1609	jan.sassaman@gmail.com
Vice Chair	Lydia Wegman	919-886-8775	lnwegman@gmail.com

**Primary County Staff Contact:**

Department of Environment, Agriculture, Parks and Recreation  
Rich Shaw (Land Conservation Manager) 245-2514 rshaw@orangecountync.gov  
Tom Davis (Water Resources Coordinator) 245-2513 tdavis@orangecountync.gov  
Brennan Bouma (Sustainability Coordinator) 245-2626 bbouma@orangecountync.gov

**How many times per month does this commission meet, including any special meetings and sub-committee meetings?**

One meeting per month (2<sup>nd</sup> Monday); committees meet as needed during meeting

**Brief Statement of Commission's Assigned Charge and Responsibilities.**

Purpose: to advise the BOCC on matters affecting the environment, with particular emphasis on environmental protection and enhancement. Other duties include:

- Perform special studies/projects on environmental issues as requested by BOCC
- Recommend environmental initiatives to the BOCC, especially of local importance
- Study changes in environmental science and environmental regulations in the pursuit of the CFE's duties
- Educate the public and local officials on environmental issues

**What are your Commission's most important accomplishments?**

- Published the 2014 Orange County State of the Environment report (previous reports were completed in 2000, 2002, 2004, 2009)
- Convened Orange County Environmental Summit (2005, 2009, 2014)
- Made recommendations to BOCC on food waste and solid waste tax district (2014)
- Worked with Orange County Schools to introduce local environmental indicators/status and trends into middle and high school science curriculum (2004, 2009, 2014)
- Hosted a Solid Waste Forum with the Chapel Hill Sustainability Committee (2013)
- Co-sponsored the annual *Nature of Orange* photography contest (2012, 2013, 2014)
- Advocated for ½ cent sales tax referendum for Triangle Region public transit (2012)
- Compiled annotated bibliography of the effects of forestry on water quality (2012)
- Developed sustainable landscaping and forest management policies for the administration of County-owned facilities (2010)
- Assisted County staff in completing the Natural and Cultural Systems Element of the Orange County Comprehensive Plan (2008)

**List of Specific Tasks, Events, or Functions Performed or Sponsored Annually.**

- Review and comment on environmental issues (e.g., fracking, biosolids application, water pollution, air quality, forest mgmt..) and other issues assigned by the BOCC
- Identify priorities for the Lands Legacy Action Plan (natural areas and wildlife habitat)
- Conduct special studies pertaining to Orange County environment (e.g., energy efficiency/sustainability, forestry effects on water quality, herbicides and native flora)
- Develop recommendations on implementation of ground water studies of the 1990s and the integration of ground water and surface water quality and quantity
- Conduct environmental education outreach at events (e.g., Last Fridays, Festifall)

**Describe this commission's activities/accomplishments in carrying out BOCC goals/priorities, if applicable.**

**BOCC Goal Five: Create, preserve, and protect a natural environment that includes clean water, clean air, wildlife, important natural lands and sustainable energy for present and future generations.**

- Presented findings and recommendations to BOCC on selected environmental issues: effects of forest mgmt. on water quality; effects of herbicides on roadside native plant habitat; potential effects of hydraulic fracturing ("fracking") in Orange County; problems caused by hydrilla in the Eno River (BOCC Priorities #1 and #12)
- Stayed abreast of ongoing and developing env. issues of importance to the County, such as Falls & Jordan Lake nutrient mgmt. rules, reducing commercial food waste in solid waste stream and permitting of biosolids on farmland (Priorities #12 and #16)
- Provides comments on proposed master plans for future parks/preserves

**If your commission played the role of an Element Lead Advisory Board involved in the 2030 Comprehensive Plan preparation process, please indicate your activities/accomplishments as they may relate to the Comprehensive Plan's goals or objectives.** *(Element Lead Advisory Boards include: Planning Board, Commission for the Environment, Historic Preservation Commission, Agriculture Pres. Board, and Parks & Recreation Council)*

The CFE provided extensive input into DEAPR staff development of the *Natural and Cultural Systems Element* of the Comprehensive Plan—specifically the chapters on Air and Energy Resources, Water Resources, and Natural Areas and Wildlife Habitat.

**Objective AE-1:**

Assess and implement the current countywide greenhouse gas emissions inventory and action plan target reductions.

- The CFE helped to initiate a countywide inventory of greenhouse gas emissions (2005), and continues to advise on ways to reduce the County's "carbon footprint."

**Objective AE-15:**

Foster participation in green energy programs such as installation incentives for solar hot water/solar generation/solar tempering in residential or commercial construction. The County should develop programs that will link citizens and businesses with options for alternative and sustainable energy sources.

- The CFE's Air and Energy Resources Committee has developed proposals that address energy efficiency and renewable power issues, and will pursue further in collaboration with other advisory boards and stakeholders.

**Objective NA-3:**

Develop a more detailed and consistent methodology for monitoring changes in forest cover throughout the County, and specifically the extent of mature hardwood forest.

- The CFE's State of the Environment report documented significant reductions in mature hardwood forest that occurred from 2003-2008 and since 1988. DEAPR staff will update those data to include forest conversions that occurred 2009 - 2013.

**Objective NA-11:**

Develop a comprehensive conservation plan for achieving a network of protected open space throughout Orange County, which addresses 1) threats to important natural areas; 2) connectivity between protected areas; 3) coordination with neighboring counties; and 4) sustainable management of critical natural resources.

- The CFE's Biological Resources Committee prepared a draft scope of work and is considering how to proceed as follow up to the 2014 Parks & Recreation Master Plan

**Objective NA-16:**

Create a system of public and private open space and conservation areas, including parks, nature preserves, and scenic vistas representative of Orange County landscape.

- The CFE advises County's Lands Legacy program in its efforts to protect the most important natural and cultural resource lands through a variety of means.
- The CFE's Biological Resources Committee prepared a draft scope of work and is considering how to proceed as follow up to the 2014 Parks & Recreation Master Plan

**Objective WR-5:**

Promote and participate in regional efforts to plan for use of water supplies in the region in an equitable manner, including contingency planning for water supplies during droughts. [Also Objectives WR-9, WR-10, and WR-15]

- CFE stays abreast of Jordan Lake Partnership and advises staff as needed
- CFE advocates for full implementation of the Water Resources Initiative to ensure planning for an adequate water supply for current and anticipated future needs

**Objective WR-11:**

Provide incentives and educational information to landowners to increase protection of watersheds and ground water supplies and their inter-relationships.

- The CFE distributes groundwater and surface water educational materials at Festifall and Last Fridays events and as part of its State of the Environment reports

**NOTE: The Orange County State of the Environment 2014 identified specific recommendations on ways to help maintain and improve Orange County's environmental quality, many of which address objectives stated in the Orange County Comprehensive Plan.**

**Identify any activities this commission expects to carry out in 2015 as they relate to established BOCC goals and priorities. If applicable, is there a fiscal impact (i.e., funding, staff time, other resources) associated with these proposed activities (list).**

- Continue to update the Orange County State of the Environment 2014 report
- Convene an Energy Task Force (or equivalent work group) to improve the County's ability to foster local sustainable energy production and energy efficiency strategies
- Recommend ways to reduce the County's "carbon footprint" and implement the County's Environmental Responsibility Goal (BOCC Priority #10)
- Help with public outreach and management efforts related to hydrilla in the Eno River
- Help initiate the development of a comprehensive conservation plan for Orange Co (BOCC Priority #1)
- Collaborate with NC Botanical Garden and others to identify significant roadside habitat for native plants; ask NCDOT and other utilities to protect those roadside habitats [authorized by BOCC June 2012]
- Co-sponsor the annual DEAPR photography contest (*The Nature of Orange*)
- Help plan for and participate in DEAPR's annual Earth Day event

**What are the concerns or emerging issues your board has identified for the upcoming year that it plans to address, or wishes to bring to the Commissioners' attention?**

- The CFE will continue to advocate for an expansion of the County's commercial food waste pickup and composting services to reduce food waste in the solid waste stream
- The CFE remains interested in developing incentives for increasing energy efficiency in new construction [January 2012 memo to Planning Board]
- The CFE will strive to learn more about environmental justice matters and incorporate relevant information and considerations in the State of the Environment 2014 report
- The CFE will follow closely the Solid Waste Advisory Group's discussions of how to improve the handling and disposal of Orange County's solid waste, and will advocate for better long-term solutions
- The CFE will continue to advocate for increased efforts to gather information related to water resources in Orange County and will continue to increase public awareness and understanding of water supply sources, related concerns, and what steps can be undertaken to maintain or improve the quantity and quality of Orange County water supply resources
- The CFE will continue to address, as appropriate, the critical environmental issues for Orange County as enumerated on page 3 of the 2014 State of the Environment report, which include potential adverse effects from a) invasive, non-native, plant and animal species; b) reductions in State-led collection of water resources data; c) potential drilling for natural gas in the Deep River basin; d) urban sprawl; and CFE support for e) the responsible deployment of clean and appropriately-sited renewable energy and reductions in energy use to help fight climate change

## ORANGE COUNTY BOARD OF COMMISSIONERS

### RESOLUTION OF DECLARATION ON CLIMATE CHANGE

**WHEREAS**, the United Nations Intergovernmental Panel on Climate Change, representing over 2,500 climate scientists and twenty years of research, has concluded that global warming caused by human emission of greenhouse gases is among the most significant problems facing the world today; and

**WHEREAS**, projected impacts of global warming will likely include changing patterns of habitats for disease-carrying insects; changes in rain and snowfall patterns, affecting water supplies, agriculture, and the frequency of flooding; changes in natural habitats that will eliminate some species and introduce new ones; and

**WHEREAS**, state, regional and local governments throughout the United States are adopting emission reduction targets and programs and that this leadership is bipartisan and coming from governors, county officials, and mayors alike; and

**WHEREAS**, many counties throughout the nation, large and small, are reducing the production of global warming pollutants through programs that provide economic and quality of life benefits, such as reduced energy bills, green space preservation, air quality improvements, reduced traffic congestion, improved transportation choices, and economic development and job creation through energy conservation/new energy technologies; and

**WHEREAS**, Orange County is undertaking policies, programs and activities to save energy and reduce greenhouse gas emissions; and

**WHEREAS**, these policies, programs and activities save energy and money, conserve natural resources, and promote sustainable land use and transportation planning in the community; and

**WHEREAS**, Orange County government will serve as a model for the community by taking appropriate actions, including those listed in the attachment to this resolution; and

**WHEREAS**, cities and counties statewide are leading by example by adopting innovative sustainability programs and policies, including working with community residents, business groups and others; and

**WHEREAS**, Orange County will recommend actions that Orange County residents and businesses can take, including the ten actions listed in the attachment to this resolution; and

**WHEREAS**, Orange County wishes to expand these activities, share its experiences with other communities, and be recognized for its accomplishments;

**NOW, THEREFORE, BE IT RESOLVED** that the Orange County Board of Commissioners does hereby recognize the critical nature of global warming and climate change, and cognizant of the actions being taken by local, state, and federal governments and other

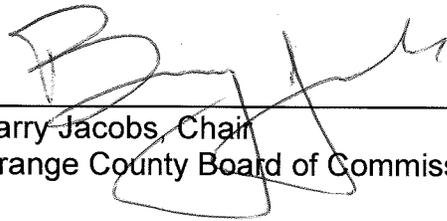
organizations around the globe, pledges to take steps for climate stabilization, and strongly encourages Orange County residents and businesses to reduce their carbon footprints.

**BE IT FURTHER RESOLVED** that this resolution be sent to the mayors of Carrboro, Chapel Hill, and Hillsborough with the request that the towns adopt similar resolutions, and that it also be sent to the members of our state and federal legislative delegations.

This the 18th day of November, 2014.



Donna Baker, Clerk to the Board



Barry Jacobs, Chair  
Orange County Board of Commissioners

## ACTIONS THAT ORANGE COUNTY GOVERNMENT AND ORANGE COUNTY RESIDENTS AND BUSINESSES CAN TAKE TO REDUCE GREENHOUSE GAS EMISSIONS

Orange County will serve as a model for the community by taking the following actions (many of which have already been implemented):

1. Switch to compact fluorescent, full spectrum compact fluorescent, and LED light bulbs in county government offices and site lighting;
2. Instruct County staff to turn off all lights, computers, and other devices when leaving for the day;
3. Reduce individual travel and encourage telecommuting and teleconferencing whenever possible for county business;
4. Make composting bins available to county residents at wholesale prices;
5. Set up a County web page on climate change that serves as an information resource;
6. Use biodiesel in county government diesel vehicles, as it becomes practical, with the goal of using B20 or greater biodiesel in all county diesel vehicles by 2020;
7. Switch to more fuel-efficient vehicles, such as hybrid vehicles, when appropriate, in new county fleet purchases targeting a combined fleet-wide average of 36 mpg by 2020;
8. Incorporate more flexfuel mixtures in County vehicles;
9. Actively reduce idling in operating all County vehicles;
10. Provide more trails, bikeways and improved roadway shoulders for walking and biking, and provide more bicycle parking throughout the county;
11. Continue to employ a green building program for Orange County, currently represented by the Triangle J High Performance Building Standards;
12. Require all County departments to buy recycled products, when possible, including paper products that use at least 30% recycled content;
13. Evaluate, strengthen and enforce tree and vegetation protection ordinances;
14. Support bus service throughout Orange County, as well as rideshare programs;
15. Create an inventory of both county government operational and county geographical greenhouse gas emissions. Set a target of greenhouse gas emissions reductions after inventory data are available;
16. Continue to reduce utility, water, and fuel use throughout County operations, as identified and measured through the Energy Scorecard program;
17. Require solid waste facilities countywide to handle and provide for full recycling, composting, and reuse centers;
18. Recycle all recyclable products in all County buildings and facilities;
19. Purchase only non-Styrofoam containers for all County facilities and County activities;

Here are ten actions that Orange County residents and businesses can take:

1. Know your carbon footprint in order to understand your energy use habits;
2. Reduce energy use by switching to compact fluorescent and LED light bulbs that can be disposed at the hazardous waste disposal sites;
3. Reduce energy use by driving and idling less- - walk, bike, carpool, rideshare, drive at a slower rate of speed, and utilize more fuel efficient vehicles;
4. Reduce energy use by buying local produce/food products and other market products, avoiding products shipped long distances, and use canvas bags for shopping;
5. Reduce energy use by turning off all electrical equipment and lights when not in use;
6. Reduce energy use by improving home energy efficiency and buying Energy Star appliances;

7. Reduce energy use by turning down water heater thermostats to 120 degrees:
8. Recycle all newsprint, cardboard, glass, metal, and plastic;
9. Compost food products and yard waste; and
10. Cut fewer trees and shrubs and plant more native drought resistant types.



Orange County  
Asset Management Services  
Jeffrey E. Thompson, Director

November 24, 2014

To: Bonnie Hammersley, Orange County Manager

From: Wayne Fenton, Asset Management Services Assistant Director

RE: Solarization for Orange County buildings

#### Background

At the Board of County Commissioners' September 4, 2014 meeting, staff were asked to investigate possible opportunities with the North Carolina Clean Energy Technology Center (formerly the NC Solar Center) for assessing the feasibility of incorporating solar elements in or on County buildings. Staff communicated with Tommy Cleveland, Renewable energy Project Coordinator, as well as Jim Kennerly, Senior Policy Analyst and Autumn Proudlove, Policy Analyst, regarding such opportunities.

#### Staff learned that:

- this team did do some informal work for the City of Raleigh as well as the City of Greensboro;
- there would be a fee for service for site assessments;
- there may be an opportunity for a portion of the work to receive grant funding via the federal Department of Energy;
- a primary function performed by this team is to assist municipalities to reduce costs by streamlining the permitting process for solar installations;
- a private sector partner is needed to take advantage of available tax credits, to achieve best payback;
- the city of Raleigh used an open-ended RFP process for identifying private sector partners

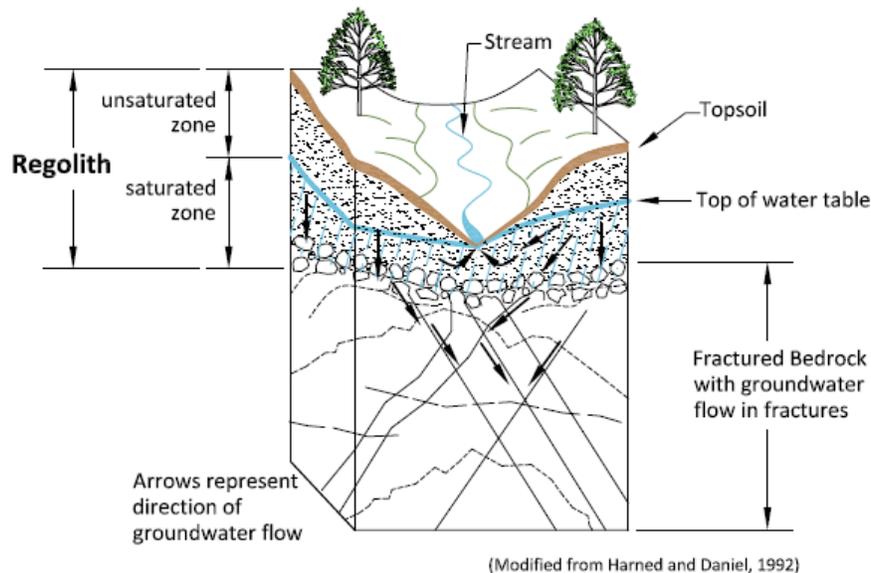
Staff plan to meet initially with Mr. Cleveland to, hopefully, identify a process for the assessment of at least some County facilities within the next few weeks. Brennan Bourma, the County's new Sustainability Coordinator, will be present at this meeting and will be managing the on-going process.

Please don't hesitate to contact me directly with questions, or if additional information is required at this time.

Thanks,  
Wayne Fenton  
919-245-2625

## Orange County Groundwater Observation Well Network (Well Net)

In May 2005, the Water Resources Initiative adopted by the Orange County Board of Commissioners proposed the creation of a groundwater observation well network to continue the work of the previous decade of groundwater research in the county, and provide a means for the collection of information on local groundwater quality and quantity. As shown in Figure 1, groundwater in the Piedmont region of North Carolina (including Orange County) is found within fractured bedrock as well as in the overlying unconsolidated material, which is known as regolith. Older hand dug and bored wells accessed the groundwater present in the near-surface regolith, but this water often contained bacteria and other contaminants originating from the surface. More recent water wells are drilled into the deeper fractured bedrock aquifer. The groundwater present in bedrock wells is only found within the fractures present in the bedrock. Hydrogeologists often refer to regolith groundwater as water that is in storage since it is this water that recharges the deeper fractured bedrock aquifer.



**Figure 1. Schematic diagram illustrating the movement of groundwater in the Piedmont region of North Carolina.**

The goals of the groundwater observation well network include the collection of groundwater level data from a combination of bedrock and regolith wells spread across Orange County. Regolith wells monitor natural stresses on the quantity of groundwater available in storage caused by variations in climatic conditions. Bedrock wells monitor changes in groundwater levels in the bedrock across the county. Taken together, the Orange Well Net (OWN) is designed to collect information concerning the amount of groundwater available locally in Orange County.

Currently, the OWN network includes the following bedrock wells: Eubanks Road, Millhouse Road, Confluence Property, Blackwood Farm, Duke Forest, Former 911 Center, and the following regolith wells: COL-1, COL-2, COL-3, Blackwood Farm, and the future Northeast District Park, the locations of which are shown on Figure 2. Groundwater level data that is collected from the OWN wells is uploaded to the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Resources (DWR) groundwater level database web site:

[http://www.ncwater.org/Data\\_and\\_Modeling/Ground\\_Water\\_Databases/leveltable.php?tl=1&net=orange&inactive=](http://www.ncwater.org/Data_and_Modeling/Ground_Water_Databases/leveltable.php?tl=1&net=orange&inactive=)

The DWR web site also allows statistical evaluation of the groundwater level records for the OWN observation wells, as well as provides information regarding groundwater level conditions across North Carolina.

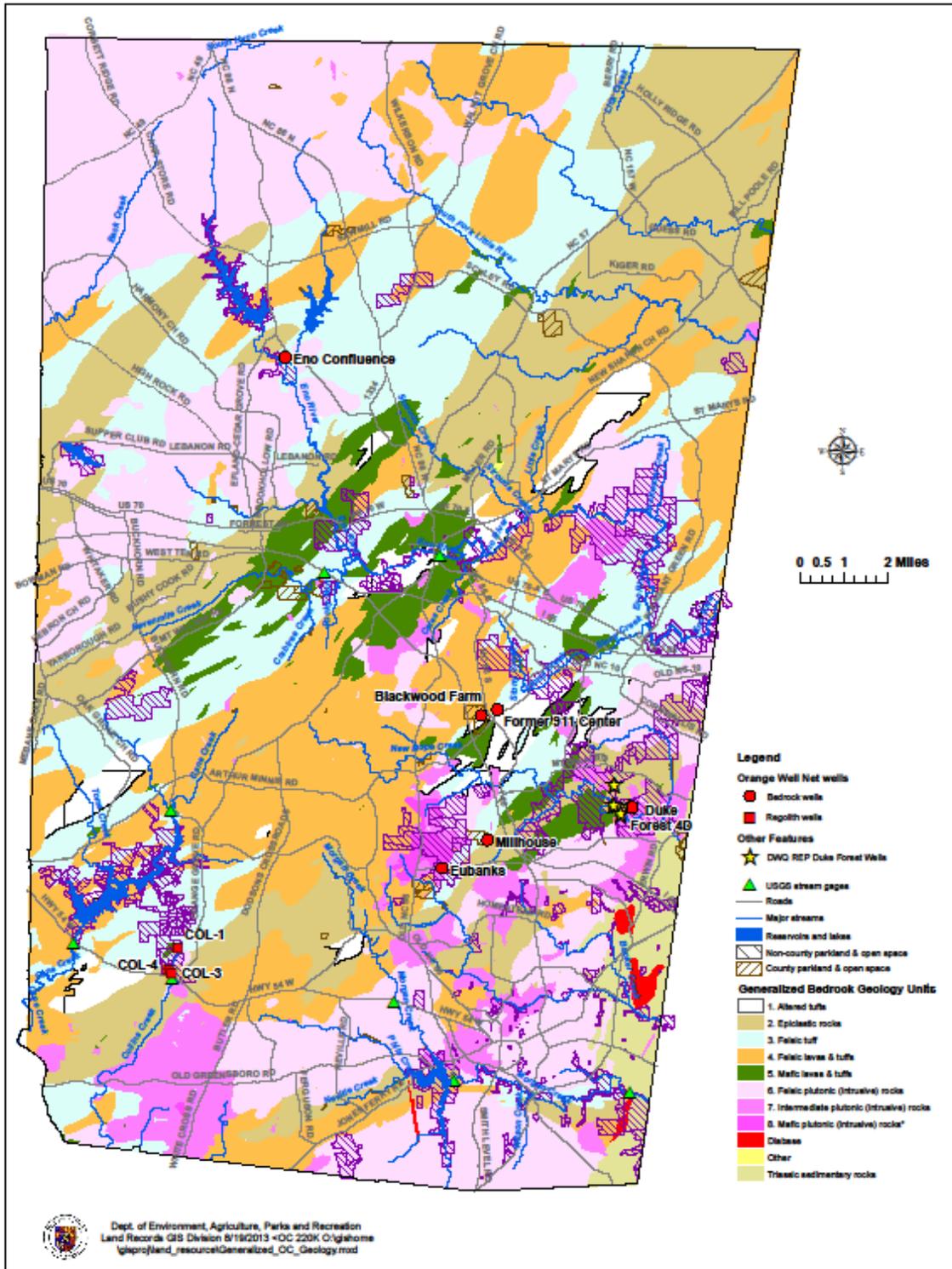


Figure 2. Generalized Geologic Map of Orange County with Locations of Orange Well Net Regolith and Bedrock Wells.

Nov. 30, 2014  
Chapel Hill News

# Council OKs incentives for green construction

By TAMMY GRUBB  
tgrubb@newsobserver.com

**CHAPEL HILL** The Town Council approved a four-year rebate program this week to encourage water- and energy-efficient construction in the Ephesus-Fordham development district.

Projects must score a 75 or higher on the Energy Star 1-100 scale, meet or exceed the state's water performance levels for public buildings and submit to a post-construction site visit to verify that efficiency measures are working correctly.

Those who meet the requirements could earn a permit fee rebate of up to 35 percent.

The pilot program applies to new construction and renovations. John Richardson, the town's sustainability officer, said the rebates could run \$600,000 over the first four years. The town expects Ephesus-Fordham redevelopment to generate average permit fees of \$432,250 each year.

More efficient buildings can boost occupancy rates and market values, Richardson said, repaying the town's investment with higher revenues over time. Ephesus-Fordham redevelopment could boost property tax revenues by roughly \$1.3 million in the first four years, according to town staff.

The council will receive periodic updates and, at the end of four years, consider whether to continue the program.

Council member Matt Czajkowski voted for the incentives Monday night, but not without some criticism.

The town gave density to future developers in the Ephesus-Fordham district instead of trading it for energy-efficient buildings, he said. Now it's giving up dedicated fee revenues to ensure efficient buildings. The council previously heard developers would not use incen-

SEE INCENTIVES, PAGE 9A

## INCENTIVES

CONTINUED FROM PAGE 1A

tives, he said.

"It comes to the fundamental question that was raised when we did Ephesus-Fordham," Czajkowski said, "which is why didn't we require levels of environmental efficiency or put in much broader incentives from the outset as we have done over and over again in the (special-use permitting) process when we've negotiated."

While the state doesn't let towns require energy- or water-efficient construction, the council could add efficiency incentives to form-based code. Code amendments wouldn't apply to submitted or approved projects.

The council approved the form-based code in May to streamline the development process in the district by specifying how buildings should look and fit their surroundings. The goal is to en-

courage the redevelopment of aging strip malls and parking lots, while growing the commercial tax base.

## In other business

### NOISE RULES CHANGED

The Town Council changed local noise rules Monday to let commercial golf courses operate landscaping equipment earlier in the morning.

The decision was made in response to a recent petition submitted on behalf of the Chapel Hill Country Club; Oaks 1, 2 and 3 Homeowners' Association; and Finley Golf Course.

The town's noise rules normally restrict the use of mowers, leaf blowers and other equipment in residential areas to the hours of 8 a.m. to 7 p.m. weekdays and 9 a.m. to 5 p.m. weekends.

Commercial golf courses, under the new rules, will be able to operate lawn equipment daily from 6:30 a.m. to 5 p.m.

Golf course equipment also will not have to meet decibel standards, limited to 65 decibels or less when within 50 feet of the property line.

### COST-BENEFIT ANALYSIS

The council also discussed a report on evaluating the financial impact of development projects.

Developers seeking a special-use permit would contribute financial information about the project. Town staff would include the cost estimates for providing services to the site, and the council would decide who pays for the work.

Council members asked for more information about how closely previously approved projects have met expectations and how to make sure that the information developers provide is accurate.

Council member Matt Czajkowski also asked staff to keep in mind the town's population growth and how it might trigger bigger-ticket needs, including new firetrucks and police facilities. Those costs are not caused by one project, he said, but many approved over a long period of time.

The council does not vote on form-based code projects, leaving approval to the town manager with a recommen-

dation from the Community Design Commission.

Grubb: 919-932-8746

*From the North Carolina Sustainability Connection:*

## **Chapel Hill/Carrboro Schools Divert 32,940 Pounds of Trash from Landfill**



*Credit: Chapel Hill-Carrboro City Schools*

Dan Schnitzer's job is to prove that sustainability pays off for Chapel Hill-Carrboro City schools. So far, the numbers are adding up.

A district-wide composting and waste education effort, funded by savings from more efficient dumpster use, has led to these impressive results since the school year's start ten weeks ago:

- 19 bags of lunch trash generated daily by 15 schools, down from 155 last year
- 32,940 pounds of waste diverted from the landfill
- 12.5 metric tons of carbon dioxide emissions prevented
- 2.5 metric tons of carbon dioxide emissions absorbed through creation of compost
- 87 percent reduction in cafeteria landfill waste

When Schnitzer began his role as the school district's first full-time sustainability coordinator last November, a transition from styrofoam to compostable cafeteria trays was already underway with assistance from an organization called [Every Tray Counts](#). This year, all elementary and middle schools became involved, with 8,000 students separating compostable, recyclable, and landfill waste every day in cafeterias across the district.

The transition was an incredibly collaborative process between parents, teachers, students, custodians, food service staff and composting companies, says Schnitzer. Volunteers contributed more than 500 hours during the first two weeks of the school year to get the project off the ground.

Schnitzer has been able to position the composting program as self-sustaining by funding it through cost-savings from a reduction of trash removal inefficiencies.

“We did a dumpster audit to look at how we can be more efficient and saw that we were literally throwing away money,” he says. Like other businesses, schools pay every time a dumpster is picked up. The audit showed that, over a period of weeks, many dumpsters were picked up partially empty. By looking at patterns of use and strategically switching the days of removal, they reduced the number of weekly pick-ups at many schools from three to two, and removed some dumpsters from service altogether. The money saved in the trash line item of the budget was then freed up for compostable waste programming.

Schnitzer, with a graduate degree in Environmental Management and Sustainability, spent six years helping manage an environmental charter school in Chicago. This background, as well as his experience directing an overnight summer camp, taught him about the challenges schools face in balancing priorities with financial, education, and environmental impacts. He looks for ways to save money and then leverage that savings in smarter ways.

“That’s the perspective I bring to this job: an understanding that there are competing pressures and priorities in the district,” says Schnitzer. “Part of the challenge is that changes don’t always benefit everyone. Sometimes things are less convenient or take more time and work.” He tries to figure out what motivates people and frame sustainability in those terms. “It takes a leap of faith to invest money upfront with a spreadsheet for later gain,” says Schnitzer.

While other NC school districts, like Granville County for example, have recycling coordinators, Schnitzer’s role is unique in breadth of reach across the school system. He engages with food service employees, facilities management, teachers, parents, school garden coordinators, custodial staff, and others as project partners.

Schnitzer’s next plans for the school district will target improvement of light and energy use through LED upgrades and better efficiency. “We’re working hard to optimize what we have, by making sure time schedules are set and running properly, and by looking at usage patterns in different areas of the buildings.”

Educational opportunities are even more important than the immediate environmental gains of sustainability initiatives in schools, says Schnitzer. “Parents and teachers are not tangential. If we’re not teaching the kids these lessons, then we’re missing 90 percent of the impact.”

While science class provides a clear opportunity to teach about environmental topics like waste and conservation, lessons of sustainability can be relevant across the curriculum through reading assignments, tasks, and exercises framed around these issues. For example, Schnitzer had the chance to discuss waste management with a graphics design class that created art for the district’s sustainability logo and signage for the composting initiative.

“I believe an entire school curriculum can be built at any grade level around a school garden” says Schnitzer. “Sustainability issues affect everyone.”

# Orange Water and Sewer Authority

**NEWS RELEASE November 10, 2014**

## **Improvements at Mason Farm Wastewater Treatment Plant will reduce energy use and greenhouse gas emissions 20% to 30%**

OWASA recently completed \$10.4 million of improvements at its Mason Farm Wastewater Treatment Plant (WWTP) which:

- **Will lower electricity use at the plant and related greenhouse gas emissions by 20% to 30%.** *Electricity savings are projected to be \$120,000 or more annually. (Greenhouse gas emissions occur when fossil fuel is burned to generate electricity.)*
- **Will help reduce odor** by covering 10 biological treatment tanks and adding devices to remove odor from air at the tanks.
- **Will help OWASA meet future standards for the quality of treated wastewater recycled to Morgan Creek, a tributary of Jordan Lake.**

"The work at our Mason Farm plant will reduce costs, and make our plant more environmental friendly and sustainable," said Todd Taylor, OWASA's General Manager of Operations. "The improvements in odor elimination also reflect our commitment to being a good neighbor to customers in neighborhoods around the plant."

The recent improvements are primarily financed with a 20-year no-interest loan of \$6.56 million from NC Clean Water funds. This loan will save a total of about \$1.7 million in interest compared to conventional debt (average of \$85,000 annually).

OWASA also received a Duke Energy incentive of \$168,000 to help pay for energy efficiency improvements.



**Above:** Ronnie Weed, Operations Supervisor at OWASA's Mason Farm Wastewater Treatment Plant, at the controls for new energy efficient equipment expected to lower electricity costs by \$120,000 or more annually.

## Background information

### Energy efficiency

The energy efficiencies result from installing:

- equipment called "diffusers" to release small air bubbles into wastewater in the biological treatment tanks
- new energy-efficient blowers to deliver air to the tanks, and
- more efficient mixers to suspend wastewater solids in the tanks.

(Oxygen is necessary to support the microorganisms which remove pollutants from wastewater.

### Treatment Plant

The Mason Farm WWTP is on Old Mason Farm Road in southeast Chapel Hill near the NC Botanical Garden and Finley Golf Course. The WWTP treats an average of 8.3 million gallons per day. Wastewater treatment includes:

- Using settling tanks to separate solids from wastewater.
- Removing pollutants in a biological process.
- Disinfecting wastewater with ultraviolet light, which is very effective in killing pathogens.
- Pumping air into treated water before it is released into Morgan Creek to enhance water quality for fish, etc.
- Treating solids separated from wastewater by heating them and breaking them down into simpler compounds in a biological process called "digestion."

### Reclaimed Water System

OWASA and the University built a reclaimed water system which went into use in April 2009. The University paid the local construction cost of almost \$15 million and pays monthly for operating and maintenance costs.

The University uses reclaimed water instead of drinking water as cooling tower make-up water, to irrigate several athletic fields and to flush toilets in some new buildings. Reclaimed water meets about 30% of the University's water demand and 10% of the overall community's water needs.

Providing reclaimed water to the University requires about 40% less energy than the pumping and treatment necessary to provide drinking water.

### For more information

- Todd Taylor, P.E., General Manager of Operations, 919-537-4216 or [ttaylor@owasa.org](mailto:ttaylor@owasa.org)
- John Kiviniemi, Wastewater Treatment and Biosolids Recycling Manager, 919-537-4352 or [jkiviniemi@owasa.org](mailto:jkiviniemi@owasa.org)
- Vishnu Gangadharan, P.E., Utilities Engineer/Project Manager, 919-537-4248 or [vgangadharan@owasa.org](mailto:vgangadharan@owasa.org)

400 Jones Ferry Road, Carrboro, NC 27510; 919-968-4421;  
[www.owasa.org](http://www.owasa.org); [info@owasa.org](mailto:info@owasa.org); Twitter: @owasa1

## **Energy and Climate Action Task Force**

The Town of Carrboro established a new Energy and Climate Protection Planning Task Force task force in May, 2014, charged with supporting the Town with community planning for climate protection and resiliency. The Task Force has been asked to prepare a report to submit to the Board of Aldermen by June, 2015 that addresses:

- a. Recommendations for new actions the Town can pursue to reduce nonrenewable energy use and greenhouse gas emissions from residential and commercial buildings in Carrboro;
- b. Recommendations for new actions the Town can pursue to reduce nonrenewable energy use associated with transportation in Carrboro;
- c. Recommendations for new actions the Town can pursue to promote renewable energy in Carrboro; and
- d. Recommendations for new actions the Town can pursue to better manage vegetation, soil, and impervious surfaces to capture carbon, reduce energy use in buildings, mitigate the heat island effect, and reduce stormwater runoff.

Agendas and meeting minutes will be posted as they become available.

A list of Task Force members is provided below:

Carolyn Buckner	mojobuckner@hotmail.com
Kerry Bullock-Ozkan	bullock170257@bellsouth.net
Dana Davis	danatdavis@yahoo.com
Jeff Herrick	kitten.soup@gmail.com
Kathy Kaufman	kknarotsky@yahoo.com
Jeanette O'Connor	jeanette.oconnor@gmail.com
Rob Pinder	rwpinder@gmail.com
Randee Haven-O'Donnell	havenod@gmail.com (Board Liaison)
Sammy Slade	sslade@townofcarrboro.org (Board Liaison)

# County backs \$40M parks plan

### Group sought delay, citing bikeways and other needs

By TAMMY GRUBB  
tgrubb@newsobserver.com

**CHAPEL HILL** The Orange County Board of Commissioners approved a master plan this month that could add more than \$40 million in parks and recre-

ation facilities over the next 15 years.

The 2030 Master Plan ([bit.ly/1xUpakT](http://bit.ly/1xUpakT)) is the first update to the county's long-range parks and recreation planning since 1988. The first park developed under that plan - Efland-Cheeks Park - opened in 1998.

The first projects the commissioners could consider under the new plan include a Millhouse

Road Park, Northeast District Park, the county's share of the Mountains-to-Sea Trail and continuing work at the Upper Eno Preserve. The master plan also recommends working with Hillsborough to provide baseball and softball fields and joint planning with the towns for new trails, connections, soccer fields and parks.

Commissioner Alice Gordon suggested making projects at

Twin Creeks Park, held over from the 1988 plan, a higher priority in the next decade.

The county's Department of Agricultural, Environment, Parks and Recreation has been working on the new plan since 2012, director David Stancil said. The new plan, based on surveys and discussions with more than 100 residents, is necessary if they want to

SEE PARKS, PAGE 5A

## PARKS

CONTINUED FROM PAGE 1A

continue seeking grants, he said.

Stancil said collaboration with the towns and the Orange Water and Sewer Authority, which controls the Cane Creek recreation area in western Orange County, is an important part of the new plan. The commissioners will get annual updates, he said, and decide when individual projects should be built as part of the capital improvements budget planning process.

Alan Green, a Bingham Township resident and member of the Parks and Recreation Council, said his hiking club regularly use county parks. This plan, he said, reflects that need, as well as the county's part in a regional transportation plan.

"Those young people ... are developing an interest in parks and hiking and trails," he said. This plan is "a little different from past master plans in that we specifically mention the need for more trails, more connectivity between parks, more greenways."

## Delay sought

The commissioners received a letter before their Nov. 18 meeting from 35 residents, asking them to delay the vote and work with the towns to revise the plan.

One urgent need, the residents said in the letter, is for paved recreational bikeways in the towns and county. They also suggested the county work with OWASA to open reservoir lands for public use and delay projects until the county can meet roughly \$330 million in school building needs.

"Today parks in the coun-

Wednesday, November 26, 2014 5A

ty's rural areas are underutilized and the plan does not address the growing needs of recreational cyclists," the letter said. "The plan overlooks nearby state and privately owned parks such as Ayr Mount, (Occaneechee) Speedway and Eno River State Park. It doesn't consider the option to use OWASA's reservoir lands as an alternative to new stand-alone county parks."

Commissioner Earl McKee said he also is concerned about the cost, especially considering the county has identified millions of dollars in other needs, from new and upgraded schools to transportation and affordable housing.

"I'm going to vote for it," he said, "but I will be quite honest, when it comes to specific items and specific parks, specific upgrades, purchases of land, I'm going to look at each one of them

with a hard eye as to whether I think that that is a priority over other priorities that we have."



McKee



Gordon

Gordon, who will retire from the board next month after 24 years, advocated for approving the plan with the understanding it could be updated.

"You do have a chance to revisit this," she said. "The only thing we're approving is the table that lists all the projects. So I think that would take care of some of the public concerns about what we might be spending money for and how we might be prioritizing."

Grubb: 919-932-8746

24-Hour: 800.559.3853  
Nov. 13, 2014

### **Duke Energy announces plans to begin removing coal ash from four North Carolina sites**

- **Coal ash excavation plans for Asheville, Dan River, Riverbend and Sutton facilities submitted to state regulators for approval**
- **Most of the 5.1 million tons of ash moved during Phase 1 will go to beneficial reuse opportunities; remainder to be stored in lined landfills**

CHARLOTTE, N.C. – Duke Energy today announced another major milestone in its plan to permanently close coal ash basins and safely store coal ash generated from its North Carolina power plants.

The company submitted detailed coal ash excavation plans to the North Carolina Department of Environment and Natural Resources (NC DENR) for ash stored at the high-priority Asheville Steam Electric Plant, Dan River Steam Station (Eden), Riverbend Steam Station (Mount Holly) and L.V. Sutton Steam Electric Plant (Wilmington) facilities.

These plans and all associated permits must be approved by NC DENR before any excavation work can begin. Under North Carolina's Coal Ash Management Act, all basins at those sites must be closed by Aug. 1, 2019.

"This milestone reflects Duke Energy's commitment to moving forward as quickly as practicable in a safe and environmentally sound way to address the enormous task of long-term coal ash storage in North Carolina," said Lynn Good, president and chief executive officer of Duke Energy. "We are devoted to being good neighbors to the communities we serve and good custodians of our shared environment."

The excavation plans announced today describe a phased approach that enables the company to begin moving ash from the sites even as additional long-term solutions are developed.

The plans detail the proposed amount of ash being moved in the first phase, its destination, how it will be transported, safety and environmental protection measures and permits required.

The plans also outline work to identify solutions for the remaining ash at each location and will be updated and submitted to NC DENR annually or earlier as required by subsequent phases.

“We think these excavation plans go beyond the specific information requested by the state, demonstrating our commitment to closing ash basins in a way that continues to protect the environment, minimizes the impact to neighboring communities and complies with North Carolina’s new coal ash management policies,” explained John Elnitsky, Duke Energy’s senior vice president of ash basin strategy. “We are prepared to proceed as soon as we have the necessary approvals from the state.”

Excavation plans for ash at each of the four high-priority facilities are site-specific.

“The initial work at these facilities will help us assess various approaches for the closure plans at our remaining 10 North Carolina facilities,” said Elnitsky.

During the initial phase of work, the company plans to move approximately 5.1 million tons of ash from the four sites, representing approximately 30 percent of the total ash stored there, within 12 to 18 months following approvals and permits from NC DENR.

As part of Duke Energy’s commitment to recycle coal ash when it can, the ash removed from three of the four sites in Phase 1 will be beneficially reused in engineered structural fill projects. These include the ongoing structural fill project at the Asheville Regional Airport and two new projects to be developed at open-pit clay mines in Chatham and Lee counties.

In such fill projects, the ash is contained using specially engineered synthetic liners, and sites are subject to strict groundwater monitoring standards set by state regulators.

Using these open-pit clay mines from the brick industry as the location for the engineered fills has several advantages, including the reclamation of previously unusable land and faster development timelines than siting a new off-site landfill. They also provide deep layers of impervious clay that add environmental protections and existing access to railroads.

Where possible, trains will be used to transport ash to limit the number of trucks on state roadways.

In addition, these projects are expected to create approximately 100 jobs in Chatham and Lee counties as well as increase the tax base.

These mine reclamation projects will comply with the requirements set forth in the Coal Ash Management Act.

Phase 1 also includes a plan for the Roanoke Cement Company to use thousands of tons of ash in the creation of concrete. Additional ash excavated during Phase 1 will be permanently stored in an existing Jettersville, Va., lined landfill.

	<b>Asheville</b>	<b>Dan River</b>	<b>Riverbend</b>	<b>Sutton</b>
<b>Total on-site ash (tons)</b>	3.1 million	2.6 million	4.6 million	7.2 million
<b>Ash moved in Phase 1 (tons)</b>	.9 million	1.2 million	1 million	2.0 million
<b>Storage location</b>	An existing lined structural fill project at the Asheville Regional Airport	An existing lined landfill in Jetersville, Va.	About 90 percent used in lined structural fill projects to be built at the Brickhaven Mine in Moncure, N.C., and the Sanford Mine in Sanford, N.C.  About 10 percent used by the Roanoke Cement Company	Lined structural fill projects to be built at the Brickhaven Mine in Moncure, N.C., and the Sanford Mine in Sanford, N.C.
<b>Transportation method</b>	Truck	Rail	Rail/Truck	Rail
<b>Phase 1 duration once permits and approvals are received</b>	11-month duration	18-month duration	12-month duration	12-month duration

Phase 1 includes moving ash from multiple locations at the sites. While much of the public focus has been on closing ash basins, the company's planning has been comprehensive and will ensure all ash at the sites is properly addressed for long-term storage.

For clarity, the company has updated its official statistics to reflect ash currently stored inside and out of basins at our facilities in North Carolina. In addition to the 108 million tons of ash in basins across the state, approximately 30 million tons is in landfills and 14 million tons is in other locations on plant property, such as structural fills or dry ash stacks.

In addition to filing excavation plans for the first four sites, the company has met aggressive state deadlines to file groundwater assessment plans, well water receptor surveys and updated permit applications for all 14 of its North Carolina facilities in order to begin the review and approval process.

As previously announced, Duke has established a national advisory panel of independent experts in partnership with the University of North Carolina at Charlotte that will provide counsel on permanent coal ash storage solutions for all of its facilities. The company also has created a dedicated, in-house organization to rigorously manage all of its coal ash operations.

More information on Duke Energy's coal ash management operations, including the site excavation plans, fact sheets and the updated coal ash metrics chart can be found at <http://www.duke-energy.com/ash-management/>

### **About Duke Energy**

Headquartered in Charlotte, N.C., Duke Energy is a Fortune 250 company traded on the New York Stock Exchange under the symbol DUK. More information about the company is available at: [www.duke-energy.com](http://www.duke-energy.com).

###

Nov. 27, 2014

# Spill damage could top \$300M

## Study looks at coal ash cleanup for Dan River as result of Feb. leak

By CRAIG JARVIS  
cjarvis@newsobserver.com

An academic study completed last week projects the monetary damage caused by the coal ash spill in the Dan River in February could exceed \$300 million.

The estimate comes as Duke Energy, and potentially its customers,

face absorbing billions of dollars to rid North Carolina of uncovered coal ash basins and resolve related legal actions. The utility is facing an unknown price tag to clean up and restore the river where the controversy began nine months ago.

The massive Feb. 2 spill spread as far as 70 miles downstream, and choked the river and shoreline with sludge. Duke Energy has promised not to pass the cost of cleaning up the Dan River to customers.

The legacy of that cleanup will in-

clude how healthy the river and its aquatic inhabitants become, as well as building an array of projects that will improve the area along the river, such as boat ramps or walkways, to offset the destruction.

Estimates have been that the company will pay tens of millions of dollars on these restoration projects. The U.S. Fish and Wildlife Service, Duke Energy and North Carolina and Virginia environmental agencies entered into an agreement in June to begin assessing the

damage and will consider suggestions from the public about what projects might work. That report will be finished early next year.

Tens of millions of dollars might be a conservative estimate. The new research by Wake Forest University research biologist Dennis Lemly, who is an expert in coal ash, puts the cost of ecological, recreational, human health, property and aesthetic losses at close to \$300 million. That's based on effects

SEE **SPILL**, PAGE 20A

In late February, Mark Bishopric, a managing partner of Three Rivers Outfitters, paddled past Duke Energy's Dan River Steam Station. Coal ash leaked into the river below the steam station on Feb. 2 after drainage pipes failed.

## SPILL

CONTINUED FROM PAGE 1A

measured six months after the spill, and could go much higher over time. Lemly found environmental losses alone amount to more than \$113 million of that amount.

The peer-reviewed article has been accepted for publication in a scientific journal. Lemly provided a copy on Wednesday. It is not part of the U.S. Fish and Wildlife study, which will determine its own impacts. The federal and state study is meant to provide tangible benefits as soon as possible by getting all the parties involved to figure out the amount of damage and kind of restoration.

Jeff Brooks, a spokesman for Duke Energy, said Wednesday its participation in the joint plan underlines its commitment to the long-term health of the communities along the North Carolina-Virginia border.

"These are important priorities for Duke Energy, and we will continue our work on this project and other activities in the region to keep the Dan River a thriving re-

source for years to come," Brooks said.

In September, the company announced it had created a \$10 million fund to improve waterways in North Carolina and South Carolina, with \$1.5 million going to the Dan River basin region.

### Too early to estimate

Tom McKenzie, a spokesman for U.S. Fish and Wildlife, said it's far too early to estimate costs.

"With these kinds of events — oil spills, release of chemicals and the like — it's generally a multiyear process," he said Wednesday.

Frank Holleman, an attorney with the Southern Environmental Law Center, which has sued the state alleging lax coal ash regulation, says he expects it will cost a lot.

"The amount should be substantial, given the fact that Duke Energy has admitted that it is incapable of cleaning up the coal ash in the river, and the substantial impact on the ecology of dumping that much coal ash and polluted coal ash water into the river all at once," Holleman said.

The spill, caused by two collapsed stormwater drain

pipes beneath a basin, put about 39,000 tons of coal ash and 27 million gallons of untreated ash wastewater into the river. Duke says it has removed about 3,000 tons from the river, closing a park for four months to stage cleanup equipment.

Duke Energy has estimated it could cost up to \$10 billion to remove all of the coal ash from its 32 ponds at 14 power plant sites across the state.

Legislation enacted last summer requires the company to remove ash from the four most vulnerable sites. A coal ash commission will determine how soon and to what extent basins at the other 10 sites should be closed.

The legislation didn't deal with who pays for all that, but Duke has indicated it would ask the state Utilities Commission to approve rate increases.

The chairman of the new commission earlier this month said "everyone will share the cost" of cleanup.

The coal ash and wastewater sludge in the Dan River mostly harmed mussels and other aquatic life that survive in river bottoms. That stretch of river near Eden is home to a rare fish and mus-

### » Online

Read more stories about the N.C. coal ash issue at [nando.com/coalash](http://nando.com/coalash).

sel that have been declared endangered species, and another mussel that is being considered for protection.

There are also concerns about longer-term harm to fish and species at the bottom of the food chain, which could work its way up the food chain.

On Monday, the N.C. Department of Environment and Natural Resources reported promising new test results showing that aquatic insects "appear to be thriving" downstream of the Eden plant.

DENR official Tom Reeder said in a statement that the agency was "pleasantly surprised but still cautiously optimistic" about the health of insect communities. "Certainly, this is very good news for anyone concerned about the ecological health of the Dan River."

Those test results will be part of the U.S. Fish and Wildlife Service damage assessment.

Jarvis: 919-829-4576;  
Twitter: @CraigJ\_NandO

## **EPA proposes lower ozone standard to curtail asthma, other ailments**

By Chris Adams, McClatchy Washington Bureau

November 26, 2014

WASHINGTON — The Obama administration proposed Wednesday to tighten the allowable limit of ozone in the air, a bid to curtail the rising problem of asthma and other respiratory ailments but one that faces strong opposition from industry groups and Republicans on Capitol Hill.

The U.S. Environmental Protection Agency proposed a [new standard for ground-level ozone](#) – known as smog – to be set between 65 and 70 parts per billion, as measured by air-quality monitors. That’s a drop from the current 75 parts per billion, a standard that was set in 2008.

Ozone forms in the atmosphere when emissions of nitrogen oxides and other compounds from automotive and industrial sources bake in the sun. It leads to poor air quality and the warnings for at-risk people – children and elderly among them – to stay indoors.

Among other things, ozone exposure can cause respiratory problems such as difficulty breathing and airway inflammation.

By reducing the level of ozone in the air, the EPA said it hopes to better protect both Americans’ health and the environment, as ozone also stunts growth of plants and trees.

“Bringing ozone pollution standards in line with the latest science will clean up our air, improve access to crucial air quality information and protect those most at risk,” said EPA Administrator Gina McCarthy, adding that “whether we work or play outdoors, we deserve to know the air we breathe is safe.”

The EPA’s calculations found that lowering the standard will provide “significantly better protection for children” and prevent from 320,000 to 960,000 asthma attacks and from 330,000 to 1 million missed school days per year by 2025; it will also reduce deaths and missed work days, the EPA said.

The new standard is just in the proposal stage, and the EPA will take public comments on it for 90 days; the EPA intends to issue the new standard by October 2015.

As part of the process, the EPA is also asking for comments about whether it should be trying to bring the standard even lower, to 60 parts per billion, a move advocated by health and environmental groups.

After the rule is finalized, states and counties will have several years to comply by mandating changes in local industries, traffic or other pollution sources. Counties in California – which have unique geography and serious air-quality problems – will have longer.

By 2025, EPA projections show that the vast majority of U.S. counties would meet the new standard, given changes and reductions already under way. Not counting California, only nine counties would exceed the 70 parts-per-billion standard, and 68 would exceed a 65 parts-per-billion standard. Those include Tarrant County, Texas, and other counties scattered across the industrial Midwest and the Southwest.

“When it comes to reducing this pollutant, we have done it before, and we are on track to do it again,” McCarthy said in a conference call with reporters.

The move was generally supported by environmentalists and health experts, although they urged the administration to drop the standard even more.

Harold P. Wimmer, president and chief executive of the American Lung Association, said in a statement the proposal was “a step that is long overdue” but that “we are concerned that EPA did not include 60 ppb in the range, though it was the clear recommendation of independent scientists as well as health and medical societies. . . . We will continue to push the agency to adopt standards based on the scientific evidence.”

But the action was met with fierce resistance from industry groups and Republicans in Congress, who said that the standard would hurt the economy and that it was just the latest in a list of EPA proposals they plan to attack next year when they control both the House of Representatives and the Senate.

Soon-to-be Senate Majority Leader Mitch McConnell, R-Ky., said in a statement, “Many expect that it could become the most expensive regulation in American history and devastate job creation – at a time when Americans are already struggling. . . . This rule lacks balance and appears to be more about politics than anything else. The new Congress will review the rule and take appropriate action.”

And House Majority Leader Kevin McCarthy, a Republican from California’s Central Valley, criticized the administration for pushing too far, despite progress already made in recent years. He promised “aggressive oversight” of the action.

# THE DUKE FOREST

# LOG

A bulletin from the  
Office of the Duke Forest

Fall 2014



## Biodiversity Focus

### Natural Heritage Areas

While enjoying the Duke Forest for its recreational amenities, you may see signs of active timber management and scientific research. But did you know that the forest also plays an important role in protecting the biodiversity of North Carolina?

The Duke Forest contains 12 registered natural heritage sites – totaling over 1,200 acres or about 17% of its land base. These sites contain exceptional plants, animals, and natural communities that are documented by the NC Natural Heritage Program ([www.ncnhp.org](http://www.ncnhp.org)) as significant for preserving the state's biodiversity.

These areas are excluded from active timber management and each site is monitored once every 3 years to assess overall condition, and if possible, to reconfirm the presence of important natural features. As a result, we know the status of every Duke Forest natural heritage site, and if necessary, can plan for management activities like the removal of trash or invasive species.

### Here's a quick profile on three of Duke Forest's unique natural heritage areas:

#### Blackwood and Bald Mountains

These areas rise over 700 feet and are characterized by a natural community known as a Piedmont Monadnock Forest. The term monadnock refers to the underlying geology, which is volcanic in origin and highly resistant to weathering – hence their dominance in the surrounding landscape. Large Chestnut Oaks, which favor high, dry, and rocky habitats, occupy the summits. These trees are identifiable by their deeply furrowed, dark bark and leaves with wavy edges. Bald Mountain is the only monadnock in Orange County that is completely undeveloped on its upper slopes and summit, and Blackwood Mountain is home to a rare plant population, Torrey's mountain-mint.



An example of Chestnut Oak bark and leaves (Photos by Jeff Pippen).

#### New Hope Creek Slopes

These slopes contain a variety of distinct habitats along 4 miles of New Hope Creek and are a favorite location for migrating birds. The most well-known community type in this area is the Piedmont Heath Bluff because it contains a population of Catawba Rhododendron. Within the floodplain, Piedmont Alluvial and Bottomland communities with canopies of Sycamore, River Birch, and Ironwood exist. Rare plants include Sweet Pinesap and Indian Physic, and animals of note are the Gray Petaltail Dragonfly and the Red Salamander. Within the creek, state endangered and rare mussels are present including the Atlantic Pigtoe, Carolina Creekshell, and Brook Floater.



A Catawba Rhododendron bloom in April.

Rocky outcrop of volcanic origin at the summit of Bald Mountain.



A Red salamander (Photo by Jeff Pippen).



THE DUKE FOREST comprises over 7,000 acres of land in Durham, Orange, and Alamance counties and has been managed for research and teaching purposes since 1931. The mission of the Forest is to facilitate research that addresses fundamental and applied questions concerning forested and aquatic ecosystems and to aid in the instruction of students so that they will be informed citizens and effective stewards of our natural resources. In addition to supporting education at local universities, the Forest also participates in community outreach through tours and other events.

## INSIDE:

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News and Updates

Upcoming Events



[www.dukeforest.duke.edu](http://www.dukeforest.duke.edu)

Photo credit for Cypress Swamp, top right: Ms. Scottee Cantrell

# Greetings from the Forest

## Staff Spotlight

Many of you may already know that the Duke Forest Staff has undergone significant changes in the last year. After over 35 years of exceptional stewardship, Judd Edeburn retired as the Duke Forest Resource Manager. Judd was honored at two events in April and May, and Duke University's Board of Trustees voted to rename the Eno Division to the Edeburn Division. Though there is no replacement for his experience and intimate knowledge of the Duke Forest, we are fortunate to have him on staff through the end of the year.

Following a national search, Sara Childs, our Program Director for the last several years was selected as the next Duke Forest Director. Sara's leadership promises to continue the tradition of excellence established by Judd, but as indicated by the title change, the staff structure has been slightly reorganized. In her role as Director, Sara will continue to work with staff to accomplish the teaching and research mission while also engaging across the university to ensure the forest's vibrant future as an asset to Duke and the community.

To support Sara as Director and take on some of Judd's former responsibilities, Jenna Schreiber joined the staff as the Forest Operations Manager in July. Jenna is a 2012 graduate of the Nicholas School MEM/MF program. She offers a combination of on-the-ground forestry skills, forest certification expertise, and a people-focused approach that has already been a tremendous addition to our team.

After 25 years of dedicated service to the Duke Forest, we have said goodbye to long-time Grounds and Maintenance Supervisor, George Pendergraft. In retirement, George is enjoying lots of time at the beach and on his boat! Luckily, we were able to find an excellent replacement. In April, we hired Brad Shewmaker as our new Grounds and Maintenance Supervisor. Brad came to us with over 13 years of experience in construction and landscaping, and he is already an invaluable team member. He has wasted no time getting up to speed with the wide-variety and sometimes strange responsibilities he is tasked with!

We have also bid farewell to Nick Biemiller, our Forest Management Intern. Nick was with us for over a year and played a major role in implementing the Duke Forest Recreation Study, among other important forest management projects. He is now off adventuring in Central America before returning to graduate school. We wish him the very best and can't thank him enough for his reliably excellent work with the Duke Forest.

Lastly, we remain very fortunate to still have Beverly Burgess, our Administrative Assistant, taking your calls and deftly running the office from day to day, and Mike Burke, our Forestry Technician, maintaining his position as the veteran boots-on-the-ground for forest management activities.

So while this year brings a lot of change to our office, we remain 100% committed to the teaching and research mission and to the excellent stewardship of the Forest.

- The Office of the Duke Forest

## DUKE FOREST STAFF:

**Sara Childs**, Director

**Jenna Schreiber**, Operations Manager

**Michael Burke**, Forestry Technician

**Beverly Burgess**, Administrative Assistant

**Brad Shewmaker**, Grounds and Maintenance Supervisor

**Judson Edeburn**, Special Projects Manager and retired Resource Manager

## ADVISORY COMMITTEE:

**Alan Townsend**

Dean of the Nicholas School of the Environment - Chair

**Norm Christensen**

Professor of Ecology & Founding Dean of the Nicholas School

**Pat Halpin**

Gabel Associate Professor of Marine Geospatial Ecology

**Bill LeFevre**

Executive Director, Sarah P. Duke Gardens

**Dan Richter**

Professor of Soils and Forest Ecology

**David Singleton**

University Counsel

**Jenny Carolina**

Office of Duke and Regional Affairs

**Brian McGlynn**

Professor of Hydrology & Biogeosciences

**Nicolette Cagle**

Lecturer in Environmental Science & Policy

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[www.dukeforest.duke.edu](http://www.dukeforest.duke.edu)

[dukeforestproject.wordpress.com](http://dukeforestproject.wordpress.com)

[www.facebook.com/dukeforest](http://www.facebook.com/dukeforest)

**TO SUBSCRIBE to the LOG or TO UPDATE contact information:**

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Judd passes the torch, in this case a log, to Sara.



George on the tractor.



L to R: Sara, Beverly, Lemurs!, Jenna, & Brad



L to R: Nick, Sara, Mike, George, Judd, Beverly, & Brad

# News and Updates

## Millstone Returns

Judd Edeburn and Gail Boyarsky (a longtime friend and neighbor of the Duke Forest) recently purchased the contents of an old log building on the property of Stanford and Sue Whitfield. After Sue passed last year, Judd and Gail felt strongly about keeping this “museum”, as the Whitfields called it, in the community. It was full of cultural and historical artifacts symbolic of the area’s rich farming and mill history. One item of special interest was a 36-inch diameter millstone - one of a pair used to grind grain at a water powered mill. The stone had been obtained by Glenn Whitfield, Stanford’s father, from a mill site along New Hope Creek in what is now the Korstian Division. Several water powered grist mills operated along New Hope Creek from the late 18th century through the early 20th century. This stone likely came from either the Robson mill or a so-called “Laurel Hill” mill referenced by Glenn in past interviews. To provide an opportunity for others to learn about the historical importance of New Hope Creek, Judd and Gail donated the millstone to the Duke Forest.



*The millstone now resides near the Wooden Bridge, close to the creek from whence it came. We hope to install interpretive signage at this location.*

## Korstian Trail Project

We concluded Phase II in April of this year but continue to work on trail closure and compliance monitoring. This is the most ambitious effort we have undertaken to protect the forest’s natural resources and improve the recreation experience. With the help of tremendous volunteers, dedicated Duke Forest Staff, and Stewart Bryan of Native Trails, we successfully completed:

- 5,783 ft of new trail and 1,229 ft of rehabilitated trail
- 6 new bridges, 2 new boardwalks, and 1 viewing platform
- 2 new fences, 1 erosion control structure, and new trail signage

In total, the project cost \$40,000 over two years and was entirely funded through donations, map and book sales, picnic shelter rentals, and revenue from the Pine Cone Pacer 5K.

***A BIG thanks to everyone that continues to support the Duke Forest; we could not accomplish important projects such as this one without you!***

## Recreation Study

In September, we completed one year of sampling for our recreation study. Preliminary results show an estimated annual visitation of 100,000 adults, 5,500 children, and 18,000 dogs. Most visitors travel less than 20 minutes to recreate in the Duke Forest and while most do not feel that other uses of the forest conflict with their own, they do cite ‘dogs off leash’ and ‘dog waste bags’ as nuisances. We hope to have a formal summary report available soon.

***Much appreciation to everyone that filled out a survey, and many thanks to everyone that responsibly enjoys the Forest with their dogs!***

## Deer Herd Reduction

We are well into our 7th season of the Duke Forest Deer Herd Reduction Program and despite a large acorn crop, hunter success is up slightly from last year. In contrast, news from the NC Wildlife Resources Commission notes that in this part of the state, overall hunting success is down - possibly due to an increased incidence of hemorrhagic disease. We have yet to find sick deer in the Duke Forest, but hunters are watching for signs.

***Please continue to obey all closure signs and always stay on authorized roads and trails - staff are writing lots of citations this year!***



*To see more pictures and learn about the Korstian Trail Project, check out: [dukeforestproject.wordpress.com](http://dukeforestproject.wordpress.com)*



*If you want to support future projects on the Duke Forest, please visit: [dukeforest.duke.edu/giving-opportunities](http://dukeforest.duke.edu/giving-opportunities)*



## Management

Every year the Duke Forest Staff manages hundreds of acres to support teaching and research, to protect and enhance natural habitats, to generate revenue for operations, and to provide outreach and recreation opportunities for the public. In the past fiscal year, we executed operations on over 500 acres – more than double the year before! A series of ice storms in early spring severely damaged several recently thinned pine stands and littered the roads with fallen trees and debris. Staff spent countless hours assessing damage and implementing appropriate responses including coordinating the salvage cutting of 22 acres and overseeing unusual work to straighten ice-damaged trees across 28 acres. We also completed the final phase of the Korstian Trail Project, but some trail closure and compliance monitoring is still underway. Overall, it was a very challenging but productive year.

 AT A GLANCE	<b>2013 - 2014</b>	
	Harvesting	<b>303 acres</b>
	Clearcut	69
	Commercial thinning	118
	Salvage harvest <i>(ice storm response)</i>	22
	Seed tree harvest	44
	Seed tree removal	9
	Selection harvest	41
	Pre-commercial Thinning	<b>64 acres</b>
	Hardwood Control	<b>61 acres</b>
Invasive Control	<b>53 acres</b>	
Site remediation <i>(ice storm response)</i>	<b>28 acres</b>	
Road Work	<b>55 miles</b>	



Duke Forest hired crews from TROSA to stand up bent over pine trees in areas that had been pre-commercially thinned just before the ice storms hit. The procedure involved baling twine, a long hooked pole, and lots of arm strength to pull the trees upright and then tie them off to adjacent trees or stumps. All the trees that were tied up are now standing vertical on their own.

## Research and Teaching

The Duke Forest fulfills its primary mission by hosting a wide variety of researchers, educators, and students. Thirty-three new research projects began this year, including a multi-university effort to build a seed bank for the study of plant evolution and the reuse of an existing well by the US Geological Survey to monitor ground water levels in Orange County. Teachers and students from all levels of study also took advantage of learning opportunities at Duke Forest. Nicholas School graduate students used the forest to learn about forest ecosystems, silviculture, and forest measurements. Several groups including the NC School of Science and Math and the Duke Action Science Camp for Young Women played in New Hope Creek to learn about aquatic ecology. In addition to supporting these activities on the ground, staff shared gigabytes of geospatial data to facilitate local historical research, as well as undergraduate and graduate group projects.

 AT A GLANCE	<b>2013 - 2014</b>	
	Number of research projects <i>(33 new projects)</i>	<b>84</b>
	Number of primary investigators	<b>63</b>
	Number of research affiliations	<b>23</b>
	Total research dollars <i>(44 of 84 reporting)</i>	<b>\$4,080,055</b>
	Number of teaching activities	<b>23</b>
	Number of educators	<b>19</b>
	Number of class visits	<b>157</b>
	Number of participating students	<b>534</b>



In partnership with the North Carolina Forest Service, Duke Forest Staff deployed Emerald Ash Borer (EAB) Monitoring Traps. The EAB is a non-native insect that attacks and kills ash trees. Since being detected in Michigan in 2002, it has spread to 22 states including North Carolina. It has not yet been found in Durham or Orange county. EAB photo (left): Eric R. Day, Virginia Polytechnic Institute and State University, Bugwood.org

# Year in Review

July 2013 - June 2014

## Community Outreach

Rainy weather thwarted several outreach events this year, but we were able to offer our popular geology and stewardship tours. We also hosted a couple special tours – an adventurous off-trail hike for members of the Eno River Association ([enoriver.org](http://enoriver.org)) to explore the banks of the river as it flows through the Hillsboro Division, and a history tour for the Duke Women's Campus Club focused on colonial settlement and mill culture along New Hope Creek. As in most years, we provided several "Introduction to the Duke Forest" tours for students from Duke and other local schools.



## Volunteers

With the help of dedicated volunteers and an ambitious group of students from the NC School of Science and Math, we completed Phase II of the Korstian Trail Project including 3 new bridges and one erosion control structure. On April 5th, we celebrated Invasive Species Awareness Week with a volunteer effort to remove Chinese Privet and other invasives from a Registered Natural Heritage Area. Additional efforts focused on ongoing trail closure work and prescribed burning for restoration and stand improvement. Without the support of public volunteers and interested student groups, we could not have accomplished all of these important projects.



The Office of the Duke Forest looks forward to offering more events in the coming year. To receive notifications about upcoming activities, **sign-up for the events list serve at: [www.dukeforest.duke.edu/contact-us](http://www.dukeforest.duke.edu/contact-us)**

2013 - 2014 Outreach	
Number of tours and activities	24
Number of participants	531
Total outreach hours	61



The Office of the Duke Forest relies on volunteer efforts to get important work accomplished; look for more opportunities to participate on the website, or **submit a volunteer interest form at: [www.dukeforest.duke.edu/volunteer-opportunities](http://www.dukeforest.duke.edu/volunteer-opportunities)**

2013 - 2014 Volunteers	
Number of volunteer events	9
Number of participants	69
Total volunteer event hours	37



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The Duke student chapter of the Society of American Foresters is excited to host the 8th Annual Duke Forestry Symposium on "Forestry and Ecosystem Services". The event will be held Friday, November 14th. For more information and to register, please email: [safduke@gmail.com](mailto:safduke@gmail.com).

UPCOMING EVENTS

**Annual Gathering**  
Thursday, November 13th, 6 - 8:30 pm



An evening of food and drink to learn about activities on the Forest with a special focus on invasive species and their impacts on our forests.

**Annual Research Tour**  
Friday, December 12th, 1 - 4 pm



An afternoon tour around Duke Forest to visit active research sites and learn about some of the topics under study.

**All events are free and open to the public. For more information and to register, please visit: [www.dukeforest.duke.edu](http://www.dukeforest.duke.edu)**

## NC panel OKs rules needed for fracking permits

By GARY D. ROBERTSON, Associated Press

RALEIGH, N.C. — After 18 months of work and more than 200,000 public comments, a state energy panel on Friday approved a comprehensive list of regulations for companies that want fracking permits to drill for and collect natural gas in North Carolina.

The state Mining and Energy Commission voted in favor of dozens of rules to guide the process for how companies would use the hydraulic fracturing method.

Since last week, commission members spent three days discussing revisions and took more comments from the public before the rules were approved with no opposing votes. The full panel has been debating and rewriting rule proposals since mid-2013.

The commission, formed in mid-2012 at the legislature's direction, held four public hearings around the state and received nearly 220,000 public comments on the rules.

"If anybody is totally happy with it, I'll be surprised, but it's really the best we could do," Commission Chairman Vikram Rao said. "I'm sure there are sections of the public who won't be particularly happy."

The decisions Friday represent an important step toward making sure fracking can begin on the schedule envisioned by Republican leaders. GOP Gov. Pat McCrory signed a law last summer clearing the way for permits to be issued next year for fracking, which involves injecting water, sand and chemicals to break apart underground rocks so oil and gas can escape.

Scientists believe pockets of natural gas exist in layers of shale under Chatham, Lee and Moore counties southwest of Raleigh, but there are disputes about how much is there.

The regulations now go to the state Rules Review Commission, which will probably suggest changes. The commission is slated to discuss the fracking rules Dec. 17-18, but some adjustments could be offered informally sooner.

"This is a lot for anybody to digest," said Amy Pickle, the commission's vice chairwoman and a leader at Duke University's Nicholas Institute for Environmental Policy Solutions. Once through the rules commission, the regulations head to the legislature, which has the final say during the session that starts in January.

The panel agreed Friday to double the amount of time the Department of Environment and Natural Resources would have to approve or deny a fracking permit application. The time was extended to 180 days because an applicant must receive financial bonding before a permit can be approved, Pickle said.

Language that gave the commission authority to halt work on fracking operations was removed. Commission members said such power wasn't explicit in the law directing the creation of the rules. Rao said such power would be formally requested from the legislature.

Commission members also said open pits containing drilling waste must be made larger to prevent spills, and they agreed to require continuous electronic monitoring of these pits for leakage into the ground.

Opponents fear chemicals could escape the wells and argue the rules don't do enough to protect the state.

"The only way that North Carolinians can truly be protected from drilling is to keep it out of the state entirely," Environment North Carolina spokeswoman Liz Kazal told the commission just before the vote.

Fracking proponents say it can be done safely and that affordable natural gas helps manufacturers create more jobs.

The panel's work will "ensure that there's safe and responsible oil and natural gas exploration here in the state," said David McGowan with the North Carolina Petroleum Council.

Associated Press writer Jonathan Drew contributed to this report.