

AGENDA

Commission for the Environment September 14, 2015 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.	Call to Order
7:32	II.	Additions or Changes to Agenda
7:35	III.	Approval of Minutes – August 10 (Attachment 1)
7:40	IV.	Energy Conservation / Management Forum Terri Buckner (OWASA Board of Directors) and Gary Saunders will report on the initial planning for a proposed community forum on energy conservation and management (Attachment 2)
8:15	V.	Green Building Incentives The CFE will continue its discussion of potential incentives for energy-efficient construction. Staff will report back on recent meeting with County Planning & Inspections (Attachment 3)
8:45	VI.	CFE Outreach / News Articles The CFE will review recent and draft news articles intended to educate and inform the public about issues highlighted in the Orange County State of the Environment (Attachments 4-6)
9:00	VII.	Orange County Bond Referendum 2016 The CFE will consider sending a representative to the September 15 BOCC meeting to provide comments on the County's proposed 2016 bond referendum (Attachments 7-8)
9:15	VIII.	Updates and Information Items Staff and/or CFE members will provide updates on the following items: <ul style="list-style-type: none">➤ Chatham Co approves temporary fracking moratorium (Attachment 9)➤ Hydrilla in the Eno River update (Attachment 10)➤ Chapel Hill pollution prevention video wins national award (Attachment 11)➤ Bolin Creek trail work raises erosion concerns in Chapel Hill (Attachment 12)➤ Orange County Social Justice Goal - adopted 2010 (Attachment 13)➤ OWASA wastewater and biosolids annual report (Attachment 14)➤ OWASA hires sustainability manager (Attachment 15)➤ Tree Harvesting in Orange Co brochure (Attachment 16)➤ Duke Forest deer management program (Attachment 17)➤ NC's curious response to EPA's Clean Power Plan (Attachment 18)➤ Making Energy Work Conference – Oct 6-7 (Attachment 19)
9:30	IX.	Adjournment

Next meeting: October 12 (Hillsborough)

CFE Meeting Ground Rules (*Adopted 9/12/11*)

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

Activities the CFE expects to carry out in 2015:

- 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
- Help with public outreach and management efforts related to hydrilla in Eno River
- Help initiate the development of a comprehensive conservation plan for Orange Co
- 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

Concerns or emerging issues the CFE has identified for 2015:

- 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
Commission for the Environment**

DRAFT Meeting Summary

August 10, 2015

Richard Whitted Meeting Facility, Hillsborough

PRESENT: Jan Sassaman (Chair), May Becker, Peter Cada, Tom Eisenhart, Lynne Gronback, Loren Hintz, David Neal, Bill Newby, Jeanette O'Connor, Rebecca Ray, Sheila Thomas-Ambat, Lydia Wegman, David Welch

ABSENT: Gary Saunders

STAFF: Tom Davis, Rich Shaw

GUESTS: Elizabeth Zander, Bill Kaiser (Chapel Hill Environmental Stewardship Advisory Board)

- I. **Call to Order** – Sassaman called the meeting to order at 7:35 pm.
- II. **Additions or Changes to Agenda** – Hintz asked to discuss his draft news article about invasive species. Sassaman agreed to add that to the Updates and Information items.
- III. **Minutes** – Wegman motioned to approve the June 8 minutes as written; seconded by Eisenhart. Approved unanimously.
- IV. **Advisory Board Appreciation** – Shaw handed out insulated lunch bags-- a gift from the Board of County Commissioners office to members of Orange County advisory boards. Shaw expressed his thanks to CFE members for their volunteer service to the county.
- V. **Hydrilla in the Eno River Update** – Davis provided an update on results from the initial two months of using herbicide to help control the spread of hydrilla in the Eno River east of Hillsborough. He showed maps of the project area, depicting the progress of the herbicide concentrations at different monitoring stations between Lawrence Road (near Hillsborough) and Red Mill Road (near Falls Lake). Davis showed photos of hydrilla in the Eno River before and after the herbicide treatment.

Davis reported the hydrilla has died back considerably from the treatment, but there has been some chlorosis to native water willow and injury to native riffleweed. A two- to three-week pause in treatment was initiated on July 20 during which the management zone will be monitored for response of natives and remnant hydrilla. Depending on these responses, treatment will either be considered complete or be resumed at a lower injection rate to prevent hydrilla recovery but reduce potential stress to riffleweed.

Davis answered questions from CFE members about the cost of the two year study (\$75K) and what agency has the lead role in determining how to proceed with the project (NC Division of Water Resources). CFE members thanked Davis for his presentation and asked him to keep them apprised as further results become available.
- VI. **Green Restaurant Challenge** – Elizabeth Zander introduced herself as Chair of the Chapel Hill Environmental Stewardship Advisory Board, whose charge is to assist the Chapel Hill Town Council in strengthening environmentally responsible practices that protect, promote, and nurture the community and the natural world through advice and program support. She introduced her colleague and former CFE member, Bill Kaiser.

Zander presented her board's plans for a "Green Restaurant Challenge" for CFE consideration and potential collaboration. She said restaurants would be evaluated based on four criteria: energy consumption, water consumption, waste reduction, and local sourcing. Zander said she has conferred with Brennan Bouma because of his experience with the Triangle Green Business Challenge while with Triangle J Council of Governments. She has also conferred with Blair Pollock and Muriel Williman with the Orange County Solid Waste Management department.

Zander asked whether the CFE would be interested in collaborating with her board, and possibly expanding the "challenge" to restaurants operating throughout Orange County. She noted that one of the CFE's objectives is to increase food composting.

CFE members asked questions and offered their ideas:

- Hintz asked if there would be prizes awarded. Zander said there winners would be recognized with good public relations. She noted Person County had a guidebook to restaurants and highlighted those with sustainable practices.
- Wegman asked if the idea has been discussed with sample restaurants. Zander has spoken with two owners who noted monitoring waste would be difficult.
- Hintz asked staff if there would be any problem for the County to participate, such as listing winning restaurants on its website. Shaw said it should be alright to list the winners based on the contest criteria, but he would need to check.
- Sassaman asked how much variation might there be among different restaurants; and noted a restaurant's size would affect its ability to achieve efficiencies. Zander said they need to find equitable ways to measure success, such as basing on number of patrons, percentage change, or most improved.
- Neal said evaluating energy consumption would also be challenging due to some restaurants using leased space versus owning the building outright and being able to make changes. Gronback suggested dividing them into two categories.
- O'Connor suggested promoting financial incentives, such as rebates.
- Hintz noted a countywide campaign would also include Mebane, Hillsborough, and Carrboro. He asked how the challenge would work. Zander said she envisions a six-week contest, beginning with publicity, baseline measures at the participating restaurants, documenting any changes, and tallying results.
- Cada said the variability of restaurant buildings makes it difficult to make comparisons. It may be better to recognize restaurants for the percent of improvements made for different measures over the time period.
- Neal said this contest should be a positive and educational opportunity that encourages participation. He suggested that "just by playing, you win."
- Shaw said rather than using detailed metrics perhaps the contest could ask participants to simply tell what they have done to reduce waste, or reduce energy or water consumption, or to increase local sourcing. Keep it open and subjective.
- O'Connor suggested introducing some social justice element, such as the percentage of unused food that is donated to another organization.

Zander thanked CFE members for these ideas and asked if anyone wished to help plan for the contest in a smaller group discussion. Wegman, Neal, and Gronback offered their assistance. Sassaman thanked those members and asked Neal to report back.

Sassaman then thanked Zander and Kaiser for sharing this information with the CFE and welcomed their ideas for other opportunities for potential collaboration.

- VII. **Green Building Incentives** – Neal noted that it had been since early 2012 that the CFE, in a memo to the Planning Board, expressed its interest in pursuing potential incentives for energy-efficient construction and renovation in Orange County. He recommends not waiting for the Town of Chapel Hill to complete its pilot study of offering incentives for “green building” in the Ephesus-Fordham district. Neal mentioned a conversation with Commissioner Jacobs in which he wished Morinaga had installed solar panels on its buildings. Neal said he reminded Jacobs the County has authority to offer incentives.

Shaw suggested that he and Bouma meet with one or more receptive members of the County building inspections staff to discuss the potential for green building incentives. He will make the contacts and notify Neal so that he can participate if available.

O’Connor said the Town of Carrboro considered offering green building incentives, but the cost of permits for the relatively small size of projects in Carrboro is not enough to offer much of a rebate. She said a representative from the Homebuilders Association will be meeting with Town staff to discuss other ideas for potential incentives.

Gronback said Green Globes, maintained by the Green Building Initiative, is an alternative to the LEED green building rating system for assessing a building’s water efficiency, energy usage, construction materials, indoor air quality, and building site.

Hintz said one purpose of this effort is to increase education and awareness; even small financial incentives can increase the chance that builders consider the green options. Sassaman agreed, and noted many people in Orange County cannot afford to improve the efficiency of their homes without the availability of financial and technical assistance.

Neal said he wants the County to do what it can to promote green building using the authority granted by the General Assembly. He still considers this “low-hanging fruit” and a worthwhile endeavor for the County—using either incentives or public education.

The CFE discussed the possibility of sending the BOCC a copy of the CFE’s January 2012 memo to the Planning Board, and asking the BOCC for its support and direction.

Shaw suggested waiting on re-sending that memo to the BOCC until he and Bouma has a meeting with County building inspections staff to discuss this matter and identify specific ways the County could design and implement potential incentives. He will arrange a meeting and notify Neal so that he has an opportunity to participate. Sassaman asked to be notified of the meeting as well.

Neal and Wegman indicated that following the meeting(s) with the inspections staff they would be willing to go back to the Planning Board to re-engage them in a conversation on how to make this work. Wegman noted she is now a member of the Planning Board. Wegman suggested they might also involve other advisory boards such as the Economic Development Commission.

Wegman asked staff to check in with the Town of Chapel Hill staff to see if there is any further progress on their pilot program and to report back to the CFE in September.

- VIII. **Photo Contest Winners** – Shaw presented the winning photos from “The Nature of Orange” photography contest, which is co-sponsored by the CFE. Shaw reminded CFE members the goal of the contest is to inspire people to help document the beauty and diversity of our natural resources and our residents connecting to their environment. He displayed the winning photos from the Youth and Adult categories, and reported that the photos will be on display at area libraries, visitor centers, and other public places.
- IX. **Updates and Information Items** – Information on the following subjects was provided in the meeting package; selected items were discussed: a) CFE comments on draft changes to impervious surface rules, b) CFE memo re 2016 bond package, c) CFE news article on native plants, d) Blackwood Farm Park opening, e) solar energy at Rogers Rd Community Center, f) Orange Co. under quarantine for emerald ash borer, g) OWASA Mitigation Tract forestry update, h) EPA’s environmental justice screening and mapping tool, i) 2014 the hottest year on record, j) climate change literacy, k) \$125M for climate change campaign, l) effective insect repellents without DEET, and more.
- Hintz reported that he sent a draft news article about non-native, invasive plants and animals to CFE members earlier in the evening. He asked members and staff to review and comment on the draft.
- X. **Adjournment** – Sassaman adjourned at approximately 9:15 pm.

Summary by Rich Shaw, DEAPR Staff

**Summary of Inter-Agency Meeting to Discuss
Potential Community Forum on Energy
August 4, 2015, 5:30 p.m. – 7:00 p.m.
OWASA Boardroom**

Meeting Attendees

Brennan Bouma, Orange County
Terri Buckner, OWASA Board of Directors
Brad Ives, UNC Associate Vice Chancellor for Campus Enterprises/Chief Sustainability Officer
Pat Davis, OWASA
Randy Dodd, Town of Carrboro
Jesse Freedman, Town of Chapel Hill
George Jacobs, UNC Energy Management
Kathy Kaufman, Carrboro Climate and Energy Task Force
John Richardson, Town of Chapel Hill
Gary Saunders, Orange County Commission for the Environment

Overview Presentation

Terri Buckner welcomed the meeting participants and thanked them for attending the meeting. She said that OWASA was in the early stages of developing an energy management plan, and it seeks to inform and actively engage customers, local governments, the University, and others as it develops the plan. The purpose of this meeting is to determine if there is interest in working together to organize and hold a community forum on energy management, similar to the Community Solid Waste Forum that was hosted by Chapel Hill's Sustainability Committee and the Orange County Commission for the Environment on May 30, 2013 (held at the Chapel Hill Public Library).

An energy forum would provide participating agencies the opportunity to: (1) share information about their respective goals and objectives, efforts, and successes to date, and (2) receive feedback and ideas from the public, and (3) identify opportunities for collaboration.

The OWASA Board of Directors and Orange County Commission for the Environment support the forum concept, and requested that this group develop preliminary goals and objectives and a proposed approach, format and timetable for such a forum for review by each groups governing body before committing to the forum.

Agency Updates

Participants provided a brief summary of their respective agency's energy and carbon management goals and objectives and ongoing efforts.

Discussion of the Forum Concept

Participants agreed that a community forum on energy could be useful; however, strong “curb appeal” is needed to generate a high level of public participation. Randy Dodd said that Carrboro held a series of three community meetings relating to energy and climate, and that the turnout ranged from about 15 to 40 people. A lot of time and effort went into planning, organizing, and holding those meetings.

After much discussion the group agreed that the real opportunity here is to work together “to do something awesome” in Orange County. The group agreed that partner agencies would meet again to begin identifying and evaluating opportunities for collaboration, from which one or more community forums would evolve.

Potential Strategies for Collaboration

1. Bring in technical experts to evaluate technologies, benefits and costs, etc. for a project such as installing solar power systems at partner agency facilities/properties. Chapel Hill is in the early stages of considering issuing a request for qualifications for consulting services for an evaluation of Town facilities. Jesse and John will share more details on this with the group at the next meeting.
2. Evaluate alternatives to beneficially reuse all of the biogas generated at OWASA’s Mason Farm Wastewater Treatment Plant. This would include evaluating strategies to increase biogas production by working together to divert food waste, fats, oil, and grease, and/or other high strength wastes to the plant. One or more partner agencies could consider providing funding support if needed to enable OWASA to move ahead with such a project. OWASA staff believes that it may be eligible to receive a 20-year, no-interest loan from the State Clean Water State Revolving Fund for such a project.
3. Develop joint strategies for making energy and water conservation an important part of our respective agency’s culture, and our community’s culture. We need to better inform and engage our employees, residents, businesses, students, etc. in efforts to reduce energy and water use, and carbon emissions.
4. Consider “crowdfunding” or other innovative approaches as a way to raise funding for renewable energy projects.

Next Steps

1. OWASA will draft a meeting summary and distribute that for review and comment by meeting participants. The final summary will incorporate any comments received.
2. OWASA will issue a poll determine the best date and time for the next meeting, which would likely be in September. Considering the regular meeting schedules of local

Summary of Inter-Agency Meeting to Discuss Potential Community Forum on Energy

Meeting Date: August 4, 2015

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governing boards, there was a general preference for holding the meeting on a Wednesday from 5:30 to 7:00 p.m. at OWASA.

3. Meeting participants will provide any follow-up information, comments, questions and suggestions to Pat Davis via e-mail to pdavis@owasa.org or by phone at 919-537-4210. Those will be consolidated and provided to the group in advance of the next meeting.

Prepared by:



Patrick Davis
Sustainability Manager, OWASA

**ORANGE COUNTY
COMMISSION FOR THE ENVIRONMENT**

MEMORANDUM

To: Orange County Planning Board

From: Orange County Commission for the Environment
Renee Price, Chair *RP*
David Neal, Energy Committee

Date: January 26, 2012

Re: Incentives for Energy Efficient Construction and Renovation in Orange County

The Orange County Commission for the Environment (“CFE”) invites 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 data¹). 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.

¹ From Architecture 2030, buildings account for 48.7% of total energy consumption in the United States (available at http://architecture2030.org/the_problem/buildings_problem_why).

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.²

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.

cc: David Stancil
Craig Benedict

² From the Database of State Incentives for Renewable Energy & Efficiency (available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NC87F&re=1&ee=1)

FACEBOOK.COM/CHAPELHILLNEWS * TWITTER.COM/THECHAPELHILLNEWS

Ash borer: The new invader

Editor's note: This is the third in a series of articles by the Orange County Commission for the Environment, a volunteer advisory board to the Board of County Commissioners.

Anyone who drives, hikes, or bikes in Orange County or North Carolina in general will notice invasive, exotic (non-native) plants growing over trees (kudzu, honeysuckle and wisteria), taking over yards (English ivy and vinca), or overgrowing wildflowers and river valleys (stiltgrass and Russian Olive).

It is not as easy to notice at first, but insects and often the fungi they carry can destroy our forests. During the 20th century the majority of our chestnut and American elm trees were lost to non-native fungi. Both were important urban shade trees and provided vital forest habitat.

Today we are losing spruce, fir and hemlock trees in mountain areas to non-native pests, and new diseases such as West Nile Virus and Asian avian flu are also spreading.

Orange County's native plants clean our water and air, provide wildlife habitat, and help protect us from floods. However, a small percentage of invasive, exotic plants found here threaten our native plants, the quality of habitat for wildlife, and the overall biological diversity of our natural areas.

These non-native plant species may grow faster, reproduce at a more rapid rate, have a larger reproductive dispersal zone, or be able to tolerate a wider range of environmental conditions than native plants. Our insects often cannot utilize exotic plants, threatening critical ecosystem services such as plant pollination. Invasive plants create monocultures, which do

What's next?

A meeting about this new pest will be held at 9 a.m. Thursday, Aug. 20, at the Orange County Whitted Center, 300 W. Tryon St. in Hillsborough. nando.com/lyg

not provide food for native animal species and thus can reduce populations of local animals.

Many invasive plants here originated in southeastern Asia, due to their similar conditions. Some were introduced to North America accidentally, while others were brought intentionally as ornamental or decorative varieties. In Orange County our newest invasive exotic species is the Emerald Ash Borer.

Today if you drive north from this area on the interstate highways you will see skeletons of

ash trees along many roads and in forests. Thesewere killed by a small, green beetle from Asia, first discovered in the U.S. in Michigan in 2002 and first seen in North Carolina in 2013. It drills a U-shaped hole in the tree trunk and destroys the internal bark, quickly killing the tree.

The Emerald Ash Borer has been found in 12 North Carolina counties, and just this year it was discovered in Orange County! North Carolina has established a quarantine that prohibits any parts of the ash tree from being moved outside of the county—including living, dead, cut, or fallen pieces; firewood, green lumber, stumps, roots, branches; and composted and uncomposted chips. The exception is firewood that has been treated by an approved U.S. Department of Agriculture method (in an approved kiln) may be removed from the quarantine area.

You can help stop the spread of invasive species by:

● Not transporting firewood or other plant material from ash trees out of Orange County.

● Learning to identify and remove invasive plant species, replacing them with species native to the Piedmont.

● Minimizing changes to natural habitats, as invasive species thrive in disturbed habitats.

● Using certified "weed-free" forage, firewood, hay, mulch, compost, and soil.

● Planting only native plants (or non-invasive, non-native species) in your yard and gardens.

● Cleaning hiking boots, waders, boats, canoes, trailers, and off-road vehicles to stop the spread of seeds and plant fragments to new locations.

● Volunteering to remove invasive species from natural areas in your community.

● Reporting any symptomatic activity in ash trees to the NCDACS Plant Industry Division hotline at 1-800-206-9333 or by email to newpest@ncagr.gov

● Obeying quarantines to stop the spread of organisms.

● Registering your backyard chickens to prevent Asian avian flu at nando.com/lyh

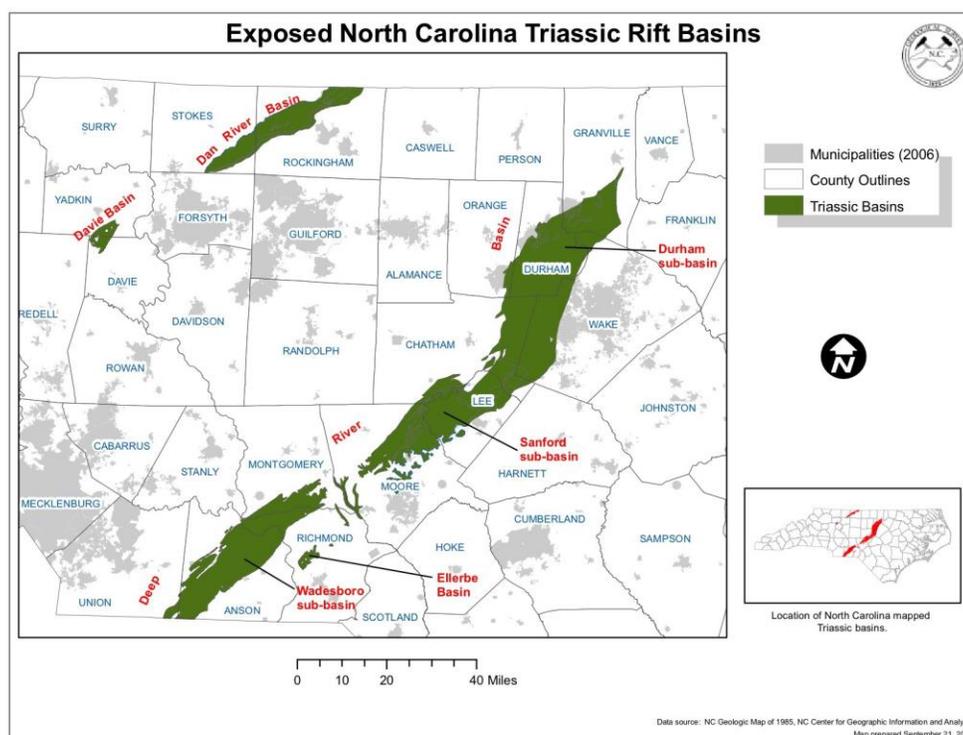
This is another in a series of articles by the Orange County Commission for the Environment (CFE). Each article highlights an environmental issue of interest to the residents of Orange County. The CFE is a volunteer advisory board to the Board of County Commissioners. Additional information can be found in the Orange County State of the Environment 2014 report at http://www.orangecountync.gov/departments/deapr/commission_for_the_environment.php

Potential Effects of Fracking on Orange County

by the Orange County Commission for the Environment

Introduction

Certain geologic basins in the United States have deposits of organic-rich shale containing reserves of natural gas and oil. Extraction of hydrocarbons from these shale deposits has become fairly widespread using horizontal drilling and hydraulic fracturing, or “fracking.” In North Carolina, organic-rich shale deposits occur in rocks of Triassic age; basins that contain Triassic rocks exposed at the surface are shown below. Only the Sanford sub-basin has been proven to contain organic shale.



Only a very small portion of southeastern Orange County is underlain by the Triassic-aged Deep River Basin. This basin is composed of three sub-basins; from north to south they are the Durham, Sanford, and Wadesboro sub-basins. The central portion of the Sanford sub-basin contains an approximately 800-foot-thick deposit of organic-rich shale. Limited activity to date identified potentially commercially viable natural gas resources in a 59,000-acre (92-square-mile) portion of the Sanford sub-basin in Lee County and a portion of Chatham County.

In 2011, the NC General Assembly directed several state agencies to investigate implications of horizontal drilling and fracking for oil and natural gas production in North Carolina. The resulting North Carolina Oil and Gas Study was published in 2012. In addition, the General Assembly overrode then-Governor Perdue's veto, thus legalizing fracking for natural gas extraction once regulations governing these activities were developed. Regulations governing horizontal drilling and fracking were developed and as of March 2015 applications for the permits necessary to drill for natural gas in North Carolina have been available. As of September 2015, no drilling unit applications or complete oil or gas well permit applications have been received by the state.

Concerns

While direct adverse effects from fracking are unlikely in Orange County, nationwide shale-gas exploration and exploitation demonstrate that the fracking process involves activities that could result in adverse impact, including the following:

- Possible contamination of surface water and groundwater;
- Negative impacts to water supplies;
- Wastewater disposal issues;
- Negative air quality impacts;
- Negative infrastructure impacts; and
- Detrimental social impacts common to boom and bust economies

If drilling for natural gas from nearby shale deposits occurs, the likely impacts on Orange County would be indirect, though not insignificant. The water used for fracking that is not recycled would need to be disposed of. This water would likely be trucked to a wastewater treatment plant, possibly in Orange County. Wastewater plants may not be able to test for and remove the contaminants found in return water, leading to the possibility that contaminants could be discharged into local waterways. Increased heavy truck traffic could cause damage to county roadways and bridges.

Conclusions

The low price and large supply of domestic natural gas, as well as the significant amount of gas known to exist in much larger shale deposits elsewhere in the United States, make extraction activities in North Carolina unlikely in the near term. Fracking within Orange County is even more unlikely since Triassic rocks are limited to the southeastern portion of the county. Were drilling to occur in shale deposits some 30 miles south of Chapel Hill, indirect impacts on water supplies and transportation infrastructure could take place in Orange County.

Learn more about fracking and North Carolina geology:

- <http://portal.ncdenr.org/web/guest/shale-gas>
- http://portal.ncdenr.org/c/document_library/get_file?uuid=b6f4712d-748e-4606-9d24-542ab0e40893&groupId=14
- <http://www.newsobserver.com/news/business/article14730470.html>
- <http://www2.epa.gov/hydraulicfracturing>
- <http://www.ie.unc.edu/issues/fracking.cfm>

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

MEMORANDUM

To: Commission for the Environment
From: Rich Shaw
Date: September 9, 2015
Subject: Articles for Public Outreach

Since February CFE members have worked with staff to develop monthly articles for publishing in the *Chapel Hill News* and *The News of Orange County*. Thus far there have been articles on hydrilla in the Eno River, electronic vehicle charging stations, the benefits of native plants, and problems caused by the emerald ash borer and other invasive exotic species.

The following is a revised calendar for writing and publishing of additional articles based on the Orange County State of the Environment 2014. Potential topics are provided for CFE members to consider and select for the remainder of 2015.

Revised Calendar for Preparing/Publishing News Articles

Topic	SOE	Committee (Lead)	Completion	Publication
Hydrilla in the Eno	pp. 69-70	Water (Cada/Davis)	April	April
New electric vehicle charging stations	pp. 21-22	Air & Energy (Bouma)	April 15	May 13
Pollinator Issues	pp. 43-44	Land (O'Connor/Shaw)	June	June
Terrestrial invasives / choosing native spp.	pp. 43-44	Land Resources (Hintz/Shaw)	Aug 15	Aug 19
Potential effects of fracking in Orange Co.	pp. 71-72	Water (Davis/Sassaman)	draft Sept 14	late Sept
Solarize projects or WISE program	N/A	Air & Energy (Neal/Bouma)		
Water conservation	pp. 47- 54	Water (____/Davis)		
Barriers to solar development	N/A	Air & Energy (_____/Bouma)		
Land conservation	pp. 37-42	Land (Wegman/Shaw)		
<i>Reconsider schedule for 2016 (change to quarterly?)</i>				

From: Orange County Government
Sent: Wednesday, September 09, 2015
Subject: Press Release- ORANGE COUNTY ACCEPTING PUBLIC COMMENT ON PROPOSED BOND REFERENDUM



Media Contact

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cbanks@orangecountync.gov

FOR IMMEDIATE RELEASE

**ORANGE COUNTY ACCEPTING PUBLIC COMMENT ON PROPOSED
BOND REFERENDUM**

ORANGE COUNTY, NC (September 9, 2015)—The Board of Orange County Commissioners (BOCC) invites public comment, during its September 15 meeting, on a proposed bond referendum.

Public comment is listed on the Agenda under 'Matters not on the Printed Agenda.'

The meeting will start at 7:00 p.m. at the Southern Human Services Center, located at 2501 Homestead Road in Chapel Hill.

The BOCC also welcomes written comments, which can be submitted via e-mail to ocbocc@orangecountync.gov or mailed to the Clerk to the Board's office at 200 S. Cameron Street, Hillsborough, NC 27278.

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**ORANGE COUNTY
COMMISSION FOR THE ENVIRONMENT**

Memorandum

To: Orange County Board of Commissioners

From: Orange County Commission for the Environment

Date: June 15, 2015

Subject: 2016 Bond Referendum

The Commission for the Environment (CFE) is concerned about the preliminary decision by the Board of County Commissioners (BOCC) to restrict the planned 2016 bond referendum to funding for school improvements and expansion. In particular, the CFE believes the BOCC should have proceeded with the process discussed at the November 19, 2014 Assembly of Governments meeting, which would have provided an opportunity for the BOCC to hear from the public, relevant County-appointed citizen advisory boards, including the CFE, and representatives of key County departments, such as the Department of Environment, Agriculture, Parks and Recreation, on their areas of expertise and/or concern.

The CFE is of the opinion that the BOCC's decision-making process would benefit greatly by hearing comments from County residents, advisory boards, and departments on the funding needs facing programs and activities that are essential to the quality of life in the County. No doubt education is important, but equally important are parks and recreation, affordable housing for low-income residents, and services for the county's growing population of seniors, among other needs. For example, if the County could provide \$5 to \$10 million for park development, it would be possible to develop and open the long-planned Blackwood Farm Park as well as additional recreational facilities in the northern part of the county. By developing Twin Creeks Park located next to Morris Grove Elementary School, the County would provide recreational opportunities for both school children and adults, helping to improve the quality of life for all residents as well as making the county a more attractive area for new businesses that seek well-rounded communities in which to locate their operations. Funding for parks and open space could help preserve additional farmland and natural areas with permanent conservation easements.

The CFE urges the Board of County Commissioners to reopen the bond referendum process and provide a full opportunity for public and County staff comment. The CFE would very much appreciate an opportunity to present its views on funding priorities related to parks and open space land conservation to the BOCC.

Thank you for considering our views.

Copies: Bonnie Hammersley, *County Manager*
David Stancil, *Environment, Agriculture, Parks and Recreation Director*

chapelboro

Chatham Commissioners Approve Temporary Fracking Ban

By Elizabeth Friend - August 19, 2015



Fracking pond

Chatham County Commissioners voted unanimously on Monday to ban hydraulic fracturing, or 'fracking,' for two years while officials update county land use plans and ordinances.

The General Assembly voted in 2012 to limit the ability of local governments to regulate fracking, but Chatham Board Chair James Crawford wrote in a press release that law does not prevent temporary moratoriums.

The new ban puts a halt to county approvals for oil and gas extraction. Crawford says board members are concerned the process produces large volumes of potentially hazardous waste and toxins. He notes the county has no facilities for treatment of such wastewater.

Chatham is one of a handful of towns and counties throughout the state that have acted to limit fracking, but it's not clear if these bans could withstand a legal challenge from drilling companies.

Last year state legislators authorized fracking in North Carolina, though to date, no permits have been approved.

The controversial extraction process is on hold pending a state Supreme Court ruling in a lawsuit over the process of appointing members to state commissions. That lawsuit includes the N.C. Mining and Energy Commission, which would be the agency responsible for issuing fracking permits.

Chatham commissioners say they'll spend the next two years looking for ways to mitigate potential damages, should the fracking ban be lifted.

<http://chapelboro.com/news/local-government/chatham-commissioners-approve-temporary-fracking-ban/>

Eno River Hydrilla Treatment Status

From: Emens, Rob
Sent: Tuesday, August 18, 2015
To: Eno River Hydrilla Task Force members
Subject: Eno River hydrilla treatment status

Hello Eno River Hydrilla Task Force,

I have a few things to share with you:

- 1) Since July 27 or soon afterwards the entire river has flushed of fluridone, at least at detectable levels, see attached FaSTEST report. The injection unit was turned off on July 20. This was initially expected as a temporary treatment suspension and was done as a cautionary act responding to a report on anecdotal observations of water willow and riffleweed being impacted. The thought was to further evaluate conditions and possibly resume treatment in August, or even early September. I will not get into the full analyses of water willow, riffleweed, snails, etc. conditions here, rather save that for an update by our Research & Monitoring Committee at our next task force meeting.

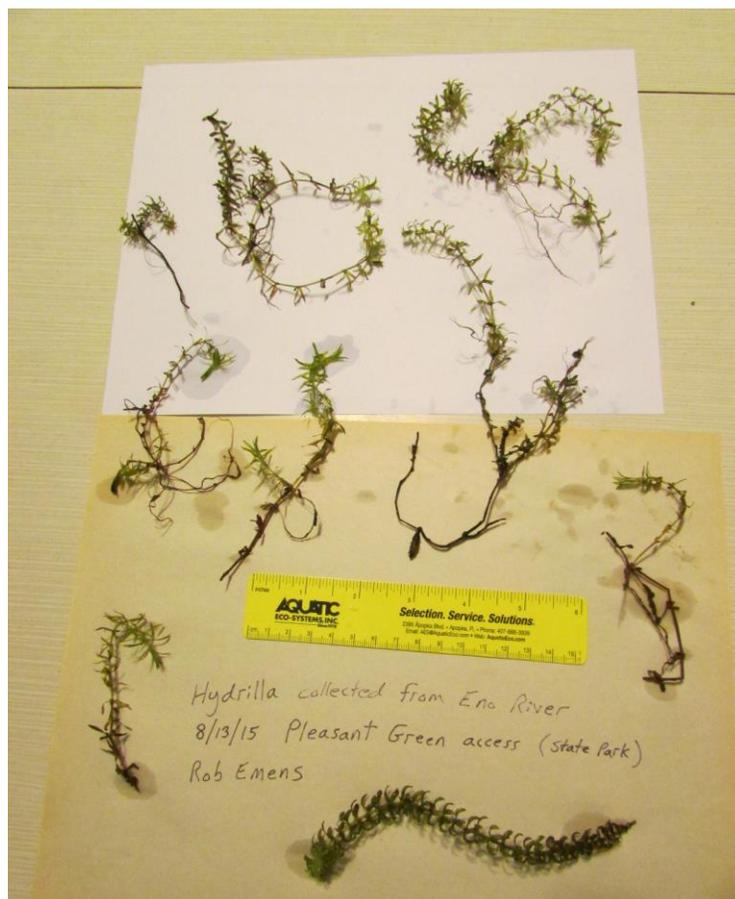
On Aug 3 a group of folks, including myself, visited several sites, some within, and some outside of the treatment zone to compare condition of non-target plants and presence/condition of hydrilla. We found there to be no significant difference in riffleweed condition. Water willow within the treatment zone did express some chlorosis which was expected. Hydrilla was found to be controlled to a large extent. Mark Heilman also visited several sites later that week. He provided a report on his observations, interpretation, and offered some future actions. Since we attained 95+% hydrilla control (possibly 99+%), and realizing at this point additional treatment would incur additional cost but diminished return, a decision has been made to not resume further treatment this year.

- 2) I will start planning for a full Task Force meeting, looking at dates in September. Once I get an idea of meeting place availability I will send out a poll with a couple times to choose from.
- 3) I visited the Pleasant Green access (part of the State Park and within the treatment zone) last Thursday. I attached a photo of the hydrilla plants I found there. There is healthy new growth and potentially some tuber sprouting occurring. Overall there doesn't seem to be a lot of plants out there and what I found took some hunting around.
- 4) The Research & Monitoring Committee met last week. I wasn't able to attend but heard that it was a productive meeting. They are lining things up to get the surveys that are needed to be done this fall. One level of surveying is to inspect the various impoundments and tributaries within the Eno watershed. Speaking of which I visited Compton's Pond last Friday. This was in response to residents who contacted me. They happened to be at our "open house" and recalled my request to everyone that if they think they see hydrilla to please contact me. Compton's Pond is severely infested with hydrilla. This is the impoundment upstream of Lake Orange between Compton Rd and NC 86. The attached photos were taken from a park that sits behind the schoolhouse along NC 86.

Rob Emens
Aquatic Weed Control Program
NCDENR – Division of Water Resources
919-707-9012



Hydrilla amassing below water surface along shoreline of Compton's Pond in northern Orange County



Healthy new growth of hydrilla found at Pleasant Green access to Eno River (8/13/15)

From: <bsinclair@nc.rr.com>

Date: Tue, Aug 11, 2015

Subject: Re: Town of Chapel Hill, NC: Water Pollution Prevention Video Receives National Award

Chapel Hill Water Pollution Prevention Video Receives National Award

August 11, 2015

A video produced by UNC's Institute for the Environment (UNC-IE) and the Town of Chapel Hill's Stormwater Management Division won the Water Environment Federation's (WEF) 2015 StormTV Project award in the training category. The link is at: <http://bit.ly/1DHZSw3>

WEF is a non-profit technical and educational organization representing water quality professionals around the world.

The winning video, *Keep Restaurant Pollution and Profits From Going Down the Stormwater Drain* (<http://bit.ly/1DHZSw3>), as well as its companion video in Spanish (<http://bit.ly/1MguYwm>), will be added to WEF's StormTV Project's listings on YouTube and will be featured in the awards ceremony during WEF's conference in Chicago in September. The conference is the world's largest annual water quality conference.

The video was produced as part of a local pollution prevention training program created for restaurant workers. The program addresses stormwater runoff pollution and the need to prevent dumping detergents, grease and organic matter from bars and restaurants into storm drains. The Wallace Genetic Foundation helped to fund the effort. The Chapel Hill Restaurant Group provided use of Mez and Squid's for filming the restaurant scenes.

The video and other free outreach materials help restaurant owners and employees become aware of the storm drain system, learn about local watersheds and understand how they can prevent water pollution. Since the training program began in Chapel Hill, restaurant employees have reduced the number of dumping violations, and several local businesses have invested in constructing or improving washout areas to avoid sending detergents, bacteria and organic matter into storm drains and local creeks.

Restaurant training materials are posted on the Town of Chapel Hill's website under Stormwater Management (<http://bit.ly/1UzecLj>). Chapel Hill restaurants may call Stormwater Management for free training presentations. For more information, contact Wendy Smith at [919-969-7246](tel:919-969-7246) or wsmith@townofchapelhill.org.

Bolin Creek trail work in Chapel Hill raises erosion, water concerns

August 10th, 2015

By Tammy Grubb tgrubb@newsobserver.com

CHAPEL HILL

The once-narrow Bolin Creek trail that wound between the creek and steep hills along Umstead Drive is now wide and flat, littered with loose rocks and several freshly cut trees.

Since work on phase 3 of the Bolin Creek Greenway started in June, neighbors and others have grown concerned about the work and how it could harm the creek. The area also is known for flooding during moderate and heavy rains.



“The fact is that this small road, this paved 10-foot greenway, is going to be wedged between a very steep bank and a creek, and that is going to be terrifically difficult to do without damaging the creek,” said Julie McClintock, president of the nonprofit Friends of Bolin Creek.

The creek could appear cloudier over the next few weeks, town stormwater engineer Chris Jensen said, but steps are being taken to control erosion and water quality. Contractor S&C Construction is using traditional black

mesh erosion fencing in some areas but has installed waddles – rolls of coconut fiber matting – in rocky, compacted areas along the creek. The waddles are moved outside the work zone during construction.

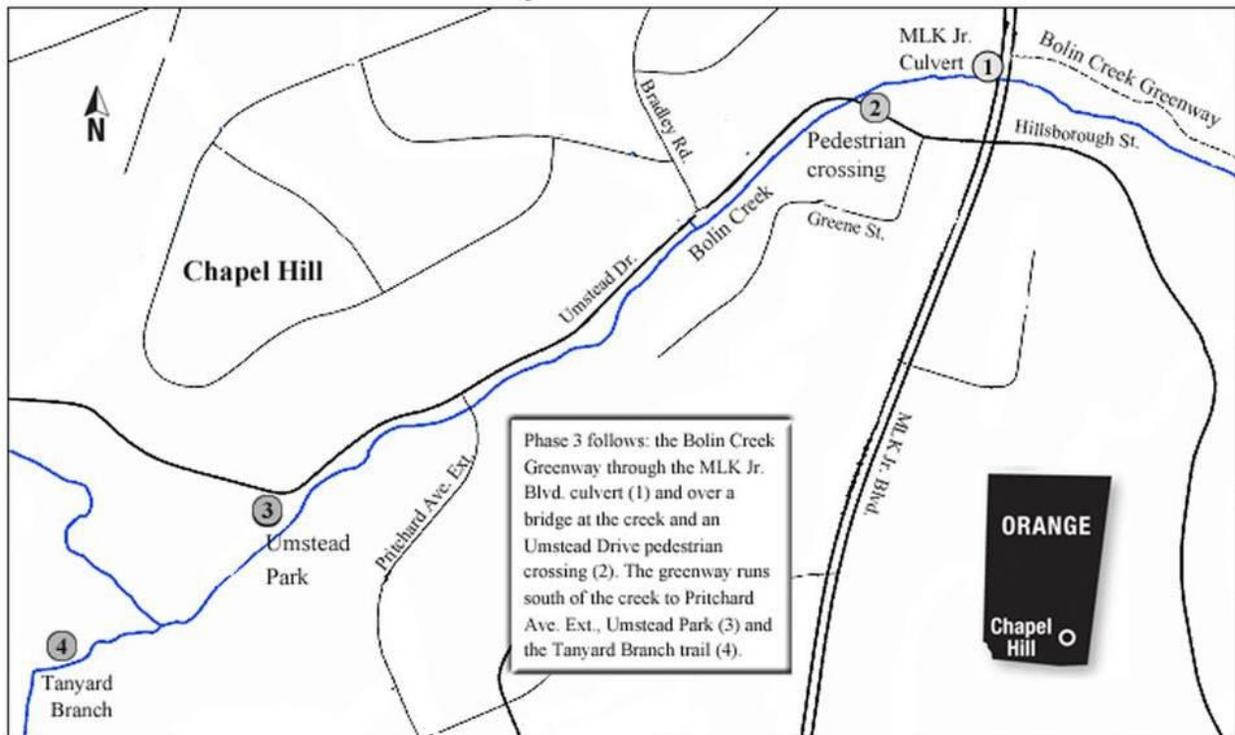
The work is challenging, said Bill Webster, Parks and Recreation planning and development manager, but S&C Construction has extensive experience building bridges and other projects in wetland areas.

The existing Bolin Creek Greenway – 1.5 miles of 10-foot-wide asphalt – connects Community Center Park on Estes Drive with Martin Luther King Jr. Boulevard, just south of the Chapel Hill Police Department. The half-mile, concrete connection from MLK Boulevard to Umstead Park could take nearly a year to build and cost \$2.2 million.

Pedestrians and cyclists, once it’s finished, will pass through a 37- by 16-foot, arched culvert under MLK Boulevard, going up the hill and across a Bolin Creek bridge on the other side. The greenway then crosses Umstead Drive and follows an abandoned sewer easement west along the creek’s southern banks to a planned tunnel under Pritchard Avenue Extension and the park.

The project also will add a sidewalk to Umstead Drive, from MLK Boulevard to the new trail crossing, and replace a wooden bridge in the park with a steel one. The new bridge will form a future connection to Tanyard Branch trail, the Northside neighborhood and downtown.

Bolin Creek Greenway Phase 3



The News & Observer

The changes are expected to form an important link in the town's trail system and make it safer for to cross busy MLK Boulevard and head downtown or west to Carrboro. Cyclists and pedestrians now go down the hill, past a dangerous gas station driveway, to cross at the traffic light.

Concerned residents say there are better ways to safely route people than a concrete trail next to a creek in the resource conservation district – land set aside to protect water quality.

"A river's riparian area is a delicate place, and there is usually a minimum area along every creek or river that should not be messed with, in order for the body of water to stay healthy," Umstead Drive resident Sue-Anne Solem recently emailed town leaders.

The fear is that stormwater will race down the hill, crossing the concrete unabated, and push more sediment downstream, residents said. That could erode the creek, increase the potential for flooding and harm aquatic life, they said.

Repairs to the Bolin Creek Greenway in recent years show what could happen, Mt. Bolus Road resident Will Raymond said. Floodwaters in 2013 damaged the trail's edges, destroying handrails and retaining walls, and creating a large landslide in one section.

Town leaders seem determined to move full speed ahead anyway, Raymond said.

"The town doesn't listen to the experts. They don't listen to the residents," he said. "I guess we're doing to have to find chunks of asphalt in the creek before the town starts believing this was a bad idea."

Raymond brought his concerns to the Friends of Bolin Creek a few years ago, McClintock said. The group opposed the project, she said, but had few options because it had been approved. They plan to work with town staff this week on a way to monitor the creek's health, she said.

Town and Jordan Lake watershed rules do allow greenway construction in conservation districts, but those greenways must be designed, built and maintained in a way that reduces their impact.

The N.C. Department of Environment and Natural Resources has approved the plan, Jensen said, They are using concrete for the trail, because it's better suited for poor soils and in areas that flood, he said.

Some residents suggested a wider sidewalk on Umstead Drive would be better, even if it requires land from neighbors or juts out over the creek. The work should have been done a few years ago, they said, when OWASA put its new sewer line under Umstead Drive.

That would have been more expensive, affected more neighbors and taken more trees from the creek's northern bank, Webster said.

The town has created an online storymap (nando.com/1n-) to provide updates about the work. The map shows landscaping around the MLK Boulevard culvert and west along the greenway to Umstead Drive. Only a few stone retaining walls will be added on the southern side of the creek.

Town staff will consider again this fall whether the trail along the creek should get new landscaping, he said.

"We have the plans, and we generally follow the plans," he said. "But just as important, when you're in the field, you look at the reality."

That is small comfort to Janet Tice, whose home overlooks the creek. Tice said she first learned the work was starting when crews cut down some of the trees. She never got the town's May letter alerting neighbors that the work would start in June, she said.

"I fail to see how this is not going to be just a disaster when it comes to erosion and flooding," she said.

Webster and Jensen invited residents to keep an eye on the work – from a safe distance – and call if they see possible problems.

"We (welcome) people's ideas," Webster said. "We live in a community with a whole lot of smart folks."

On September 2, 2010, the BOCC unanimously ADOPTED the social justice goals outlined in the proposed Orange County Social Justice Goal. The adopted goals are as follows:

SOCIAL JUSTICE GOALS

GOAL: FOSTER A COMMUNITY CULTURE THAT REJECTS OPPRESSION AND INEQUITY

The fair treatment and meaningful involvement of all people regardless of race or color; religious or philosophical beliefs; sex, gender or sexual orientation; national origin or ethnic background; age; military service; disability; and familial, residential or economic status.

GOAL: ENSURE ECONOMIC SELF-SUFFICIENCY

The creation and preservation of infrastructure, policies, programs and funding necessary for residents to provide shelter, food, clothing and medical care for themselves and their dependents.

GOAL: CREATE A SAFE COMMUNITY

The reduction of risks from vehicle/traffic accidents, childhood and senior injuries, gang activity, substance abuse and domestic violence.

GOAL: ESTABLISH SUSTAINABLE AND EQUITABLE LAND-USE AND ENVIRONMENTAL POLICIES

The fair treatment and meaningful involvement of people of all races, cultures, incomes and educational levels with respect to the development and enforcement of environmental laws, regulations, policies, and decisions. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.

GOAL: ENABLE FULL CIVIC PARTICIPATION

Ensure that Orange County residents are able to engage government through voting and volunteering by eliminating disparities in participation and barriers to participation.



Collection

Treatment and Recycling of Wastewater and Biosolids

Annual Report
for July 2014
through June 2015

Orange Water and Sewer Authority, 400 Jones Ferry Road, Carrboro, NC 27510

Highlights

- We surpassed the water quality standards for our **Mason Farm Wastewater Treatment Plant (WWTP)**. The phosphorus level in our treated wastewater was **57%** below the limit and nitrogen was **71%** below the limit. Limiting phosphorus and nitrogen is important for water quality because they promote excessive growth of algae, which reduces water quality and makes water more difficult and expensive to treat for drinking purposes.
- We treated and recycled **1,597 dry tons** of wastewater biosolids. Biosolids are solids which we separate from wastewater and treat so that they can be recycled in agriculture or landscaping. Our Class A biosolids continue to meet the U.S. Environmental Protection Agency's (EPA's) standards for Exceptional Quality.
- In September 2014, we completed **\$10.4 million** of improvements at our WWTP which reduced electricity use per gallon of wastewater by about **30%** (**\$250,000** annual savings); will help us meet future standards for treated wastewater; and further eliminated off-site odor.
- There were two overflows from our sanitary sewers. The overflows totaled an estimated **1,100 gallons** or a fraction of one percent of total wastewater volume (**2.95 billion gallons**).
- In 2014, we began a review of opportunities to reduce biosolids management costs while ensuring sustainable use of biosolids. A key issue in this study is whether OWASA should continue applying liquid biosolids to approved farmlands.



Our **Wastewater Treatment and Biosolids Recycling** team at **Mason Farm Wastewater Treatment Plant**. *Top row, left to right: Jed Clark, Rod Dail, Johnny Johnson, Ken Bailey, Greg Monschein, Alex Braxton, Jay Lowe, Michael Wolfgang, John Kiviniemi, Nathan Barnhardt, James Dodson. Bottom row: Ronnie Williams, Sandra Bradshaw, Emily Caperton, Dirk Cartner, Ronnie Weed and David Hartshorn. Not pictured: Todd Norman, Cory Kirkland, Stephen Long and Charles Williams.*

Causes of Overflows From Sewers

When a sewer is damaged, the flow in a sewer is blocked or if the flow in a sewer exceeds pipe capacity, the result is an overflow of untreated wastewater.

What can block a sewer pipe and cause an overflow?

- Accumulations of fat, oil and grease. Fat and grease should be disposed of with refuse taken to a landfill, and used cooking oil should be recycled;
- Tree and shrub roots, which can enter a crack in a pipe then grow inside a sewer; and
- Trash or debris such as clothing and towels.

Our Work to Prevent Wastewater Overflows

- We inspect sewers to find blockages, damage, cracks and leaks. In 2014-15 we cleaned about 86 miles of sewers, or one-fourth of the system; and inspected about 11 miles of sewers.
- We test for leaks, cracks and unauthorized connections to our sewers by putting non-toxic smoke into the pipes to see where smoke comes out.
- We clean sewers to remove blockages by fat, grease, roots, etc.
- We fix cracks in sewers to keep out rainwater and groundwater.
- We mow and clear our "easements" to help keep tree and shrub roots from growing into and blocking sewers, and to maintain safe, timely access. A sewer easement is an area where we can install and improve sewer lines; inspect, maintain and repair them; and keep clear access.
- To ensure adequate capacity, structural integrity and reliable operation, we spent about **\$1.7 million** to rehabilitate or replace more than **2.7 miles** of sewers and manholes in FY 2014-15

Please Help Prevent Wastewater Overflows

Proper disposal of fat, oil and grease

Please dispose of household fat and grease with trash that goes to a landfill and recycle cooking oil at the:

**Orange County Household Hazardous Waste Program,
1514 Eubanks Road,
Chapel Hill, NC 27516
919.932.2989**

Restaurants and related businesses are required to install grease traps and to have them pumped out on a regular basis.

Tree and shrub roots can grow into sewers and cause overflows

Please help us keep clear access through OWASA easements. Before planting trees or shrubs, installing a fence, etc. in an OWASA easement, please contact us at **919.537.4292** or **info@owasa.org**.

Keeping trash and debris out of sewers

Our sanitary sewer system is not designed to handle trash and debris, which can cause blockages and overflows. For example, baby wipes and other hygienic wipes, even those called "flushable," should not be flushed.

Reporting wastewater overflows and odor

If you notice an overflow from OWASA sewer or a private sewer service line, please contact us immediately at **919.968.4421** at any time so that we can stop the overflow from our sewer, or contact the property owner if a private pipe is leaking.

Randy Horton was promoted to **Manager of our Wastewater Collection and Water Distribution Systems** in April 2015. Randy has worked at OWASA since we began serving the community in 1977, and he had also worked at the University's water utility starting in 1975.



Biosolids Treatment and Recycling

What are biosolids and why are they recycled?

Biosolids are the solids separated from wastewater then treated at our WWTP. Biosolids can be recycled to improve soil because biosolids include phosphorus and nitrogen, which improve the fertility of soil; and other organic matter which holds moisture in the soil and improves its structure.

Our WWTP produces about **4.4 “dry tons” of biosolids per day.** (A dry ton is the weight of solids without considering the weight of water that remains with biosolids after they are partly dewatered.)

How do we treat wastewater solids to convert them to recyclable biosolids?

We break down biosolids in a biological process (“digestion”) and heat them to about 140 degrees to kill pathogens.

How are biosolids recycled?

About half of our biosolids are applied in liquid form on farmland approved by the State. Biosolids include nitrogen and phosphorus (the key ingredients in fertilizers), so they are a resource for

farmers. The other half of our biosolids are dewatered and mixed with other organic material at a private composting facility.

What State and Federal regulations apply to biosolids?

Federal and State regulations limit the levels of various metals in biosolids, and the rates at which biosolids can be put on farmland to help grow crops for animal consumption. The amount of biosolids that can be applied to a field depends on the nitrogen level in the biosolids and ability of a crop to use nitrogen. Our biosolids are tested for bacteria, phosphorus, nitrogen, metals, etc. every 60 days.

At OWASA land where we recycle biosolids, we test the groundwater three times a year.

Testing and quality of our biosolids

Our Class A biosolids meet the U.S. Environmental Protection Agency’s (EPA’s) standards for “Exceptional Quality.” Our biosolids have very low levels of pathogens and metals, as shown below.

Substance	EPA Limit for Exceptional Quality Biosolids	OWASA (July 2014– June 2015) Average unless otherwise noted
Fecal Coliform Bacteria	1,000 CFU per gram	121 CFU (maximum)
Mercury	17 parts per million (ppm)	0.7 ppm
Cadmium	39 ppm	0.5 ppm
Arsenic	41 ppm	under 2.4 ppm
Lead	300 ppm	4.3 ppm
Copper	1,500 ppm	260 ppm
Zinc	2,800 ppm	771 ppm
Nickel	420 ppm	13.9 ppm
Molybdenum	n/a	7.7 ppm
Selenium	36 ppm	2.5 ppm

PPM means parts per million. One part per million is like a penny in \$10,000.

CFU means colony forming units.

Our Wastewater Treatment Process

- Solids are removed in settling tanks;
- Bacteria and other microorganisms consume pollutants;
- We use filters to remove very small particles not removed in settling tanks;
- Ultraviolet light disinfects the wastewater; and
- We add oxygen to benefit fish and amphibians in waterways receiving treated wastewater.

Some treated wastewater is used for non-drinking purposes via our reclaimed water system. Most treated wastewater is recycled at Morgan Creek near Finley Golf Course. Morgan Creek flows to Jordan Lake, a water supply for several communities in the region. OWASA has a State allocation of Jordan Lake water for severe droughts and operational emergencies.

The Wastewater Collection (Sewer) System

We maintain **340 miles** of sanitary sewers and **21 facilities** where we pump wastewater uphill, but most of our sewers operate with the simple force of gravity.

Our Reclaimed Water System

Reclaimed water (RCW) is highly treated wastewater which can be used for various non-drinking purposes. Using reclaimed water reduces the need to use water from our reservoirs. From July 2014 - June 2015, the University and UNC Healthcare used about **239 million gallons** of RCW, or about **30%** of the University's overall water purchases from OWASA.

In 2014-15, we spent about **\$1.7 million** to replace and renew sewers and manholes to help prevent wastewater overflows and maintain adequate capacity and structural integrity in our sewer system.



For a Tour of Our Mason Farm WWTP

We would appreciate the opportunity to provide a tour of our WWTP for your neighborhood or civic group, class, etc. Please contact us at **919.537.4289** or **info@owasa.org** to arrange a time and date.

SAFE Disposal of Medication

Pharmaceutical compounds in the water environment are a matter of scientific research regarding how they may affect people, fish, etc. If medications are flushed down a toilet or otherwise get into the sewer system, pharmaceuticals may get into a creek, river or lake that is a water supply. Wastewater treatment plants, septic systems and drinking water treatment plants are not designed to remove pharmaceutical compounds.

Medication should not be flushed down the drain. The Chapel Hill and Carrboro Police Departments have drop boxes for safe disposal of liquid and pill medications that are expired, unused, or unwanted. Liquid medications must be in the original container. Pills must be in original container or a zip lock bag. **New and used needles are not accepted.**

Questions or Comments?

If you have questions or comments about wastewater or biosolids collection, treatment and recycling, please contact us at **919.968.4421** or **info@owasa.org**. For a more detailed version of this report, please visit our website.

Chapel Hill Police Headquarters

828 Martin Luther King Jr. Boulevard; drop box days and hours: Monday-Friday, 9 AM to 5 PM. More information: 919.968.2760.

Carrboro Police Department

100 North Greensboro Street; drop box days and hours: Monday-Friday, 8:30 AM to 5 PM. More information: 919.918.7397.



A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

Orange Water and Sewer Authority

400 Jones Ferry Road
Carrboro, NC 27510
919.968.4421 | info@owasa.org | owasa.org
@owasa1

Orange Water and Sewer Authority

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community

NEWS RELEASE August 27, 2015

Mary Tiger is OWASA's new Sustainability Manager;

Mary Tiger began work as OWASA's new Sustainability Manager on Monday, August 24th. Her responsibilities include continuing to develop and improve OWASA's strategies and programs for sustainable use of resources and environmental protection.

The OWASA Board's Strategic Plan values "embracing the principles of environmental, social, and economic sustainability. We strive to make the highest and best use of our local water resources and to promote conservation of water, energy, and other natural resources." Strategic Plan initiatives related to sustainability include affordability outreach and preparing energy management and water conservation plans.

Before joining OWASA, Ms. Tiger served as Chief Operating Officer and a Senior Project Director at the Univ. of North Carolina's Environmental Finance Center for six years. She has also worked as an intern with Charlotte Water and as Utility Conservation Coordinator for the City of Loveland, Colorado. Mary earned a Master's degree in Public Administration from UNC in 2009.

When not busy playing Legos with her five-year old daughter or gardening with her husband, Mary enjoys learning to play the violin, dancing and hiking.

"Mary Tiger has excellent analytical, communication and management skills in addition to her strong knowledge of water resources and sustainability concepts, and we are delighted that she has joined the OWASA team," said Ed Kerwin, OWASA's Executive Director.

Mary Tiger, Sustainability Manager, 919-537-4241 or mtiger@owasa.org



Tree Harvesting in Orange County...what YOU need to know

Trees and forests provide a valuable resource to Orange County and its residents. Not only do they provide useful wood and paper products, trees and forests supply oxygen, provide wildlife habitat, help cool the air in summer, prevent erosion, and give us cleaner air to breathe. In fact, riparian forests (those along streams) help prevent flooding and filter pollutants before entering our streams, helping to clean our water.

According to the USDA-Forest Service's *Forest Statistics for North Carolina 2002*, nearly 60% of the 255,900 acres within Orange County are considered forestland. Most of the forestland in Orange County (about 90%) is under private ownership, although many forests are located within small parcels of land. As Orange County continues to develop, the Orange County Planning Department receives an increasing number of citizen concerns regarding tree harvesting. While private landowners may indeed manage their forestlands and harvest their trees, there are guidelines that are to be followed, called the *NC Forest Practices Guidelines* (FPG's). The North Carolina Division of Forest Resources ("NC Forest Service") oversees the FPG's and other forestry-related rules. If FPG's and other forestry-related rules are followed, forest management activities such as "Tree Harvesting" are exempt from most local regulations. If these guidelines are not followed, tree harvesting may lose its exemption from certain regulations, including those enforced by Orange County.



For instance, a landowner may harvest trees even along streams provided they adhere to the FPG's and other applicable state-required buffer rules. However, if these guidelines are violated, the timber harvest may no longer be exempt from Orange County's *Soil Erosion and Sedimentation Control Ordinance*. This ordinance requires the submittal of an erosion control plan, fees, and issuance of a land disturbance permit for disturbances as small as 10,000 square feet.

Likewise, tree harvesting does not require a building permit or other type of development approval from Orange County, unless trees are harvested "in anticipation of development". Harvesting "in anticipation of development" refers to the removal of trees under forestry exemptions prior to selling and/or developing a property. If this occurs, Orange County can withhold approvals (i.e. building permits, subdivision approval, etc.) if the tree harvesting violates Orange County's subdivision ordinance, zoning ordinance, or other applicable County regulations. Approvals can be withheld for up to three (3) years for unintentional violations and a maximum of five (5) years if trees were knowingly harvested in order to bypass development requirements.



For example... a landowner contracts a logging company to harvest trees from his 20-acre tract. The logger harvests the trees in accordance with the forestry-related guidelines and rules. The landowner then sells the tract to a developer. The developer in turn, submits a plan to the County to subdivide the property and develop it into 2-

acre residential lots. However, upon investigation it is noted that due to the tree harvest, there is no longer an undisturbed landscape buffer required by Orange County's subdivision regulations. Therefore, the subdivision approval is withheld for a time period until trees of adequate size are replanted, and the landscape buffer restored in accordance with Orange County's guidelines.



Another example... a developer owns a 100-acre tract with a stream. The parcel is subdivided into 10-acre lots, exempt from the Orange County subdivision regulations. However, prior to subdividing the parcel the developer harvests some of the trees. One of the lots is sold to a couple that intends to build a single-family residence on the lot. The lot they purchased borders the stream. In this case, the building permit, or if required the land disturbance permit, can be withheld because there is no longer an undisturbed buffer along the stream. The Orange County zoning ordinance requires a minimum of a 50-foot buffer of undisturbed vegetation on either side of a stream and it can be much wider depending on the circumstance. In this case the stream buffer would have to be restored prior to issuance of a building permit.

Obviously tree harvesting in anticipation of development can have serious consequences for you and your clients. Projects can be delayed, fines can be levied, and legal action is possible. All of which can cost you and your clients a lot of money... *Money that doesn't grow on trees.*



Instead, consider leaving trees along and within areas that will require buffers so that you leave your and/or your clients future options open.

"Tree Harvesting" in anticipation of development is NOT allowable!

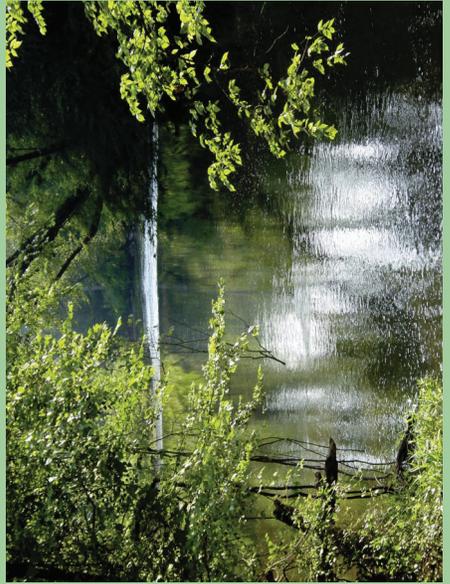
If you have questions or need to find more information about tree harvesting in anticipation of development, please contact:

Orange County Planning & Inspections
Engineering, Erosion Control,
& Stormwater Division
131 W. Margaret Lane
P.O. Box 8181
Hillsborough, NC 27278
Telephone: 919-245-2587

If you need assistance planning a tree harvest or other forest management questions, please contact:

N.C. Division of Forest Resources
110 Boone Square, Suite 12
Hillsborough, NC 27278
Telephone: 919-732-8152

Orange County
Engineering, Erosion Control,
& Stormwater Division
Protecting our Water Resources



Orange County
Planning & Inspections
131 W. Margaret Lane
Hillsborough, NC 27278

www.orangecountync.gov



North Carolina
Department of Environment and
Natural Resources,
Division of Forest Resources



www.ncforestsERVICE.gov

**Tree Harvesting in
Orange County...**



**What YOU Need
to Know**

Duke Forest Deer Management Program

September 28 - December 18, 2015

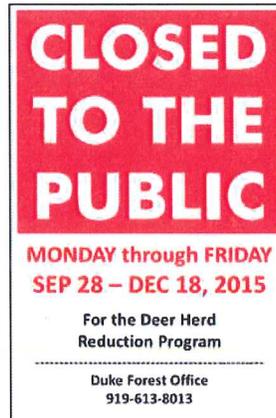
The Office of the Duke Forest is preparing for its eight hunting season through the NC Wildlife Resources Commission Deer Management Assistance Program. Results from the 2015 deer population survey showed an increase in total deer spotted when compared to 2014, but the number remains well below the high recorded in 2010. The Office will continue to monitor this trend but is confident that hunting is necessary to reduce the negative impacts of overabundant deer on the Forest.

The 2015 season will begin on September 28th and continue through December 18th. During this time, the **Durham, Korstian, and Blackwood Divisions of the Forest will be closed to all public access Monday through Friday.** All divisions of the Forest will be open on Saturdays and Sundays and on November 26th and 27th in observance of Thanksgiving.

Hunting is conducted by two pre-selected groups; it is not open to the general public. The Durham and Korstian Divisions will be hunted with bow and arrow only while the Blackwood Division will have both bow and gun hunting. For safety reasons, please observe all posted signs and seek alternate locations for recreation.

Researchers, teachers, and students with upcoming or ongoing work in the Forest should contact the Office as soon as possible to discuss arrangements for use during the deer season.

The Office of the Duke Forest appreciates your support and cooperation throughout the program. If you have any questions or concerns, please contact the Office at (919) 613-8013, or via email at dukeforest@duke.edu. You may also check our web site (www.dukeforest.duke.edu) for updates on the program.



Signs will be posted at all gated entrances to the Duke Forest. Staff will be issuing citations to any unauthorized users found in the Forest during the hunt.



Duke Forest Closure Notice

From September 28, 2015 through December 18, 2015, the following divisions of the Duke Forest will be **closed to all public access Monday through Friday:**

**Durham Division
Korstian Division
Blackwood Division**

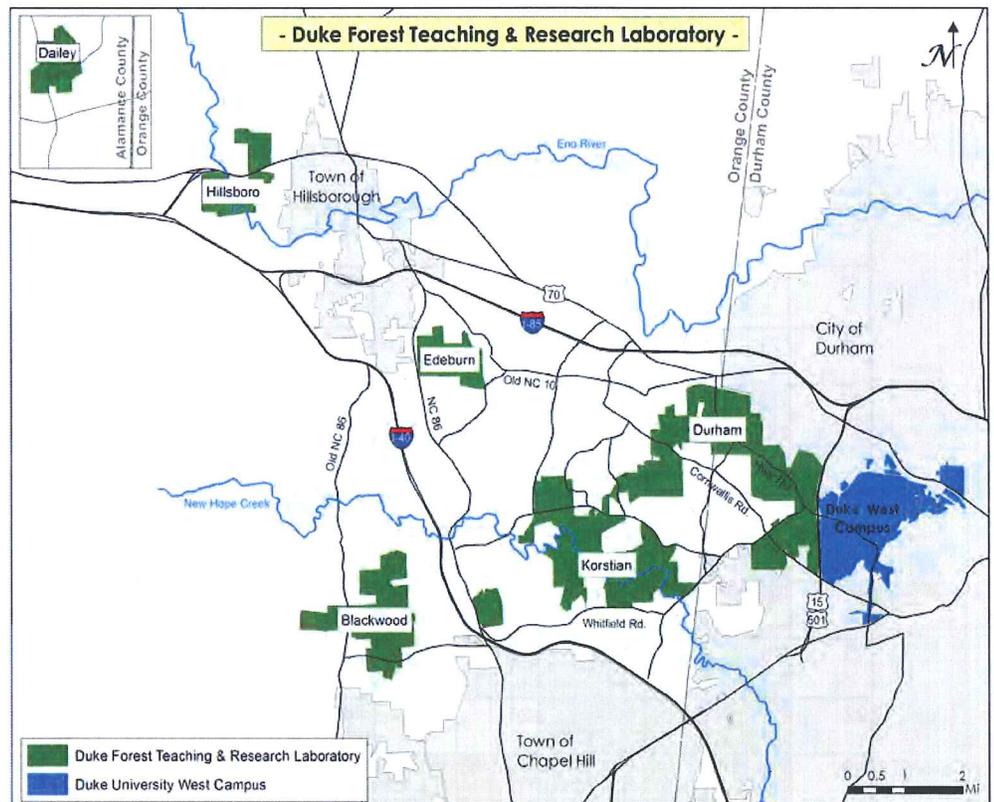
The Edeburn (formerly Eno), Hillsboro, and Dailey Divisions will remain open during this period.

The Al Buehler Cross Country Trail and the East Campus Trail are also alternate locations for recreation at Duke.

This closure is **for your safety** during the Deer Herd Reduction Program.



Thank you in advance for your cooperation



Please see reverse for a quick reference calendar



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2015 Deer Management Program Notice

Duke Forest Closure Quick Reference Calendar

Days in gray = Durham, Korstian, and Blackwood Divisions closed to all public access.

September 2015

Su	M	T	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2015

Su	M	T	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2015

Su	M	T	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2015

Su	M	T	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

North Carolina's curious response to EPA's Clean Power Plan

August 10th, 2015

By Robin Smith - Contributing Columnist

In one way, the new U.S. Environmental Protection Agency (EPA) rule to limit carbon dioxide (CO₂) emissions from power plants released on Monday looks like a typical air quality rule. The Clean Power Plan rule sets state by state reduction goals for a pollutant (CO₂) from a particular set of sources (electric generating facilities).

But the rule takes an unusual and innovative approach to meeting those goals. The rule identifies three components (or “building blocks” in EPA rule-speak) of a plan to reduce CO₂ emissions associated with power generation: 1. reducing power plant CO₂ emissions (the traditional Clean Air Act approach); 2. increased electric generation from renewable energy sources; and 3. transition of electric generation facilities from coal to natural gas.

In effect, the rule aims to lower CO₂ emissions per kilowatt hour used and allows the states to take credit for CO₂ emissions avoided by shifting electric generation to energy sources with low or no CO₂ emissions. EPA set state CO₂ reduction goals by estimating how much each state could lower CO₂ emissions using the three basic building blocks. (The earlier draft EPA rule used energy efficiency as a fourth “building block” in setting state CO₂ reduction goals; the final rule does not, but still allows a state to use energy efficiency measures to meet its reduction goal.)

The proposed EPA rule requires each state to submit a plan for meeting its CO₂ reduction target by June 30, 2016. The state plan can rely on any or all of the three “building blocks” in the EPA rule; it can also include measures that fall outside those categories – including increased energy efficiency — as long as the plan achieves the CO₂ reduction target for regulated electric generation facilities. If a state fails to develop a plan, EPA can create a federal plan for the state.

The McCrory administration has opposed the Clean Power Plan rule — in written comments, in testimony before Congressional committees and in a statement released on Monday. In part, the administration has argued that the Clean Air Act does not authorize EPA to issue a rule that relies on measures — such as increased reliance on renewable energy — that go beyond limiting pollutant emissions from regulated power plants.

Last week, the practical implications of that position became clearer when DENR Secretary Donald van der Vaart told a Senate committee that the McCrory administration intends to resist the flexibility offered under the federal rule and submit a CO₂ reduction plan based entirely on requiring additional CO₂ emission reductions at power plants.

The Secretary's comments came as a state Senate committee debated House Bill 571, which requires DENR to develop a state CO₂ reduction plan with the participation of the public and the electric utilities. DENR did not support House Bill 571, but the bill passed the House with a bipartisan majority and the support of the state's major electric utilities and environmental organizations.

Last Wednesday, the Senate Agriculture and Environment Committee adopted a substitute draft of H 571 that would prohibit DENR from taking any action or expending any state resources on development of a CO2 reduction plan until all legal challenges to the federal rule had been resolved or until July 1, 2016 (whichever came later). Asked to comment on the proposed substitute bill, Secretary van der Vaart indicated that DENR would prefer to submit a CO2 reduction plan by June 30, 2016 as required under the federal rule — but a plan based entirely on reducing power plant emissions. (Note: The bill has not yet gone to the floor for a vote and discussions between the Senate and DENR are apparently ongoing.)

Most states have started planning to meet the CO2 reduction targets. Even in coal-producing states where political opposition to the EPA rule tends to be highest, state air quality agencies have begun sketching out CO2 reduction scenarios in case the rule survives the expected legal challenges. Only one state — Oklahoma — has prohibited its environmental agency from developing a plan. A recent Washington Post story reported that even coal-dominated states like Kentucky seem confident of meeting the CO2 reduction target thanks in part to recent investments in renewable energy generation. It isn't clear that any state other than North Carolina has decided to develop a plan based solely on CO2 reductions at coal-fired power plants.

All of which leaves something of a public policy mystery.

A state with significant advantages in renewable energy, energy efficiency and already on the road to transitioning power plants from coal to natural gas seems to have settled on a policy that throws those advantages away. Instead of working with electric utilities, consumers and environmental organizations to develop the most cost-effective CO2 reduction plan for the state, DENR intends to unilaterally develop a plan based entirely on reducing power plant emissions.

Moreover, it isn't clear why or what that policy choice could cost the state.

Robin Smith is a lawyer with more than 25 years of experience in environmental law and policy and a former Assistant Secretary for Environment at the North Carolina Department of Environment and Natural Resources. She blogs at <http://www.smithenvironment.com/>

7th Annual Making Energy Work Conference

Raleigh Convention Center

October 6-7, 2015

NCSEA's annual Making Energy Work conference is the setting for collaboration to move our clean energy economy forward. We recognize that success is a team effort – and North Carolina's future energy success story will be the result of clean energy providers, consumers, businesses, utilities, decision makers, and advocates working together toward common goals.

Since 2009, the conversations generated at Making Energy Work provided opportunities to inform, build relationships and identify solutions that lead to the continued flourishing of North Carolina's clean energy economy. With uncertainty on the horizon, these conversations are more important than ever.

Highlights from our 2014 event included:

- Over 50 exhibitors;
- A diverse group of sponsors representing the clean energy industry and its consumers;
- Exciting "Power Pitch" segments dedicated to showcasing 5 inspiring start-up entrepreneurs & innovators;
- NCSEA's Clean Energy Awards presented to individuals, businesses and organizations that have achieved outstanding advancements in our industry; and
- Countless new connections and partnerships formed among attendees!

In keeping with tradition, we expect this year's Making Energy Work will build on that momentum and deliver our best event yet.

Connect, Inspire and Advance your goals at MEW 2015:

- Exclusive reception, providing opportunities to network and make new connections
- An exciting display of the latest electric and alternative fuel vehicles
- The new & improved official Making Energy Work 2015 mobile app, which helps MEW attendees connect before, during and after the event
- A fun and engaging badge earning game with prizes for the top scorers
- And more!

More about this at: <http://www.makingenergywork.org/>