

AGENDA

Commission for the Environment November 10, 2014 7:30 p.m.

Richard Whitted Meeting Facility (Room 250)
300 West Tryon Street, Hillsborough, NC

| <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 – September 8 (Attachment 1) |
| 7:40 | IV. | Review of the Environmental Summit/SOE The CFE will review the format and discussions from the Environmental Summit and consider recommendations for how it could be improved in the future. Staff will report on current and planned outreach efforts for State of the Environment report. (Attachments 2-3) |
| 8:00 | V. | Review of the CFE/BOCC dinner meeting The CFE will review the recent discussion of issues with the BOCC (October 14) and discuss how to proceed. (Attachments 4-5) |
| 8:30 | VI. | Annual Report and Work Plan (2014-15) The CFE will prepare its annual report of the past year's activities and work plan for the upcoming year. The BOCC has asked each advisory board to provide this by November 30. A draft 2014-15 report is provided for CFE consideration. (Attachment 6) |
| 9:00 | VII. | Election of Officers CFE members are scheduled to elect a new Chair and Vice-Chair for the upcoming year in accordance with the CFE policies and procedures. (Attachment 7) |
| 9:20 | VIII. | Updates and Information Items Staff and/or CFE members will provide updates on the following items: <ul style="list-style-type: none">➤ Chapel Hill-Carrboro schools begin composting lunch (Attachment 8)➤ Landmark fracking study finds no water pollution (Attachments 9-10)➤ A review of local solar facilities permitting in NC (Attachment 11)➤ McDougle Middle School's new solar array (Attachment 12)➤ Potential for solar at closed landfill (Attachment 13)➤ Ozone layer recovering (Attachment 14)➤ UNC trustees look at clean energy investments (Attachment 15)➤ US Dept. of Energy issues green building certification system (Attachment 16)➤ OWASA recognized for sustainable water utility management (Attachment 17)➤ Duke Forest Deer Management 2014 (Attachment 18)➤ Hydrilla threatens Falls Lake (Attachment 19)➤ Orange County receives "NC Smart Fleet" award (Attachment 20) |
| 9:30 | IX. | Adjournment <i>Next meeting:</i> December 8 (Solid Waste Management - Chapel Hill) |

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

September 8, 2014

Orange County West Campus Office Building, Hillsborough

PRESENT: Jan Sassaman (Chair), May Becker, Peter Cada, Loren Hintz, Donna Lee Jones, Cliff Leath, Bill Newby, Steve Niezgod, Jeanette O'Connor, Rebecca Ray, David Welch

ABSENT: Judy Miller, David Neal, Gary Saunders, Lydia Wegman

STAFF: Rich Shaw, Tom Davis

GUEST: Rob Pinder

- I. **Call to Order** – Sassaman called the meeting to order at 7:33 pm.
- II. **Additions or Changes to Agenda** – Becker asked to add a discussion of the CFE's November 2013 resolution on the diversion of food waste from the solid waste stream. Shaw asked to add a consideration of whether to hold the October 13 meeting. Sassaman agreed to add both items to the agenda. No other changes or additions.
- III. **Minutes** – Sassaman asked for a motion on the August 11 meeting minutes. Hintz motioned to approve as written; Niezgod seconded. Approved unanimously.
- IV. **Introduction of New Member** – Judy Miller was not in attendance. Sassaman asked staff to contact Ms. Miller to determine her status for joining the commission.
- V. **Solarize Hillsborough** – Shaw introduced Rob Pinder of "Solarize Hillsborough." Shaw said he had suggested to the Chair that Pinder be invited to the meeting because the project appears to be one that the CFE would find interesting and consistent with its goals and objectives. Shaw added that he had already signed up to receive an assessment of his home for its potential to install solar panels.

Pinder said he represents NextClimate, a non-profit organization. He described Solarize Hillsborough is part of a larger grassroots initiative to bring simple and affordable solar power to homes and businesses in Orange County. He provided environmental and economic reasons for converting to solar energy production and described why this is a particularly good time to do it. Pinder explained the benefits of having several members from a community learning together and earning group discounts for installation.

CFE members provided feedback and asked several questions.

- Hintz asked if there would be outreach directed to low-income homeowners or groups such as Habitat for Humanity. Pinder said the tax credit would not benefit low-income residents, but that NC WARN is partnering with Habitat for Humanity to pursue energy conservation measures.
- Hintz asked if their contractors paid their installers adequately and didn't treat them as independent contractors—a pervasive problem in the construction industry highlighted in this week's News and Observer. Pinder explained the vetting process and said this was not an issue for their contractors, which are certified by the Green Building program.

- Ray asked the status of Duke Energy's purported efforts to limit solar energy installations by its customers. Pinder said it has not been a problem.
- Leath commended Pinder on helping communities to reduce costs. Pinder noted the assessment is free, and 200 homes have signed up so far in Hillsborough.
- Davis asked if the historic commission would object to solar panels in the historic district. Pinder said solar panels should be allowed on the back side of homes.
- O'Connor asked if Solarize Carrboro was still active. Newby asked if Hillsborough's Beckett's Ridge community were eligible. Pinder said the program is open to all county residents, and the more under contract the lower the cost.
- Welch asked if businesses could participate. Pinder said business may participate, but this project is not intended for building commercial solar arrays.
- Sassaman asked what are the downsides to the program. Pinder said he could not think of downsides, however he noted the solar panels degrade over time and are warranted for 25 years.
- Hintz asked if Pinder had encountered any problems with local ordinances. Pinder said many homeowner associations prohibit solar panels, however Chapel Hill and Carrboro don't allow new subdivisions to prohibit them.

Pinder said homeowners are being offered to sign up for a free assessment by November 7, 2014. Assessments will be completed by January 9, 2015, and contracts with homeowners are to be signed by February 13, 2015.

CFE members thanked Pinder and said they would help publicize the program.

CFE Resolution – Diversion of Food Waste (unscheduled item) – Becker reminded commission members of the CFE's resolution concerning the diversion of food waste from Orange County's solid waste stream (November 2013). She noted the CFE has not received a response from the Board of County Commissioners (BOCC) nor from the Solid Waste Management Department. Becker asked that the resolution be re-sent to the BOCC for consideration and potential action.

Sassaman noted the BOCC recently appointed the Solid Waste Advisory Group (SWAG)—a multijurisdictional task force charged with developing collaborative solutions for solid waste issues in Orange County. He suggested the matter be forwarded to that group or to the Solid Waste Management Department for developing a plan. Other members felt it would be better for the BOCC to decide how to handle the matter.

Sassaman asked staff to locate the signed resolution and recirculate to CFE members for their information and review. Becker motioned that the CFE review the resolution and, if there were no major objections following that review, direct staff to send another copy of the resolution to the BOCC for consideration and potential action. Hintz seconded the motion. The motion was approved.

October 13 CFE Meeting (unscheduled item) – Shaw asked CFE members whether they wanted to hold their scheduled October 13 meeting or to consider the October 11 Environmental Summit as the October meeting. Sassaman asked CFE members and staff if there were any pressing issues that would warrant holding the meeting. Hearing none, Sassaman agreed to cancel the October 13 meeting.

- VI. **State of the Environment 2014** – Shaw reviewed the status of the draft report. He thanked CFE members and Davis for the work they had done over the past two months. Shaw identified a “punch list” of items needed for completing the report, including page numbering corrections, finalizing the status and trend icons, and adding a dedication to outgoing Commissioner Alice Gordon. He asked CFE members for any other edits or changes, and requested final comments to staff by noon on September 15.

Newby suggested making sure none of the maps were copyrighted. Shaw asked Air and Energy Committee members to provide feedback for the section on energy conservation by Orange County government (pp. 19-20).

CFE members agreed to provide any final comments to staff by noon on September 15. Staff will incorporate those changes into the final report that will be released to the public at Orange County Environmental Summit.

- VII. **Environmental Summit Planning** – Shaw referred CFE members to the draft program and flyer for the Environmental Summit (Attachments 7 and 8). He reported that all speakers have confirmed their participation. Sassaman reported he had met with Norm Christenson, who offered the following title of his presentation: "*Environmental Sustainability in a World of Change: Lessons from the Land.*" O'Connor said she would share that title with Johnny Randall and ask for a title to his invasive species talk.

Shaw reviewed the list of needs for the summit (Attachment 6), and asked for feedback on various matters, including room set up, displays, and invited guests. CFE members decided to invite representatives of area nonprofit organizations to attend the event and to bring brochures, but not to bring displays. Shaw asked CFE members to tell staff which groups to invite to avoid sending out multiple invitations to the same groups. He asked for suggestions by Monday, September 15. Leath said he would publicize the event in the Orange County Voice newsletter. O'Connor suggested publicizing the event in the Chapel Hill News. Niezgoda offered to help transport items to Maple View.

- VIII. **Updates and Information Items** – Information on the following subjects was provided and selected items were summarized by staff: a) “The Nature of Orange” photo contest, b) new transit service to Durham, c) changes to State rules to protect riparian buffers and wetlands, d) the likelihood of shale gas development in NC, e) Attorney General warns company to stop fracking orders, f) Jordan Lake water circulators begin operation, and g) Orange County Board of Adjustment approves PSNC natural gas pipeline.

- IX. **Adjournment** – Hintz motioned to adjourn the meeting; seconded by Welch. Sassaman adjourned the meeting at 9:16 pm.

Summary by Rich Shaw, DEAPR Staff

Commission for the Environment

The Commission for the Environment advises the Orange County Board of County Commissioners on matters affecting the natural environment.

This responsibility generally includes the following:

- advising on environmental policy,
- making recommendations on environmental initiatives,
- promoting education of the public and local officials on environmental issues, and
- conducting special environmental studies and projects.



The Commission for the Environment is a citizen advisory board comprised of 15 members, appointed by the Board of County Commissioners.

To apply go to: www.co.orange.nc.us/boards/apply.asp

Members:

May Becker, Peter Cada, Loren Hintz, Donna Lee Jones, Cliff Leath, David Neal, William Newby, Steven Niezgoda, Jeanette O'Connor, Rebecca Ray, Jan Sassaman, Gary Saunders, Lydia Wegman, David Welch

Membership:

- Members of the Commission for the Environment must be Orange County residents.
- Members are appointed by the Board of County Commissioners and serve at the pleasure of the board.
- The CFE has 15 appointed members with specific expertise in:
 - Air Quality
 - Biological Sciences
 - Water Resources
 - Engineering
 - Land Conservation
 - Environmental Education

Meetings:

When: 2nd Monday of each month at 7:30 p.m. [No July meeting]

Where: Two rotating locations:

- *Orange County Solid Waste Management Department Offices,*
1207 Eubanks Road, Chapel Hill
- *Richard Whitted Meeting Facility,*
300 West Tryon Street, Hillsborough



Contact the DEAPR office for more information: 919-245-2510



Orange County Environmental Summit



Maple View Agricultural Education Center
October 11, 2014—9:30 am to Noon

State of the Environment 2014

The 2014 State of the Environment report provides information and recommendations intended to facilitate policy decisions that affect Orange County's natural resources.

The purpose is to:

- Describe the current status of Orange County's natural environment
- Provide measures to monitor and evaluate progress toward a cleaner, healthier environment
- Highlight the major environmental challenges facing the County
- Recommend actions to confront these challenges

The report uses 20 environmental indicators to measure progress toward environmental goals in the topical areas of air and energy resources, land resources, and water resources. Recommendations for each environmental indicator were developed along with critical issues faced by the County.

Critical Issues:

1. **Air and Energy Resources**—We need to improve air quality, chiefly by reducing our reliance on cars. Reducing energy use is the first step in fighting climate change. The County has improved the energy efficiency of its buildings; we can build on this by investing more in energy-efficiency programs for residential and commercial buildings.
2. **Land Resources**—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.
3. **Water Resources**—Important data on our surface water and ground-water will be unknown due to reductions in State-led data collection efforts. Also, if drilling for natural gas occurs in the Deep River basin, nearby Orange County residents could experience negative impacts to air quality, water quality and supply, and infrastructure.

See the full report at http://www.co.orange.nc.us/ercd/2014_SOE_index.asp



Orange County Environmental Summit

Agenda

9:30am **Gathering and Refreshments**

10:00 **Welcome**

Jan Sassaman, Chair, Commission for the Environment (CFE)

10:05 **Introductory Remarks**

Alice Gordon, Orange County Board of Commissioners

10:12 **Presentation of the *State of the Environment 2014***

Rich Shaw, Orange County Land Conservation Manager

10:25 **Keynote Address: *Environmental Sustainability in a World of Change: Lessons from the Land***

Dr. Norm Christensen, Nicholas School of the Environment, Duke University

Introduction by Jan Sassaman, CFE Chair
Questions and Answers



11:00 **Panel Speakers:**

Johnny Randall, North Carolina Botanical Garden

Controlling Invasive Plants: Working Smarter – Not Harder

Don Francisco, University of NC Chapel Hill (retired)

The Future of Jordan Lake

Moderator: Loren Hintz, CFE Vice Chair

Questions and Answers

11:50 **Closing Remarks**

Barry Jacobs, Chair, Orange County Board of Commissioners

12:00 **Adjourn**

12:15pm Tour of Agricultural Education Center (optional / fee required)

Environmental Summit 2014 Attendees

| Name | Organization | Address |
|---------------------|---------------------------------|--------------------------|
| Rob Pinder | NextClimate & Solarize Orange | 103 Fidelity Street |
| John Kent | Citizen / New Hope Crk CAC | 394 Cub Creek Road |
| Steve Hall | Citizen | 105 Braswell Place |
| Bethany Shewmaker | Citizen | 220 Elizabeth Street |
| Lianna Jarecki | Citizen | 611 Cosgrove Avenue |
| Jean Bolduc | Citizen | 5519 Hideway Drive |
| Olga Grlic | Citizen | 529 Dogwood Dr. |
| Carl King | Citizen | 1901 S. Lakeshore Drive |
| Bill Kaiser | Citizen | 2112 Markham Dr. |
| Jane Norton | Citizen | 5605 Mt. Sinai Road |
| Bill and Gwen Reid | Citizens | 209 S. Cameron St. |
| Holly Reid | Citizen | 207 S. Cameron Street |
| Blythe Thompson | Citizen | 4122 Schley Road |
| Anne Sassaman | Citizen | 201 Bolinwood Drive |
| Laura Streitfeld | Citizen / Preserve Rural Orange | 3141 Morrow Farm Lane |
| William Rogers | Citizen | 8900 Rollingwood Road |
| Malcolm Munkittrick | Citizen / Student | 301B Hillsborough Street |
| Jenna Schreiber | Citizen | 107A Hanna Street |
| Alan Biermann | Citizen | P.O. Box 2425 |

| | | |
|------------------|-------------------------|-----------------------|
| Bonnie Hammersly | Orange Co. Manager | 103 Vitex Street |
| Jeff Thompson | Orange County AMS | P.O. Box 8181 |
| Carl Matyac | Coop. Extension Service | 306 Revere Road |
| Pat Davis | OWASA | 400 Jones Ferry Road |
| Trish D'Arconte | Town of Chapel Hill | |
| Wendy Smith | Town of Chapel Hill | 6817 Ramblewood Drive |

BOCC Members

| | | |
|----------------------|------|-----------------------|
| Barry Jacobs | BOCC | 2105 Moorefields Road |
| Alice Gordon | BOCC | 282 Edgewood Road |
| Bernadette Pelissier | BOCC | 4516 Mystic Lane |

CFE Members

| | | |
|-------------------|-----|-------------------------|
| Jan Sassaman | CFE | 201 Bolinwood Drive |
| Loren Hintz | CFE | 804 Kings Mill Rd. |
| May Becker | CFE | 511 Cotton Street |
| Peter Cada | CFE | 420 Coach House Lane |
| Donna Lee Jones | CFE | 3035 Carriage Trail |
| Cliff Leath | CFE | 6600 Maynard Farm Rd |
| David Neal | CFE | 323 West Queen Street |
| Bill Newby | CFE | 2821 Becketts Ridge Rd |
| Steve Niezgoda | CFE | 524 Patriot's Pointe Dr |
| Jeanette O'Connor | CFE | 117 S Peak Dr. |
| Rebecca Ray | CFE | 5617 Jomali Drive |
| David Welch | CFE | 20 East Drive |

DEAPR Staff

| | | |
|---------------|-------|-----------------|
| David Stancil | DEAPR | 306 Revere Road |
| Tom Davis | DEAPR | 306 Revere Road |
| Rich Shaw | DEAPR | 306 Revere Road |

Speakers - Environmental Summit 2014

| | | |
|----------------------|---------------------------------|----------------------|
| Dr. Norm Christensen | Nicholas Sch of the Environment | 9112 Bent Tree Lane |
| Dr. Johnny Randle | NC Botanical Garden | 1301 Arboretum Drive |
| Dr. Don Francisco | UNC Chapel Hill (retired) | |

1 DRAFT

MINUTES

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

6
 7 The Orange County Board of Commissioners met for a joint meeting with the
 8 Commission for the Environment on Tuesday, October 14, 2014 at 5:30 p.m. at the Whitted
 9 Building in Hillsborough, N.C.

10
 11 **COUNTY COMMISSIONERS PRESENT:** Chair Jacobs and Commissioners Mark Dorosin,
 12 Alice M. Gordon, Earl McKee, Bernadette Pelissier, Renee Price, and Penny Rich

13
 14 **COUNTY ATTORNEYS PRESENT:** John Roberts

15
 16 **COUNTY STAFF PRESENT:** County Manager Bonnie Hammersley, Assistant County Manager
 17 Clarence Grier, Cheryl Young and Clerk to the Board Donna Baker (All other staff members will
 18 be identified appropriately below)

19
 20 **COMMISSION FOR THE ENVIRONMENT MEMBERS PRESENT:** Chair Jan Sassaman, Vice
 21 Chair Loren Hintz and members May Becker, Peter Cada, Steve Niezgod, Jeanette O'Connor,
 22 David, Neal, Rebecca Ray and Donna Lee Jones

23
 24 **COMMISSION FOR THE ENVIRONMENT MEMBERS ABSENT:** William Newby, Lydia
 25 Wegman, Clifford Leath, David Welch, Gary Saunders

26
 27 **DEPARTMENT OF ENVIRONMENT, AGRICULTURE AND PARKS AND RECREATION**
 28 **(DEAPR) STAFF PRESENT:** Dave Stancil, Rich Shaw and Tom Davis

29
 30 **Welcome/Introductions and Opening Remarks**

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

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

36 Introductions were made.

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

39
 40 **1. Orange County State of the Environment 2014 Report (Attachment 1)**

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

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

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

50 Jan Sassaman said the report is included in attachment 1, and it raises many critical
 51 issues. He said the report is divided into sections that highlight different areas. He reviewed
 52 the following issues as outlined in the abstract materials:
 53

1 **Critical Issues**

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

24
25 Jan Sassaman reviewed air and energy recommendations page 2 of the report:
26

27 **Highlighted Recommendations from the Orange County State of the Environment 2014** 28 **Air and Energy Resources**

- 29 1. Orange County should work with Carrboro, Chapel Hill, and Hillsborough to update the
30 2005 Greenhouse Gas Emissions Inventory and Forecast for the county, and assess our
31 progress toward the emissions-reduction goals recommended in the 2005 Greenhouse
32 Gas Emissions report.
- 33 2. Orange County should collaborate with its citizens and with civic organizations that are
34 organizing for clean energy policy at the local, state, federal, or international level.
- 35 3. Orange County should incentivize green building techniques by offering reduced building
36 permit fees for commercial and residential buildings that achieve demonstrable energy
37 savings.
- 38 4. Orange County should continue to reduce the amount of solid waste sent to landfills by
39 implementing a "pay-as-you-throw" system and stop trucking Orange County solid waste to
40 the Durham transfer station.

41 42 **Land Resources**

- 43 1. Orange County should work with its partners to protect at least 12% of county land area by
44 2020, with focus on Natural Heritage Areas, and develop a comprehensive
45 conservation plan for a network of protected space throughout the county.
- 46 2. Orange County should continue educating and assisting the agricultural community with the
47 Voluntary Agricultural District and Present Use Value Taxation programs.
- 48 3. Orange County should increase efforts to encourage homeowners and businesses to
49 choose regionally native species for landscaping.

50

1 **Water Resources**

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

13
14 Jan Sassaman said one thing that comes out of this report is the importance of thinking
15 globally and acting locally.

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

20 Commissioner Gordon said the CfE and staff did a great job presenting this report at the
21 summit. She said the quantity and quality of Orange County surface and ground water is a
22 critical issue, and she hopes the County will do what it can to monitor this.

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

25 Commissioner Gordon said climate change is a serious issue, and something needs to
26 be done soon. She said things can be done locally to think globally and educate people about
27 options.

28 Commissioner Gordon referred to the recommendations page, and she noted that there
29 was a study about gas emissions that should be finished off. She said it is important to protect
30 the County's land area, and the Lands Legacy Program has done a good job of this. She said
31 surface water and groundwater are important issues for life. She said this is overall a wonderful
32 report. She said it is important to educate people about climate change, and Orange County
33 has done many things to be proactive in this area.

34 Commissioner Rich referred to the recommendations on air and energy, and she said
35 Chapel Hill has updated some of their data on this. She urged staff to get this information. She
36 referred to recommendation #4 and questioned what the solution or option would be to the
37 trucking of solid waste to Durham.

38 Loren Hintz said the last item will go into that issue in more detail. He said the short
39 answer is for all entities that supported the solid waste group to come up with the ideas. He
40 said there is a lot of sentiment that the County has a responsibility to better figure out what to
41 do with its solid waste. He said the Durham transfer station should only be a short term
42 solution, but there is no long term answer.

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

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

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

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

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

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

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

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

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

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

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

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

34 Commissioner Dorosin said the report is outstanding, but he would challenge everyone
35 to take a broader view of what environmentalism is as it relates to the impact on social justice
36 issues. He said these things are interrelated, and he would push for them to look at the
37 impacts of these issues on vulnerable low wealth communities. He said the flooding that
38 occurred last year had a clear disparate impact on the most vulnerable people in the
39 community. He said it would be interesting to take the groundwater contamination maps and
40 overlay basic census data on whether these contaminated areas are concentrated in low wealth
41 areas.

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

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

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

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

5
6 **2. Orange County Environmental Summit - October 11 (Attachment 2)**

7 This discussion was combined with item 1 above.

8
9 **3. Incentives for Energy Efficient Construction and Renovation (Attachment 3)**

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

13 David Neal reviewed the following information from the abstract:

14
15 The Orange County Commission for the Environment (“CFE”) invited the Orange County
16 Planning Board to consider a Low Energy Construction Permitting Incentive ordinance in 2012.
17 N. C. Gen. Stat. § 153A-340 allows counties to charge “reduced building permit fees or provide
18 partial rebates of building permit fees for buildings” that meet or exceed recognized energy
19 efficient design and construction principals. Members of CFE are available to work with the
20 Planning Board and county staff to review similar ordinances enacted pursuant to this statute
21 (for example, from Catawba County) and from around the country, then to draft an ordinance
22 for consideration by the Orange County Board of Commissioners.

23
24 Neither the current level of carbon in the atmosphere nor projected increases in greenhouse
25 gas emissions are sustainable. Costly and potentially irreversible adverse climate effects are
26 likely unless mitigation measures – such as increased energy efficiency investments and
27 decreased fossil fuel consumption – are taken in the near future. In Orange County, we cannot
28 wait for policy changes at the state and federal level to encourage increased energy efficiency.
29 Steps taken now to improve efficiency and decrease or eliminate our reliance on fossil fuels for
30 energy production will help lock-in reduced energy use for years to come.

31
32 Since 2003, Orange County has been a member of Local Governments for Sustainability, an
33 international membership association committed to a sustainable future. Creating incentives for
34 energy efficiency in construction is consistent with Orange County’s commitment to a
35 sustainable future. The 2005 Greenhouse Gas Inventory revealed that nearly fifty percent of
36 greenhouse gas emissions in Orange County come from residential and commercial buildings
37 (consistent with national data¹). Orange County, Chapel Hill, and Carrboro, in conjunction with
38 Hillsborough, are currently working on a revised inventory of greenhouse gas emissions and
39 attempting to identify reduction measures.

40
41 Making use of the authority granted by the General Assembly to incentivize energy efficient
42 construction is a straightforward way to reduce greenhouse gas emissions at the county level
43 for the long term.

44
45 CFE would like to explore crafting an incentive program that would be attractive to lower-
46 income residents, for whom savings on utility bills would provide a particularly important benefit.
47 To give an example of how such an energy efficient construction incentive might function, below
48 is a summary of the Catawba County incentives enacted pursuant to N. C. Gen. Stat. §153A-
49 340:

50

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

10
11 Additionally, existing one and two family homes and commercial buildings can receive a 50%
12 rebate on the permitting fees associated with the installation of geothermal heat pumps,
13 photovoltaic (PV) systems, solar water heating systems, and gray/rain water collection for
14 flushing fixtures.

15
16 Regular fees must be paid in full at time of plan review or permit issuance. Fee rebates will be
17 refunded upon project completion and certification by third party inspection agency.²
18 Rebates or reduced fees for efficient construction could be structured on a sliding scale, with
19 zero energy construction receiving the most robust incentives. Given the current level of
20 permitting fees, rebates or reductions in Orange County could be designed here that could
21 provide a substantial incentive for efficient construction.

22
23 The CFE looks forward to working with the Planning Board on crafting an efficiency incentive
24 program for consideration by the Orange County Board of Commissioners. We would
25 appreciate the opportunity to have this item included on an upcoming agenda and to work with
26 you on completing a draft proposal in the next few months.

27
28 David Neal said this program is also in Catawba County, and he is happy to contact
29 them to see if there is enough data to show if this has been effective. He does not know what
30 budgetary implications this would have had for the planning department. He said otherwise it
31 would not be hard to write a model ordinance for how a system like this would work.

32 He said another recommendation is the idea of partnering with Duke Energy and
33 Piedmont Electric to create affordable on-bill financing options for energy efficient upgrades.
34 He said this might be appealing for lower income individuals. He said the USDA rolled out a
35 program this year that allows rural electric coops to do on-bill financing programs. He said if
36 Piedmont Electric could be encouraged to take advantage of this, it would be a great way to
37 bring some money into the County to do energy efficiency work in a way that reaches low
38 income individuals. He said this information is listed in the bullet points on page 12 of the
39 report.

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

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

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

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

5
6 **4. Promoting Energy Conservation and Greater Use of Renewable Energy Sources**
7 **(e.g., Solarize Orange, Geothermal, Biogas, Biodiesel, Wood) (Attachment 4)**

8 Loren Hintz said attachment 4 refers to Solarize Orange. He said the biggest thing in
9 the news right now is solar energy. He said for private home owners who have enough income
10 to be able to use a tax deduction, solarizing can work. He said there are other options that the
11 County can help facilitate. He said geothermal is a good investment for heating and cooling a
12 home, but it is a large investment. He said one question is whether the permitting process and
13 fees should be the same for geothermal wells as for regular wells.

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

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

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

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

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

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

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

32 Chair Jacobs said Cooperative Extension will provide free energy efficient light bulbs,
33 but many people don't know about this. He said if this gets to a bond package it would be a
34 good opportunity to address the non-profit affordable housing entities in the County and lobby
35 for the next generation of energy efficiency.

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

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

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

42
43 **5. Solid Waste Issues**

44 • **CfE Interest in the Direction the County Will Go In Handling Solid Waste; Support**
45 **of the 'New Solid Waste Advisory Group (SWAG)**

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

49 He said at this point, given the changes that have happened and the formation of the
50 Solid Waste Advisory Group (SWAG), the CfE has an interest in understanding what the Board

1 is thinking and how the CfE can assist them. He suggested that a couple of the Commissioners
2 could attend the next CfE meeting to discuss this.

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

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

10 Chair Jacobs noted that a report will be given at the Assembly of Governments meeting
11 on November 14th.

12
13 • **CFE Interest in Diverting More Food Waste from the Solid Waste Stream Through
14 Composting (Attachment 5)**

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

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

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

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

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

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

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

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

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

43
44 Barry Jacobs, Chair

45
46
47 Donna Baker, Clerk to the Board

48

Response to Commissioner Rich
BOCC October 14, 2014 regarding Solid Waste
Jan Sassaman, Chair
Commission for the Environment

Penny Rich asked for detail/clarification on the solid waste recommendation that “Orange County should continue to reduce the amount of solid waste sent to landfills ... and stop trucking Orange County solid waste to the Durham County transfer station.” Clarification of this issue is a complex one and could not be provided within the time-frame of the meeting.

The concern is two-fold; one aspect concerns the ethical issues associated with disposing of our solid waste on another community or jurisdiction instead of dealing with it ourselves, and another is the set of issues associated with the myriad environmental concerns associated with trucking our waste to a locus north of Durham on well-trafficked roads to a facility over which the County has no control. The latter set of issues consists mostly of environmental and regulatory concerns. The present temporary process is to transport waste from the County using mostly collection vehicles. This practice is inefficient, expensive, unsafe, and environmentally unsound. The extra miles traveled per truckload delivered to the transfer station would:

- Increase per-load delivery times, thus requiring more labor hours to deliver each load to a tip,
- add wear and tear (and thus maintenance requirements) to vehicles, some of which are not necessarily designed or geared for highway travel,
- increase fuel costs,
- incur increased exposure of truck operators, and other drivers, to potential road accidents,
- increase vehicular emissions, and
- result in a lack of enforcement of Orange County disposal regulatory bans.

The most ethical and environmentally appropriate action is to reduce the amount of material that we must dispose of, through waste reduction, recycling, or reuse, and then convert the final waste residue into some useable commodity such as gas, heat, or biomass. Current technologies are not economically, and in some cases technically, viable for dealing with the relatively small amounts of waste generated here in Orange County. This leaves us with several options to dispose of waste locally:

- taking our waste to a regional alternative disposal site (mass burn or other type of facility) with problems similar to hauling to the Durham facility or hosting a large facility here in the County,
- developing a new County landfill, with familiar problems of siting close to urban areas, and the problems associated with distance hauling in remote northern parts of the County, or
- building a waste transfer station somewhere in Orange County that would allow us to deliver short-haul to the station by collection vehicles, with the waste transferred to larger capacity long-haul vehicles for transport to landfills of our choosing.

The first option, a large regional energy conversion facility would either be unacceptable (if close to urban areas) or require a transfer station if located remotely in the County. This leaves us, as a County, with the option of imposing a landfill or a waste transfer station somewhere relatively close to the population centroid. Landfilling in Orange County, especially close to the population centroid, is not likely to be an option, leaving, ultimately, the need for a waste transfer station.

A waste transfer station would still require us to impose our waste on some other community, but if sited properly, could mitigate some of the concerns associated with our present practice, such as decreased labor hours, decreased wear and tear on vehicles, decreased fuel costs and emissions, reduced accident potential, and the ability of Orange County to monitor waste movement and enforce County regulations.

This then leads to the issue of waste transfer station siting. This involves environmental, practical, and political considerations. It needs to be close to the population centroid, close to roadways, sited to accommodate state siting regulations, and in a location that is socially acceptable. The present Eubanks Road solid waste facility is an ideal location for a transfer station and should be reconsidered, with a tip fee surcharge on materials handled by the station used to fund additional community improvements. Two other locations, the area just north of the Chapel Hill Public Works facility and a portion of the UNC-CH Horace Williams tract have been discussed and merit consideration.

In the final analysis, the solution will boil down to a political one and will require a great deal of political will to accomplish.

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: | Loren Hintz | 919-933-8987 | ldhintz@bellsouth.net |

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

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

One meeting per month (2nd 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 Orange County State of the Environment report in 2014 (previous state of the environment reports completed in 2000, 2002, 2004, 2009)
- Convened Orange County Environmental Summit (2005, 2009, and 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 a Sustainable Landscaping Policy for County-owned facilities (2010)
- Developed a Forest Management Policy for County properties (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 continue to expand its efforts 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 2009 reported on the significant reduction in mature hardwood forest that occurred from 2003-2008 and since 1988. DEAPR staff is updating the 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

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).

- Disseminate 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 develop a comprehensive conservation plan for Orange Co (BOCC Priority #1)
- Co-sponsor the annual DEAPR photography contest: *The Nature of Orange*
- Help plan for and participate in DEAPR's annual Earth Day event(s)

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 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 collaborating with the Planning Board (with appropriate direction from the BOCC) on developing incentives for increasing energy efficiency in new construction [Jan. 2012 memo to Planning Board]
-
-
- The CFE will collaborate with the NC Botanical Garden and others to identify significant roadside habitat for native plants and work with NCDOT and other utilities to protect those roadside habitats [authorized by BOCC June 2012]

ORANGE COUNTY



Department of Environment,
Agriculture, Parks & Recreation

MEMORANDUM

November 10, 2014

TO: Commission for the Environment
FROM: Rich Shaw, Land Conservation Manager
SUBJECT: Election of Officers

The Commission for the Environment is scheduled to hold its annual election of officers (Chair and Vice Chair) as specified in the CFE policies and procedures.

Section III of the procedures is provided below for your information and guidance:

SECTION III: MEMBERSHIP

- A. Authority ...
- B. Composition ...
- C. Officers
 - 1. The elected officers of the Commission for the Environment shall consist of a Chair and a Vice Chair.
- D. Election Procedures and Terms of Office
 - 1. The Officers shall be elected by the Commission for the Environment from among its members at the regular meeting in November of each year. They shall take office at the following regular meeting.
 - 2. The candidate for each office receiving a majority vote of the Commission for the Environment members present shall be declared elected.
 - 3. The officers shall be elected for a term of one year. They shall be eligible to succeed themselves for not more than three consecutive terms.
 - 4. Appointment to serve for any actual period of one (1) year or more will constitute a full term. Appointment for any actual period of less than one (1) year will constitute a partial or unexpired term.

NATURAL and CULTURAL RESOURCES DIVISION

Orange County Department of Environment, Agriculture, Parks & Recreation
PO Box 8181, Hillsborough, NC 27278
Phone: (919) 245-2510 Fax: (919) 644-3351

September 1, 2014

WUNC 91.5 North Carolina Public Radio

Chapel Hill-Carrboro Schools Begin Composting Lunch

BY WILL MICHAELS



Credit: Chapel Hill-Carrboro City Schools

Schools in Chapel Hill and Carrboro have launched a district-wide composting program in their cafeterias.

The program started on the first day of classes in 15 elementary and middle schools. Many individual schools in North Carolina have started composting, but few districts have created their own programs.

Dan Schnitzer, sustainability coordinator for Chapel Hill-Carrboro City Schools, says the schools will be able to use some of the compost their students create.

"Our compost company that's doing the hauling will be donating compost back to the school district in the spring for our school gardens, so it would be very cool to have the kids go out in the garden, get their hands dirty, and to be able to say, 'hey, remember that apple core you through out on the first day of school? Well, it's coming back to your school in a healthy way in the form of soil,'" he says.

Schnitzer says high schools are not yet part of the program. He says high school students usually spread out across campus during lunchtime, which makes it more difficult to gather compost. The district hopes to offset the cost of hauling the compost away by cutting down on trash, and reducing dumpster fees.

<http://wunc.org/post/chapel-hill-carrboro-schools-begin-composting-lunch>

Landmark fracking study finds no water pollution

By KEVIN BEGOS, Associated Press
September 16, 2014

PITTSBURGH — The final report from a landmark federal study on hydraulic fracturing, or fracking, found no evidence that chemicals or brine water from the gas drilling process moved upward to contaminate drinking water at a site in western Pennsylvania.

The Department of Energy report, released Monday, was the first time an energy company allowed independent monitoring of a drilling site during the fracking process and for 18 months afterward. After those months of monitoring, researchers found that the chemical-laced fluids used to free gas stayed about 5,000 feet below drinking water supplies.

Scientists used tracer fluids, seismic monitoring and other tests to look for problems, and created the most detailed public report to date about how fracking affects adjacent rock structures.

The fracking process uses millions of gallons of high-pressure water mixed with sand and chemicals to break apart rocks rich in oil and gas. That has led to a national boom in production, but also to concerns about possible groundwater contamination.

But the Energy Department report is far from the last word on the subject. The department monitored six wells at one site, but oil or gas drilling at other locations around the nation could show different results because of variations in geology or drilling practices. Environmentalists and regulators have also documented cases in which surface spills of chemicals or wastewater damaged drinking water supplies."

There are a whole wealth of harms associated with shale gas development" separate from fracking, said Maya K. van Rossum, of the Delaware Riverkeeper group. She mentioned methane gas leaks, wasteful use of fresh water and air pollution, and said the Energy Department study confirms a point that the Riverkeeper has been making: that faulty well construction is the root cause of most problems, not fracking chemicals migrating up through rocks.

A separate study published this week by different researchers examined drilling sites in Pennsylvania and Texas using other methods. It found that faulty well construction caused pollution, but not fracking itself.

Avner Vengosh, a Duke University scientist involved with that study, just published in The Proceedings of the National Academy of Sciences, said in an email that it appears the Energy Department report on the Pennsylvania site is consistent with their findings.

The leading industry group in Pennsylvania said the Energy Department study reaffirms that hydraulic fracturing "is a safe and well-regulated technology." Marcellus Shale Coalition president Dave Spigelmyer said in an email that the study reflects "the industry's long and clear record of continuously working to enhance regulations and best practices aimed at protecting our environment."

The Energy Department report did yield some surprises. It found that the fractures created to free oil or gas can extend as far as 1,900 feet from the base of the well. That's much farther than the usual

<http://www.newsobserver.com/2014/09/16/4155921/federal-study-finds-fracking-didnt.html#>

estimates of a few hundred feet. The Energy Department researchers believe that the long fractures may have followed existing fault lines in the Marcellus Shale or other formations above it.

The department study also ran into problems with the manmade markers meant to track possible long-term pollution. The Energy Department said it was able to track the markers for two months after fracking, but then that method had to be abandoned when it stopped working properly.

The Chronicle

Duke researchers explore potential dangers of fracking

By Neelesh Moorthy | October 6, 2014

With North Carolina's ban on fracking set to expire next year, Duke researchers are looking into the potential dangers of the technique.

Over the last several years, hydraulic fracturing—better known as fracking—has increased the potential to produce domestic oil and gas. The process uses high pressure water and horizontal drilling to break up shale beneath the ground and bring up natural gas. But Duke researchers have explored potential risks of the process, with their work becoming increasingly important as North Carolina holds public hearings on fracking and seeks to begin fracking tests in the fall.

The leakage of methane into private water wells and the presence of carcinogens in drinking water are two of the significant dangers exposed by the research.

“We sampled hundreds of homes with private drinking water wells, and found that people living near shale gas wells are more likely to have methane, ethane, and propane, the components of natural gas, in their water,” said Robert Jackson, formerly of the Nicholas School of the Environment and now a professor of environment and energy at Stanford University.

This becomes a problem in “confined spaces, such as basements, wells, and sheds,” where methane’s flammability has been known to cause explosions, Jackson said. However, the leakage of methane into private water supplies is not necessarily an inevitable consequence of fracking. Research by Jackson and Avner Vengosh, professor of earth and ocean sciences at the Nicholas School of the Environment, has shown that the culprits are faulty pipes, or wells, used while extracting natural gas from below the surface.

“Researchers haven’t found connectivity between the fractures made from fracking and any sort of natural pathway to the surface or aquifers,” said Jennifer Harkness, a graduate student at the Nicholas School currently working with Vengosh. “The gas is not migrating from the fractures made during fracking, but it can be leaked out of poorly formed wells.”

It is against this background of research that the North Carolina legislature is working to institute new regulations when the fracking ban ends next year. The state's Mining and Energy Commission held public hearings throughout August and September to discuss the topic—attracting significant attention from environmental protestors before the Commission drafts its official fracking rules in November.

Jackson said that he believed the legislature was not paying sufficient attention to research from the Nicholas School.

“I think there’s a perception amongst some people in Raleigh that they don’t want to hear about problems that might occur,” Jackson said. “I think the Mining and Energy Commission was designed to establish rules to help drilling come to North Carolina, not to decide whether or not drilling should come to North Carolina. That discussion never really happened.”

The research has also raised concerns about carcinogens being introduced into drinking water supplies. At the end of the drilling, the water originally shot at the underground shale layer to break it apart is brought back up along with the desired natural gas. This wastewater normally goes to a specialized wastewater treatment plant before being discharged into rivers which feed into drinking water plants downstream. However, these drinking water plants often use disinfectants which react with the fracking wastewater to produce potential carcinogens

“Even if the [fracking wastewater] constituted only .01 percent by volume of the river, there would still be a significant shift in the types of byproducts formed, to the more toxic kinds,” said William Mitch, who conducted research with Vengosh as an associate professor of civil and environmental engineering at Stanford.

There are alternatives available, such as reusing the water for further fracking and deep well injections. However, these options are highly dependent on the geology of the specific area, and are not guaranteed to work. Options at the treatment level, such as reverse osmosis, are extremely cost and energy intensive.

“There really aren’t great treatment alternatives that can remove halides,” Mitch said.

The Mining and Environmental Commission will file its fracking regulations with the state November 20, and drilling companies will likely be able to apply for fracking licenses in the Spring. But Jackson is not convinced that North Carolina will see a big surge in drilling operations even when the ban on fracking ends, citing North Carolina’s small shale reserves in comparison to other states’ as well as a lack of oil and gas infrastructure.

“I’m skeptical that many companies will come to North Carolina any time soon. I think what we will see are wells drilled through subsidies from the state,” Jackson said. “The real question is how much the state is going to spend trying to get companies to come drill here, and I hope the answer is not very much.”

PLANNING & INSPECTIONS DEPARTMENT
Craig N. Benedict, AICP, Director

Current Planning
(919) 245-2575
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131 W. Margaret Lane
Suite 201
P. O. Box 8181
Hillsborough, NC 27278



MEMORANDUM

TO: Board of County Commissioners
 Bonnie Hammersley, County Manager

FROM: Craig Benedict, Planning Director
 Michael D. Harvey, Current Planning Supervisor

DATE: October 7, 2014

SUBJECT: Information Item – Regulation of Solar Facilities within North Carolina

Please accept the following memorandum as an assessment of solar regulations currently enforced throughout the State.

This information was requested by BOCC members during the May 27, 2014 Quarterly Public Hearing to ascertain how existing County regulations compared to other local governments.

BACKGROUND: The County adopted solar regulations in the fall of 2012.

The amendments were initiated by staff to address a concern over existing regulations not providing adequate distinction(s) between the erection of a solar array for personal use versus the erection of an array to serve as either an income generator for a property owner or a public utility benefiting multiple properties throughout the region.

Staff also identified existing inconsistencies within the Orange County Unified Development Ordinance (UDO) concerning regulations governing the development of utilities needing correction.

The amendment package, reviewed at the August 27, 2012 Joint Quarterly Public Hearing and adopted on November 8, 2012, addressed the following:

1. New definitions of solar facilities.

2. Allows for solar facilities consistent with all other 'utilities' as denoted within the Utilities land use category of the UDO.¹
3. Established acceptable levels of power generation for solar panels erected on private property to address on-site power needs, specifically:
 - a. For residential land uses:
 - i. Having a rated capacity consistent with local utility providers net metering policies not to exceed 20 kilowatts of electricity generated on-site,
 - ii. Having a rated storage volume for heated water not to exceed 240 gallons, and
 - iii. Having a collector area of more than 1,000 square feet for thermal collection.²
 - b. For non-residential land uses:
 - i. Limits based on the average utility need (i.e. electricity, water, etc.) to support the non-residential land use.³
4. Adopted new regulations governing the review and approval of solar facilities intended for commercial/public utility purposes.
5. Facilities generating over 20, but under 100, kilowatts are reviewed through the Class B Special Use Permit process (i.e. acted upon by the Board of Adjustment).⁴
6. Facilities generating over 100 kilowatts are reviewed through the Class A Special Use Permit process (i.e. acted upon by the BOCC with a recommendation from the Planning Board).⁵

The attached table provides a synopsis of solar regulations enforced throughout the State.

In reviewing these regulations staff would note the following:

- a. Orange County regulations are comparable with other standards currently being enforced throughout the State.
- b. Orange County's standards provide distinctions, with respect to permit review and approval of a solar facility, based on the overall intensity of a given project (i.e. how much power is generated and for what purpose) while others seem to base their development/review processes on the size of property where a solar facility is to be located.

¹ Section 5.2 Table of Permitted Uses.

² Section 5.9.6 (A) (1) (b) of the UDO.

³ There was lengthy discussion on this provision. Several Planning Board and BOCC members did not want to establish a definitive limit that could hinder non-residential developments from becoming energy self-sufficient.

⁴ Standards of evaluation and development are located within Section 5.9.6 (B) of the UDO.

⁵ Standards of evaluation and development are located within Section 5.9.6 (C) of the UDO.

- c. While most of the identified counties treat solar facilities as a utility, some restrict the general use zoning districts where such projects can be located.

As previously indicated Orange County allows for solar facilities in most all general use zoning districts consistent with existing allowances for utility operations. The notable exception is that solar facilities over 20 kilowatts are prohibited within the Existing Commercial (EC-5) and Existing Industrial (E1) general use zoning districts.

There did not seem any compelling rationale to limit their location to a specific land use, whether non-residential or residential/agricultural area since solar facilities follow high power transmission lines and substations, which are located to serve the overall regional electric grid serving both urban and rural areas.

- d. Required setbacks for solar facilities range from 50 ft. from property lines/rights-of-way to 150 feet.

The Orange County does not have a specific setback standard. Current regulations require a 50 land use buffer along the perimeter of the property line. This required land use buffer, in turn, creates a 'setback' requirement in order for the erected panels to avoid shadows created by the required vegetation.

- e. Required land use buffers are comparable with existing County standards. Durham and Brunswick counties establish specific regulations governing the actual 'opacity' (i.e. how visible the development will be once a land use buffer is established) of a required land use buffer.

Orange County's UDO does not have specific opacity requirements.

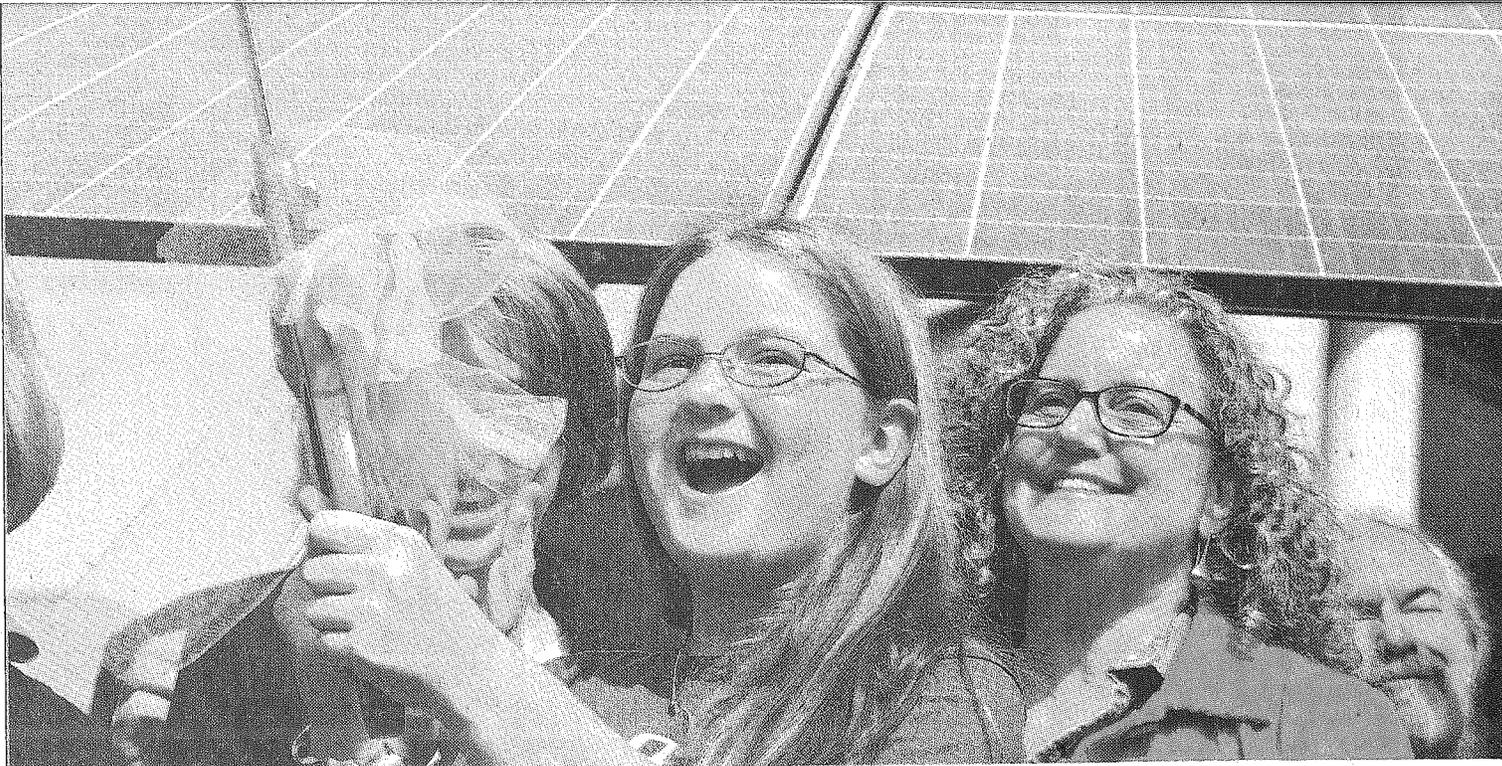
- f. In reviewing this matter with several county planning departments, there appears to be a trend towards local governments initiating amendments to their land use regulations establishing development standards for solar facilities.

Staff looks forward to providing additional detail as necessary.

| GOVERNMENT ENTITY | WHERE PERMITTED | HOW PERMITTED | LAND USE BUFFERS | SETBACKS/HEIGHT | DECOMMISSIONING |
|-------------------|--|---|--|--|--|
| ORANGE COUNTY | Allowed in the majority of general use zoning districts. Permit process based on intensity of project. | Based on intensity of power generated: <ul style="list-style-type: none"> • Accessory use (under 20 kilowatts) – Staff approval. • Between 20 – 100 (anywhere from 10 to 25 individual panels) kilowatts – Class B Special Use Permit (SUP). • Over 100 kilowatts (anywhere from 25 to 40 individual panels) – Class A Special Use Permit. | Class B and Class A Solar Facilities all require a 50 ft. wide land use buffer | None specified. Typical array has to be approximately 50 feet from trees achieving height of 12 feet to avoid shadow from foliage. Resulting setback has been approximately 100 feet for the solar projects we have approved so far. Height limit: <ul style="list-style-type: none"> • Accessory and Class B SUP – based on district • Class A SUP – 40 ft. limit for arrays and structures. | <ul style="list-style-type: none"> • Notify Planning within 60 days prior to cessation of activities. • Facility removed within 12 months of cessation. • Required to re-stabilize property and obtain required permits (i.e. Erosion Control) to do so. • Record document rescinding any recorded Special Use Permit. |
| CHATHAM COUNTY | Permitted (lots under 2 acres in size) in all residential and industrial districts. Use not permitted in commercial districts. Permitted (lots over 2 acres in size) through Conditional Use Permit process in the same residential and industrial districts. | Based on lot size and intended use: <ul style="list-style-type: none"> • Accessory use (no power limit identified) • On property under 2 acres – staff approval • On property over 2 acres – Conditional Use Permit (i.e. rezoning and Special Use Permit) acted upon by Board of Commissioners. | 50 feet landscaped buffer (lots under and over 2 acres). | <ul style="list-style-type: none"> • 50 ft. minimum setback • 100 ft. setback from roadways (projects on property over 2 acres in area) • Height: 15 ft. measured from grade at base of solar collector. | Removed at owner's expense within one hundred and eighty (180) days of determination by the Planning Department the facility is no longer being maintained in an operable state or no longer supplying solar power. |

| GOVERNMENT ENTITY | WHERE PERMITTED | HOW PERMITTED | LAND USE BUFFERS | SETBACKS/HEIGHT | DECOMMISSIONING |
|-------------------|---|--|--|---|---|
| CATAWBA COUNTY | Permitted by right in Industrial districts. Permitted in 2 residential districts through the Conditional Use Rezoning process. | Where permitted by right staff review/action on site plan. Within residential districts only permitted through processing of a Conditional Use Rezoning application acted upon by the Board of Commissioners. | Minimum height of 10 feet (within 5 years of planting). Landscaped area has to be 75 feet in width. | All structures and fences are required to be setback 100 feet from all rights-of-way and 50 feet from all property lines. No height limit specified within Ordinance. Staff assumes it is based on underlying zoning district where facility is located. | <ul style="list-style-type: none"> • Application must include decommissioning plan. • Following 6 months of inactivity applicant shall have 6 months to remove facility. • Required to re-stabilize property and obtain required permits (i.e. Erosion Control) to do so. • As part of permit applicant has to have performance bond at a minimum of \$500,000.00 to cover decommissioning if necessary. • Landowner/tenant is required to notify County when site is abandoned. |
| CLAY COUNTY | Permitted everywhere. Clay County does not have local zoning regulations (i.e. general use zoning districts and development standards.) | Approved by Building Inspections Department administratively. | Ordinance requires a vegetative buffer along the perimeter of the property. There is no mandatory width. | All structures and fences are required to be setback 100 feet from all rights-of-way, property lines. No height limit specified. | No standards listed. |

| GOVERNMENT ENTITY | WHERE PERMITTED | HOW PERMITTED | LAND USE BUFFERS | SETBACKS/HEIGHT | DECOMMISSIONING |
|--------------------|--|---------------------------------------|---|---|----------------------|
| DURHAM CITY/COUNTY | <p>Listed within the Major Utility land use category of their Unified Development Ordinance.</p> <p>Permitted in most residential zoning districts subject to action by the Board of Adjustment.</p> | Acted upon by the Board of Adjustment | Variable width buffer ranging from 20 to 30 ft. depending on the district where the facility is located and topography of the site. Buffer may be expanded to address issues of visibility. | <p>Comply with general use district regulations where located.</p> <p>No specified height limit.</p> | No standards listed. |
| BRUNSWICK COUNTY | <p>Listed within the Utilities land use category of their Unified Development Ordinance.</p> <p>Solar serving as an accessory use is permitted in all zoning districts.</p> <p>Solar serving commercial/utility use only allowed within 'Rural Residential' zoning district with action from Board of Adjustment.</p> <p>Permitted use in commercial and industrial districts.</p> | Acted upon by the Board of Adjustment | Variable depending on district. Ranges from 20 to 40 feet based on surrounding uses. | <p>150 ft. setbacks from all property lines and rights-of-way (both for permitted facilities and facilities acted upon by Board of Adjustment.)</p> <p>Height limit of 20 ft.</p> | No standards listed. |



October 29, 2014

JONATHAN M. ALEXANDER - jalexander@newsobserver.com

Megan Zalaski holds up a pair of scissors after cutting the ribbon to the school's new solar array Friday at McDougle Middle School.

McDougle lets the sunshine in

School 1st in district to get solar panels

BY JONATHAN M. ALEXANDER
jalexander@newsobserver.com

CARRBORO Megan Zalaski looked into the crowd nervously, as she held a huge pair of scissors – half her body size – ready to cut the big blue ribbon.

With cameras snapping, and her McDougle Middle School classmates and principals cheering, she held the scissors steady and snipped, cutting the ribbon to the

Right for solar?

Solar works best on structures facing south, southwest, and southeast. There should be little or no shading from trees, buildings, chimneys or roof gables. Your roof should be in good condition.

To estimate how much solar power is available at your home, a good rule of thumb is that 100 sq. ft. are needed for 1kW capacity panel, that for North Carolina conditions, will generate between 1,000 -- 1,500 kWh per year.

Questions? Contact info@solarizenc.org
Source: Solarize Orange County

school's new solar panels.

School board members, town, county and district leaders all came to watch Friday's ceremony. The solar panels are the first of

their kind in the Chapel Hill-Carrboro City Schools district.

"It's the beginning process of getting schools to produce clean energy and not just clean thinking and

healthy students," said Dan Schnitzer, sustainable energy coordinator for the district.

Solar panels convert energy from the sun into electricity. When the sun's rays hit the panels, the thermal energy knocks electrons in the panel's silicon layers into metal conductors. The movement of the electrons creates the flow of electricity, helping to power the school.

Rob Pinder of Solarize Carrboro, approached Schnitzer and Principal Debra Scott a year ago. The idea was to not just talk about the importance
SEE **SOLAR**, PAGE 2A

SOLAR

CONTINUED FROM PAGE 1A

of clean air and alternative energy, but to make it happen.

"This is a real life application of what they are learning," Scott said. "That's what we do in just about all classes. We try to tie it to something that is meaningful to the students and (apply) what they're learning to their lives."

The students raised \$8,000 for the solar panels, some coming from a baking sale, some from community donors. Even the eighth graders

from the previous year donated money.

Schnitzer said the district plans to install solar panels at all schools. The Solarize Chapel Hill project will set aside money from every installation to eventually raise money to do that, he said.

"It's a win-win. We'll get more people interested in solarized movements," Schnitzer said. "And our students win. They get learning opportunities. And they get clean energy in their

schools."

According to the district, in a year, the installation will generate 1,400 kilowatt-hours of electricity for the school. That is enough electricity to power a refrigerator for two years, or a home for two months. Each year the installation will also avoid having to burn 1,000 pounds of coal and will prevent one ton of greenhouse gas emissions.

Alexander: 919-932-2008;
Twitter: @jonmalexander1

Memorandum

To: Bonnie Hammersley, County Manager

From: Gayle Wilson, Director - Department of Solid Waste Management
David Stancil, Director - Department of Environment, Agriculture, Parks and Recreation

Subject: BOCC Follow-up – Potential for Solar Energy Project at Closed Landfill

Date: September 29, 2014

At the April 15, 2014 meeting the Board of Commissioners requested that David Stancil and Gayle Wilson provide information regarding the potential for alternative energy producing opportunities at the closed landfill on Eubanks Road such as solar. A preliminary investigation into the subject resulted in the following feedback.

County staff asked the county's engineering consultant HDR Engineering of the Carolinas to consider the Board's request and help staff to develop an informed response. HDR contacted Jay Cobb with Strata Solar. Strata Solar is a turn-key developer for the installation and operations of solar energy projects with their corporate office located in Chapel Hill. HDR provided a summary of the Orange County Facility and indicated that the County had an interest in meeting with a representative of Strata Solar to discuss the potential for developing a solar project on the site. Mr. Cobb said that normally they would conduct an initial meeting with an interested party to do a site evaluation and complete a financial model to determine if it is advantageous to continue with development of a project. However, he felt that it would not be feasible at this time to pursue a solar project with Orange County for the following reasons:

1- The key to financial feasibility of solar projects is that they are contingent upon the tax credits available to the project and since Orange County cannot use the tax breaks it reduces the available revenue for a project. In other words, the turn-key solar development companies are not as interested in the public sector as they are in the private sector since the revenue possibilities are much greater for the latter. A project at Eubanks Road would provide revenues to the County in the form of lease payments for use of the property which would generally be low.

2- The cost of installation of the solar panels on a closed landfill is much higher due to the cap system which must be taken into account when designing the support system. For green field areas the posts that support the rack system are generally driven 6 to 8 feet in the ground. This is not possible on a closed landfill because it would impact the cap system. The use of a ballasted system, which is comprised of concrete blocks on which the solar panels are installed, are required on a closed landfill to protect the integrity of the cap system. Strata Solar has developed and installed this type of system on a research and development basis but has not used it in a project due to its higher installation cost.

The main issue here is that Strata Solar, along with the other solar developers, has a number of projects available to them that can use a "cookie-cutter" approach to development which keeps the installation costs low and through tax credits with private owners can maximize the revenues from a project. They are not currently pursuing the installation of solar energy recovery at old landfills at this time but may have interest in the future.

Based on HDR's conversation with Strata Solar, staff believes it would be in the best interest of Orange County to hold off pursuing a solar project at Eubanks Road currently, but revisit it in the future as conditions may change. Staff is available to answer any additional questions on this issue as necessary.

Sept. 11, 2014

Scientists: Ozone layer recovering

Chemist calls discovery 'victory for diplomacy'

By SETH BORENSTEIN
Associated Press

WASHINGTON Earth's protective but fragile ozone layer is beginning to recover, largely because of the phase-out since the 1980s of certain chemicals used in refrigerants and aerosol cans, a U.N. scientific panel reported Wednesday in a rare piece of good news about the health of the planet.

Scientists said the development demonstrates that when the world comes together, it can counteract a brewing ecological crisis.

For the first time in 35 years, scientists were able to confirm a statistically signifi-

cant and sustained increase in stratospheric ozone, which shields us from solar radiation that causes skin cancer, crop damage and other problems.

From 2000 to 2013, ozone levels went up 4 percent in the key mid-northern latitudes at about 30 miles high, said NASA scientist Paul Newman. He co-chaired the every-four-years ozone assessment by 300 scientists, released at the United Nations.

"It's a victory for diplomacy and for science and for the fact that we were able to work together," said chemist Mario Molina. In 1974, Molina and F. Sherwood Rowland wrote a scientific study forecasting the ozone depletion problem. They won the 1995 Nobel Prize in chemistry for their work.

The ozone layer had been

thinning since the late 1970s. Man-made chlorofluorocarbons, called CFCs, released chlorine and bromine, which destroyed ozone molecules high in the air. After scientists raised the alarm, countries around the world agreed to a treaty in 1987 that phased out CFCs. Levels of those chemicals between 30 and 50 miles up are decreasing.

The United Nations calculated in an earlier report that without the pact, by 2030 there would have been an extra 2 million skin cancer cases a year around the world.

Paradoxically, heat-trapping greenhouse gases — considered the major cause of global warming — are also helping to rebuild the ozone layer, Newman said.

The report said rising levels of carbon dioxide and other gases cool the upper

stratosphere, and the cooler air increases the amount of ozone.

And in another worrisome trend, the chemicals that replaced CFCs contribute to global warming and are on the rise, said MIT atmospheric scientist Susan Solomon. At the moment, they don't make much of a dent, but they are expected to increase dramatically by 2050 and make "a big contribution" to global warming.

The ozone layer is still far from healed. The long-lasting, ozone-eating chemicals still lingering in the atmosphere create a yearly fall ozone hole above the extreme Southern Hemisphere, and the hole hasn't closed up. Also, the ozone layer is still about 6 percent thinner than in 1980, by Newman's calculations.

UNC trustees want to look at clean energy investments

By Jane Stancill

jstancill@newsobserver.com September 25, 2014

CHAPEL HILL — UNC-Chapel Hill trustees on Thursday directed endowment fund managers to look into clean energy investments, after student activists called for university divestment from coal-burning companies.

In a unanimous resolution, the board requested the UNC Management Company, which handles the endowment funds, to research targeted investments that “advance environmentally friendly clean energy strategies.”

It’s unclear whether the move will result in clean energy investments, and there is no plan for UNC-CH to divest from coal-related energy companies. But students were happy with Thursday’s action after several years of activism on the issue.

“It’s hard not to be ecstatic,” said Tait Chandler, a senior from Canada who began work on a coal divestment campaign his first year at UNC-CH. “This is like the first time we can say, ‘This is what we’ve done.’ ... This is something. It’s a step in the right direction.”

Jasmine Ruddy, a senior from Morehead City, said she was grateful for the board’s collaborative approach but added, “We’re always going to be pushing and challenging the board and the administration to see what they’re willing to do to face the climate crisis.”

The action came the week of the United Nations summit on climate change, amid a growing movement away from fossil fuel investments by some universities and philanthropies.

A recent report from Arabella Advisors, a Washington-based firm focused on socially responsible stocks, said that 181 institutions and local governments had pledged to divest from fossil fuels as of this month. Among them are Stanford University, which dropped coal, and the Rockefeller Brothers Fund, a philanthropy by the family of John D. Rockefeller, the founder of Standard Oil.

UNC-CH’s \$2.4 billion endowment includes energy stocks, but it’s not clear how much money is tied up in coal. Investments can be spread across portfolios that include stocks from many different companies.

The UNC-CH students against coal appeared before the trustees a year ago to ask for coal divestment. At the time, trustees thanked the students for the information but said it was one-sided. That led to a campus forum in April and included representatives from the investment community and Duke Energy, as well as environmentalists.

For energy companies, dropping coal immediately would mean a power shortage and a negative impact on the economic environment, Steve Lerner, a Chapel Hill trustee, said Thursday.

“But,” he added, “the only way to transition off of that is to have alternative sources of energy.”

So, he said, the board decided on a measured approach to not stop any investments but to pursue new ones in clean energy.

Extricating energy stocks from portfolios is complex and difficult, said Trustee Chairman Lowry Caudill of Durham.

“The focus shifted to: What can we do? Where can we have impact and move the needle?” Caudill said. “It’s a very forward-looking approach to handling this.”

Chancellor Carol Folt said she was proud of the students. “They really entered into this in a wonderful spirit,” she said. “They went out and talked to people from all areas of the conversation and brought them to campus. This is an idea that they fully embraced and have been real leaders on, so we’re very excited about that.”

Ruddy said the ultimate goal of divestment campaigns is to encourage utilities to abandon coal and move more quickly to renewable energy. “This is something that is becoming a really popular movement,” she said.

Department Issues Green Building Certification System Final Rule

U.S. Department of Energy | Posted: Monday, October 13, 2014 9:34 pm

WASHINGTON, D.C. -- Supporting the Obama Administration's goal to reduce carbon emissions and protect the environment, the Energy Department is pursuing a suite of initiatives to strengthen federal energy management through increased focus on measurement of energy use in federal buildings and energy efficient building design. Principal among the efforts is the Department's issuance of a final rule that requires verified energy and water performance for new and retrofitted federal buildings that are certified by private sector green building certification systems.

The rule, which goes into effect Nov. 13, ensures that in cases where agencies choose to use green building certification systems to meet federal sustainability and energy standards, they must choose a system that verifies enhanced energy and water efficiency. By requiring re-assessments at least every four years, the rule will ensure energy and water savings continue well beyond the initial building opening or retrofit. System requirements for the verification of energy and water performance in new construction and major renovations will lead to reduced consumption through active energy and water management.

The considered use of green building rating systems advances federal high performance buildings by focusing on modernized, integrated building systems that minimize inefficiencies and waste and enhance cost-saving benefits. DOE will provide a webinar discussing the rule's requirements in November.

To further the Department's sustainability and energy savings efforts, the Federal Energy Management Program recently updated its Federal Building Energy Use Benchmarking Guidance, which designates the Environmental Protection Agency's ENERGY STAR Portfolio Manager as the sole benchmarking tool for federal agencies. Complementing energy measurement efforts, the Department will soon release guidance for federal building metering that will help agencies prioritize buildings for metering as they undertake efforts to measure energy and water consumption to meet federal energy and water reduction goals. Together, these efforts will bring increased focus to verification of energy performance and management in federal buildings.

Finally, the Energy Department issued a supplemental notice of proposed rulemaking seeking additional public comment on its proposed rule to phase in designs of new federal buildings and major renovations that significantly reduce consumption of non-renewable energy commodities.

The Department's Office of Energy Efficiency and Renewable Energy accelerates development and facilitates deployment of energy efficiency and renewable energy

technologies and market-based solutions that strengthen U.S. energy security, environmental quality, and economic vitality.

SOURCE: U.S. Department of Energy

Rich Shaw

From: OWASA <gfeller@owasa.org>
Sent: Monday, October 27, 2014 2:23 PM
To: Rich Shaw
Subject: OWASA receives national award for sustainable water utility management



**ASSOCIATION OF
METROPOLITAN
WATER AGENCIES**



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 October 27, 2014

OWASA receives national award for sustainable water utility management

OWASA recently received a Sustainable Water Utility Management Award from the Association of Metropolitan Water Agencies (AMWA).

AMWA is an organization of largest publicly-owned drinking water suppliers in the U.S. The Sustainable Water Utility Management awards recognize utilities committed to innovation and success in economic, social and environmental aspects of their services.

AMWA recognized:

that OWASA's "...aggressive water conservation program and implementation of a reclaimed water system have reduced the community's risk of droughts, enabled the utility to defer expensive capacity expansion projects, improved its water supply resiliency and redundancy, and reduced its energy use and carbon footprint.

"Efficiency improvements have been implemented throughout the organization following treatment process optimization studies, business process reviews and deployment of information technology solutions.

"A comprehensive asset management program provides timely, accurate information on which to base important investment decisions, and comprehensive watershed management plans protect the quality of water supplies."

"AMWA awards recognize the serious commitment and significant progress these award-winning drinking water agencies are making toward long-term viability through innovative management practices, executive leadership and employee

engagement," said AMWA President Chuck M. Murray, General Manager, Fairfax Water. "Sustainable communities cannot exist without sustainable water systems, and these award winners are invaluable assets to their communities and their customers."

John Young, Chair of the OWASA Board, said "The OWASA Board and staff are extremely grateful to our customers in the Carrboro-Chapel Hill community for their strong support of water conservation and sustainability, and for the resources which enable us to pursue excellence in our services and projects."

Additional background information

Reduced drinking water demand

Water conservation by OWASA customers and use of reclaimed water resulted in a 26% reduction in drinking water use from Fiscal Year (FY) 1999 to 2013, despite a 27 percent increase in the number of customer accounts over that same period.

Average water sales in FY 2013 were at the same level as in the early 1990s, although OWASA has about 60% more customer accounts than twenty years ago. These savings translate to similar reductions in the use of chemicals and energy for water treatment.

Reclaimed Water System

After the record drought of 2001-02, OWASA and the University of North Carolina at Chapel Hill evaluated the technical, economic, and environmental feasibility of using reclaimed water to meet certain non-drinking water needs on the main campus. The study concluded that such a strategy was feasible.

OWASA and the University partnered to design, finance and construct the system, and it was placed into service in April 2009. The University paid almost \$15 million to implement the system.

The University now uses reclaimed water instead of drinking water as cooling tower make-up water, for irrigation at 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.

In addition to reducing the community's risk to droughts, the reclaimed water system provides water supply redundancy and reliability benefits for the University.

Providing reclaimed water to the University requires about 40% less energy than pumping raw water from reservoirs, treating it at the drinking water plant, and then pumping treated water to OWASA's distribution (pipe) system.

For more information

AMWA: Carolyn Peterson, 202-331-2820 or peterson@amwa.net

OWASA: Ed Kerwin, Executive Director, 919-537-4211 or ekerwin@owasa.org

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OWASA | 400 Jones Ferry Road | Carrboro | NC | 27510

Duke Forest Deer Management Program

September 29 - December 19, 2014

The Office of the Duke Forest is preparing for its seventh hunting season through the NC Wildlife Resources Commission Deer Management Assistance Program. Results from the 2014 deer population survey showed a slight decline in total deer spotted when compared to 2013 and continue to be lower than the high recorded in 2010. The Office will continue to monitor this trend but is confident that hunting remains a necessary tool for reducing the negative impacts of overabundant deer on the Forest.

The 2014 season will begin on September 29th and continue through December 19th. 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 27th and 28th in observance of Thanksgiving.

Hunting will again be 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.

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 29, 2014 through December 19, 2014, the following divisions of the Duke Forest will be **closed to all public access** Monday through Friday:

- Durham Division**
- Korstian Division**
- Blackwood Division**

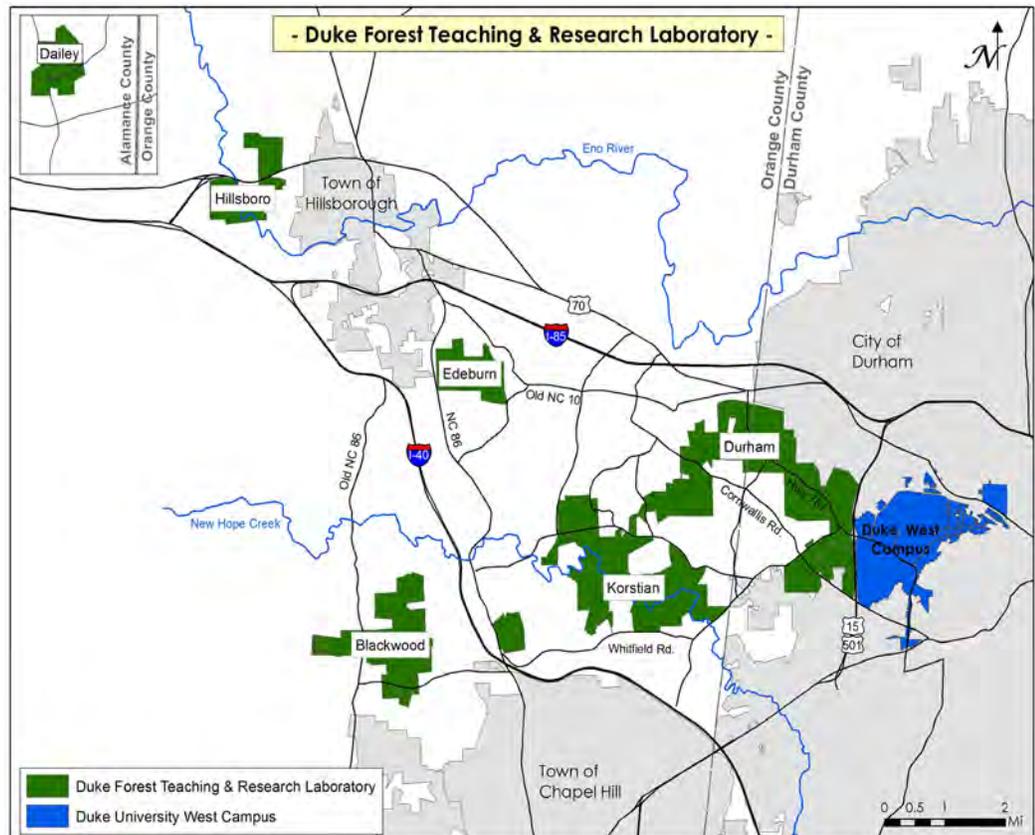
The Edeburn (formerly Eno), Hillsboro, and Dailey Divisions will remain open during this period.

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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2014 Deer Management Program Notice

Duke Forest Closure Quick Reference Calendar

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

September 2014

| Su | M | T | W | Th | F | Sa |
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October 2014

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November 2014

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December 2014

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Hydrilla takeover threatens Falls Lake

Aquatic plant spreading in the Eno, moving downstream

KARA BETTIS
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DURHAM The invasive aquatic plant hydrilla is moving down the Eno River at a rate of 1 mile per year and could begin to hamper boating and other recreational activities in Falls Lake in 12 years, according to researchers at N.C. State University and the N.C. Division of Parks and Recreation.

Hydrilla is a submerged spiny plant that grows in tight mats, becoming a nuisance for boaters, swimmers and recreational fishermen. It often suffocates native veg-

etation and animals such as mussels, snails and fish and can clog intake pipes for drinking water and irrigation.

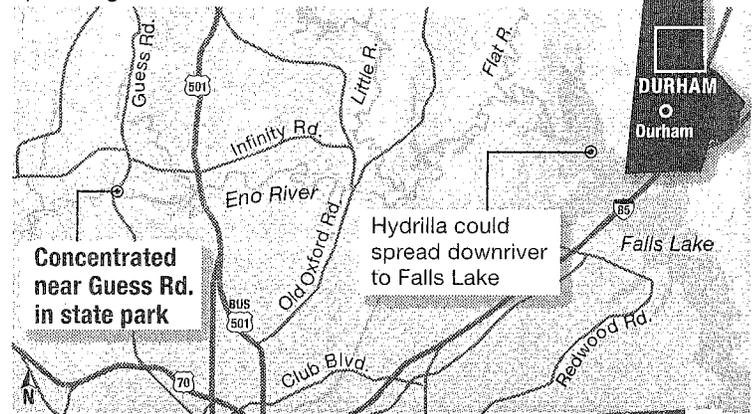
A task force of state and local governments is seeking ways to prevent the spread of hydrilla in the Eno, starting with a public education campaign at Eno River State Park. The plant splits easily, leading to the growth of new plants, which spread as fragments float downstream or are carried by boaters and fishermen.

"The hydrilla density has gotten so bad, it is impacting human use and other organisms" in the Eno, said Rob Richardson, assistant professor of crop science at N.C. State University and an aquatic

SEE HYDRILLA, PAGE 2B

Hydrilla creeping toward Falls Lake

Hydrilla, an invasive aquatic plant, originally appeared in Lake Orange and West Fork Eno Reservoir and is spreading downriver.



weed scientist.

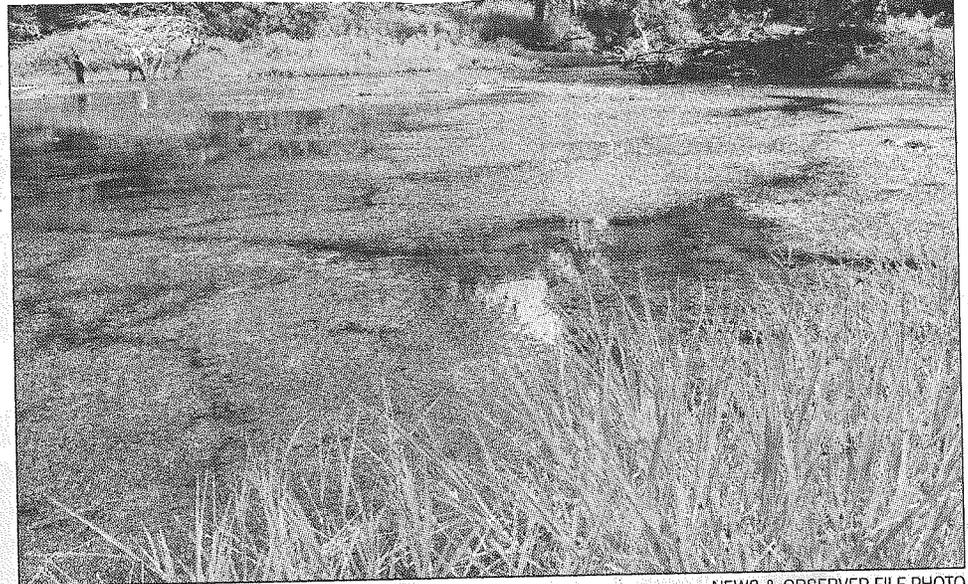
Hydrilla originated in central Africa and Australia and was initially brought to the United States as an aquarium plant. It was first discovered in North Carolina in Wake County's Umstead Park in 1980. The most recent published statewide report on the plant came out in 1992, indicating that 51 new locations of hydrilla had been discovered within nine years, mostly in Wake and surrounding counties.

In the Eno, hydrilla seems to be most concentrated around Guess Road and the eastern end of Eno River State Park. It's thought to have gotten into the river from Lake Orange and West Fork Eno Reservoir upstream.

Hydrilla could potentially block intake sources for drinking water and irrigation. Ed Buchan, environmental coordinator for Raleigh's public utility department, says the city is aware of hydrilla's approach to Falls Lake, the city's main supply of drinking water, but says its intake pipes are 40 feet deep, below where the plant flourishes.

"Our approach is to keep an eye on it," Buchan said. "If it ever gets to a point where it is going to explode in growth, we'll treat it chemically."

Other lakes in Eastern North Carolina, such as Lake



NEWS & OBSERVER FILE PHOTO

Hydrilla chokes part of the Eno River that flows through Durham.

Waccamaw, Lake Gaston and Lake Benson, have also suffered from hydrilla. In Lake Gaston, the cost of hydrilla management has reached up to \$1 million.

Richardson said hydrilla can carry bacteria harmful to birds, but he said most of these cases have been found farther south.

"At the moment, we are not aware of any human diseases caused by it," he said.

Possible solutions

Eno River Hydrilla Management Task Force, which aims to halt the spread of hydrilla, includes officials from Durham and Orange coun-

ties and state and federal agencies. Richardson, a member of the task force, says it will consider each method of control, taking into account environmental concerns and their effectiveness on each site.

Potential treatments include introducing grass carp, a non-reproductive fish that feeds on hydrilla, or using federally approved herbicides.

Hand removal will not work because of the plant's rapid spread, said Rob Emens, manager of the aquatic weed control program with the N.C. Department of Environment and Natural Resources. Emens said Eno River State Park organized a volunteer project to weed out a section of the river in 2011, but a month later, the river was inundated again.

Several research projects in conjunction with NCSU are still underway to determine how hydrilla can be controlled, including tagging and monitoring of grass carp, Richardson said. The biology of hydrilla differs in rivers and reservoirs, and treatments can differ as well.

"It's a fairly complicated situation with a lot of intricacies," Richardson said.

For the public, park officials recommend reporting concentrations of hydrilla, as well as simply cleaning off boots, tackle, equipment and boats before transferring them between bodies of water. Hydrilla can grow from a single fragment and can spread rapidly when hanging from recreational equipment.

Rich Shaw

From: Carla Banks
Sent: Tuesday, November 04, 2014 2:08 PM
To: Carla Banks
Subject: Press Release- ORANGE COUNTY RECEIVES "NC SMART FLEET" AWARD



Media Contact

Jeff Thompson, Director
Asset Management Department
Phone: 919.245.2625
jthompson@orangecountync.gov

FOR IMMEDIATE RELEASE

ORANGE COUNTY RECEIVES "NC SMART FLEET" AWARD

ORANGE COUNTY, NC (November 4, 2014)—Orange County is among 10 Triangle Clean Cities Coalition Stakeholder Fleets to achieve the designation of being an "NC Smart Fleet."

"Orange County is committed to promoting a sustainable vehicle fleet. This recognition honors the outstanding efforts the County's fleet mechanics and fuel managers have made toward this commitment," said Jeff Thompson, director of Orange County Asset Management Services.

Chief Deputy Secretary of the NC Department of Transportation, Nick Tennyson, presented the awards to fleet representatives at the first Southeast Alternative Fuels Conference held in Raleigh.

This award is based on Orange County's impressive efforts to reduce petroleum usage through technology, training and policy adoption, resulting in the County being recognized on the Leader level.

"Our residents can take pride in knowing that Orange County continues to lead by example with the consistent deployment of energy efficient and environmentally friendly fleet practices," added Thompson.

Congratulations to the following award-winners:

Champion Level

Town of Chapel Hill
EPES Transport
BuildSense

Leader Level

City of Fayetteville
Orange County, NC
Piedmont Biofuels
Town of Cary

Supporter Level

National Institute of Environmental Health Sciences
Town of Apex
Town of Knightdale

To learn how to make your fleet an NC Smart Fleet, please contact Lacey Jane Wolfe at lacey@tjcog.org



Pictured from left to right: Orange County Fleet Management staff Jaime Cartagena, William Russell, Mike Brooks, and Alan Dorman

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Regards,