



# Chatham County, NC

## Meeting Agenda - Final

### Board of Commissioners

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Monday, October 16, 2017

6:00 PM

Historic Courthouse Courtroom

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#### Work Session - 2:30 PM - Historic Courthouse Courtroom

#### **PUBLIC INPUT SESSION**

*The Public Input Session is held to give citizens an opportunity to speak on any item. The session is no more than thirty minutes long to allow as many as possible to speak. Speakers are limited to no more than three minutes each and may not give their time to another speaker. Speakers are required to sign up in advance. Individuals who wish to speak but cannot because of time constraints will be carried to the next meeting and given priority. We apologize for the tight time restrictions. They are necessary to ensure that we complete our business. If you have insufficient time to finish your presentation, we welcome your comments in writing.*

#### **BOARD PRIORITIES**

[17-2362](#)

Presentation on Future Economics of Wastewater Handling by Vic D'Amato

**Attachments:** [Chatham Co 10-5-17](#)

[17-2346](#)

Receive presentation by Renita Foxx about the Chatham 360 Program.

**Attachments:** [Chatham 360 Presentation to BOC in Oct 2017 FINAL](#)

[17-2359](#)

A discussion item to consider County-initiated rezonings of businesses in the formerly unzoned portion of Chatham County.

**Attachments:** [GIS Map Snapshot](#)  
[Hyperlink](#)

[17-2347](#)

Vote on a request to appoint members to the Affordable Housing Advisory Committee

**Attachments:** [Affordable Housing Committee Membership](#)

#### **CLOSED SESSION**

[17-2364](#)

Closed Session to discuss matters relating to attorney/client privilege and personnel.

**ADJOURNMENT****End of Work Session****Regular Session - 6:00 PM - Historic Courthouse Courtroom****INVOCATION and PLEDGE OF ALLEGIANCE****CALL TO ORDER****APPROVAL OF AGENDA and CONSENT AGENDA**

*The Board of Commissioners uses a Consent Agenda to act on non-controversial routine items quickly. The Consent Agenda is acted upon by one motion and vote of the Board. Items may be removed from the Consent Agenda and placed on the Regular Agenda at the request of a Board member or citizen. The Consent Agenda contains the following items:*

[17-2345](#)

Vote on a request to approve the September 6, 2017 Special Meeting Minutes and the September 18, 2017 Work and Regular Session Minutes.

**Attachments:** [Draft Minutes 09.06.17](#)

[Draft Minutes 09.18.2017](#)

[17-2281](#)

Vote on a request by Stephen Gangemi to rezone property located at 10295 US 15-501 N, Parcel No. 66505, from R1, Residential to CD-O&I, Conditional District Office & Institutional and convert a single-family residence into general and professional offices for a chiropractic business.

**Attachments:** [More Information from Planning Department Website](#)

[17-2282](#)

Vote on a request by Nathan Glines, owner Harmony Gardens, to rezone a portion of property located at 5661 Beaver Creek Rd, Parcel No. 5727, from R1, Residential to CD-NB, Conditional District Neighborhood Business to develop an events center to hold weddings and other such gatherings.

**Attachments:** [More Information from Planning Department Website](#)

[17-2354](#)

Vote on a request by F-L Legacy Owner, LLC for subdivision Final Plat approval of **The Legacy Phase 5A2**, consisting of 22 lots on 10.29 acres, located off SR-1716, Big Woods Road and Legacy Falls Drive South, parcel #17378.

**Attachments:** [More Information from Planning Department Website](#)

- [17-2353](#) Vote on a request by Michael Poe for a twenty-four (24) month extension of preliminary plat to extend the current preliminary plat expiration date for Cattail Creek Subdivision from November 15, 2017 to November 15, 2019, consisting of 21 remaining lots, located off White Smith Road, S. R. 1506, Hadley Township, parcel #60065

**Attachments:** [More Information from Planning Department Website](#)

- [17-2293](#) Vote on a request to adopt revisions to the Chatham County Flood Damage Prevention Ordinance.

**Attachments:** [Chatham County Flood Damage Prevention Ordinance \(REDLINE\)-BB \(000000](#)

[More Information from the Planning Department Website](#)

[FEMA Letter regarding adoption deadline](#)

[Chatham County Flood Damage Prevention Ordinance \(REDLINE\)-Final Draft-1](#)

- [17-2343](#) Vote on a request to approve the re-appointment of Joseph McEvoy to the Alcohol Beverage Control Board

- [17-2365](#) Vote on a request to approve appointment of Matthew Stark to the Triangle South Workforce Development Board

- [17-2344](#) Vote on a request to approve the naming of one private road in Chatham County

**Attachments:** [Dairymont Drive Petition](#)

[Dairymont Drive](#)

- [17-2348](#) Vote on a request to approve to award a service weapon to retiring Corporal Ed Fawcett.

- [17-2356](#) Vote on a request to approve Tax Releases and Refunds

**Attachments:** [September 2017 Release and Refund Report](#)

[September 2017 NCVTS Pending Refund Report](#)

- [17-2360](#) Vote on a request to approve sending a letter of support of Siler City's efforts to obtain a Brownfields Grant from the US Environmental Protection Agency

**Attachments:** [Letter of Support for Siler City](#)

### **End of Consent Agenda**

### **SPECIAL PRESENTATION**

- [17-2357](#) Vote on a request to adopt Resolution Proclaiming November as Family Caregivers Month in Chatham County

**Attachments:** [caregivermonth proclamation 2017](#)

- [17-2342](#) Vote on a request to adopt a Resolution proclaiming November 18, 2017 as National Adoption Day in Chatham County

**Attachments:** [National Adoption Day Resolution](#)

- [17-2358](#) Presentation: State of the County Report for FY 2016-17

## **PUBLIC INPUT SESSION**

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## **PUBLIC HEARINGS**

- [17-2340](#) Public Hearing to receive public comment on the Sale of Malt Beverages, Unfortified Wine, Fortified Wine, and Mixed Beverages in Unincorporated Chatham County Beginning at 10:00 a.m. on Sundays and Vote on a request to approve Ordinance allowing such sales.

**Attachments:** [Ordinance allowing Sale of Alcoholic Beverages](#)

[Tourism Advisory Committee letter supporting SB 155](#)

[EDC Support of SB 155](#)

[NCGS 18B 1001 Kinds of ABC Permits; places eligible](#)

- [17-2355](#) A Legislative public hearing request by Russ Anderson for a general use rezoning on Parcel 92203 located at 414 New Elam Church Road, from R-1 Residential to IL Industrial Light on approximately 10 acres, Cape Fear Township.

**Attachments:** [More Information from Planning Department Website](#)

## **BOARD PRIORITIES**

- [17-2368](#) Vote on a request to approve adding general planning to the Chatham County Recreation Grants to Towns Funding Policy.

**Attachments:** [Recreation grants to Towns Funding Policy update 2017](#)



[17-2283](#)

Presentation of the Natural Gas Development Impacts Study in Chatham County by Charles Yuill.

**Attachments:** [Hydraulic Fracturing Assessment Report](#)

[Oct 2017 Presentation Chatham County North Carolina Hydraulic Fracturing Ba](#)

[June 2017 Presentation chatham ppdraft613](#)

[17-2341](#)

Vote on a request to adopt a Resolution Setting the Time and Place for Meetings of the Chatham County Board of Commissioners for Calendar Year 2018.

**Attachments:** [2018 BOC Meeting Calendar Resolution 9.28](#)

## **MANAGER' S REPORTS**

## **COMMISSIONERS' REPORTS**

## **ADJOURNMENT**



# Chatham County, NC

## Text File

File Number: 17-2362

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Work Session

**In Control:** Board of Commissioners

**File Type:** Agenda Item

Presentation on Future Economics of Wastewater Handling by Vic D'Amato



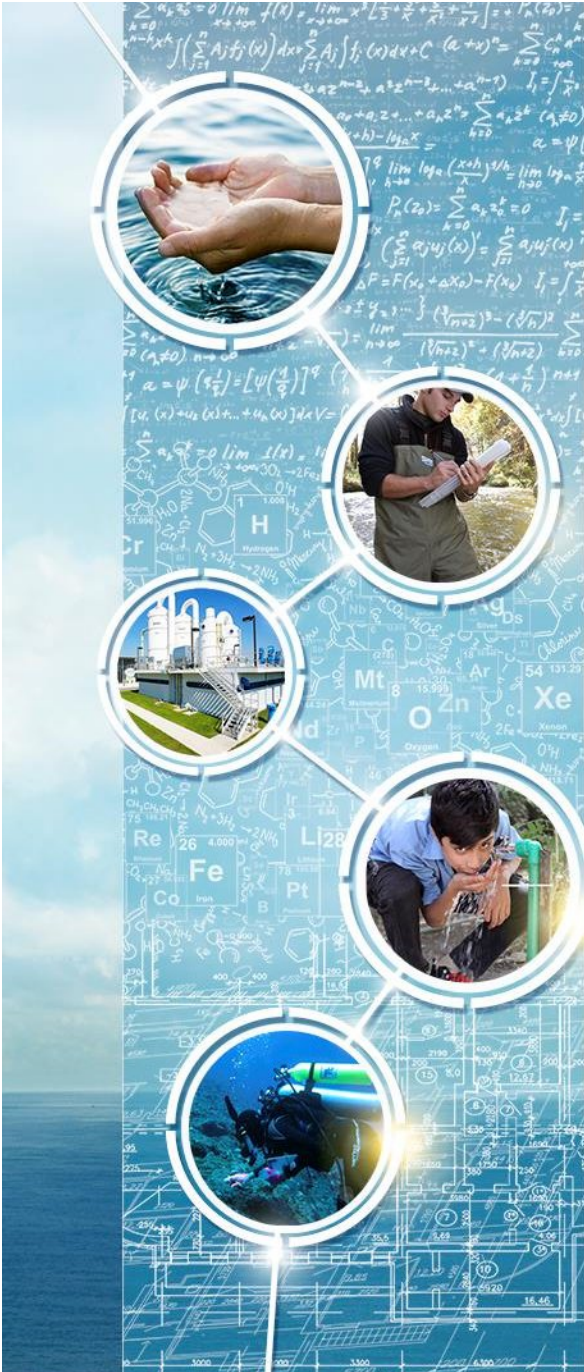
TETRA TECH

# Wastewater Management Options

October 16, 2017

Chatham County, NC

Victor D'Amato, PE



# Background

- First presentation to Chatham County BOC:  
November, 2001!
  - Individual and Community Wastewater System Options
- Chatham County wastewater management
  - Most development on individual onsite systems (well/septic) or cluster systems (package plants)
  - Bynum WWTP (owned/operated by Chatham Co.)
  - Chatham County Schools
  - Pittsboro and Siler City WWTPs
  - Comprehensive Plan and UDO effort provides opportunity to be more proactive



# Subsurface Systems

- Wastewater systems with Subsurface Dispersal are permitted by Chatham County Environmental Health
  - Septic systems and larger systems with a “drainfield”
  - Systems >3,000 gpd must be approved by NC DHHS first



# Surface (Land Application) Systems

- Wastewater systems with Surface Dispersal are permitted by NC DEQ, DWR, Non-Discharge Permitting Unit
  - Spray irrigation and surface drip irrigation systems





# Discharging Systems

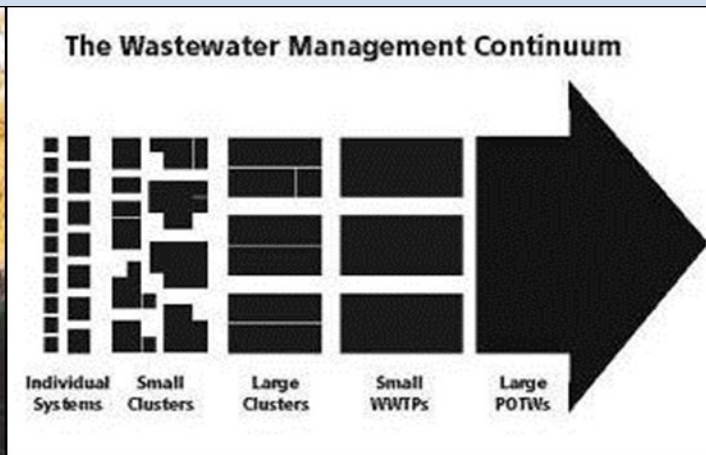
- Wastewater systems with Surface Water Discharge are permitted by NC DEQ, DWR, NPDES Permitting Branch





# Distributed Wastewater Management

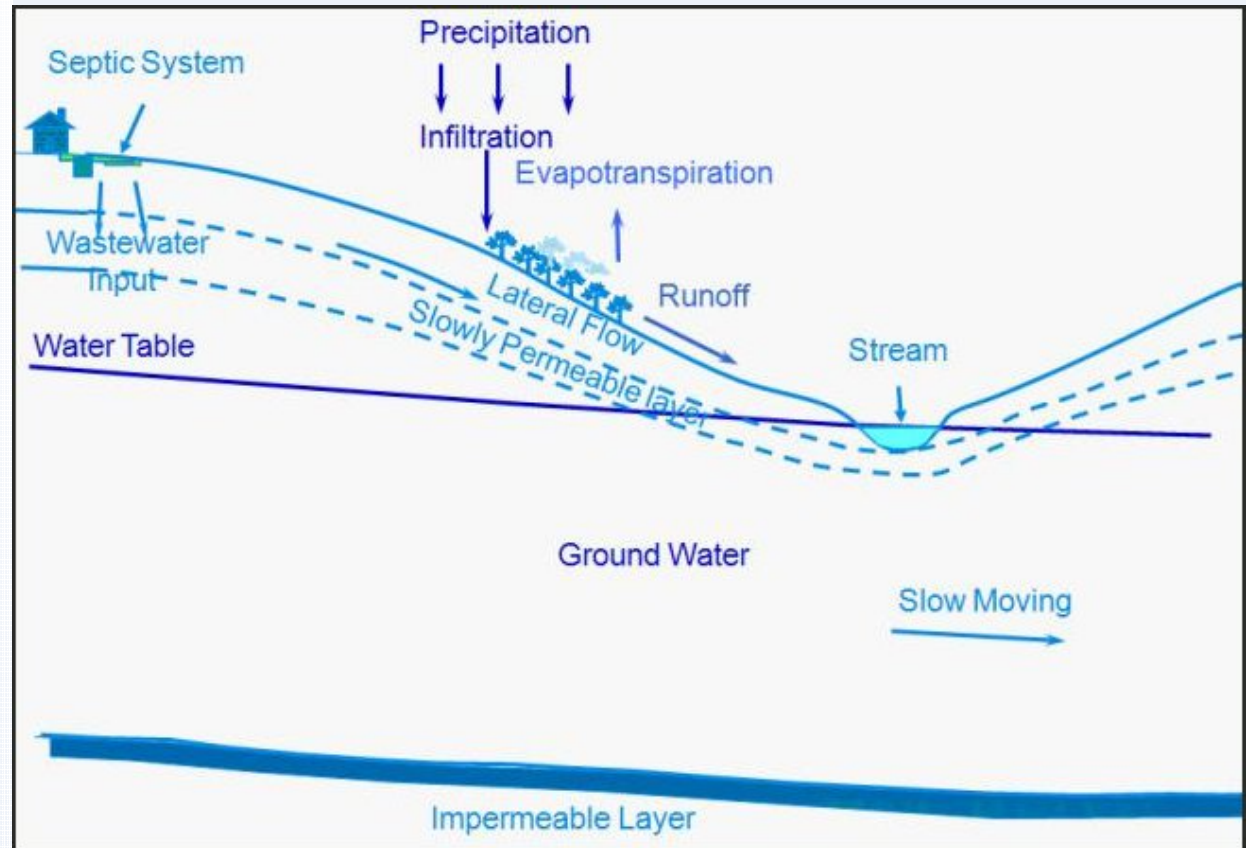
- Decentralized systems: multiple smaller systems
  - Onsite
  - Cluster
- Centralized systems: one large system for a given area
- Distributed management: all of the above
  - Recognizes the importance of scale in managing water
    - Small systems can be as or more effective than large ones
  - Recognizes that ALL systems need to be managed



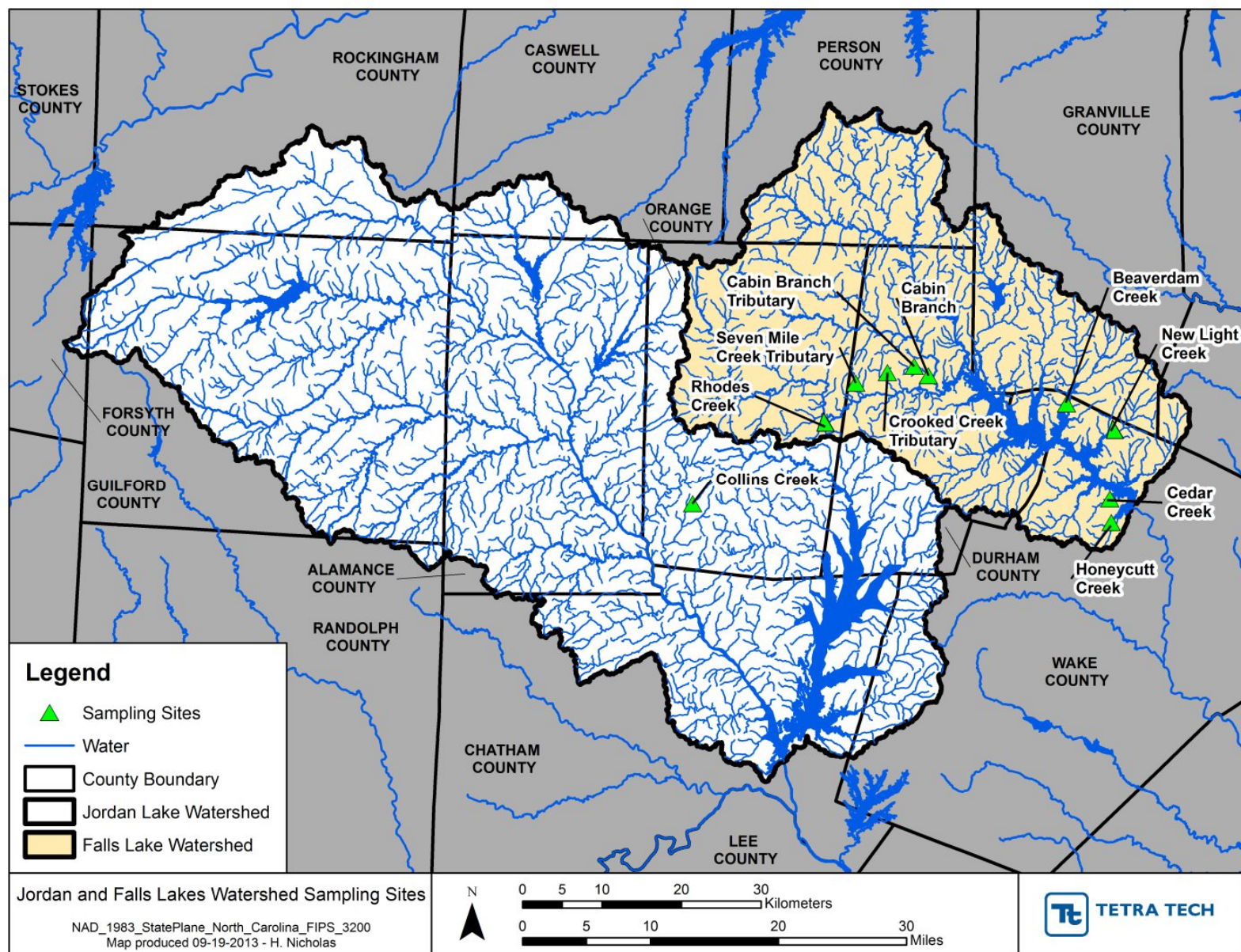


# Benefits: Effective

- Decentralized technologies are robust
- Multiple soil dispersal areas enhance assimilation
- Conserves water/restores local hydrology through groundwater recharge
- Soil is an effective treatment medium



# Jordan and Falls Lake Watershed Water Quality Monitoring Locations



# NC Piedmont Onsite System Performance

Basin	Stream Order*	Septic-Generated Nutrients		Measured Load in Stream		Percent Septic Load Delivered to Stream	
		TN (lb/d/mi <sup>2</sup> )	TP (lb/d/mi <sup>2</sup> )	TN (lb/d/mi <sup>2</sup> )	TP (lb/d/mi <sup>2</sup> )	TN (%)	TP (%)
Rhodes Creek	unk.	-	-	0.57	0.012	-	-
Seven-Mile Creek	4 <sup>th</sup>	30.4	3.9	0.139	0.0068	0.46	0.18
Cabin Branch	8 <sup>th</sup>	30.2	3.86	0.57	0.0178	1.89	0.46
Crooked Creek	2 <sup>nd</sup>	27.0	3.45	1.53	0.0286	5.67	0.83
Beaverdam Creek	unk.	3.83	0.42	0.20	0.024	5.1	5.7
New Light Creek	unk.	4.68	0.60	0.37	0.033	8.0	5.4
Honeycut Creek	unk.	15.5	1.99	0.33	0.025	2.2	1.3
Cedar Creek	unk.	29.7	3.81	0.66	0.039	2.2	1.0
AVERAGE		20.2	2.6	0.55	0.023	3.6	2.1

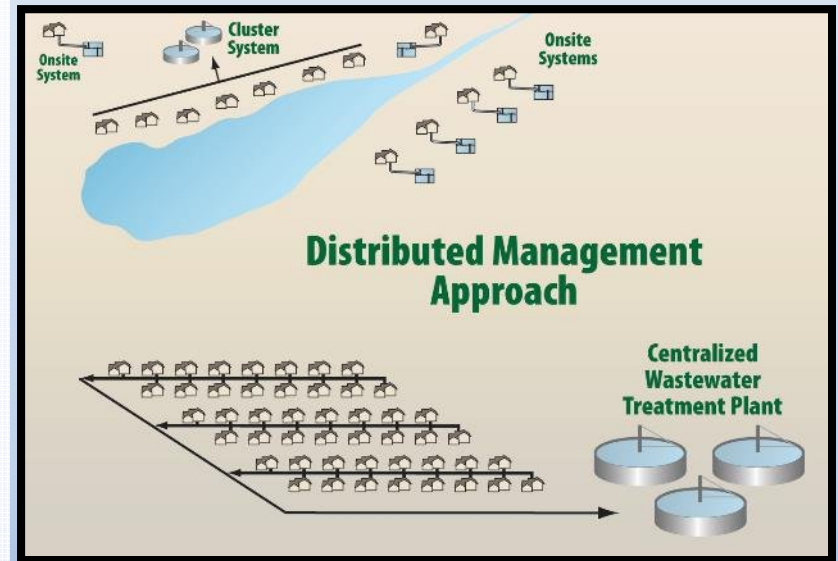
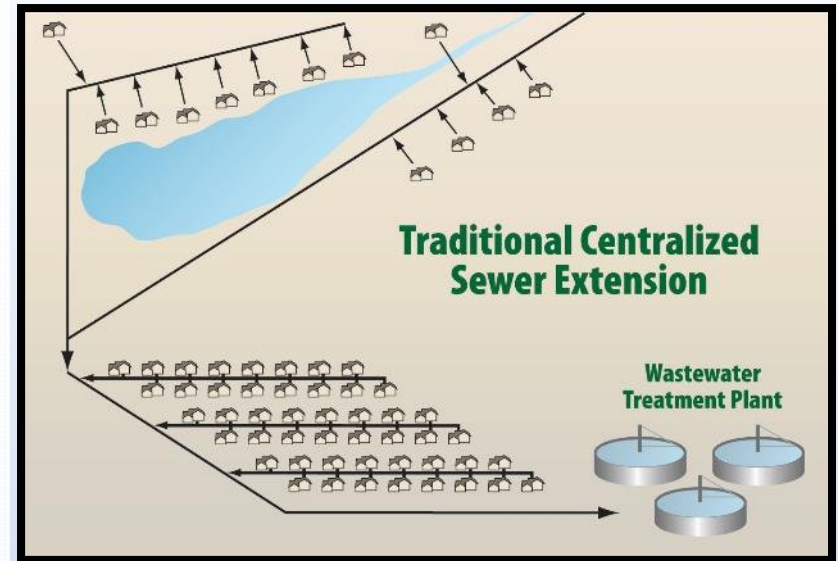
- Equivalent "effluent" concentrations: 2.0 mg/l TN, 0.2 mg/l TP
- **Equivalent reductions: 96% TN, 98% TP**
- Corroborated by more recent USGS and ECU data and ChesBay Program work

Data from:  
 NCDENR 2010  
 Berkowitz 2014



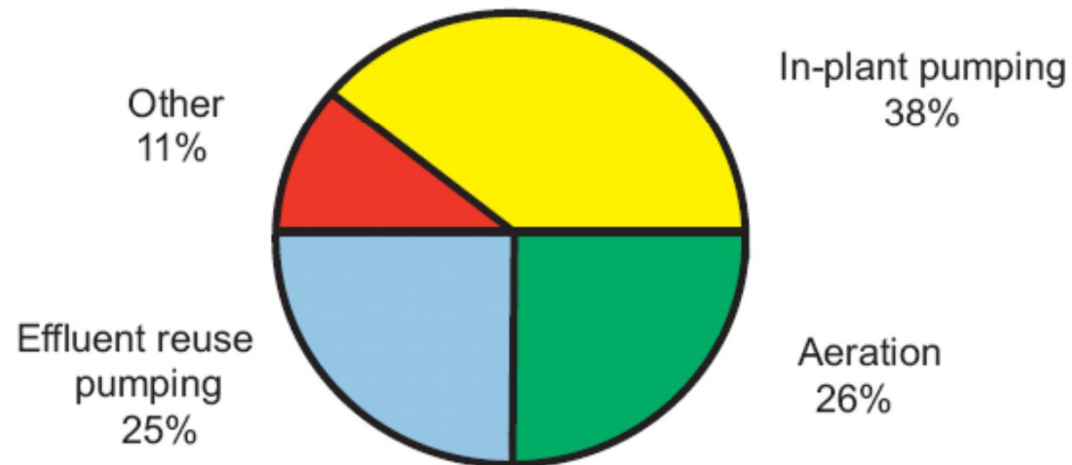
# Benefits: Efficient

- Treatment close to the source and/or reuse requires less energy
- Urban reuse retrofits are more feasible
- Smart, clean and green technology
  - Smart controls: Remote monitoring of multiple systems
  - Resource recovery within facilities
  - Fit-for-Purpose: match water quality to intended reuse
  - Multifunctional: Landscape/facility integration
  - Resilient: Relatively infiltration-resistant; passive ecological treatment



# Wastewater Utility Energy Use

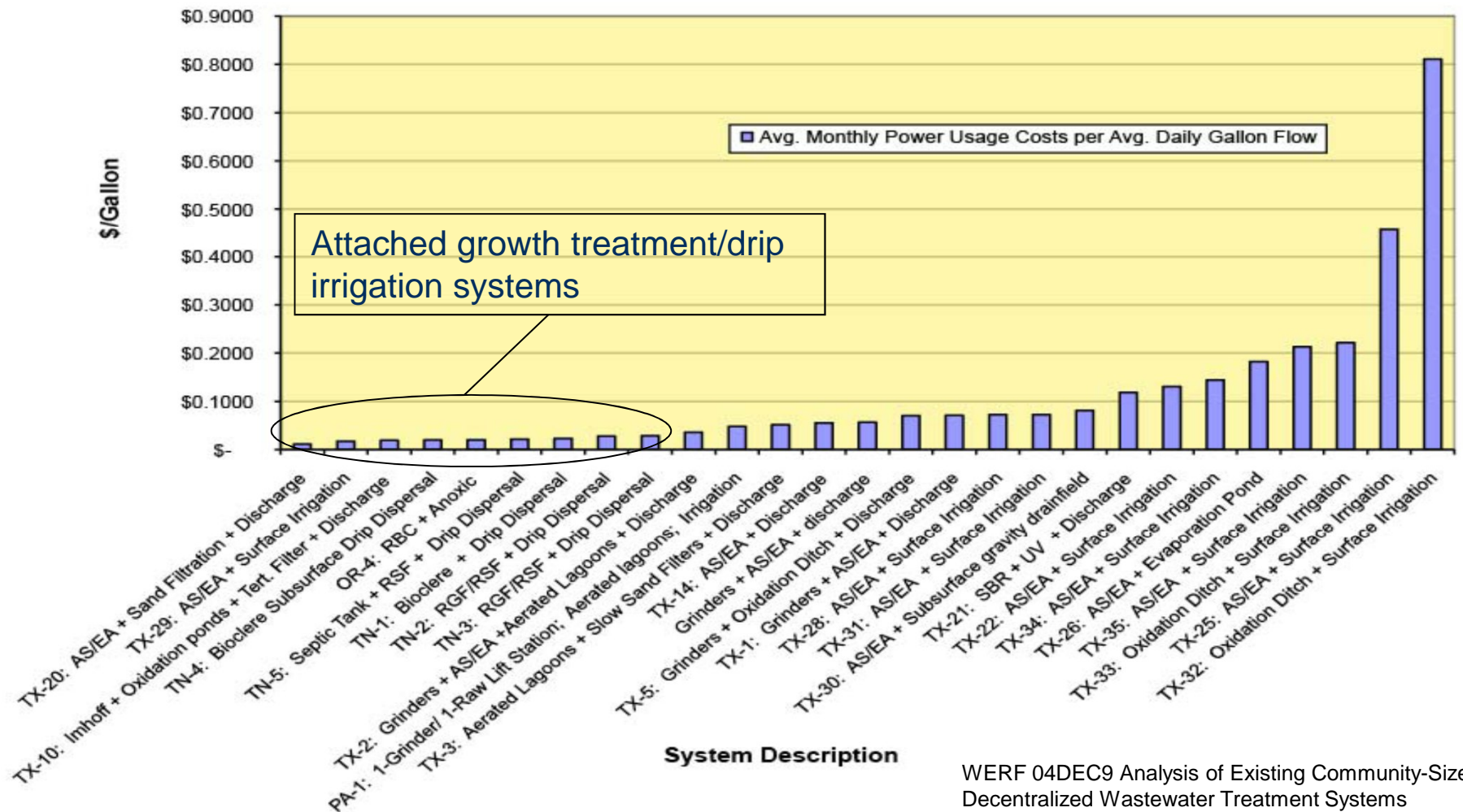
**National Association of Clean Water Agencies (NACWA)  
Survey of Energy Use**  
47 Respondents used 2.1 billion kWh of electricity



T. Jones, "Water-Wastewater Committee: Program Opportunities in the Municipal Sector: Priorities for 2006," presentation to CEE June Program Meeting, June 14, 2006, Boston, MA. Available online at [http://www.cee1.org/cee/mtg/6-06\\_ppt/jones.pdf](http://www.cee1.org/cee/mtg/6-06_ppt/jones.pdf).

# Power Demands of Decentralized Systems

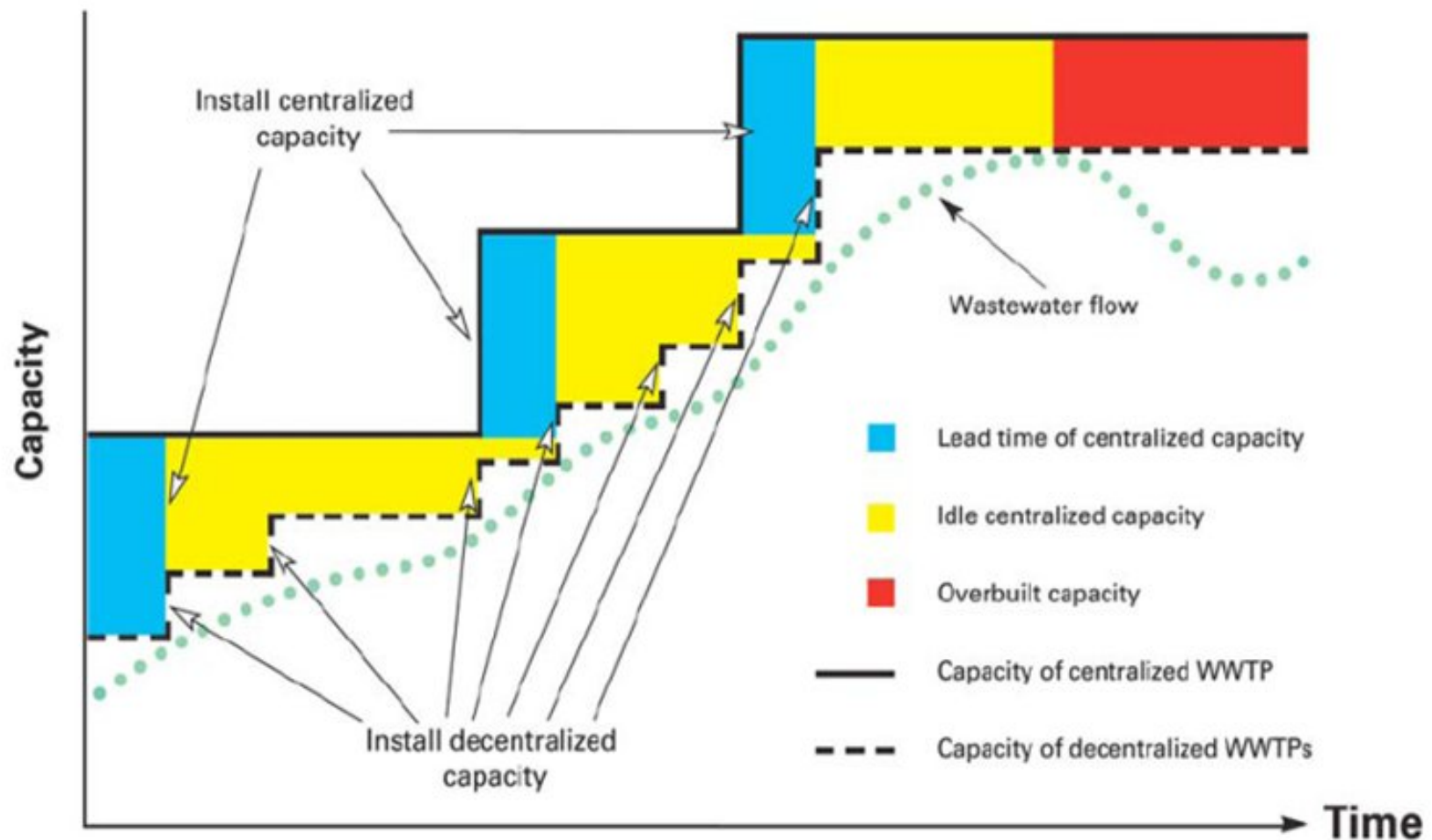
FIGURE 3  
Average Monthly Reported Power Usage Costs Per Gallon of Reported Average Daily Flow.



WERF 04DEC9 Analysis of Existing Community-Sized  
Decentralized Wastewater Treatment Systems  
Decentralized Systems

# Benefits: Affordable

“Pay as You Grow” or “Right-Sized, Just-in-Time”





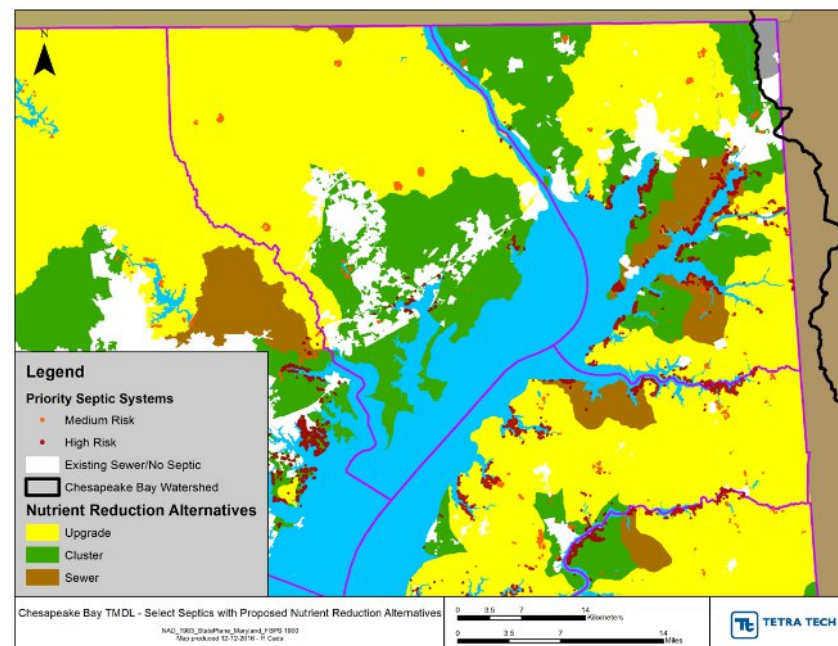
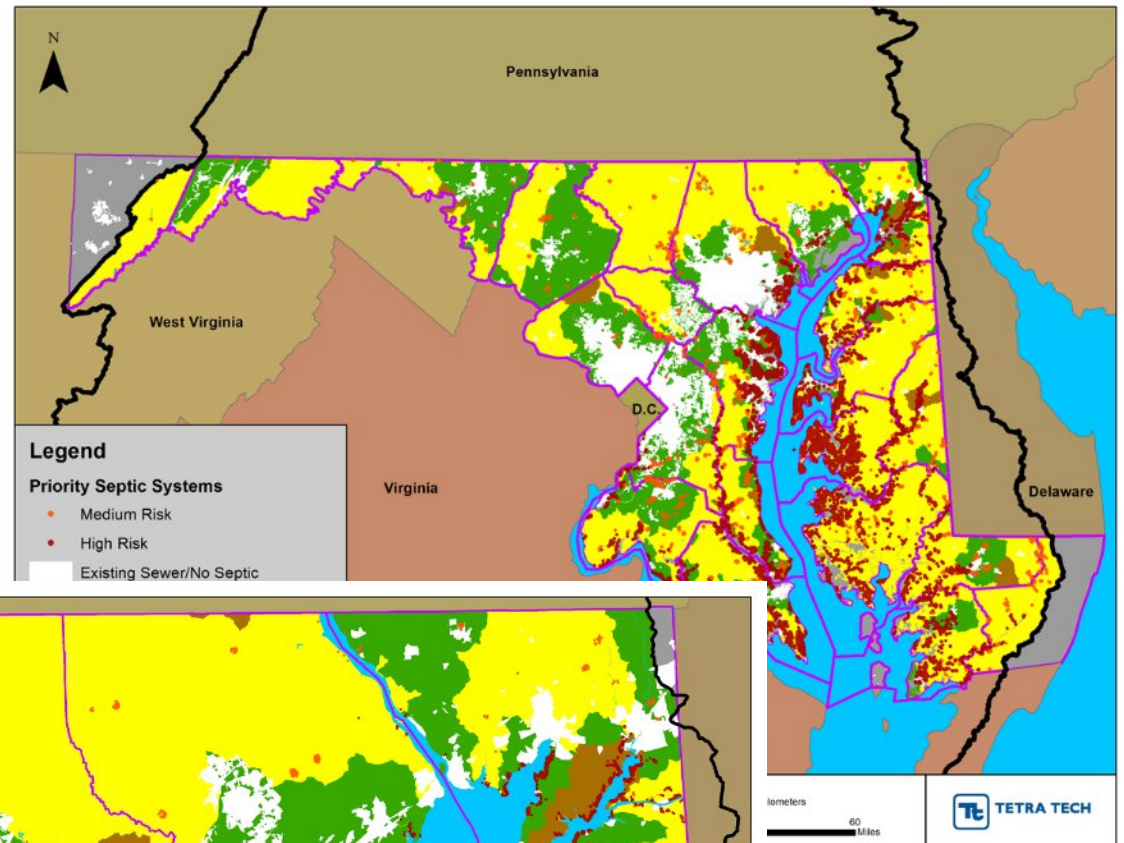
# Treatment Technologies





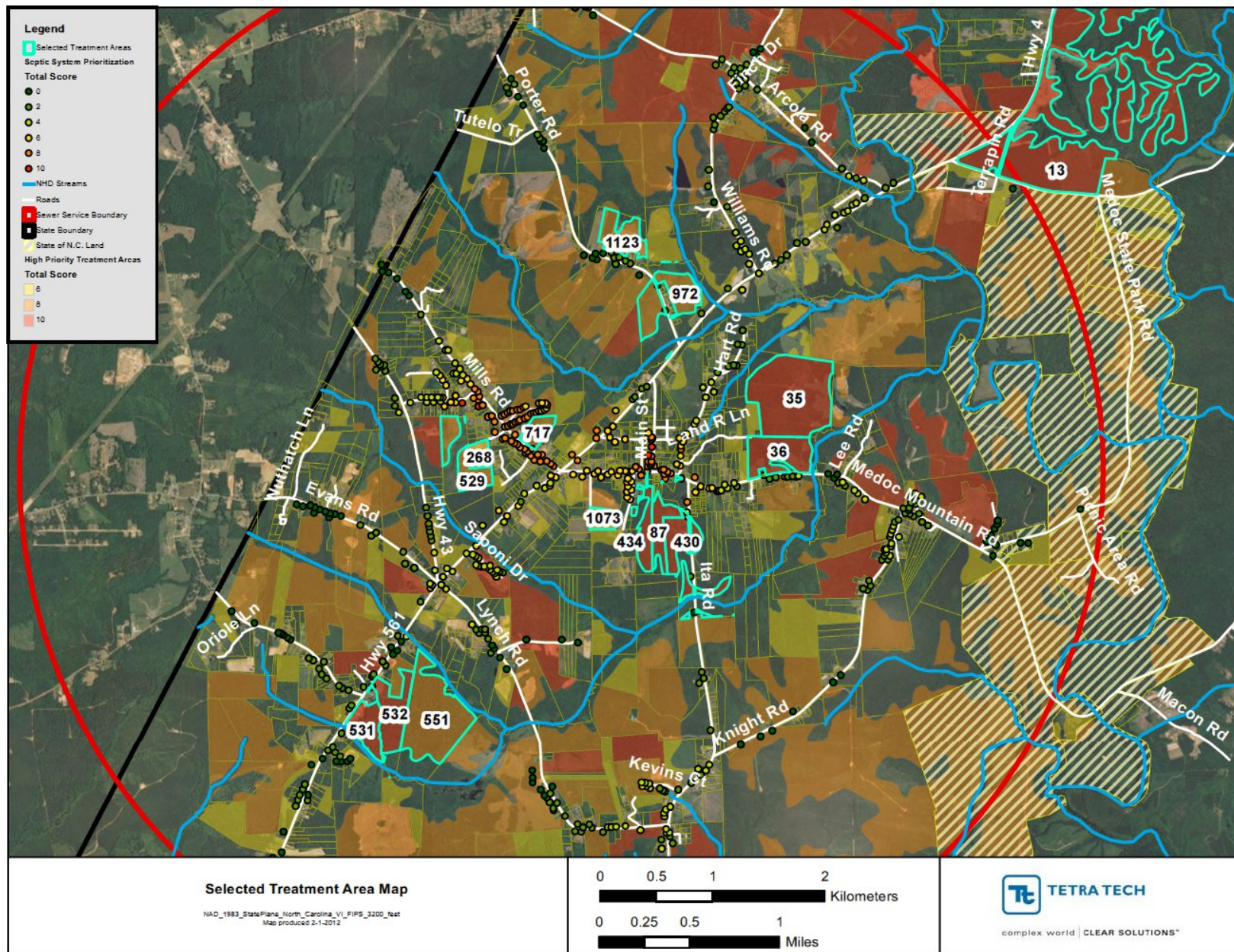
# Maryland Plan for Chesapeake Bay TMDL

- Statewide plan for reducing nutrients from existing decentralized systems
  - Loading analysis
  - Reduction analysis
- Tied into State smart growth objectives
  - Onsite upgrades
  - Clustering
  - Sewering





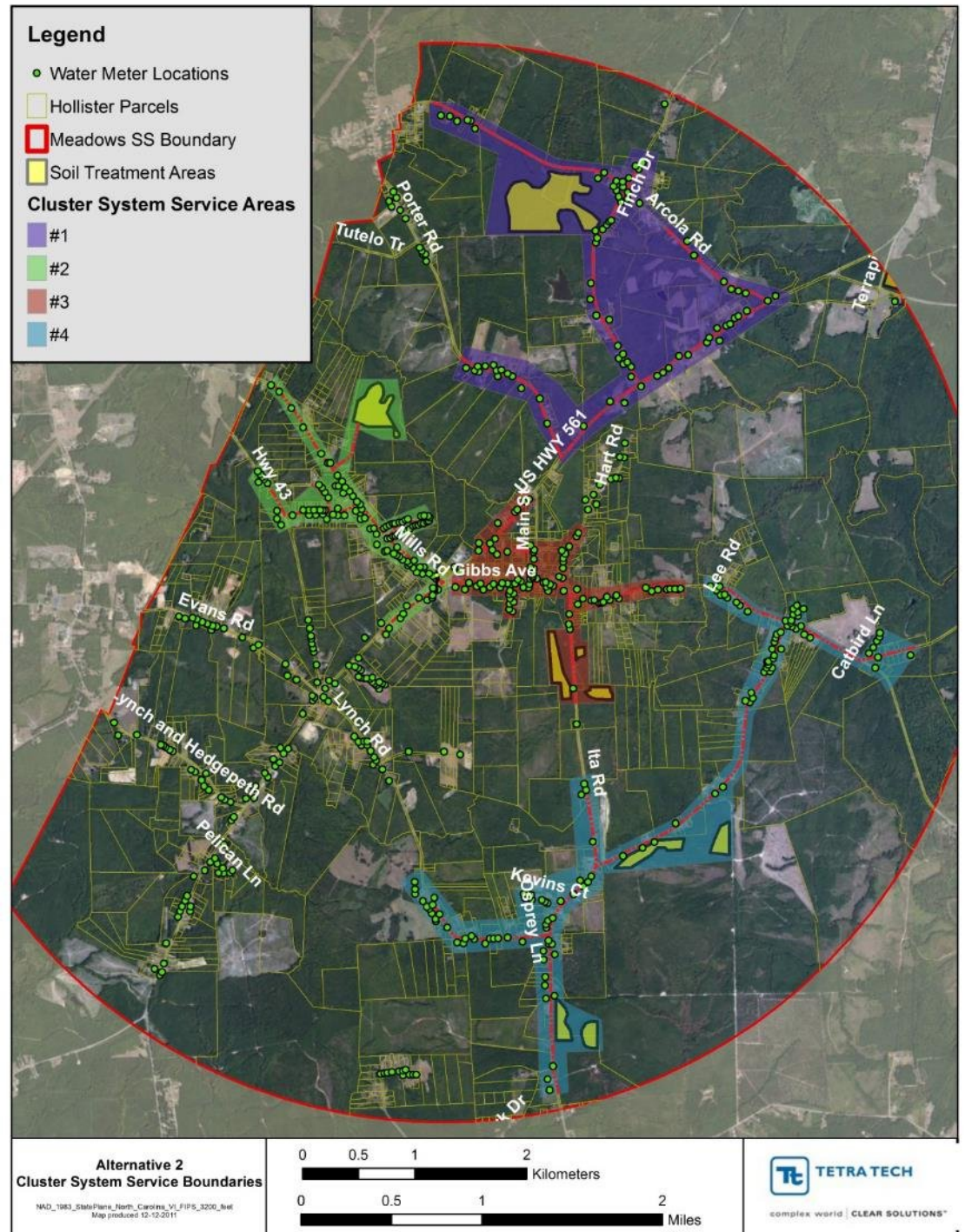
# Planning: Meadows Sewer District





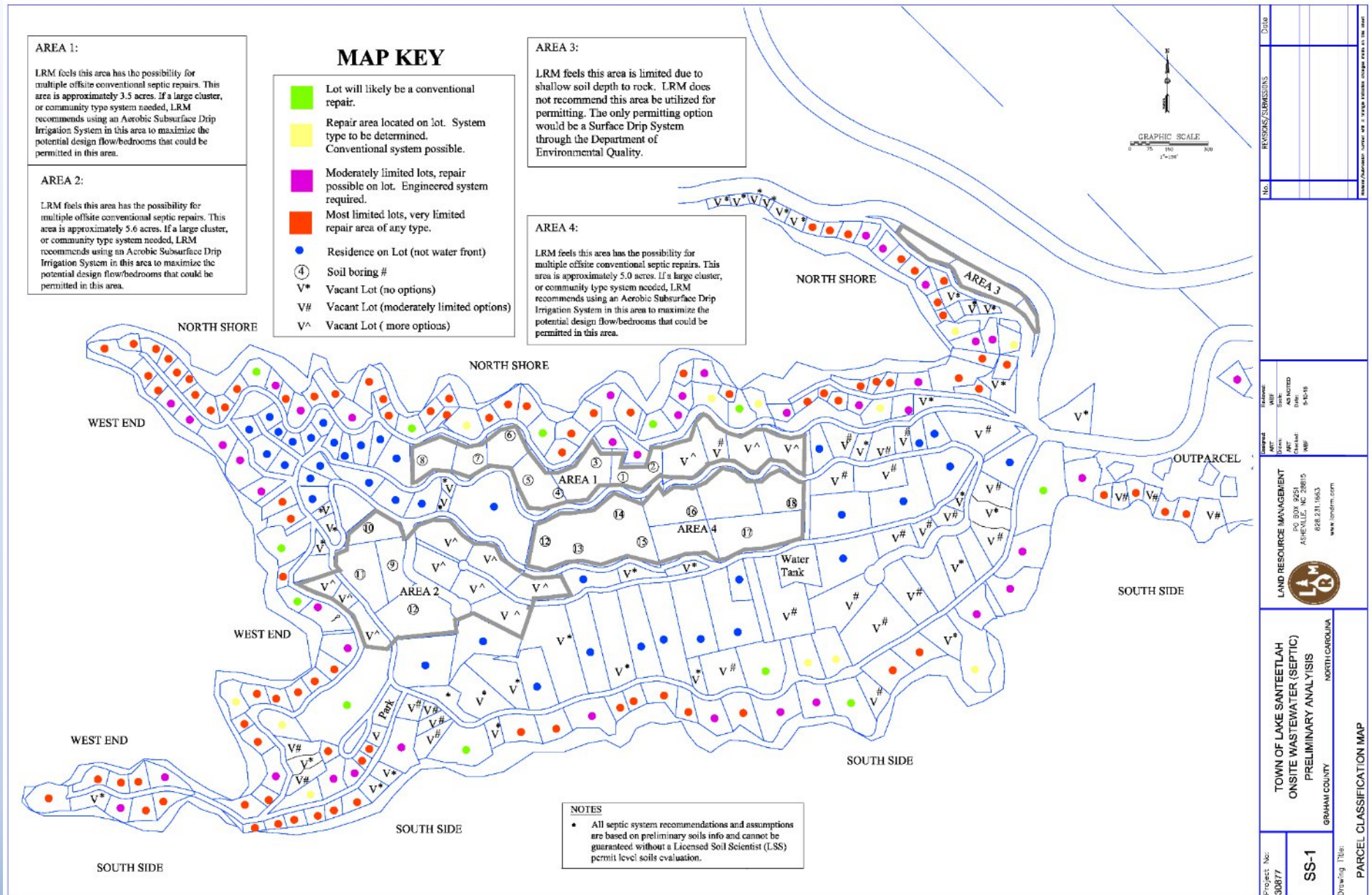
# Meadows Sewer District: Multiple Cluster Option

- Cost effective
  - Sewer connection...  
\$22K/home
  - Single cluster...  
\$12.8K/home
  - Multi-cluster...  
\$8.8K/home
  - Smaller clusters...?



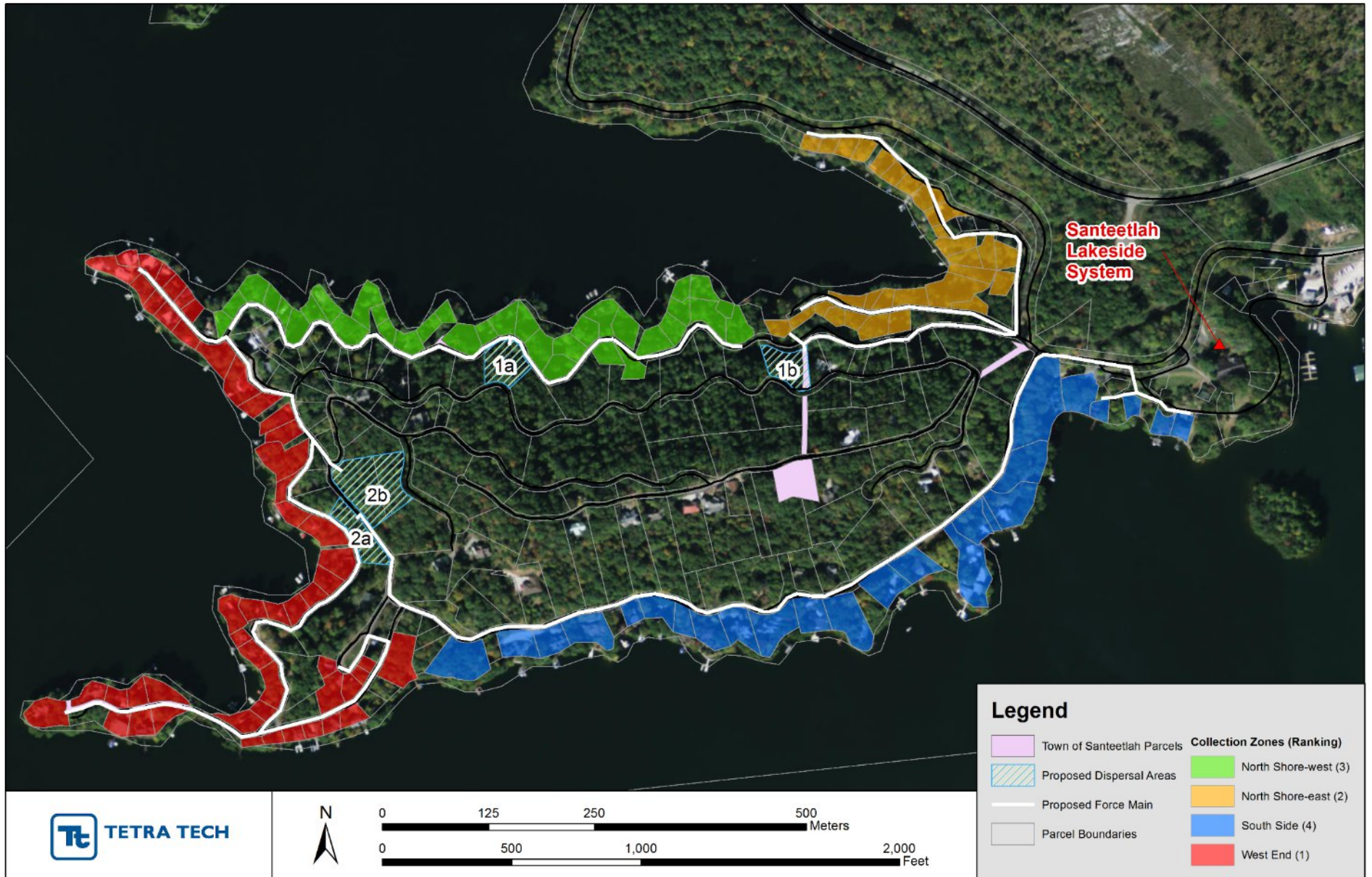


# Planning: Town of Lake Santeetlah





# Lake Santeetlah - Potential Cluster System Plan



# Distributed System Applications

- Green Buildings/Sustainable Sites
  - Integration into buildings/landscapes
  - Resource recovery and reuse
  - Education and recreation
- Independent Communities
  - Maintain fiscal control
  - Preserve community character
  - Underserved communities
- Utility Optimization
  - Managed distributed systems
  - Sewer mining
  - Satellite reuse
- [www.werf.org/distributedwater](http://www.werf.org/distributedwater)
  - Includes decision-support tool

Case Studies Listed by Type	
<b>Green Building/Sustainable Sites (GB)</b>	
<a href="#">Battery Park City, New York City (UO)</a>	
<a href="#">Couran Cove Island Resort, Queensland, Australia (IC)</a>	
<a href="#">Currumbin Ecovillage, Queensland, Australia (IC)</a>	
<a href="#">Dockside Green, Victoria, British Columbia, Canada (UO)</a>	
<a href="#">Philip Merrill Center, Annapolis, Maryland</a>	
<a href="#">Sidwell Friends School, Washington, D.C.</a>	
<a href="#">Workplace6 Recycled Water Factory, Sydney, Australia (UO)</a>	
<b>Independent Communities (IC)</b>	
<a href="#">Bethel Heights, Arkansas</a>	
<a href="#">Gillette Stadium, Foxborough, Massachusetts (GB)</a>	
<a href="#">Lake Elmo, Minnesota</a>	
<a href="#">Piperton, Tennessee</a>	
<a href="#">Warren, Vermont</a>	
<a href="#">Weston Solar Aquatics, Weston, Massachusetts (GB)</a>	
<a href="#">Wickford Village, Rhode Island</a>	
<b>Utility Optimization (UO)</b>	
<a href="#">LOTT Alliance, Lacey, Olympia, and Tumwater, Washington</a>	
<a href="#">Loudoun Water, Loudoun County, Virginia (IC)</a>	
<a href="#">Mobile Area Water and Sewer System, Mobile, Alabama</a>	
<a href="#">Pennant Hills Golf Club, Sydney, Australia</a>	
<a href="#">Sand Creek, Aurora, Colorado</a>	
<a href="#">University of North Carolina at Chapel Hill, North Carolina (GB)</a>	



# Distributed System Applications



- **MAWSS, Mobile Alabama**
  - Owns and operates two conventional and at least 12 decentralized wastewater facilities
- **Sydney Water**
  - Privately-driven sewer mining project
  - Treated water is used to irrigate 55 acres of greens, tees and fairways
- **Bethel Heights, Arkansas**
  - Rapidly-growing population on septic systems
  - City selected two cluster systems phased-in to meet increasing demand with growth
- **Dockside Green, Victoria, B.C.**
  - On-site, closed-loop treatment provides fit-for-purpose, reclaimed water supply
    - Toilet flushing, landscape irrigation, green roof watering, and natural stream/pond

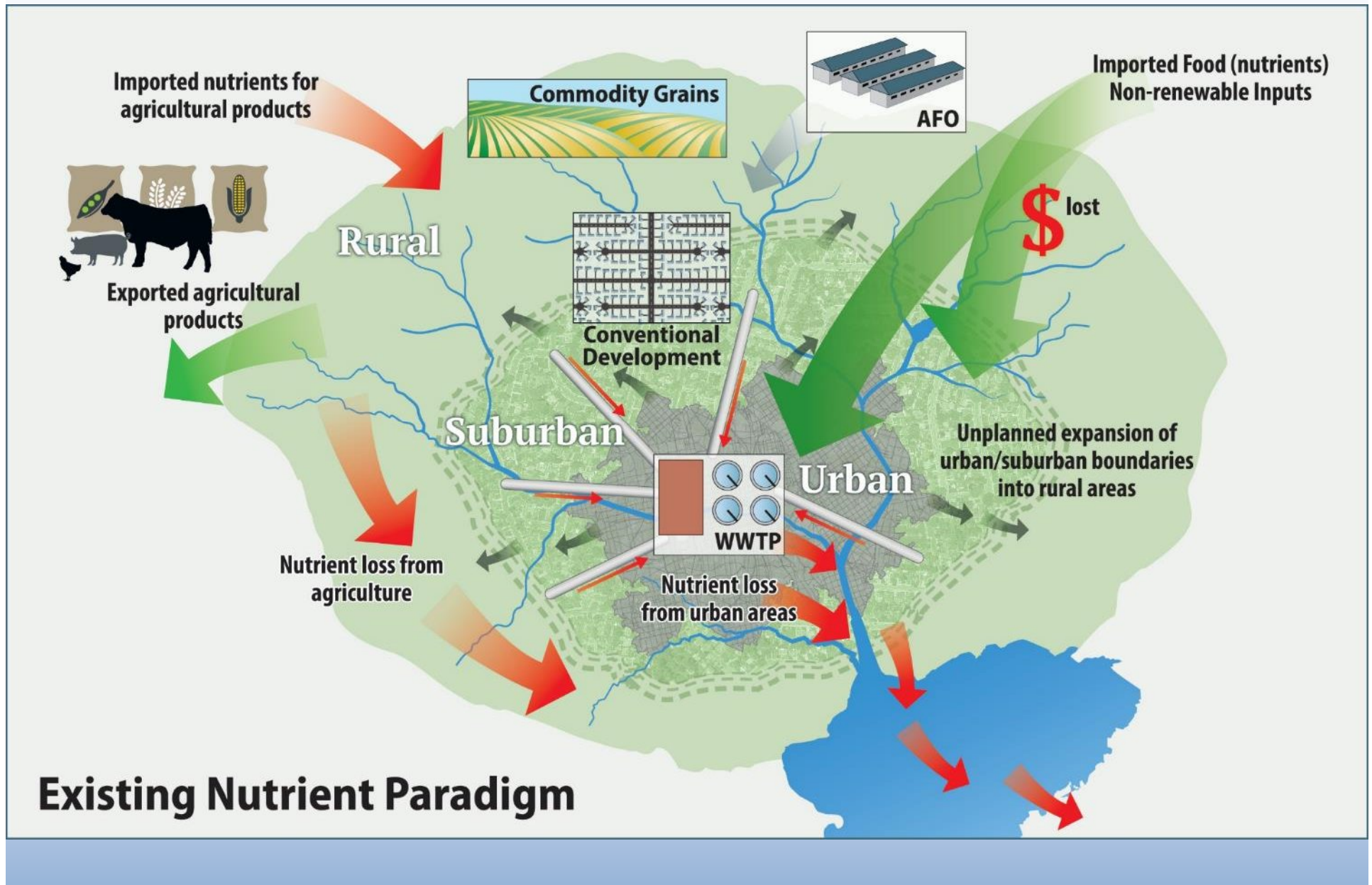
# Resources in Wastewater

- Clean water
  - Landscape/agriculture irrigation
  - Flushing toilets
- Nutrients: nitrogen and phosphorus primarily
  - Fertilizer for landscape/agriculture
- Carbon/energy
  - Biogas for direct burning or electricity generation
  - Compost for soil amendment

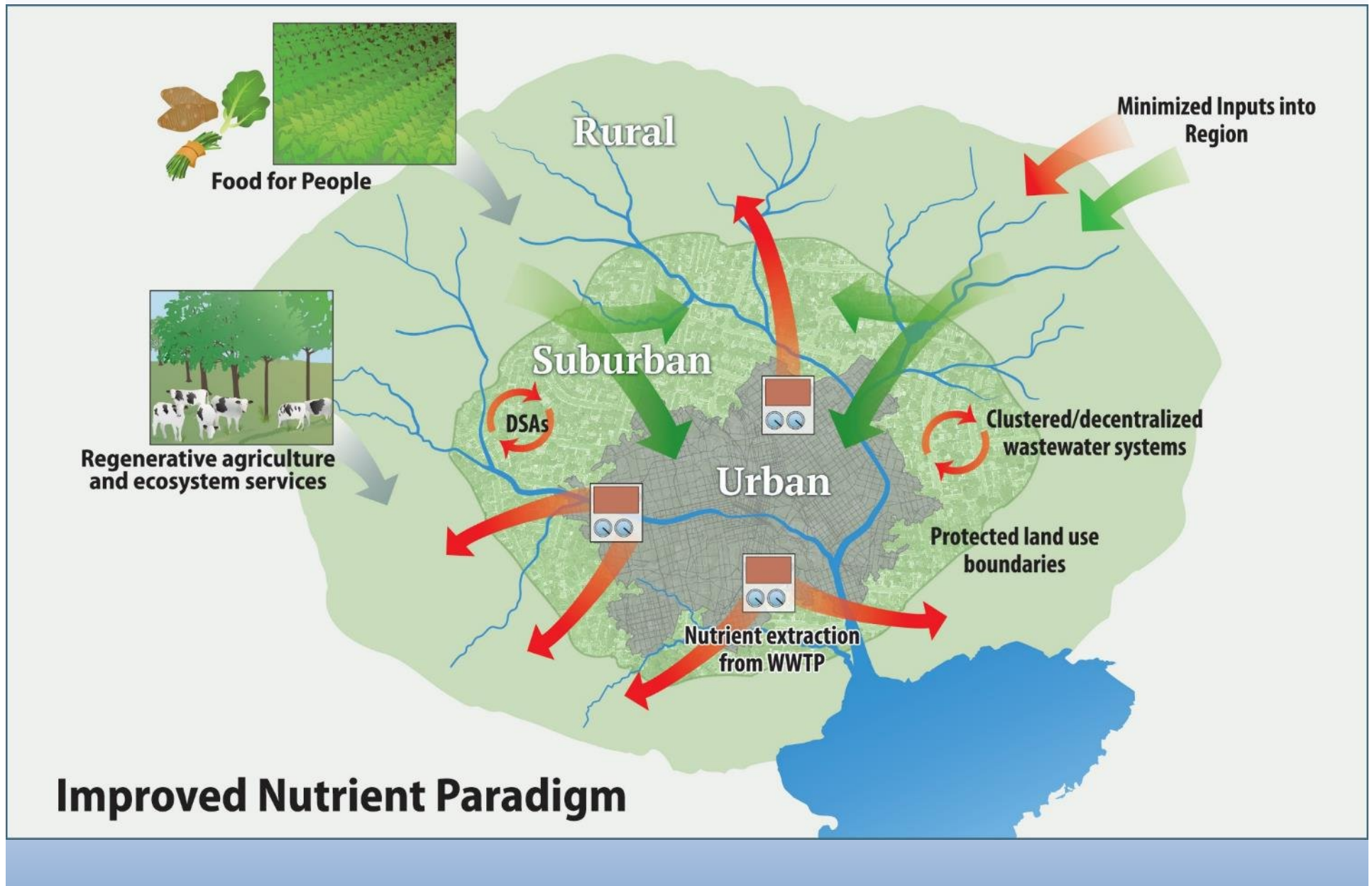




# An Unsustainable Model

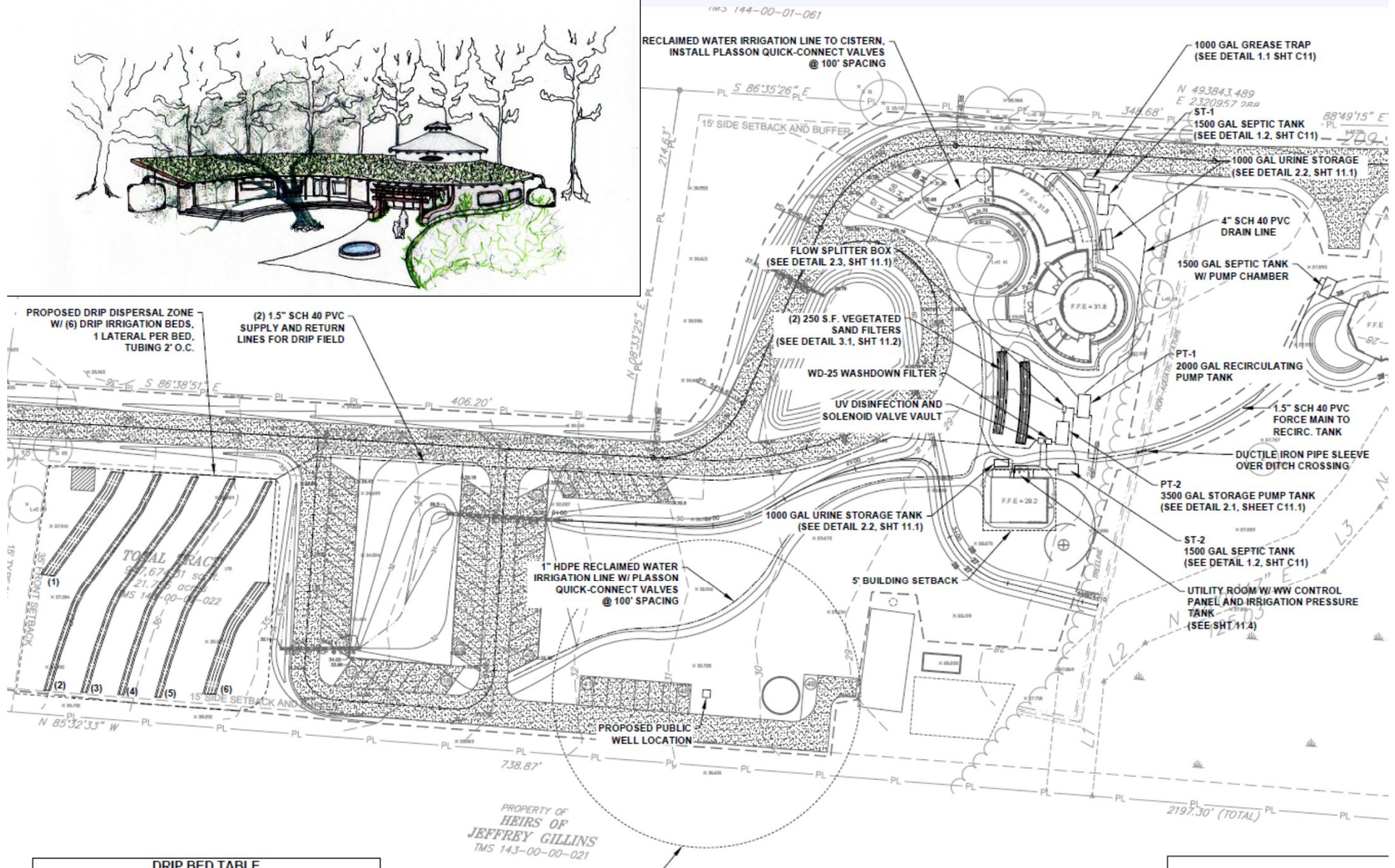


# A Resilient Model



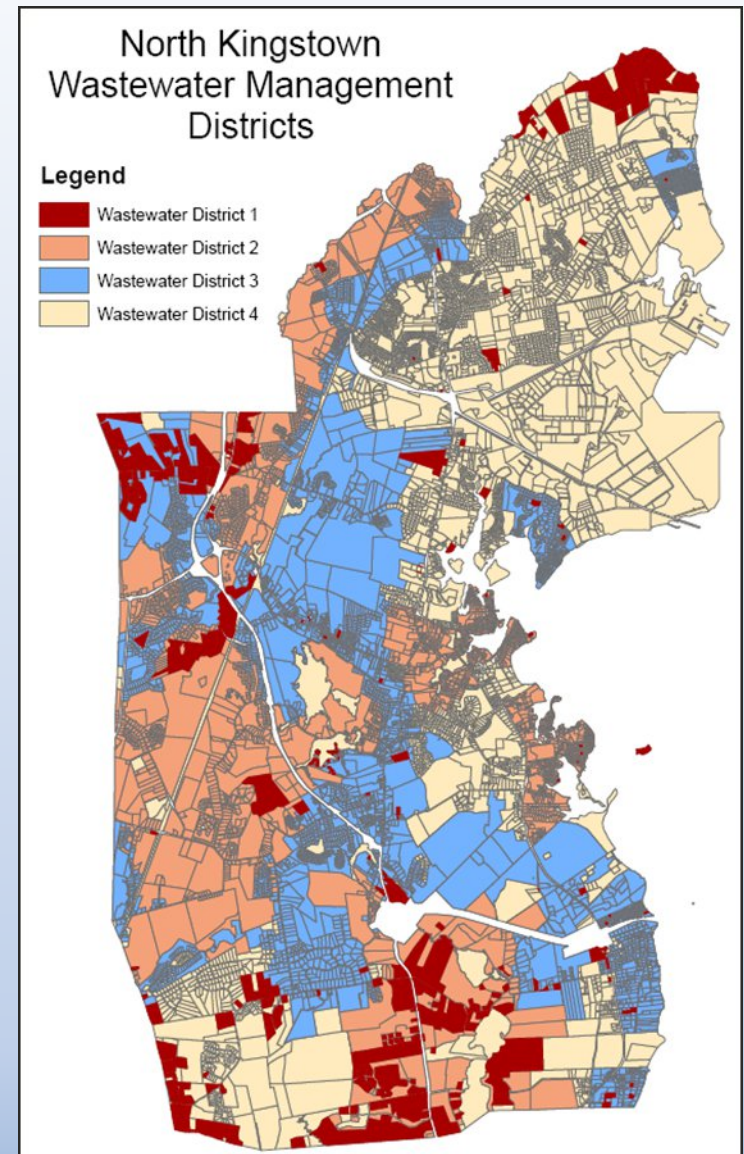


## Moncks Corner, SC



# Paths Forward

- Status quo
  - Health Department continues permitting septic systems and privately owned and operated “cluster” systems ad hoc
  - Centralized sewer implemented over time
- Proactive wastewater management
  - Inventory: what do you have?
    - GIS data, permit data, field reconnaissance
  - Prioritize systems for improvement
    - Stakeholder goals and values
    - Indicators might include: proximity to water, soil characteristics, system age, etc.
  - Manage: intensity tied to risk
    - Onsite improvements, cluster systems, sewer
    - Implementation (design, installation, OM&M)
    - Capacity building





# Recommendations and Contact Information



- Recognize attributes of centralized and decentralized approaches
- Recognize importance of a distributed sewer architecture
- Consider water/sewer approaches when identifying development zones
- Avoid “leapfrog” development
- County-side wastewater scoping study

Victor D'Amato, PE  
Tetra Tech Engineering, P.C.  
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PO Box 14409  
Research Triangle Park, NC 27709  
919-485-2070  
[victor.damato@tetrattech.com](mailto:victor.damato@tetrattech.com)



# Chatham County, NC

## Text File

File Number: 17-2346

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Work Session

**In Control:** Board of Commissioners

**File Type:** Agenda Item

Receive presentation by Renita Foxx about the Chatham 360 Program.

# Chatham 360

HELPING PEOPLE TURN  
THEIR LIVES AROUND



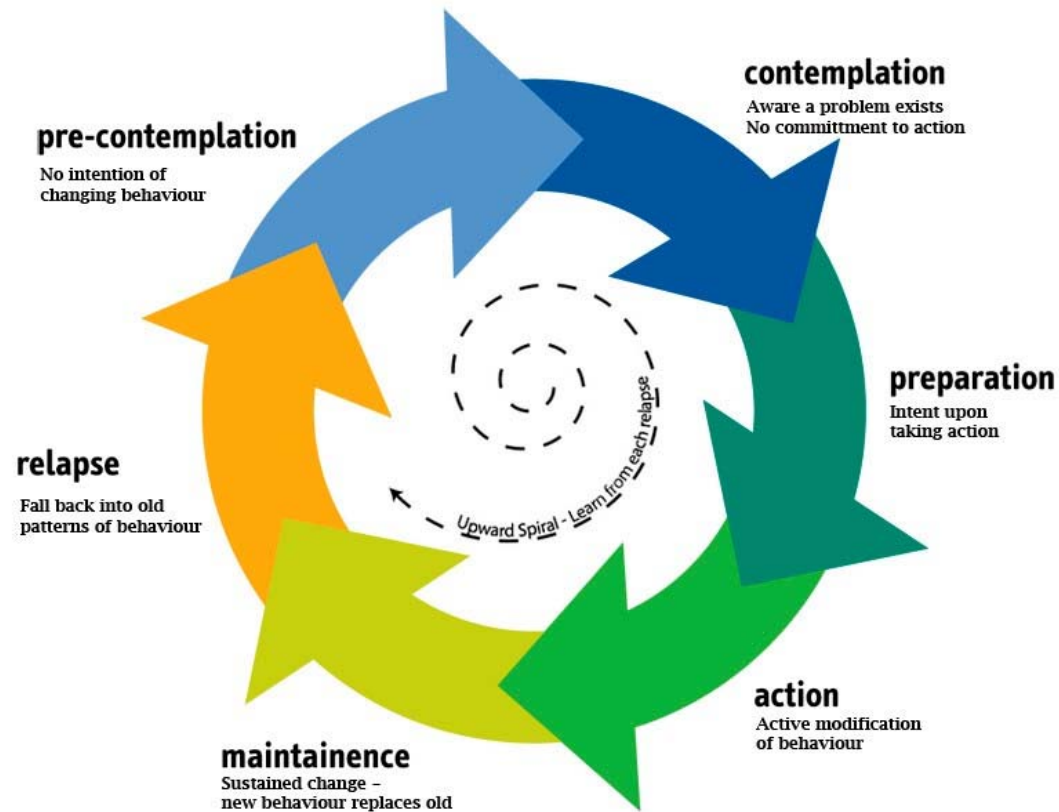
## Our transition to Chatham 360

- ▶ On July 1, 2011, we transitioned from Project Turnaround to **Chatham 360**
- ▶ The name shows our commitment to a full circle of treatment for clients.
- ▶ We believe that individuals, if given the proper resources and treatment would make more informed decisions when faced with difficult circumstances





# Why Chatham 360, rather than 180?



**Transtheoretical Model of Change**  
Prochaska & DiClemente

# Who do we primarily serve?

- ▶ **First Offenders:** We serve first offenders age 16 and up with a non-violent, drug-related offense
- ▶ **Pretrial Release:** Respectful supervision & monitoring defendants at savings to taxpayers
- ▶ **Monitoring Cases:** For clients needing treatment outside scope of Chatham 360, such as residential treatment
- ▶ **NEW! Misdemeanor Diversion:** A program targeting 16 & 17 year olds with misdemeanor charges.
- ▶ **Social Services Consultations:** For parents identified as having substance abuse issues



# First Offenders Program

- ▶ Those age 16 and up with a non-violent, drug-related offense must successfully complete a program that varies depending on whether the charges are felonies or misdemeanors. The program involves:
  - ▶ Substance abuse assessment
  - ▶ Individual counseling with homework assignments
  - ▶ Group therapy (age appropriate)
  - ▶ Random drug screening
- ▶ Currently serving **46 clients** in this program





# First Offenders Completion Rate

- ▶ Since 2013-14, the number of people served has stayed about the same
- ▶ However, the percentage of those completing the program has increased from 63.6% (FY14) to 72.3% (FY17)



## Monitoring Cases

- ▶ Defendants with legal charges who need treatment outside our scope of services are referred to appropriate treatment facilities
- ▶ We continue to report back to the State of NC on compliance
- ▶ We current have **43 clients** in this program



# Pretrial Release

- ▶ Provide timely, accurate information to the courts so they can make informed decisions regarding bond, competency and treatment.
- ▶ We also supervise and monitor defendants in a respectful manner, using measures that:
  - ▶ save money for taxpayers
  - ▶ promote compliance with court orders & appearances
  - ▶ support public safety
- ▶ Currently serving **46 clients** (5 electronic monitoring)





# Key Components of Pretrial Release

- ▶ Defendants call in daily to report compliance
- ▶ Electronic monitoring may be used, as directed by the court
- ▶ Development of appropriate treatment plan, including mental health and substance abuse treatments
- ▶ Treatments may include residential treatment, ranging from 6 months to a year
- ▶ Failure to comply results in immediate order of arrest



# Pretrial Release Results

- ▶ The number of clients accepted for the program after screening has varied some each year.
- ▶ The percentage of accepted clients who end up referred for residential treatment has varied from 16.6% (FY14) to a high of 30.6% (FY15)
- ▶ The percentage of those avoiding re-arrest has been consistently around 66%-68% except for FY 15, which was 87.8%  
The percentage of those with charges dismissed or who get probation varied from a high of 57.1% in FY14 to a low of 37.2% last year



# Caveat about Pretrial Release

- ▶ Our recommendations for treatment have the potential to help the offender receive a better court outcome
- ▶ HOWEVER, we never guarantee this





# New Misdemeanor Diversion Program

- ▶ In December 2019, a new state law takes effect that raises the age of criminal adults to age 18 years old
- ▶ This new program targets 16 and 17 year olds who have misdemeanor charges. **Not necessarily related to drug offenses.**
- ▶ Charges are not formally filed if the young person participates in a 90-day diversion program



# Components of Misdemeanor Diversion Program

- ▶ Provide psychoeducational group sessions on such topics as healthy decision making to drug education.
- ▶ Host PowWow Sessions with law enforcement to help humanize officers and help officers develop a different perspective on young people (but does not get into legal issues). Sheriff's Office sponsors light refreshments
- ▶ Coordinate Mock Trial with District Attorney's Office, Public Defender's Office and Judges to help young people understand consequences of their actions



# Social Services Consultations

- ▶ Upon request, Chatham 360 also helps the Department of Social Services in assessing parents identified as having substance abuse issues
- ▶ We will develop recommendations for treatment, which could include:
  - ▶ inpatient treatment with or without their children
  - ▶ outpatient treatment
- ▶ We provide drug screenings for these clients
- ▶ Currently have **26 clients** in this program





# Staff qualifications

- ▶ Since 2007, I have earned:
  - ❑ Licensed Clinical Addictions Specialist and Licensed Professional Counselor
  - ❑ Certified Clinical Supervisor
  - ❑ National Certified Counselor.
  - ❑ County Employee of the Year 2012
- ▶ Thea Palmer has a B.S. in Criminal Justice and also has:
  - ❑ Registered with to take exam within 3 months to be Certified Substance Abuse Counselor
  - ❑ Working toward becoming Guardian Ad Litem by Oct. 2017



## In Closing

- ▶ Chatham 360 believes in looking at ways to help residents within Chatham County feel empowered to make better decisions that will lead to better results.





# Chatham County, NC

## Text File

File Number: 17-2359

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Work Session

**In Control:** Planning

**File Type:** Agenda Item

A discussion item to consider County-initiated rezonings of businesses in the formerly unzoned portion of Chatham County.

### **Action Requested:**

A discussion item to consider County-initiated rezonings of businesses in the formerly unzoned portion of Chatham County.

### **Introduction & Background:**

After nearly two years of discussion and study, on August 15th, 2016, the Chatham County Board of Commissioners voted to zone the formerly unzoned portions of the county to R-1 and R-5 residential. The draft Comprehensive Land Use Plan specifically supports "rezonings for businesses uses or properties made non-conforming by the extension of zoning in 2016." (Land Use Policy #7, Strategy 7.2). Consequently, prior to the adoption of county-wide zoning, the Chatham County Planning Department sent a business listing form to every property owner in the unzoned portion of the county. Nearly 13,000 forms were sent. The business listing form asked property owners to list any non-residential use of their land, so the Planning Department could properly document any non-conforming uses and prepare for future rezonings. The Planning Department received over 1,000 forms. Approximately 300 forms described non-conforming businesses, while the remaining 700 listed either agricultural uses of the land (which were exempted from zoning regulations via the bona fide farm exemption) or otherwise permitted uses, such as a residence. Aerial images of these 300 businesses were captured, as well, in order to further establish non-conforming status.

### **Discussion & Analysis:**

In addition to mailing and documenting business listing forms, Planning staff compiled tax and fire inspection records to determine if there were any other businesses in the formerly unzoned portions of the county. After combining tax and fire inspection records, along with the business listing forms, staff determined that 524 parcels in the formerly unzoned part of the county may contain non-conforming uses or businesses. In order to confirm that these non-conforming uses actually existed, staff performed site visits to each parcel, spoke with the property owners, and documented the current use of the property. After several months of visiting properties, the following observations were made by staff:

- 204 parcels appear to be eligible for rezoning to a non-residential zoning district



- 48 parcels are eligible for the issuance of a home occupation permit
- 272 parcels are not eligible for rezoning or issuance of a home occupation permit

During the site visiting process, the interior of multiple parcels were inaccessible to staff due to “No Trespassing” signage, the presence of loose dogs, or physical barriers, such as locked gates, fences, or washed out roads. However, the tax data, aerial imagery, and some visual confirmation from the site visits allowed staff to recommend rezonings, issuance of HOPs, or maintenance of the status quo for these parcels.

Based on the observed use, staff determined which zoning classification would be most appropriate to consider to use for rezoning the property. Since many uses are permitted in multiple zoning classifications, staff recommended that the parcels be eligible for rezoning to the least intensive permitted zoning classifications possible. For example, if a use were allowed in both light and heavy industrial zoning district, then staff recommended that the parcel should be eligible to be rezoned to the light industrial classification. Furthermore, some uses are permitted in an R-1 or R-5 district with the issuance of Conditional Use Permit. It should be noted that many of the non-conforming uses on parcels eligible for rezoning do not occur across the entirety of the parcels. Many uses are limited to a single building or small portion of the parcel.

Now that the inventory of businesses is complete, the next step is to meet with property owners eligible for a rezoning to determine if they wish to rezone their property, and if so, how much of the property they would like to rezone. Planning staff would contact property owners and schedule these meetings. Additionally, planning staff will coordinate with representatives from the Chatham County Tax Department as the issue of changes in tax value is likely to arise. Once the meetings are complete, and the list of properties and portions of properties that will undergo rezoning is finalized, staff will present this information to the Board of Commissioners and then move forward with a County-initiated rezoning of these business properties.

A gis web application has been created identifying the properties and a link has been included as an attachment

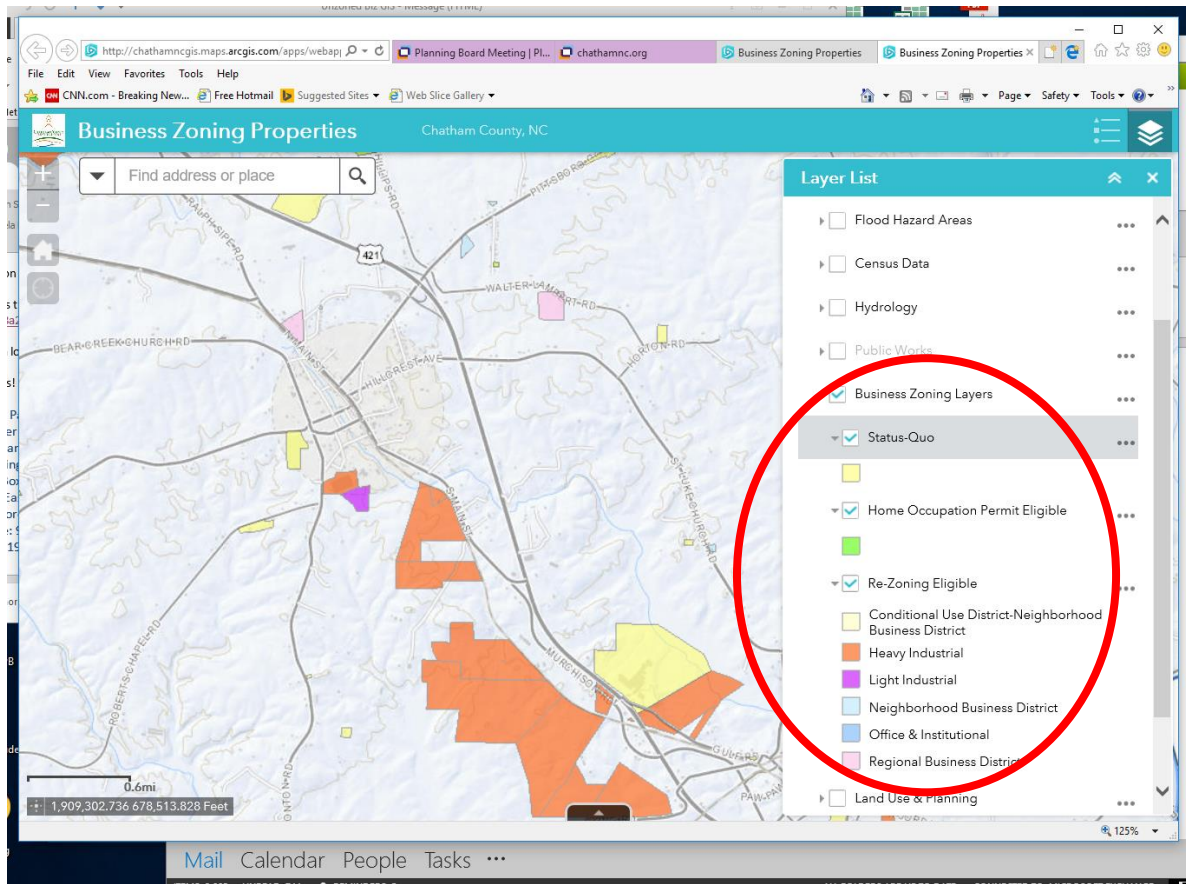
(<http://chathamncgis.maps.arcgis.com/apps/webappviewer/index.html?id=8a3a205b2dbd41459379332f46537df3>). The properties that were reviewed by staff are

identified under the “Business Zoning Layers” folder and “Status Quo” means no change is recommended, “Home Occupation Permit Eligible” means that the use qualifies as a home occupation and a rezoning is not necessary, and “Re-Zoning Eligible” means that a rezoning of all or a portion of the property is needed to made the use conforming. For “Re-Zoning Eligible” properties the layer includes the recommended zoning classification that would be most appropriate for the current use of the property.

### **Recommendation:**

It is the recommendation of Planning staff to contact the landowners, inquire if they wish to rezone their parcel or a portion of their parcel to a different zoning classification as determined by staff, and if so, schedule a meeting with the owners and Planning staff to determine the extent of the rezoning. After these meeting are held, Planning staff will present the results to the Board of Commissioners and then move forward with a

County-initiated rezoning of these businesses, as discussed in during the initial zoning process.







# Chatham County, NC

## Text File

File Number: 17-2347

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Work Session

**In Control:** Board of Commissioners

**File Type:** Appointment

**Agenda Number:**

Vote on a request to appoint members to the Affordable Housing Advisory Committee

Action Requested: Vote on a request to appoint members to the Affordable Housing Advisory Committee

Introduction & Background: At its August 21, 2017 Meeting, the Board of Commissioners voted to re-form the Affordable Housing Advisory Committee.

Applications were received from the following people:

Guile Jonathan Contreras - District 4  
Leslie Farrow - District 2  
Matthew Stark - District 3  
Sharon Gray - District 2  
Carolyn Huggins - District 2  
Marilyn Bourque - District 2  
Susan Levy - District 3  
Bob Schmidt - District 4  
Joseph Darrell Parnell - District 4  
William L. "Bill" Moses - District 5  
Cynthia "Zen" Shoemaker - District 3  
Shaneka Gillespie - District 1  
John Foley - District 2  
Kurt Libatore - District 2  
Lonnie West - District 2  
Felicia Hackney - District 3  
Tammy Phillips - District 3  
Jeanette Baird - District 4

Discussion & Analysis: Each Commissioner needs to appoint one person to represent their district. Then the full Board needs to appoint four additional people to serve on the committee. It was recommended that the Board appoint a representative or liaison for the following: Older Adult Resident, Hispanic/Latino Resident, Property Manager or Landlord, and Mobile Home Park Resident. The Towns of Pittsboro, Siler City, and Goldston will each make one appointment to the committee. The Town of Siler City has selected Chip Price as their representative and Larry Cheek as an alternate.

Once the appointments have been made the Clerk will assign one, two or three year terms to each member.

Budgetary Impact: N/A

Recommendation: Motion to approve appointment of members to the Affordable Housing Advisory Committee

# Chatham County

## Affordable Housing Advisory Committee

### General Framework

Launching in fall 2017, the Chatham County Affordable Housing Advisory Committee will make recommendations to the Chatham County Board of Commissioners for procedures and policies around affordable housing. The Committee will be instrumental in implementing the Chatham County Affordable Housing Strategy Toolbox.

The Committee will be made up of 8-12 residents. Initially, members' term lengths will vary to prevent terms from expiring at the same time, however, members can be reappointed to serve a 3-year term. County staff will attend every meeting and assist with staffing and facilitating the meetings. From fall 2017 through summer 2018, planners from Triangle J Council of Governments will facilitate the meetings.

### Charge and Responsibilities

The Committee is charged with:

- Reviewing affordable housing policies and procedures and providing recommendations and comments to advise County leadership.
- Understanding the Chatham County Affordable Rental Housing Strategy Toolbox and helping to implement priorities.
- Providing feedback and assistance in developing additional strategies to support affordable homeownership opportunities and transitional housing in Chatham County.
- Helping to promote opportunities related to affordable housing like fair housing workshops, RFPs, and surveys.
- Submitting an "Advisory Committee Summary Annual Report" to the Chatham County Board of Commissioners.

### Application Process

Residents will apply to be on the Committee by submitting the Chatham County Volunteer Application for Boards & Committees form located here:

<https://chathamnc.seamlessdocs.com/f/CommitteeForm>

### Committee Membership

The list below can help guide the formation of the Committee. The town boards of Goldston, Pittsboro, Siler City will have the ability to designate their members. In addition, it is beneficial if members have expertise in some of the fields that relate to housing, including the following:



- Real estate, development
- Social services
- Public health
- Transportation
- Finance
- Economic development
- Design, architecture
- Urban and regional planning
- Property management
- Faith-based service provider

Not every representation/liaison category below must be filled; however, the formation should be intentional so that there is a wide variety of knowledge and diverse representation. Every member must be a resident of Chatham County. In accord with the county's conflict of interest policy for advisory committees, members and organizations members are associated with cannot benefit from decisions or recommendations made by the Committee.

	Representation/Liaison	Potential Organizations	Potential Individuals
1	Older adult resident		
2	Hispanic/Latino resident		
3	Property manager/landlord		
4	Mobile home park resident		
5	Pittsboro resident		
6	Siler City resident		
7	Goldston resident		
8	District 1 resident		
9	District 2 resident		
10	District 3 resident		
11	District 4 resident		
12	District 5 resident		



# Chatham County, NC

## Text File

File Number: 17-2364

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Work Session

**In Control:** Board of Commissioners

**File Type:** Agenda Item

**Agenda Number:**

Closed Session to discuss matters relating to attorney/client privilege and personnel.



# Chatham County, NC

## Text File

File Number: 17-2345

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Board of Commissioners

**File Type:** Minutes

**Agenda Number:**

Vote on a request to approve the September 6, 2017 Special Meeting Minutes and the September 18, 2017 Work and Regular Session Minutes.





# Chatham County, NC

## Meeting Minutes

### Board of Commissioners

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Wednesday, September 6, 2017

9:00 AM

Agriculture & Conference Center

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#### Special Meeting

#### Special Meeting - 9:00 AM - Agriculture & Conference Center

#### CALL TO ORDER

*Chairman Crawford welcomed those in attendance and called the meeting to order at 9:02am.*

**Present:** 5 - Chairman Jim Crawford, Vice Chair Diana Hales, Commissioner Walter Petty, Commissioner Mike Dasher and Commissioner Karen Howard

#### CLOSED SESSION

[17-2319](#)

Closed Session to discuss matters relating to Economic Development

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, to approve going out of the Special Meeting and convening in Closed Session to discuss matters relating to economic development. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

#### BOARD PRIORITIES

[17-2312](#)

Comprehensive Plan work session to provide an in-depth review of the Plan goals and elements.

**Attachments:** [Presentation](#)

[More information from Planning Department website](#)

*Comprehensive Plan Consultant Meg Nealon with LandDesign gave a presentation to the Board. (Presentation attached)*

*Commissioner Howard suggested using another photo in place of the Southern Village photo. Vice Chair Hales suggested using a photo of Farrington Village Center.*

*Chairman Crawford asked if the Plan would be available in the County Libraries. Ms. Nealon stated that is up to the Board. Chairman Crawford asked what a good strategy would be to reach specific groups, such as developers. Ms. Nealon stated one strategy is to have something on the homepage of the website. Planning Director*

Jason Sullivan stated they are using the Plan in pre-application meetings. Vice Chair Hales suggested starting with the map. Ms. Nealon stated some communities have a Developer Forum to informally get the word out about the Plan. Vice Chair Hales stated the forum should include Chatham Park.

Vice Chair Hales asked if there should be a Cooperative Area Plan with Siler City for the CAM site. Ms. Nealon stated the County and Siler City both stand to gain by working together on an Area Plan. She pointed out the County has already done a plan with the Town of Cary.

Chairman Crawford asked if Siler City is going through a UDO process. Planner Cara Coppola stated Siler City is working on a Land Use Plan. Vice Chair Hales stated Siler City has been in the UDO process for over a year.

Commissioner Petty stated he believes the Board needs to be careful about telling people what they can and cannot do with their property in the rural areas.

Vice Chair Hales believes landbanking should be a priority in the future.

The group took a break for lunch at 12:00 PM. Commissioner Petty left the meeting.

The group resumed the meeting at 12:15 PM.

Vice Chair Hales asked if a Health Impact Assessment could be included in the UDO. Ms. Nealon stated a Health Impact Assessment could be part of the application. Chairman Crawford asked if developers are required to provide recreation amenities. Mr. Sullivan stated it is the developers' choice but they also have the recreation exaction fee. The County Manager stated the exaction fee can only be used for land.

Vice Chair Hales stated she would like to see the wastewater included as part of the water and sewer master plan.

Vice Chair Hales suggested the plan address a minimum housing code.

Commissioner Dasher asked how long the UDO process is. Mr. Sullivan stated it is a three year process. Commissioner Dasher asked what the County does in the meantime while the UDO is being completed. Mr. Sullivan stated there may be some projects that the County decides need to wait until there is a UDO and there may be other projects that need to be addressed right away.

Vice Chair Hales stated she believes the megasite area plans should be a priority when it comes to implementation of the Plan.

The County Manager stated the agenda abstracts will address how the request works with the Comprehensive Plan.

Vice Chair Hales would like mounted maps of the Comprehensive Plan in County offices and in the Historic Courthouse once the Plan is adopted.

Mr. Sullivan stated the Planning Board will discuss the meeting on October 3rd and at a Special Meeting on October 17th. The Plan should come to the Board of Commissioners for adoption in November.

## **ADJOURNMENT**

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, that this meeting be adjourned. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty





# Chatham County, NC

## Meeting Minutes

### Board of Commissioners

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Monday, September 18, 2017

6:00 PM

Historic Courthouse Courtroom

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#### Work Session - 2:00 PM - Historic Courthouse Courtroom

**Present:** 4 - Chairman Jim Crawford, Vice Chair Diana Hales, Commissioner Mike Dasher and Commissioner Karen Howard

**Absent:** 1 - Commissioner Walter Petty

#### PUBLIC INPUT SESSION

*Amanda Robertson submitted the following comments:*

*I have been before the Board twice in the last six months to talk about the methane resolution. I am really happy to see it on the agenda for a vote today. Hopefully you all will vote to pass it. This is something new that I am handing out. It came out about a week ago from the North Carolina Council of Churches. I want to read some of it for the record today.*

*"As people of faith, we proclaim our belief that our world is God's creation, that God sees it as good, and that it is ours to protect and maintain. As Governing Board members of the NC Council of Churches we represent nearly a million and a half North Carolinians, from many faith traditions, who share a common teaching: we are charged by our Creator with caring for creation (Genesis 1:28, 2:15), and are called to be faithful stewards of that which is entrusted to us (Luke 16:1-13)."*

*"As faith leaders of the 21st Century we are well aware of the detrimental effects on the atmosphere of our continued use of fossil fuels and we oppose the continued development of a fossil infrastructure that is literally killing our planet. The Union of Concerned Scientists report that burning fossil fuels shows us the visible cost to our ecosystem, but the hidden costs are much higher. Fracked gas is extremely dangerous. Besides being flammable, gas pipelines emit a significant source of methane emissions through leaks large and small, a material 84 times more detrimental to our atmosphere than carbon dioxide. No pipeline is a hundred percent leak proof, no matter the guarantees and insurances that come from the manufacturer."*

*"We resolve that any new investment in energy infrastructure based on the extraction of fossil fuels is morally reprehensible and, as people of faith, we believe it is an abuse of the God-given gift of creation for which we are charged to care."*

*This is not a religious institution. I know that but I share this today because I think it sends a voice to how many members of this group stand behind the decision to move away from fracked gas, from natural gas infrastructure in the State of North Carolina. I learned recently that natural gas is between 90-95% methane. This is really evil stuff. I ask you to please do everything you can to stop this from continuing to be used in*

our state. The first move would be to send this resolution on to Governor Cooper and ask to stop this. Thank you.

Chris Tommerdahl submitted the following comments:

On behalf of my neighbors in Polks Landing, we want to thank you, our Commissioners, the Planning Board and the Planning Staff for your attention and responsiveness over the last several months. We want to extend that thank you to our Commissioners, the Planning Board, and Planning staff, especially Angela and Jason. We are so grateful for your open communication and the time and thought that you've put into not only this rezoning, but also into the County's planning guidelines for the future. We really appreciated that many of you came to our neighborhood to visit the site and speak with us on several occasions. We've been impressed with your ideas and leadership and this has helped make the last few months a very positive experience for our group. Although many of us didn't know each other before the rezoning was proposed, the process has encouraged our neighborhood to come together, meet new people, and work toward a common goal. Thank you for offering this process and for giving residents such an accessible means of affecting Chatham's future!

## **BOARD PRIORITIES**

### **17-2335**

#### **2017 Third Quarter Employee of the Quarter Award-Cara Coppola, Planner II, Planning Department**

Courtney Goldston introduced Cara Coppola, Planner with the Chatham County Planning Department. Ms. Coppola joined Chatham County on January 4, 2016 and she hit the ground running from the moment she started, taking on the coordination of the Transportation Advisory Committee and Chatham's participation in regional transportation efforts. More importantly, in this short time, she has evolved into the project manager for the comprehensive planning process which involves meeting with the steering committee and consultants, meeting and presenting materials to advisory boards throughout the county, updating the website, and reviewing documents and drafts. This is by far the largest long-range planning efforts in recent years, and has a tremendous impact on the county's growth and development plan for years to come. Cara's work on this project is immeasurable and the plan would not be progressing as well as it is without her efforts. This work is far above what is expected of an entry-level planner and far beyond the initial scope of her job. It is because of her excellent work and leadership on this project she has been named the recipient of the 2017 Third Quarter Employee of the Quarter award.

Chairman Crawford presented Ms. Coppola with the Third Quarter Employee of the Quarter Award.

The County Manager introduced the new Chatham County Emergency Operations Director, Steve Newton. Mr. Newton thanked the Board for the opportunity to serve the citizens of Chatham County.

### **17-2313**

#### **Vote on a request to adopt Resolution to Slow the Climate Crisis by Reducing Methane Emissions from Natural Gas Systems**

**Attachments:**     [Methane Resolution](#)

*Mike Petruska, member of the Climate Change Advisory Committee, stated the Committee voted to bring this resolution to the Board of Commissioners for adoption.*

*Vice Chair Hales asked if other jurisdictions had passed the resolution. Jim Warren, Director of NC Warn, stated Orange County adopted the original resolution. The NAACP has also adopted the resolution.*

*Chairman Crawford read the resolution into the record.*

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, that Resolution #2017-30 to Slow the Climate Change Crisis by Reducing Methane Emissions From Natural Gas Systems, attached hereto and by reference made a part hereof, be adopted. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty

[17-2317](#)

Receive Annual Report from the Environmental Review Advisory Committee

**Attachments:**     [ERAC Report FY 2016 - 2017](#)  
                              [ERAC 2016 - 2017 Presentation](#)

*Terry Schmidt, Chair of the ERAC, gave a presentation to the Board. (Presentation attached)*

*Vice Chair Hales agreed that requirement for environmental impact assessments should be included in the UDO.*

**This Agenda Item was received and filed**

[17-2325](#)

Receive the Transportation Advisory Committee 2016-2017 Annual Report.

**Attachments:**     [Annual Report 2017](#)  
                              [TAC roster](#)  
                              [TAC Presentation](#)

*Ed Reagan, Chair of the Transportation Advisory Committee, gave a presentation to the Board. (Presentation attached)*

*Commissioner Hales stated she would like for the meeting to look at new data to be in addition to the quarterly meetings.*

**This Agenda Item was received and filed**

[17-2326](#)

A request to receive the Durham Chapel Hill Carrboro Metropolitan Planning Organization (DCHC MPO) presentation and comment on Chatham County Projects being considered in the 2045 Metropolitan



Transportation Plan (MTP).

**Attachments:**    [More Information from Planning Department Website](#)  
[PowerPoint Presentation](#)  
[Map of Chatham Specific Highway Projects - 2045 MTP Alternatives Analysis](#)

*Andy Henry with the DCHC-MPO gave a presentation to the Board. (Presentation attached)*

*Vice Chair Hales asked if there was a multiuse path in the Chatham County Transportation Plan. Mr. Henry stated he would look into it.*

[17-2318](#)

Vote on a request to approve Proposed Revisions to the Advisory Committee Policy & Addendums

**Attachments:**    [Advisory committee policy proposed changes Sept 18 2017](#)  
[Advisory committee policy addendum proposed revisions Sept 2017](#)

*Debra Henzey, Community Relations Director, reviewed the specifics of the request. The proposed changes in the policy relate to the timing of advisory committee annual reports to the Board of Commissioners. The addendum proposed changes reflect the reformation of the Affordable Housing Advisory Committee and changes to the Transportation Advisory Committee.*

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty

[17-2334](#)

Vote on a request to approve Formation and Organization of Human Relations Task Force

**Attachments:**    [Human Relations recommendations for Sept 2017 BOC meeting 2](#)

*Debra Henzey, Community Relations Director, gave a presentation to the Board. (Presentation attached)*

**A motion was made by Vice Chair Hales, seconded by Commissioner Howard, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty

[17-2314](#)

Request to appoint Chatham County Commissioner to the Aging Plan Steering Team

**Attachments:**    [AgingPlanSteeringTeamLetter](#)

*Tansy Long, Policy Analyst, reviewed the specifics of the request.*

*Chairman Crawford volunteered to serve on the Steering Team.*

*The Board gave unanimous consent.*

[17-2315](#)

Set Dates of January 2018 Board of Commissioners Retreat.

*The Board agreed to reserve the following dates for the 2018 January Board of Commissioners Retreat:*

*January 9, 2018*

*January 10, 2018*

*January 11, 2018*

*January 12, 2018*

*January 23, 2018*

*January 24, 2018*

*Once staff hears from Commissioner Petty they will choose three dates for the retreat.*

**CLOSED SESSION**

[17-2337](#)

Closed Session to discuss matters relating to economic development.

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, to approve going out of the Work Session and convening in Closed Session to discuss matters relating to economic development and attorney-client privilege. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty

**ADJOURNMENT**

**A motion was made by Commissioner Dasher, seconded by Commissioner Howard, that this meeting be adjourned. The motion carried by the following vote:**

**Aye:** 4 - Chairman Crawford, Vice Chair Hales, Commissioner Dasher and Commissioner Howard

**Absent:** 1 - Commissioner Petty

**End of Work Session**

**Regular Session - 6:00 PM - Historic Courthouse Courtroom**

**Present:** 5 - Chairman Jim Crawford, Vice Chair Diana Hales, Commissioner Walter Petty, Commissioner Mike Dasher and Commissioner Karen Howard

**INVOCATION and PLEDGE OF ALLEGIANCE**

*Commissioner Hales invited all in attendance to observe a moment of silence after which the Chairman invited everyone present to stand and recite the Pledge of Allegiance.*

**CALL TO ORDER**

*Chairman Crawford welcomed those in attendance and called the meeting to order at 6:05 PM.*

**APPROVAL OF AGENDA and CONSENT AGENDA**

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that the Agenda and Consent Agenda be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

**17-2327**

Vote on a request to approve the August 21, 2017 Work and Regular Session Minutes

**Attachments:** [Draft Minutes 08.21.2017](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that the Minutes be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

**17-2338**

Vote on a request by The Sprott Center to use a portion of the money designated for renovations for technology for a computer lab.

**Attachments:** [Sprott Youth Center Computer Request](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

**17-2339**

Vote on a request to accept up to \$33,400 in the current fiscal year for funding of nutritionist position.

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

**17-2270**

Vote on a request to approve \$717.53 Travel Reimbursement from Healthiest Cities & Counties

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2271](#)

Vote on a request to approve \$11,597 Maternal Health, Family Planning and Child Health - State Funds Reduction

**Attachments:** [\\$11,597 MH - CH - FP - State Funds Reduction](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2272](#)

Vote on a request to approve \$14,623 Minority Diabetes Prevention Program Funds.

**Attachments:** [\\$14,623 Diabetes Funds](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2306](#)

Vote on a request to approve \$592 Sexually Transmitted Diseases (STD) Treatment Funds.

**Attachments:** [\\$592 Communicable Disease Funds Addendum](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2303](#)

Vote on a request to approve the re-naming of one private road in Chatham County

**Attachments:** [ABE BURNETT PETITION](#)

[ABE BURNETT MAP](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard



[17-2308](#)

Vote on a Request to Approve a Pyrotechnics Display at the Bennett Baptist Church, 68 E. Bonlee Street, Bennett, NC 27208, on October 28, 2017.

**Attachments:**    [Attachment A-N.C.G.S 14-410 N.C.G.S.14-413.pdf](#)  
[Attachment B-Pyrotechnics Letter of Request.pdf](#)  
[Attachment C-NC Pyrotechnics Operators License.pdf](#)  
[Attachment D-Certificate of Insurance.pdf](#)  
[Attachment E-ATF License.pdf](#)  
[Attachment F-Display Area Site Map.pdf](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2309](#)

Vote on a request to approve Annual Settlement and Order of Collection

**Attachments:**    [FY16-17 Annual Settlement \(Signed by Kep Kepley 8-9-17\)](#)  
[Order of Collection](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2310](#)

Vote on a request to approve Animal Control Ordinance with revisions.

**Attachments:**    [8-28-17 Ordinance](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Ordinance, attached hereto and by reference made a part hereof, be adopted. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2307](#)

Vote on a request to adopt Project Ordinance concerning body cameras for the Sheriff's Office. Approve the purchase of body cameras on GSA contract in the amount of \$74,417.44 from Watchguard. Approve trade in of in car camera microphones.

**Attachments:**    [Project Ordinance Body Cameras v1](#)  
[Chatham CT SD-NC - VISTA Charging Base Kit - GSA Quote](#)  
[Chatham CT SD-NC - VISTA WF with Back Office -New EL4- GSA Quote](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Ordinance, attached hereto and by reference made a part**

hereof, be adopted. The motion carried by the following vote:

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2266](#)

Vote on a request to adopt a resolution proclaiming September 2017 as World Rabies Awareness Month

**Attachments:** [September 2017 - BOC World Rabies Awareness Month](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that Resolution #2017-31 Proclaiming September 2017 as World Rabies Awareness Month, attached hereto and by reference made a part hereof, be adopted. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2320](#)

Vote on a request to approve Tax Releases and Refunds

**Attachments:** [August 2017 Release and Refund Report](#)  
[August 2017 NCVTS Pending Refund Report](#)  
[July 2017 Manual NCVTS Pending Refund Report](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that the Tax Releases and Refunds, attached hereto and by reference made a part hereof, be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2321](#)

Vote on a request to approve Tax Department - Tax Write-Off

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2322](#)

Vote on a request by Freehold Communities on behalf of F-L Legacy Owner, LLC for subdivision Preliminary Plat review and approval of The Legacy, Phase 4A2, consisting of 43 lots on 8.56 acres, located off Big Woods Road, S. R. 1716, Williams and New Hope Townships, parcel #17378.

**Attachments:** [More Information from Planning Department Website](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2323](#)

Vote on a request to approve by Lee Bowman, Project Manager on behalf of NNP Briar Chapel, LLC for subdivision Preliminary Plat review and approval of **SD East**, consisting of 11 lots which includes 7 non-residential subdivision lots, 2 exempt over 10 acre lots, and 2 stormwater pond lots, located off US HWY 15-501, on 31.31 acres, Baldwin Township, parcel #18911

**Attachments:** [More Information from Planning Department Website](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2329](#)

Vote on a request to approve Fiscal Year 2017-2018 Budget Amendments

**Attachments:** [Budget Amendment 2017-2018 Sept](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that the Budget Amendments, attached hereto and by reference made a part hereof, be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

[17-2336](#)

Vote on a request to authorize Larilee Isley to sign Chatham County Agriculture & Conference Center Rental Agreements.

**Attachments:** [Final Event Contract.dotx](#)

**A motion was made by Commissioner Howard, seconded by Commissioner Dasher, that this Agenda Item be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

### **End of Consent Agenda**

### **PUBLIC INPUT SESSION**

*Gene Brooks gave the Board a brief history of Chatham County. The people he talks to out in the county tell him that it cost \$10,000 in fees to build a house. Some people he has talked to have said that their taxes have gone up two or three times due to the increasing value of their homes. He urged the Board to send out a newsletter and get businesses to advertise in it.*

*Terri Tyson submitted the following comments:*

*I am speaking on the request by Briar Chapel. I moved to Briar Chapel this past May*

*from Orange County. I have enjoyed living there. Newland has done a good job developing Briar Chapel and should be allowed to increase the number of residences as they have requested. They have included many features that developers are often asked to include when creating a neighborhood. They were recently cited as one of the best communities nationally. Any dire consequences of adding to the total is an exaggeration. Let's share. This will allow more families the opportunity to live in a nice neighborhood. The new elementary school will make Briar Chapel and nearby neighborhoods even better places to live. Briar Chapel has a lot of trails, green space and more families should get to appreciate the amenities. Newland and the excellent builders that they work with should be allowed to keep doing the job they have been doing. The expansion request should be granted.*

*Ms. Tyson asked how she can find out about what went on in the Work Session. Chairman Crawford stated the video of the discussion will be available in the next day or two. Commissioner Petty stated she could also sign up on the County website to receive updates on any Board of Commissioner Meeting.*

*Emily Moose submitted the following comments:*

*I would like to state for the record that while I serve on the Planning Board I am here as a private citizen and resident of the county that I love. I am here to ask for the removal or relocation of the Confederate monument on the courthouse circle. It was erected in 1907 during a period of brutal disenfranchisement of African Americans. If your connection with the statue is to honor loved ones, I believe there are better places to do that. A cemetery or a museum or another place that is more appropriate. For other people, the statue represents something very different and very painful. I have black colleagues, colleagues of color who say that this statue does not invite them into the county. It does not encourage civic participation or civic involvement. Understanding that the statue represents something very different and very painful and valuing one's neighbors as well as one's own should be enough to support removal or relocation. I realize as a Board you are operating under political constraints but I believe you have an opportunity here to do something really important and long overdue. I don't think that there is going to be a communal epiphany one day where this takes place. I think this could be a moment for you to do something impactful. I don't think we need to wait for a national or state law to address this or for the nation to finish a discussion about Thomas Jefferson and George Washington. This is our community and we should have the power to say what does and doesn't represent our ideals. This is the most prominent monument in our entire county and it is the welcome mat. When people come here for the first time this is what they see. Is this really what we want to be the first symbol that people see? Do we really feel that this upholds the expectation of equal treatment under the law when there is a confederate statue guarding the courthouse. I have long roots in the south. My great, great, great grandfather fought in the Civil War for the Confederacy and died with a Union bullet in his neck. This stuff runs deep. I understand that a lot of people see heritage in this but I think we need to respect the history of all of our residents and not take a slice of one experience of history and uphold that. I understand that this is difficult but I don't think it is impossible. I would love to be part of a discussion or community dialogue to move this forward. Thank you.*

## **PUBLIC HEARINGS**



17-2324

A Legislative public hearing request by Elkins Sawmill to rezone a portion of property, consisting of approximately 57.41 acres, located off of King Road, Parcel No. 5595, from R1, Residential to IH, Heavy Industrial.

**Attachments:**     [More Information from Planning Department Website](#)

*Zoning Administrator Angela Birchett reviewed the specifics of the request.*

*Hayes Fennley, attorney for the applicant, addressed the Board.*

*Chairman Crawford asked what the applicant intends to do on the land. Ms. Fennley stated the intended use is to move and expand the mulching operation.*

*Vice Chair Hales asked about buffers. Planning Director Jason Sullivan stated it would be a one hundred foot building setback from the adjoining properties. He stated if the intended use of the land is for a mulching operation it will require a Conditional Use Permit in addition to the rezoning.*

*Ms. Birchett stated staff talked with the applicant in great detail about going forward with a conditional district zoning versus general use zoning. The applicaiton stated "however, in order to add that simple limiting condition the ordinance requires they file for conditional zoning district application, which includes a detailed site plan which is time consuming and costly and a full blown environmental impact statement prepared by an environmental engineer, also costly and time consuming, that gets into issues such as historic properties, endangered species, etc. all so you can limit the property to what most citizens would consider an environmentally desirable use." Ms. Birchett stated if they intend to have a mulching operation the ordinance requires a conditional use process. That is another three to six month process after this three month process.*

*Jay Elkins, applicant, addressed the Board. He stated he started selling ground hardwood mulch ten years ago. The business has grown and he has no room to expand. Triangle Brick allows him to store logs on their property. He needs to expand but he has to determine if it is worth it. He spoke with two different engineers and to do a stormwater runoff plan they want \$30,000 - \$50,000. He is already paying a lawyer to help with the process. He is not trying to slight the County in any way. If anything he will be paying more taxes and generating more money.*

*Ms. Fennley stated the Zoning Ordinance on the website most recently had mulching as a permitted use but they will proceed with the current process.*

*The Chairman opened the hearing.*

*No one signed up to speak.*

*The Chairman closed the hearing.*

**This Agenda Item was referred to the Planning Board.**

**BOARD PRIORITIES**17-2316

Vote on a request to adopt Resolution Proclaiming September 2017 as Senior Center Month

**Attachments:**     [SeniorCenterMonth2017 \(1\) \(2\)](#)

*Chairman Crawford read the resolution into the record.*

**A motion was made by Vice Chair Hales, seconded by Commissioner Howard, that Resolution #2017-32 Proclaiming September 2017 as Senior Center Month, attached hereto and by reference made a part hereof, be adopted. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

**17-2165**

Vote on a request by NNP Briar Chapel for a revision to the Chatham County Compact Community Ordinance, Section 6.2 Maximum Size, to increase the dwelling unit cap from 2,500 to 2,650.

**Attachments:**     [More Information from Planning Department Website](#)

*Planning Director Jason Sullivan reviewed the specifics of the request. This is the first of two items that are running concurrently. This is a request to amend Section 6.2 of the Compact Communities Ordinance. NNP-Briar Chapel, LLC is requesting that the dwelling unit cap be raised from 2,500 units to 2,650 units. A public hearing was held on May 15, 2017. People spoke both in favor and in opposition of the text amendment. The Planning Board discussed the request in July and August and voted 7-3 to recommend approval of the text amendment. The Planning Board also voted 7-3 to recommend adoption of a consistency statement.*

*Mr. Sullivan stated the Board's decision would affect not only Briar Chapel but any compact community to come forward in the future. The Board agreed to hold off on voting on the text amendment until after they discussed the Conditional Use Permit request.*

**17-2168**

Vote on a request by NNP Briar Chapel for a revision to the Conditional Use Permit to (1) revise the civic site at the intersection of Andrews Store Rd and Parker Herndon Rd (possible Chatham County elementary school site) on master plan to allow for full development of the site (rather than just 2 acres as shown), (2) create the possibility of having up to 2,650 residential units (currently approved for 2,500), (3) revise the master plan map to reduce the perimeter buffer (a) from 100' to 50' along the frontage with Chapel in the Pines church (at the church's request); (b) from 100' to 50' along the short boundary with Duke Energy ROW at SD-N; and (c) from 100' to 75' along Phase 15-S boundary to eliminate the need to build a retaining wall within the perimeter buffer, (4) revise the color key table on the master plan map to reflect adjustments to residential densities in particular locations, and (5) update the moderately priced dwelling unit requirement for any increase above the original 2,389 approved units.

**Attachments:**     [More Information from Planning Department Website](#)

*Planning Director Jason Sullivan reviewed the specifics of the request. This is a quasi-judicial item and a public hearing was held on May 15, 2017. Anyone who spoke did so under oath. He instructed the commissioners to disregard any comments they received outside of the public hearing.*

*The request to increase the dwelling unit cap to 2,650 is to increase the cap to allow for multifamily housing. The total number of multifamily dwelling units will not exceed 350 units. If NNP-Briar Chapel, LLC utilized all 350 multifamily units it would draw down on some of the single family units for a total of 2,300 single family units.*

*Another part of the request is to reduce the perimeter buffer to fifty feet where Briar Chapel property adjoins Chapel in the Pines. That is to accomodate some additional parking requested by Chapel in the Pines.*

*There is also a request to reduce the perimeter buffer for Lot 4 in SD North to allow for additional parking.*

*There is a buildable area restriction on the civic site at the intersection of Andrews Store Road and Parker Herndon Road. They are requesting to have that removed so that the entire acreage could be used for more build upon area. This is the area the school system is interested in purchasing for the elementary school.*

*There is an area adjacent to Phase 15 South and the application included a request to reduce the 100 foot perimeter buffer to 75 feet. The Planning Board recommended denial of this piece of the request and the applicant has agreed to it.*

*Mr. Sullivan reviewed the revised plan received today. The plan includes a voluntary 50 foot buffer around the Dollar property.*

*There is a requirement in the Compact Communities Ordinance for a provision for affordable housing or an acceptable payment in lieu. Staff and the applicant worked together to come up with a reasonable accomodation for the increase in units. Briar Chapel would continue to pay \$460.44 per unit, which is part of the original agreement from 2005. They have agreed to double that amount moving forward for any units over the 2,389. They will pay \$920.88 per unit, including multifamily units.*

*Another issue about a road crossing came up since the Planning Board discussion. The road crossing was approved in 2005 and somehow between 2012 and 2014 revisions the road crossing was deleted from the plan. Briar Chapel is requesting the road crossing across the creek be added back to the plan.*

*The planning staff has worked with the applicant and the applicant has agreed to include a statement that the maximum number of single family units be limited to 2,389.*

#### [17-2165](#)

Vote on a request by NNP Briar Chapel for a revision to the Chatham County Compact Community Ordinance, Section 6.2 Maximum Size, to increase the dwelling unit cap from 2,500 to 2,650.

**Attachments:**     [More Information from Planning Department Website](#)

**A motion was made by Commissioner Petty, seconded by Commissioner Dasher, that Resolution #2017-33 Adopting a Consistency Statement for the Approval of an Amendment to the Compact Communities Ordinance, attached**

hereto and by reference made a part hereof, be adopted. The motion carried by the following vote:

**Aye:** 5 - Commissioner Petty, Commissioner Dasher, Commissioner Howard, Chairman Crawford and Vice Chair Hales

**A motion was made by Commissioner Petty, seconded by Commissioner Dasher, that this Ordinance, attached hereto and by reference made a part hereof, be approved. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

#### 17-2168

Vote on a request by NNP Briar Chapel for a revision to the Conditional Use Permit to (1) revise the civic site at the intersection of Andrews Store Rd and Parker Herndon Rd (possible Chatham County elementary school site) on master plan to allow for full development of the site (rather than just 2 acres as shown), (2) create the possibility of having up to 2,650 residential units (currently approved for 2,500), (3) revise the master plan map to reduce the perimeter buffer (a) from 100' to 50' along the frontage with Chapel in the Pines church (at the church's request); (b) from 100' to 50' along the short boundary with Duke Energy ROW at SD-N; and (c) from 100' to 75' along Phase 15-S boundary to eliminate the need to build a retaining wall within the perimeter buffer, (4) revise the color key table on the master plan map to reflect adjustments to residential densities in particular locations, and (5) update the moderately priced dwelling unit requirement for any increase above the original 2,389 approved units.

**Attachments:**      [More Information from Planning Department Website](#)

**A motion was made by Commissioner Petty, seconded by Commissioner Dasher, that Resolution #2017-34 Approving a Revision to the Conditional Use Permit by NNP-Briar Chapel, LLC, attached hereto and by reference made a part hereof, be adopted. The revisions include increasing the dwelling unit cap from 2,500 to 2,650, reduce the perimeter buffer to 50 feet at Chapel In The Pines, reduce the perimeter buffer to 50 feet for Lot 4 in SD North, remove the buildable area restriction on the civic site at the intersection of Parker Herndon Road and Andrews Store Road, add the 50 foot voluntary buffer adjacent to the Dollar property, incorporate the revised site plan with a modification to a stream crossing description, Condition #20 regarding the affordable housing payment will be modified, the revised site plan will be incorporated into the Conditional Use Permit, the language will be modified to incorporate all of the changes to the Conditional Use Permit to reflect changes that have occurred since 2014, and item #2 will be revised to reflect the maximum number of dwelling units will be 2,650 but single family units will be limited to 2,389. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard

## **MANAGER' S REPORTS**



*The County Manager stated she has received Brunch Bill recommendations from the Convention and Visitors Bureau and the Economic Development Corporation. The Board gave unanimous consent to put it on the October 16th agenda and have a public hearing at 6pm. Staff will send out a press release to let citizens know about the public hearing.*

### **COMMISSIONERS' REPORTS**

*Commissioner Petty stated he would like the commissioners to gather donations for the hurricane victims. He has a truck and a driver. Chairman Crawford stated he would talk to the Manager at Lowe's Hardware to see if they could park the truck there to collect the donations. Commissioner Howard stated she would come up with a list of acceptable donations.*

*Chairman Crawford stated he went to the Mayors and Chairs Meeting where there was a presentation by the NC Rural Center. Most of the Board will attend TJCOG Summit next week in Clayton.*

*Vice Chair Hales received unanimous consent from the Board to sign letter stating Chatham County will participate in the Jordan Lake One Water Association. She stated the commissioners have received letters and comments asking the Board to increase its membership from five to seven members. She requested the County Attorney to explain the process and the state law for increasing the number of members on a County Board of Commissioners and the process for district and at large voting. The County Attorney stated he would be prepared by the next Board meeting.*

### **ADJOURNMENT**

**A motion was made by Commissioner Howard, seconded by Vice Chair Hales, that this meeting be adjourned. The motion carried by the following vote:**

**Aye:** 5 - Chairman Crawford, Vice Chair Hales, Commissioner Petty, Commissioner Dasher and Commissioner Howard



# Chatham County, NC

## Text File

File Number: 17-2281

**Agenda Date:** 10/16/2017

**Version:** 2

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Planning

**File Type:** Agenda Item

Vote on a request by Stephen Gangemi to rezone property located at 10295 US 15-501 N, Parcel No. 66505, from R1, Residential to CD-O&I, Conditional District Office & Institutional and convert a single-family residence into general and professional offices for a chiropractic business.

### **Action Requested:**

A request by Stephen Gangemi to rezone property located at 10295 US 15-501 N, Parcel No. 66505, from R1, Residential to CD-O&I, Conditional District Office & Institutional and convert a single-family residence into general and professional offices for a chiropractic business.

### **Introduction & Background:**

A legislative public hearing was held August 21, 2017. Planning staff presented the request. No one spoke on the matter. The item was referred to the Planning Board for review and recommendation.

### **Discussion & Analysis:**

Conditional Zoning districts are districts in which the development and use of the property is subject to predetermined ordinance standards and the rules, regulations, and conditions imposed as part of a legislative decision creating the district and applying it to the particular property.

Some land uses are of such a nature or scale that they have significant impacts on both the immediate surrounding area and on the entire community, which cannot be predetermined and controlled by general district standards. The review process established in this Ordinance provides for accommodation of such uses by a reclassification of property into a conditional zoning district, subject to specific conditions, which ensure compatibility of the use with neighboring properties. A conditional zoning district is not intended for securing early zoning for a proposal, except when that proposal is consistent with an approved land use plan or the proposal can demonstrate that public infrastructure needed to serve the development will be made available within a reasonable time period.

The property is currently zoned R1, Residential, and the adjoining properties to the north,

south, and west are also zoned R1, Residential. The properties on the opposite side of US 15-501N are zoned Conditional Use Business (Chatham Downs Shopping Center) and R1, Residential with a conditional use permit for a furniture store. The watershed designation is WS-IV Protected Area and is also in Jordan Lake Drainage. The watershed designation allows for non-residential uses with a built upon area limit ranging between 24% and 36%.

The applicant held a community meeting, as required by the zoning ordinance, on May 31, 2017 at the site. No adjacent or adjoining landowners attended and no issues were provided to the applicant.

The applicant met with the Chatham County Appearance Commission (CCAC) on May 24 2017. The CCAC was very pleased with the proposed landscape plan. The applicant is retaining the majority of the existing trees and vegetation. Some additional fill-in landscaping is proposed where needed. The existing privacy fence has been extended per the CCAC's request and this was their only additional recommendation.

There are five standard items listed in the Zoning Ordinance that must be addressed by an applicant when submitting a rezoning application. The applicant has addressed those items in the application materials or in supplemental material and they are also discussed below.

**Item #1: The alleged error in this Ordinance, if any, which would be remedied by the proposed amendment with a detailed description of such error in the Ordinance and detailed reasons how the proposed amendment will correct the same.** The applicant is claiming no error in the Ordinance.

**This standard is supported and recommended for approval.**

**Item #2: The changed or changing conditions, if any, of the area or in the County generally, which make the proposed amendment reasonably necessary to the promotion of the public health, safety, and general welfare.** Per the applicant's research included in the application packet, this area is growing at a 2.83% rate with more than 21,000 people within a five mile radius and over 114,000 within ten miles of this location. Housing is rapidly growing, especially within subdivisions off of US 15-501 (e.g. Briar Chapel and Chatham Park). With the current increased residential numbers and those to be constructed and occupied, the need for local medical services is and will continue to increase.

**This standard is supported and recommended for approval.**

**Item #3: The manner in which the proposed amendment will carry out the intent and purpose of any adopted plans or part thereof by encouraging the expansion and support of current business located within the county.** Per the applicant, This property fits in nicely with Chatham County's vision for land conservation and development. The current woodlands will be protected, as will be the natural underground spring which is located on the south side of the property. The rural character of the house and land are suitable and ideal for this small business; the current structure will be used

with slight modifications within and the land will be maintained and improved with native trees, plants and shrubs.

The location of the property is on the opposite side of US 15-501 N from Chatham Downs shopping center and is located within a community center commercial in the proposed Comprehensive Land Use Plan, which is not adopted at this time. This area has been transitioning from rural and residential uses to commercial, as has occurred along several areas of the 15-501 corridor from Chapel Hill to Pittsboro. The current Land Use and Development Plan states on Page 12 that commercial is to be cited along major highways in clusters that retain rural crossroads or village character and should be integrated with other nearby development.

Page 34 speaks specifically on the US 15-501 North corridor as an area that may link to infrastructure and build on the economic activity south of Chapel Hill.

**This standard is supported and recommended for approval.**

**Item #4: The requested amendment is either essential or desirable for the public convenience or welfare.** The applicant states, there is only one chiropractic office within a five mile radius of this property, therefore, a rezoning of this area will allow easier access to chiropractic care. There is a high demand for chiropractic services in the proposed location as approximately 8% of residents within the five mile radius (and 7.4% within ten miles) have visited a chiropractor within the last twelve months (see report in the application packet) (For comparison, a dermatologist is at 12.4% and a physical therapist is at 6.3 %.) Within a fifteen mile radius the demand for a chiropractor exceeds other health professions.

**This standard is supported and recommended for approval.**

**Item #5: All other circumstances, factors, and reasons which the applicant offers in support of the proposed amendment include** The practice does not require roadside advertisement; therefore the sign facing US 15-501 will be minimal. A 6'X2' sign approximately 6' high is proposed, either double sided, or two single-sided signs at an angle, per the visibility from both north and south 15-501 traffic.

The existing well and septic will be used and an operations permit revision from Environmental Health will be required if the rezoning is approved. The current septic area has been located is distant from any proposed land changes, including parking spaces. The primary new built upon area will be the parking areas. Ten parking spaces are required per the size of the building and eleven are proposed. There will be eight parking spaces parallel and adjacent to the driveway, four of which will be concrete (one of which is ADA compliant) and the other four will be gravel. This is essentially the most significant change to the grounds and a few trees will need to be removed from that area, however other areas of current existing gravel parking will be replaced by trees, plants, and gardens. There will also be three gravel parking spaces in the front of the building. Concrete sidewalks will join the parking areas to the building, and possibly a gravel walkway rather than concrete from the back four spaces to the back of the building (staff parking/entrance).



**This standard is supported and recommended for approval.**

During the agenda review with the Planning Board Chair and Vice-Chair, it was asked if a less intense conditional zoning district could be requested, which in this case would be CD-O&I (conditional district office and institutional). The Planning Director received confirmation from the county attorney, Jep Rose, this could be done provided the applicant agreed. He indicated that as long as the use still fell within the allowed uses in an O&I district, the public hearing notification stated that changes could occur, and there were no changes to the site plan, it was permissible to move to a less intensive district.

The Planning Board met on September 5, 2017 and reviewed the request. By vote of 7-2, they recommended approval as conditioned below. Planning staff confirmed with the applicant that the CD-O&I zoning classification was acceptable and all other information in the application remains unchanged.

Some concerns noted by planning board members were increased traffic with more commercial sprawl on the US 15-501 corridor and potential effects on the stream shown on the lower southwest corner edge of the property.

Support for the project included a low volume practice, continuation of the rural character of the area by maintaining a majority of the existing mature vegetation and utilizing the existing house to be converted into the practice.

A minority report was also provided by the Planning Board members voting in opposition to rezoning request and it is attached for reference.

**The Planning Board and planning staff recommend approval of this request with the following consistency statement and stated conditions as noted below.**

**Recommendation:**

The Planning Board by vote of 7-2 recommends the Board of Commissioners adopt a resolution approving the following **Consistency Statement**:

**It is the opinion of the Chatham County Board of Commissioners that the rezoning request for Parcel No 66505 is consistent with the goals and objectives of the Land Use Plans of Chatham County by supporting business growth that fills a need for medical services in a heavily populated residential area and is approved. The Land Conservation and Development Plan recommends that commercial development is to be cited along major highways in clusters that retain rural crossroads or village character and should be integrated with other nearby development. The proposal also protects ground and surface waters with no more than 36% development allowed without curb and gutter or 24% if curb and gutter with limited land disturbance on the site to maintain the rural character of the property.**

The Planning Board by a 7-2 vote recommends adoption of an ordinance amending the Zoning Ordinance approving the request by Stephen Gangemi to rezone property located

at 10295 US 15-501 N, Parcel No. 66505, from R1, Residential to CD-O&I, Conditional District Office & Institutional with the following conditions:

**Site Specific Conditions**

1. The recommendations of the Chatham County Appearance Commission shall be followed. Existing vegetation should be preserved and maintained as reasonably necessary and as allowed by development of the site. Required plantings shall be installed by the next optimal planting season following the issuance of the first building permit.
2. A building permit shall be obtained and remain valid at all times within two (2) years of this approval or it shall become null and void.

**Standard Site Conditions**

3. The application, standards and adopted regulations of the applicable ordinances and policies, and the approved recommendations as provided for and/or conditioned, are considered to be the standards as set forth and shall comply as stated. Changes or variations must be approved through the Planning Department or other approving board before any such changes can take place. These include but are not limited to landscaping, lighting, signage, parking, building construction, etc.
4. All required local, state, or federal permits (i.e. NCDOT commercial driveway permits, NCDWQ, Chatham County Erosion & Sedimentation Control, Environmental Health Division, Stormwater Management, Building Inspections, Fire Marshal, etc.) shall be obtained, if required, and copies submitted to the Planning Department prior to the initiation of the operation/business.

**Standard Administrative Conditions:**

5. Fees - Applicant and/or landowner shall pay to the County all required fees and charges attributable to the development of its project in a timely manner, including, but not limited to, utility, subdivision, zoning, and building inspections.
6. Continued Validity - The continued validity and effectiveness of this approval was expressly conditioned upon the continued compliance with the plans and conditions listed above.
7. Non-Severability - If any of the above conditions is held to be invalid, this approval in its entirety shall be void.
8. Non-Waiver - Nothing contained herein shall be deemed to waive any discretion on the part of the County as to further development of the applicant's property and this permit shall not give the applicant any vested right to develop its property in any other manner than as set forth herein.



# Chatham County, NC

## Text File

File Number: 17-2282

**Agenda Date:** 10/16/2017

**Version:** 2

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Planning

**File Type:** Agenda Item

Vote on a request by Nathan Glines, owner Harmony Gardens, to rezone a portion of property located at 5661 Beaver Creek Rd, Parcel No. 5727, from R1, Residential to CD-NB, Conditional District Neighborhood Business to develop an events center to hold weddings and other such gatherings.

### **Action Requested:**

A request by Nathan Glines, owner Harmony Gardens, to rezone a portion of property located at 5661 Beaver Creek Rd, Parcel No. 5727, from R1, Residential to CD-NB, Conditional District Neighborhood Business to develop an events center to hold weddings and other such gatherings.

### **Introduction & Background:**

A legislative public hearing was held on August 21, 2017. Planning staff presented the request. No one spoke on the matter and the item was referred to the Planning Board for review and recommendation.

### **Discussion & Analysis:**

Conditional Zoning districts are zoning districts in which the development and use of the property is subject to predetermined ordinance standards and the rules, regulations, and conditions imposed as part of a legislative decision creating the district and applying it to the particular property.

Some land uses are of such a nature or scale that they have significant impacts on both the immediate surrounding area and on the entire community, which cannot be predetermined and controlled by general district standards. The review process established in this Ordinance provides for accommodation of such uses by a reclassification of property into a conditional zoning district, subject to specific conditions, which ensure compatibility of the use with neighboring properties. A conditional zoning district is not intended for securing early zoning for a proposal, except when that proposal is consistent with an approved land use plan or the proposal can demonstrate that public infrastructure needed to serve the development will be made available within a reasonable time period.

The property is currently zoned R1, Residential and the surrounding properties are zoned R1 and R5, Residential. The R5 designation applies to property owned by the Corps of

Engineers for Jordan Lake. The watershed designation is this area WS-IV Protected and Critical Area within the Jordan Lake drainage. The WS-IV Critical Area covers a small portion of the northern property boundary and adjoining properties to the north.

The applicant held the community meeting, as required by the zoning ordinance, on April 2, 2017 at the site. No adjacent or adjoining landowners attended. The applicant then made door to door visits with each landowner and no issues or concerns were expressed.

The applicant met with the Chatham County Appearance Commission (CCAC) on May 24, 2017. The CCAC unanimously supported the preliminary plans and recommended moving the vegetation along the western side of the property closer to the venue area and not along the property line to meet the Type A buffer requirement.

There are five standard items listed in the Zoning Ordinance that must be addressed by an applicant when submitting a rezoning application. The applicant has addressed those items in the application materials or in supplemental material and they are also discussed below.

**Item #1: The alleged error in this Ordinance, if any, which would be remedied by the proposed amendment with a detailed description of such error in the Ordinance and detailed reasons how the proposed amendment will correct the same.** The applicant is claiming no error in the Ordinance. The use of an events center limited is an eligible conditional use under the requested CD-NB district. The Zoning Ordinance allows for uses that are listed as conditional to be considered as allowed uses when combined with a conditional zoning district rezoning application.

- This standard is supported and recommended for approval.

**Item #2: The changed or changing conditions, if any, of the area or in the County generally, which make the proposed amendment reasonably necessary to the promotion of the public health, safety, and general welfare.** The applicant states that due to the increased residential growth in the county, there is a lack of affordable event space for weddings and other events. The area will be in the rear of the property so that traffic will be pulled into the site. Open space will be utilized for gardens and tent areas when requested. Although not a necessary use, it is desirable for the public convenience. It is also in close proximity to Old US 1 (approximately 1 mile) and US 1 which can draw revenue in from adjoining Wake County.

- This standard is supported and recommended for approval.

**Item #3: The manner in which the proposed amendment will carry out the intent and purpose of any adopted plans or part thereof by encouraging the expansion and support of current business located within the county.** The site will not be visible from the public roadway or adjoining properties. The property will utilize the existing wooded areas along the perimeter of the site and add additional plantings for a Type A buffer along the eastern and western property lines.

A future reception hall will be constructed which is to be located in the furthest corner of



the property. The current railed fencing will help to ensure guests do not trespass onto adjacent land.

- This standard is supported and recommended for approval.

**Item #4: The requested amendment is either essential or desirable for the public convenience or welfare.** This venue hopes to offer options that are up to 50% less than what the average wedding cost was in 2016 to make it more affordable for more people. This is to be a low intensity commercial operation with minimal impacts to the property. Based on an ESRI report provided by the applicant, events such as weddings draw clients from a radius of about 30 miles or 1.5 million citizens. The offering of a gardens style event center offers a unique appeal compared to other venues in the area that are either farm or barnyard style based.

- This standard is supported and recommended for approval.

**Item #5: All other circumstances, factors, and reasons which the applicant offers in support of the proposed amendment include** creating a low impact business that may bring business to other parts of the county. Traffic will be minimal usually on weekends when traffic is lower. The applicant plans to hold 2-3 events per week with staggered arrival and departure times.

A commercial driveway permit will be applied for and all other regulations will be adhered to.

The property will utilize well and private septic for the venue. No additional costs or infrastructure are needed from the county. The applicant will live on the parcel to ensure safety and design standards are maintained.

- This standard is supported and recommended for approval.

The Planning Board met on September 5, 2017. By vote of 7-2 they recommend approval of the conditional district rezoning request.

Some concerns noted were the property adjoining the US Corps of Engineers lands citing that hunting is allowed and controlled burns are conducted as part of a NC Forestry Service maintenance program, about the septic system being located next to Corps land and the possibility of overflow, music and the impact on neighboring properties and whether there were time limits, and lack of stormwater control devices. The applicant stated he was aware and would make sure his clients were also made aware; he has contacted Agri-Waste Technologies about designing a flow equalization system that the Chatham County Environmental Health Department would need to approve; that music, whether indoors or outdoors, would stop by 10:30 pm; and that less 20,000 square feet of disturbance was needed to develop the site and would not require installation of stormwater devices.

There was encouragement to support this type of small business enterprise by several board members.

**The planning board and planning staff, based on all standards being supported, recommend approval of the conditional zoning request with the following**

**consistency statement and stated conditions as noted below.**

**Recommendation:**

The Planning Board by vote of 7-2 recommends adoption of a resolution approving the following **Consistency Statement**:

**It is the opinion of the Planning Board that the rezoning request for Parcel No 5727 is consistent with the goals and objectives of the Land Use Plans of Chatham County by supporting business growth that offers affordable options for services in a growing residential area and is approved. Due to minimal land disturbance on the site, the rural character of the property will be preserved by locating the event center activity in the rear of the property.**

The Planning Board by a 7-2 vote recommends adoption of an ordinance amending the Zoning Ordinance approving the request by Stephen Gangemi to rezone property located at 10295 US 15-501 N, Parcel No. 66505, from R1, Residential to CD-NB, Conditional District Neighborhood Business with the following conditions:

**Site Specific Conditions**

1. The recommendations of the Chatham County Appearance Commission shall be followed as recommended. Existing vegetation should be preserved and maintained as reasonably necessary and as allowed by development of the site. Required plantings shall be installed by the next optimal planting season following the issuance of the first building permit.
2. Phasing of the project is allowed provided the event center begins operations within two (2) years of this approval or it shall become null and void.

**Standard Site Conditions**

3. The application, standards and adopted regulations of the applicable ordinances and policies, and the approved recommendations as provided for and/or conditioned, are considered to be the standards as set forth and shall comply as stated. Changes or variations must be approved through the Planning Department or other approving board before any such changes can take place. These include but are not limited to landscaping, lighting, signage, parking, building construction, etc.
4. All required local, state, or federal permits (i.e. NCDOT commercial driveway permits, NCDWQ, Chatham County Erosion & Sedimentation Control, Environmental Health Division, Stormwater Management, Building Inspections, Fire Marshal, etc.) shall be obtained, if required, and copies submitted to the Planning Department prior to the initiation of the operation/business.

**Standard Administrative Conditions:**

5. Fees - Applicant and/or landowner shall pay to the County all required fees and charges attributable to the development of its project in a timely manner, including, but not limited to, utility, subdivision, zoning, and building inspections.
6. Continued Validity - The continued validity and effectiveness of this approval was

expressly conditioned upon the continued compliance with the plans and conditions listed above.

7. Non-Severability - If any of the above conditions is held to be invalid, this approval in its entirety shall be void.
8. Non-Waiver - Nothing contained herein shall be deemed to waive any discretion on the part of the County as to further development of the applicant's property and this permit shall not give the applicant any vested right to develop its property in any other manner than as set forth herein.



# Chatham County, NC

## Text File

File Number: 17-2354

Agenda Date: 10/16/2017

Version: 1

Status: Approval of Agenda and  
Consent Agenda

In Control: Planning

File Type: Agenda Item

Vote on a request by F-L Legacy Owner, LLC for subdivision Final Plat approval of **The Legacy Phase 5A2**, consisting of 22 lots on 10.29 acres, located off SR-1716, Big Woods Road and Legacy Falls Drive South, parcel #17378.

### Action Requested:

A request by F-L Legacy Owner, LLC for subdivision Final Plat approval of **The Legacy Phase 5A2**, consisting of 22 lots on 10.29 acres, located off SR-1716, Big Woods Road and Legacy Falls Drive South, parcel #17378.

### Introduction & Background:

**Zoning:** R1 with Conditional Use Permit for a Planned Unit Development

**Watershed District:** WSIV Protected & Jordan Lake Buffer Area

**Water Source:** public, Chatham County

**Sewer Source:** private, waste water treatment plant

**Road type:** private, paved

**Within the 100 year flood plain:** No floodable area in Phase 5A2

**Reviewed:** Under pre-2008 Subdivision Regulations

The Legacy at Jordan Lake Subdivision was approved by the Board of County Commissioners on March 15, 2004 as a Planned Unit Development for a cluster development. Modifications were made to the plan in 2005 to add 50.6 acres and change the number of lots to 463. The project is approved for 463 lots on 626 acres with an amenity center. Phase One received final plat approval in December, 2005 for 105 lots. Phases Two and Three, consisting of 114 lots received preliminary / final plat approval in 2006 (54 lots in Phase Two and 60 lots in Phase Three). In 2011, the developer submitted a request to the Board of County Commissioners to relinquish the final plat approvals for Phases Two and Three (undeveloped); to recombine the 114 lots with the remaining undeveloped portion of the property into one parcel of land containing 402 acres; and to allow Phases Two and Three to revert to their approved preliminary plat status as of November 20, 2006. The BOC approved the request on November 7, 2011. The Resolution Accepting The Voluntary Relinquishment of Final Plat Approvals of The Legacy at Jordan Lake, Phases Two and Three is recorded in Book 1593, Page 272.



The recorded recombination plat can be viewed at Plat Slide 2011, Pages 199 & 200 and at Plat Slide 2012, Page 10. The Resolution stated that the recreation fees and the water availability fees previously paid by the developer would be retained by the county and credited toward any similar fees incurred by the developer in future submittals until December 31, 2015 or any later date required by an amendment to the Permit Extension Act.

To date 226 lots have received final plat approval. *As part of a 2014 CUP revision, the final plat sunset date for all phases is December 31, 2020.* The Phase 5A2 layout conforms to the revision to the CUP approved in 2014.

**Discussion & Analysis:**

Phase 5A2 is a portion of Phase 5A that received preliminary plat approval on April 20, 2015 for 57 lots. Phase 5A1 received final plat approval on April 20, 2015 for 35 lots. The request before the Board is for final plat approval of The Legacy, Phase 5A2, consisting of 22 lots on 10.29 acres with a financial guarantee for completion of the remaining infrastructure. The pre-2008 Subdivision Regulations allow a final plat to be submitted with a financial guarantee when a minimum of 40% of the total cost of improvements have been completed and when the public health and/or safety will not be endangered. Mark Ashness, P. E., CE Group, Inc. has certified in a cost estimate letter dated August 9, 2017 that 60% of the required infrastructure has been completed and that the roads are graded and stoned and accessible to emergency vehicles. The cost letter states that the developer anticipates the roads to be paved prior to final plat recordation. An updated cost letter may be submitted if additional work has been completed prior to recordation of the final plat to reduce the amount of the financial guarantee. The county attorney will review and approve the form of the contract and financial guarantee. The roadways in The Legacy are private and to be constructed to meet NCDOT's Standards and Specifications, but not reviewed or approved by NCDOT. A third party testing agency has been retained to provide testing and certification. Those records will then be provided to the HOA. Per Note 12 on the plat, maintenance of the private roads is the sole responsibility of The Legacy at Jordan Lake HOA, Inc.

Mark Ashness, P. E., CE Group, engineer for the developer has provided the following information regarding stormwater management for The Legacy at Jordan Lake:

The Legacy was submitted in 2005 and predated the County Stormwater regulations.

The applicant voluntarily provided the following at that time:

1. Additional 50' (100' each side) voluntary buffer on all blue line streams.
2. **For portions of the project within the Jordan Lake Critical Area** (this is a very small area near Big Woods Road) Treat for the 1YR 24 Hour Storm.
3. **For portions of the project within the Jordan Lake Protected Area** Capture the equivalent volume of runoff equal to the 1st 1/2" of runoff from impervious areas and detain and release slowly over a 2-5 day period.

Capturing the 1st 1/2 inch is consistent of what other PUD projects proposed at that time. The additional 50' buffer on each side of stream and treating the 1 YR 24

Hour Storm (within the critical area) were proffers that were above and beyond what other projects were doing in 2005.

Sheet 1 of the final plat shows a stream located in the common area. Staff recommends that the stream be shown on Sheet 2 along with the 100 foot per side riparian buffer measured from the top of bank landward. Staff also recommends that conservation area / open space be labeled on Sheet 2.

The Technical Review Committee met on August 16, 2017 to review the request for final plat. Staff discussion included that the property is located within the Jordan Lake Buffer Area; that there are no additional streams shown on the NRCS maps that affect Phase 5A2; that language is on the plat stating that the county would not be responsible for restoring private infrastructure in the course of repairing the public water system; and that emergency vehicle access is adequate. Staff had no other concerns or questions. The submittal meets the requirements of the Subdivision Regulations with changes stated above.

The Planning Board met on September 5, 2017 to review the request. Mark Ashness, P. E, CE Group and Fred Ward were present to represent the developer and to answer questions from the Board. Questions from the Planning Board included whether a HOA will be responsible for maintenance of the park area/common spaces; purpose of park; can stormwater devices be increased to capture the first 1" of runoff versus the approved 1/2" of runoff from impervious areas; are stormwater ponds inspected annually; and is there an Operations & Maintenance Agreement for the stormwater features?

Mark Ashness, P. E. stated that a HOA will be responsible for maintenance of all park/common areas; that the park is a wooded area and will remain as such; that as stated in the agenda notes capturing the 1st ½ inch of runoff was consistent with other PUD projects proposed at that time; that the additional 50' buffer on each side of blue line streams and treating the 1 YR 24 Hour Storm (within the critical area) were proffers that were above and beyond what other projects were doing in 2005; that a separate management company is responsible for inspecting the ponds yearly; and there is an O & M Agreement.

The Planning Board requested that a note be added to the final plat to state the maintenance responsibility of the park/common area.

**Recommendation:**

The Planning Department and the Planning Board by a vote of 8 - 1 recommend granting approval of the final plat titled "The Legacy at Jordan Lake - Tract 2, Subdivision Plat, Phase 5A2" with the following conditions:

1. The county attorney shall review and approve the contract and financial guarantee prior to final plat recordation.
2. Prior to recordation of the final plat, Sheet 2 shall be revised to show the stream along with the 100 foot per side riparian buffer. (This condition has been met)
3. Prior to recordation of the final plat, Sheet 2 shall be revised to label the

conservation / open area. (This condition has been met)

The Planning Board added the following:

4. Prior to recordation of the final plat, a note shall be added to state the maintenance responsibility of the park/common areas. (This condition has been met)



# Chatham County, NC

## Text File

File Number: 17-2353

Agenda Date: 10/16/2017

Version: 1

Status: Approval of Agenda and  
Consent Agenda

In Control: Planning

File Type: Agenda Item

Vote on a request by Michael Poe for a twenty-four (24) month extension of preliminary plat to extend the current preliminary plat expiration date for Cattail Creek Subdivision from November 15, 2017 to November 15, 2019, consisting of 21 remaining lots, located off White Smith Road, S. R. 1506, Hadley Township, parcel #60065

### Action Requested:

Request by Michael Poe for a twenty-four (24) month extension of preliminary plat to extend the current preliminary plat expiration date for Cattail Creek Subdivision from November 15, 2017 to November 15, 2019, consisting of 21 remaining lots, located off White Smith Road, S. R. 1506, Hadley Township, parcel #60065

### Introduction & Background:

**Zoning District :** R-1

**Watershed District:** WSIV-PA / Jordan Lake Buffer Area

**Water Source:** Private wells

**Septic:** On-site and off-site septic and repair areas

**No floodable area**

### General Information:

This subdivision is review under the Pre-2008 Subdivision Regulations. Cattail Creek received Sketch Plan approval in 2004 for 76 lots and Preliminary Plat approval in 2005 for 72 lots. There are 21 lots remaining to be final platted. The current preliminary plan for the remaining 21 lots will expire on November 15, 2017 unless an extension request is approved by the Board of Commissioners. If the current preliminary plat expires, any future development of the property will be reviewed and approved under the current Subdivision Regulation.

All lots in Cattail Creek Subdivision in Phases 1 through 5 (this includes a 5 lot minor subdivision approved in 2004 prior to the major subdivision submittal) have received final plat approval and to date 55 homes have been constructed. The minimum lot size is 1.50 acres with an average lot size of approximately 2 acres. The Permit Extension Act of 2009 extended the preliminary plat expiration date to November 15, 2013 and the developer has requested and received two (2) additional extension requests to establish

the current preliminary plat expiration date of November 15, 2017.

**Discussion & Analysis:**

The request before the Board is for a twenty-four month extension of preliminary plat to extend the preliminary plat expiration date from November 15, 2017 to November 15, 2019. The developer, Michael Poe, has stated in his extension request letter that the reason for the extension request is based on the past housing market decline in the Siler City area, but the current housing market appears strong enough to support completion of the project. As stated above there have been 55 homes built to date in Phases 1 - 5. Mr. Poe is marketing the balance of the property and has a potential buyer that is interested in completing the project as originally approved.

In 2008, the Jordan Lake Riparian Buffer requirements were required to be implemented by the Legislature and the parcel, #60065, is located within this area. Per the NRCS maps there are possibly two (2) additional features that may require an undisturbed riparian buffer. Drew Blake, Environmental Quality Specialist, made an on-site visit and determined that only one of the features will require an undisturbed buffer. If the extension request is approved, the feature and undisturbed buffer will be shown on the final plat. The erosion control permit previously approved by Chatham County in 2013 has expired. The developer will be required to obtain a new permit prior to any land disturbing activities. Based on the pre-2008 Subdivision Regulations, no stormwater permit is required from Chatham County.

The lots in Cattail Creek Subdivision are accessed by NCDOT public, state maintained roadways. The road plan was approved by NCDOT in 2005. Mr. Poe petitioned NCDOT to take over the maintenance of the roadways in Phases 1 through 5. Planning staff has received a letter dated July 7, 2017 from NCDOT stating that Rebecca Lane, Isabela Court, and Madison Court will be maintained by NCDOT. Staff received verification dated July 14, 2017 from Justin Richardson, Assistant District Supervisor, NCDOT, that a new road plan permit will not be required unless the road plans change from the original approval. The Cattail Creek stream crossing was completed in 2008/2009 per the conditions of the Army Corps of Engineers 404 permit obtained in 2005. A NCDWQ 401 permit was not required at that time based on the regulations in place. There are no additional creek crossings necessary to complete development of the balance of the property.

*The Planning Board met on August 1, 2017 to review and discuss the request. Laura Grace, Realtor, was present to represent the potential buyer, Karelian Homes, Inc. and answer questions on the request. The Board discussed the request and had the following concerns / questions:*

*--Cattail Creek is a perennial stream and required a 50 foot wide riparian buffer at the time of preliminary plat approval in 2005,*

*--If developed under the existing subdivision regulations instead of the pre-2008 regulations, Cattail Creek would require a 100 foot wide riparian buffer,*

*--Can the Planning Board require the additional 50 foot riparian buffer along Cattail*



Creek,

--Concern regarding run-off from future development into Cattail Creek which feeds into Terrell's Creek,

--Would the additional feature shown on the NRCS map be included on future maps along with the required riparian buffer,

--If the extension request was granted, would the Planning Board have an opportunity to review future maps,

--If the extension request is granted, but the sale of the property does not happen, does the extension still apply?

Staff stated that under the pre-2008 subdivision regulations, the final plat(s) are required to be reviewed by the Planning Board and approved by the Board of Commissioners; that the Board cannot require the additional buffer, that the applicant can volunteer to provide the additional buffer; that the stream feature shown on the NRCS map will have to be shown on future maps along with the required riparian buffer; and that if the request is approved, the approval runs with the land and not the property owner.

Ms. Grace spoke and stated that her client was committed to completing the development of the property; that no work would commence until a new erosion control permit was obtained; and that every effort would be made to eliminate run-off into the stream.

The Planning Board tabled the request until the September 5, 2017 meeting to allow the current developer and potential buyer to respond to the Board's concerns.

The Planning Board met on September 5th to continue discussion on the request.

Included in the revised Planning Board agenda notes for the 9/5/17 meeting was Attachment # 4 dated August 22, 2017, Cattail Creek Subdivision Buffer Proposal, which stated in part that "Karelian Homes, Inc. is willing to voluntarily add an additional 50 foot wide buffer to effectively increase the existing mandatory 50 foot buffer area which extends along the property boundary with Cattail Creek to a total of 100 feet; that the additional 50 feet would not be used for dwellings, concrete and paved driveways and walkways, and wells; that Karelian Homes Inc. would, however, reserve the right to use a part of the voluntary 50 foot buffer as an area where septic drain fields may be located if necessary." See letter, attachment #4. A map, attachment # 5, was also provided showing the location of the 50 foot voluntary buffer along lots that would border Cattail Creek and shows the NRCS additional feature and buffer. Laura Grace was present along with the potential buyer/developer of the property.

The Planning Board stated that they appreciated the developer, Karelian Homes, Inc. being willing to provide the additional voluntary 50 foot riparian buffer along Cattail Creek. Some Planning Board members stated they still had concerns that the water

quality of Terrell's Creek is considered 'poor' and further development of the balance of Cattail Creek Subdivision under the pre-2008 Subdivision Regulations will further deteriorate Terrell's Creek because stormwater controls are not required; and that they were not comfortable with septic systems being allowed in the outer 50 foot voluntary buffer. A Board member asked what the differences would be if the balance of the property was developed under the current subdivision regulations versus pre-2008. The developer with Karelian Homes stated that a soils report in 2004 indicated that there are pockets of adequate soils for septic systems near Cattail Creek (which were outside the original required 50 foot buffer area), however, every effort would be made not to intrude into the additional 50 foot voluntary buffer area with septic systems or repair areas. Ms. Grace spoke and stated that the lot lines will need to be revised to accommodate the water feature shown on the NRCS maps; therefore, there may be less than 21 lots developed, that the average lot size would be 2 acres, that the developer wants to keep the cost of house and land affordable and intends to use local building suppliers. Ms. Grace stated that differences between the two regulations would include a 100 foot riparian buffer along Cattail Creek and buffers along the water feature shown on the NRCS maps (which are both being provided), and there would be a requirement for stormwater controls. Ms. Grace stated that Karelian Homes is not planning to add stormwater controls.

As stated in the August 1st Planning Board notes, staff reminded the Planning Board that Planning staff is not making a recommendation because this is a policy decision to be made by the Board of Commissioners.

**Recommendation:**

The Planning Board by a vote of 7 - 2 recommended approval of the request for an extension of the current preliminary plat expiration date for Cattail Creek Subdivision from November 15, 2017 to November 15, 2019.



# Chatham County, NC

## Text File

File Number: 17-2293

**Agenda Date:** 10/16/2017

**Version:** 2

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Planning

**File Type:** Agenda Item

Vote on a request to adopt revisions to the Chatham County Flood Damage Prevention Ordinance.

### Action Requested:

A request to adopt revisions to the Chatham County Flood Damage Prevention Ordinance.

### Introduction & Background:

On May 17th, 2017, the Federal Emergency Management Agency (FEMA) sent the County Manager a notice that final flood hazard determinations had been made by the agency. FEMA received no requests for changes in the flood hazard determinations made in the preliminary Flood Insurance Study (FIS) and proposed Flood Insurance Rate Maps (FIRM), which were published on August 30th, 2013. The effective date for the modified flood hazard information and revised FIRM panels is November 17th, 2017. As a condition of continued eligibility in the National Flood Insurance Program (NFIP), Chatham County is required to adopt floodplain management regulations that meet the standards of Section 60.3(d) of the NFIP regulations by November 17th, 2017. The North Carolina Division of Emergency Management (NCDEM) has revised their Flood Damage Prevention Model Ordinance to reflect the floodplain management regulations that meet the standards of Section 60.3(d) of the NFIP regulations. The current Chatham County Flood Damage Prevention Ordinance is modeled after an earlier version of the NCDEM model ordinance, and therefore, must be revised to reflect the changes to the NCDEM model ordinance, in order to allow Chatham County to remain eligible in the NFIP.

On August 21st, 2017, the Board of Commissioners held a Public Hearing to consider revisions to the Chatham County Flood Damage Prevention Ordinance. No one from the public spoke on the matter. The Board of Commissioners forwarded the item to the Planning Board for a review and recommendation. On September 5th, the Planning Board held a Public Hearing. No one from the public spoke. The Planning Board recommended adoption of the revisions to the Flood Damage Prevention Ordinance, with three minor changes: The first was to define the acronym "NAVD 1988", which stands for the North American Vertical Datum of 1988. The second was to change the phrase "Article 54" on Article 4, Section B, Paragraph 1, Subsection 5, to "Article 5". The third was to add the following language to Section B, Subsection 2: "New non-residential

construction shall be located outside of the SFHA.” This language is in the current ordinance, and was inadvertently removed from the previous redlined ordinance.

**Discussion & Analysis:**

None of the changes to the NCDEM model ordinance will significantly impact how Chatham County currently regulates flood hazard areas. The day-to-day floodplain administration of Chatham County should remain the same, with one possible exception: Article 5, Section A under “General Standards”, #s 5-7 (Page 18). These general standards concern the placement of water supply systems, sanitary sewage systems, and on-site waste disposal systems on a parcel of land. A change was made to these standards to accommodate the rare situation when one of these systems must be located inside the SFHA (i.e. if the entire parcel is within the SFHA). Should this situation occur, any new system that must be located in the floodplain must also be reviewed and approved by the Floodplain Administrator.

On October 6, 2017 the county was contacted by North Carolina Department of Public Safety staff that the following three technical revisions also needed to be incorporated into the amended ordinance:

#1 The definition of Lowest Adjacent Grade should include the word “lowest” “Lowest Adjacent Grade (LAG)” means the lowest elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

#2 Article 5, Section B(2), we gave you a Cross Reference that does not exist Article 5, Section I (2) should be Article 5, Section G(2) (the Zone AO Section)

#3 Article 5, Section G(2)

The Cross Reference of Article 5, Section H(1) should be Article 5, Section G(1)

Those changes have been incorporated into the final draft of the Flood Damage Prevention Ordinance for adoption.

**Recommendation:**

The Planning Board by unanimous vote recommends adoption of an ordinance amending the Flood Damage Prevention Ordinance with three changes as noted in the Discussion & Analysis with an effective date of November 17, 2017. This includes additional technical revisions reported to the county by the North Carolina Department of Public Safety on October 6.

# Chatham County Flood Damage Prevention Ordinance

## CHATHAM COUNTY

### FLOOD DAMAGE PREVENTION ORDINANCE

#### ARTICLE 1 STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

##### SECTION A STATUTORY AUTHORIZATION

The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143, Parts 3 and 4 of Article 18 of Chapter 153A and Part 121, Article 6 of Chapter 153A of the North Carolina General Statutes delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Board of County Commissioners of Chatham County, North Carolina does ordain as follows:

##### SECTION B FINDINGS OF FACT

- (1) The flood prone areas of Chatham County are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- (2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities, and by the occupancy in flood prone areas by uses vulnerable to floods or other hazards.

##### SECTION C STATEMENT OF PURPOSE

It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or velocities;
- (2) require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3) control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
- (4) control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
- (5) prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

##### SECTION D. OBJECTIVES

The objectives of this ordinance are:

- (1) to protect human life and health;
- (2) to minimize expenditure of public money for costly flood control projects;
- (3) to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;



# Chatham County Flood Damage Prevention Ordinance

- (4) to minimize prolonged business losses and interruptions;
- (5) to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges that are located in flood prone areas;

~~(6)~~ (6) Minimize damage to private and public property due to flooding;

(7) Make flood insurance available to the community through the National Flood Insurance Program;

(8) Maintain the natural and beneficial functions of floodplains;

(9) to help maintain a stable tax base by providing for the sound use and development of flood prone areas; and,

~~(7)~~(10) to insure that potential buyers are aware that property is in a Special Flood Hazard Area.

## ARTICLE 2 DEFINITIONS

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

"Accessory Structure (Appurtenant Structure)" means a structure located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

"Addition (to an existing building)" means an extension or increase in the floor area or height of a building or structure.

"Alteration of a watercourse" means a dam, impoundment, channel relocation, change in channel alignment, channelization, or change in cross-sectional area of the channel or the channel capacity, or any other form of modification which may alter, impede, retard or change the direction and/or velocity of the riverine flow of water during conditions of the base flood.

"Appeal" means a request from a review of the local administrator's interpretation of any provision of this ordinance.

"Area of shallow flooding" means a designated A0 Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

"Area of Special Flood Hazard" see "Special Flood Hazard Area (SFHA)"

"Area of Future-Conditions Flood Hazard" means the land area that would be inundated by the 1-percent-annual-chance (100- year) flood based on future-conditions hydrology

"Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

"Base flood," means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

"Base Flood Elevation (BFE)" means a determination of the water surface elevations of the base flood as published in the Flood Insurance Study. When the BFE has not been provided in a "Special Flood Hazard Area", it may be obtained from engineering studies available from a Federal or State or other source using FEMA approved engineering methodologies. This elevation, when combined with the "Freeboard", establishes the "Regulatory Flood Protection Elevation".

# Chatham County Flood Damage Prevention Ordinance

"Best available data" - This is information provided by the U.S. Army Corps of Engineers, other government agencies, or other competence sources such as a registered surveyor or engineer, which is prepared using standard accepted practices.

"Building" see "Structure."

"Chemical Storage Facility" means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

"Design Flood": See "Regulatory Flood Protection Elevation."

"Development" means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

"Development Activity" means any activity defined as Development which will necessitate a Floodplain Development Permit. This includes buildings, structures, and non-structural items, including (but not limited to) fill, bulkheads, piers, pools, docks, landings, ramps, and erosion control/stabilization measures.

"Digital Flood Insurance Rate Map (DFIRM)" means the digital official map of a community, issued by the Federal Emergency Management Agency (FEMA), on which both the Special Flood Hazard Areas and the risk premium zones applicable to the community are delineated.

"Disposal" means, as defined in NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

"Elevated building" means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

"Encroachment" means the advance or infringement of uses, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

"Existing building and existing structure" means any building and/or structure for which the "start of construction" commenced before February 17, 1997.

"Existing manufactured home park or manufactured home subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before February 17, 1997.

"Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) the overflow of inland or tidal waters; and,
- (2) the unusual and rapid accumulation of runoff of surface waters from any source.

"Flood Boundary and Floodway Map (FBFM)" means an official map of a community, issued by the Federal Emergency Management Agency, on which the Special Flood Hazard Areas and the floodways are delineated. This official map is a supplement to and shall be used in conjunction with the Flood Insurance Rate Map (FIRM).

"Flood Hazard Boundary Map (FHBM)" means an official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of the Special Flood Hazard Areas have been defined as Zone A.

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“Flood Insurance” means the insurance coverage provided under the National Flood Insurance Program.

“Flood Insurance Rate Map (FIRM)” means an official map of a community, issued by the Federal Emergency Management Agency on which both the Special Flood Hazard Area and the risk premium zones applicable to the community are delineated.

“Flood Insurance Study” means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the Federal Emergency Management Agency. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.

“Flood Prone Area” see “Floodplain”

“Floodplain” means any land area susceptible to being inundated by water from any source.

“Floodplain Administrator” is the individual appointed to administer and enforce the floodplain management regulations.

“Floodplain Development Permit” means any type of permit that is required in conformance with the provisions of this ordinance, prior to the commencement of any development activity.

“Floodplain Management” means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

“Floodplain Management Regulations” means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood-prone areas. This term describes federal, state or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.

“Flood proofing,” means any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

“Flood-resistant material” means any building product [material, component or system] capable of withstanding direct and prolonged contact (minimum 72 hours) with floodwaters without sustaining damage that requires more than low-cost cosmetic repair. Any material that is water-soluble or is not resistant to alkali or acid in water, including normal adhesives for above-grade use, is not flood-resistant. Pressure-treated lumber or naturally decay-resistant lumbars are acceptable flooring materials. Sheet-type flooring coverings that restrict evaporation from below and materials that are impervious, but dimensionally unstable are not acceptable. Materials that absorb or retain water excessively after submergence are not flood-resistant. Please refer to Technical Bulletin 2, Flood Damage-Resistant Materials Requirements, and available from the FEMA. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

“Floodway” means the channel of a river or other watercourse, including the area above a bridge or culvert when applicable, and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

“Floodway encroachment analysis” means an engineering analysis of the impact that a proposed encroachment into a floodway or non-encroachment area is expected to have on the floodway boundaries and flood levels during the occurrence of the base flood discharge. The evaluation shall be prepared by a qualified North Carolina licensed engineer using standard engineering methods and models.

“Flood Zone” means a geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

# Chatham County Flood Damage Prevention Ordinance

“Freeboard” means the height added to the Base Flood Elevation (BFE) to account for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization on the watershed. The Base Flood Elevation plus the freeboard establishes the “Regulatory Flood Protection Elevation”.

“Functionally dependent facility” means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

“Hazardous Waste Facility” means, as defined in NCGS 130A, Article 9, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.

“Highest Adjacent Grade (HAG)” means the highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.

“Historic Structure” means any structure that is: (a) listed individually in the National Register of Historic Places (a listing maintained by the US Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register; (b) certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (c) individually listed on a local inventory of historic landmarks in communities with a “Certified Local Government (CLG) Program; or (d) certified as contributing to the historical significance of a historic district designated by a community with a “Certified Local Government (CLG) Program.

Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1966 as amended in 1980.

“Letter of Map Change (LOMC)” means an official determination issued by FEMA that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

(a) Letter of Map Amendment (LOMA): An official amendment, by letter, to an effective National Flood Insurance Program map. A LOMA is based on technical data showing that a property had been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the base flood elevation. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property, portion of a property, or structure is not located in a special flood hazard area.

(b) Letter of Map Revision (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, special flood hazard area boundaries and floodway delineations, and other planimetric features.

(c) Letter of Map Revision Based on Fill (LOMR-F): A determination that a structure or parcel of land has been elevated by fill above the BFE and is, therefore, no longer located within the special flood hazard area. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community’s floodplain management regulations.

(d) Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA to revise the effective FIRM.

“Light Duty Truck” means any motor vehicle rated at 8,500 pounds Gross Vehicular Weight Rating or less which has a vehicular curb weight of 6,000 pounds or less and which has a basic vehicle frontal area of 45 square feet or less as defined in 40 CFR 86.082-2 and is:

(a) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or

(b) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or

(c) Available with special features enabling off-street or off-highway operation and use.

# Chatham County Flood Damage Prevention Ordinance

"Lowest Adjacent Grade (LAG)" means the elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

"Lowest Floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area is not considered a building's lowest floor provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

"Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

"Market Value" means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (Actual Cash Value); or adjusted tax assessed values.

~~"Mean Sea Level" means, for purposes of this ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988, or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which Base Flood Elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used.~~

"New construction" means structures for which the "start of construction" commenced on or after the effective date of the original version of the community's Flood Damage Prevention Ordinance and includes any subsequent improvements to such structures.

~~"Non-Conversion Agreement" means a document stating that the owner will not convert or alter what has been constructed and approved. Violation of the agreement is considered a violation of the ordinance and, therefore, subject to the same enforcement procedures and penalties. The agreement must be filed with the recorded deed for the property. The agreement must show the clerk's or recorder's stamps and/or notations that the filing has been completed.~~

"Non-conforming Lot of Record" means a lot existing at the effective date of this ordinance or any amendment to it (and not created for the purpose of evading the restrictions of this ordinance) that cannot meet the minimum requirements as prescribed herein.

"Non-Encroachment Area" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study report.

"Post-FIRM" means construction or other development for which the "start of construction" occurred on or after the effective date of the initial Flood Insurance Rate Map for the area.

"Pre-FIRM" means construction or other development for which the "start of construction" occurred before the effective date of the initial Flood Insurance Rate Map for the area.

"Principally Above Ground" means that at least 51% of the actual cash value of the structure is above ground.



# Chatham County Flood Damage Prevention Ordinance

“Public Safety” and/or “Nuisance” means anything which is injurious to the safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

“Recreational vehicle” means a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and, (d) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use. (e) is fully licensed and ready for highway use. For the purpose of this ordinance, “Tiny Homes/Houses” and Park Models that do not meet the items listed above are not considered Recreational Vehicles and should meet the standards of and be permitted as Residential Structures.

“Reference Level” is the bottom of the lowest horizontal structural member of the lowest floor, excluding the foundation system, for structures within all Special Flood Hazard Areas.

“Regulatory Flood Protection Elevation” means the “Base Flood Elevation” plus the “Freeboard”. In “Special Flood Hazard Areas” where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus three (3) feet of freeboard. In “Special Flood Hazard Areas” where no BFE has been established, this elevation shall be at least five (5) feet above the highest adjacent grade.

“Remedy a violation,” means to bring the structure or other development into compliance with State or community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

“Riverine” means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

“Salvage Yard” means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

“Solid Waste Disposal Facility” means, as defined in NCGS 130A-290(a)(35), any facility involved in the disposal of solid waste.

“Solid Waste Disposal Site” means, as defined in NCGS 130A-290(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

“Special Flood Hazard Area (SFHA)” means the land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year, as determined in Article 3, Section B of this ordinance.

“Start of construction” includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations, or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

“Structure” means, for floodplain management purposes, a walled and roofed building, a manufactured home, or a gas, liquid, or liquefied gas storage tank, or other man-made facilities or infrastructures that are principally above ground.

# Chatham County Flood Damage Prevention Ordinance

"Substantial damage" means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of "substantial improvement".

"Substantial improvement" means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures, which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either: (1) any correction of existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or, (2) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure [and the alteration is approved by variance issued pursuant to Article 4 Section E of this ordinance](#).

["Technical Bulletin and Technical Fact Sheet" means a FEMA publication that provides guidance concerning the building performance standards of the NFIP, which are contained in Title 44 of the U.S. Code of Federal Regulations at Section 60.3. The bulletins and fact sheets are intended for use primarily by State and local officials responsible for interpreting and enforcing NFIP regulations and by members of the development community, such as design professionals and builders. New bulletins, as well as updates of existing bulletins, are issued periodically as needed. The bulletins do not create regulations; rather they provide specific guidance for complying with the minimum requirements of existing NFIP regulations.](#)

["Temperature Controlled" means having the temperature regulated by a heating and/or cooling system, built-in or appliance.](#)

"Variance" is a grant of relief to a person from the requirements of this ordinance.

"Violation" means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Articles 4 and 5 is presumed to be in violation until such time as that documentation is provided.

"Water Surface Elevation (WSE)" means the height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of ~~coastal or~~ riverine areas.

"Watercourse" means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

## **ARTICLE 3. GENERAL PROVISIONS.**

### **SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES.**

This ordinance shall apply to all Special Flood Hazard Areas within the jurisdiction of Chatham County and within the jurisdiction of any other community whose governing body agrees, by resolution, to such applicability.

### **SECTION B. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD.**

~~The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) and its accompanying Flood Insurance Rate Maps (FIRM), for Chatham County dated February 2, 2007, which are adopted by reference and declared to be a part of this ordinance.~~ [The Special Flood Hazard Areas are those identified under the Cooperating Technical State \(CTS\) agreement between the State of North Carolina and FEMA in its FIS dated November 17, 2017 shown on FIS for Chatham County and associated DFIRM panels, including any digital data developed as part of the FIS, which are adopted by reference and declared a part of this ordinance. Future revisions to the FIS and DFIRM panels that do not change flood hazard data within the jurisdictional authority of Chatham County are also adopted by](#)

# Chatham County Flood Damage Prevention Ordinance

[reference and declared a part of this ordinance. Subsequent Letter of Map Revisions \(LOMRs\) and/or Physical Map Revisions \(PMRs\) shall be adopted within 3 months.](#)

## **SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT.**

A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within Special Flood Hazard Areas determined in accordance with Article 3, Section B of this ordinance.

## **SECTION D. COMPLIANCE.**

No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.

## **SECTION E. ABROGATION AND GREATER RESTRICTIONS.**

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

## **SECTION F. INTERPRETATION.**

In the interpretation and application of this ordinance all provisions shall be: (1) considered as minimum requirements; (2) liberally construed in favor of the governing body; and, (3) deemed neither to limit nor repeal any other powers granted under State statutes.

## **SECTION G. WARNING AND DISCLAIMER OF LIABILITY.**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Chatham County or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

## **SECTION H. PENALTIES FOR VIOLATION.**

Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a [Class 1 misdemeanor pursuant to NC G.S. § 143-215.58, misdemeanor](#). Any person who violates this ordinance or fails to comply with any of its requirements shall ~~, upon conviction thereof, be fined not more than \$100.00 or imprisoned for not more than thirty (30) days, or both. be subject to civil penalties or imprisoned for not more than 30 days, or both. Civil penalties shall be assessed in the amount of \$50.00 per day for the first offense, \$100.00 per day for the second occurrence of the same offense, \$200.00 per day for the third occurrence of the same offense, and \$500.00 per day for the fourth and each subsequent occurrence of the same offense.~~—Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Chatham County from taking such other lawful action as is necessary to prevent or remedy any violation.

## **ARTICLE 4. ADMINISTRATION.**

### **SECTION A. DESIGNATION OF FLOODPLAIN ADMINISTRATOR.**

The Chatham County Manager or his designee is hereby appointed to administer and implement the provisions of this ordinance.

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## **SECTION B. FLOODPLAIN DEVELOPMENT APPLICATION, PERMIT AND CERTIFICATION REQUIREMENTS.**

**(1) Application Requirements.** Application for a Floodplain Development Permit shall be made to the floodplain administrator prior to any development activities located within Special Flood Hazard Areas. The following items shall be presented to the floodplain administrator to apply for a floodplain development permit:

- (a) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
  - (i) the nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
  - (ii) the boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map as determined in Article 3, Section B, or a statement that the entire lot is within the Special Flood Hazard Area;
  - (iii) flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Article 3, Section B;
  - (iv) the boundary of the floodway(s) or non-encroachment area(s) as determined in Article 3, Section B;
  - (v) the Base Flood Elevation (BFE) where provided as set forth in Article 3, Section B; Article 4, Section C (11 & 12); or Article 5, Section D;
  - (vi) the old and new location of any watercourse that will be altered or relocated as a result of proposed development;
  - (vii) certification of the plot plan by a registered land surveyor or professional engineer.
- (b) Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area including but not limited to:
  - (i) Elevation in relation to NAVD 1988 mean sea level of the proposed reference level (including basement) of all structures;
  - (ii) Elevation in relation to NAVD 1988 mean sea level to which any non-residential structure in Zone AE, A or AO will be flood-proofed; and
  - (iii) Elevation in relation to NAVD 1988 mean sea level to which any proposed utility systems will be elevated or flood proofed;
- (c) If flood proofing, a Flood proofing Certificate (*FEMA Form 81-65*) with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of flood proofing measures.
- (d) A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
  - (i) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls);

# Chatham County Flood Damage Prevention Ordinance

- (ii) Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Article 5, Section B (4)(d), when solid foundation perimeter walls are used in Zones A, AO, AE, and A1-30;
- (e) Usage details of any enclosed areas below the regulatory flood protection elevation.
- (f) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;
- (g) Copies of all other Local, State and Federal permits required prior to floodplain development permit issuance (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.)
- (h) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure Article 5, Sections B (6 & 7) of this ordinance are met.
- (i) A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

**(2) Permit Requirements.** The Floodplain Development Permit shall include, but not be limited to:

- (a) A complete description of all the development to be permitted under the floodplain development permit. (e.g. house, garage, pool, septic, bulkhead, cabana, pier, bridge, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials, etc.).
- (b) The Special Flood Hazard Area determination for the proposed development per available data specified in Article 3, Section B.
- (c) The regulatory flood protection elevation required for the reference level and all attendant utilities.
- (d) The regulatory flood protection elevation required for the protection of all public utilities.
- (e) All certification submittal requirements with timelines.
- (f) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse unless the requirements of Article 5, Section F have been met, as applicable.
- (g) The flood openings requirements, if in Zones A, AO, AE or A1-30.
- (i) A statement, that all materials below BFE/RFPE must be flood resistant materials.

**(3) Certification Requirements.**

- (a) Elevation Certificates
  - (i) An Elevation Certificate (FEMA Form 81-31) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.



# Chatham County Flood Damage Prevention Ordinance

- (ii) A final as-built Elevation Certificate (FEMA Form 81-31) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

## (b) Flood proofing Certificate

### (i)

If non-residential flood proofing is used to meet the regulatory flood protection elevation requirements, a Flood proofing Certificate (FEMA Form ~~086-0-3481-65~~), with supporting data, ~~and~~ an operational plan, ~~and an inspection and maintenance plan are~~ required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the flood-proofed design elevation of the reference level and all attendant utilities, in relation to ~~NAVD 1988 mean sea level~~. Flood-proofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The floodplain administrator shall review the certificate data, ~~the operational plan, and the inspection and maintenance plan and plan~~. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

(ii) A final Finished Construction Floodproofing Certificate (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the issuance of a Certificate of Compliance/Occupancy. It shall be the duty of the permit holder to submit to the Floodplain administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988. Floodproofing certificate shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to Certificate of Occupancy. Failure to submit the certification or failure to make required corrections shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to deny a Certificate of Compliance/Occupancy.

- (c) If a manufactured home is placed within Zone A, AO, AE, or A1-30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required per Article 5, Section B (3).
- (d) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.
- (e) Certification Exemptions. The following structures, if located within Zone A, AO, AE or A1-30, are exempt from the elevation/flood proofing certification requirements specified in items (a) and (b) of this subsection:
  - (i) Recreational Vehicles meeting requirements of Article 5, Section B (6)(a);
  - (ii) Temporary Structures meeting requirements of Article 5, Section B (7); and

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(iii) Accessory Structures less than 150 square feet meeting requirements of Article 5, Section B (8).

## (4) Determinations for existing buildings and structures.

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the Building Official, shall:

(a) Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made;

(b) Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure;

(c) Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and

(d) Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the NC Building Code and this ordinance is required.

## **SECTION C. DUTIES AND RESPONSIBILITIES OF THE LOCAL ADMINISTRATOR.**

Duties of the local administrator shall include, but not be limited to:

- (1) Review all floodplain development applications and issue permits for all proposed development within Special Flood Hazard Areas to assure that the requirements of this ordinance have been satisfied.
- (2) Advise permittee that additional Federal or State permits may be required (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.) and require that copies of such permits be provided and maintained on file with the development permit.
- (3) Notify adjacent communities and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- (4) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.
- (5) Prevent encroachments within floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Article 5, Section F are met.
- (6) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) and all attendant utilities of all new or substantially improved structures, in accordance with Article 4, Section B (3).
- (7) Obtain the actual elevation (in relation to mean sea level) to which all new and substantially improved structures have been flood proofed, in accordance with Article 4, Section B (3).

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- (8) Obtain actual elevation (in relation to mean sea level) of all public utilities in accordance with Article 4, Section B (3).
- (9) When flood proofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with Article 4, Section B (3) and Article 5, Section B (2).
- (10) Where interpretation is needed as to the exact location of boundaries of the areas of Special Flood Hazard Areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
- (11) When Base Flood Elevation (BFE) data has not been provided in accordance with Article 3, Section B, obtain, review, and reasonably utilize any Base Flood Elevation (BFE) data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant to Article 5, Section D (2)(b), in order to administer the provisions of this ordinance.
- (12) When Base Flood Elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance with Article 3, Section B, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this ordinance.
- (13) When the lowest ground elevation of a parcel or structure in a Special Flood Hazard Area is above the Base Flood Elevation, advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the Letter of Map Amendment (LOMA) issued by FEMA in the floodplain development permit file.
- (14) Permanently maintain all records pertaining to the administration of this ordinance and make these records available for public inspection.
- (15) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the floodplain administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the floodplain administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.
- (16) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the floodplain administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.
- (17) Revoke floodplain development permits as required. The floodplain administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, or specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.
- (18) Make periodic inspections throughout all special flood hazard areas within the jurisdiction of the community. The floodplain administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.

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- (19) Follow through with corrective procedures of Article 4, Section D.
- (20) Review, provide input, and make recommendations for variance requests.
- (21) Maintain a current map repository to include, but not limited to, [historical and effective](#) ~~the~~ FIS Report, [historical and effective](#) FIRM and other official flood maps and studies adopted in accordance with Article 3, Section B of this ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
- (22) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-F) and Letters of Map Revision (LOMR).

### SECTION D. CORRECTIVE PROCEDURES.

- (1) Violations to be Corrected: When the local administrator finds violations of applicable State and local laws, it shall be his duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
- (2) Actions in Event of Failure to Take Corrective Action: If the owner of a building or property shall fail to take prompt corrective action, the floodplain administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
  - (a) that the building or property is in violation of the Flood Damage Prevention Ordinance;
  - (b) that a hearing will be held before the floodplain administrator at a designated place and time, not later than ten (10) days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and,
  - (c) that following the hearing, the local administrator may issue such order to alter, vacate, or demolish the building; or to remove fill as appears appropriate.
- (3) Order to Take Corrective Action: If, upon a hearing held pursuant to the notice prescribed above, the floodplain administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, they shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than sixty (60) calendar days, nor more than one hundred eighty (180) calendar days. Where the administrator finds that there is imminent danger to life or other property, they may order that corrective action be taken in such lesser period as may be feasible.
- (4) Appeal: Any owner who has received an order to take corrective action may appeal from the order to the local elected governing body by giving notice of appeal in writing to the floodplain administrator and the clerk within ten (10) days following issuance of the final order. In the absence of an appeal, the order of the administrator shall be final. The local governing body shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.
- (5) Failure to Comply with Order: If the owner of a building or property fails to comply with an order to take corrective action from which no appeal has been made or fails to comply with an order of the governing body following an appeal, the owner shall be guilty of a [Class 1](#) misdemeanor [pursuant to NC G.S. § 143-215.58](#) and shall be punished in the discretion of the court.

### SECTION E. VARIANCE PROCEDURES.

- (1) The Chatham County Board of Adjustment as established by Chatham County, hereinafter referred to as the "appeal board", shall hear and decide requests for variances from the requirements of this ordinance.
- (2) Any person aggrieved by the decision of the appeal board or any taxpayer may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.

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- (3) Variances may be issued for:
  - (a) the repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure.
  - (b) functionally dependant facilities if determined to meet the definition as stated in Article 2 of this ordinance, provided provisions of Article 4, Section E (9)(b), (c), and (e) have been satisfied, and such facilities are protected by methods that minimize flood damages.
  - (c) any other type of development provided it meets the requirements stated in this section.
- (4) In passing upon such applications, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:
  - (a) the danger that materials may be swept onto other lands to the injury of others;
  - (b) the danger to life and property due to flooding or erosion damage;
  - (c) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  - (d) the importance of the services provided by the proposed facility to the community;
  - (e) the necessity to the facility of a waterfront location as defined under Article 2 of this ordinance as a functionally dependent facility, where applicable;
  - (f) the availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
  - (g) the compatibility of the proposed use with existing and anticipated development;
  - (h) the relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
  - (i) the safety of access to the property in times of flood for ordinary and emergency vehicles;
  - (j) the expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and,
  - (k) the costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.
- (5) A written report addressing each of the above factors shall be submitted with the application for a variance.
- (6) Upon consideration of the factors listed above and the purposes of this ordinance, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.
- (7) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the Base Flood Elevation (BFE) and the elevation to which the structure is to be built and that such construction below the Base Flood Elevation increases risks to life and property, and that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance up to \$25 per \$100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.



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- (8) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.
- (9) Conditions for Variances:
  - (a) Variances shall not be issued when the variance will make the structure in violation of other Federal, State, or local laws, regulations, or ordinances.
  - (b) Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
  - (c) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
  - (d) Variances shall only be issued prior to development permit approval.
  - (e) Variances shall only be issued upon:
    - (i) a showing of good and sufficient cause;
    - (ii) a determination that failure to grant the variance would result in exceptional hardship; and,
    - (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (10) A variance shall not be issued for solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas.

### ARTICLE 5. PROVISIONS FOR FLOOD HAZARD REDUCTION.

#### SECTION A. GENERAL STANDARDS.

In all Special Flood Hazards Areas the following provisions are required:

- (1) All new residential and non-residential construction and new structures shall be located outside the Special Flood Hazard Area, except as otherwise provided in this ordinance
- (2) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure;
- (3) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- (4) All electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, appliances (washers, dryers, refrigerators, freezers, etc.), hot water heaters, and electric outlets/switches.
  - (a) Replacements part of a substantial improvement, electrical, heating, ventilation, plumbing, air conditioning equipment, and other service equipment shall also meet the above provisions.
  - (b) Replacements that are for maintenance and not part of a substantial improvement, may be installed at the original location provided the addition and/or improvements only comply with the standards for new construction consistent with the code and requirements for the original structure.

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- (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system. New water supply wells shall be located outside the 100-year flood plain unless circumstances warrant otherwise, except for new residential construction on non-conforming lots of record as provided in Article 5, Section B (2). New and replacement water supply systems that need to be located in the floodplain must~~shall~~ be reviewed and approved by the Floodplain Administrator.
- (6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters. New surface sewage disposal systems and repair areas shall be located outside the 100 year flood plain unless circumstances warrant otherwise, except for new residential construction on non-conforming lots of record as provided in Article 5, Section B (2). New and replacement sanitary sewer systems that need to be located in the floodplain ~~shall~~ must be reviewed and approved by the Floodplain Administrator.
- (7) On-site waste disposal systems shall be located outside the 100-year flood plain unless circumstances warrant otherwise and constructed to avoid impairment to them or contamination from them during flooding. On-site waste disposal systems that need to be located in the floodplain must ~~shall~~ be reviewed and approved by the Floodplain Administrator.
- ~~(8) Any alteration, repair, reconstruction, or improvements to a structure, which is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" contained in this ordinance~~
- (89) Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.
- ~~(94)~~ New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted. A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a Special Flood Hazard Area only if the structure or tank is either elevated or flood proofed to at least the regulatory flood protection elevation and certified according to Article 4, Section B (3) of this ordinance.
- ~~(104)~~ All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
- (112) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- (123) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (134) Public or private roads and bridges serving more than three (3) subdivision lots shall have a travel way a ~~at least~~ minimum height of three (3) feet above the base flood elevation.
- ~~(145)~~ Pedestrian bridges, boardwalks, greenway trails, walkways, and canoe and boat access points are allowed ~~w~~ within Special Flood Hazard Areas and shall comply with the applicable standards of Article 5, Section F. ~~Pedest~~ Pedestrian bridges and boardwalks shall be prohibited across the Haw River, Rocky River, and Deep River.
- (156) All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.
- ~~(167) Fill material shall only be allowed in Special Flood Hazard Areas when reasonably necessary for the elevation of structures in compliance with the standards of this ordinance or remediation of contaminated sites. The amount of fill material shall be the minimum necessary to meet the standards of this ordinance. Fill material shall only be allowed in Special Flood Hazard Areas when reasonably necessary for the elevation of structures in compliance~~

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with the standards of this ordinance or remediation of contaminated sites. The amount of fill material shall be the minimum necessary to meet the standards of this ordinance.

## SECTION B. SPECIFIC STANDARDS.

In all Special Flood Hazard Areas where Base Flood Elevation data has been provided, as set forth in Article 3, Section B, or Article 4, Section C (11 & 12), the following provisions, in addition to Article 5, Section A, are required:

- (1) (a) Residential Construction. New residential construction shall be located outside the 100-year flood plain, except as provided in Article 5, Section B (1)(b). Substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than regulatory flood protection elevation, as defined in Article 2 of this ordinance.  
  
(b) Residential Construction on Non-conforming Lots of Record. Where the owner of a non-conforming lot of record does not own sufficient land to enable the owner to conform to the provisions of Article 5, Section B (1)(a), such lot may be used as a building site. Any new residential construction on a non-conforming lot of record shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance.
- (2) Non-Residential Construction. New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Article 2 of this ordinance. Structures located in Zones A, AE, AH, AO, A99 may be floodproofed to the Regulatory Flood Protection Elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the Regulatory Flood Protection Elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the floodproofing elevation shall be in accordance with Article 5, Section I (2). A registered professional engineer or architect shall certify that the floodproofing standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Article 4, Section B(3), along with the operational plan and the inspection and maintenance plan.~~New non-residential construction shall be located outside the 100-year flood plain. Substantial improvement of any commercial, industrial, or non-residential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance. Substantial improvements to structures located in A, AE and A1-A30 zones may be flood-proofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the regulatory flood protection elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the flood-proofing elevation shall be in accordance with Article 5, Section II (3). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Article 4, Section B (3), along with the operational and maintenance plans.~~
- (3) Manufactured Homes.
  - (a) New manufactured homes shall be placed outside the 100-year flood plain. Replacement manufactured homes for manufactured homes located within Special Flood Hazard Areas shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance
  - (b) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by engineer certification, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15. Additionally, when the elevation would be

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met by an elevation of the chassis thirty-six (36) inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.

- (c) All enclosures or skirting below the lowest floor shall meet the requirements of Article 5, Section B (4)(a), (b), and (c).
- (d) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the floodplain administrator and the local Emergency Management coordinator.

(4) Elevated Buildings. Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:

- (a) shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;

(b) Shall not be temperature-controlled or conditioned;

- ~~(c)~~ shall be constructed entirely of flood resistant materials below the regulatory flood protection elevation;

- ~~(d)~~ shall include, in Zones A, AO, AE, and A1-30, flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria;

- (i) A minimum of two flood openings on different sides of each enclosed area subject to flooding;
- (ii) The total net area of all flood openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding;
- (iii) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
- (iv) The bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade;
- (v) Flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
- (vi) Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.

(5) Additions/Improvements.

- (a) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:

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- (i) not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure.
  - (ii) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction, as defined in Article 2 of this ordinance.
- (b) Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.
- (c) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
  - (i) not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction, as defined in Article 2 of this ordinance.
  - (ii) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction, as defined in Article 2 of this ordinance.
- (d) (d) Any combination of repair, reconstruction, rehabilitation, addition or improvement of a building or structure taking place during a 1 year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started must comply with the standards for new construction. For each building or structure, the 1 year period begins on the date of the first improvement or repair of that building or structure subsequent to the effective date of this ordinance. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The requirement does not, however, include either:
  - (i) Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assume safe living conditions.
  - (ii) Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure. ~~Where an independent perimeter load bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction, as defined in Article 2 of this ordinance.~~



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(6) Recreational Vehicles. Recreational vehicles shall either:

(a) Temporary Placement

(i) Be on site for fewer than 180 consecutive days; or

(ii) Be fully licensed and ready for highway use. (A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions.)

(b) Permanent Placement. Recreational vehicles that do not meet the limitations of Temporary Placement shall meet all the requirements for new construction.

~~(a) be on site for fewer than 180 consecutive days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions); or~~

~~(b) meet all the requirements for new construction.~~

(7) Temporary Non-Residential Structures. Prior to the issuance of a development permit for a temporary structure, the applicant must submit to the floodplain administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. ~~administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification.~~ The following information shall be submitted in writing to the floodplain administrator for review and written approval;

- (a) a specified time period for which the temporary use will be permitted. Time specified may not exceed three months, renewable up to one year;
- (ii) the name, address and phone number of the individual responsible for the removal of the temporary structure;
- (iii) the time frame prior to the event at which a structure will be removed (i.e. minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);
- (iv) a copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and; and
- (v) designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.

(8) Accessory Structure. When accessory structures (sheds, detached garages, etc.) are to be placed within the Special Flood Hazard Area, the following criteria shall be met:

- (a) Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
- (b) Accessory structures shall not be temperature controlled;
- (c) Accessory structures shall be designed to have low flood damage potential;

## Chatham County Flood Damage Prevention Ordinance

- (d) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
- (e) Accessory structures shall be firmly anchored in accordance with Article 5, Section A (2);
- (f) All service facilities such as electrical shall be installed in accordance with Article 5 Section A (5); and
- (g) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with Article 5, Section B (4)(c).

An accessory structure shall be limited to a footprint of 150 square feet or less, shall satisfy the criteria outlined above, and not require an elevation or flood-proofing certificate.

(9) Tanks. When gas and liquid storage tanks are to be placed within a Special Flood Hazard Area, the following criteria shall be met:

- (a) Underground tanks. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty;
- (b) Above-ground tanks, elevated. Above-ground tanks in flood hazard areas shall be elevated to or above the Regulatory Flood Protection Elevation on a supporting structure that is designed to prevent flotation, collapse or lateral movement during conditions of the design flood. Tank-supporting structures shall meet the foundation requirements of the applicable flood hazard area;
- (c) Above-ground tanks, not elevated. Above-ground tanks that do not meet the elevation requirements of Section B (2) of this ordinance shall be permitted in flood hazard areas provided the tanks are designed, constructed, installed, and anchored to resist all flood-related and other loads, including the effects of buoyancy, during conditions of the design flood and without release of contents in the floodwaters or infiltration by floodwaters into the tanks. Tanks shall be designed, constructed, installed, and anchored to resist the potential buoyant and other flood forces acting on an empty tank during design flood conditions.
- (d) Tank inlets and vents. Tank inlets, fill openings, outlets and vents shall be:
  - (i) At or above the Regulatory Flood Protection Elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood; and
  - (ii) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

(10) Other Development.

- (a) Fences in regulated floodways and NEAs that have the potential to block the passage of floodwaters, such as stockade fences and wire mesh fences, shall meet the limitations of Article 5, Section F of this ordinance.
- (b) Retaining walls, sidewalks and driveways in regulated floodways and NEAs. Retaining walls and sidewalks and driveways that involve the placement of fill in regulated floodways shall meet the limitations of Article 5, Section F of this ordinance.
- (c) Roads and watercourse crossings in regulated floodways and NEAs. Roads and watercourse crossings, including roads, bridges, culverts, low-water crossings and similar means for vehicles or pedestrians to travel from one side of a watercourse to the other side, that encroach into regulated floodways shall meet the limitations of Article 5, Section F of this ordinance.

### SECTION C. RESERVED

# Chatham County Flood Damage Prevention Ordinance

## **SECTION D. STANDARDS FOR FLOODPLAINS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS.**

Within the Special Flood Hazard Areas designated as Approximate Zone A and established in Article 3, Section B, where no Base Flood Elevations (BFE) data has been provided by FEMA, the following provisions, in addition to Article 5, Sections A and B, shall apply:

- (1) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty (20) feet each side from top of bank or five times the width of the stream, whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (2) The BFE used in determining the regulatory flood protection elevation shall be determined based on one of the following criteria set in priority order:
  - (a) If Base Flood Elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or flood proofed in accordance with standards in Article 4, Section C (11 & 12).
  - (b) All subdivision, manufactured home park and other development proposals shall provide Base Flood Elevation (BFE) data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such Base Flood Elevation (BFE) data shall be adopted by reference per Article 3, Section B to be utilized in implementing this ordinance.
  - (c) When Base Flood Elevation (BFE) data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated to or above the regulatory flood protection elevation, as defined in Article 2.

## **SECTION E. STANDARDS FOR RIVERINE FLOODPLAINS WITH BFE BUT WITHOUT ESTABLISHED FLOODWAYS OR NON-ENCROACHMENT AREAS.**

Along rivers and streams where BFE data is provided but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

- (1) Standards outlined in Article 5, Sections A and B; and
- (2) Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

## **SECTION F. FLOODWAYS AND NON-ENCROACHMENT AREAS.**

Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Article 3, Section B. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions, in addition to standards outlined in Article 5, Sections A and B, shall apply to all development within such areas:

## Chatham County Flood Damage Prevention Ordinance

- (1) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated that:
  - (a) the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the floodplain administrator prior to issuance of floodplain development permit, or
  - (b) a Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.
- (2) If Article 5, Section F (1) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this ordinance.
- (3) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided the following provisions are met:
  - (a) the anchoring and the elevation standards of Article 5, Section B (3); and
  - (b) the no encroachment standard of Article 5, Section F (1).

### **G. STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AO).**

Located within the Special Flood Hazard Areas established in Article 3, Section B, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Article 5, Section A, all new construction and substantial improvements shall meet the following requirements:

- (1) The reference level shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of three (3) feet, above the highest adjacent grade; or at least two feet above the highest adjacent grade plus a freeboard of three (3) feet if no depth number is specified.
- (2) Non-residential structures may, in lieu of elevation, be flood proofed to the same level as required in Article 5, Section H (1) so that the structure, together with attendant utility and sanitary facilities, below that level shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as per Article 4, Section B (3) and Article 5, Section B (2).
- (3) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

### **SECTION H. STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AH).**

Located within the Special Flood Hazard Areas established in Article 3, Section B, are areas designated as shallow flooding areas. These areas are subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are one (1) to three (3) feet. Base Flood Elevations are derived from detailed hydraulic analyses are shown in this zone. In addition to Article 5, Sections A and B, all new construction and substantial improvements shall meet the following requirements:

- (1) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

## **ARTICLE 6. LEGAL STATUS PROVISIONS**

# Chatham County Flood Damage Prevention Ordinance

## **SECTION A. - EFFECT ON RIGHTS AND LIABILITIES UNDER THE EXISTING FLOOD DAMAGE PREVENTION ORDINANCE.**

This ordinance in part comes forward by re-enactment of some of the provisions of the flood damage prevention ordinance enacted February 17, 1997 as amended, and it is not the intention to repeal but rather to re-enact and continue to enforce without interruption of such existing provisions, so that all rights and liabilities that have accrued there under are reserved and may be enforced. The enactment of this ordinance shall not affect any action, suit or proceeding instituted or pending. All provisions of the flood damage prevention ordinance of Chatham County enacted on February 17, 1997, as amended, which are not reenacted herein, are repealed.

## **SECTION B. EFFECT UPON OUTSTANDING BUILDING PERMITS.**

Nothing herein contained shall require any change in the plans, construction, size or designated use of any building, structure or part thereof for which a building permit has been granted by the Chief Building Inspector or his authorized agents before the time of passage of this ordinance; provided, however, that when construction is not begun under such outstanding permit within a period of sixty (60) days subsequent to passage of this ordinance, construction or use shall be in conformity with the provisions of this ordinance.

## **SECTION C. SEVERABILITY.**

If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

## **SECTION D. EFFECTIVE DATE**

This ordinance shall become effective upon adoption.

## **SECTION E. ADOPTION CERTIFICATION**

I hereby certify that this is a true and correct copy of the Flood Damage Prevention Ordinance as adopted on the 17th day of February 1997.

Revised: October 7, 2002  
December 18, 2006  
October 16, 2017

CHATHAM COUNTY BOARD OF COMMISSIONERS

\_\_\_\_\_  
Chairman, Chatham County Board  
of Commissioners

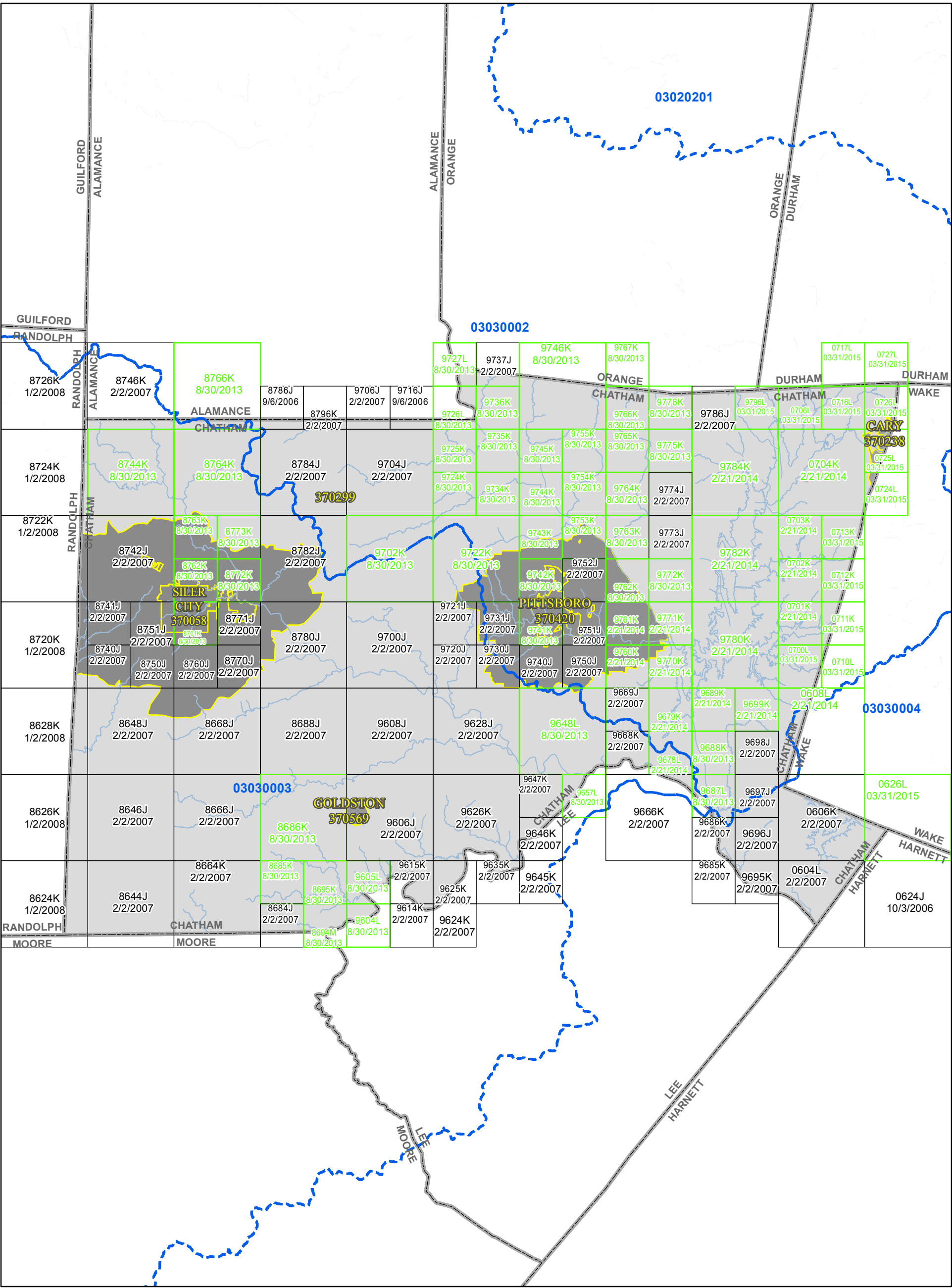
ATTEST:

\_\_\_\_\_  
~~Sandra B. Sublett~~ Lindsay Ray, CMC, Clerk to the Board  
Chatham County Commissioners

\_\_\_\_\_  
Date



# Chatham County Flood Damage Prevention Ordinance



1 in = 4 miles

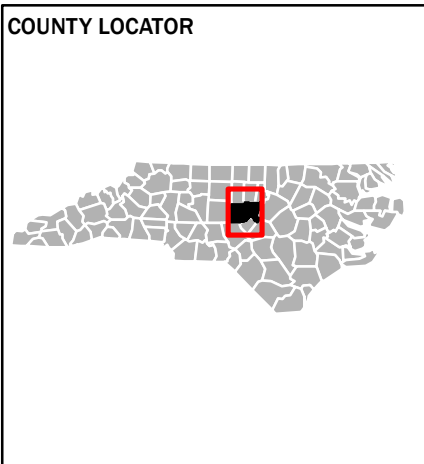
0 0.75 1.5 3 4.5 Miles

Map Projection:  
Lambert Conformal Conic  
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT  
[HTTP://FRIS.NC.GOV/FRIS](http://FRIS.NC.GOV/FRIS)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

REVISED  
PRELIMINARY  
11/30/2015



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

CHATHAM COUNTY, NORTH CAROLINA And Incorporated Areas

PANELS PRINTED:  
8624, 8644, 8664, 8685, 8695, 9605, 9615, 9625, 9635, 9645, 9685, 9695, 0604, 8726, 8746, 8766, 9727, 9737, 9746, 9767, 0717, 0727, 8786, 8796, 9706, 9716, 9726, 9736, 9766, 9776, 9786, 9796, 0706, 0716, 0726, 8724, 8744, 8764, 8784, 9704, 9725, 9735, 9745, 9755, 9765, 9775, 9784, 0704, 0725, 9724, 9734, 9744, 9754, 9764, 9774, 0724, 8722, 8742, 8763, 8773, 8782, 9702, 9722, 9743, 9753, 9763, 9773, 9782, 0703, 0713, 8762, 8772, 9742, 9752, 9762, 9772, 0702, 0712, 8720, 8741, 8751, 8761, 8771, 8780, 9700, 9721, 9731, 9741, 9751, 9761, 9771, 9780, 0701, 0711, 8740, 8750, 8760, 8770, 9720, 9730, 9740, 9750, 9760, 9770, 0700, 0710, 8628, 8648, 8668, 8688, 9608, 9628, 9648, 9669, 9679, 9689, 9699, 0608, 9668, 9678, 9688, 9698, 8626, 8646, 8666, 8686, 9606, 9626, 9647, 9657, 9666, 9687, 9697, 0606, 0626, 9646, 9686, 9696, 8684, 8694, 9604, 9614, 9624

MAP NUMBER  
37037CINDOC



**FEMA**

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

AUG 07 2017

James G. "Jim" Crawford  
Chairperson, Board of Commissioners  
Chatham County  
12 East Street, Second Floor  
Pittsboro, North Carolina 27312

Dear Mr. Crawford:

I commend you for the efforts that have been put forth in implementing the floodplain management measures for Chatham County, North Carolina, to participate in the National Flood Insurance Program (NFIP). As you implement these measures, I want to emphasize the following:

- Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) have been completed for your community;
- the FIS and FIRM will become effective on November 17, 2017; and
- by the FIS and FIRM effective date, the Department of Homeland Security's Federal Emergency Management Agency (FEMA) Regional Office is required to approve the legally enforceable floodplain management measures your community adopts in accordance with Title 44 Code of Federal Regulations Section 60.3(d).

As noted in FEMA's letter dated May 17, 2017, no significant changes have been made to the flood hazard data on the Preliminary and/or revised Preliminary copies of the FIRM for Chatham County. Therefore, Chatham County should use the Preliminary and/or revised Preliminary copies of the FIRM as the basis for adopting the required floodplain management measures. Final printed copies of the FIRM for Chatham County will be sent to you within the next few months.

If you encounter difficulties in enacting the measures, I recommend you contact the North Carolina Department of Public Safety, Risk Management Section. You may contact John D. Brubaker, P.E., CFM, the NFIP State Coordinator, by telephone at (919) 825-2300, in writing at 4218 Mail Service Center, Raleigh, North Carolina 27699-4218, or by electronic mail at [dan.brubaker@ncdps.gov](mailto:dan.brubaker@ncdps.gov).

The FEMA Regional staff in Atlanta, Georgia, is also available to provide technical assistance and guidance in the development of floodplain management measures. The adoption of compliant floodplain management measures will provide protection for Chatham County and will ensure its participation in the NFIP. The Regional Office may be contacted by telephone at (770) 220-5200 or in writing. Please send your written inquiries to the Federal Insurance and Mitigation Division, FEMA Region IV, at 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

James G. "Jim" Crawford

AUG 07 2017  
Page 2

You may have already contacted the NFIP State Coordinator and/or the FEMA Regional Office, and may be in the final adoption process or recently adopted the appropriate measures. However, in the event your community has not adopted the appropriate measures, this letter is FEMA's official notification that you only have until November 17, 2017, to adopt and/or submit a floodplain management ordinance that meets or exceeds the minimum NFIP requirements, and request approval from the FEMA Regional Office by the effective date. Your community's adopted measures will be reviewed upon receipt and the FEMA Regional Office will notify you when the measures are approved.

I appreciate your cooperation to ensure that your community's floodplain management measures are approved by the FEMA Regional Office by November 17, 2017. Your compliance with these mandatory program requirements will enable your community to avoid suspension from the NFIP.

Sincerely,



Rachel Sears, Director  
Floodplain Management Division  
Mitigation Directorate | FEMA

cc: Gracia Szczech, Regional Administrator, FEMA Region IV  
John D. Brubaker, P.E., CFM, NFIP State Coordinator, North Carolina Department of Public  
Safety, Risk Management Section  
Jason Sullivan, Planning Director, Chatham County

# Chatham County Flood Damage Prevention Ordinance

## CHATHAM COUNTY

### FLOOD DAMAGE PREVENTION ORDINANCE

#### **ARTICLE 1. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES**

##### **SECTION A. STATUTORY AUTHORIZATION**

The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143, Parts 3 and 4 of Article 18 of Chapter 153A and Part 121, Article 6 of Chapter 153A of the North Carolina General Statutes delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry.

Therefore, the Board of County Commissioners of Chatham County, North Carolina does ordain as follows:

##### **SECTION B. FINDINGS OF FACT**

(1) The flood prone areas of Chatham County are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

(2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities, and by the occupancy in flood prone areas by uses vulnerable to floods or other hazards.

##### **SECTION C. STATEMENT OF PURPOSE**

It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or velocities;
- (2) require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3) control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
- (4) control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
- (5) prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

##### **SECTION D. OBJECTIVES**

The objectives of this ordinance are:

- (1) to protect human life and health;
- (2) to minimize expenditure of public money for costly flood control projects;



# Chatham County Flood Damage Prevention Ordinance

- (3) to minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) to minimize prolonged business losses and interruptions;
- (5) to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges that are located in flood prone areas;
- ~~(6)~~ (6) to minimize damage to private and public property due to flooding;
- (7) to make flood insurance available to the community through the National Flood Insurance Program;
- (8) to maintain the natural and beneficial functions of floodplains;
- (9) to help maintain a stable tax base by providing for the sound use and development of flood prone areas; and,
- ~~(7)(10)~~ (10) to ensure that potential buyers are aware that property is in a Special Flood Hazard Area.

## ARTICLE 2. DEFINITIONS

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

"Accessory Structure (Appurtenant Structure)" means a structure located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

"Addition (to an existing building)" means an extension or increase in the floor area or height of a building or structure.

"Alteration of a watercourse" means a dam, impoundment, channel relocation, change in channel alignment, channelization, or change in cross-sectional area of the channel or the channel capacity, or any other form of modification which may alter, impede, retard or change the direction and/or velocity of the riverine flow of water during conditions of the base flood.

"Appeal" means a request from a review of the local administrator's interpretation of any provision of this ordinance.

"Area of shallow flooding" means a designated A0 Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

"Area of Special Flood Hazard" see "Special Flood Hazard Area (SFHA)"

"Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

"Base flood," means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

"Base Flood Elevation (BFE)" means a determination of the water surface elevations of the base flood as published in the Flood Insurance Study. When the BFE has not been provided in a "Special Flood Hazard Area", it may be obtained from engineering studies available from a Federal or State or other source using FEMA approved engineering methodologies. This elevation, when combined with the "Freeboard", establishes the "Regulatory Flood Protection Elevation".

# Chatham County Flood Damage Prevention Ordinance

“Best available data” - This is information provided by the U.S. Army Corps of Engineers, other government agencies, or other competence sources such as a registered surveyor or engineer, which is prepared using standard accepted practices.

“Building” see “Structure.

“Chemical Storage Facility” means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

“Design Flood”: See “Regulatory Flood Protection Elevation.”

“Development” means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

“Development Activity” means any activity defined as Development which will necessitate a Floodplain Development Permit. This includes buildings, structures, and non-structural items, including (but not limited to) fill, bulkheads, piers, pools, docks, landings, ramps, and erosion control/stabilization measures.

“Digital Flood Insurance Rate Map (DFIRM)” means the digital official map of a community, issued by the Federal Emergency Management Agency (FEMA), on which both the Special Flood Hazard Areas and the risk premium zones applicable to the community are delineated.

“Disposal” means, as defined in NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

“Elevated building” means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

“Encroachment” means the advance or infringement of uses, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

“Existing building and existing structure” means any building and/or structure for which the “start of construction” commenced before February 17, 1997.

“Existing manufactured home park or manufactured home subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before February 17, 1997.

“Flood” or “flooding” means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) the overflow of inland or tidal waters; and,
- (2) the unusual and rapid accumulation of runoff of surface waters from any source.

“Flood Boundary and Floodway Map (FBFM)” means an official map of a community, issued by the Federal Emergency Management Agency, on which the Special Flood Hazard Areas and the floodways are delineated. This official map is a supplement to and shall be used in conjunction with the Flood Insurance Rate Map (FIRM).

“Flood Hazard Boundary Map (FHBM)” means an official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of the Special Flood Hazard Areas have been defined as Zone A.

# Chatham County Flood Damage Prevention Ordinance

“Flood Insurance” means the insurance coverage provided under the National Flood Insurance Program.

“Flood Insurance Rate Map (FIRM)” means an official map of a community, issued by the Federal Emergency Management Agency on which both the Special Flood Hazard Area and the risk premium zones applicable to the community are delineated (*see also* “DFIRM”).

“Flood Insurance Study” —means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the Federal Emergency Management Agency. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.

“Flood Prone Area” see “Floodplain”

“Floodplain” means any land area susceptible to being inundated by water from any source.

“Floodplain Administrator” is the individual appointed to administer and enforce the floodplain management regulations.

“Floodplain Development Permit” means any type of permit that is required in conformance with the provisions of this ordinance, prior to the commencement of any development activity.

“Floodplain Management” means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

“Floodplain Management Regulations” means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood-prone areas. This term describes federal, state or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.

“Flood proofing” means any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

“Flood-resistant material” means any building product [material, component or system] capable of withstanding direct and prolonged contact (minimum 72 hours) with floodwaters without sustaining damage that requires more than low-cost cosmetic repair. Any material that is water-soluble or is not resistant to alkali or acid in water, including normal adhesives for above-grade use, is not flood-resistant. Pressure-treated lumber or naturally decay-resistant lumbars are acceptable flooring materials. Sheet-type flooring coverings that restrict evaporation from below and materials that are impervious, but dimensionally unstable are not acceptable. Materials that absorb or retain water excessively after submergence are not flood-resistant. Please refer to Technical Bulletin 2, Flood Damage-Resistant Materials Requirements, and available from the FEMA. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

“Floodway” means the channel of a river or other watercourse, including the area above a bridge or culvert when applicable, and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

“Floodway encroachment analysis” means an engineering analysis of the impact that a proposed encroachment into a floodway or non-encroachment area is expected to have on the floodway boundaries and flood levels during the occurrence of the base flood discharge. The evaluation shall be prepared by a qualified North Carolina licensed engineer using standard engineering methods and models.

“Flood Zone” means a geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

# Chatham County Flood Damage Prevention Ordinance

“Freeboard” means the height added to the Base Flood Elevation (BFE) to account for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization on the watershed. The Base Flood Elevation plus the freeboard establishes the “Regulatory Flood Protection Elevation”.

“Functionally dependent facility” means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

“Hazardous Waste Facility” means, as defined in NCGS 130A, Article 9, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.

“Highest Adjacent Grade (HAG)” means the highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.

“Historic Structure” means any structure that is: (a) listed individually in the National Register of Historic Places (a listing maintained by the US Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register; (b) certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (c) individually listed on a local inventory of historic landmarks in communities with a “Certified Local Government (CLG) Program; or (d) certified as contributing to the historical significance of a historic district designated by a community with a “Certified Local Government (CLG) Program.

Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1966 as amended in 1980.

“Letter of Map Change (LOMC)” means an official determination issued by FEMA that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

(a) Letter of Map Amendment (LOMA): An official amendment, by letter, to an effective National Flood Insurance Program map. A LOMA is based on technical data showing that a property had been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the base flood elevation. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property, portion of a property, or structure is not located in a special flood hazard area.

(b) Letter of Map Revision (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, special flood hazard area boundaries and floodway delineations, and other planimetric features.

(c) Letter of Map Revision Based on Fill (LOMR-F): A determination that a structure or parcel of land has been elevated by fill above the BFE and is, therefore, no longer located within the special flood hazard area. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community’s floodplain management regulations.

(d) Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA to revise the effective FIRM.

“Light Duty Truck” means any motor vehicle rated at 8,500 pounds Gross Vehicular Weight Rating or less which has a vehicular curb weight of 6,000 pounds or less and which has a basic vehicle frontal area of 45 square feet or less as defined in 40 CFR 86.082-2 and is:

(a) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or

(b) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or

(c) Available with special features enabling off-street or off-highway operation and use.

# Chatham County Flood Damage Prevention Ordinance

"Lowest Adjacent Grade (LAG)" means the lowest elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

"Lowest Floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area is not considered a building's lowest floor provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

"Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

"Market Value" means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (Actual Cash Value); or adjusted tax assessed values.

~~"Mean Sea Level" means, for purposes of this ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988, or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which Base Flood Elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used.~~

NAVD 1988" – North American Vertical Datum of 1988

"New construction" means structures for which the "start of construction" commenced on or after the effective date of the original version of the community's Flood Damage Prevention Ordinance and includes any subsequent improvements to such structures.

~~"Non-Conversion Agreement" means a document stating that the owner will not convert or alter what has been constructed and approved. Violation of the agreement is considered a violation of the ordinance and, therefore, subject to the same enforcement procedures and penalties. The agreement must be filed with the recorded deed for the property. The agreement must show the clerk's or recorder's stamps and/or notations that the filing has been completed.~~

"Non-conforming Lot of Record" means a lot existing at the effective date of this ordinance or any amendment to it (and not created for the purpose of evading the restrictions of this ordinance) that cannot meet the minimum requirements as prescribed herein.

"Non-Encroachment Area" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study report.

"Post-FIRM" means construction or other development for which the "start of construction" occurred on or after the effective date of the initial Flood Insurance Rate Map for the area.

"Pre-FIRM" means construction or other development for which the "start of construction" occurred before the effective date of the initial Flood Insurance Rate Map for the area.

"Principally Above Ground" means that at least 51% of the actual cash value of the structure is above ground.



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“Public Safety” and/or “Nuisance” means anything which is injurious to the safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

“Recreational vehicle” means a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and, (d) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use, (e) is fully licensed and ready for highway use.

For the purpose of this ordinance, “Tiny Homes/Houses” and Park Models that do not meet the items listed above are not considered Recreational Vehicles and should meet the standards of and be permitted as Residential Structures.

~~“Reference Level” is the top of the lowest floor for structures within Special Flood Hazard Areas designated as Zones A, AE, AH, AO, or A99.” is the bottom of the lowest horizontal structural member of the lowest floor, excluding the foundation system, for structures within all Special Flood Hazard Areas.~~

“Regulatory Flood Protection Elevation” means the “Base Flood Elevation” plus the “Freeboard”. In “Special Flood Hazard Areas” where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus three (3) feet of freeboard. In “Special Flood Hazard Areas” where no BFE has been established, this elevation shall be at least five (5) feet above the highest adjacent grade.

“Remedy a violation,” means to bring the structure or other development into compliance with State or community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

“Riverine” means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

“Salvage Yard” means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

“Solid Waste Disposal Facility” means, as defined in NCGS 130A-290(a)(35), any facility involved in the disposal of solid waste.

“Solid Waste Disposal Site” means, as defined in NCGS 130A-290(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

“Special Flood Hazard Area (SFHA)” means the land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year, as determined in Article 3, Section B of this ordinance.

“Start of construction” includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations, or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall,

# Chatham County Flood Damage Prevention Ordinance

ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

"Structure" means, for floodplain management purposes, a walled and roofed building, a manufactured home, or a gas, liquid, or liquefied gas storage ~~than ank, or other man-made facilities or infrastructures~~ that isare principally above ground.

"Substantial damage" means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of "substantial improvement".

"Substantial improvement" means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures, which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either: (1) any correction of existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or, (2) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure and the alteration is approved by variance issued pursuant to Article 4 Section E of this ordinance.

"Technical Bulletin and Technical Fact Sheet" means a FEMA publication that provides guidance concerning the building performance standards of the NFIP, which are contained in Title 44 of the U.S. Code of Federal Regulations at Section 60.3. The bulletins and fact sheets are intended for use primarily by State and local officials responsible for interpreting and enforcing NFIP regulations and by members of the development community, such as design professionals and builders. New bulletins, as well as updates of existing bulletins, are issued periodically as needed. The bulletins do not create regulations; rather they provide specific guidance for complying with the minimum requirements of existing NFIP regulations.

"Temperature Controlled" means having the temperature regulated by a heating and/or cooling system, built-in or appliance.

"Variance" is a grant of relief to a person from the requirements of this ordinance.

"Violation" means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Articles 4 and 5 is presumed to be in violation until such time as that documentation is provided.

"Water Surface Elevation (WSE)" means the height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of ~~coastal or~~ riverine areas.

"Watercourse" means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

## ARTICLE 3. GENERAL PROVISIONS.

### SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES.

This ordinance shall apply to all Special Flood Hazard Areas within the jurisdiction of Chatham County and within the jurisdiction of any other community whose governing body agrees, by resolution, to such applicability.

### SECTION B. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD.

~~The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) and its accompanying Flood~~

# Chatham County Flood Damage Prevention Ordinance

~~Insurance Rate Maps (FIRM), for Chatham County dated February 2, 2007, which are adopted by reference and declared to be a part of this ordinance. The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its FIS dated November 17, 2017 for Chatham County and associated DFIRM panels, including any digital data developed as part of the FIS, which are adopted by reference and declared a part of this ordinance. Future revisions to the FIS and DFIRM panels that do not change flood hazard data within the jurisdictional authority of Chatham County are also adopted by reference and declared a part of this ordinance. Subsequent Letter of Map Revisions (LOMRs) and/or Physical Map Revisions (PMRs) shall be adopted within 3 months.~~

## SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT.

A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within Special Flood Hazard Areas determined in accordance with Article 3, Section B of this ordinance.

## SECTION D. COMPLIANCE.

No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.

## SECTION E. ABROGATION AND GREATER RESTRICTIONS.

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

## SECTION F. INTERPRETATION.

In the interpretation and application of this ordinance all provisions shall be: (1) considered as minimum requirements; (2) liberally construed in favor of the governing body; and, (3) deemed neither to limit nor repeal any other powers granted under State statutes.

## SECTION G. WARNING AND DISCLAIMER OF LIABILITY.

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Chatham County or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

## SECTION H. PENALTIES FOR VIOLATION.

Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a ~~Class 1 misdemeanor pursuant to NC G.S. § 143-215.58, misdemeanor.~~ Any person who violates this ordinance or fails to comply with any of its requirements ~~shall~~ shall, upon conviction thereof, be fined not more than \$100.00 or imprisoned for not more than thirty (30) days, or both. -be subject to civil penalties or imprisoned for not more than 30 days, or both. Civil penalties shall be assessed in the amount of \$50.00 per day for the first offense, \$100.00 per day for the second occurrence of the same offense, \$200.00 per day for the third occurrence of the same offense, and \$500.00 per day for the fourth and each subsequent occurrence of the same offense. - Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Chatham County from taking such other lawful action as is necessary to prevent or remedy any violation.

# Chatham County Flood Damage Prevention Ordinance

## ARTICLE 4. ADMINISTRATION.

### SECTION A. DESIGNATION OF FLOODPLAIN ADMINISTRATOR.

The Chatham County Manager or his designee is hereby appointed to administer and implement the provisions of this ordinance.

### SECTION B. FLOODPLAIN DEVELOPMENT APPLICATION, PERMIT AND CERTIFICATION REQUIREMENTS.

(1) **Application Requirements.** Application for a Floodplain Development Permit shall be made to the floodplain administrator prior to any development activities located within Special Flood Hazard Areas. The following items shall be presented to the floodplain administrator to apply for a floodplain development permit:

- (a) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
  - (i) the nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
  - (ii) the boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map as determined in Article 3, Section B, or a statement that the entire lot is within the Special Flood Hazard Area;
  - (iii) flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Article 3, Section B;
  - (iv) the boundary of the floodway(s) or non-encroachment area(s) as determined in Article 3, Section B;
  - (v) the Base Flood Elevation (BFE) where provided as set forth in Article 3, Section B; Article 5-4, Section A and B ~~(11 & 12)~~; or Article 5, Section D;
  - (vi) the old and new location of any watercourse that will be altered or relocated as a result of proposed development;
  - (vii) certification of the plot plan by a registered land surveyor or professional engineer.
- (b) Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area including but not limited to:
  - (i) Elevation in relation to NAVD 1988 ~~mean sea level~~ of the proposed reference level (including basement) of all structures;
  - (ii) Elevation in relation to NAVD 1988 ~~mean sea level~~ to which any non-residential structure in Zone AE, A or AO will be flood-proofed; and
  - (iii) Elevation in relation to NAVD 1988 ~~mean sea level~~ to which any proposed utility systems will be elevated or flood proofed;

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- (c) If flood proofing, a Flood proofing Certificate (*FEMA Form 81-65*) with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of flood proofing measures.
- (d) A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
  - (i) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls);
  - (ii) Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Article 5, Section B (4)(d), when solid foundation perimeter walls are used in Zones A, AO, AE, and A1-30;
- (e) Usage details of any enclosed areas below the regulatory flood protection elevation.
- (f) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;
- (g) Copies of all other Local, State and Federal permits required prior to floodplain development permit issuance (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.)
- (h) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure Article 5, Sections B (6 & 7) of this ordinance are met.
- (i) ~~(i)~~ A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

**(2) Permit Requirements.** The Floodplain Development Permit shall include, but not be limited to:

- (a) A complete description of all the development to be permitted under the floodplain development permit. (e.g. house, garage, pool, septic, bulkhead, cabana, pier, bridge, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials, etc.).
- (b) The Special Flood Hazard Area determination for the proposed development per available data specified in Article 3, Section B.
- (c) The regulatory flood protection elevation required for the reference level and all attendant utilities.
- (d) The regulatory flood protection elevation required for the protection of all public utilities.
- (e) All certification submittal requirements with timelines.



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(f) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse unless the requirements of Article 5, Section F have been met, as applicable.

(g) The flood openings requirements, if in Zones A, AO, AE or A1-30.

(h) A statement, that all materials below BFE/RFPE must be flood resistant materials.

## **(3) Certification Requirements.**

### **(a) Elevation Certificates**

(i) An Elevation Certificate (FEMA Form 086-0-3381-34) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.

(ii) A final as-built Elevation Certificate (FEMA Form 086-0-3381-34) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

### **(b) Flood proofing Certificate**

#### **(i)**

If non-residential flood proofing is used to meet the regulatory flood protection elevation requirements, a Flood proofing Certificate (FEMA Form 086-0-3481-65), with supporting data, ~~and~~ an operational plan, and an inspection and maintenance plan are required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the flood-proofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988 mean sea level. Flood-proofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The floodplain administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan ~~and plan~~. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a ~~F~~floodplain ~~D~~development ~~P~~permit. Failure to construct in accordance with the certified design ~~shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.~~

(ii) A final Finished Construction Floodproofing Certificate (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the issuance of a Certificate of Compliance/Occupancy. It shall be the duty of the permit holder to submit to the Floodplain administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988. Floodproofing certificate shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to Certificate of Occupancy. Failure to submit the certification or failure to make required corrections

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shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to deny a Certificate of Compliance/Occupancy.

- (c) If a manufactured home is placed within Zone A, AO, AE, or A1-30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required per Article 5, Section B (3).
- (d) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.
- (e) Certification Exemptions. The following structures, if located within Zone A, AO, AE or A1-30, are exempt from the elevation/flood proofing certification requirements specified in items (a) and (b) of this subsection:
  - (i) Recreational Vehicles meeting requirements of Article 5, Section B (6)(a);
  - (ii) Temporary Structures meeting requirements of Article 5, Section B (7); and
  - (iii) Accessory Structures less than 150 square feet meeting requirements of Article 5, Section B (8).

## (4) Determinations for existing buildings and structures.

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the Building Official, shall:

- (a) Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made;
- (b) Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure;
- (c) Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and
- (d) Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the NC Building Code and this ordinance is required.

## **SECTION C. DUTIES AND RESPONSIBILITIES OF THE LOCAL ADMINISTRATOR.**

Duties of the local administrator shall include, but not be limited to:

- ~~(1)~~ Review all floodplain development applications and issue permits for all proposed development within Special Flood Hazard Areas to assure that the requirements of this ordinance have been satisfied.

(1)

## Chatham County Flood Damage Prevention Ordinance

- (2) Advise permittee that additional Federal or State permits may be required (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.) and require that copies of such permits be provided and maintained on file with the development permit.
- (3) Notify adjacent communities and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- (4) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.
- (5) Prevent encroachments within floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Article 5, Section F are met.
- (6) Obtain actual elevation (in relation to ~~NAVD 1988 mean sea level~~) of the reference level (including basement) and all attendant utilities of all new or substantially improved structures, in accordance with Article 4, Section B (3).
- (7) Obtain the actual elevation (in relation to ~~NAVD 1988 mean sea level~~) to which all new and substantially improved structures have been flood proofed, in accordance with Article 4, Section B (3).
- (8) Obtain actual elevation (in relation to ~~NAVD 1988 mean sea level~~) of all public utilities in accordance with Article 4, Section B (3).
- (9) When flood proofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with Article 4, Section B (3) and Article 5, Section B (2).
- (10) Where interpretation is needed as to the exact location of boundaries of the areas of Special Flood Hazard Areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
- (11) When Base Flood Elevation (BFE) data has not been provided in accordance with Article 3, Section B, obtain, review, and reasonably utilize any Base Flood Elevation (BFE) data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant to Article 5, Section D (2)(b), in order to administer the provisions of this ordinance.
- (12) When Base Flood Elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance with Article 3, Section B, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this ordinance.
- (13) When the lowest ground elevation of a parcel or structure in a Special Flood Hazard Area is above the Base Flood Elevation, advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the Letter of Map Amendment (LOMA) issued by FEMA in the floodplain development permit file.
- (14) Permanently maintain all records pertaining to the administration of this ordinance and make these records available for public inspection.
- (15) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the floodplain administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the floodplain administrator has a right, upon presentation of proper

# Chatham County Flood Damage Prevention Ordinance

credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.

- (16) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the floodplain administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.
- (17) Revoke floodplain development permits as required. The floodplain administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, or specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.
- (18) Make periodic inspections throughout all special flood hazard areas within the jurisdiction of the community. The floodplain administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.
- (19) Follow through with corrective procedures of Article 4, Section D.
- (20) Review, provide input, and make recommendations for variance requests.
- (21) Maintain a current map repository to include, but not limited to, historical and effective ~~the~~ FIS Report, historical and effective FIRM and other official flood maps and studies adopted in accordance with Article 3, Section B of this ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
- (22) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-F) and Letters of Map Revision (LOMR).

## SECTION D. CORRECTIVE PROCEDURES.

- (1) Violations to be Corrected: When the local administrator finds violations of applicable State and local laws, it shall be his duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
- (2) Actions in Event of Failure to Take Corrective Action: If the owner of a building or property shall fail to take prompt corrective action, the floodplain administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
  - (a) that the building or property is in violation of the Flood Damage Prevention Ordinance;
  - (b) that a hearing will be held before the floodplain administrator at a designated place and time, not later than ten (10) days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and,
  - (c) that following the hearing, the local administrator may issue such order to alter, vacate, or demolish the building; or to remove fill as appears appropriate.
- (3) Order to Take Corrective Action: If, upon a hearing held pursuant to the notice prescribed above, the floodplain administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, they shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified

## Chatham County Flood Damage Prevention Ordinance

time period, not less than sixty (60) calendar days, nor more than one hundred eighty (180) calendar days. Where the administrator finds that there is imminent danger to life or other property, they may order that corrective action be taken in such lesser period as may be feasible.

- (4) Appeal: Any owner who has received an order to take corrective action may appeal from the order to the local elected governing body by giving notice of appeal in writing to the floodplain administrator and the clerk within ten (10) days following issuance of the final order. In the absence of an appeal, the order of the administrator shall be final. The local governing body shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.
- (5) Failure to Comply with Order: If the owner of a building or property fails to comply with an order to take corrective action from which no appeal has been made or fails to comply with an order of the governing body following an appeal, the owner shall be guilty of a Class 1 misdemeanor pursuant to NC G.S. § 143-215.58 and shall be punished in the discretion of the court.

### SECTION E. VARIANCE PROCEDURES.

- (1) The Chatham County Board of Adjustment as established by Chatham County, hereinafter referred to as the “appeal board”, shall hear and decide requests for variances from the requirements of this ordinance.
- (2) Any person aggrieved by the decision of the appeal board or any taxpayer may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.
- (3) Variances may be issued for:
  - (a) the repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure.
  - (b) functionally ~~dependant~~dependent facilities if determined to meet the definition as stated in Article 2 of this ordinance, provided provisions of Article 4, Section E (9)(b), (c), and (e) have been satisfied, and such facilities are protected by methods that minimize flood damages.
  - (c) any other type of development provided it meets the requirements stated in this section.
- (4) In passing upon such applications, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:
  - (a) the danger that materials may be swept onto other lands to the injury of others;
  - (b) the danger to life and property due to flooding or erosion damage;
  - (c) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  - (d) the importance of the services provided by the proposed facility to the community;
  - (e) the necessity to the facility of a waterfront location as defined under Article 2 of this ordinance as a functionally dependent facility, where applicable;
  - (f) the availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
  - (g) the compatibility of the proposed use with existing and anticipated development;
  - (h) the relationship of the proposed use to the comprehensive plan and floodplain management program for that area;



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- (i) the safety of access to the property in times of flood for ordinary and emergency vehicles;
  - (j) the expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and,
  - (k) the costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.
- (5) A written report addressing each of the above factors shall be submitted with the application for a variance.
- (6) Upon consideration of the factors listed above and the purposes of this ordinance, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.
- (7) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the Base Flood Elevation (BFE) and the elevation to which the structure is to be built and that such construction below the Base Flood Elevation increases risks to life and property, and that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance up to \$25 per \$100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.
- (8) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.
- (9) Conditions for Variances:
- (a) Variances shall not be issued when the variance will make the structure in violation of other Federal, State, or local laws, regulations, or ordinances.
  - (b) Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
  - (c) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
  - (d) Variances shall only be issued prior to development permit approval.
  - (e) Variances shall only be issued upon:
    - (i) a showing of good and sufficient cause;
    - (ii) a determination that failure to grant the variance would result in exceptional hardship; and,
    - (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (10) A variance shall not be issued for solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas.

## ARTICLE 5. PROVISIONS FOR FLOOD HAZARD REDUCTION.

### SECTION A. GENERAL STANDARDS.

In all Special Flood Hazards Areas the following provisions are required:

## Chatham County Flood Damage Prevention Ordinance

- (1) All new residential and non-residential construction and new structures shall be located outside the Special Flood Hazard Area, except as otherwise provided in this ordinance
- (2) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure;
- (3) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- (4) All new electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, appliances (washers, dryers, refrigerators, freezers, etc.), hot water heaters, and electric outlets/switches.
  - (a) Replacements part of a substantial improvement, electrical, heating, ventilation, plumbing, air conditioning equipment, and other service equipment shall also meet the above provisions.
  - (b) Replacements that are for maintenance and not part of a substantial improvement, may be installed at the original location provided the addition and/or improvements only comply with the standards for new construction consistent with the code and requirements for the original structure.
- (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system. New water supply wells shall be located outside the SFHA 100-year flood plain unless circumstances warrant otherwise, except for new residential construction on non-conforming lots of record as provided in Article 5, Section B (2). New and replacement water supply systems that need to be located in the floodplain must shall be reviewed and approved by the Floodplain Administrator.
- (6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters. New surface sewage disposal systems and repair areas shall be located outside the SFHA 100-year flood plain unless circumstances warrant otherwise, except for new residential construction on non-conforming lots of record as provided in Article 5, Section B (2). New and replacement sanitary sewer systems that need to be located in the floodplain shall must be reviewed and approved by the Floodplain Administrator.
- (7) On-site waste disposal systems shall be located outside the SFHA 100-year flood plain unless circumstances warrant otherwise and constructed to avoid impairment to them or contamination from them during flooding. On-site waste disposal systems that need to be located in the floodplain must shall be reviewed and approved by the Floodplain Administrator.
- ~~(8) Any alteration, repair, reconstruction, or improvements to a structure, which is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" contained in this ordinance~~
- (89) Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.
- (940) New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted. A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located

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in a Special Flood Hazard Area only if the structure or tank is either elevated or flood proofed to at least the regulatory flood protection elevation and certified according to Article 4, Section B (3) of this ordinance.

- (104) All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
- (112) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- (123) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (134) Public or private roads and bridges serving more than three (3) subdivision lots shall have a travel way a minimum height of three (3) feet above the base flood elevation.

(14) When a structure is partially located in Special Flood Hazard Area, the entire structure shall meet requirements or new construction and substantial improvements.

(15) When a structure is located in multiple flood hazard zones or in a flood hazard risk zone with multiple base flood elevations, the provisions for the more restrictive flood hazard risk zone and the highest BFE shall apply.

(165) Pedestrian bridges, boardwalks, greenway trails, walkways, and canoe and boat access points may be permitted according to Article 4, Section B ~~are allowed w~~ within Special Flood Hazard Areas and shall comply with the applicable standards of Article 55, Section F. ~~Pedest~~ Pedestrian bridges and boardwalks shall be prohibited across the Haw River, Rocky River, and Deep River.

(176) All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.

(187) Fill material shall only be allowed in Special Flood Hazard Areas when reasonably necessary for the elevation of structures in compliance with the standards of this ordinance or remediation of contaminated sites. The amount of fill material shall be the minimum necessary to meet the standards of this ordinance. Fill material shall only be allowed in Special Flood Hazard Areas when reasonably necessary for the elevation of structures in compliance with the standards of this ordinance or remediation of contaminated sites. The amount of fill material shall be the minimum necessary to meet the standards of this ordinance.

## SECTION B. SPECIFIC STANDARDS.

In all Special Flood Hazard Areas where Base Flood Elevation data has been provided, as set forth in Article 3, Section B, or Article 5-4, Section BC (11 & 12), the following provisions, in addition to Article 5, Section A, are required:

- (1) (a) Residential Construction. New residential construction shall be located outside the ~~100-year flood plain~~ SFHA, except as provided in Article 5, Section B (1)(b). Substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than regulatory flood protection elevation, as defined in Article 2 of this ordinance.
- (b) Residential Construction on Non-conforming Lots of Record. Where the owner of a non-conforming lot of record does not own sufficient land to enable the owner to conform to the provisions of Article 5, Section B (1)(a), such lot may be used as a building site. Any new residential construction on a non-conforming lot of record shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance.
- (2) Non-Residential Construction. New non-residential construction shall be located outside of the SFHA. Substantial improvement of any existing commercial, industrial, or other non-residential structure shall have the reference

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~~level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Article 2 of this ordinance. Structures located in Zones A, AE, AH, AO, A99 may be floodproofed to the Regulatory Flood Protection Elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the Regulatory Flood Protection Elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the floodproofing elevation shall be in accordance with Article 5, Section G (2). A registered professional engineer or architect shall certify that the floodproofing standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Article 4, Section B(3), along with the operational plan and the inspection and maintenance plan.~~ ~~New non-residential construction shall be located outside the 100-year flood plain. Substantial improvement of any commercial, industrial, or non-residential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance. Substantial improvements to structures located in A, AE and A1-A30 zones may be flood proofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the regulatory flood protection elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the flood proofing elevation shall be in accordance with Article 5, Section H (3). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Article 4, Section B (3), along with the operational and maintenance plans.~~

(3) Manufactured Homes.

- (a) New manufactured homes shall be placed outside the ~~100-year flood plain~~ SFHA. Replacement manufactured homes for manufactured homes located within Special Flood Hazard Areas shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation, as defined in Article 2 of this ordinance
- (b) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by engineer certification, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15. Additionally, when the elevation would be met by an elevation of the chassis thirty-six (36) inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.
- (c) All enclosures or skirting below the lowest floor shall meet the requirements of Article 5, Section B (4) ~~(a), (b), and (c)~~.
- (d) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the floodplain administrator and the local Emergency Management coordinator.

(4) Elevated Buildings. Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:

- (a) shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area

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(stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;

(b) Shall not be temperature-controlled or conditioned:

(c**e**) shall be constructed entirely of flood resistant materials below the regulatory flood protection elevation;

(d**e**) shall include, in Zones A, AO, AE, and A1-30, flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria;

- (i) A minimum of two flood openings on different sides of each enclosed area subject to flooding;
- (ii) The total net area of all flood openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding;
- (iii) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
- (iv) The bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade;
- (v) Flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
- (vi) Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.

(5) Additions/Improvements.

- (a) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
  - (i) not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure.
  - (ii) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction, as defined in Article 2 of this ordinance.
- (b) Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.
- (c) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
  - (i) not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction, as defined in Article 2 of this ordinance.



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- (ii) a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction, as defined in Article 2 of this ordinance.
- (d) Any combination of repair, reconstruction, rehabilitation, addition or improvement of a building or structure taking place during a 1 year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started must comply with the standards for new construction. For each building or structure, the 1 year period begins on the date of the first improvement or repair of that building or structure subsequent to the effective date of this ordinance. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The requirement does not, however, include either:
- (i) Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assume safe living conditions.
- (ii) Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure. ~~Where an independent perimeter load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction, as defined in Article 2 of this ordinance.~~
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- (6) Recreational Vehicles. Recreational vehicles shall either:
- (a) Temporary Placement
- (i) Be on site for fewer than 180 consecutive days; or
- (ii) Be fully licensed and ready for highway use. (A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions.)
- (b) Permanent Placement. Recreational vehicles that do not meet the limitations of Temporary Placement shall meet all the requirements for new construction.
- (a) ~~be on site for fewer than 180 consecutive days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions); or~~
- (b) ~~meet all the requirements for new construction.~~
- (7) Temporary Non-Residential Structures. Prior to the issuance of a development permit for a temporary structure, the applicant must submit to the floodplain administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. ~~administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification.~~ The following information shall be submitted in writing to the floodplain administrator for review and written approval;
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## Chatham County Flood Damage Prevention Ordinance

- (a) a specified time period for which the temporary use will be permitted. Time specified may not exceed three months, renewable up to one year;
- (ii) the name, address and phone number of the individual responsible for the removal of the temporary structure;
- (iii) the time frame prior to the event at which a structure will be removed (i.e. minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);
- (iv) a copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and; and
- (v) designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.

(8) Accessory Structure. When accessory structures (sheds, detached garages, etc.) are to be placed within the Special Flood Hazard Area, the following criteria shall be met:

- (a) Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
- (b) Accessory structures shall not be temperature controlled;
- (c) Accessory structures shall be designed to have low flood damage potential;
- (d) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
- (e) Accessory structures shall be firmly anchored in accordance with Article 5, Section A (2);
- (f) All service facilities such as electrical shall be installed in accordance with Article 5 Section A (5); and
- (g) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with Article 5, Section B (4)(c).

An accessory structure shall be limited to a footprint of 150 square feet or less, shall satisfy the criteria outlined above, and not require an elevation or flood-proofing certificate.

(9) Tanks. When gas and liquid storage tanks are to be placed within a Special Flood Hazard Area, the following criteria shall be met:

(a) Underground tanks. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty;

(b) Above-ground tanks, elevated. Above-ground tanks in flood hazard areas shall be elevated to or above the Regulatory Flood Protection Elevation on a supporting structure that is designed to prevent flotation, collapse or lateral movement during conditions of the design flood. Tank-supporting structures shall meet the foundation requirements of the applicable flood hazard area;

(c) Above-ground tanks, not elevated. Above-ground tanks that do not meet the elevation requirements of Section B (2) of this ordinance shall be permitted in flood hazard areas provided the tanks are designed, constructed, installed, and anchored to resist all flood-related and other loads, including the effects of buoyancy, during conditions of the design flood and without release of contents in the floodwaters or infiltration by floodwaters into

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the tanks. Tanks shall be designed, constructed, installed, and anchored to resist the potential buoyant and other flood forces acting on an empty tank during design flood conditions.

(d) Tank inlets and vents. Tank inlets, fill openings, outlets and vents shall be:

(i) At or above the Regulatory Flood Protection Elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood; and

(ii) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

(10) Other Development.

(a) Fences in regulated floodways and NEAs that have the potential to block the passage of floodwaters, such as stockade fences and wire mesh fences, shall meet the limitations of Article 5, Section F of this ordinance.

(b) Retaining walls, sidewalks and driveways in regulated floodways and NEAs. Retaining walls and sidewalks and driveways that involve the placement of fill in regulated floodways shall meet the limitations of Article 5, Section F of this ordinance.

(c) Roads and watercourse crossings in regulated floodways and NEAs. Roads and watercourse crossings, including roads, bridges, culverts, low-water crossings and similar means for vehicles or pedestrians to travel from one side of a watercourse to the other side, that encroach into regulated floodways shall meet the limitations of Article 5, Section F of this ordinance.

**SECTION C. RESERVED**

**SECTION D. STANDARDS FOR FLOODPLAINS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS.**

Within the Special Flood Hazard Areas designated as Approximate Zone A and established in Article 3, Section B, where no Base Flood Elevations (BFE) data has been provided by FEMA, the following provisions, in addition to Article 5, Sections A and B, shall apply:

- (1) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty (20) feet each side from top of bank or five times the width of the stream, whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

## Chatham County Flood Damage Prevention Ordinance

- (2) The BFE used in determining the Regulatory Flood Protection Elevation shall be determined based on the following criteria:
- (a) When BFE data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or floodproofed in accordance with standards in Article 5, Sections A and B.
  - (b) When floodway or non-encroachment data is available from a Federal, State, or other source, all new construction and substantial improvements within floodway and non-encroachment areas shall also comply with the requirements of Article 5, Sections B and F.
  - (c) All subdivision, manufactured home park and other development proposals shall provide BFE data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such BFE data shall be adopted by reference in accordance with Article 3, Section B and utilized in implementing this ordinance.
  - (d) When BFE data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated or floodproofed (nonresidential) to or above the Regulatory Flood Protection Elevation, as defined in Article 2. All other applicable provisions of Article 5, Section B shall also apply.~~The BFE used in determining the regulatory flood protection elevation shall be determined based on one of the following criteria set in priority order:~~
- ~~(a) If Base Flood Elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or flood proofed in accordance with standards in Article 4, Section C (11 & 12).~~
- ~~(b) All subdivision, manufactured home park and other development proposals shall provide Base Flood Elevation (BFE) data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such Base Flood Elevation (BFE) data shall be adopted by reference per Article 3, Section B to be utilized in implementing this ordinance.~~
- (c) When Base Flood Elevation (BFE) data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated to or above the regulatory flood protection elevation, as defined in Article 2.**

### **SECTION E. STANDARDS FOR RIVERINE FLOODPLAINS WITH BFE BUT WITHOUT ESTABLISHED FLOODWAYS OR NON-ENCROACHMENT AREAS.**

Along rivers and streams where BFE data is provided but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

- (1) Standards outlined in Article 5, Sections A and B; and
- (2) Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

### **SECTION F. FLOODWAYS AND NON-ENCROACHMENT AREAS.**

# Chatham County Flood Damage Prevention Ordinance

Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Article 3, Section B. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions, in addition to standards outlined in Article 5, Sections A and B, shall apply to all development within such areas:

- (1) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated that:
  - (a) the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the floodplain administrator prior to issuance of floodplain development permit, or
  - (b) a Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.
- (2) If Article 5, Section F (1) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this ordinance.
- (3) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided the following provisions are met:
  - (a) the anchoring and the elevation standards of Article 5, Section B (3); and
  - (b) the no encroachment standard of Article 5, Section F (1).

## **SECTION G. STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AO).**

Located within the Special Flood Hazard Areas established in Article 3, Section B, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Article 5, Section A, all new construction and substantial improvements shall meet the following requirements:

- (1) The reference level shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of three (3) feet, above the highest adjacent grade; or at least two feet above the highest adjacent grade plus a freeboard of three (3) feet if no depth number is specified.
- (2) Non-residential structures may, in lieu of elevation, be flood proofed to the same level as required in Article 5, Section ~~GH~~ (1) so that the structure, together with attendant utility and sanitary facilities, below that level shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as per Article 4, Section B (3) and Article 5, Section B (2).
- (3) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

## **SECTION H. STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AH).**

Located within the Special Flood Hazard Areas established in Article 3, Section B, are areas designated as shallow flooding areas. These areas are subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are one (1) to three (3) feet. Base Flood Elevations are derived from detailed hydraulic analyses are shown in this zone. In addition to Article 5, Sections A and B, all new construction and substantial improvements shall meet the following requirements:

# Chatham County Flood Damage Prevention Ordinance

(1) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

## ARTICLE 6. LEGAL STATUS PROVISIONS

### SECTION A. ~~—~~EFFECT ON RIGHTS AND LIABILITIES UNDER THE EXISTING FLOOD DAMAGE PREVENTION ORDINANCE.

This ordinance in part comes forward by re-enactment of some of the provisions of the flood damage prevention ordinance enacted February 17, 1997 as amended, and it is not the intention to repeal but rather to re-enact and continue to enforce without interruption of such existing provisions, so that all rights and liabilities that have accrued there under are reserved and may be enforced. The enactment of this ordinance shall not affect any action, suit or proceeding instituted or pending. All provisions of the flood damage prevention ordinance of Chatham County enacted on February 17, 1997, as amended, which are not reenacted herein, are repealed.

### SECTION B. EFFECT UPON OUTSTANDING BUILDING PERMITS.

Nothing herein contained shall require any change in the plans, construction, size or designated use of any building, structure or part thereof for which a building permit has been granted by the Chief Building Inspector or his authorized agents before the time of passage of this ordinance; provided, however, that when construction is not begun under such outstanding permit within a period of sixty (60) days subsequent to passage of this ordinance, construction or use shall be in conformity with the provisions of this ordinance.

### SECTION C. SEVERABILITY.

If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

### SECTION ~~DE~~. EFFECTIVE DATE

This ordinance shall become effective upon adoption.

### SECTION ~~ED~~. ADOPTION CERTIFICATION

I hereby certify that this is a true and correct copy of the Flood Damage Prevention Ordinance as adopted on the ~~—~~17th day of ~~—~~February 1997.

Revised: October 7, 2002

December 18, 2006

October 16, 2017 (effective November 17, 2017)

CHATHAM COUNTY BOARD OF COMMISSIONERS

\_\_\_\_\_  
Chairman, Chatham County Board  
of Commissioners

ATTEST:



# Chatham County Flood Damage Prevention Ordinance

| Sandra B. Sublett  
~~Sandra B. Sublett~~ Lindsay Ray, CMC, Clerk to the Board  
Chatham County Commissioners

\_\_\_\_\_  
Date



# Chatham County, NC

## Text File

File Number: 17-2343

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Board of Commissioners

**File Type:** Appointment

**Agenda Number:**

Vote on a request to approve the re-appointment of Joseph McEvoy to the Alcohol  
Beverage Control Board

Action Requested: Vote on a request to approve the re-appointment of Joseph McEvoy to  
the Alcohol Beverage Control Board

Introduction & Background: Joseph McEvoy has served three years on the ABC Board.  
The ABC Board wishes to re-appoint Mr. McEvoy to a three year term expiring November  
16, 2020.

Discussion & Analysis:

Budgetary Impact: N/A

Recommendation: Motion to approve appointment



# Chatham County, NC

## Text File

File Number: 17-2365

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Board of Commissioners

**File Type:** Appointment

**Agenda Number:**

Vote on a request to approve appointment of Matthew Stark to the Triangle South  
Workforce Development Board

Action Requested: Vote on a request to approve appointment of Matthew Stark to the  
Triangle South Workforce Development Board

Introduction & Background: The Triangle South Workforce Development Director,  
Rosalind Cross, is recommending Matthew Stark to fulfill the private sector appointment  
to the board. The Workforce Innovation and Opportunity Act (WIOA) requires specific  
representation on the board and this appointment will allow the board to be in compliance  
of this regulation. Mr. Stark represents the private sector with eight years of experience in  
the service industry.

Discussion & Analysis:

Budgetary Impact: N/A

Recommendation: Motion to approve appointment



# Chatham County, NC

## Text File

File Number: 17-2344

**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Emergency Operations

**File Type:** Agenda Item

Vote on a request to approve the naming of one private road in Chatham County

Action Requested: Motion to approve the private drive as listed

A. Dairymont Drive

Introduction & Background: The Chatham County Commissioners adopted an ordinance providing for the establishment for the naming of private roads in Chatham County. The Office of Emergency Operations has received one petition requesting the naming of one (1) private road located in Chatham County on private property. This petition is in order, complete and bears the proper number of required signatures.

Discussion and Analysis: As part of its plan to develop the Enhanced-911 Emergency Response System, there is a vital need to maintain the County's established system providing for the naming of private roads. This is important so that there can be no duplications or similarities of these assigned names within Chatham County which could result in confusion and/or delay in the response to these roads, should an emergency exist in that location.

Budgetary Impact: The cost of road signage for these roads will be \$78.00 per sign. At the rate of one sign per road, this total cost will be \$78.00. The Chatham County Commissioners have decided to absorb this cost for the making and installation of this private road sign.

Recommendation: Motion to approve the private drive as listed.

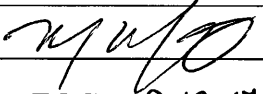
# CHATHAM COUNTY ROAD NAMING REQUEST FORM

- **QUESTIONS:** Any questions concerning this form should be directed to: Denise Suits, 919-545-8163
- **RETURN COMPLETED FORM TO:** Chatham County Emergency Operations, P. O. Box 613, Pittsboro, NC 27312

## ALL INFORMATION BELOW MUST BE COMPLETED

<b>1. APPLICANT INFORMATION</b> Name: <u>Baywood Builders</u> Address: <u>128 Carson Ct</u> City, State & Zip Code: <u>Pittsboro, NC 27312</u> Phone Number: <u>919-618-3702</u>	<b>2. TYPE OF REQUEST (check one box only)</b> <input checked="" type="checkbox"/> Private road or driveway <input type="checkbox"/> Renaming of road <input type="checkbox"/> Other
<b>3. PROPERTY INFORMATION</b> State Road Number (if applicable): Township where Road Originates: :Select one here Will the road be part of a development? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If a development, is it: A major development <input type="checkbox"/> A minor development <input checked="" type="checkbox"/> Is it possible that this will be come a state road? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Length of road: Type of road (check one answer only) Private <input checked="" type="checkbox"/> Public <input type="checkbox"/>	<b>4. ROAD NAME INFORMATION**</b> What is the existing road name (if applicable)?  What are the proposed or new road name(s)? • <u>DAIRMOUNT DRIVE</u> • If existing name is to be changed, what is the reason for this change?
<b>5. DIRECTIONS TO ROAD (only needed if it is a private road):</b> <u>off of N. 11th Side Dairy Rd next to Dairy Farm</u>	
<b>6. ATTACHMENTS REQUIRED</b> Names, addresses and phone numbers of ALL adjacent property owners (see page 2).** <ul style="list-style-type: none"> <li>• Signatures of at least 60% of adjacent property owners (see page 2).</li> <li>• Attached map with marked location of the road on the map.</li> </ul>	

**\*\*IMPORTANT:** The County Board of Commissioners may consider a number of factors when naming or renaming a road, including the number of adjacent owners, acreage of ownership, historical significance of a road name, and roads with similar names.

7. Signature of Applicant: <u></u>	Date of Signature: <u>9/19/17</u>
Date Submitted to County EOC: <u>9-19-17</u>	

**IMPORTANT:** If this form & required information is not completed and submitted properly, the petition is not valid.





HILLSIDE DAIRY RD

HILLSIDE MUSIC RD

DAIRMONT DRIVE

1475

1454

2035

365

370

390

400





# Chatham County, NC

## Text File

File Number: 17-2348

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Sheriff's Office

**File Type:** Agenda Item

Vote on a request to approve to award a service weapon to retiring Corporal Ed Fawcett.

Action Requested: Motion to surplus weapon and award the service weapon to Corporal Ed Fawcett on the event of his retirement from the Chatham County Sheriff's Office.

Introduction & Background: Corporal Ed Fawcett has served over 10 years.

Discussion & Analysis: In years past, on the event of a long-serving, sworn officer's retirement, their assigned service weapon, Glock 40 cal. model 22, has been surplused and presented to them upon their retirement. It is our desire to honor Corporal Ed Fawcett's service to Chatham County and its citizens in this way.

Budgetary Impact: None. This will have no effect on our operating budget.

Recommendation: Motion to surplus weapon and award the service weapon to Corporal Ed Fawcett on the event of his retirement from the Chatham County Sheriff's Office.



# Chatham County, NC

## Text File

File Number: 17-2356

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Tax Office Assessor

**File Type:** Agenda Item

Vote on a request to approve Tax Releases and Refunds

Action Requested: Vote to approve Tax Releases and Refunds.

Introduction & Background: The attached list of taxpayers, have requested a release or refund of their tax bills.

Discussion & Analysis: In accordance with G.S. 105-381, the attached list of taxpayers, have requested a release or refund of their tax bills.

Recommendation: Vote to approve Tax Releases and Refunds.

DATE	10/02/17	BOARD REVIEW OF CORRECTED RECEIPTS REPORT								PAGE	1
TIME	11:12:48	CHATHAM CO TAX DEPARTMENT								PROG#	CL2182
USER	AMY	DEPOSIT DATES 9/01/2017 THROUGH 9/30/2017									
SKIP	NEGATIVE ABATEMENTS	OMIT ABATE CODES ERROR BOER CHGOF PTC									
TAX		DEPOSIT									
YEAR	TAXPAYER NAME	DATE	RECEIPT	DIST	REAL	PERSONAL	M VEH	MV FEE	S WASTE	REASON	ABTCD
=====											
2011	MORRIS KENNETH HOWARD	9/22/2017	1788272	107		12.49				GA / NO RECORD O	MVDOS
2011	PARKS DAVID JOE	9/26/2017	1788788	107		127.50				GA IN 2010/CSWND	MVDOS
	** YEAR TOTALS **					139.99					
2012	MORRIS KENNETH HOWARD	9/22/2017	1912027	107		11.64				GA / NO RECORD O	MVDOS
2012	PARKS DAVID JOE	9/26/2017	1912600	107		118.46				GA IN 2010/CWNDS	MVDOS
	** YEAR TOTALS **					130.10					
2013	MORRIS KENNETH HOWARD	9/22/2017	2047758	107		10.47				GA / NO RECORD O	MVDOS
2013	PARKS DAVID JOE	9/26/2017	2048358	107		106.61				GA IN 2010/CWNDS	MVDOS
	** YEAR TOTALS **					117.08					
2014	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2117898	109		103.85				FINAL RETURN 201	PPSLD
2014	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2117899	109		4.41				FINAL RETURN 201	PPSLD
2014	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2117900	109		2.29				FINAL RETURN 201	PPSLD
2014	MORRIS KENNETH HOWARD	9/22/2017	2128832	107		9.44				GA / NO RECORD O	MVDOS
2014	PARKS DAVID JOE	9/26/2017	2129376	107		95.98				GA IN 2010/CWNDS	MVDOS
	** YEAR TOTALS **					215.97					
2015	BARNES DONNIE	9/15/2017	2193855	107		194.37				PASSED AWAY OCT	PPSLD
2015	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2180423	109		103.85				FINAL RETURN 201	PPSLD
2015	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2180424	109		3.95				FINAL RETURN 201	PPSLD
2015	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2180425	109		2.29				FINAL RETURN 201	PPSLD
2015	DORSETT NANCY M	9/11/2017	2196249	202		5.58				SOLD 9/2014	PPSLD
2015	HARRINGTON PATRICIA A	9/07/2017	2216160	107					125.00	ONLY 1 DWELLING	SWFEE
2015	MORRIS KENNETH HOWARD	9/22/2017	2190791	107		8.69				GA / NO RECORD I	MVDOS
2015	PARKER BRENDA B	9/06/2017	2177043	101					125.00	REFUND PER WASTE	SWFEE
2015	PARKS DAVID JOE	9/26/2017	2191352	107		88.19				GA IN 2010/CWNDS	MVDOS
	** YEAR TOTALS **					406.92			250.00		
2016	BARNES DONNIE	9/15/2017	2256317	107		197.56				PASSED AWAY OCT	PPSLD
2016	C & W ELECTRONICS INC	9/07/2017	2227389	108		4.65				BUSINESS DISSOLV	PPSLD
2016	C & W ELECTRONICS INC	9/07/2017	2227390	108		.80				BUS DISSOLVED PE	PPSLD
2016	C & W ELECTRONICS INC	9/07/2017	2227391	108		1.66				BUS DISSOLVED PE	PPSLD
2016	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2243377	109		105.64				FINAL RETURN 201	PPSLD
2016	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2243378	109		3.63				FINAL RETURN 201	PPSLD
2016	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2243379	109		2.32				FINAL RETURN 201	PPSLD
2016	DORSETT NANCY M	9/11/2017	2258609	202		5.64				SOLD 9/2014	PPSLD
2016	HARRINGTON PATRICIA A	9/07/2017	2280982	107					125.00	ONLY 1 DWELLING	SWFEE
2016	MORRIS KENNETH HOWARD	9/22/2017	2253291	107		7.94				GA / NO RECORD I	MVDOS
2016	PARKER BRENDA B	9/06/2017	2240168	101					125.00	REMOVE FEE PER W	SWFEE
2016	PARKS DAVID JOE	9/26/2017	2253849	107		80.64				GA IN 2010/CWNDS	MVDOS
	** YEAR TOTALS **					410.48			250.00		
2017	SEAGROVES ROSCOE	9/29/2017	2352543	112		505.47				ROLL BACK ERROR	LUERR

DATE	10/02/17	BOARD REVIEW OF CORRECTED RECEIPTS REPORT									PAGE	2
TIME	11:12:48	CHATHAM CO TAX DEPARTMENT									PROG#	CL2182
USER	AMY	DEPOSIT DATES 9/01/2017 THROUGH 9/30/2017										
SKIP	NEGATIVE ABATEMENTS	OMIT	ABATE	CODES	ERROR	BOER	CHGOF	PTC				
TAX	DEPOSIT											
YEAR	TAXPAYER NAME	DATE	RECEIPT	DIST	REAL	PERSONAL	M VEH	MV FEE	S WASTE	REASON	ABTCD	
=====												
2017	BACKOF CHARLES	9/27/2017	2307194	103	187.33					L/U ACREAGE ERRO	LUERR	
2017	BARNES DONNIE	9/15/2017	2319184	107		196.03				PASSED AWAY OCT	PPSLD	
2017	BARNES HENRY W JR ETAL	9/08/2017	2320425	107	91.94					VALUE ERROR PER	WVAL	
2017	BOGART RICHARD M	9/12/2017	2316556	101		49.69				CARTERET CO	OCNTY	
2017	BULLOCK SHERRY	9/15/2017	2336742	107		15.93				SOLD PER BILL OF	PPSLD	
2017	C & W ELECTRONICS INC	9/07/2017	2291818	108		4.62				BUS DISSOLVED PE	PPSLD	
2017	C & W ELECTRONICS INC	9/07/2017	2291819	108		.80				BUS DISSOLVED PE	PPSLD	
2017	C & W ELECTRONICS INC	9/07/2017	2291820	108		1.65				BUS DISSOLVED PE	PPSLD	
2017	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2307010	109		104.79				FINAL RETURN 201	PPSLD	
2017	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2307011	109		3.83				FINAL RETURN 201	PPSLD	
2017	CENTRAL CAROLINA WELL DRILLING	9/08/2017	2307012	109		3.83				FINAL RETURN 201	PPSLD	
2017	COBLE WILLIAM BRUCE	9/26/2017	2352531	106		11.97				CORRECTION PER V	PPVAL	
2017	COOK PHILLIP WAYNE	9/08/2017	2297863	109	29.60					VALUE ERROR PER	WVAL	
2017	DORSETT NANCY M	9/11/2017	2321344	202		5.76				SOLD 9/2014	PPSLD	
2017	GONZALEZ MARIA DE LA PAZ SOSA	9/08/2017	2349541	104	43.62					VALUE ERROR PER	WVAL	
2017	HAMPTON VILLAGE LLC	9/06/2017	2296242	101		12.99				CORRECT VALUE PE	WVAL	
2017	HAMPTON VILLAGE LLC	9/06/2017	2296273	101		17.46				VALUE IN 2015	WVAL	
2017	HARRINGTON PATRICIA A	9/07/2017	2346280	107					125.00	ONLY 1 DWELLING	SWFEE	
2017	HINSHAW ROBERT GLENN	9/28/2017	2350407	109	125.39				125.00	ACREAGE ERROR PE	LUERR	
2017	HOOD JUDITH I	9/08/2017	2290431	107	112.77					VALUE ERROR PER	WVAL	
2017	MITCHELL BROTHERS TRANSPORT	9/25/2017	2352819	103			36.08			PD 3500 PER BOSA	WVAL	
2017	MOODY JIMMY RICHARD JR	9/21/2017	2318505	103					125.00	REMOVE PER W MGM	SWFEE	
2017	MOORE TODD S LIFE EST	9/14/2017	2339222	103	919.95					TIMELY APP AFTER	LUERR	
2017	MORRIS KENNETH HOWARD	9/22/2017	2316404	107		7.08				GA / NO RECORD I	MVDOS	
2017	MUNACH ROBERT	9/11/2017	2299595	201					165.00	NO DWELLING	SWFEE	
2017	PARKER JOSEPH D	9/06/2017	2339232	101					125.00	REMOVE FEE PER W	SWFEE	
2017	PARKS DAVID JOE	9/26/2017	2316904	107		72.06				GA IN 2010/CWNDS	MVDOS	
2017	PORTUONDO DANIEL	9/11/2017	2319806	200	52.90					VALUE ERROR PER	WVAL	
2017	SPINKS ARTHUR JR HEIRS	9/20/2017	2343548	101	366.99				125.00	HOUSE ON WRONG P	RPVAL	
2017	WASCO INC	9/18/2017	2347595	105		142.50				SOLD	PPSLD	
2017	WASCO INC	9/18/2017	2347596	105		8.86				PP SOLD 8/2016	PPSLD	
2017	WASCO INC	9/18/2017	2347597	105		9.08				PP SOLD 8/2016	PPSLD	
2017	WASCO INC	9/18/2017	2347598	105		475.30				PP SOLD 8/2016	PPSLD	
2017	WASCO INC	9/18/2017	2347599	105		9.74				PP SOLD 8/2016	PPSLD	
2017	WOOD KEVIN J	9/12/2017	2302189	106						ADD FEE PER W MG	SWFEE	
** YEAR TOTALS **					2435.96	1153.97	36.08		790.00			
*** FINAL TOTALS ***					2435.96	2574.51	36.08		1290.00			

\*\*\* NORMAL END OF JOB \*\*\*



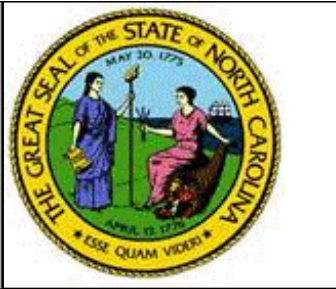
North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
AGUAYO, FELIPE DEJESUS JR	AGUAYO, FELIPE DEJESUS JR		71 RILEY LN		SILER CITY, NC 27344	Proration	0038232585	BME2145	AUTHORIZED	74995954	Refund Generated due to proration on Bill #0038232585-2016-0000-00
ALLRED, JOHN HERBERT JR	ALLRED, JOHN HERBERT JR	ALLRED, CONSTANCE FROMMEYER	4908 PLEASANT HILL CHU RD		SILER CITY, NC 27344	Proration	0008617946	BKK9189	AUTHORIZED	74995556	Refund Generated due to proration on Bill #0008617946-2016-0000-00
BLINCO, EDWARD STEWART	BLINCO, EDWARD STEWART		133 HARBOR TRACE LN		SUMMERVILLE, SC 29486	Proration	0014498365	TTT6886	AUTHORIZED	112002399	Refund Generated due to proration on Bill #0014498365-2016-0000-00
BOENING, ROBERT WILLIAM	BOENING, ROBERT WILLIAM		345 TURTLE CREEK FARM RD		APEX, NC 27523	Proration	0025530844	DEC3696	AUTHORIZED	74793564	Refund Generated due to proration on Bill #0025530844-2016-0000-00
BRAY, CURTIS CRAIG	BRAY, CURTIS CRAIG		1115 ZEB BROOKS RD		BEAR CREEK, NC 27207	Proration	0025236338	DDD5835	AUTHORIZED	74850412	Refund Generated due to proration on Bill #0025236338-2016-0000-00





North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

	Refund Reason	Create Date	Authorization Date
ie	Vehicle Totalled	09/26/2017	9/26/2017 3:50:23 PM
ie	Vehicle Sold	09/26/2017	9/26/2017 10:16:33 AM
ie	Vehicle Sold	09/18/2017	9/18/2017 11:32:36 AM
ie	Vehicle Sold	09/21/2017	9/21/2017 3:33:34 PM
ie	Vehicle Sold	09/22/2017	9/22/2017 11:30:14 AM



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$76.11)	\$0.00	(\$76.11)
09	Tax	(\$8.22)	\$0.00	(\$8.22)
			Refund	\$84.33
00	Tax	(\$35.68)	\$0.00	(\$35.68)
09	Tax	(\$3.86)	\$0.00	(\$3.86)
			Refund	\$39.54
00	Tax	(\$43.62)	\$0.00	(\$43.62)
23	Tax	(\$24.09)	\$0.00	(\$24.09)
23	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$67.71
00	Tax	(\$3.48)	\$0.00	(\$3.48)
07	Tax	(\$0.57)	\$0.00	(\$0.57)
			Refund	\$4.05
00	Tax	(\$11.98)	\$0.00	(\$11.98)
03	Tax	(\$1.32)	\$0.00	(\$1.32)
			Refund	\$13.30



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
BRAY, VERA COTNER	BRAY, VERA COTNER		210 QUAIL ROOST DR		CARRBORO, NC 27510	Proration	0001283438	PVB2209	AUTHORIZED	112003956	Refund Generated due to proration on Bill #0001283438-2016-0000-00
BRITT, TIMOTHY RAY	BRITT, TIMOTHY RAY	BRITT, MELANIE HENDRIX	312 NC HIGHWAY 22 42		BENNETT, NC 27208	Proration	0028457487	DKJ6692	AUTHORIZED	74669242	Refund Generated due to proration on Bill #0028457487-2016-0000-00
BUTT, JUDITH GROSS	BUTT, JUDITH GROSS		3000 GALLOWAY RIDGE APT J 102		PITTSBORO, NC 27312	Proration	0038718590	YPN4586	AUTHORIZED	74996228	Refund Generated due to proration on Bill #0038718590-2016-0000-00
BYRNE, LAKAISHA NICOLE	BYRNE, LAKAISHA NICOLE		935 VERNIE PHILLIPS RD		BEAR CREEK, NC 27207	Proration	0037818751	ELA4357	AUTHORIZED	74996454	Refund Generated due to proration on Bill #0037818751-2016-0000-00
CRESS, PHILIP REID	CRESS, PHILIP REID		120 OAKRIDGE LN		CHAPEL HILL, NC 27517	Proration	0014501567	WTK1515	AUTHORIZED	74213242	Refund Generated due to proration on Bill #0014501567-2016-0000-00



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/19/2017	9/19/2017 3:30:12 PM
-			
ie	Vehicle Sold	09/19/2017	9/19/2017 2:15:40 PM
-			
ie	Vehicle Sold	09/27/2017	9/27/2017 9:52:16 AM
-			
ie	Vehicle Sold	09/27/2017	9/27/2017 12:25:58 PM
-			
ie	Vehicle Sold	09/07/2017	9/7/2017 9:54:43 AM
-			



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$11.34)	\$0.00	(\$11.34)
22	Tax	(\$8.59)	\$0.00	(\$8.59)
22	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$19.93
00	Tax	(\$9.53)	\$0.00	(\$9.53)
13	Tax	(\$1.35)	\$0.00	(\$1.35)
			Refund	\$10.88
00	Tax	(\$37.90)	\$0.00	(\$37.90)
07	Tax	(\$6.16)	\$0.00	(\$6.16)
			Refund	\$44.06
00	Tax	(\$29.47)	\$0.00	(\$29.47)
04	Tax	(\$4.18)	\$0.00	(\$4.18)
			Refund	\$33.65
00	Tax	(\$39.71)	\$0.00	(\$39.71)
07	Tax	(\$6.45)	\$0.00	(\$6.45)
			Refund	\$46.16





North Carolina Veh

NCVTS Pending

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
CROSS, RICHARD TERENCE	CROSS, RICHARD TERENCE		177 CRAIG HILL LN		CHAPEL HILL, NC 27516	Proration	0019749829	CDH2816	AUTHORIZED	74850760	Refund Generated due to proration on Bill #0019749829-2016-0000-00
DAVIS, EUGENE JOSEPH	DAVIS, EUGENE JOSEPH		44 COBBLE RIDGE DR		PITTSBORO, NC 27312	Proration	0010231817	BBC2214	AUTHORIZED	74850708	Refund Generated due to proration on Bill #0010231817-2016-0000-00
DENNEY, ROBERT GEORGE	DENNEY, ROBERT GEORGE	DENNEY, ANN LOUISE	747 BLACKFRIAR S LOOP		CARY, NC 27519	Proration	0036920085	EET5576	AUTHORIZED	112494264	Refund Generated due to proration on Bill #0036920085-2016-0000-00
DOWNEY, WILLIAM EDWARD JR	DOWNEY, WILLIAM EDWARD JR	DOWNEY, BARBARA TEETSELL	156 EDGEWOOD DR		DURHAM, NC 27713	Proration	0030935031	DHZ3640	AUTHORIZED	75074614	Refund Generated due to proration on Bill #0030935031-2016-0000-00
ERNST, KARL FREDERICK	ERNST, KARL FREDERICK		711 RED OAK DR		SILER CITY, NC 27344	Adjustment < \$100	0018809827	CAM7146	AUTHORIZED	111133575	Refund Generated due to adjustment on Bill #0018809827-2016-0000-00



North Carolina Ver

NCVTS Pending

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	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/22/2017	9/22/2017 3:07:24 PM
ie	Vehicle Sold	09/22/2017	9/25/2017 9:48:54 AM
ie	Tag Surrender	09/27/2017	9/29/2017 9:55:22 AM
ie	Vehicle Sold	09/28/2017	9/29/2017 9:55:22 AM
ie	Mileage	09/05/2017	9/5/2017 1:38:54 PM



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$18.96)	\$0.00	(\$18.96)
07	Tax	(\$3.08)	\$0.00	(\$3.08)
			Refund	\$22.04
00	Tax	(\$78.16)	\$0.00	(\$78.16)
21	Tax	(\$53.43)	\$0.00	(\$53.43)
			Refund	\$131.59
00	Tax	(\$246.34)	\$0.00	(\$246.34)
23	Tax	(\$136.03)	\$0.00	(\$136.03)
23	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$382.37
00	Tax	(\$153.54)	\$0.00	(\$153.54)
12	Tax	(\$25.43)	\$0.00	(\$25.43)
			Refund	\$178.97
00	Tax	(\$12.47)	\$0.00	(\$12.47)
22	Tax	(\$9.44)	\$0.00	(\$9.44)
22	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$21.91

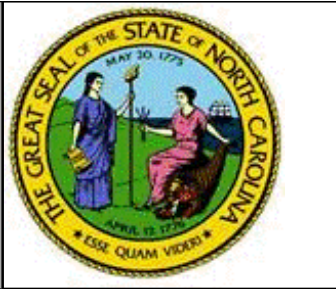


North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
ESCOBAR, JUANA MARTA	ESCOBAR, JUANA MARTA		84 COLEMAN		SILER CITY, NC 27344	Adjustment < \$100	0038943648	FBC7801	AUTHORIZED	112611720	Refund Generated due to adjustment on Bill #0038943648-2017-0000
ETHRIDGE, JAMES MARK	ETHRIDGE, JAMES MARK		1056 BEAVER DAM RD		CHAPEL HILL, NC 27517	Proration	0035793384	6K7444	AUTHORIZED	74850588	Refund Generated due to proration on Bill #0035793384-2016-0000-00
FAHLBERG, JOHN ALLEN	FAHLBERG, JOHN ALLEN		12926 MOREHEAD		CHAPEL HILL, NC 27517	Proration	0001311451	BEH7394	AUTHORIZED	74407008	Refund Generated due to proration on Bill #0001311451-2016-0000-00
FIKS, GERALD BRIAN	FIKS, GERALD BRIAN		PO BOX 312		MONCURE, NC 27559	Proration	0030776903	PAL5777	AUTHORIZED	74155852	Refund Generated due to proration on Bill #0030776903-2016-0000-00
FLANARY, JACK DONLELLY JR	FLANARY, JACK DONLELLY JR		277 SWEET GUM		PITTSBORO, NC 27312	Proration	0001280288	LYT8108	AUTHORIZED	74213354	Refund Generated due to proration on Bill #0001280288-2016-0000-00



North Carolina Ver

NCVTS Pending

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	Refund Reason	Create Date	Authorization Date
ie	Situs error	09/28/2017	9/28/2017 10:19:07 AM
ie	Vehicle Sold	09/22/2017	9/22/2017 1:21:09 PM
ie	Vehicle Sold	09/13/2017	9/13/2017 9:01:45 AM
ie	Vehicle Sold	09/06/2017	9/6/2017 2:21:11 PM
ie	Vehicle Sold	09/07/2017	9/7/2017 11:05:36 AM



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	\$0.00	\$0.00	\$0.00
21	Tax	(\$46.40)	\$0.00	(\$46.40)
09	Tax	\$7.34	\$0.00	\$7.34
			Refund	\$39.06
00	Tax	(\$26.10)	\$0.00	(\$26.10)
07	Tax	(\$4.24)	\$0.00	(\$4.24)
			Refund	\$30.34
00	Tax	(\$3.99)	\$0.00	(\$3.99)
07	Tax	(\$0.65)	\$0.00	(\$0.65)
			Refund	\$4.64
00	Tax	(\$78.64)	\$0.00	(\$78.64)
05	Tax	(\$15.51)	\$0.00	(\$15.51)
			Refund	\$94.15
00	Tax	(\$2.32)	\$0.00	(\$2.32)
07	Tax	(\$0.38)	\$0.00	(\$0.38)
			Refund	\$2.70





North Carolina Veh

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
FOUST, KAREN LYNNE	FOUST, KAREN LYNNE		240 PICKETT LN		PITTSBORO, NC 27312	Proration	0009706973	AD1446	AUTHORIZED	74461034	Refund Generated due to proration on Bill #0009706973-2016-0000-00
FREE, BRADLEY STEVEN	FREE, BRADLEY STEVEN		1398 US 322		UTICA, PA 16362	Proration	0029281925	DLH2713	AUTHORIZED	75075080	Refund Generated due to proration on Bill #0029281925-2016-0000-00
FREE, BRADLEY STEVEN	FREE, BRADLEY STEVEN		1398 US 322		UTICA, PA 16362	Proration	0034945859	DKR6271	AUTHORIZED	75075074	Refund Generated due to proration on Bill #0034945859-2016-0000-00
FREE, BRADLEY STEVEN	FREE, BRADLEY STEVEN		1398 US 322		UTICA, PA 16362	Proration	0036275850	6H2556	AUTHORIZED	75075068	Refund Generated due to proration on Bill #0036275850-2016-0000-00
HIGDON, NORMA MORGAN	HIGDON, NORMA MORGAN		540 ALPINE RD		MONCURE, NC 27559	Proration	0020290497	CHR1526	AUTHORIZED	74669384	Refund Generated due to proration on Bill #0020290497-2016-0000-00



North Carolina Ver

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	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/14/2017	9/14/2017 8:27:34 AM
ie	Reg . Out of state	09/28/2017	9/28/2017 4:59:45 PM
ie	Reg . Out of state	09/28/2017	9/28/2017 4:54:31 PM
ie	Reg . Out of state	09/28/2017	9/28/2017 4:52:14 PM
ie	Vehicle Sold	09/19/2017	9/19/2017 4:36:52 PM



North Carolina Ver

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$2.27)	\$0.00	(\$2.27)
07	Tax	(\$0.37)	\$0.00	(\$0.37)
			Refund	\$2.64
00	Tax	(\$1.36)	\$0.00	(\$1.36)
06	Tax	(\$0.26)	\$0.00	(\$0.26)
			Refund	\$1.62
00	Tax	(\$27.23)	\$0.00	(\$27.23)
06	Tax	(\$5.26)	\$0.00	(\$5.26)
			Refund	\$32.49
00	Tax	(\$25.32)	\$0.00	(\$25.32)
06	Tax	(\$4.89)	\$0.00	(\$4.89)
			Refund	\$30.21
00	Tax	(\$36.94)	(\$1.85)	(\$38.79)
05	Tax	(\$7.29)	(\$0.36)	(\$7.65)
			Refund	\$46.44



North Carolina Veh

NCVTS Pending

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
HILLMAN, ZONDA MARIE	HILLMAN, ZONDA MARIE		810 BELMONT BAY DR, APT 303		WOODBRI E, VA 22191	Proration	0034743616	0016SR	AUTHORIZED	112003215	Refund Generated du to proration on Bill #0034743616-2016 2016-0000-00
HOOKS, JILLIAN SCHNEIDER	HOOKS, JILLIAN SCHNEIDER		658 EARL GOODWIN RD		APEX, NC 27502	Proration	0032769301	CMP1155	AUTHORIZED	74793584	Refund Generated du to proration on Bill #0032769301-2016 2016-0000-00
HUDSON, KATIE LEIGH	HUDSON, KATIE LEIGH		103 N EASTERN ST		GREENVILLE, NC 27858	Adjustment < \$100	0039001312	EEA2429	AUTHORIZED	112493229	Refund Generated du to adjustment on Bill #0039001312-2016 2016-0000
KAUFMANN, JAMES DAVID	KAUFMANN, JAMES DAVID		11009 GOVERNORS DR		CHAPEL HILL, NC 27517	Proration	0036950083	PDT1119	AUTHORIZED	74088600	Refund Generated du to proration on Bill #0036950083-2016 2016-0000-00
KULP, KATHRYN ANN THIBAUT	KULP, KATHRYN ANN THIBAUT		1208 E KENNEDY BLVD UNIT 835		TAMPA, FL 33602	Proration	0024772529	CHN8014	AUTHORIZED	74155376	Refund Generated du to proration on Bill #0024772529-2016 2016-0000-00



North Carolina Ver

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	Refund Reason	Create Date	Authorization Date
ie	Reg . Out of state	09/19/2017	9/20/2017 8:40:55 AM
ie	Vehicle Sold	09/21/2017	9/21/2017 3:45:34 PM
ie	Situs error	09/26/2017	9/26/2017 9:34:04 AM
ie	Vehicle Sold	09/05/2017	9/20/2017 8:40:55 AM
ie	Reg . Out of state	09/06/2017	9/6/2017 9:11:59 AM



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$81.42)	\$0.00	(\$81.42)
23	Tax	(\$44.96)	\$0.00	(\$44.96)
23	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$126.38
00	Tax	(\$42.76)	\$0.00	(\$42.76)
07	Tax	(\$6.95)	\$0.00	(\$6.95)
			Refund	\$49.71
00	Tax	\$0.00	\$0.00	\$0.00
21	Tax	(\$83.93)	\$0.00	(\$83.93)
07	Tax	\$19.95	\$0.00	\$19.95
			Refund	\$63.98
00	Tax	(\$434.69)	\$0.00	(\$434.69)
07	Tax	(\$70.64)	\$0.00	(\$70.64)
			Refund	\$505.33
00	Tax	(\$57.83)	\$0.00	(\$57.83)
21	Tax	(\$39.54)	\$0.00	(\$39.54)
			Refund	\$97.37





North Carolina Veh

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
LEVINE, BURTON ALAN	LEVINE, BURTON ALAN		384 TALL OAKS RD		CHAPEL HILL, NC 27516	Proration	0010186015	CDH1194	AUTHORIZED	74667972	Refund Generated due to proration on Bill #0010186015-2016-0000-00
LIZZI, NICHOLAS FRANK	LIZZI, NICHOLAS FRANK	LIZZI, MISTY ANN	94 RENWOOD GRANT CT		CHAPEL HILL, NC 27517	Proration	0027232433	VYA5339	AUTHORIZED	75145750	Refund Generated due to proration on Bill #0027232433-2016-0000-00
MIESCIER, JOHN JOSEPH	MIESCIER, JOHN JOSEPH	MIESCIER, CATHERINE IRENE	14016 TURNBERRY LN, APT 205		MIDLOTHIAN, VA 23113	Proration	0009712850	VNP7852	AUTHORIZED	74267696	Refund Generated due to proration on Bill #0009712850-2016-0000-00
MORROW, HEATHER LORRAINE	MORROW, HEATHER LORRAINE		190 CULBERSON DR		SILER CITY, NC 27344	Proration	0009434028	BEE3936	AUTHORIZED	74995266	Refund Generated due to proration on Bill #0009434028-2016-0000-00
MUSANTE, LEIGH ANN HALLMAN	MUSANTE, LEIGH ANN HALLMAN		511 PERFECT MOMENT DR		DURHAM, NC 27713	Adjustment < \$100	0031554692	2411ST	AUTHORIZED	74735648	Refund Generated due to adjustment on Bill #0031554692-2016-0000-00



North Carolina Ver

NCVTS Pending

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	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/18/2017	9/18/2017 9:00:16 AM
ie	Vehicle Sold	09/29/2017	9/29/2017 11:40:53 AM
ie	Vehicle Sold	09/08/2017	9/8/2017 1:50:53 PM
ie	Vehicle Sold	09/25/2017	9/25/2017 3:40:42 PM
ie	Mileage	09/20/2017	9/20/2017 8:40:23 AM



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$10.57)	\$0.00	(\$10.57)
07	Tax	(\$1.72)	\$0.00	(\$1.72)
			Refund	\$12.29
00	Tax	(\$31.63)	\$0.00	(\$31.63)
07	Tax	(\$5.14)	\$0.00	(\$5.14)
			Refund	\$36.77
00	Tax	(\$9.79)	\$0.00	(\$9.79)
07	Tax	(\$1.59)	\$0.00	(\$1.59)
			Refund	\$11.38
00	Tax	(\$21.77)	\$0.00	(\$21.77)
01	Tax	(\$3.09)	\$0.00	(\$3.09)
			Refund	\$24.86
00	Tax	(\$11.34)	\$0.00	(\$11.34)
12	Tax	(\$1.88)	\$0.00	(\$1.88)
			Refund	\$13.22



North Carolina Veh

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
OLINGER, JERRY WAYNE	OLINGER, JERRY WAYNE		1565 NEW ELAM CHURCH RD		NEW HILL, NC 27562	Proration	0028824354	TRC4537	AUTHORIZED	74735882	Refund Generated due to proration on Bill #0028824354-2016-0000-00
PARRA, WILLIAM CHARLES	PARRA, WILLIAM CHARLES	PARRA, MARGARET NICHOLS	10364 STEPHENS		CHAPEL HILL, NC 27517	Proration	0024081450	MVY5400	AUTHORIZED	74669364	Refund Generated due to proration on Bill #0024081450-2016-0000-00
POE, WILLIAM MICHAEL	POE, WILLIAM MICHAEL	POE, RHONDA BOONE	4577 PINEY GROVE CHURCH	RD	SILER CITY, NC 27344	Proration	0018817041	YND6249	AUTHORIZED	74213244	Refund Generated due to proration on Bill #0018817041-2016-0000-00
REISMAN, MACHAELLA MARIE	REISMAN, MACHAELLA MARIE		2007 N MERIDIAN RD, APT C		TALLAHASSEE, FL 32303	Proration	0035059819	EHX2682	AUTHORIZED	74667982	Refund Generated due to proration on Bill #0035059819-2016-0000-00
RIDER, SHARON BARNARD	RIDER, SHARON BARNARD		101 SAGEBRUSH RD		CHAPEL HILL, NC 27516	Proration	0024629241	DDE3580	AUTHORIZED	74994924	Refund Generated due to proration on Bill #0024629241-2016-0000-00



North Carolina Ver

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	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/20/2017	9/20/2017 11:28:08 AM
ie	Vehicle Sold	09/19/2017	9/19/2017 4:19:08 PM
ie	Vehicle Sold	09/07/2017	9/7/2017 9:56:11 AM
ie	Reg . Out of state	09/18/2017	9/18/2017 9:06:14 AM
ie	Vehicle Sold	09/25/2017	9/25/2017 11:59:18 AM



North Carolina Ver

NCVTS Pending

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Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$24.35)	\$0.00	(\$24.35)
05	Tax	(\$4.80)	\$0.00	(\$4.80)
			Refund	\$29.15
00	Tax	(\$53.92)	\$0.00	(\$53.92)
07	Tax	(\$8.76)	\$0.00	(\$8.76)
			Refund	\$62.68
00	Tax	(\$54.95)	\$0.00	(\$54.95)
10	Tax	(\$8.67)	\$0.00	(\$8.67)
			Refund	\$63.62
00	Tax	(\$42.12)	\$0.00	(\$42.12)
03	Tax	(\$4.65)	\$0.00	(\$4.65)
			Refund	\$46.77
00	Tax	(\$55.93)	(\$2.80)	(\$58.73)
07	Tax	(\$9.09)	(\$0.45)	(\$9.54)
			Refund	\$68.27





North Carolina Veh

NCVTS Pending

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
RISK, GAYLE DULA	RISK, GAYLE DULA		369 BEECH FOREST WAY		PITTSBORO, NC 27312	Proration	0014498345	ZSM8987	AUTHORIZED	74343794	Refund Generated due to proration on Bill #0014498345-2016-0000-00
RUBRIGHT, HEATHER LYNN	RUBRIGHT, HEATHER LYNN		903 QUEENSDALE DR		CARY, NC 27519	Proration	0022070224	XZC5602	AUTHORIZED	111775356	Refund Generated due to proration on Bill #0022070224-2016-0000-00
RUNBERG, EVELYN AMARETTE GERY	RUNBERG, EVELYN AMARETTE GERY		61 HENRYS RIDGE RD		PITTSBORO, NC 27312	Proration	0018808418	BMR6289	AUTHORIZED	74995956	Refund Generated due to proration on Bill #0018808418-2016-0000-00
SCHALK, MANFRED ALLEN	SCHALK, MANFRED ALLEN		24 SPEYSIDE CIR		PITTSBORO, NC 27312	Proration	0020254118	0BX232	AUTHORIZED	74213532	Refund Generated due to proration on Bill #0020254118-2016-0000-00
SCIOLINO, JOSEPH CHARLES	SCIOLINO, JOSEPH CHARLES	SCIOLINO, CONSTANCE FLOYD	184 AMERICAN CT		APEX, NC 27523	Proration	0024867799	PXX9258	AUTHORIZED	74995100	Refund Generated due to proration on Bill #0024867799-2016-0000-00



North Carolina Veh

NCVTS Pending

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	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/11/2017	9/11/2017 11:33:14 AM
ie	Vehicle Sold	09/15/2017	9/15/2017 4:27:15 PM
ie	Vehicle Sold	09/26/2017	9/29/2017 9:55:22 AM
ie	Tag Surrender	09/07/2017	9/20/2017 8:40:55 AM
ie	Vehicle Sold	09/25/2017	9/25/2017 2:18:15 PM



North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$40.93)	\$0.00	(\$40.93)
06	Tax	(\$7.91)	\$0.00	(\$7.91)
			Refund	\$48.84
00	Tax	(\$32.80)	\$0.00	(\$32.80)
23	Tax	(\$18.12)	\$0.00	(\$18.12)
23	Vehicle Fee	\$0.00	\$0.00	\$0.00
			Refund	\$50.92
00	Tax	(\$107.42)	\$0.00	(\$107.42)
07	Tax	(\$17.46)	\$0.00	(\$17.46)
			Refund	\$124.88
00	Tax	(\$105.34)	\$0.00	(\$105.34)
07	Tax	(\$17.11)	\$0.00	(\$17.11)
			Refund	\$122.45
00	Tax	(\$47.82)	(\$2.39)	(\$50.21)
07	Tax	(\$7.77)	(\$0.39)	(\$8.16)
			Refund	\$58.37



North Carolina Veh

NCVTS Pending

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Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
SHEPHERD, ADRIANA CONSUELO	SHEPHERD, ADRIANA CONSUELO		118 W SALISBURY ST		PITTSBORO, NC 27312	Proration	0001298395	YSA6691	AUTHORIZED	74088596	Refund Generated due to proration on Bill #0001298395-2016-0000-00
SHEPHERD, ADRIANA CONSUELO	SHEPHERD, ADRIANA CONSUELO		118 W SALISBURY ST		PITTSBORO, NC 27312	Proration	0009180591	ZRA5551	AUTHORIZED	74088594	Refund Generated due to proration on Bill #0009180591-2016-0000-00
SMITH, CRAIG DENNIS	SMITH, CRAIG DENNIS		1475 BRIAR CHAPEL PKWY		CHAPEL HILL, NC 27516	Proration	0031551048	CDW3095	AUTHORIZED	74350658	Refund Generated due to proration on Bill #0031551048-2016-0000-00
SMITH, TERESA GREESON	SMITH, TERESA GREESON		390 BURGESS RD		APEX, NC 27523	Proration	0032042555	DKJ5945	AUTHORIZED	74793072	Refund Generated due to proration on Bill #0032042555-2016-0000-00
SPELL, KIMBERLY JENKINS	SPELL, KIMBERLY JENKINS		155 GRAYSON JENKINS RD		APEX, NC 27523	Proration	0001309373	ALK8170	AUTHORIZED	75074622	Refund Generated due to proration on Bill #0001309373-2016-0000-00



North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/05/2017	9/5/2017 9:20:29 AM
ie	Vehicle Sold	09/05/2017	9/5/2017 9:19:21 AM
ie	Vehicle Sold	09/12/2017	9/20/2017 8:40:55 AM
ie	Vehicle Sold	09/21/2017	9/21/2017 10:02:41 AM
ie	Vehicle Sold	09/28/2017	9/28/2017 11:41:13 AM



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$5.24)	(\$0.26)	(\$5.50)
21	Tax	(\$3.58)	(\$0.18)	(\$3.76)
			Refund	\$9.26
00	Tax	(\$8.46)	\$0.00	(\$8.46)
21	Tax	(\$5.79)	\$0.00	(\$5.79)
			Refund	\$14.25
00	Tax	(\$154.60)	\$0.00	(\$154.60)
07	Tax	(\$25.13)	\$0.00	(\$25.13)
			Refund	\$179.73
00	Tax	(\$67.56)	\$0.00	(\$67.56)
08	Tax	(\$10.98)	\$0.00	(\$10.98)
			Refund	\$78.54
00	Tax	(\$21.44)	\$0.00	(\$21.44)
07	Tax	(\$3.48)	\$0.00	(\$3.48)
			Refund	\$24.92





North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
STEVENS, DONALD ALLEN	STEVENS, DONALD ALLEN		1600 BILL LAMBERT RD		BEAR CREEK, NC 27207	Proration	0030195776	YF7229	AUTHORIZED	75146184	Refund Generated due to proration on Bill #0030195776-2016 2016-0000-00
SVENDSEN, HUGH BLAKE	SVENDSEN, HUGH BLAKE	SVENDSEN, CLAIRE INGRID	678 BEAR TREE CRK		CHAPEL HILL, NC 27517	Proration	0018802549	ZWR4746	AUTHORIZED	74213586	Refund Generated due to proration on Bill #0018802549-2016 2016-0000-00
TINERVIN, SCOTT ROBERT	TINERVIN, SCOTT ROBERT	TINERVIN, EMILY STARKWEATHER	126 128TH AVE NE		BELLEVUE, WA 98005	Proration	0031048658	PCH6633	AUTHORIZED	74669394	Refund Generated due to proration on Bill #0031048658-2016 2016-0000-00
TUDOR, CURT DAVID	TUDOR, CURT DAVID		20104 SCOTT		CHAPEL HILL, NC 27517	Proration	0009302516	NTW9280	AUTHORIZED	74267378	Refund Generated due to proration on Bill #0009302516-2017 2017-0000-00
VANORSDELL, DONNA	VANORSDELL, DONNA		286 CANTERBURY LN		SILER CITY, NC 27344	Proration	0030026830	YWA8192	AUTHORIZED	74088588	Refund Generated due to proration on Bill #0030026830-2016 2016-0000-00



North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

	Refund Reason	Create Date	Authorization Date
ie	Vehicle Totalled	09/29/2017	9/29/2017 4:45:57 PM
ie	Vehicle Sold	09/07/2017	9/7/2017 2:22:19 PM
ie	Vehicle Sold	09/19/2017	9/20/2017 8:40:55 AM
ie	Vehicle Sold	09/08/2017	9/8/2017 10:13:13 AM
ie	Vehicle Sold	09/05/2017	9/5/2017 9:16:23 AM



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$4.41)	\$0.00	(\$4.41)
03	Tax	(\$0.49)	\$0.00	(\$0.49)
			Refund	\$4.90
00	Tax	(\$56.13)	\$0.00	(\$56.13)
07	Tax	(\$9.12)	\$0.00	(\$9.12)
			Refund	\$65.25
00	Tax	(\$119.60)	\$0.00	(\$119.60)
07	Tax	(\$19.44)	\$0.00	(\$19.44)
			Refund	\$139.04
00	Tax	(\$29.02)	\$0.00	(\$29.02)
07	Tax	(\$4.76)	\$0.00	(\$4.76)
			Refund	\$33.78
00	Tax	(\$32.32)	\$0.00	(\$32.32)
03	Tax	(\$3.57)	\$0.00	(\$3.57)
			Refund	\$35.89



North Carolina Veh

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Payee Name	Primary Owner	Secondary Owner	Address 1	Address 2	Address 3	Refund Type	Bill #	Plate Number	Status	Transaction #	Refund Description
WALKER, VANESSA MARIE	WALKER, VANESSA MARIE		19002 STONE BRK		CHAPEL HILL, NC 27517	Proration	0029967632	PBV8179	AUTHORIZED	74850114	Refund Generated due to proration on Bill #0029967632-2016-0000-00
WHITFIELD, KEITH PARTIN	WHITFIELD, KEITH PARTIN	WHITFIELD, RHONDA GOODWIN	238 BEAVER CREEK RD		APEX, NC 27502	Proration	0009153913	CD5301	AUTHORIZED	73847988	Refund Generated due to proration on Bill #0009153913-2016-0000-00
WINDSOR, PATRICK MILTON CLYDE	WINDSOR, PATRICK MILTON CLYDE		76 CHURCHWOOD LN		PITTSBORO, NC 27312	Proration	0014486187	YVB6222	AUTHORIZED	74995650	Refund Generated due to proration on Bill #0014486187-2016-0000-00



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

	Refund Reason	Create Date	Authorization Date
ie	Vehicle Sold	09/22/2017	9/22/2017 8:10:03 AM
ie	Vehicle Sold	09/01/2017	9/1/2017 9:40:49 AM
ie	Vehicle Sold	09/26/2017	9/26/2017 11:16:32 AM



North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

Tax Jurisdiction	Levy Type	Change	Interest Change	Total Change
00	Tax	(\$12.89)	\$0.00	(\$12.89)
07	Tax	(\$2.10)	\$0.00	(\$2.10)
			Refund	\$14.99
00	Tax	(\$5.16)	\$0.00	(\$5.16)
07	Tax	(\$0.84)	\$0.00	(\$0.84)
			Refund	\$6.00
00	Tax	(\$7.89)	\$0.00	(\$7.89)
21	Tax	(\$5.39)	\$0.00	(\$5.39)
			Refund	\$13.28
			Refund Total	\$3621.85



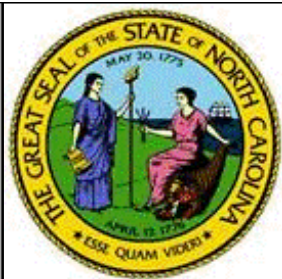


North Carolina Ver

NCVTS Pending

Report Date 10/2/2017 11:01:06 AM

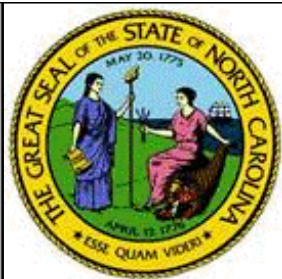
Tax Jurisdiction	District Type	Net Change
00	COUNTY	(\$2,811.86)
21	CITY	(\$238.24)
22	CITY	(\$18.03)
23	CITY	(\$223.20)
01	FIRE	(\$3.09)
03	FIRE	(\$10.03)
04	FIRE	(\$4.18)
05	FIRE	(\$27.96)
06	FIRE	(\$18.32)
07	FIRE	(\$213.89)
08	FIRE	(\$10.98)
09	FIRE	(\$4.74)
10	FIRE	(\$8.67)
12	FIRE	(\$27.31)
13	FIRE	(\$1.35)
Total		(\$3,621.85)



North Carolina Ver

**NCVTS Pending**

Report Date 10/2/2017 11:01:06 AM



North Carolina Ver

**NCVTS Pending**

Report Date 10/2/2017 11:01:06 AM

Report Parameters





# Chatham County, NC

## Text File

File Number: 17-2360

**Agenda Date:** 10/16/2017

**Version:** 2

**Status:** Approval of Agenda and  
Consent Agenda

**In Control:** Environmental Quality

**File Type:** Agenda Item

Vote on a request to approve sending a letter of support of Siler City's efforts to obtain a Brownfields Grant from the US Environmental Protection Agency

Action Requested: Send letter of support

Introduction & Background: The BOC wishes to provide support to the Town of Siler City in applying for a Brownfields Grant.

### About the Grant

A brownfield site is defined as real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of hazardous substances, pollutants, contaminants, controlled substances, petroleum or petroleum products, or is mine-scarred land. Brownfield Assessment Grants are for community-wide proposals. The request is for \$200,000 from the hazardous substances funding for sites with potential contamination of hazardous substances, pollutants, or contaminants and \$200,000 from the petroleum funding for sites with potential petroleum contamination.

### Background

On July 2014, Darin McClure (President of Mid-Atlantic Associates) presented to the Town Board regarding EPA Brownfields Assessment grants. Following the presentation, the Town Board authorized staff to send out RFQ for professional consulting services for a Brownfield Assessment Project. After reviewing the submittals and holding oral interviews, Staff selected Mid-Atlantic Associates. In October

Discussion & Analysis: The Town of Siler City is working to build a sustainable Brownfields program to further stimulate economic development in our community. The first step in the process is applying for a \$400,000 EPA Brownfields Assessment grant. The grant provides funds to conduct community outreach/involvement, site inventory and prioritization, Phase 1 and Phase II Environmental Site Assessments, and site planning related to brownfield sites. For additional information please see below or <http://epa.gov/brownfields>. The Town views proactive engagement of Brownfield assessment and possible remediation as one fundamental tool available to enhance and catalyze development investment of prime properties within our community. As such, the Town requests your support in advancing this effort.

Budgetary Impact: None

Recommendation: Vote on a request to approve support of Siler City's efforts to obtain a Brownfields Grant from the US Environmental Protection Agency





COUNTY COMMISSIONERS

Jim Crawford, Chair  
Diana Hales, Vice Chair  
Mike Dasher  
Karen Howard  
Walter Petty

COUNTY MANAGER: Renee Paschal

October 17, 2017

Mr. Bryan Thompson  
Siler City Town Manager  
P.O. Box 769  
Siler City, NC 27344

Dear Mr. Thompson:

On behalf of Chatham County government, I am writing to express our enthusiastic support of the Town of Siler City's application for a Brownfields Grant from the US Environmental Protection Agency (EPA). On October 16, 2017, the Board of Commissioners voted unanimously to provide a letter of support. This grant would be a tremendous asset in the economic development and recovery of Siler City, which would also augment our ability to market Siler City and the nearby CAM industrial megasite to major industries.

The Town of Siler City and the surrounding area have been most impacted by the loss of industries over the past 15 years. While some former industrial sites in the town are being redeveloped by Mountaire Farms, others will need major funding to remove or mitigate potential hazardous substances and petroleum. The county is already a strong partner with the town and the Chatham Economic Development Corporation in making major investments in potential industrial properties in and near Siler City. A grant from the EPA for brownfield redevelopment would complement these efforts.

Chatham County Commissioner Diana Hales has volunteered to serve on the Steering Committee required as part of the EPA grant. We also are eager to help the town promote related public meetings and will provide community outreach through our e-notify system and other contacts. Finally, we will provide other support as needed, including attending meetings, offering staff expertise and serving as a liaison with the full Board of Commissioners.

We are very fortunate to have a strong positive relationship between Chatham County and the Town of Siler City. Please let us know anything else that we might do to support this grant opportunity.

Sincerely,

Renee Paschal  
Chatham County Manager

cc: Chatham County Board of Commissioners  
Town of Siler City Mayor and Board of Commissioners



# Chatham County, NC

## Text File

File Number: 17-2357

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Board Priorities

**In Control:** Board of Commissioners

**File Type:** Resolution

Vote on a request to adopt Resolution Proclaiming November as Family Caregivers Month in Chatham County



## CHATHAM COUNTY COMMISSIONERS

Jim Crawford, Chairman  
Diana Hales, Vice Chair  
Mike Dasher  
Karen Howard  
Walter Petty

## COUNTY MANAGER

Renee Paschal

P. O. Box 1809, Pittsboro, NC 27312-1809 • Phone: (919) 542-8200

# Resolution of the Chatham County Board of Commissioners

## Proclaiming November as Family Caregivers Month in Chatham County

WHEREAS, Chatham County wishes to join the state and nation in recognizing November as Family Caregivers Month and also as World Alzheimer's Disease Awareness Month; and

WHEREAS, Chatham County acknowledges the vital role that family and friends assume in caring for their loved ones, including those with Alzheimer's disease and children with special needs; and

WHEREAS, the average family caregiver of an older person reportedly gives more than 24 hours of help each week, with many feeling overwhelmed at times; and

WHEREAS, the national theme for Family Caregivers Month—Caring around the Clock—speaks to the many challenges caregivers can face day and night while providing their loving care; and

WHEREAS, while the largest group of caregivers (34%) are those between ages 50 and 64, notably nearly 1 in 4 caregivers are ages 18 to 34—many of whom face physical, emotional and financial strain in balancing their caregiving with a working career; and

WHEREAS, Chatham's large and growing older population will demand increasing recognition of and support for the vital role of family caregivers; and

WHEREAS, the Chatham County Council on Aging and others are striving to do their part on behalf of caregivers by offering respite, a support group, options counseling, meals-on-wheels, assistive equipment and other assistance.

NOW THEREFORE, be it resolved by the Chatham County Board of County Commissioners that November 2017 is proclaimed Family Caregiver Month and calls upon the people of Chatham County to observe the month by joining the Council on Aging in honoring and supporting family caregivers.

Adopted this 16<sup>th</sup> day of October, 2017.

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Jim Crawford, Chairman  
Chatham County Board of Commissioners

ATTEST:

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Lindsay K. Ray, NCCCC, Clerk to the Board  
Chatham County Board of Commissioners



# Chatham County, NC

## Text File

File Number: 17-2342

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Board Priorities

**In Control:** Board of Commissioners

**File Type:** Resolution

Vote on a request to adopt a Resolution proclaiming November 18, 2017 as National Adoption Day in Chatham County



Established 1771

#### CHATHAM COUNTY COMMISSIONERS

Jim Crawford, Chairman  
Diana Hales, Vice Chair  
Mike Dasher  
Karen Howard  
Walter Petty

#### COUNTY MANAGER

Renee Paschal

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P. O. Box 1809, Pittsboro, NC 27312-1809 • Phone: (919) 542-8200

## Resolution of the Chatham County Board of Commissioners

### **PROCLAIMING NOVEMBER 18, 2017 AS NATIONAL ADOPTION DAY IN CHATHAM COUNTY**

WHEREAS, Chatham County recognizes the importance of giving children permanent, safe, and loving families through adoption; and

WHEREAS, More than 110,000 children in the United States foster care system are waiting to be adopted; and

WHEREAS, More than 90 children are in foster care in Chatham County; and

WHEREAS, To help these children find permanent, nurturing families, the local courts of Chatham County will open their doors on National Adoption Day, Saturday, November 18, 2017 to finalize the adoptions of local children and join other organizations to celebrate all adoptions; and

WHEREAS, This effort along with similar celebrations in all 50 states, the District Columbia, Guam and Puerto Rico will offer children the chance to live with stable and loving families and encourage other dedicated individuals to make a powerful difference in the lives of a child through adoption;

NOW, THEREFORE, BE IT RESOLVED, that the Chatham County Board of Commissioners does hereby proclaim November 18, 2017 as NATIONAL ADOPTION DAY in Chatham County, and in so doing, urges all citizens to join in a national effort to raise awareness about the importance of adoption.

Adopted, this the 16<sup>th</sup> day of October, 2017.

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James G. Crawford, Chairman  
Chatham County Board of Commissioners

ATTEST:

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Lindsay K. Ray, NCCCC, Clerk to the Board  
Chatham County Board of Commissioners



# Chatham County, NC

## Text File

File Number: 17-2358

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**Agenda Date:** 10/16/2017

**Version:** 2

**Status:** Board Priorities

**In Control:** County Manager's Office

**File Type:** Agenda Item

Presentation: State of the County Report for FY 2016-17

Action Requested: Receive report

Introduction & Background: Commissioner Chairman James Crawford will present the State of the County Report for fiscal year 2016-17. Copies will not be provided in advance but will be posted on the county website on Tuesday, October 17, 2017.

Discussion & Analysis: N/A

Budgetary Impact: N/A

Recommendation: N/A





# Chatham County, NC

## Text File

File Number: 17-2340

**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Public Hearing

**In Control:** Board of Commissioners

**File Type:** Ordinance

Public Hearing to receive public comment on the Sale of Malt Beverages, Unfortified Wine, Fortified Wine, and Mixed Beverages in Unincorporated Chatham County Beginning at 10:00 a.m. on Sundays and Vote on a request to approve Ordinance allowing such sales.

### Action Requested:

Receive public comment and vote to allow the sale of alcoholic beverages before noon on Sundays at licensed premises.

### Introduction & Background:

On June 29, 2017, the North Carolina General Assembly enacted Senate Bill 155, entitled "An Act to Make Various Changes to the Alcoholic Beverage Control Commission Laws". Section 4 of Ratified Senate Bill 155 authorizes city and county governments to adopt an ordinance to allow alcohol sales beginning at 10:00 a.m. on Sundays pursuant to the licensed premises' permit issued under G.S. 18B-1001. Ratified Senate Bill 155 was signed into law by Governor Roy Cooper on June 30, 2017.

The county has received requests from the Chatham County Tourism Advisory Committee and Chatham County Economic Development Corporation urging the adoption of the bill. The Town of Pittsboro's Board of Commissioners adopted its ordinance on August 28, 2017.

The county is required to "opt-in" by adopting an ordinance.

**Discussion & Analysis:** In order for the ordinance to be approved at the first reading, all five commissioners must unanimously vote to adopt. If there is not a unanimous vote, the ordinance must go to a second reading. Upon the second reading a majority vote is required for adoption.

**Budgetary Impact:** N/A

### Recommendation:

Receive public comment and vote to allow the sale of alcoholic beverages before noon on Sundays at licensed premises.



**An Ordinance to Allow the Sale of Alcoholic Beverages Before Noon  
on Sundays at Licensed Premises**

**WHEREAS**, on June 29, 2017, the North Carolina General Assembly enacted Senate Bill 155, entitled "An Act to Make Various Changes to the Alcoholic Beverage Control Commission Laws"; and

**WHEREAS**, Section 4 of Ratified Senate Bill 155 authorizes city and county governments to adopt an ordinance to allow alcoholic sales beginning at 10:00 a.m. on Sundays; and

**WHEREAS**, Ratified Senate Bill 155 was signed into law by Governor Roy Cooper on the 30<sup>th</sup> day of June, 2017 and became effective on that date (Session Law 2017, Chapter 87); and

**WHEREAS**, by enacting Senate Bill 155, North Carolina joins 47 other States in allowing alcohol services before noon on Sunday; and

**WHEREAS**, Sunday morning alcohol service will allow the hospitality community and retail merchants in our county to meet the needs of their customers; and

**WHEREAS**, Sunday morning alcohol service will benefit the county's small business community, bring people into business districts earlier in the day, and generate increased tax revenues; and

**WHEREAS**, our County has a diverse and growing population with different religious beliefs, each of which has various times and multiple days for worship;

**NOW, THEREFORE, BE IT ORDAINED** by the Board of Commissioners of Chatham County, North Carolina that:

Section 1. Pursuant to the authority contained in G.S. 153A-145.7, the sale of malt beverages, unfortified wine, fortified wine, and mixed beverages is allowed in the unincorporated areas of Chatham County beginning at 10:00 a.m. on Sunday pursuant to the licensed premises' permit issued under G.S. 18B-1001.

Section 2. This ordinance is effective on the \_\_\_\_ day of October, 2017.

Adopted this \_\_\_\_ day of October, 2017

Chatham County Board of Commissioners

\_\_\_\_\_  
James G. Crawford, Chairman

Attest:

\_\_\_\_\_  
Lindsay K. Ray, NCCCC  
Clerk to the Board

September 8, 2017

Chatham County Board of County Commissioners  
County Manager, Renee Paschal  
Chatham, County, North Carolina  
12 East St, P.O. Box 1809  
Pittsboro, NC 27312

Dear Commissioners, County Manager:

On behalf of the Tourism Advisory Committee (Pittsboro-Siler City Convention & Visitors Bureau), I write to you to urge the adoption of the "Brunch Bill" ordinance in Chatham County. S.B. 155, more commonly referenced as the "Brunch Bill," has been signed into law by Gov. Roy Cooper. The law allows Sunday alcohol sales to begin at 10 a.m. instead of noon. However, to be effective, local cities and/or counties must "opt-in" by adopting an ordinance. Local governments throughout North Carolina are moving forward to adopt the language, and we hope that Chatham County is next.

Chatham County's CVB has been positioning for growth for some time and the adoption of S.B. 155 at the county level has the potential to enhance growth, support the already favorable visitor-related economic impact, benefit visitors, and work well for the restaurant and hospitality industry.

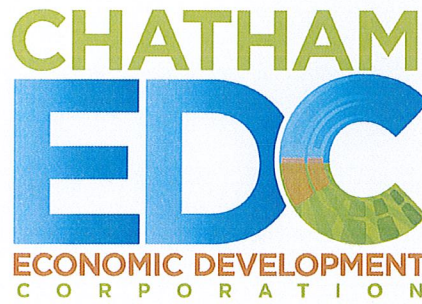
The option to serve earlier will be beneficial for restaurants, grocery/markets, licensed establishments, venues that host special occasions, tasting rooms, beverage shops, etc. While not all businesses may necessarily serve or sell at 10 a.m., the flexibility provides opportunity for revenue but also fair competition with our neighboring municipalities.

Please help keep Chatham County a competitive place to own a visitor business and appealing place to visit by adopting an ordinance allowing earlier Sunday alcohol sales.

Sincerely,



Janak Patel,  
Principal/GM, Days Inn & Suites Siler City.  
Chair, Tourism Advisory Committee



**Chatham Economic Development Corporation Resolution in Support of North Carolina Senate Bill 155**

WHEREAS, the Chatham Economic Development Corporation is a 501(c)3 economic development non-profit organization responsible for business recruitment, retention and expansion and entrepreneurship for Chatham County; and

WHEREAS, North Carolina Senate Bill 155, known as the "Brunch Bill," allows municipalities to change local ordinance to permit the sale of alcoholic beverages beginning at 10 a.m. on Sundays; and

WHEREAS, the Chatham Economic Development Board of Directors ("the EDC Board") at its September 12, 2017 meeting, voted 8-2 to support an ordinance change for Chatham County; and

WHEREAS, the EDC Board recognizes the business opportunity for restaurants and retail establishments to expand services at their discretion; and

WHEREAS, the EDC Board believes the Chatham County Board of Commissioners should solicit public input to ensure there is adequate hearing from Chatham County residents.

NOW, THEREFORE, BE IT RESOLVED by the Chatham Economic Development Corporation Board of Directors that we support North Carolina Senate Bill 155 as an economic development opportunity, but encourage the Chatham County Board of Commissioners engage with residents and businesses on the ordinance change.

Approved this, the 12<sup>th</sup> day of September, 2017

A handwritten signature in black ink, appearing to read "Doug Emmons", written over a horizontal line.

Doug Emmons, Chair, Chatham Economic Development Corporation Board of Directors



**§ 18B-1001. Kinds of ABC permits; places eligible.**

When the issuance of the permit is lawful in the jurisdiction in which the premises are located, the Commission may issue the following kinds of permits:

- (1) On-Premises Malt Beverage Permit. - An on-premises malt beverage permit authorizes (i) the retail sale of malt beverages for consumption on the premises, (ii) the retail sale of malt beverages in the manufacturer's original container for consumption off the premises, and (iii) the retail sale of malt beverages in a cleaned, sanitized, resealable container that is filled or refilled and sealed for consumption off the premises and that identifies the permittee and the date the container was filled or refilled. It also authorizes the holder of the permit to ship malt beverages in closed containers to individual purchasers inside and outside the State. The permit may be issued for any of the following:
  - a. Restaurants;
  - b. Hotels;
  - c. Eating establishments;
  - d. Food businesses;
  - e. Retail businesses;
  - f. Private clubs;
  - g. Convention centers;
  - h. Community theatres;
  - i. Breweries as authorized by G.S. 18B-1104(7) and (8).
- (2) Off-Premises Malt Beverage Permit. - An off-premises malt beverage permit authorizes (i) the retail sale of malt beverages in the manufacturer's original container for consumption off the premises, (ii) the retail sale of malt beverages in a cleaned, sanitized, resealable container that is filled or refilled and sealed for consumption off the premises and that identifies the permittee and the date the container was filled or refilled, and (iii) the holder of the permit to ship malt beverages in closed containers to individual purchasers inside and outside the State. The permit may be issued for any of the following:
  - a. Restaurants.
  - b. Hotels.
  - c. Eating establishments.
  - d. Food businesses.
  - e. Retail businesses.
  - f. The holder of a brewing, distillation, and fermentation course authorization under G.S. 18B-1114.6. A school obtaining a permit under this subdivision is authorized to sell malt beverages manufactured during its brewing, distillation, and fermentation program at one noncampus location in a county where the permittee holds and offers classes on a regular full-time basis in a facility owned by the permittee.
- (3) On-Premises Unfortified Wine Permit. - An on-premises unfortified wine permit authorizes (i) the retail sale of unfortified wine for consumption on the premises, either alone or mixed with other beverages, (ii) the retail sale of unfortified wine in the manufacturer's original container for consumption off the premises, and (iii) the retail sale of unfortified wine dispensed from a tap connected to a pressurized container utilizing carbon dioxide or similar gas into a cleaned, sanitized, resealable container that is filled or refilled and sealed for consumption off the premises and that identifies the permittee and the date the container was filled or refilled. The permit also authorizes the permittee to transfer unfortified wine, not

more than four times per calendar year, to another on-premises unfortified wine permittee that is under common ownership or control as the transferor. Except as authorized by this subdivision, transfers of wine by on-premises unfortified wine permittees, purchases of wine by a retail permittee from another retail permittee for the purpose of resale, and sale of wine by a retail permittee to another retail permittee for the purpose of resale are unlawful. In addition, a particular brand of wine may be transferred only if both the transferor and transferee are located within the territory designated between the winery and the wholesaler on file with the Commission. Prior to or contemporaneous with any such transfer, the transferor shall notify each wholesaler who distributes the transferred product of the transfer. The notice shall be in writing or verifiable electronic format and shall identify the transferor and transferee, the date of the transfer, quantity, and items transferred. The holder of the permit is authorized to ship unfortified wine in closed containers to individual purchasers inside and outside the State. Orders received by a winery by telephone, Internet, mail, facsimile, or other off-premises means of communication shall be shipped pursuant to a wine shipper permit and not pursuant to this subdivision. The permit may be issued for any of the following:

- a. Restaurants;
  - b. Hotels;
  - c. Eating establishments;
  - d. Private clubs;
  - e. Convention centers;
  - f. Cooking schools;
  - g. Community theatres;
  - h. Wineries;
  - i. Wine producers.
- (4) Off-Premises Unfortified Wine Permit. - An off-premises unfortified wine permit authorizes (i) the retail sale of unfortified wine in the manufacturer's original container for consumption off the premises, (ii) the retail sale of unfortified wine dispensed from a tap connected to a pressurized container utilizing carbon dioxide or similar gas into a cleaned, sanitized, resealable container that is filled or refilled and sealed for consumption off the premises and that identifies the permittee and the date the container was filled or refilled, and (iii) the holder of the permit to ship unfortified wine in closed containers to individual purchasers inside and outside the State. The permit may be issued for retail businesses. The permit also authorizes the permittee to transfer unfortified wine, not more than four times per calendar year, to another off-premises unfortified wine permittee that is under common ownership or control as the transferor. Except as authorized by this subdivision, transfers of wine by off-premises unfortified wine permittees, purchases of wine by a retail permittee from another retail permittee for the purpose of resale, and sale of wine by a retail permittee to another retail permittee for the purpose of resale are unlawful. In addition, a particular brand of wine may be transferred only if both the transferor and transferee are located within the territory designated between the winery and the wholesaler on file with the Commission. Prior to or contemporaneous with any such transfer, the transferor shall notify each wholesaler who distributes the transferred product of the transfer. The notice shall be in writing or verifiable electronic format and shall identify the transferor and transferee, the date of the transfer, quantity, and items transferred. The permit may also be issued to the holder of a viticulture/enology course authorization under G.S.



18B-1114.4. A school obtaining a permit under this subdivision is authorized to sell wines manufactured during its viticulture/enology program at one non-campus location in a county where the permittee holds and offers classes on a regular full-time basis in a facility owned by the permittee. The permit may also be issued for a winery or a wine producer for sale of its own unfortified wine during hours when the winery or wine producer's premises is open to the public, subject to any local ordinance adopted pursuant to G.S. 18B-1004(d) concerning hours for the retail sale of unfortified wine. A winery obtaining a permit under this subdivision is authorized to sell wine manufactured by the winery at one additional location in the county under the same conditions specified in G.S. 18B-1101(5) for the sale of wine at the winery; provided, however, that no other alcohol sales shall be authorized at the additional location. Orders received by a winery by telephone, Internet, mail, facsimile, or other off-premises means of communication shall be shipped pursuant to a wine shipper permit and not pursuant to this subdivision.

- (5) On-Premises Fortified Wine Permit. - An on-premises fortified wine permit authorizes the retail sale of fortified wine for consumption on the premises, either alone or mixed with other beverages, and the retail sale of fortified wine in the manufacturer's original container for consumption off the premises. The permit also authorizes the permittee to transfer fortified wine, not more than four times per calendar year, to another on-premises fortified wine permittee that is under common ownership or control as the transferor. Except as authorized by this subdivision, transfers of wine by on-premises fortified wine permittees, purchases of wine by a retail permittee from another retail permittee for the purpose of resale, and sale of wine by a retail permittee to another retail permittee for the purpose of resale are unlawful. In addition, a particular brand of wine may be transferred only if both the transferor and transferee are located within the territory designated between the winery and the wholesaler on file with the Commission. Prior to or contemporaneous with any such transfer, the transferor shall notify each wholesaler who distributes the transferred product of the transfer. The notice shall be in writing or verifiable electronic format and shall identify the transferor and transferee, the date of the transfer, quantity, and items transferred. The holder of the permit is authorized to ship fortified wine in closed containers to individual purchasers inside and outside the State. Orders received by a winery by telephone, Internet, mail, facsimile, or other off-premises means of communication shall be shipped pursuant to a wine shipper permit and not pursuant to this subdivision. The permit may be issued for any of the following:

- a. Restaurants;
- b. Hotels;
- c. Private clubs;
- d. Community theatres;
- e. Wineries;
- f. Convention centers.

- (6) Off-Premises Fortified Wine Permit. - An off-premises fortified wine permit authorizes the retail sale of fortified wine in the manufacturer's original container for consumption off the premises and it authorizes the holder of the permit to ship fortified wine in closed containers to individual purchasers inside and outside the State. The permit may be issued for food businesses. The permit may also be issued for a winery for sale of its own fortified wine. Orders received by a winery by telephone, Internet, mail, facsimile, or other off-premises means of communication

shall be shipped pursuant to a wine shipper permit and not pursuant to this subdivision. The permit also authorizes the permittee to transfer fortified wine, not more than four times per calendar year, to another off-premises fortified wine permittee that is under common ownership or control as the transferor. Except as authorized by this subdivision, transfers of wine by off-premises fortified wine permittees, purchases of wine by a retail permittee from another retail permittee for the purpose of resale, and sale of wine by a retail permittee to another retail permittee for the purpose of resale are unlawful. In addition, a particular brand of wine may be transferred only if both the transferor and transferee are located within the territory designated between the winery and the wholesaler on file with the Commission. Prior to or contemporaneous with any such transfer, the transferor shall notify each wholesaler who distributes the transferred product of the transfer. The notice shall be in writing or verifiable electronic format and shall identify the transferor and transferee, the date of the transfer, quantity, and items transferred.

- (7) Brown-Bagging Permit. - A brown-bagging permit authorizes each individual patron of an establishment, with the permission of the permittee, to bring up to eight liters of fortified wine or spirituous liquor, or eight liters of the two combined, onto the premises and to consume those alcoholic beverages on the premises. The permit may be issued for any of the following:
  - a. Restaurants;
  - b. Hotels;
  - c. Private clubs;
  - d. Community theatres;
  - e. Congressionally chartered veterans organizations.
- (8) Special Occasion Permit. - A special occasion permit authorizes the host of a reception, party or other special occasion, with the permission of the permittee, to bring fortified wine and spirituous liquor onto the premises of the business and to serve the same to his guests. The permit may be issued for any of the following:
  - a. Restaurants;
  - b. Hotels;
  - c. Eating establishments;
  - d. Private clubs;
  - e. Convention centers.
- (9) Limited Special Occasion Permit. - A limited special occasion permit authorizes the permittee to bring fortified wine and spirituous liquor onto the premises of a business, with the permission of the owner of that property, and to serve those alcoholic beverages to the permittee's guests at a reception, party, or other special occasion being held there. The permit may be issued to any individual other than the owner or possessor of the premises. An applicant for a limited special occasion permit shall have the written permission of the owner or possessor of the property on which the special occasion is to be held.
- (10) Mixed Beverages Permit. - A mixed beverages permit authorizes the retail sale of mixed beverages for consumption on the premises. The permit also authorizes a mixed beverages permittee (i) to obtain a purchase-transportation permit under G.S. 18B-403 and 18B-404, (ii) to obtain an antique spirituous liquor permit under subdivision (20) of this section, and (iii) to use for culinary purposes spirituous liquor lawfully purchased for use in mixed beverages. The permit may be issued for any of the following:
  - a. Restaurants;

- b. Hotels;
  - c. Private clubs;
  - d. Convention centers;
  - e. Community theatres;
  - f. Nonprofit organizations; and
  - g. Political organizations.
- (11) Culinary Permit. - A culinary permit authorizes a permittee to possess up to 12 liters of either fortified wine or spirituous liquor, or 12 liters of the two combined, in the kitchen of a business and to use those alcoholic beverages for culinary purposes. The permit may be issued for either of the following:
- a. Restaurants;
  - b. Hotels;
  - c. Cooking schools.
- A culinary permit may also be issued to a catering service to allow the possession of the amount of fortified wine and spirituous liquor stated above at the business location of that service and at the cooking site. The permit shall also authorize the caterer to transport those alcoholic beverages to and from the business location and the cooking site, and use them in cooking.
- (12) Mixed Beverages Catering Permit. - A mixed beverages catering permit authorizes a hotel or a restaurant that has a mixed beverages permit to bring spirituous liquor onto the premises where the hotel or restaurant is catering food for an event and to serve the liquor to guests at the event.
- (13) Guest Room Cabinet Permit. - A guest room cabinet permit authorizes a guest room cabinet permittee to sell to its room guests, from securely locked cabinets, malt beverages, unfortified wine, fortified wine, and spirituous liquor. A permittee shall designate and maintain at least ten percent (10%) of the permittee's guest rooms as rooms that do not have a guest room cabinet. A permittee may dispense alcoholic beverages from a guest room cabinet only in accordance with written policies and procedures filed with and approved by the Commission. A permittee shall provide a reasonable number of vending machines, coolers, or similar machines on premises for the sale of soft drinks to hotel guests.
- A guest room cabinet permit may be issued to any of the following:
- a. A hotel (i) holding a mixed beverages permit and (ii) located in a county subject to G.S. 18B-600(f).
  - b. A hotel (i) holding a mixed beverages permit and (ii) located in a county that has a population in excess of 150,000 by the last federal census.
  - c. A private club (i) holding a mixed beverages permit, (ii) having management contracts for the rental of living units, and (iii) located in a county defined in G.S. 18B-101(13a)b.2.
  - d. An 18-hole golf course (i) holding a mixed beverages permit or located in a county where ABC stores have heretofore been established but in which the sale of mixed beverages has not been approved, (ii) having management contracts for the rental of living units, and (iii) located in a county that has a population in excess of 20,000 people by the last federal census.
- (14) Brew on Premises Permit. - A permit may be issued to a business, located in a jurisdiction where the sale of malt beverages is allowed, where individual customers who are 21 years old or older may purchase ingredients and rent the equipment, time, and space to brew malt beverages for personal use in amounts set forth in 27 C.F.R. § 25.205. The customer must do all of the following:

- a. Select a recipe and kettle.
- b. Weigh out the proper ingredients and add them to the kettle.
- c. Transfer the wort to the fermenter.
- d. Add the yeast.
- e. Place the ingredients in a fermentation room.
- f. Filter, carbonate, and bottle the malt beverage.

A permittee may transfer the ingredients from the fermentation room to the cold room and may assist the customer in all the steps involved in brewing a malt beverage except adding the yeast. A malt beverage produced under this subdivision may not contain more than six percent (6%) alcohol by volume.

- (15) Wine-Tasting Permit. - A wine-tasting permit authorizes wine tastings on a premises holding a retail permit, by the retail permit holder or his employee. A wine tasting consists of the offering of a sample of one or more unfortified wine products, in amounts of no more than one ounce for each sample, without charge, to customers of the business. Any person pouring wine at a wine tasting shall be at least 21 years of age.

- a. Representatives of the winery, which produced the wine, the wine producer, a wholesaler, or a wholesaler's employee may assist with the tasting. Assisting with a wine tasting includes:
  - 1. Pouring samples for customers.
  - 2. Checking the identification of patrons being served at the wine tasting.
- b. When a representative of the winery that produced the wine, the wine producer, a wine wholesaler, or a wine wholesaler's employee assists in a wine tasting conducted by a retail permit holder:
  - 1. The retail permit holder shall designate an employee to actively supervise the wine tasting.
  - 2. A retail permit holder's employee shall not supervise more than three wine-tasting areas.
  - 3. No more than six wines may be tasted at any one tasting area.
  - 4. The wine tasting shall not last longer than four hours from the time designated as the starting time by the retail permit holder.
- c. The retail permit holder shall be solely liable for any violations of this Chapter occurring in connection with the wine tasting. The Commission shall adopt rules to assure that the tastings are limited to samplings and not a subterfuge for the unlawful sale or distribution of wine, and that the tastings are not used by industry members for unlawful inducements to retail permit holders. Except for purposes of this subsection, the holder of a wine-tasting permit shall not be construed to hold a permit for the on-premises sale or consumption of alcoholic beverages. Any food business is eligible for a wine-tasting permit.

- (16) Wine Shop Permit. - A wine shop permit authorizes (i) the retail sale of malt beverages, unfortified wine, and fortified wine in the manufacturer's original container for consumption off the premises, (ii) the retail sale of malt beverages or unfortified wine dispensed from a tap connected to a pressurized container utilizing carbon dioxide or similar gas in a cleaned, sanitized, resealable container that is filled or refilled and sealed for consumption off the premises and that identifies the permittee and the date the container was filled or refilled, and (iii) wine tastings on the premises conducted and supervised by the permittee in accordance with



subdivision (15) of this section. It also authorizes the holder of the permit to ship malt beverages, unfortified wine, and fortified wine in closed containers to individual purchasers inside and outside the State. The permit may be issued for retail businesses whose primary purpose is selling malt beverages and wine for consumption off the premises and regularly and customarily educating consumers through tastings, classes, and seminars about the selection, serving, and storing of wine. The holder of the permit is authorized to sell unfortified wine for consumption on the premises, provided that the sale of wine for consumption on the premises does not exceed forty percent (40%) of the establishment's total sales for any 30-day period. The holder of a wine-tasting permit not engaged in the preparation or sale of food on the premises is not subject to Part 6 of Article 8 of Chapter 130A of the General Statutes.

- (17) **Winemaking on Premises Permit.** - A permit may be issued to a business, located in a jurisdiction where the sale of unfortified wine is allowed, where individual customers who are 21 years old or older may purchase ingredients and rent the equipment, time, and space to make unfortified wine for personal use in amounts set forth in 27 C.F.R. § 24.75. Except for wine produced for testing equipment or recipes and samples pursuant to this subdivision, the permit holder shall not engage in the actual production or manufacture of wine. Samples may be consumed on the premises only by a person who has a nonrefundable contract to ferment at the premises, and the samples may not exceed one ounce per sample. All wine produced at a winemaking on premises facility shall be removed from the premises by the customer and may only be used for home consumption and the personal use of the customer.
- (18) **Malt Beverage Tasting Permit.** - A malt beverage tasting permit authorizes malt beverage tastings on a premises holding a retail permit by the retail permit holder or his employee. A representative of the brewery whose beverages are being featured at the tasting shall be present at the tasting unless the wholesaler or a wholesaler's employee determines that no representative of the brewery needs to be present. A malt beverage tasting consists of the offering of a sample of one or more malt beverage products, in amounts of no more than two ounces for each sample, without charge, to customers of the business. Any persons pouring malt beverage at a malt beverage tasting shall be at least 21 years of age.
  - a. Representatives of the brewery which produced the malt beverage, a wholesaler, or a wholesaler's employee may assist with the tasting. Assisting with a malt beverage tasting includes:
    - 1. Pouring samples for customers.
    - 2. Checking the identification of patrons being served at the malt beverage tasting.
  - b. When a representative of the brewery that produced the malt beverage, a malt beverage wholesaler, or a malt beverage wholesaler's employee assists in a malt beverage tasting conducted by a retail permit holder:
    - 1. The retail permit holder shall designate an employee to actively supervise the malt beverage tasting.
    - 2. A retail permit holder's employee shall not supervise more than three malt beverage tasting areas.
    - 3. No more than four malt beverages may be tasted at any one tasting area.

4. The malt beverage tasting shall not last longer than four hours from the time designated as the starting time by the retail permit holder.
  - c. The retail permit holder shall be solely liable for any violations of this Chapter occurring in connection with the malt beverage tasting. The Commission shall adopt rules to assure that the tastings are limited to samplings and not a subterfuge for the unlawful sale or distribution of malt beverages, and that the tastings are not used by industry members for unlawful inducements to retail permit holders. Except for purposes of this subdivision, the holder of a malt beverage tasting permit shall not be construed to hold a permit for the on-premises sale or consumption of alcoholic beverages. Any food business is eligible for a malt beverage tasting permit.
- (19) Spirituous liquor tasting permit. - The holder of any distillery permit authorized by G.S. 18B-1105 may conduct a consumer tasting event on the premises of the distillery subject to the following conditions:
- a. Any person pouring spirituous liquor at a tasting shall be an employee of the distillery and at least 21 years of age.
  - b. The person pouring the spirituous liquor shall be responsible for checking the identification of patrons being served at the tasting.
  - c. Each consumer is limited to tasting samples of 0.25 ounce of each spirituous liquor which total no more than 1.5 ounces of spirituous liquor in any calendar day.
  - d. The consumer shall not be charged for any spirituous liquor tasting sample.
  - e. The spirituous liquor used in the consumer tasting event shall be distilled at the distillery where the event is being held by the permit holder conducting the event.
  - f. A consumer tasting event shall not be allowed when the sale of spirituous liquor is otherwise prohibited.
  - g. Tasting samples are not to be offered to, or allowed to be consumed by, any person under the legal age for consuming spirituous liquor.
- The distillery permit holder shall be solely liable for any violations of this Chapter occurring in connection with the tasting. The Commission shall adopt rules to assure that the tastings are limited to samplings and not a subterfuge for the unlawful sale or distribution of spirituous liquor and that the tastings are not used by industry members for unlawful inducements to retail permit holders.
- (20) Antique spirituous liquor permit. - A permit under this subdivision may be issued to a holder of a mixed beverages permit issued under subdivision (10) of this section. Notwithstanding any law to the contrary, the permit holder may sell at retail antique spirituous liquor for use in mixed beverages for consumption on premises. The acquisition of antique spirituous liquor on or after September 1, 2015, shall be in accordance with the process established by rule of the Commission for special orders of spirituous liquor that is not on the list approved by the Commission. (1945, c. 903, s. 1; 1947, c. 1098, ss. 2, 3; 1949, c. 974, s. 1; 1957, cc. 1048, 1448; 1963, c. 426, ss. 10, 12; c. 460, s. 1; 1971, c. 872, s. 1; 1973, c. 476, s. 128; 1975, c. 586, s. 1; c. 654, ss. 1, 2; c. 722, s. 1; 1977, c. 70, s. 19; c. 182, s. 1; c. 669, ss. 1, 2; c. 676, ss. 1, 2; c. 911; 1979, c. 348, ss. 2, 3; c. 683, ss. 5, 6, 11, 12; 1981, c. 412, s. 2; 1981 (Reg. Sess., 1982), c. 1262, ss. 16, 17, 22; 1983, c. 457, s. 3; c. 583, ss. 2-5; 1985, c. 89, ss. 1-3; c. 596, s. 1; 1987, c. 391, s. 2; c. 434, s. 1; 1989, c. 800, ss. 11, 12; 1991, c. 459, ss. 5, 6; c. 565, ss. 1, 7; c. 669, s. 1;



1991 (Reg. Sess., 1992), c. 920, s. 7; 1993, c. 508, s. 5; 1995, c. 466, s. 10; c. 509, ss. 16-18; 1997-443, s. 16.28; 1997-467, s. 3; 2001-262, s. 1; 2001-487, s. 49(a); 2003-402, s. 5; 2005-350, ss. 1, 2(a); 2006-222, s. 2.1; 2006-227, ss. 1, 9; 2006-264, s. 35.3; 2009-377, s. 2; 2009-539, s. 3; 2010-31, s. 14.12(c); 2011-73, ss. 3, 4; 2011-107, s. 1; 2011-333, ss. 4, 5; 2013-76, s. 1; 2014-115, s. 28.2(a); 2014-120, s. 17(c); 2015-98, ss. 1(b), 1(d), 5(a), 8.)



# Chatham County, NC

## Text File

File Number: 17-2355

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Public Hearing

**In Control:** Planning

**File Type:** Agenda Item

A Legislative public hearing request by Russ Anderson for a general use rezoning on Parcel 92203 located at 414 New Elam Church Road, from R-1 Residential to IL Industrial Light on approximately 10 acres, Cape Fear Township.

**Action Requested:**

A Legislative public hearing request by Russ Anderson for a general use rezoning on Parcel 92203 located at 414 New Elam Church Road, from R-1 Residential to IL Industrial Light on approximately 10 acres, Cape Fear Township.

**Introduction & Background:**

**Discussion & Analysis:**

**Recommendation:**



# Chatham County, NC

## Text File

File Number: 17-2368

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Board Priorities

**In Control:** Parks and Recreation

**File Type:** Agenda Item

**Agenda Number:**

Vote on a request to approve adding general planning to the Chatham County Recreation Grants to Towns Funding Policy.

Action Requested:

Motion to approve adding general planning to the Chatham County Recreation Grants to Towns Funding Policy.

Introduction & Background:

That Chatham County Recreation Grants to Towns Funding Policy is intended to provide recreational opportunities for towns located entirely within Chatham County. Funds may be used for the following purposes: to improve or construct parks and recreation facilities, to implement parks and recreation programs/projects, to purchase recreation equipment, to provide match for a larger grant and to provide support for grant planning.

Discussion & Analysis:

To add general planning to the funding policy funds to the towns would be very beneficial to the towns. These plans can be used as a long-term plan that describes how a local government will address the recreational needs of the citizens in its jurisdiction. There are different types of general recreation planning such as comprehensive system wide plan, park systems master plan, and greenway system master plan just to name a few. Most of the time, these plans provide community needs assessments, inventory and comparison of existing facilities and recommendations and the plans prioritize action plan.

Budgetary Impact:

None

Recommendation:

Motion to approve adding general planning to the Chatham County Recreation Grants to Towns Funding Policy.



## Chatham County Recreation Grants to Towns Funding Policy

### Purpose

The purpose of this policy is to establish guidelines for funding of towns located entirely within Chatham County by the county Parks and Recreation Department.

### Policy Statement

Any expenditure of these funds must satisfy the North Carolina Constitution's public purpose requirement, which requires that public funds be expended for the benefit of all citizens. See N.C. Constitution Article V, Section 2(1). Funds must also be spent on projects, programs, or services that could have been provided by Chatham County directly according to statutory authority in N.C.G.S. §153A-449.

Funding will be provided in the budget on a \$5 per capita basis, according to the most recent population data available from the State Demographer at the time the county budget is prepared.

### Eligibility for County Funds

To be eligible to be considered for funding, towns must agree to the following:

- Funds are non-supplanting and will not be used for regular operating or salary expenses.
- Funds are not provided as pass-through funding to other agencies.
- Funds must be spent within the fiscal year. Towns will provide year-end report with documentation to support the expenditure of all funds. Funds that are not spent will be returned to the county. In limited cases, funds may be rolled over. The rollover must be approved by the Parks & Recreation Director and the Budget Manager.
- All town programs and facilities must be open to all county residents equally; residents outside municipal boundaries will pay the same fees and charges as those within municipal boundaries for all programs and facilities. This equitable fee schedule must be maintained for programs and facilities as long as the county funding continues and for facilities funded from this program as long as county funding continues plus five years or the useful life of the facility, whichever is less.

### Use of the funds by towns

This funding is intended to provide recreational opportunities for towns located entirely within Chatham County. Funds may be used for the following purposes:

- 1) To improve or construct parks and recreation facilities
- 2) To implement parks and recreation programs/projects
- 3) To purchase recreation equipment
- 4) To provide a match for a larger grant
- 5) To provide support for grant planning
- 6) To provide support for general planning

Funds must be fully spent within the fiscal year in which they are awarded. Any unspent funds must be returned to the county unless the County Manager approves retainage by the town of the money.

### Funding Application Process

The county will announce availability of funds by July 7 via email from the Chatham County Parks and Recreation Director to the town managers. Towns must inform the Chatham County Parks and Recreation Director via email of the intention to complete a project that is within the guidelines defined above.

The Parks and Recreation Director will confirm project eligibility by email and will notify the Chatham County Board of Commissioners of the project that will be undertaken with county funds.

Funds will be disbursed on a reimbursement basis when requested. Requests for reimbursement will be accompanied by documentation of spending, and, where possible, photos of the completed project.

#### Grant Reporting and Monitoring

Towns will submit a mid-year report by January 15 and a year-end report by July 15. Reports will address the status of each funded program or project and document the spending of county funds.





# Chatham County, NC

## Text File

File Number: 17-2283

**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Board Priorities

**In Control:** Planning

**File Type:** Agenda Item

Presentation of the Natural Gas Development Impacts Study in Chatham County by Charles Yuill.

### **Action Requested:**

Presentation of the Natural Gas Development Impacts Study in Chatham County by Charles Yuill.

### **Introduction & Background:**

In August 2015, the Board of Commissioners adopted an ordinance instituting a temporary moratorium on oil and gas development activities within Chatham County. Section 7 of the moratorium includes two tasks to be completed during the moratorium.

### **Discussion & Analysis:**

The moratorium expiration is 24 months from the adoption date, which is August 2017. The two tasks listed under section 7 are as follows:

- a) **Studies:** The Board of Commissioners will hire a consultant or consultants with expertise regarding fracking and other oil and gas development activities and their impacts on the natural, man-made, and social environments and its economic benefits and costs. The consultant(s) will be tasked to study Chatham County and to analyze state and federal regulatory programs and to prepare a report for the Board regarding the full range of expected impacts on Chatham County, including financial impacts. The study will include the most current analysis of impacts in localities similar to Chatham County in other states and the effectiveness of local ordinances in managing these impacts. This study and report should be completed within the first year of the moratorium and will include the consultant's conclusions as to whether additional time is needed for thorough study.
- b) **Development of Conditional Use Ordinance:** Upon completion of the study and report. The Board intends to develop a draft conditional use ordinance and/or other ordinances based on the report and the consultant's advice which will be coordinated with the revisions to the County's comprehensive zoning ordinance. The draft ordinance will be made for public review and comment and at least one public hearing will be held. Based on public comments the Board will finalize the ordinance and initiate the adoption procedure. Development of the ordinance and final approval is estimated to take one year.

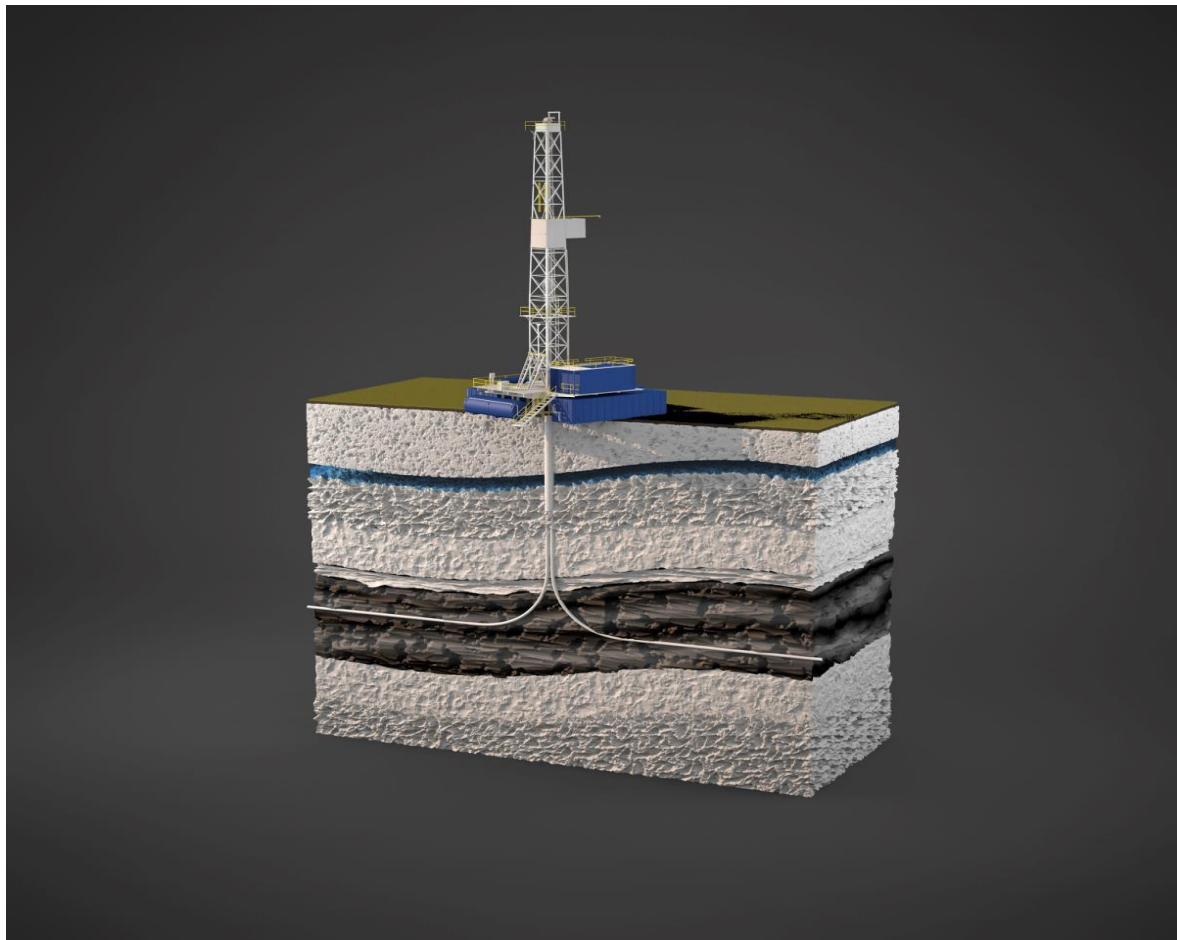
On June 13, 2017 the county held a meeting with the consultant currently under contract to address the first task. The attendees included the Board of Commissioners, Climate Change Committee, Environmental Review Advisory Committee, Agriculture Advisory Board, Planning Board, and Board of Health. The purpose of the meeting was to provide an update on the study, outline current findings, and present new information that has been generated since adoption of the moratorium. The meeting also provided an opportunity for county boards and committees, as well as the public, an opportunity to ask questions of the consultant in advance of preparation of the final report. It is anticipated that the report will be completed by the end of June and presented to the Board of Commissioners in August.

During the presentation on June 13, the Board received new information about the impacts of natural gas exploration in Chatham County including updated information from the NC Geologic Survey (a copy of the presentation is attached). On June 19, 2017 received an update from staff on the status of the moratorium and voted 4-0 to schedule a public hearing to consider an extension of the moratorium. On July 17, 2017 the board voted to extend the moratorium for one additional year. The purpose of this meeting is to receive a presentation on the final draft of the Natural Gas Impacts Study. The next step is to develop regulations addressing the impacts of natural gas exploration in Chatham County.

**Recommendation:**

Receive presentation on the final report.

# **Chatham County North Carolina Hydraulic Fracturing Background Assessment**



**October 2017**

**Submitted to Chatham County Board of Commissioners**

**Submitted by: Charles Yuill Environmental Consultant**

**Morgantown West Virginia**

## Preface

This report summarizes aspects of hydraulic fracturing, which is a technology for extracting natural gas from tight or non-fractured shale formations. The report is presented in terms of potential impacts and issues for Chatham County, North Carolina. The report is not intended to be an all-inclusive review of hydraulic fracturing's or fracturing issues and impacts. Such summaries are well presented in numerous other publications. The reader is referred to the following documents that do provide such detailed assessments:

1. Physicians for Social Responsibility. Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking Unconventional Gas and Oil Extraction. November 2016.
2. Resources for the Future. The State of State Natural Gas Regulation. June 2013. (now may be a little out of date).
3. State of North Carolina. North Carolina Oil and Gas Study. 2012.
4. United States Environmental Protection Agency. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States. December 2016.

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## **Chatham County North Carolina**

### **Hydraulic Fracturing Background Assessment**

#### **A. Introduction**

This summary report has been prepared to provide background information for Chatham County, North Carolina with regards to the potentials for hydraulic fracturing for natural gas recovery in the County. This report considers the County's geologic, land use / land cover, hydrologic, and cultural resource environments, as well as the regulatory environment in North Carolina and the Federal government. The report also briefly reviews the major environmental, fiscal, and human health issues associated with hydraulic fracturing or fracking. The report does not provide an in-depth review of fracking's associated human health, environmental, fiscal, and community impacts as such reviews.

Chatham County is located in central North Carolina southwest of the Raleigh / Durham metropolitan area. The County is primarily rural agriculture and forestland with a number of small towns and villages, in addition to dispersed rural development and significant natural and recreational resources. The County is on the eastern edge of the Piedmont Plateau consisting mostly of gently rolling hills, V shaped river valleys, and a number of monadnocks (which are steep isolated hillsides) – located mostly in the western higher elevation portions of the County. Natural gas exploration and development became a topic of interest in 2009 when the North Carolina Geologic Survey began studying shale formations in the Deep River rift basin – a narrow sedimentary basin running through the southern portion of the County. At that time the NCGS estimated that there are 700 acres in the county suited to natural gas development utilizing hydraulic fracturing, though it was anticipated that this estimate could be enlarged with additional investigations.

To establish a working definition for this report, hydraulic fracturing (“fracking”) is drilling into geologic formations, specifically tight shale gas or oil bearing formations, and then directing a high-pressure water mixture at the rock to release the gas or oil inside by creating fractures and other openings in the rock where previously such openings did not exist. Water, sand or fine granular ceramic materials, and chemicals are injected into the rock at very high pressures allowing the gas to flow through the formation out to the head of the well. Fracking has now become a dominant technology for the recovery of natural gas in the United States, as well as around the world, primarily due to the large reserves of natural gas in geologic basins and formations that are recoverable only applying such technologies.

The organization of the report is as follows:

1. A brief history of fracking.
2. The current state of fracking technologies and practices
3. Fracking and Chatham County
4. Fracking and North Carolina
5. Observations / Recommendations / Suggestions



6. Appendices
  - a. Major environmental, health and safety, and community infrastructure issues associated with fracking.
  - b. Summary of public meeting questions / comments from the public meeting held on June 13 in Pittsboro, North Carolina.
  - c. Copy of the presentation from the June 13 Commission public meeting.

## **B. A Brief History of Fracking**

One of the current myths regarding fracking is that it was developed relatively recently. In fact, fracking can trace its roots to the American Civil War. During the war a Union artillery officer observed the increased explosive power associated with firing explosive artillery shells into narrow trenches and surmised that firing such shells into vertical or horizontal tunnels would result in even greater explosive results. After the war in 1865, the officer patented his “explosive torpedo” as a way to free captured underground oil, and eventually water, from tight geologic formations. He initially used black powder and then nitroglycerin to charge these “explosions.” The use of “nitro” continued until the 1930’s when drillers began to use what they referred to as acid, which was an early mixture of non-explosive materials providing drillers far more control with casing design and maintenance and eventual well closure. It was during this time that drillers began to apply this “acid” under significant pressures to improve the results of the injections.

Modern commercial fracking began during the 1940s when geologists from the Stanolind Oil Company attempted pressurized fracking in the Hugaton Gas Field in Kansas using 1,000 gallons of gelled gasoline per “frack.” Though these experiments failed, they were noticed by Halliburton geologists in Oklahoma and Texas, who in 1947 – 1948, began their own experiments in various gas fields utilizing a range of liquid mixtures often under very high pressure. Their results were more successful and the technology became to be widely used in a number of oil and gas basins in Oklahoma, Texas, Colorado and Wyoming. As a matter of fact, fracking (though not using the specific term) was mentioned by President Ford in his 1975 state-of-the-union address as a potential future contributor to future American energy independence. Modern day fracking, using the methods we describe today, did not really begin until the 1990s, with accompanying significant increases in oil prices, without which the high investments required to undertake fracking activities would not have been possible. Geologist George Mitchell helped usher in modern fracking when he took hydraulic fracturing and combined it with horizontal drilling. A couple of other important fracking “milestones” include:

1. 1986 – The US Department of Energy drills a horizontal fracking well In Wayne County, West Virginia ushering in the era of eastern fracking.
2. 1999 – Very high-pressure injections are initially used in Texas and this practice soon spreads throughout the industry.
3. 2004 – Initial EPA report indicates that numerous fluids utilized in fracking are potentially toxic for humans.
4. 2005 – A number of exemptions for fracking from the Clean Water Act, Clean Air Act and Safe Drinking Water Act are put in place with the Energy Policy Act of 2005. Today,

fracking regulations are basically set by the states.

5. 2011 – EPA initiates a long-term comprehensive study on the impacts of fracking on drinking water resources, which was completed in 2016.

Today, fracking occurs throughout the United States, with active operations now in 21 states. In addition,

1. 34 states have laws and regulations on the books to facilitate fracking.
2. Three states have bans or moratoriums – Vermont, Maryland, and New York.
3. One multi-state region has a fracking moratorium – The Delaware River Basin (a primary water supply watershed for New York City). However, that moratorium is expected to be lifted.
4. Michigan, another state with significant fracking activity (12,000 wells), will likely have a fracking moratorium, on the ballot in 2018.

The following map outlines the major basins of the United States in which the majority of fracking activity is occurring.

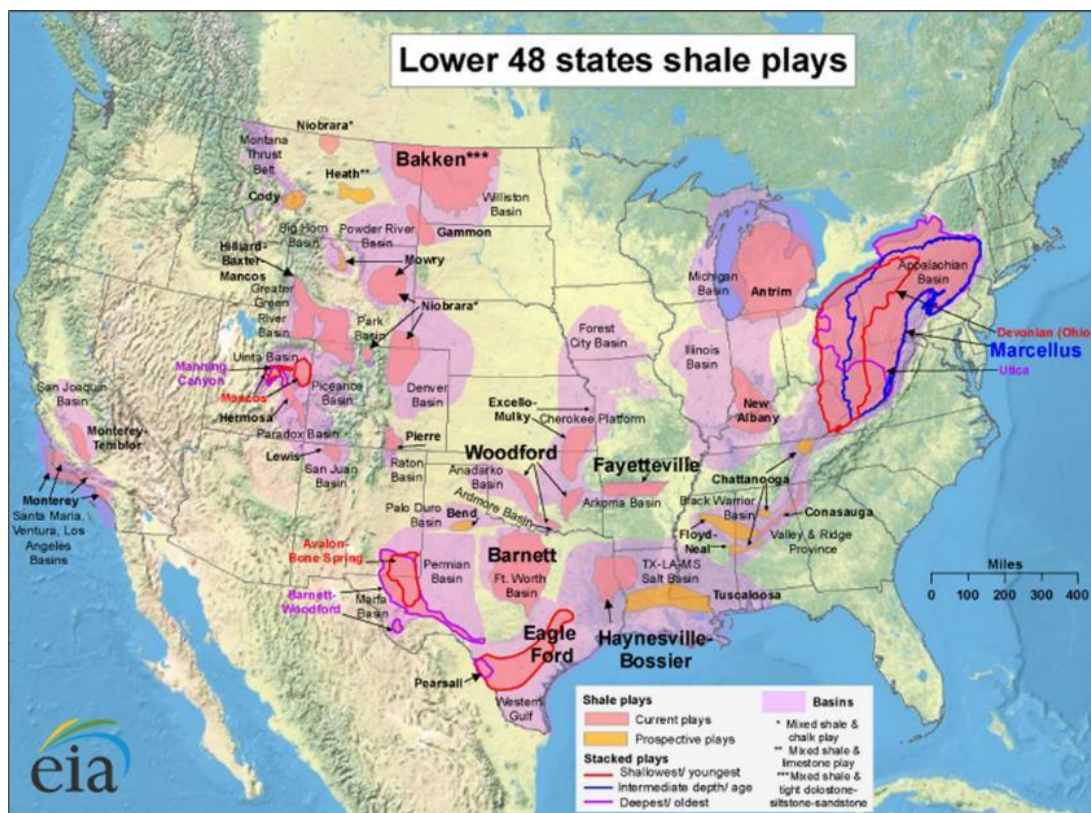


Figure 1. Major shale / fracking basins in the United States.

### C. Fracking – A General Description

Fracking is actually a small (in terms of duration), but very significant, part of the broader natural gas drilling, recovery, operations, environmental controls, site closure and restoration

activities that may be required in the overall development of a gas well. Once mineral rights have been obtained or are available, fracking activities can be initiated. A simple description of fracking operations includes:

1. Developing new access roads (typically heavy duty unpaved roads). The roads are constructed during prospecting, which generally requires drilling and testing utilizing a range of seismic experiments.
2. Exploration sites can become drill/well pads when the site is deemed to be suitable and available for well development based on legal, regulatory, production and environmental characteristics. In larger production areas, numerous wells are often drilled, ideally on relatively even spacing, allowing for logical units for development (40- to 240-acre spacing is typical). Often, well pads are 8 to 15 acres in total area. Typically, about 40% of the land is disturbed.
  - a. Well pads: 25% of area will remain disturbed due to continued activity at the well.
  - b. Pipelines: 4% typically remains disturbed after revegetation. Pipelines are often hundreds of yards in length for each well. Pipelines are typically ten yards or more in width. There will be pipelines for natural gas transport and there may be pipelines for water to support water recycling.
  - c. Ponds: 5% of total disturbed area. Pond sizes are being reduced with newer operations now using water storage tanks.
  - d. Roads: typically 7% of the total area. Roads that are constructed for well pad access are often 100 to 300 yards in length and are developed for moving equipment and water / chemicals between paved roads and the well pads.

Re-vegetation, water control, and other mitigation can be restored to 60% of that area soon after construction and well development.

3. Well pads will contain a well or multiple wells, as well as supporting technology and environmental control features in the case of horizontal fracking. Examples of these environmental control features include storage and treatment ponds and other excavated areas for storage / evaporation of return and produced water. Ponds are used for water storage and as evaporation ponds. On-site removal of potentially toxic solids is required. The resulting residuals are transported offsite for landfilling or other disposal. New methods for water re-use permits for the size of these water storage ponds to be greatly reduced and in some cases eliminated. In addition, well pads are used for:
  - a. Fluid mixing, storage and warming equipment;
  - b. Non-target gas control and measurement equipment – primarily methane; and
  - c. Storage of equipment;
4. The operation may have on-site or nearby injection wells. However, injection wells are being utilized less frequently due to the requirements and economics of water reuse in some fracking operations that may be in close proximity to a given well.
5. Pipelines are developed for natural gas transport and in some cases for water recycling.
6. Pipeline lengths can vary from a few hundred yards per well pad to miles.
7. Compressor stations and gathering compressors are developed for gas transport. Compressor stations may be attached to well pads or be developed separately. There also may be two different stages of compressor stations – compressors in close proximity to wells to the collected gas along gathering pipelines and second stage compressors that are utilized to move the gas to major transmission pipelines.

8. Existing infrastructure – roads and water – are critical to successful fracking operations.



Figure 2. Typical water retention pond and well pad for fracking.

**A brief description of the fracking process.** Once a suitable well location has been established, drilling the well can begin utilizing standard deep drilling drill pipe hardware and methods. As the drill bit descends into the ground, air is forced down the borehole flushing rock cuttings to the surface of the ground. These cuttings return with water from the drilling operation and often contain highly toxic materials. The hole should be initially drilled to below the elevation of the deepest freshwater aquifer. At this point, a surface casing is inserted into the well borehole to separate subsequent activities from the freshwater source aquifer. This surface casing also anchors a blowout preventer, which is a safety device that protects workers and equipment at the well location. Then cement is pumped into the borehole filling and sealing the area between the casing and the outer edges of the borehole.

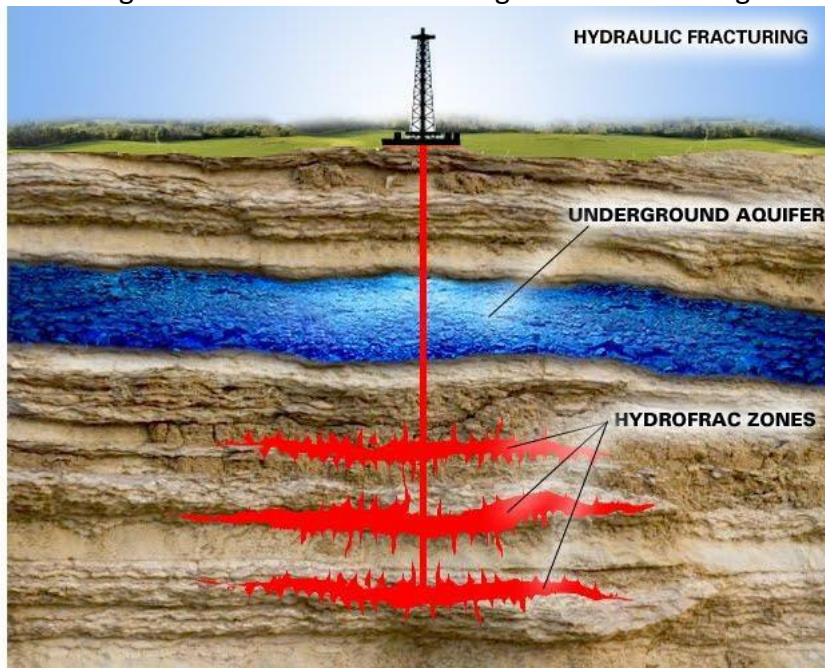


Figure 3. Illustration of the basic process of fracking for natural gas.



At this point, drilling continues below the casing, utilizing a downhole drilling motor, which can continue with vertical drilling or begin turning for horizontal drilling. When the target locations are reached, the drilling motor is removed and production casings are inserted for the entire length of the borehole. Again, cement is pumped into the hole filling the voids between the casing and the walls of the hole. Once this effort is completed, the lower casing is perforated using a perforating gun or “perf” creating thousands of holes in the casing. Electric currents are used to shoot small holes through the casing and cement. Plugs are sometimes placed into the borehole to facilitate fracking at different depths. Depending on the depth of the target shale formation, total fracking well depths can range from three or four thousand feet to over eight or nine thousand feet.

The well is now set for fracking with water, sand or ceramic particles. Fracking fluids are sent into the borehole at pressures often exceeding 10,000 pounds per square inch (psi). Fracking can continue to different stages or depths and the entire well borehole can be re-fracked multiple times as needed – either initially or over the life of the well. Fracking can require up to five million gallons of water per frack event. Such amounts of water, sand, and chemicals can require over 1,000 round trips from water sources and chemical storage areas to the well(s) in what may be a concerted two-week length of time. Once fracking is completed, any well plugs are removed and gas typically begins flowing up the borehole and into on-site pipelines moving the gas to adjacent compressors and eventually into gas transmission lines in the region.

**Regulatory components and associated fracking components.** Fracking is an extremely complex process that requires detailed logistics planning, numerous different activities, complex equipment, significant amounts of chemicals, complex environmental protection management activities, and a variety of skillsets. A 2013 report by Resources for the Future (RFF 2013) provides a detailed summary of these components.

#### **1. Site Components**

- a. Well spacing is generally a function of shale formation geology
- b. Well setbacks from surface water and development such as buildings
- c. Water testing

#### **2. Well Drilling**

- a. Casing / cementing regulations
- b. Cement preparation and circulation

#### **3. Fracturing Regulations**

- a. Water withdrawal limits
- b. Fracking fluid limits and disclosure

#### **4. Wastewater Storage**

- a. Fracking fluid storage
- b. Pit liner requirements
- c. Pit freeboard requirements

- d. Underground injection regulations
  - e. Fluid disposal
  - f. Fluid transportation
5. **Excess / fugitive gas disposal**
    - a. Venting
    - b. Flaring
  6. **Production**
    - a. Severance taxes
  7. **Well abandonment**
    - a. Idle time limits
    - b. Temporary abandonment
    - c. Final restoration and stabilization
  8. **Other considerations**
    - a. Accident reporting
    - b. Regulatory agencies

States have applied a number of different approaches to regulating the aspects above, but typically, states are adopting combinations of approaches such as basic command and control (setting minimum requirements for parameters such as distance and storage volumes); case by case permitting; and allowances for special case variances. States are also beginning to utilize performance standards. This means well developers are given flexibility in selecting their various methods (such as for water storage or reuse) so long as certain performance metrics are met (such as water quality measures).

**Site development regulations.** States regulate shale gas development from the very beginning of the process – before fracking activities are initiated. The following graphic illustrates a timeline showing the various aspects of gas well development and operation through the life of the well – which in some cases can extend decades with multiple fracks.

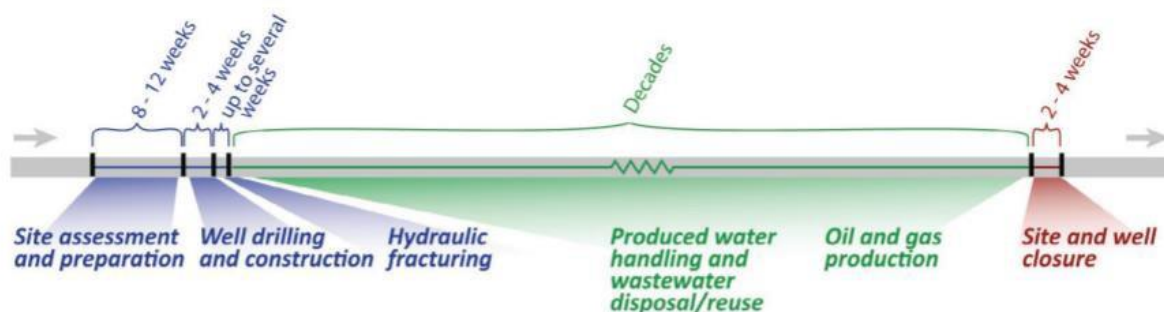


Figure 4. Summary of a timeline and activities for a typical hydraulic fracture well (source USEPA 2016).



Typically the states, and therefore operators, must document the suitability of a proposed well site for development including meeting relevant setback requirements (typically from occupied structures). These setbacks can also include: public and private drinking water sources including both wells and public water intakes; riparian zones and other sensitive landscapes; and any other landscape features deemed appropriate and allowable with state regulations. In viewing a number of states, setbacks requirements for occupied structures range from 100 to 1,000 feet. There is also a tremendous range for setbacks from various water features – from 50 to 500 feet – though setbacks from public water sources (surface intakes and wells) are typically greater (often up to 2,000 feet). Over the last couple of years, States have been expanding required setbacks, particularly for public water sources. A number of states actually do not regulate minimum distances for gas wells from private drinking water wells, though minimum distances of 100 feet are typical.

Pre-drilling water testing is required in nearly all states, with the distances required for water testing often based on estimated fracking distances and characteristics. When actual minimum distances are mentioned, they range from .09 miles to one mile. Where states require testing “near to the proposed well,” the definition of “near” is often left to the operator and / or regulatory agency to determine.

Typically, other aspects such as suitability of local roads and infrastructure, as well as proximity to schools and healthcare (except for occupied building minimums), are not considered in well siting decisions or regulations.

**Water quality liabilities.** Operators are generally liable for pollution problems originating from their wells for distances in excess of the minimum distances for required water testing. Liability distances can range from 1,500 feet - 2,500 feet for a number of eastern states to over a half of a mile in Colorado.

**Well casing and cementing requirements.** In general, states require the extension of well casings and cementing to extend below the lowest or base levels / zones containing any freshwater that is utilized (drinking water aquifers). These distances, however, are relatively short, ranging between 30 and 120 feet below the lowest or base elevations (often determined by monitoring existing wells in the area), with an average of 60 feet. Typically, casings and cementing must also be able to meet performance standards, such as the ability to withstand the pressures associated with multiple fracking events over various durations of time. Cementing performance minimums are also typically dealt with – particularly to insure that cementing from different cementing injections are fully joined to minimize potentials for subsequent leakage through cement seams. Cementing in all cases is completed from the lowest required elevations in the borehole to the surface of the ground. Methods for insuring well casing and cementing performance are variable from operator to operator and from state to state. Well casing and cementing longevity are also not typically / systematically addressed by operators or state regulations except in general qualitative terms.

**Hydraulic fracturing.** The actual fracturing involves high-pressure injection of a mixture of water, sand or pulverized ceramic materials, and fracking fluid, which is composed of what is

often a very complex mixture of chemicals that are combined to meet very specific objectives in the fracking process. These objectives can include:

1. Biocides to reduce bacteria and other living organisms that can impact the durability of the well casing and cement.
2. Corrosion inhibitors to protect the well casing.
3. Friction reducers to improve the slick water / gas performance of the process.
4. Iron control to minimize iron armoring which can reduce the porosity of the shale fractures.
5. PH adjusting compounds to reduce potential damage to the well casing and cement collars.

Water is the dominant ingredient in this mixture with often millions of gallons of water required per fracking episode. This water is typically withdrawn from local surface and groundwater sources. However, water recycling is becoming far more prevalent in fracking with water reuse typically providing the majority of the water being used in many gas-producing areas. States typically require permits for industrial operations that withdraw significant amounts of water, such as those required with fracking. Operators also must typically report on the amounts and source locations for the water they are using. Trucks are typically used to transport the water to well sites, though areas that utilize recycled water often install piping systems to move frack water to where it may be needed. As mentioned above, individual frack events can involve hundreds of round-trip truck trips from water sources or storage areas to the individual well.

**Fracking fluids.** Fracking fluid components have historically been regarded as trade secrets, so many of the components included in the fluids are not fully regulated and are not always fully disclosed. Partial disclosure is generally mandated by states and the amount of disclosure is often left to the discretion of the well operators by determining what chemicals are in fact “trade secrets.” States that require full disclosure often hold those disclosures as confidential, free from the potential reporting requirements of the Freedom of Information Act. FracFocus, a database initially developed by the US Department of Energy, is perhaps the best source of information about fracking chemicals – state-to-state and operator-to-operator. The Occupational Safety and Health Administration also require the disclosure of all hazardous chemicals – however there are storage minimum amounts and levels of required reporting that do not always result in full disclosure of chemicals and associated concentrations or amounts. This is because well operator methods often do not align with OSHA requirements for chemical reporting.

**Wastewater and flow back water storage and disposal.** Typically, almost half of the water that is fracked returns to the surface as flow back or produced water, depending on the characteristics of the well and the shale formation being fracked. This water also returns with many of the fracking chemicals, as well as carrying materials from the formation itself, which many times includes toxic or at least environmentally problematic materials. In the past, this water has typically been stored for recycling (reuse in additional fracking) or disposed of by utilizing deep injection wells. In many areas of the eastern United States, injection well usage has slowed due to injected water being lost for subsequent fracking activities because

operator access to public water sources is now being permitted and in some cases, limited.

The storage, disposal, and recycling of such water is extremely complex with opportunities for spills and / or leaks that can lead to shallow groundwater or surface water pollution events. This flow back or produced water is most common immediately after a fracking event, and will be minimized or eliminated once the well is producing gas. As the economics and technologies of fracking are changing, so are the ways the industry is dealing with the resulting wastewater. On-site lined storage ponds/pits are being replaced with enclosed storage tanks improving environmental protection. This also improves operational aspects of fracking with improved control over storage and management of the produced water. The volumes of water being stored are being reduced significantly as the industry develops improved methods for water reuse in the fracking process. In addition, water treatment technologies are being developed and improved to facilitate increased and continued utilization of produced water for continued fracking, reducing operational demands for new water. For example, a billion dollar treatment facility is being developed in central West Virginia to potentially handle water from hundreds of wells. Well-to-well and operator-to-operator networks are being established to move produced water from where it is being produced to where it might be needed. New pipeline systems may be above ground or underground. These new water pipelines often use the same pipeline alignments as already in-place natural gas pipelines. However, much of the produced water also continues to be trucked, often severely impacting rural / local road networks in terms of road damage and maintenance, as well as road crowding and safety.

For operations utilizing pits and impoundments for water storage, the operators must typically adhere to state impoundment design and operation regulations, often with increased design requirements due to the potentially toxic nature of the water mixtures being stored. State impoundment freeboard design requirements (additional depth of the pit or impoundment above the design water level), emergency storage in the event of unexpected water volumes; pit liner materials, and site / landform slope guidelines are all aspects regulating water storage in pits for fracking operations. Pit failures of one form or another (sloughing sidewalls, tears, etc.) are often the source of significant surface and shallow groundwater pollution events associated with frack wells. Pit liners are regulated in every state and typically address liner thickness, materials, maintenance, and monitoring of liner degradation, failure, and requirements and methods for replacement.

**Underground injection wells.** Injection wells are permitted in all of the states with active fracking and the associated regulatory programs. However, there are tremendous variations in the required design and operation of the wells. Currently, Ohio, Arkansas and portions of Texas have moratoria due the increased seismic activities linked to shale gas fluid disposal in such wells and the expansion of such moratoria to other states is likely to continue. These concerns over seismic activity are driving the industry towards improved water treatment for greater reuse of produced water in other fracking operations and decreased reliance on deep well injection. There are a variety of other water disposal methods being utilized in different fracking states and the following is a list of these technologies / methods moving from most widely used to least used:

1. Underground injection (though use is being reduced)

2. Disposal facilities
3. Evaporation ponds / disposal pits
4. Land application – for certain uses only
5. Discharge into surface water bodies – under very limited conditions

Drilling wastes such as drill lubrication fluids, muds and well cuttings must be similarly disposed of.

**Wastewater transportation and tracking.** Wastewater that is not utilized, stored on-site, or in adjacent fracking operations must be transported using either trucks or pipelines. Truck transport generally requires permitting for transport of hazardous materials that is typical for other hazardous materials. Trucks have traditionally been the primary method for wastewater transportation though pipelines are now becoming more prevalent.

**Excess gas disposal.** Typically, excess gases, often methane, that are not to be captured are either vented or flared. It is now recognized, that these practices have had serious environmental consequences. Venting and flaring are regulated by all of the states with active fracking, at least in terms of setting limitations on their usage. Venting is more widely regulated than flaring, which is still relatively widely used in many fracking states. However, when the Obama Administration sought to regulate excess and fugitive gases (primarily methane), the majority of operators responded by installing equipment for the capture of these gases for transport for downstream processing and utilization. This has resulted in decreased use of both flaring and venting.

**Production of gas from the well.** Well production is regulated similarly to traditional gas and oil well regulation. There is often less governmental oversight of traditional gas producing wells. These wells may be essentially static and low maintenance for many years. However, producing wells may periodically produce water and fugitive methane, which will be dealt with as discussed above. However, it must be noted that periodic methane escapes are relatively common in producing wells, particularly in the early stages of production.

**Site downtime, abandonment and environmental restoration.** Typically, site abandonment and restoration regulations come in to play at the end of the well life. When wells are no longer producing they are typically plugged and abandoned. However, wells are often temporarily abandoned or “shut down,” as is currently the case with many wells, due to the relatively low cost of natural gas. Operators and the states have a variety of mechanisms for the continued inspection and maintenance of such inactive wells. The time over which wells can remain idle varies significantly from state to state – ranging from 1 to 300 months, but typically 12 months. After such periods the well must be “permanently plugged”.

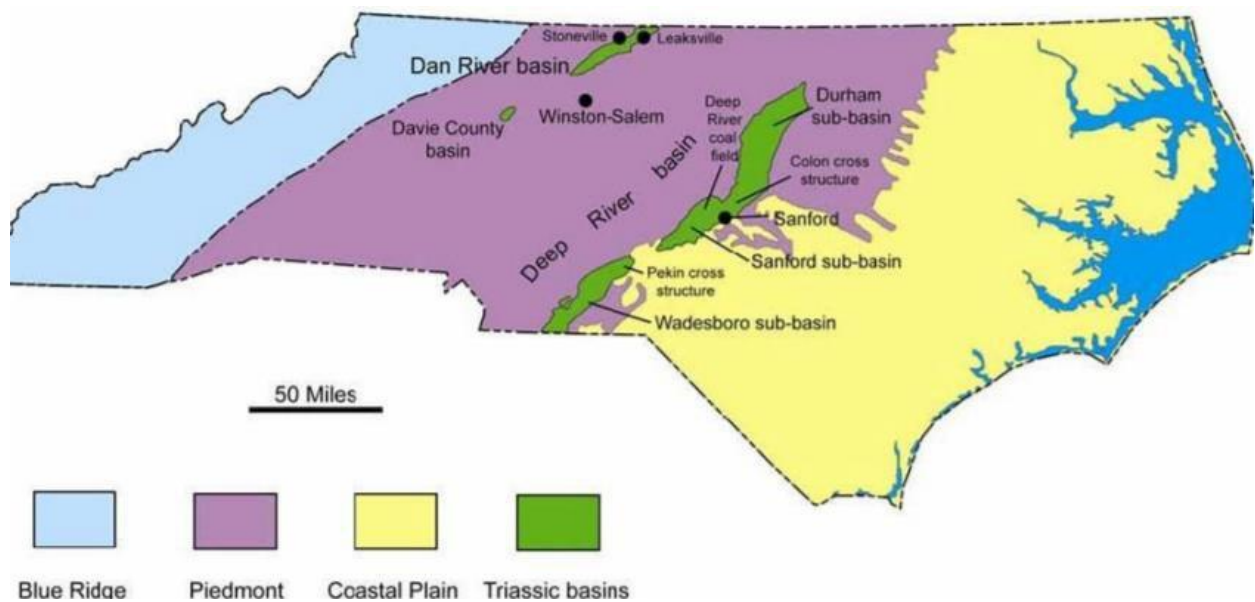
Once a well is abandoned a range of state regulations that address erosion and sedimentation control, road abandonment, revegetation, regrading and land reshaping, and the restoration of natural surface water flow patterns come into play.

There are numerous other regulatory / legal aspects that can impact frack well development

and operation. These can include environmental accident reporting, health and safety reporting, production reporting for taxation purposes, unannounced inspections, etc.

#### D. Fracking and Chatham County

The geology of North Carolina includes four “Triassic Rift Basins” that contain sedimentary shale formations, some of which could be natural gas sources using fracking technologies. Rift basins are typically sedimentary areas that are narrow and bounded by other large metamorphic or igneous formations that are the result of tectonic activities that occurred over millions of years. The major basins are the Wadesboro, Sanford, and Durham sub-basins of the Deep River Basin and the Dan River Basin. The Davie County and Ellerbe Basins are two additional much smaller basins. A 2012 USGS / North Carolina Geology Survey identified the Deep River Basin as the most promising for containing recoverable natural gas.



*Figure 5. The major Mesozoic “rift” basins of North Carolina.*

The Deep River Basin can be divided into the three sub-basins – Durham, Sanford, and Wadesboro. It is the Sanford sub-basin that is present in the southeastern corner of Chatham County and actually covers most of adjacent Lee County. The following graphic provides a more detailed view of the Deep River Basin in the Chatham County region.

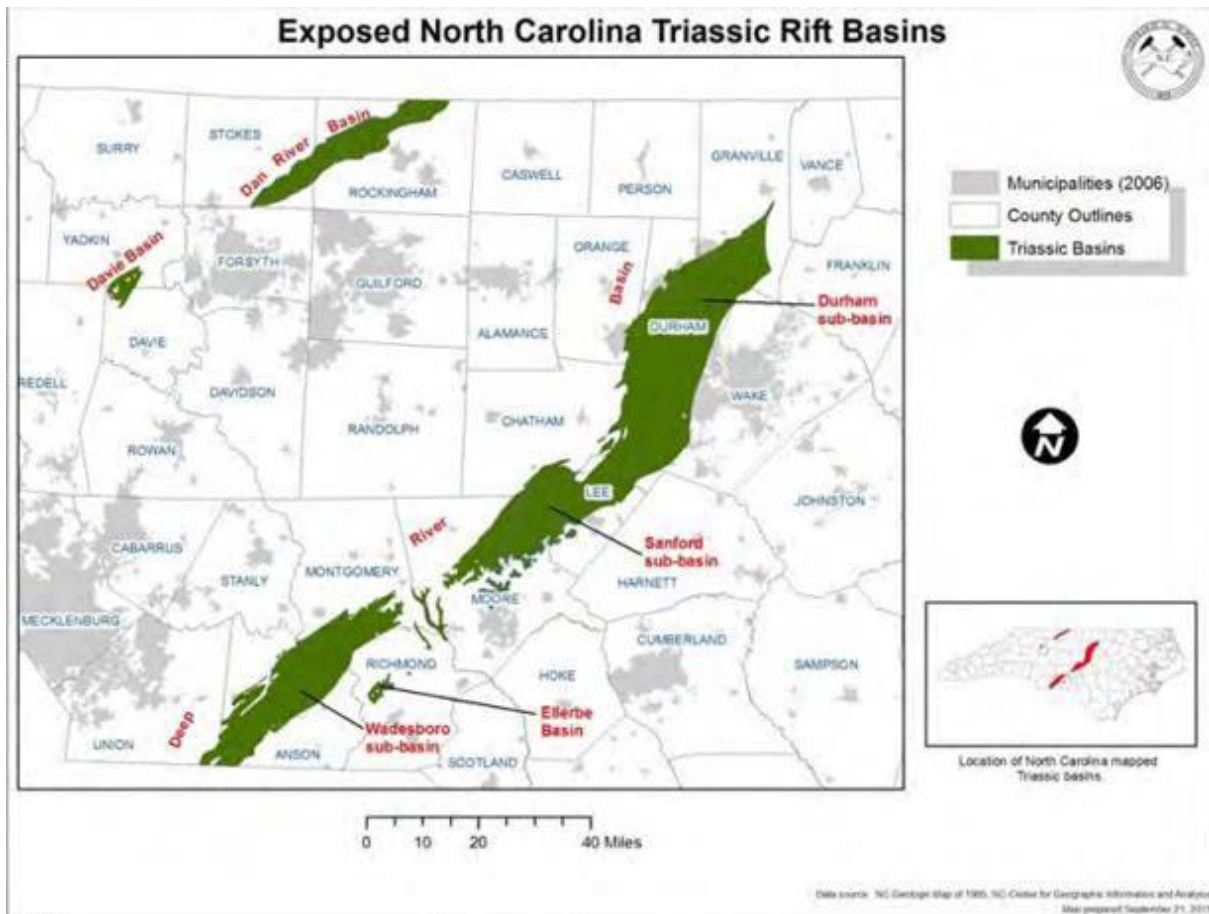


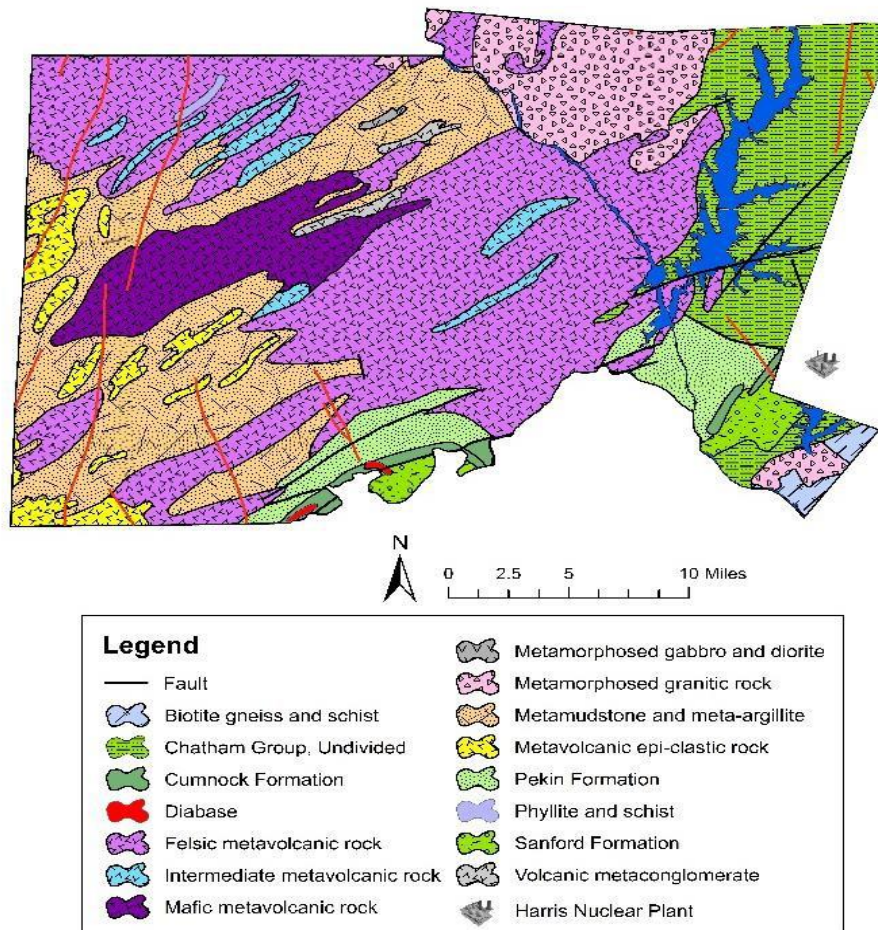
Figure 6. Exposed basins in the Chatham County region.

According to a number of USGS / NCGS investigations within the Sanford sub-basin, only the Cumnock shale formation provides the opportunity for recoverable natural gas. The Cumnock formation only occurs in the southeastern portion of Chatham County. The formation actually daylights / outcrops at the earth's surface in the County. This is according to the 2012 USGS / NCGS study (USGS 2012) and confirmed with a recent May 2017 map compilation for the County. The earlier study, as well as current mapping, indicates that there are between 700 and 1,000 acres of Cumnock Formation in the County. Additional estimates seem to indicate that this area could be slightly over 3,000 acres. However, much of this area is unavailable for natural gas development due to the presence of an "exclusion zone" for the Harris nuclear power plant located adjacent to the southeastern corner of the Chatham County. Though fracking is not specifically controlled in this zone, the Utility operating the plant has significant input into activities that are allowed / controlled in proximity to the plant (Haven 2017 unpublished, CFR 100.11 NRC). In addition, the floodplain / riparian zone of the Deep River excludes additional areas. In summary, the very shallow depths of the Cumnock Formation potentially results in only 500 to 700 acres available for development in the County. This area may be reduced further as it may be subject to other constraints such as existing building and well setbacks, surface water setbacks, and protection zones around a significant public water intake.



Early estimates indicated that gas volumes in the entire Deep River were in the range of 1,660 billion cubic feet of gas but more recent estimates put the total volume in the basin around 1.7 trillion cubic feet, much of which is not recoverable. The Cumnock Formation typically ranges in thickness between 200 and 600 feet with localized maximum thicknesses in excess of 800 feet. Following is a generalized geology compilation map of Chatham County showing the outcrop areas of the Cumnock Formation. The potential area for fracking in Chatham County is the southern portion of the County – often in relatively close proximity to the Deep River floodplain and riparian zone.

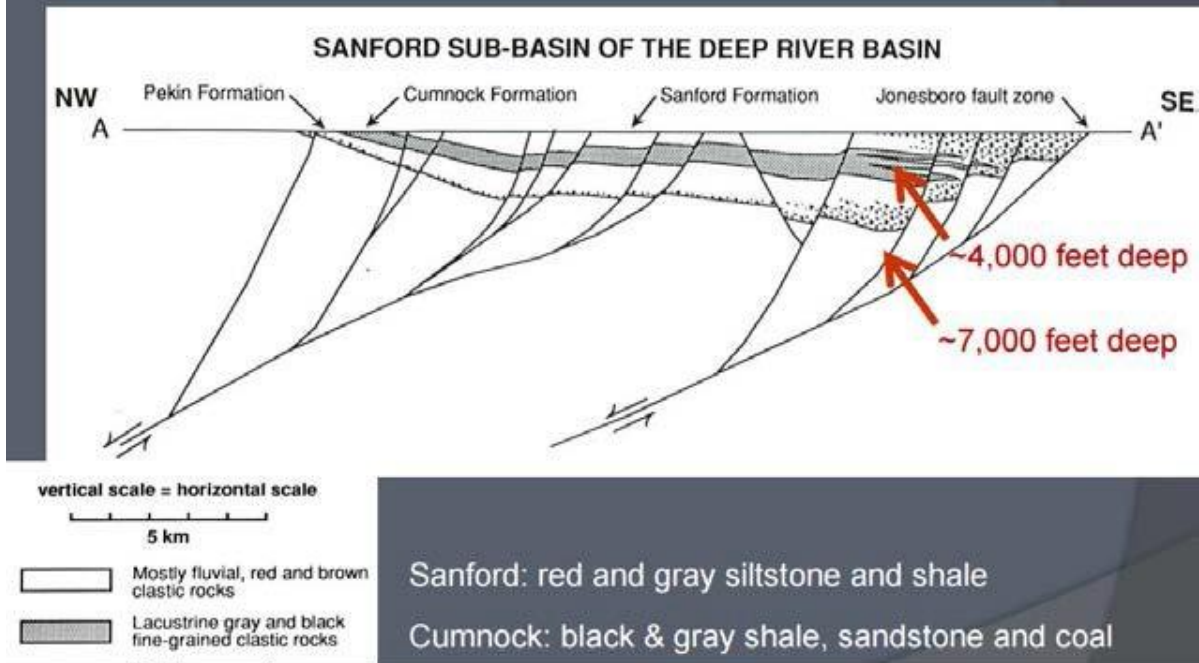
## Chatham County Geologic Map



Map compiled by W.T. Haven (19 May 2017).  
 Map layers provided by CGIA website.  
 Geological information provided by the N.C. Geological Survey.

*Figure 7. Geologic Map showing the outcrop of the Cumnock Formation in Chatham County in dark green.*

# Generalized cross section



*Figure 8. Geologic cross-section highlighting the Cumnock formation with the outcrop of the formation shown in the northwestern edge of the section. The section also illustrates the gradually increasing depth of the formation, as the formation extends into Lee County. Gas from these greater depths are more suited to recovery using fracking well technologies.*

The result of these conditions is that much of the Cumnock Formation area in Chatham County includes areas of irregular formation outcrops where no gas recovery is possible because of the inconsistent presence / absence pattern of the shale. In addition, much of the remainder of the formation is at relatively shallow depths. This can result in significant cost increases due to technical difficulties with shale recovery at shallow depths, as well as increased potentials for the environmental damages that are often associated with “shallow fracking”.

# Chatham County Geologic Map

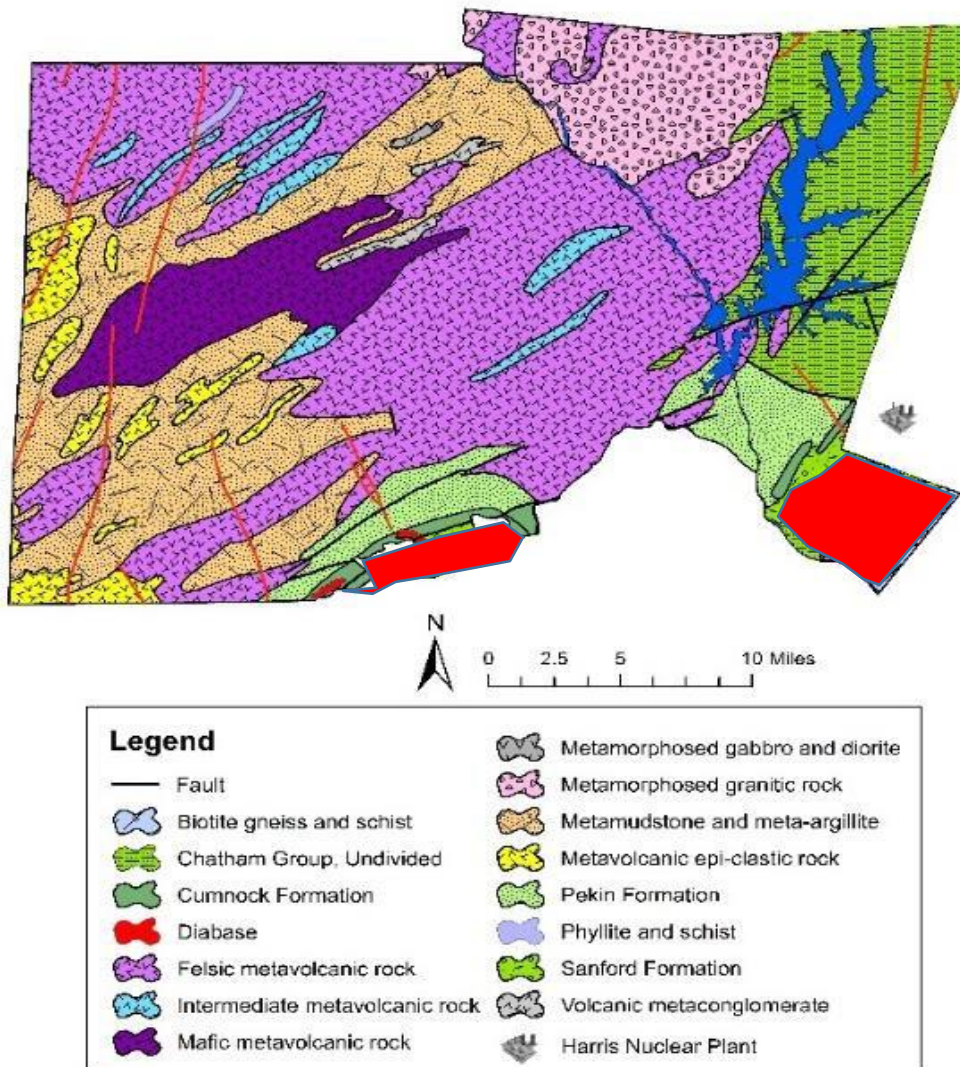


Figure 9. Chatham County geologic map with Cumnock Formation coverage in Chatham County illustrated in red.

Though countywide zoning regulation has recently been extended cover previously unzoned areas of Chatham County, the County does have a history of land use and environmental planning spanning back a number of years. This includes moving forward with the current countywide comprehensive planning effort that is underway. The recently released comprehensive plan draft summarizes some of these milestones.

1. County land conservation and development plan – 2001.
2. Chatham County housing needs assessment – 2006.
3. Farmland Preservation Plan – 2009.
4. Parks and Recreation Master Plan 2011.
5. Conceptual Land Use Plan – 2013.
6. Comprehensive Transportation Plan – 2016.



The portion of Chatham County that overlays the Cumnock Formation can be characterized as an agricultural area with numerous farms, significant forest patches, small village centers, dispersed development, and an employment zone or area with dispersed commercial and industrial facilities in the eastern portion of the County.

Going back to earlier work completed by the State Natural Heritage Program, what emerges is a recognition of the importance of the ecological, water resource, cultural, and recreational resources from the Deep River floodplain and riparian zone. Following is the proposed plan for parks, recreation, and open space from the County Comprehensive Plan. The plan illustrates the Deep River riparian zone containing:

1. Blue ways and water trails
2. Recreational trails
3. Historic areas and districts
4. A conservation design zone for residential development
5. Two designated village centers
6. River access recreation nodes

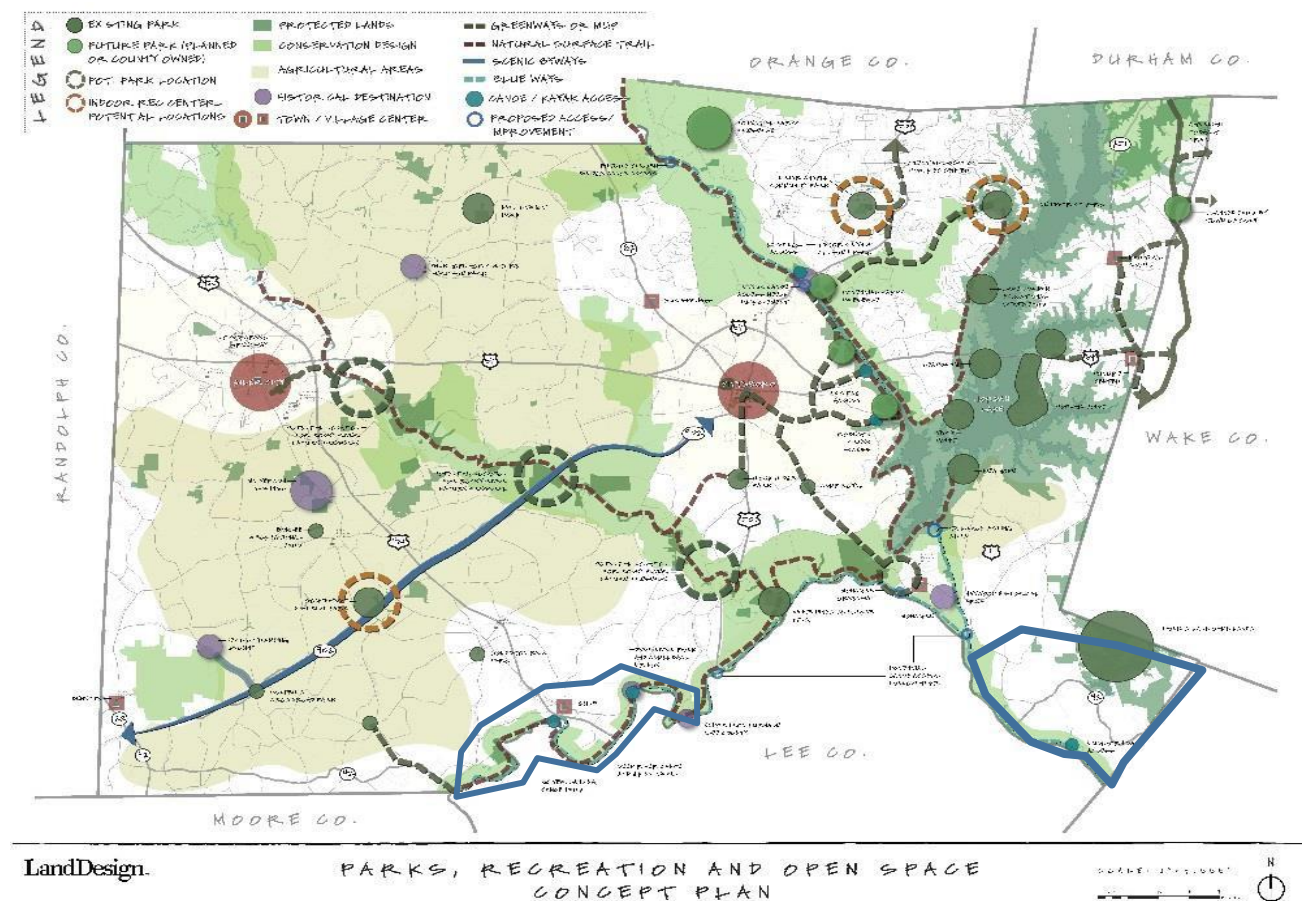


Figure 10. Proposed Chatham County open space and recreation plan. Cumnock Formation areas are outlined in blue.

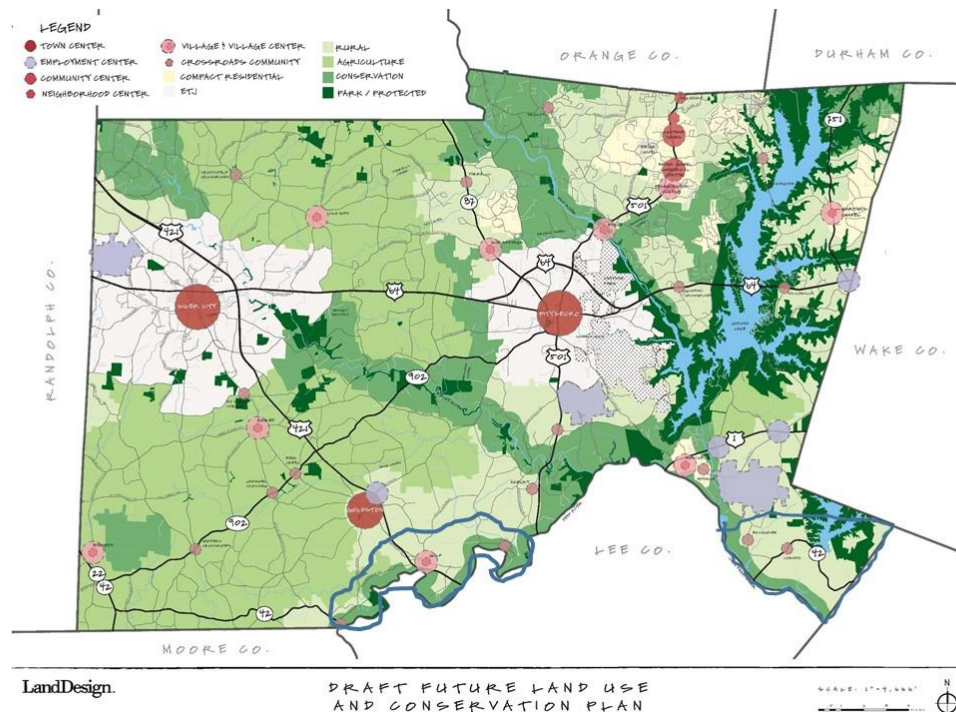


Figure 11. Proposed general land use concept plan for Chatham County with areas overlaying the Cumnock Formation outlined in blue.

**Chatham County and “shallow fracking.”** What is known as “shallow fracking” nationally occurs in roughly 15% of fracking wells. Shallow fracking is where well depths are generally less than 3,000 feet. This often results in reduced vertical distances between drinking water groundwater formations and the shale formations being fracked. These short distances would be found with any fracking operation that would occur in Chatham County due to the relatively shallow depths of the Cumnock Formation. Significantly higher risks of groundwater pollution are present with shallow fracking because of the relatively short distances between the bottom elevations of zones of concern (such as with groundwater aquifers) and the top elevation of the formations to be fracked. States such as Arkansas and Texas that have a majority of existing shallow wells require specialized casing / cementing methods to offset the relatively short distances between groundwater and the fracking activity. However, even with such specialized well construction higher numbers of groundwater pollution incidents are observable.

**Chatham County and the regulation of fracking.** North Carolina’s counties and municipalities operate under “Dillon’s Rule” in which local government authority is restricted to areas specifically outlined in state laws and regulations. Counties and municipalities are granted zoning and developmental regulations powers and those powers can be relevant for fracking. A 2014 Mining and Energy Commission study (Cary community study 2014.) researched whether local government can apply these powers to aspects of fracking. This study’s results appear to be integrated into the 2015 state regulations that will be implemented once the state regulatory program is operational. Important among these provisions are:

1. Local ordinances should only apply to surface land and water issues;
2. Local governments should be able to apply zoning and land use authorities to the oil and gas industry;
3. Local governments cannot develop and apply ordinances / regulations exclusively to prohibit oil and gas operations including fracking;
4. Special use permit programs can be developed that specifically address oil and gas operations allowing such operations with special use permitted areas;
5. The ability to appeal all decisions concerning implementation of local regulations to oil and gas operations need to be included in local regulatory programs.

#### **E. Fracking and North Carolina**

North Carolina developed and passed a comprehensive oil and gas exploration bill in 2011 – Session Law 201-143 / Senate Bill 820 that included authorization for fracking. Among other aspects, the legislation addressed the following;

1. Reconstituting the State Mining Commission as a Mining and Energy Commission.
2. Authorized development of a modern regulatory program – resulting in the 2015 regulations.
3. Provided for allowing hydraulic fracturing and horizontal drilling pending additional legislative actions.
4. Enhanced protections for surface owners and public bodies.
5. Established a legislative committee for energy policy.
6. Forced pooling of gas leases was not implemented in North Carolina.

The legislation also authorized the development of a comprehensive study of the issues associated with hydraulic fracturing in North Carolina. The resulting study titled, “North Carolina Oil and Gas Study”, is an exhaustive 500+ page document which examines numerous aspects of hydraulic fracturing, including: regulatory program development and funding, permitting and inspection program development, program management and potential enforcement methods and associated penalties, the surface and underground environmental impacts of fracturing, and potential community and health and safety issues.

Additional legislation was passed in 2013, and 2015 regulations (Subchapter 05H- Oil and Gas Conservation) were put in place with implementation to be activated with full appointment of a new Oil and Gas Commission. Once fully operational, the Commission will have regulatory and rule development responsibilities. The North Carolina Department of Environmental Quality will have responsibilities for technical support and providing technical guidance to the Commission. The 2015 regulations encompass the full range of administrative and technical issues associated with operation of the State’s regulatory program and the oil and gas operators addressing those regulations.

The following is not going to provide an exhaustive review of those regulations. These regulations, as well as the 500-page background report, can be downloaded from online sources. This report summarizes the regulations, as they address surface land and water aspects, air and groundwater pollution, land use and location siting issues, impacts on



community infrastructure, and issues related to hearings and appeals and the disposition of “confidential information as well as public notification requirements.

1. Public notification requirements.
  - a. 30 calendar day public notifications prior to any drilling activity.
  - b. Specific notices to surface and mineral owners within a proposed “drilling unit.”
2. Oil and gas permit applications.
  - a. Activities that require permits – full life cycle of a potential gas well from drilling to plugging and location re-entry and plan revisions.
  - b. Map submission requirements – including detailed, map scale, well data, and environmental / community context mapping.
  - c. Detailed well technical characteristics.
3. Well site development plans.
  - a. Sedimentation and erosion control plans.
  - b. Water management plans.
  - c. Well site reclamation plans.
  - d. Plans for emergency management.
  - e. Plans for fugitive methane control.
4. Permit review, appeal, timing and denial procedures.
5. Bonding – required for well plugging and abandonment, a disturbed land bond (amount calculated for each well) and a one million dollar environmental damage bond. Criteria for eventual bond release are also detailed.
6. Well site construction standards.
  - a. Well construction – not reviewed here.
  - b. Leak detection system – must be detailed.
  - c. Well pad and site must be developed according to the North Carolina Erosion and Sedimentation Control Design Manual.
  - d. Stormwater management using the BMP’s of the North Carolina Division of Water Quality.
  - e. Spill containment systems must be designed and fully detailed.
  - f. Storage pit and tank construction standards.
    - i. Location setbacks
    - ii. Impoundment design standards
    - iii. Locations – in cut rather than fill areas
    - iv. Adherence to relevant standards – ASSHTO and ASTM among others
7. Setback requirements for wells and other production equipment and facilities.
  - a. 650 feet from all occupied buildings
  - b. 100 feet from paved public roads
  - c. 200 feet from perennial streams, lakes and wetlands
  - d. 100 feet from intermittent streams
  - e. 650 feet from public and private water wells
  - f. 100 feet to the edges of mapped floodplains
  - g. 1,500 feet setback from any public water intakes or the edges of rivers that drain more than 140 square miles (such as the Deep River).
  - h. Criteria for granting variances to setbacks and prohibited setbacks. Criteria address reducing setback requirements with no specific guidelines for increasing setbacks.

8. Casing and cementing standards – not summarized here.
9. Well stimulation methods – not summarized here.
10. Wellhead requirements.
  - a. Wellhead equipment must withstand 100% above the anticipated well operating pressures.
  - b. Check-valves to prevent unintended gas or fluids flows.
11. Well maintenance, blowout, and control measures (not reviewed here)
12. Visual impact mitigation.
  - a. Well operators must use visual screening including vegetation, berms, and new vegetation planting.
  - b. Operators may request variances based on;
    - i. Zoning.
    - ii. Surface use agreements.
    - iii. Land use compatibility.
    - iv. Topography and / or design of the well pad.
13. Well closure – not reviewed here.
  - a. Permanent closure.
  - b. Well shutting in
  - c. Well temporary abandonment
14. Closure requirements for the site and water handling and safety and security at well sites.
15. Reclamation plan requirements.
  - a. Future land use plans.
  - b. A plan for revegetation and / or reforestation (if site was previously forested).
  - c. Requirements for plan review.
    - i. Consultation with different organizations and agencies
    - ii. Professional background of persons preparing reclamation plans.
16. Requirements for continued well operations.
  - a. Testing and additionally required testing.
  - b. Requirements for inspections and inspection reporting.

## **F. Observations / Recommendations / Suggestions**

### **Observations**

1. Hydraulic fracturing is unlikely to occur in Chatham County. This is due to the relatively small acreage of the Cumnock Formation present in the County, which is really the only candidate shale formation for fracking in the County. The relatively small acreage present is further reduced with the exclusion zone for Harris nuclear power station, publicly managed lands, and the various setback distances included in the proposed regulatory program for occupied buildings, streams and wetlands, public water intakes, public and private drinking water wells, and the Deep River floodplain / riparian zone. Any fracking that may occur in the County will likely be peripheral to fracking that may occur to the south of Chatham County in Lee County. Such limited potentials could include a very small number of wellpads that are extensions of more intensive development in Lee County.

2. The relatively shallow depths of the Cumnock Formation in Chatham County would create conditions for what is known as “shallow fracking,” in which the distances between groundwater aquifers (with drinking water wells in the County sometimes driven to 1,000 foot depths). The Cumnock Formation which may be right around 1,000 feet in parts of the County, with those depths increasing as the formation moves southward towards Lee County. Such conditions increase the potentials for fracking related ground water pollution due to the close proximity of the fracking activity and groundwater wells and the associated aquifer depths, which are typically variable in rift basins.
3. The Deep River riparian zone has been recognized as a nationally significant ecological and natural resource asset in previous environmental studies completed by the North Carolina Natural Heritage Program. The Deep River is also central to the Chatham County cultural and recreational resource plans and open space development.
4. The State has designated a number of significant natural / cultural / recreational areas that have a variety of special land use performance and management measures associated with these areas; Jordan Lake is one of the designated areas. The County could explore having the Deep River floodplain / riparian zone designated as one of these areas to provide a greater degree of environmental protection in an area that may suitable for fracking.
5. There are a number of avenues for the County to integrate aspects of county zoning with standards from the State’s fracking regulations – such as for visual impact standards.

### **Recommendations**

1. Formation of a multi-county working group focusing on larger geographic issues regarding unconventional shale development
2. Develop voluntary guidelines for shale gas development in the County similar to those developed by the working group in the Marcellus region.

[http://marcelluscoalition.org/wp-content/uploads/2013/03/RP\\_Site\\_Planning.pdf](http://marcelluscoalition.org/wp-content/uploads/2013/03/RP_Site_Planning.pdf)

3. Develop formal guidelines / standards with potential amendment of the county regulations (such as zoning and subdivision regulations) to exert additional controls over any fracking that may occur. Such guidelines / standards are allowable with the 2011 law and associated 2015 regulations so long as the guidelines / standards do not eliminate the possibility for hydraulic fracturing or overly restrict fracking activities to make such activities essentially unfeasible.

### **Suggestion**

1. Chatham and Lee Counties could undertake a detailed spatial study to examine specific

extents and patterns for potential fracking and the potential relationships between the two counties and eventual development of a fracking industry. Such a study could rely on data that for the most part are available in the two counties, including:

- a. Lidar data for precise elevation modeling.
- b. Geology data developed by NC Geologic Survey and USGS for the Triassic Basin.
- c. Land use / land cover.
- d. Plans and ordinance restrictions.
- e. Structures – building footprints are available for Lee County and could be developed for Chatham County.
- f. Public and private drinking water wells and water intake locations.
- g. Natural and cultural resource locations.
- h. Streams, wetlands and floodplains.

# Appendices

## **Some key legal / regulatory aspects of hydraulic fracturing in North Carolina**

**Use of injection wells for disposal of produced water from fracking.** Injection wells are prohibited in North Carolina. The result is that produced water would likely be recycled for reuse in fracking or disposed of utilizing surface disposal.

**North Carolina Oil and Gas Commission regulations.** Current proposed of the regulations covers most but not all aspects of fracking. Regulations will need to be reviewed and revised to address all critical aspects of hydraulic fracturing operations – from exploration to restoration and site abandonment and to comprehensive record keeping and reporting.

Most aspects of the proposed regulations for North Carolina do reflect current science and practice. However, the utility of many of the regulations (such as borehole cementing and surface well site water control measures) require rigorous inspection and enforcement to be effective.

**Local regulation of hydraulic fracturing.** Generally applicable local regulations can be applied to hydraulic fracturing as authorized in state laws. Typically, local regulations cannot address any aspects regulated by state law. Zoning, subdivision regulations, and other design review / siting ordinances may address aspects of fracking operations so long as such ordinances do not preclude or severely limit the development of hydraulic fracturing operations.

However, it must be noted that the application of local ordinances can be appealed to the Oil and Gas Commission to determine whether such regulation is overly restrictive or unnecessary.

**Surface owner property rights.** Deference is given to the mineral owner such that the surface owner(s) cannot diminish the value of the mineral resource. This applies to all surface aspects of fracking operations except for thru pipelines and roadways. Right-of-ways for thru pipelines and roadways (not directly required for on-site development) must be negotiated separately.

**Forced or mandatory pooling of mineral leases.** North Carolina does not have forced or mandatory pooling of mineral leases. Eastern states, in which surface and mineral ownership patterns typically do not have forced pooling due to complex surface and mineral ownership patterns.

**Hydraulic fracturing moratoriums.** Moratoriums can be enacted, if such moratoriums are: of fixed duration; and relate to specific goals and objectives, such as the need for additional study and not simply as a “delaying tactic.”

**State regulations and conditions found specifically in Chatham County.** Proposed state regulations (primarily setback requirements) potentially do not adequately address a number of critical environmental conditions found in Chatham County. These include: igneous and metamorphic geologic features such as dikes which are often sites susceptible to groundwater



pollution from surface sources; proximity to the Deep River main-stem and riparian zone and the ecological importance of the Deep River; and the shallow depths of the Cumnock Formation in the County and the resulting close proximity of groundwater source formations to the formation suitable for natural gas development. This close proximity potentially increases the likelihood of groundwater pollution of fracturing activities.

### **Major environmental, health and safety, and community infrastructure issues associated with fracking**

**Water Quality.** The impacts of fracking activity on surface and groundwater resources are perhaps the most well-known and documented. These impacts relate to groundwater water quality degradation that is often due to leaking of fracking chemicals because of surface accidents or well casing and cementing failures, water well failures due to drilling altering shallow aquifers, and surface water features such as streams and wetlands that can be impacted by surface accidents and equipment failures.

The potential issues associated with fracking and water quality are only likely to worsen. For example, during 2015, 300,000 wells in the United States were producing 53 billion cubic feet of gas per day and utilizing over 150 billion gallons of water per year – some of this water is recycled from previous fracking but much of it is from ongoing water supply withdrawals.

**Fracking chemicals.** Fracking chemical use is not regulated by the Clean Energy Act of 2005 and limitations on fracking chemical disclosure to the public are regulated by the same law. However, states are not precluded from regulating fracking chemicals and chemical disclosures. Twenty-eight states require disclosure of some, but not all, chemicals used in fracking, and in fact, no state requires the reporting of all frack constituent chemicals in the interest of “trade secrets”. Twenty-three states actually rely on FracFocus (a USDOE initiated effort) for chemical review and reporting. Following are some of the chemicals and their purposes in fracking. Such chemicals typically make up .5% to 2% of the total volumes of typical fracking fluid mixtures.

<b>Category</b>	<b>Purposes</b>	<b>Examples</b>
Diluted acids	improve injection and penetration	Hydrochloric acid
Biocide	minimizes bacterial contamination of	Glutaraldehyde
Breaker	used to break down gels that form	Ammonium
Clay stabilizer	prevents clays from forming in open	Potassium chloride
Corrosion inhibitors	maintaining integrity of the metal	Dimethylformamide
Crosslinker	thickens fluids to hold proppants	Borate salts
Defoamer	lowers tension and allows gas to escape	Polyglycol

Foamers	reduces fluid volumes	Acetic acid
Friction reducers	improves fluid flow efficiencies	Polyacrylamide
Gels	thicken fluids	Guar gum
Iron control	prevents materials from hardening	Citric acid
Oxygen scavenger	maintaining integrity of steel casing	Ammonium
pH adjustor	controls pH in the solution	Sodium carbonate
Proppant	holds fractures open	silica – sand
Scale control	prevents mineral scale formation	Ethylene glycol
Solvents	improves wettability	Stoddard solvent
Surfactant	improves fluid flows	Isopropanol

Numerous past and on-going studies have indicated that many of the chemicals being utilized are toxic to humans, wildlife, and insect populations. In addition to utilization of potentially toxic chemicals, other water resource related fracking aspects include: water usage, and surface and groundwater contamination. Several of the chemicals that are used are also known to cause cancer.

**Water usage.** Typical fracking wells utilize between two and ten million gallons of water for a single frack. A single five million gallon frack using water removed from the natural sources would require 1,400 truck trips. The extraction of so much water has raised issues concerning water availability for human use, agriculture, and the ecology of aquatic and terrestrial wildlife. In the past, fracking operators were generating excesses of water, which were being stored or injected. The industry is moving towards recycling water from fracking wells, often after being re-processed in industrial water treatment facilities.

**Aquatic ecology.** Water withdrawals can impact aquatic habitat quality, as well as water temperature in surface water streams and wetlands that can degrade habitat values for water temperature sensitive species. Chemical spills will certainly have potentially drastic, but often short-term impacts on aquatic wildlife in proximity to wells and pipelines.

**Sources of water pollution.** Storage basin leaks, fracking fluid leakage from well casing and cementing discontinuities, and fracking fluid migration from fracked shales to adjacent aquifers have all occurred in other fracking operations are certainly potentials for future operations. There are inconsistencies in different scientific studies on the contributions of fracking to groundwater pollution with geologic and operational differences being significant variables. An additional issue may relate to the long-term resiliency of the steel casings and cement linings that may be present and operating in wells for many years and will remain after wells are abandoned and plugged. This is somewhat due to the very slow rates that

water and therefore, fracking fluids can move through subsurface formations – often groundwater pollution impacts may not be felt in areas from such pollution sources for decades. However, studies are finding increases in surface pollution events from accidents and equipment failures at the well pads that are potentially the issues of greatest concern. Little is actually known about the very long term pollution potentials of abandoned wells.

**Air quality including methane.** Air pollution associated with fracking operations typically exerts a number of negative impacts. Dozens of pollutants are associated with drilling and fracking operations that do pose serious health impacts. The two main sources of air quality problems are excess gas escapes and operational impacts such as pollutant discharges from compressors and other mechanized equipment such as trucks and drill rigs. In the past, gases were flared or vented if the gas could not be stored or used commercially. Venting is the release of gas from the well borehole into the atmosphere. Borehole gases are often produced during initial drill and fracking operations. Flaring is a process in which gas is burned off in stacks or flairs. When burned, methane produces carbon dioxide – a greenhouse gas. Such practices have environmental consequences – primarily the release of greenhouse gas emissions. The Obama Administration implemented rules in 2016 to control greenhouse gases produced by fracking operations; however, those regulations were recently deactivated. Methane also has developing markets so it is now being captured as a commercially viable product, which it has been in the west for a number of years where there is a lucrative coalbed methane industry. However, widespread operational returns to flaring and venting are not anticipated as many gas operations put significant hardware investments in place, given that fugitive gas control measures were going to be critical in the expected regulatory program of EPA which has since been reversed.

Fugitive methane releases have proven to be significant and continue to be problematic during actual well operation. Methane releases often continue after well abandonment, pointing to the importance of well abandonment and well plugging regulations. Continued methane releases have been noted in traditional gas wells that have often been abandoned decades ago.

There are many sources of air pollutants along the shale gas development chain. Other activities associated with shale gas development are often significant sources of air pollutants. Example of other important sources include:

1. ***site preparation***, including building roads and clearing pads,
2. ***drilling*** the well,
3. ***truck traffic*** to deliver and remove materials and wastes to and from the site,
4. ***separation and treatment operations*** (remove acid gases, remove water from natural gas and *separation* of natural gas from other hydrocarbons),
5. ***compressor stations*** that pressurize natural gas in gathering and transport pipelines, and
6. ***fugitive emissions*** that escape unintentionally from cracks or leaks.

Natural gas development and production emits criteria pollutants as defined by the Clean Air Act. Nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) are associated with oil

and gas development. In the presence of sunlight, these may react to form ozone and contribute to regional air problems. Regional chemical transport modeling has predicted that ozone may be of particular concern (EPA 2012) in heavy fracking regions. Nitrogen dioxide and particulate matter (PM<sub>2.5</sub>) emissions are also potentially significant but may be more of a local than a regional issue.

Hazardous air pollutants or air toxics are another category of pollutant that is emitted with shale gas development and production. Many operations necessary for oil and gas development use diesel-powered engines, which emit diesel particulate matter. In addition, natural gas-fired engines can be significant sources of formaldehyde, a secondary pollutant. Aromatics (e.g., benzene and toluene) and other volatile chemicals can be and are often released during shale gas production.

**Noise and light pollution.** Fracking operations do produce noise levels that increase risks on human health, cardiovascular disease, and other conditions that may relate to increased stress. A number of studies have noted that people living near fracking operations bring up issues like air pollution, traffic and groundwater issues, but also regularly complain about noise. In fact, environmental noise is a well-known public health issue. Excess noise can actually link to adverse health issues such as depression, diabetes, birth complications and cognitive impairments in children. Noises can be constant or variable ranging from drilling, which results in loud continuous noises, to compressor stations that produce continuous low rumbles. The greatest noise levels in fracking are associated with site development, drilling, and fracking – typically over a period of a month or two per well. Compressor noise will be present throughout the life of the well(s), which can extend decades. The major sources of noise during development of a fracking well pad including:

1. excavators, graders, bulldozers, compactors and loaders associated with site and pipeline development,
2. drilling equipment including drill rigs, tubular preparation, and drill pipe connections,
3. trucks and other large vehicles to supply the well site with raw materials and water during,
4. well development, and
5. gas compressors – which actually generate the greatest noise actually during natural gas production once well development and fracking activities have ceased.

Field studies of people living in proximity to fracking in West Virginia and Pennsylvania have yielded the following general results:

1. Sound levels, even at their most extreme do not typically have enough intensity to cause hearing loss in humans.
2. Sound monitoring indicates continuous low-level noise with intermittent changes in intensity, which causes annoyance, anxiety, and stress over long periods of time in residents living nearby – typically less than ¼ mile.
3. Residents continue to indicate that sound impacts are of greater concern than the 24 hour a day lighting that is typically associated with frack wells during development.

In addition, noise exposure like other health issues, may disproportionately impact vulnerable populations such as the elderly, children, and people with chronic illnesses.

**Health effects.** Potential health issues can be present for workers, as well as resident / adjacent populations. Shale gas workers face chronic morbidity concerns similar to most oil and gas workers from silicosis and cancers, respiratory, and dermal diseases. People living near fracking operations report noticeable odors, and in smaller numbers – respiratory and dermatological problems.

**Ecosystem, wildlife, and other exposures.** Pet and livestock illness and mortality rate increases have been reported near drilling sites, in Pennsylvania, West Virginia, and Texas. In addition, to impacts on ecological health indicator species such as mussels, amphibians, and benthic macroinvertebrates, studies have noted impacts on endemic species such as small and large mammals in terms of decreased populations and increased offspring mortality. Direct chemical exposures, noise, and habitat disturbances are all potential wildlife impacts that can be significant. In addition, larger landscape impacts that relate to potential wildlife issues include:

1. Well pads, roads, and pipelines result in significant landscape fragmentation.
  - a. Loss of quality forests that support wildlife diversity.
  - b. Loss of interior forests that are habitat to interior species such as songbirds.
  - c. Loss of quality forest edges which are critical to songbird and insect pollinator populations as well as bats.
  - d. Loss of forested stream buffers and riparian zone quality that contribute to habitat quality for many wildlife species.
  - e. Fragmentation of agricultural fields that are utilized as habitat and food sources for many species.

**Road safety and maintenance costs.** Fracking activities, over the life of a typical well, will require thousands of truck trips to and from well sites. Rural paved roads are typically constructed as light-duty roads that are not designed to handle such traffic loads and levels. Paved road quality rapidly degrades when designed capacities are exceeded. Road damage repair and ongoing maintenance costs can exert significant financial burdens on local and state agencies.

**Other community impacts.** A range of community impacts can be felt in areas such as emergency services, social services, and law enforcement. At least, during the early stages of fracking operation development, the majority of workers employed are typically from outside of the region as workers are often required to have specialized expertise and training, creating a transitory workforce for the period of well development, drilling, and fracking. Once wells begin production, industry worker requirements are greatly reduced, relying on a much smaller resident workforce.

**Land use and land use planning impacts.** With the Federal government deferring nearly all of the regulation of fracking to the states, the states in turn do provide local governments with some ability to regulate aspects of fracking with the tools readily at their disposal – primarily planning, zoning, and subdivision regulations. However, local governments typically are only

able to regulate the surface impacts of fracking with no real authority to regulate sub-surface or operational aspects of fracking operations. Typically, local governments, when considering aspects such as required setbacks and siting standards, cannot exceed state regulatory requirements. However, local governments are generally able to interpret such state regulations adapting those regulations to the context of local land use and other environmental conditions as expressed in community land use plans and regulations – so long as those regulations do not appear to have been developed to preclude fracking as a potential activity.



# Questions, Comments And Observations

## Summary of Public and Officials' Comments Regarding Fracking in Chatham County.

**Key Concerns – written and oral comments summary of all community inputs – June 2017 comment period.**

1. Potential human health effects of exposure to fracking fluids from groundwater / well pollution and/or surface sources.
2. Potential human health from accidents and other unplanned surface events.
3. Noise and air pollution of from various components of the operations.
4. Community impacts on infrastructure, community services and general community health.
5. Environmental / ecological impacts of groundwater pollution and surface accidents.
6. Impacts of methane releases through flaring and leakage on air quality.
7. Impacts on general community quality and health.
8. Long-term durability and maintenance of wells and other equipment.
9. Traffic, congestion and roadway safety.

### **Natural Gas Study Meeting – June 13, 2017 Questions and comments received after the meeting**

#### Questions

1. The rules/regulations developed by the NC Mining & Energy Commission (now in "limbo" due to litigation) dealt only with horizontal fracking. Will a new set of regulations/rules be needed to address shallow and vertical fracking?

**The 2015 regulations will form the basis for the regulatory programs – those regulations are also currently under review. North Carolina DEQ is operating on the assumption that these regulations will be the core of the eventual regulatory program.**

What are the possible taxes that local government can impose on fracking or fracking infrastructure? If there are restrictions on county taxation, where in the NC regulations/statutes are these restrictions stated?

**Development impact fees and special use fees are possible (such as for road maintenance) – taxation would be difficult. There are no state restrictions but there are also no state allowances for such taxation– which is more important. Local governments can only engage in activities that are explicitly allowed.**

2. Estimate costs for crime, schools, medical care, housing etc. for fracking workforce and their families. How could the county increase resiliency in anticipation of these costs to County infrastructure and budget? The workers and families do not pay local or state taxes, but they need health and social services--how does our county manage these costs?

**It is highly unlikely that there will be a significant in-county transient workforce to support fracking in the County. If there is one there are a number of options, counties in Pennsylvania and West Virginia levy local employment fees to capture some of these costs – for workers not living in the area of work. Infrastructure impact fees can be significant – high impact roads in Pennsylvania are now typically repaved every four to five years with**

these fees.

**Example of well development to worker ratios, if ten new wells in Chatham County, the transient workforce would be fifty to seventy workers for a period of six months to one year. Then a local workforce would like assume responsibility for well operation and maintenance.**

3. If vertical fracking occurs, how will gas be gathered? Currently there is no infrastructure for this process.

**All natural gas wells require pipelines – which typically move gas from an individual well to a compressor station. Compressors are typically sited to process gas from multiple wells. From a local compressor location additional pipeline will move gas to an additional compressor and then into the larger gas transmission system.**

4. Are drilling units formed for vertical fracking?

**Yes. Any fracking that would occur in Chatham County would likely be vertical frack wells – due to the shallow depth of the Cumnock Formation in the County. Geology and lease availability are the determinants of spacing and not an arbitrary well spacing. The often seen spacings in the literature, that are on spacing variants of 40 acres, are artifacts of gas development in the Midwest and Upper Great Plains where subsurface ownership is often on 40 acre increments due to the Public Land Survey. Drilling units can be complex particularly in eastern states where mineral ownership patterns may be very complex. For example, an area in Greene County Pennsylvania has three different gas producers operating three adjacent wells within an area less than one square mile. Gas production is measured at the well head. Complex and uneven well spacings are typical in eastern states.**

5. At the meeting it was discussed that fracking is suspended during droughts. However, what sort of legislation/ordinances are needed to assure that agricultural and residential water needs are assured before any water is used for fracking during a drought?

**These cases are typical for states that require water use permits. North Carolina does not have general requirements for water use. Water use from wells does require permitting.**

6. When shallow fracking is done, will the gas and fracking fluid flow into our aquifers? Case studies/references?

**That is difficult to assess ahead of time but with the reduced distances between aquifers and frack shale formations the likelihood is increased – though there are different studies showing different results. For the best review see work by Robert Johnson at Stanford – <http://pubs.acs.org/doi/full/10.1021/acs.est.5b01228>.**

**See also Climate Change News – 02/15/2016. “Shallow fracking wells contaminate drinking water wells – scientist warns.”**

7. Will shallow fracking have detectable and significant effects on our aquifer and on natural and built surface structures?

**See above. There should be no impacts on structures. No impacts on structures have been noted in any studies. Shallow fracking is generally undertaken at significant depths – any fracking less than a mile in depth is referred to as shallow fracking.**

8. In our local geology we have diabase sills and dikes that extend to the surface. How will shallow fracking blasts interact with these unique, shallow features? Will the blasts cause severe impacts on our aquifers? Documentation/ references?

**Sills and dikes, which typically occur in igneous / metamorphic environments are often very sensitive to potential water movement and water pollution. Fracking has not regularly occurred in such environments so little is known about fracking in close proximity to such features. The Mining and Energy Commission potentially should develop setbacks and / or operational standards for well development in proximity to these features. The features are not specifically addressed in the 2015 regulations.**

9. Next to diabase dikes there are often "pocket aquifers" formed by the pooling of water around dikes. Is it known if water contamination is a greater risk with shallow fracking since the dikes can act as conduits for water? Documentation/references?

**There are no references addressing the relationships between dikes and sills and fracking outside of papers developed in North Carolina which would indicate that the associated issues are specific to rift basins. As such the issue potentially demands greater study by DEQ and the Mining and Energy Commission.**

10. Will flaring come under our county's noise and light ordinances?

**Unknown. Typically flaring has not been addressed in local ordinances.**

11. Can Chatham/Lee Counties develop a ballot initiative to ban fracking? Have other local bans been effective?

**In North Carolina, local governments cannot ban fracking but can impose moratoria. Ballot initiatives have not always proven to be effective in other states due to state regulations. Ballot initiatives did lead to the banning of fracking in Maryland and New York and a ballot initiative will be on the ballot to limit fracking in Michigan in 2018 – which already has over 10,000 wells.**

12. Could additional information be provided about the new system for cleaning fracking wastewater that Dr. Yuill described?

**Antero Resources facility in Doddridge County WV. Water will only be suitable for re-fracking at the present time.**

13. Dr. Yuill indicated that casing failures have decreased since 2015. What improvements have been made to reduce casing failures? Are these improved methods being adopted by most fracking companies? Given that well casings can crack anytime and that the likelihood of cracks increases after repeated fracking of a well, what is the likelihood that even these new well casings will eventually leak?

**Improved monitoring in-well.**

**Based on current knowledge it is anticipated significant percentage of wells that are fracked multiple times will leak.**

**Ten years of data in the Marcellus Region indicated a casing failure rate of 7% with single or repeated frackings.**

**Newer technology long-term durability is presently unknown.**

14. What local strategies, policies and regulations have been most effective in decreasing the negative impacts of fracking?

**Zoning is primary source of regulation – siting limitations. Development impact fees are typically the only avenue to local governments to exert control over potential infrastructure damage costs.**

15. If fracking occurs in Lee County, do you expect it to be vertical or horizontal fracking?

**Potentially both technologies are feasible in Lee County. Where feasible, horizontal fracking may be preferred as surface disturbances are greatly reduced (with multiple wells on one well pad) as well as secondary impacts from road construction and other infrastructure features.**

16. While the shale layer in Lee County may be thicker and therefore extend deeper than the shale layer in Chatham County, all of the diagrams I have seen depicting the shale in Chatham & Lee counties show the shale very close to the surface, regardless of how deep the shale goes. Will this extension of the shale near to the surface make Lee County susceptible to groundwater contamination just like Chatham County? In the Marcellus the upper layer of the shale is a mile from the water table—but in Lee and Chatham the shale extends upwards very close to the water table (and in at least one place extends through the water table to the ground surface!)

**The Shale may extend to depths of 8,000 feet in portions of Lee County. Shallow fracking issues are of concern where shale depths are less than 3,000 feet and horizontal fracking is unfeasible in such conditions.**

17. What steps could Chatham County take to gain control over the location of fracking infrastructure, surface water & groundwater withdrawals and flow of truck traffic as a result of fracking in Lee County?

**Location – can and has been regulated with zoning and special use zoning / permitting.**

**Groundwater withdraws are permitted. Regulations that preclude fracking are not permitted.**

**Surface water not regulated.**

**Truck traffic not regulated but noise and braking system restrictions for trucks may be applied.**

**Road impact fees may be applied but fees do not limit usage.**

18. The report indicates that much of Chatham's shale area lies under public lands and is therefore off limits to fracking. However, public lands across our country are being fracked. Could public lands in Chatham County eventually be opened to fracking?

**Most public land fracking is under Federal land – Federal agencies are precluded from limiting fracking by current USDI and USDA directives. State land decisions are the responsibility of the state agencies. However, agency limits may be difficult to enforce if the mineral rights have been severed from the agency**

**owning the surface.**

19. I would like clarification on the issue of high-level technology for "reclaiming" the fracking solution. Water treatment technology including membrane and adsorption for contaminant separation is my area of expertise in my career as a researcher and teacher at the Univ. of North Carolina and before that at the Univ. of Mass.

**First I am not a research chemist so the expertise of the questioner probably exceeds mine.**

20. Would it ever make economic sense to transport reclaimed fracking solution to a public water treatment plant to augment the supply even if the treatment technology at the fracking site was producing excellent quality water? I would think in general that the fracking sites are too far removed from water treatment plants to make this viable.

**In an area such as North Carolina – the simple answer is water transport costs would make this unfeasible. In the arid west the answer is quite possibly.**

21. What are the specifics to the example given where fracking solution was shipped to a water treatment plant resulting in "killing" the plant operation? I am assuming that Dr. Yuill did mean delivery to a water treatment plant and NOT to a publicly owned wastewater treatment plant. The term "killing" could be misinterpreted by the public. Water treatment plants rely on physical and chemical methods of purification. The only interference that I could imagine is that the salt concentration had not been sufficiently lowered and interfered with the chemical coagulation process but I'd like Dr. Yuill to clarify.

**Killing is perhaps an unfortunate term. Prior to 2009 there were a number of attempts in Pennsylvania, West Virginia and Ohio to treat fracked water in municipal water treatment plants using standard municipal treatment technologies. Damage was incurred at a number of these plants. So, in 2011 the USEPA issued regulations against such plants accepting fracking water. The jurisdiction of EPA in such matters was due to the EPA grants that often funded construction and ongoing operation of the plants. In 2012-2013 the industry began to explore development of frack water specific treatment plants because the expansion of natural gas production was slowing and as such the industry was dealing with excess water with no disposal options. Water disposal is problematic if the industry is not expanding creating new demands for recycled frack water.**

22. Would not the most logical reuse of the fracking solution be directly on site? For instance, given multiple wells, what about sequencing the fracking such that the reclaimed fracking solution from the first well could be used over and over?

**What is mentioned is always the idealized plan but many times sequencing does not always work. Truck haulage and new pipelines are now being constructed to move frack water around heavy production areas – from well to well. Many of these pipelines are above ground so that they may be readily disassembled and reassembled as needed.**



23. What is the likelihood that locations for fracking in Chatham and Lee counties would coincide with areas interested in reuse of irrigation?

**In an area such as the two counties, irrigation would not be recommended as the technologies are still somewhat unproven and although the two counties are rural, there are still populations that could be in close proximity to any irrigation activities. Irrigation has been implemented mostly in the unpopulated arid Great Plains of Wyoming and Montana.**

24. What is best way to explain to the public why reclaimed fracking solution is Ok for non-potable but not Ok for potable reuse? I think the public is getting unnecessarily scared when presented with this seeming contradiction. While I question the circumstances where reclaimed fracking solution could be added to the raw water supply of a community, the public here needs to understand water reclamation practices. In California, reclaimed wastewater is injected into the groundwater and withdrawn at another location, allowing for a natural process to occur in between injection and POTABLE reuse. Nonpotable reuse has been practiced for decades and California is the leader in setting regulations, including inorganics like NaCl applied to crops.

Though not a question directly for Dr. Yuill, why not educate the public a little about the nature of raw water supplies in the U.S.? A woman at the presentation raised concerns about any chemical being in a public water supply giving the example of a chemical (this is 1,4 dioxane used in manufacturing upstream) found in the Pittsboro water supply by Dr. Knappe at NCSU. While we surely want a raw water supply of the highest quality, the public fails to understand the regulatory process that leads to list of Maximum Contaminant Levels (MCLs) that recognizes the presence of synthetic chemicals from upstream sources and requires removal at water treatment plants. There is not yet an MCL for the chemical she was concerned about. It is currently on the Unregulated Contaminant Monitoring Rule list. It is above Surface Water Quality standard and above the NC Groundwater Standard. But there is NO Federal or NC standard. I don't condone the presence of synthetic chemicals in drinking water supplies. Nevertheless, the public needs to understand the regulation process for control and the role of water treatment processes to remove these chemicals. In western European countries, the *precautionary principle* has been promoted as a way to take control steps in the absence of health risk information. In the U.S., a water utility can on its own decide to add more protection for the public absent regulations by installing more technology such as carbon adsorption or membrane separation. But it is balancing act between cost and risk reduction.

**Comments noted for the record.**

(Note: This email was submitted by two people)

I am responding to your request that attendees submit their comments and questions by email to you in a timely manner.

I am totally against the possibility that Chatham County pursue a program of natural gas

extraction from our county... or any county in NC.

After listening to Mr. Yuill's presentation it was clear to me and all those around me at the meeting that this would be a foolhardy endeavor.

Examples:

1. 1-4 (actually up to 16) MILLION gallons of fresh water combined with possible 750 SECRET toxic chemicals pumped under great pressure into the earth.
  - a. This alone is shocking. However this water becomes toxic, stored in ponds 20 ft. DEEP and the size of a few football fields, lined for safety to protect the ground under, and surrounded with barbed around to prevent poisoning of drinkers of this water. When the water evaporates in the air, the sludge is then rolled up and BURIED in special hazardous materials landfills specifically built for these materials.
2. In the PA study, from 1200 wells, over 100 documented cases were confirmed about compromised water systems.
  - a. One community lose their water supply for two years.... still ongoing. (East Findlay Township where Charles Yuill has 24 acres of land so I know firsthand.)
3. Much loss of forest, wildlife habitat
4. Much loss of farmland.
5. Many documented cases of urban loss of water potability.
6. Many accidental spills of gas and oil and chemicals.

Note: The above are comments and observations that stand for themselves. Yuill agrees with the sentiments expressed above. One additional point worth mentioning is that even when an operator is doing things correctly, significant problems can still occur due to the unpredictability of many aspects of subsurface geology as well as drill and hardware performance at great depths.

I hope you can answer my concerns. Plus, why defend an old technology. Unsure of point but C.Yuill is commenting on what has occurred and not defending technology – as the technology is complex and often very problematic.

**Comments are noted for the record.**

(Note: the breaks in numbering are from the submittal) Review of Fracking Report for Chatham Co. 6/13/17 Unconventional NG Resource Considerations and Conditions for Chatham County, NC

Dr. Yuill, thank you for this brief review of some of the issues around fracking in Chatham County. I understand this work is preliminary. Governor Cooper has just signed NC onto “We Are Still In” referring to the Paris Climate Accord. Adding fracking during this time of rapid global warming is irrational and immoral since we have sustainable energy alternatives and methane is 86X more potent greenhouse gas than carbon dioxide.

**(Methane continues to be an issue at all stages of natural gas development – particularly with recent relaxation of methane control regulations by the USEPA.).** Every step of natural gas production releases methane! Frack Free NC is a coalition of many grassroots

organizations that organized years ago to resist fracking and the build-up of gas infrastructure and to promote sustainable (non-nuclear) energies for our future. These groups and others spoke at hearings and wrote thousands of responses opposing and criticizing the weak oil and gas regulations passed last year. These comments may be useful in your research.

**In my opinion some subjects that should be researched and covered sufficiently in your final report and presentation are the following:**

1. Human, animal and wildlife health risks and injuries from chemical exposures downwind or adjacent to frack pads and near trucking accidents. I would like you to include the types of chemicals used in fracking—carcinogens, petroleum products, endocrine disruptor chemicals, acids, bases etc. There are dangers from acidizing and from sand inhalation.;
2. Deliberate and unlawful releases of waste water; for example bad practices like spreading waste waters on road for deicing and illegal dumping;
3. The amount of methane released from fracking and gas infrastructure—this is considerable according to my reading in the Compendium;
4. The social changes and costs brought on by fracking—for example drugs and crime;
5. How diabase dikes which are numerous through the Triassic shale deposits will impact drilling and casement success. Could dikes limit where fracking occurs and provide a path of groundwater contamination? ;
6. The incredible daily number of chemical and oil spills that are routine for the oil and gas industry as monitored by Sky Truth Alerts and other watchdogs. ;
7. How will wildcatters potentially create more environmental, property and financial damage for NC? What can be done about this?
8. Although no local government can ban or regulate fracking there is the qualification that “generally-applicable requirements, restrictions or conditions are OK”. This will continue to be fought in court. Case law will have a bearing on how fracking can be managed. Fracking moratoria can be renewed for valid reasons.
9. North Carolina has no cheap methods or facilities for disposal of hazardous fracking liquids and solids. I am fearful that sanitary waste water treatment systems will be forced to “treat “liquid wastes causing contamination of our rivers and sludges for field application. Solid wastes—toxicity ignored — could be disposed in our solid waste landfills. How effective are “treatment” facilities and where are these used?
10. What is the status of recycling waste water in the fracking industry? What equipment is needed?

**Recycling is becoming significant for reuse for fracking not for general purpose water usage.**

**Here are some notes by page from your presentation:**

**Page 2.**

Working Definition: I like it that you don't play games with the definition of HF like the O and G industry does. But your definition should include the fact that shale rock is blasted to pieces with explosives and cracks opened with pressure. Review of Fracking Report for Chatham Co. M. Girolami 6/13/17 Unconventional NG Resource Considerations and Conditions for Chatham County, NC

I really object in the second paragraph calling natural gas the "preferred fuel". By Whom??? The oil and gas industry of course. For those of us who want a livable earth and rejoice in the Paris Climate Accord, we say the excellent fuels for Planet Earth are solar and wind.

**Page 5.**

"Fracking has been around since 1947.

Fracking in 1947 was baby fracking. It did not use the range of toxic chemicals and the quantities of water in use today. Nor were frack pad density of any consequence at that time. Fracking was done out west where few humans lived. Not the same beast as today. So since by your phrasing it is so old, does that give it prestige or make it safer? Very doubtful.

**The answer is not it does not and as fracking has moved to more populated areas the impacts on human health have increased simply due to increased exposures.**

**Page 8.**

You note that "process complexity is the source of many potential problems". Dr. A. Ingraffea states that 5 % of wells fail right away and all wells fail eventually especially if fracked repeatedly. My reading in the Compendium is that the "process" involves extensive well failure, no real solution to waste water disposal, extravagant wastage of clean water, major methane leaks and losses, toxic chemicals released to groundwater contaminating wells and surface water etc. The process itself is no good! It does not protect the environment or human health.  
<https://www.epa.gov/sites/production/files/documents/ingraffea.pdf>

**Page 12.**

Type of chemicals? Endocrine disruptor chemicals, carcinogens, petroleum products, metals, waste products from other industries, etc. No limit on the chemicals used...even radioactive chemicals.

**Page 18.**

I would like to hear what forced pooling has meant to the unwilling landowner. NC does not have mandatory pooling ...yet.

**Mandatory pooling is unlikely in North Carolina as logical gas units can be developed in North Carolina without it – see Pennsylvania and West Virginia.**

**Page 19.**

How do you protect surface owners when mineral rights are severed?

**Enforcement of environmental regulations is perhaps the only recourse. As well as enforcement of all required setbacks.**

**Page 20.**

The Duke University Law Center says that “Generally Applicable requirements, restrictions or conditions are OK, although a fracking operator may petition the O & G Commission for preemption review”. Moratoria can be renewed.

**Page 21.**

What is a toxic solid settling from a toxic liquid? There is no separation of toxins...only sediment. Injection wells are not legal in NC. What landfills are you thinking about? No natural gas infrastructure in Chatham.

**This is why fracking is unlikely in Chatham County.**

**Page 22.**

Repeated fracs. That is a sure way of destroying the casing and contaminating groundwater.

**Page 23.**

How many wells drilled per pad? Please cover pad density. And well density.

**Where horizontal drilling is suitable there can be up to six wells per well pad with each horizontal extent on a 60 degree offset. At this density there would likely be less than one well pad per square mile and more than likely less dense than that.**

**Page 26.** There are no methods for permanent disposal of produced and flow back water in NC. There are no treatment facilities and deep well injection is not feasible or legal. Flaring is not restricted in NC regs. Noise and pollution from flares is major. Well failure is chronic. (Ingraffea) Review of Fracking Report for Chatham Co. Girolami 6/13/17 Unconventional NG Resource Considerations and Conditions for Chatham County, NC.

**Page 28.**

Fracking over a fault that is also near a nuclear plant may be a grave risk. Is 5 miles adequate? Methane escaping from fracking is considerable not negligible. See Compendium.

**In 2017 methane from fracking did become negligible (due to Obama era regulations and operator compliance). By this I mean actually the one week of fracking and not the complete well development and operation, as methane escapes during well operation do continue to be a serious problem – much of the data in the compendium is seriously out of date and actually a bit questionable. However, methane control reversals will result in methane levels rising in all aspects of natural gas production. Methane escape has always been a problem in all aspects of natural gas production. 29.**

“Perceptions of community health, perceptions about environmental quality and health”  
Perceptions is the wrong word here. There are real impacts to public health immediately from traffic danger, diesel, sand, chemical emissions, chemical spills, noise and social degradation from drugs, crime, man camps etc. But perception alone can have a grave impact as well. There is no plan to do health monitoring etc. Many have no health care or limited access.

**Page 30.**

Fracking 2017 Unreal that flaring would continue for up to 30 days a year. That gas should be captured at once. But NC has no infrastructure. Very likely a wildcatter would just frack to show we have gas but have no way of capturing the gas. What are specialized treatments that can remove 700 plus chemicals? NC has no specialized landfills for hazardous waste solids.

**Page 37.**

Consider long term open waste pits and damage to birds and other wild things.  
Evaporation during some months. We have hurricanes and frequent heavy rain events that would keep these filled.

**Page 38.**

Damage to drinking water appears to be extensive. Loss of trust in water will ruin the economy as well as harm community health.

**Page 44.**

Good treatment of shallow fracking. What are some sources of information? Pavilion is a shallow shale deposit that had extensive groundwater and well contamination. Consider the diabase dykes that are extremely common throughout the Triassic.

**Page 45.**

Damage from high density vertical wells. Out west sometimes the spacing is much less than 40 acres.

**Typically for coal bed methane – very rare for hydraulic fracturing for natural gas – I work in the Powder River Basin.**



**Page 54.**

I think that Chatham's shallow shale, diabase dikes, Jonesboro fault running along shale deposits and under nearby Sharon Harris Nuclear Power Plant, lack of gas infrastructure, there is an excellent case for no fracking in Chatham. Your recommendations are very weak and not relevant to your content.

**I agree totally that fracking in Chatham County is highly unlikely for the above reasons – the County needs to build this case as only the State can declare the County unsuited for fracking. Though I could readily make that case.**

**Above comments are noted for the record.**

Comments

- Attached is a 2013 NC DOT study of the projected impact of fracking on our transportation infrastructure and the anticipated costs to repair the damage. The study was presented to the NC Mining & Energy Commission's Funding Levels & Potential Funding Sources Study Group. The study gives a great overview of the amount of truck traffic required to frack a well, along with estimates of the cost to repair the transportation infrastructure damage that will occur. This study includes bridge damage, which was not detailed in Dr. Yuill's study. While presenting this PowerPoint, the DOT representatives pointed out that while the fracking companies sometimes help finance road repairs, they usually do not pay for bridge repairs which can be very expensive.

**In Pennsylvania they do pay for bridge repairs.**

I am sending this study because I think it provides valuable information that will support and extend Dr. Yuill's information on road/travel impacts from fracking. (Note: See attachment labelled "2013-Feb 20-H – Infrastructure Impacts & Associated Costs ...")

- Having been a resident of Chatham County since 1974, I would like to go on record as being totally opposed to fracking in our (or any) area. Realizing you may be inundated with scientific information and facts, I will just say: ditto! And register my total opposition. Thank you for your consideration.
- My husband and I moved to NC about 3 years ago and had not heard about the issues related to fracking until now. We understand that a fracking moratorium was in place but has lapsed and could or could not be reinstated. Please put us in the group of those who oppose fracking—and we are glad to bring a much longer list of Chatham Co. folks who are too, if necessary. We can think of no faster way to stop development and lower home and business values in Chatham County than by making it a fracking area. We will be out in force if this looks like a possibility. Chatham has a lot of near term potential for prosperity. Fracking is a desperate activity for areas that have no pathway to prosperity and thus

dynamite the area surrounding homes and pollute the water for a short term injection of meagre funds.

- I was present at last night's talk on the possibility of natural gas extraction (aka fracking) in Chatham County. I am absolutely against a program which would enrich big business and deplete, in many ways, the residents of our county – or any NC county.
- Mr. Yuill's presentation made clear to me, and to the residents seated around me at the meeting, that this would be a shortsighted and foolhardy endeavor, in short because:
  1. 1-4 million (more like 16 million) gallons of fresh water, mixed with a possible 750 secret and toxic chemicals are to be pumped under great pressure into the earth. I find this shocking and unacceptable.
  2. As this water becomes toxic, it is to be stored in ponds the size of several football fields, and 20 feet deep, lined for safety and ostensibly to protect the environment. These immense ponds are to be surrounded with barbed wire to prevent wildlife from drinking this poisonous brew, but not the avian population.
  3. After an extended time of evaporation (and odor?), the remaining sludge is to be rolled up in the pond liners and buried in special *hazardous materials landfills specifically built to hold these materials*. We have enough of these death sites and do not need more.
  4. Over 100 documented cases of compromised water systems was confirmed in a study of 1200 PA wells. One community, after two years, is still waiting to again enjoy drinkable water in its homes. Chatham County has its share of water problems, and does not need this additional concern.

Additionally: Much loss of forest, of wildlife habitat, of farmland, and many other documented cases of loss of potable water, left unmentioned, plus many accidental spills of gas, of oil and chemicals.

Why defend a technology with all these well-known drawbacks?

I have deep concerns about the possibility of fracking in Chatham.

- The information Mr. Yuill presented on fracking seems compelling. Given North Carolina's worship of business and run-away legislature, I have little confidence in any "ameliorating" measures with which the state may develop. Stopping fracking appears to be the only safe way to prevent the resulting harm.

- As a native of Pennsylvania, a state with some of the highest rates of fracking in the country, I have seen first-hand how fracking can affect a community. In addition to the noise and pollution of trucks and heavy industry, fracking divides people in a variety of ways. The problems aren't only political. Fracking salaries create an inflation in rental costs and other living expenses. It exaggerates differences between the haves and have nots. One of the reasons I chose to live in Chatham County is that it did not have the extreme economic differences as I had seen elsewhere. Nor did I encounter the tensions, the casually snide remarks, the inflated fears for safety and other marks of a divided society. I hope that the county's final report on fracking takes into account these social concerns.
- I was unable to attend the recent meeting on the possibility of natural gas extraction in Chatham County but I wanted to submit my concerns. Fracking in Chatham County or anywhere in North Carolina is a terrible idea for many reasons.

Clean, renewable energy is on the ascendency and on a remarkable downward trend in cost. This is where the future is, this is where the jobs are. And these technologies, plus new innovations, will help our efforts to slow climate change and prevent a catastrophic future for our children and grandchildren.

Methane, produced through leakage and general maintenance, is an extremely potent greenhouse gas. We need to be taking every possible greenhouse gas OUT of the environment, not putting more in.

In addition, there are real health concerns about the chemicals used in fracking and the risk of contamination for drinking water. We don't need to be taking these risks for a dying industry. Instead we should be doing all we can to keep fossil fuels in the ground.

I am totally against the possibility that Chatham County pursue a program of natural gas extraction from our county. Instead, let Chatham County lead the way in pursuing clean, renewable energy.

- Comments from the Chatham County Climate Change Committee

The Natural Gas Study (NGS) is being conducted pursuant to the *"ORDINANCE OF THE CHATHAM COUNTY BOARD OF COMMISSIONERS INSTITUTING A TEMPORARY MORATORIUM ON OIL AND GAS DEVELOPMENT ACTIVITIES WITHIN CHATHAM COUNTY, NORTH CAROLINA"*, dated August 17, 2015.

At that time, the Commissioners noted, among other findings, that:

"(20) Existing state statutes and regulatory programs for oil and gas development do not yet constitute the best management practices necessary to adequately ensure such activities will not negatively impact the air, soil, water, environment, and health of residents within

Chatham County; and therefore do not adequately protect the health and welfare of the County's residents ..." and

"(21) The Board finds it necessary to provide for additional time to study the impact of fracking and other oil and gas development activities that has been experienced in other states and to determine the adequacy of applicable State and federal regulatory programs in regulating and mitigating such impacts ..."

- CCAC Comments and Suggestions:

To provide the information the Commissioners sought, as noted above, the study must

1. Examine the potential negative impacts of oil and gas development activities on air, soil, water, environment, and health, should those activities be conducted in Chatham County.
2. Examine adequacy of existing state statutes and regulatory programs to determine the adequacy of those programs in mitigating the potential negative impacts associated with oil and gas development.

Potential Negative Impacts. To ensure technical credibility, the study must address the full range of potential environmental risks that may result from fracking in Chatham County. A major study by Resources for the Future (RFF) found that there were at least 12 pathways in which air, land, or water could be impacted by fracking.<sup>1</sup>

- The NSG should evaluate all of the risk pathways and the possible implications for environmental, health, and infrastructure in Chatham County. Where possible the NSG should identify best practices to mitigate risks.
- NSG should clarify whether it is likely that an oil and gas development site would also include storage of produced waters onsite, and whether disposal wells would be drilled at the site or nearby.
- It is well documented that the "produced waters" from fracking contain high concentrations of salt, and may contain a suite of chemicals added during the fracking process. It is unclear what facilities exist in Chatham County to manage this type of wastewater. The NSG should address the likely management pathway for these waters, and assess accompanying risks.
- It is also unclear what chemicals exist in fracking water. EPA reviewed data that had been

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<sup>1</sup> "Pathways to Dialogue - What the Experts Say about the Environmental Risks of Shale Gas Development", by Alan Krupnick, Hal Gordon, and Sheila Olmstead. February 2013.

submitted voluntarily to the website, “FracFocus”.<sup>2</sup> EPA found toxic chemicals such as Methanol, Hydrochloric Acid, and Ethylene Glycol, to name a few.<sup>3</sup> There may be additional chemicals. Companies are not required to submit data to FracFocus.

- The NSG should identify the types of chemicals that could be expected to be used here in Chatham County, or if that is not possible, acknowledge that we don’t know, and identify a best practice approach to obtain chemical information.

A pathway of serious concern from a climate perspective is the release of methane to the air. EPA has stated: “...Methane's lifetime in the atmosphere is much shorter than carbon dioxide (CO<sub>2</sub>), but CH<sub>4</sub> is more efficient at trapping radiation than CO<sub>2</sub>. Pound for pound, the comparative impact of CH<sub>4</sub> is more than 25 times greater than CO<sub>2</sub> over a 100-year period.”<sup>4</sup> Other sources have argued that impact of methane is even greater.<sup>5</sup> Some estimates were to 50-90% higher.

Chatham County is seeking to be a “*Become a Carbon Negative County*”.<sup>6</sup> At this time we do not have major sources emitting methane in Chatham.

- The NSG should estimate the potential methane emissions of potential fracking in Chatham County, and determine the potential contribution of carbon equivalent emissions (CO<sub>2</sub>e) to the environment that could result. This may require development of one or more “model” facilities based in information from other states. If possible, the NSG should identify best practices to control and minimize methane emissions.

It should be noted that methane risk pathways include contamination of groundwater. Methane can contaminate drinking water sources. The Extension Service of the Pennsylvania State University (Penn State) cautions: “... *Escaping gas may seep into confined areas of your home, where it may reach dangerous concentrations. There have been cases in Pennsylvania where houses, camps, or wells have exploded due to methane accumulation.*”<sup>7</sup> Penn State’s Extension Services also suggests homeowners may want to install gas monitors.<sup>8</sup> In fact, the issue of methane contamination has become so widespread in Pennsylvania that state’s Department of Environmental Protection (DEP)

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<sup>2</sup> EPA Report, “Analysis of Hydraulic Fracturing Fluid Data from the FracFocus Chemical Disclosure Registry 1.0”, March 2015. The three chemicals cited as listed in EPA’s Toxics Release Inventory, and so by definition are toxic.

<sup>3</sup> Ibid., p. 4.

<sup>4</sup> See <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>

<sup>5</sup> “Using Multi-Scale Measurements to Improve Methane Emission Estimates from Oil and Gas Operations in the Barnett Shale Region, Texas”, published in Environmental Science and Technology, Robert Harriss, Ramon A. Alvarez, David Lyon, Daniel Zavala-Araiza, Drew Nelson, and Steven P. Hamburg. July 7, 2015.

<sup>6</sup> Draft Chatham County Comprehensive Plan, p. 109.

<sup>7</sup> Pennsylvania State University <http://extension.psu.edu/natural-resources/water/drinking-water/water-testing/pollutants/methane-gas-and-its-removal-from-wells-in-pennsylvania>.

<sup>8</sup> Ibid

maintains a list of accredited labs so property owners can have their wells tested.<sup>9</sup>

- The NSG should evaluate whether methane could contaminate groundwater in Chatham based on experiences in other states. If possible the NSG should recommend best practice to minimize groundwater contamination.

Unfortunately, methane emissions can continue and even increase if wells are not closed properly.<sup>10</sup> Abandoned wells in Pennsylvania “...keep emitting for years, even decades”.<sup>11</sup>

Finally, the disposal of produced water is another issue with serious implications for Chatham County. The water is contaminated with salt and other chemicals, many of which are unknown. The State of Ohio had over 200 disposal wells active in 2014.<sup>12</sup> Some counties in Ohio had 10 or more disposal wells.

- The NSG should estimate the amount of produced waters that may be associated with oil and gas development in Chatham County, the capacity for wastewater treatment that may be needed, and whether the burden of providing the waste water capacity may fall upon the County.

In summary, the NSG must evaluate at least a dozen exposure pathways. The chemicals used are only partially known. There are major implications for Chatham County residents and infrastructure. The NSG must address these points to provide the Commissioners the information cited in the Moratorium notice.

Adequacy of NC laws. To address the information cited by the Commissioners, the NSG should address NC or other applicable laws and programs. Some questions would include:

- Regulations or laws in place to control the venting or discharge of methane to the atmosphere?
- Regulations to control leakage of methane to groundwater?
- Requirements to disclose chemicals used in fracking injection water?
- Requirements for storage, use, and disposal of produced fracking waters?
- Requirements such as bonding, to ensure proper closure of fracking facilities?

Other impacts on Chatham County government may include having to conduct inspections, providing monitoring and analysis of well water, facilities to allow shipment and management of wastewater, and air monitoring.

- The NSG should address what a best practice approach to controlling fracking would

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<sup>9</sup> <http://extension.psu.edu/natural-resources/water/drinking-water/water-testing/testing>

<sup>10</sup> University of Stanford News Service, 11/14/2016, study by Jackson and Kang.

<sup>11</sup> Ibid.

<sup>12</sup> State of Ohio “Class II Brine Injection Wells in Ohio” map, 07/11/2014.



look like here in Chatham County.

- Best practices would include legislation, regulations, and permitting and other activities needed to ensure compliance.
- The goal of laws and regulations would be to reduce any releases or emissions from fracking to negligible amounts, to protect the health of Chatham residents, and the County's environment.

**Above comments are noted for the record.**

**Legal Questions – presented here for the record but summarized beginning on page 28 of the report.**

1. Legal Framework for Fracking: The Scope of Study states that a summary of the current status of the legal framework for regulation these activities (natural gas development) will be included in the report. This is quite important since the Mining and Energy Commission has been replaced by the Oil and Gas Commission, which has not yet had a majority of appointees seated yet. No fracking permits have been issued in NC to date.

What is the status of the rules governing fracking in NC and the legal challenges to them?

2. What controls do landowners have over the use of the surface of their property for natural gas development if...

A). the property owner does not own the mineral rights under their property?, or **Deference given to mineral owner over the surface owner. Surface owner cannot diminish value of mineral rights. Pipelines and transportation are negotiated separately.**

B). their property is included in a development through forced pooling?  
**NC Does not have mandatory pooling.**

3. With the control of oil and gas production allocated to the State, how much can the County do to change the answers to the questions above?

**The County can regulate everything the state provides for – with county ordinances such as zoning and subdivision regulations, special use zones as well as additional standards for siting, location, road layout etc.**

4. Most (all?) of the incidents where gas drilling has resulted in migration of natural gas to surrounding water wells have been caused by faulty cementing around the well casing in the zone adjacent to producible groundwater. How good are the State regulations governing cementing of wells and how effective is the State oversight of drilling operations?

**State regulations reflect current practice. Note: regulations have not really “gone live” as the Commission has not been fully staffed. However, there are conditions in Chatham County that potentially require special consideration – primarily related to dikes and other igneous and metamorphic features that can be areas with significant groundwater problems due to the complexity of the geology.**

Other Questions:

5. How much geologic separation is there between the gas-producing shale deposits in Chatham

County and the groundwater used for domestic and agricultural uses? I.e. How deep are the shale deposits compared to the depth of groundwater produced for domestic uses and how effective is the intervening rock in isolating the shale deposits?

**Shale depths range from 0 to greater than 1,000 feet. Groundwater wells have gone to those depths in the County.**

6. The report should look at the most current data and studies. There is considerable new information regarding impacts of fracking since the Chatham County moratorium was enacted in 2015. An excellent source of documents on a wide variety of health and other impacts can be found in the "The Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking" which brings together findings and studies from the scientific and medical literature, government and industry reports, and journalistic investigation. The Compendium demonstrates scientific evidence of risks and harms, health impacts and water contamination, and climate impacts of fracking. There are now over 900 peer-reviewed studies on the impacts of fracking, the vast majority of which indicate risks and adverse impacts. The report can be found at

<http://concernedhealthny.org/compendium/>

**Study was reviewed – as have all of the annual updates.**

7. Also of importance is the report released on 12/13/2016 by the EPA on "Impacts from Hydraulic Fracturing Activities on Drinking Water". EPA's report concludes that hydraulic fracturing

activities can impact drinking water resources under some circumstances and identifies factors that influence these impacts. The report can be found at

<https://www.epa.gov/hfstudy>.

8. Will the report look at studies from other areas where fracking has taken place in addition to the

Marcellus shale regions of Pennsylvania and WVA, as mentioned in the Scope of Services? The shale basins in NC are quite shallow compared to the Marcellus shales, which could create much larger threats to contamination of ground water and drinking water wells. This link is to an illustration of the NC Deep River shale basin and the distance between ground water and shale depths. The studies of drinking water contamination in the shallower Pavillion Wyoming fracking, may be relevant for Chatham County.

New studies on the connection between induced earthquakes and fracking (not just injection of fracking wastewater into deep wells) must also be considered since Chatham County's underlying geology may be particularly unsuited for fracking, especially with the presence of the Shearon Harris nuclear power plant within the shale region.

**EPA study was reviewed. Duke Power can extend the exclusion zone.**

9. Will the report look at methane releases during fracking operations that contribute to climate change? This is another area where more studies and data have been done since 2015.

**Actually methane control was to be implemented in fracking operations during Fall 2016 and a number of operators have already installed hardware to begin to do this. Methane is actually a commercially viable product that is captured with thousands of methane wells in Wyoming, Colorado and Montana. However, the USEPA recently reversed those regulations so methane will continue to be dealt with with flaring and release.**

## **From Emails**

Brian,

Here are some concerns and questions I would like addressed in the report being developed by the consultant,

Charles Yuill, concerning expected impacts from fracking. As stated earlier I regret that I cannot be at the meeting on June 13, but look forward to reading, and commenting on, the presentation once it is available online.

1. The report should look at the most current data and studies. There is considerable new information regarding impacts of fracking since the Chatham County moratorium was enacted in 2015. An excellent source of documents on a wide variety of health and other impacts can be found in the "The Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking" which brings together findings and studies from the scientific and medical literature, government and industry reports, and journalistic investigation. The Compendium demonstrates scientific evidence of risks and harms, health impacts and water contamination, and climate impacts of fracking. There are now over 900 peer-reviewed studies on the impacts of fracking, the vast majority of which indicate risks and adverse impacts. The report can be found at <http://concernedhealthny.org/compendium/>

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distance between ground water and shale depths. The studies of drinking water contamination in the shallower Pavillion Wyoming fracking, may be relevant for Chatham County. 3 New studies on the connection between induced earthquakes and fracking (not just injection of fracking wastewater into deep wells) must also be considered since Chatham County's underlying geology may be particularly unsuited for fracking, especially with the presence of the Shearon Harris nuclear power plant within the shale region.

The Scope of Study states that a summary of the current status of the legal framework for regulation these activities (natural gas development) will be included in the report. This is quite important since the Mining and Energy Commission has been replaced by the Oil and Gas Commission, which has not yet had a majority of appointees seated yet. No fracking permits have been issued in NC to date. What is the status of the rules governing fracking in NC and the legal challenges to them?

3. Will the report look at methane releases during fracking operations that contribute to climate change? This is another area where more studies and data have been done since 2015. Thank you,

I am not for or against the process to be presented about.

This is only my personal opinion. I believe information about diabase dikes should be included. I will not publicly speak on this, but it is disingenuous not to have it included in the presentation in my opinion. I have attached a few pieces of info about them. Thank you,

One of the assumptions that we follow in Chatham County is that diabase dikes, due to their formation, have a greater opportunity to channel ground water and are highly prized by well drillers when siting wells. Being able to channel the groundwater also enables the diabase dikes to act as a channel of contamination as well.

Curious if the below concern is with placing fracking wells or injection wells near diabase dikes and the more direct impact these activities will potentially have on the ground water and drinking water wells. Just a guess

Yes you are correct about ground water movement in those areas and can certainly bring the issue up – the areas around the dikes appear to not be particularly well suited for well development due to shale depth and the probable unfeasibility of fracking in those areas. Charlie Yuill

I have a question, which is whether NC has any regulations or laws in place to control the venting or discharge of methane to the atmosphere? Methane is almost 100 times more potent than other greenhouse gases so even small discharges are believed to contribute to global warming.

A second question is whether NC has any laws or regulations to require the disclosure of fracking chemicals?

It's hard to evaluate the possible impacts when we don't know what might be used. 2

- Regarding the treatment of wastewater, where is the nearest specialized water treatment facility that could process fracking wastewater? This seems especially important since wastewater injection is not legal in NC.
- Seismic issues with fracking may be less severe than those encountered with wastewater injection, but when drilling comes close to a fault that runs right under a nuclear rod storage pond and along the edge of a nuclear power plant, any seismic activity becomes potentially lethal  
2
- Could a map be developed which identifies the location of the 1,000 acres of non-contiguous land where fracking might be possible? (pg. 53 of draft report.)
- The Triassic basin extends under Jordan Lake. What impact could fracking have on Jordan Lake as a drinking water source?
- What might the impacts be on the Cape Fear River, Haw and Rocky Rivers, all of which serve as drinking water resources?
- What financial impacts would fracking have on Chatham County? Could a comparison be done of **the costs of fracking**-- for additional services (emergency, social services, police, etc.), disruption of travel due to road destruction, loss of agriculture, loss of eco-tourism, decrease of property values, etc. VS. **county income from fracking**.
- What would the impact of fracking be on our roads? In a report done by the NCDOT on fracking impacts, information was included about the low standards of construction used for most rural roads in Chatham County and the NCDOT predicted severe destruction of roads due to these low construction standards.  
Furthermore,  
Chatham County is in the same NCDOT funding district as Lee and Moore County, so we would be competing with them for limited funds for road repairs—and their fracking would likely be very destructive on their roads too.
- What impacts of fracking will Chatham County encounter from the fracking done in surrounding counties, even if Chatham itself has no fracking within its borders? For example, will our roads be destroyed by trucks going to Lee County? Will compressors or other infrastructure likely be located in Chatham County? Will water be taken from Chatham for fracking in Lee? Will workers likely live in Chatham and therefore need increased social services, medical care, etc.?

I hope there is still time to submit questions for Dr. Yuill. I am in LA right now, so a little slow on the review!

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Dr. Yuill, thank you for this brief review of some of the issues around fracking in Chatham County. I understand this work is preliminary.

Governor Cooper has just signed NC onto “We Are Still In” referring to the Paris Climate Accord. Adding fracking during this time of rapid global warming is irrational and immoral since we have sustainable energy alternatives and methane is 86X more potent green house gas than carbon dioxide. Every step of natural gas production releases methane!

Frack Free NC is a coalition of many grassroots organizations that organized years ago to resist fracking and the build up of gas infrastructure and to promote

sustainable (non nuclear) energies for our future. These groups and others spoke at hearings and wrote thousands of responses opposing and criticizing the weak oil and gas regulations passed last year. These comments may be useful in your research.

**In my opinion some subjects that should be researched and covered sufficiently in your final report and presentation are the following:**

- (1) Human, animal and wildlife health risks and injuries from chemical exposures downwind or adjacent to frack pads and near trucking accidents. I would like you to include the types of chemicals used in fracking—carcinogens, petroleum products, endocrine disruptor chemicals, acids, bases etc.. There are dangers from acidizing and from sand inhalation.;
- (2) Deliberate and unlawful releases of waste water; for example bad practices like spreading waste waters on road for deicing and illegal dumping;

The amount of methane released from fracking and gas infrastructure—this is considerable according to my reading in the Compendium;

- (3) The social changes and costs brought on by fracking—for example drugs and crime;
- (4) How diabase dikes which are numerous through the Triassic shale deposits will impact drilling and casement success. Could dikes limit where fracking occurs and provide a path of groundwater contamination?;
- (5) The incredible daily number of chemical and oil spills that are routine for the oil and gas industry as monitored by Sky Truth Alerts and other watchdogs.;
- (6) How will wildcatters potentially create more environmental, property and financial damage for NC?. What can be done about this?;
- (7) Although no local government can ban or regulate fracking there is the qualification that “generally-applicable requirements, restrictions or conditions are OK”. This will continue to be fought in court. Case law will have a bearing on how fracking can be managed.

Fracking moratoria can be renewed for valid reasons.;

- (8) North Carolina has no cheap methods or facilities for disposal of hazardous fracking liquids and solids. I am fearful that sanitary waste water treatment systems will be forced to “treat” liquid wastes causing contamination of our rivers and sludges for field application. Solid wastes —toxicity ignored — could be disposed in our solid waste landfills. How effective are “treatment” facilities and where are these used?;

- (9) What is the status of recycling waste water in the fracking industry? What equipment is needed?

**Here are some notes by page from your presentation:**

Page

**2.**

Working Definition: I like it that you don’t play games with the definition of HF like the O and G industry does. But your definition should include the fact that shale rock is blasted to pieces with explosives and cracks opened with pressure.

Review of Fracking Report for Chatham Co.



Unconventional NG Resource  
Considerations and Conditions for  
Chatham County, NC

I really object in the second paragraph calling natural gas the “preferred fuel”. By Whom??? the oil and gas industry of course. For those of us who want a livable earth and rejoice in the Paris Climate Accord, we say the excellent fuels for Planet Earth are solar and wind.

**5.**

“Fracking has been around since 1947.

Fracking in 1947 was baby fracking. It did not use the range of toxic chemicals and the quantities of water in use today. Nor were frack pad density of any consequence at that time. Fracking was done out west where few humans lived. Not the same beast as today. So since by your phrasing it is so old, does that give it prestige or make it more safe? Very doubtful.

**8.**

You note that “process complexity is the source of many potential problems”. Dr. A. Ingraffea states that 5 % of wells fail right away and all wells fail eventually especially if fracked repeatedly.

My reading in the Compendium is that the “process” involves extensive well failure, no real solution to waste water disposal, extravagant wastage of clean water, major methane leaks and losses, toxic chemicals released to groundwater contaminating wells and surface water etc.

The process itself is no good!. It does not protect the environment or human health.

<https://www.epa.gov/sites/production/files/documents/ingraffea.pdf>

Type of chemicals? Endocrine disruptor chemicals, carcinogens, petroleum products, metals, waste products from other industries, etc.

No limit on the chemicals used...even radioactive chemicals.

**18.**

I would like to hear what forced pooling has meant to the unwilling landowner.

NC does not have mandatory pooling ...yet.

**19.**

How do you protect surface owners when mineral rights are severed?

**20.**

The Duke University Law Center says that “Generally Applicable requirements, restrictions or conditions are OK, although a fracking operator may petition the O & G Commission for preemption review”.

Moratoria can be renewed.

**21.**

What is a toxic solid settling from a toxic liquid? There is no separation of toxins...only sediment.

Injection wells are not legal in NC. What landfills are you thinking

about? No natural gas infrastructure in Chatham.

**22.**

Repeated fracs. That is a sure way of destroying the casing and contaminating groundwater.

**23.**

How many wells drilled per pad? Please cover pad density. And well density.

**26.**

There are no methods for permanent disposal of produced and flow back water in NC. There are no treatment facilities and deep well injection is not feasible or legal. Flaring is not restricted in NC regs. Noise and pollution from flares is major.

Well failure is chronic. (Ingraffea)

Review of Fracking Report for Chatham Co.

Unconventional NG Resource

Considerations and Conditions for  
Chatham County, NC

M. Girolami 6/13/17

**28.**

Fracking over a fault that is also near a nuclear plant may be a grave risk. Is 5 miles adequate? Methane escaping from fracking is considerable not negligible. See Compendium.

**29.**

"Perceptions of community health, perceptions about environmental quality and health" Perceptions is the wrong word here. There are real impacts to public health immediately from traffic danger, diesel, sand, chemical emissions, chemical spills, noise and social degradation from drugs, crime, man camps etc. But perception alone can have a grave impact as well. There is no plan to do health monitoring etc. Many have no health care or limited access.

**30.**

Fracking 2017

Unreal that flaring would continue for up to 30 days a year. That gas should be captured at once. But NC has no infrastructure. Very likely a wildcatter would just frack to show we have gas but have no way of capturing the gas.

What are specialized treatments that can remove 700 plus chemicals? NC has no specialized landfills for hazardous waste solids.

Consider longterm open waste pits and damage to birds and other wild things. Evaporation during some months. We have hurricanes and frequent heavy rain events that would keep these filled.

**38.**

Damage to drinking water appears to be extensive. Loss of trust in water will ruin the economy as well as harm community health.

**44.**

Good treatment of shallow fracking. What are some sources of information. Pavilion is a shallow shale deposit that had extensive groundwater and well contamination. Consider the diabase dykes that are extremely common throughout the Triassic.

**45.**

Damage from high density vertical wells. Out west sometimes the spacing is much less than 40 acres.

**54.**

I think that Chatham's shallow shale, diabase dikes, Jonesboro fault running along shale deposits and under nearby Sharon Harris Nuclear Power Plant, lack of gas infrastructure, there is an excellent case for no fracking in Chatham. Your recommendations are very weak and not relevant to your content.

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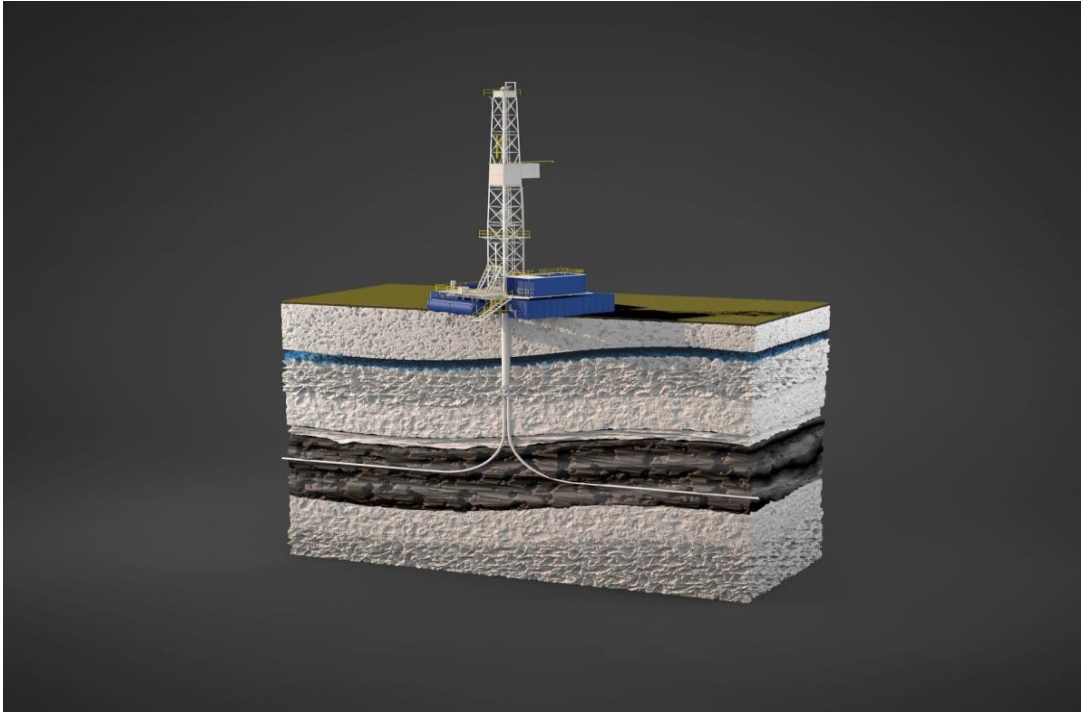
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# Chatham County North Carolina Hydraulic Fracturing Background Assessment 2<sup>nd</sup> Presentation

- **October 2017**
- **Submitted to Chatham County  
Board of Commissioners**



# Organization

- Summary of scientific findings and consensus among persons studying fracking
- Summary of key legal / regulatory provisions that may impact fracking in North Carolina
- A case study that illustrates what Chatham would be facing in the advent of a fracking industry in the county or nearby.
- ***This information is designed to complement the information from the first presentation.***

# Science and hydraulic fracturing – key aspects and consensus among key researchers

- **Source:**

- Extensive review of shale gas environmental impacts from scientific literature 2010 – 2015. Environmental science and pollution research. Springer Verlag April 2017.

# Finding one

- Wastewater characteristics are almost exclusively dependent on rock formations.
- Consensus – high.

# Finding two

- Migration of methane and salts to groundwater as a result of fracturing rarely occurs
- Consensus is high

# Finding three

- Contamination of surface water as a result of poor waste water treatment and handling is common
- Consensus is high



# Finding four

- Wastewater organic contaminants tend to be highly biodegradable
- Consensus is moderate

# Finding five

- Wastewater reuse after pretreatment is a simple method to limit negative impacts
- Consensus is high

# Finding six

- Methane leakage percent lies with the .66 to 3.9% range
- Consensus is moderate

# Finding seven

- Shale gas GHG life cycle emissions are lower for gas than for coal
- Consensus is high

# Finding eight

- Seismicity from deep well injection is far more likely than for hydraulic fracturing
- Consensus is high

# finding nine

- Seismicity is connected to preexisting faults
- Consensus is moderate

# Key legal / regulatory provisions that impact potential fracturing in Chatham County

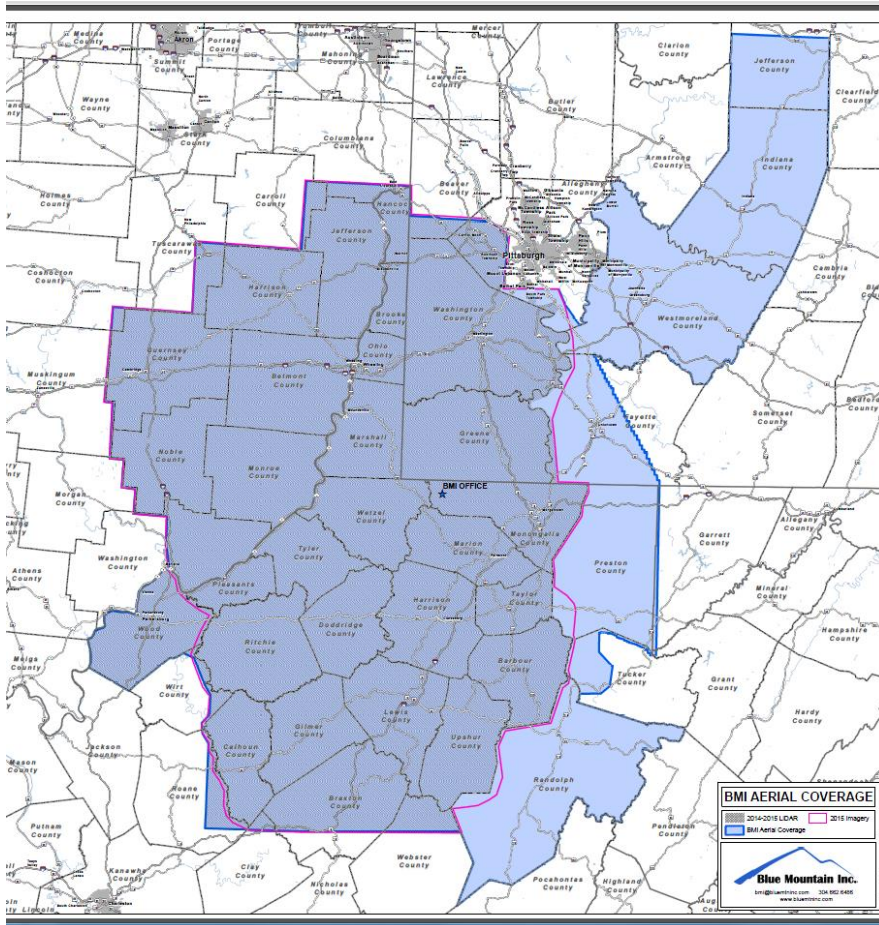
- **Use of injection wells for disposal of produced water from fracking.** Injection wells are prohibited in North Carolina. The result is that produced water would likely be recycled for reuse in fracking or disposed of utilizing surface disposal.
- **North Carolina Oil and Gas Commission regulations.** Current draft of the regulations covers most but not all aspects of fracking. Regulations will need to be reviewed and revised to address all critical aspects of hydraulic fracturing operations – from exploration to restoration and site abandonment and to comprehensive record keeping and report



- Most aspects of the proposed regulations for North Carolina do reflect current science and practice. However, the utility of many of the regulations (such as borehole cementing and surface well site water control measures) require rigorous inspection and enforcement to be effective.
- **Local regulation of hydraulic fracturing.** Generally applicable local regulations can be applied to hydraulic fracturing as authorized in state laws. Typically, local regulations cannot address any aspects regulated by state law. Zoning, subdivision regulations, and other design review / siting ordinances may address aspects of fracking operations so long as such ordinances do not preclude or severely limit the development of hydraulic fracturing operations.
- However, it must be noted that the application of local ordinances can be appealed to the Oil and Gas Commission to determine whether such regulation is overly restrictive or unnecessary.
- **Surface owner property rights.** Deference is given to the mineral owner such that the surface owner(s) cannot diminish the value of the mineral resource. This applies to all surface aspects of fracking operations except for thru pipelines and roadways. Right-of-ways for thru pipelines and roadways (not directly required for on-site development) must be negotiated separately.

- **Forced or mandatory pooling of mineral leases.** North Carolina does not have forced or mandatory pooling of mineral leases. Eastern states typically do not have forced pooling due to complex surface and mineral ownership patterns.
- **Hydraulic fracturing moratoriums.** Moratoriums can be enacted, if such moratoriums are: of fixed duration; and relate to specific goals and objectives, such as the need for additional study; and not simply as a “delaying tactic.”
- **State regulations and conditions found specifically in Chatham County.** Proposed state regulations (primarily setback requirements) potentially do not adequately address a number of critical environmental conditions found in Chatham County. These include: igneous and metamorphic geologic features such as dikes which are often sites susceptible to groundwater pollution from surface sources; proximity to the Deep River mainstem and riparian zone and the ecological importance of the Deep River; and the shallow depths of the Cumnock Formation in the County and the resulting close proximity of groundwater source formations to the formation suitable for natural gas development. This close proximity potentially increases the likelihood of groundwater pollution of fracturing activities.

# Case study – Greene County and Marshall County



- Area of early gas development
- Area with significant gas resources
- Rural / agricultural with villages / hamlets
- The case study is the landscape along the major east / west route between Waynesburg and Moundsville
- ***Any dozen or so wells in the area probably will produce more gas than there is in North Carolina***



The landscape – historic mining and traditional natural gas with unconventional gas now dominating

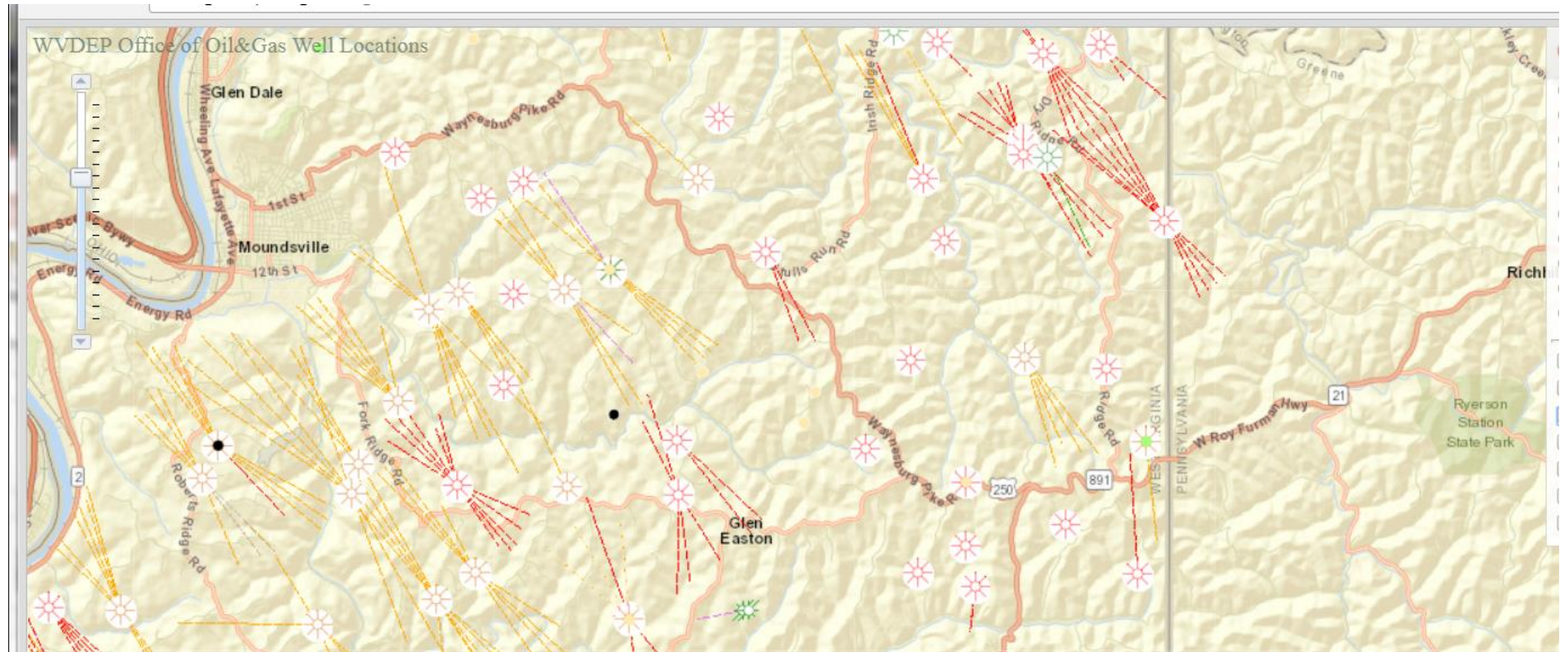




View from the road – a fracking well with multiple laterals in production mode with recent pipeline regrading in the background



So how much development is there in a intensively developed area?





Details of the well – operators do not anticipate any refracking of these wells





View of the road that carries most of the well development traffic



# Some counts for the area

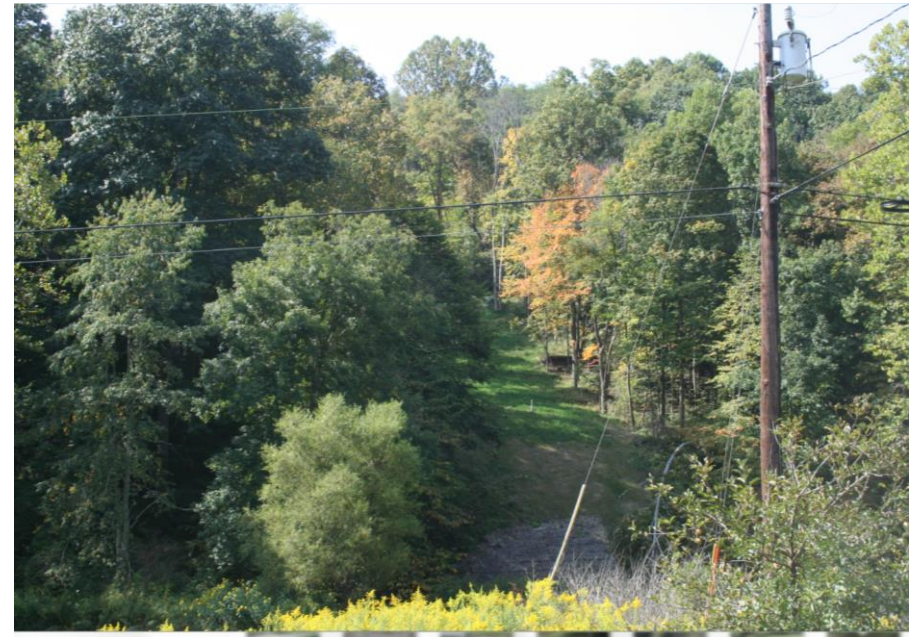
- Area of roughly 400 square miles
- One drill rig currently operating in the area – typical for a region of this size
- Three wells in various stages of fracking
- Road counts in a random hour of monitoring
  - Six fluid trucks
  - Four sand trucks
  - Seven pipe trucks

# Fluid trucks and a local compressor station





Views of pipelines – wells have pipelines to connect to compressors and compressors have pipelines to connect with gathering compressors



# Well locations and location of the drill rig in the region





# Gathering locations are intensively developed



Workforce – 70 – 80 out of state workers in the region – most of the workforce is local but out of state expertise needed for deep drilling experience





# Gathering facility construction



# Compressors at gathering location





Two wells with numerous laterals –  
companies often pool resources





# Venting and flaring stacks



# Larger views of a portion of the facility – view from the road





Another well that is a well with only two laterals



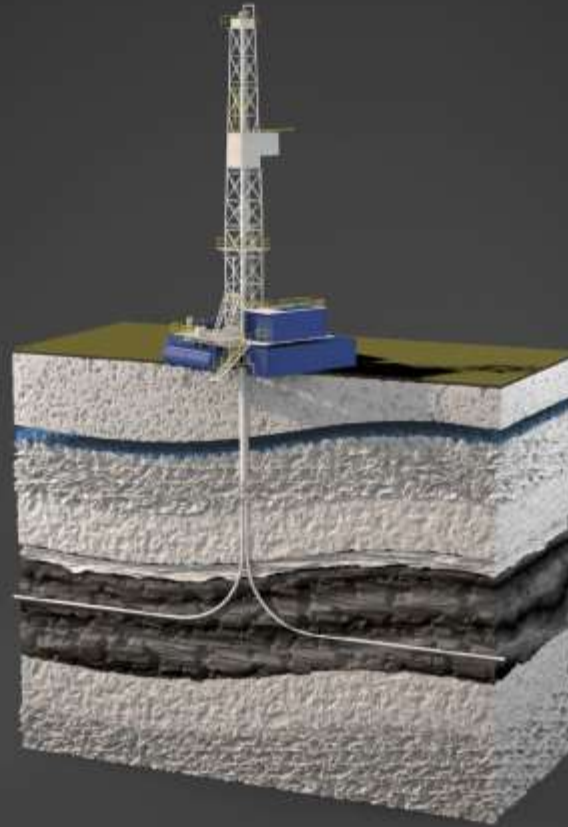
# Pipeline construction on a steeper hillside – view from the road





# A few other facts

- No reported groundwater well damage
- A number of spills were reported with some significant surface water damage
- No significant community impacts were reported by the counties or municipalities – law enforcement except for vehicle moving violations for workers and service trucks
- Amount of venting and flaring appears to be significant
- A number of secondary unpaved roads have become unpassable to normal vehicle traffic – paved road conditions appeared to be suitable for all traffic



Unconventional ( Constrained Shale Bed) Natural Gas Resource  
Considerations and Conditions  
for Chatham County, North Carolina  
June 2017

# This presentation

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- A component of on-going Comprehensive Planning for Chatham County
- Emphasis is on potential landscape, land use and community development aspects of unconventional (hydraulic fracturing) natural gas development in the County.

# Before we go on – a working definition.....

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- Hydraulic Fracturing or fracking (will continue with this term) is drilling into the earth before a high-pressure water mixture is directed at the rock to release the gas or oil inside. Water, sand, and chemicals are injected to the rock at very high pressures which allows the gas to flow through the formation out to the head of the well.
- Fracking has gained significance as the nation has turned to natural gas as a preferred fuel.



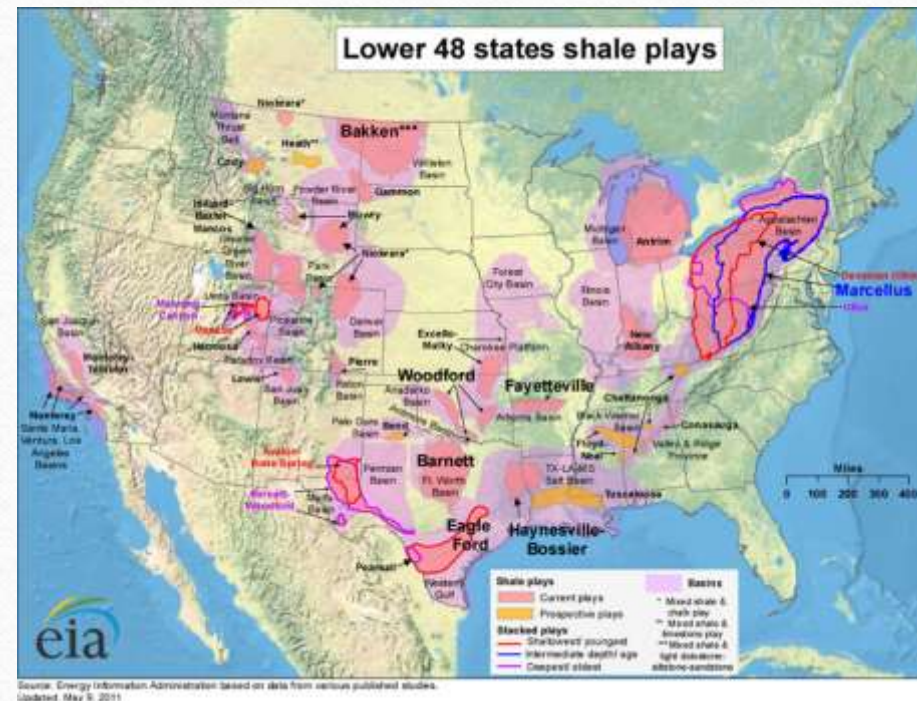
# Presentation Organization

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- A basic review – will be brief
- Environmental issues most often associated with fracking
- Fracking 2017 – advances over recent years
- A case study from Pennsylvania
- Fracking and Chatham County
- Questions

# Fracking – some background and important relevant terms

- Fracking has been around since 1947.
- Has become important with the recognition of the natural gas available in major basin shales.
- Emphasis has been on larger basins but a great deal of fracking occurs in smaller shallow basins and rift basins



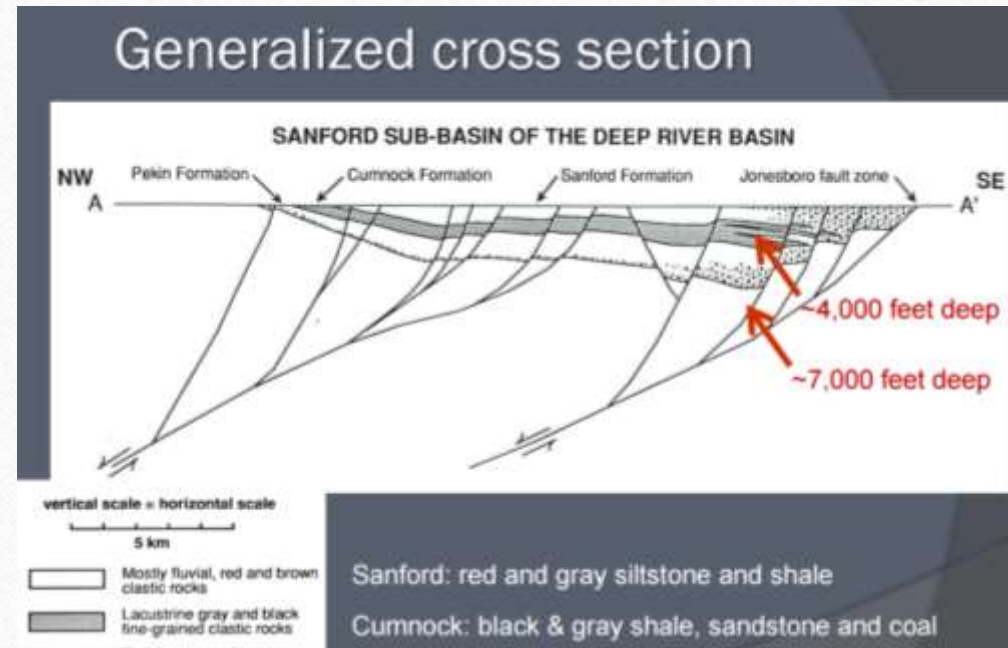
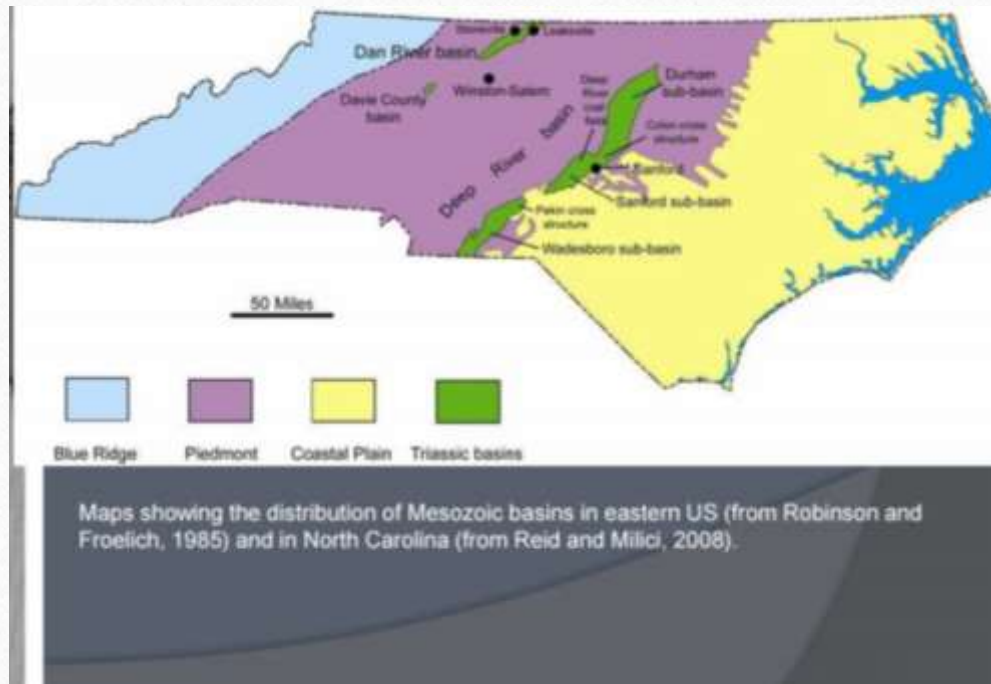


# Extent of fracking

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- Active fracking in 21 states with 5 more poised for fracking in the near future
- 34 states have laws and regulations on the books to facilitate fracking
- Three states have bans or moratoriums – Vermont, Maryland, and New York
- One multi-state region has a fracking moratorium – The Delaware River Basin (a primary water supply watershed for NYC). However, that moratorium is expected to be lifted.
- Another state (Michigan) with significant fracking activity (12,000 wells) has a fracking ban to be likely on the ballot in 2018.

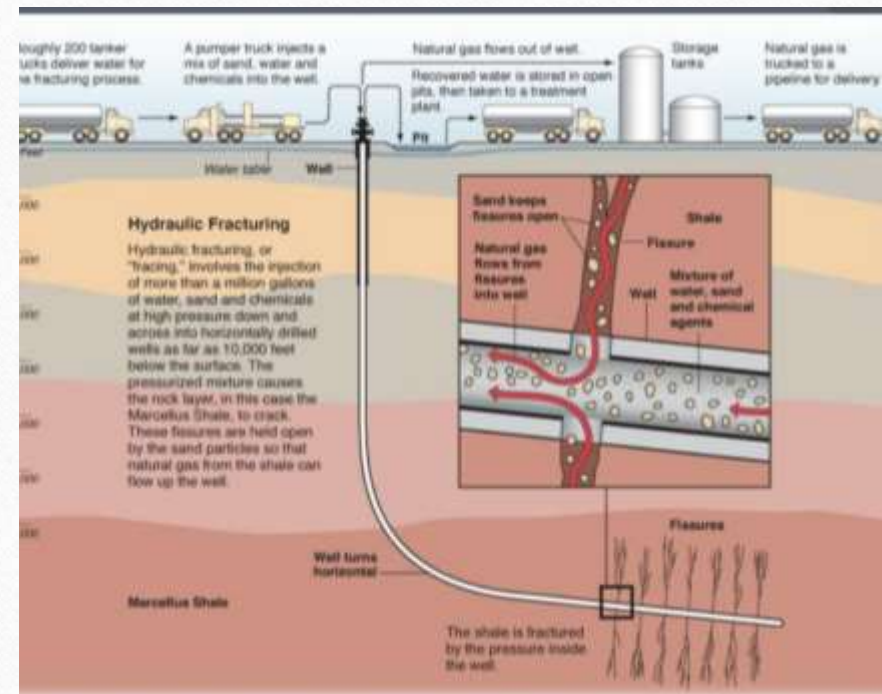
# The rift basins of North Carolina with a cross section through the Deep River Basin

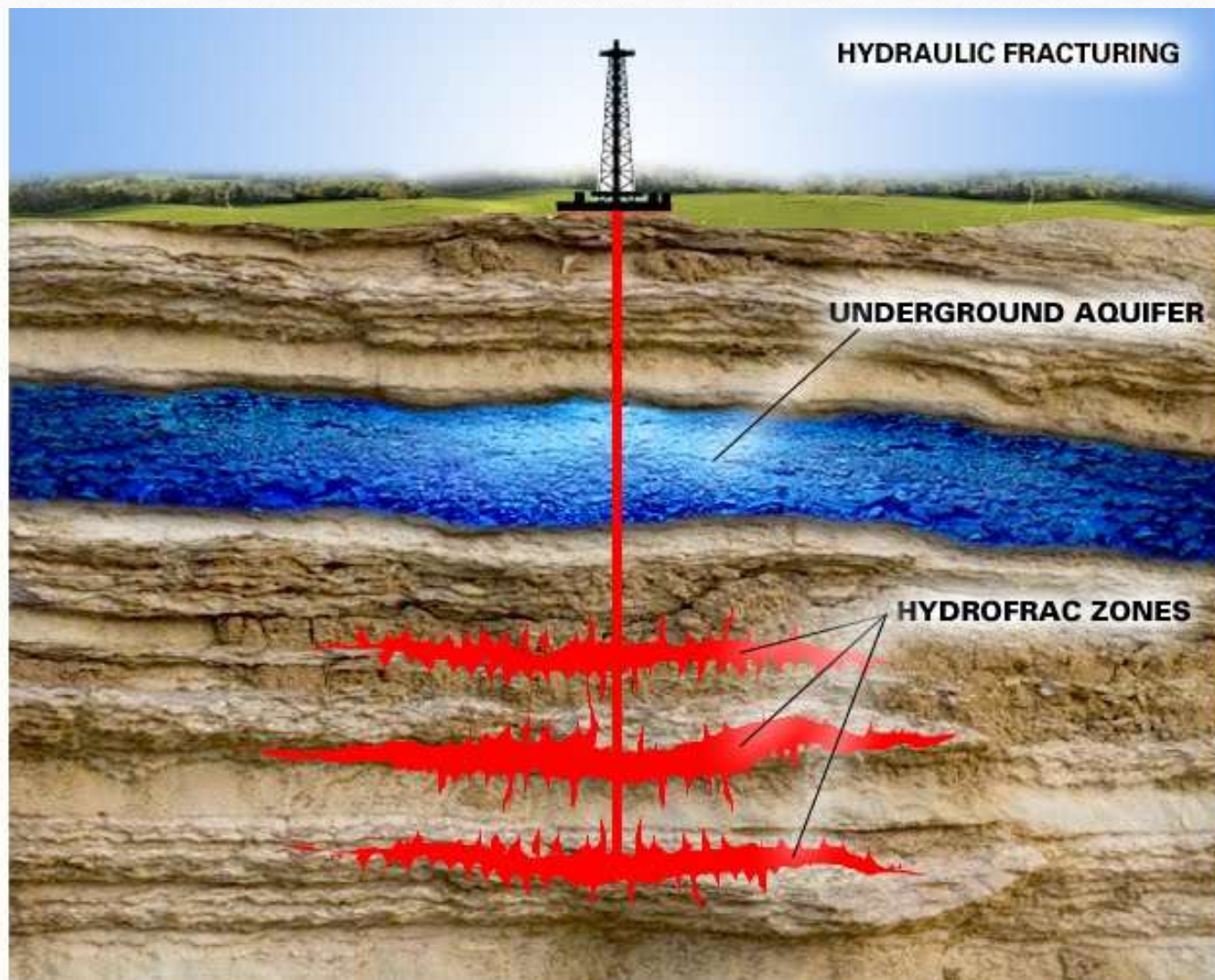




# The basic process

- Prospecting
- Locate potential well locations
- Fracking can be
  - Horizontal drilling
  - Vertical shaft fracking
  - Deep fracking
  - Shallow fracking – will be relevant in later discussions (fracking formations less than 3,000 feet deep).
  - The process complexity is the source of many potential problems





**HYDRAULIC FRACTURING**

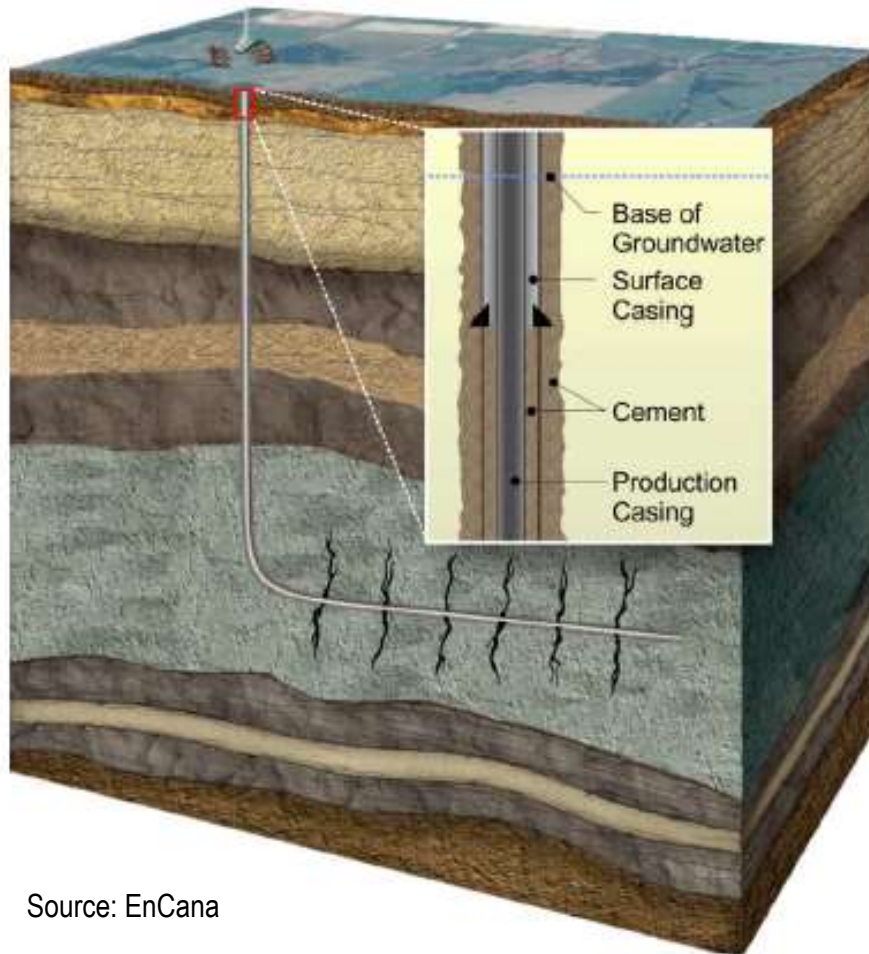
**UNDERGROUND AQUIFER**

**HYDROFRAC ZONES**



# *What Changed the Game?*

## Horizontal Well with Multi-Stage Fracturing



Source: EnCana

- Natural gas production from shallow, fractured shale formations not new
  - First shale well drilled in Fredonia, NY in 1821
  - First fractured well in 1947
  - 2.5 million fractures to date worldwide; > 1 million in U.S.
- What “changed the game” was the recognition that one could “create a permeable reservoir” and high rates of gas production by using intensively stimulated horizontal wells

# So fracking is a high-energy introduced process

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- Fracking is used where formations (primarily shale) are “tight” with little or no natural fracturing and openings with little opportunity to utilize pressure differentials to move gas up the shaft to the wellhead.
- Typically fracking introduces new pressures down the borehole in excess of 10,000 psi.
- It is the fracking fluid/mixture (water, sand or ceramics, and chemicals) that is pressurized.
- A variety of chemicals are used for a variety of reasons – improve slickness, reduce or destroy bacteria, reduce corrosion in the metal well casing, etc.
- Sand is used to deliver fracking fluid mixtures and to maintain openings in the shale.

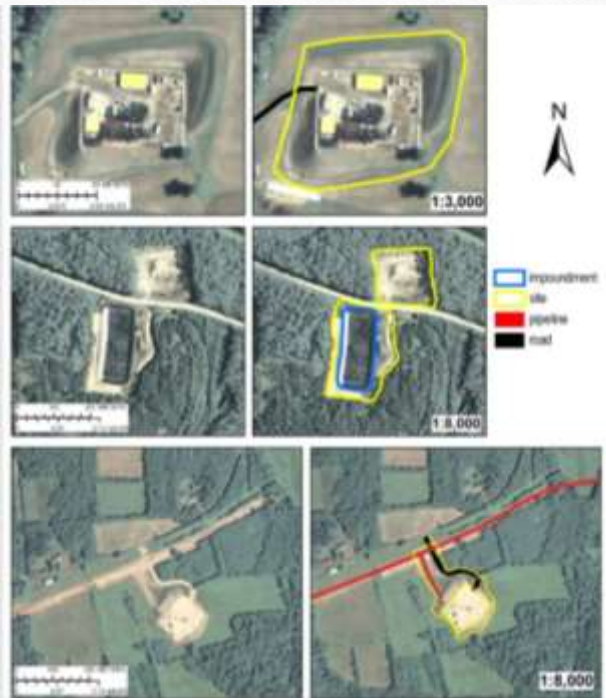


# Fracking chemicals

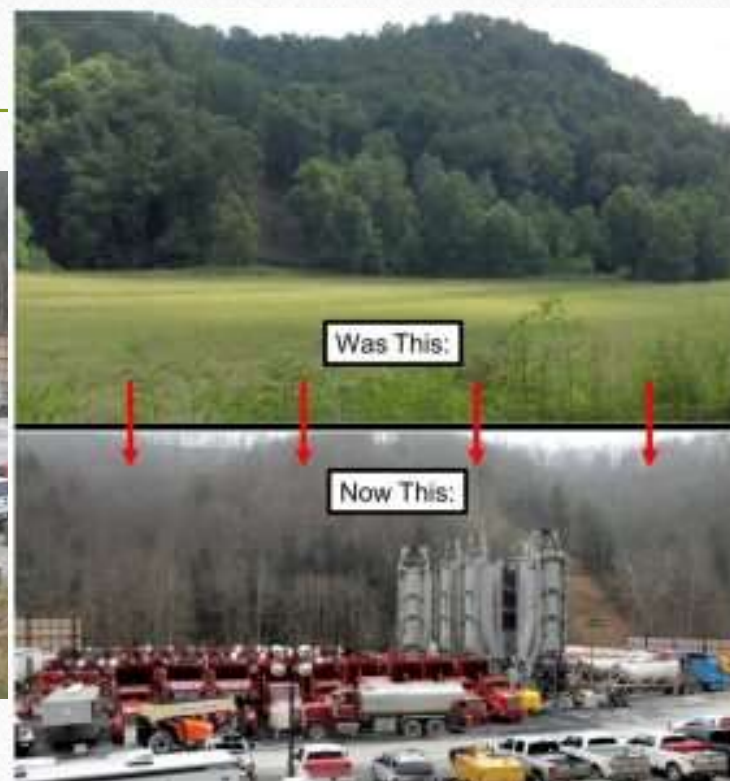
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- Specific listings are protected as trade secrets... but analysis has shown that what are referred to as volatile organic chemicals are heavily utilized.
- Over 750 different chemicals have been detected many of which pose potential human health risks.\*\*
  - Biocides
  - Corrosion inhibitors
  - Friction reducers
  - Iron control
  - pH adjusting compounds
- \*\*major chemicals will be listed in the final report.

# What does it look like in the landscape?













# Logistics yard, paved road impacts, and flaring





# Before we move on it is important to introduce a few important legal / regulatory components

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- Amendments to the CWA (Clean Water Act) in 2005 remove fracking well location and aspects of fracking from state implementation of the CWA pushing fracking to the states.
- The **Halliburton** exemption partially removes injection wells from Federal / state injection well regulations – for Class II injection wells.
- The above combine to provide a regulatory framework for fracking. Note: fracking operators and injection well operators are often different in that injection wells often take water from numerous different well operators.
- **Forced or mandatory pooling – a quick discussion**
  - Old concept - 38 states have forced pooling regulations
    - Originated in the Midwest and Great Plains with the Public Land Survey.
  - Pennsylvania and West Virginia do not – both states rely on aspects of pooled leases
  - North Carolina does not have a current mandatory pooling law.

# Some relevant Federal regulations and associated exemptions.

Federal Law	Applicable to Oil and Gas Development	Exemptions or Limitations	Source of Exemption Exemption or Limitation
Safe Drinking Water Act	<ul style="list-style-type: none"><li>• Underground Injection Control Program</li><li>• Imminent and Substantial Endangerment Provision</li></ul>	<ul style="list-style-type: none"><li>• Hydraulic fracturing fluids other than diesel fuels do not require Underground Injection Control Permit</li></ul>	Statutory – 2005 Energy Policy Act
Clean Water Act	<ul style="list-style-type: none"><li>• National Pollutant Discharge Elimination System program</li><li>• Spill reporting and spill prevention and response planning requirements</li></ul>	<ul style="list-style-type: none"><li>• Federal stormwater permits not required for uncontaminated stormwater at oil and gas construction or well sites</li></ul>	Statutory - 1967 Water Quality Act and 2005 Energy Policy Act
Resource Conservation and Recovery Act	<ul style="list-style-type: none"><li>• Non-exempt wastes present at well sites may be regulated as hazardous</li><li>• Imminent and Substantial Endangerment Provision</li></ul>	<ul style="list-style-type: none"><li>• Oil and gas exploration and production wastes not regulated as hazardous waste</li></ul>	1988 Regulatory/EPA decision
Comprehensive Environmental Response, Compensation, and Liability Act	<ul style="list-style-type: none"><li>• Hazardous substance release reporting</li><li>• Imminent and Substantial Endangerment Provision for releases of a pollutant or contaminant</li></ul>	<ul style="list-style-type: none"><li>• Liability and reporting provisions do not apply to injections of fluids authorized by state law for production, enhanced recover, or produced water</li><li>• Petroleum releases not covered</li></ul>	Statutory – 1980
Emergency Planning and Community Right-to-Know Act	<ul style="list-style-type: none"><li>• Reporting on use, inventories, and releases into the environment of hazardous and toxic chemicals above threshold quantities</li></ul>	<ul style="list-style-type: none"><li>• Oil and gas well operations not required to report releases of listed chemicals to Toxics Release Inventory</li></ul>	1997 Regulatory/EPA decision

# One more area worth discussing – mineral rights

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- Connected and severed mineral rights – can become complex situations
- Severed mineral rights can and are often subdivided
  - For example in the case of heirs
  - Can be split spatially or by formation vertically
- In the case of severed rights most legal deference is with the mineral owner in that the mineral owner generally has full access to the benefits of mineral ownership
  - Drilling and development
  - Secondary development
  - Pipelines can be a bit more complex



## Also important

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- State law limits local governments from implementing ordinances that regulate oil and gas development.
- However, moratoriums can be implemented and continued so long as such moratoriums are of fixed durations.

# On the ground fracking operations are designed as systems

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- Access roads
- Drill sites which become drill pads
- Well pads and supporting technology and environmental control features including various ponds and excavated areas for storage / evaporation of return and produced water. Ponds are used for water storage and as evaporation ponds so that potentially toxic solids can be removed and transported offsite for landfilling or other disposal.
  - Fluid mixing and warming equipment
  - Vapor control measure equipment
  - Storage
- May have on-site or nearby injection wells
- Pipelines
- Compressor stations and gathering compressors
- Existing infrastructure – roads, landfills

# The process.....

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- Drill to below depths of concern and case in metal and concrete
- Continue drilling into formations of interest – typically the above are a ten day process
- Once drilling is complete then fracking can be initiated – typically a two to three day process
- Wells may have up to 20 fracs
- Once fracking is complete the fracking equipment is removed and the site is prepped for production

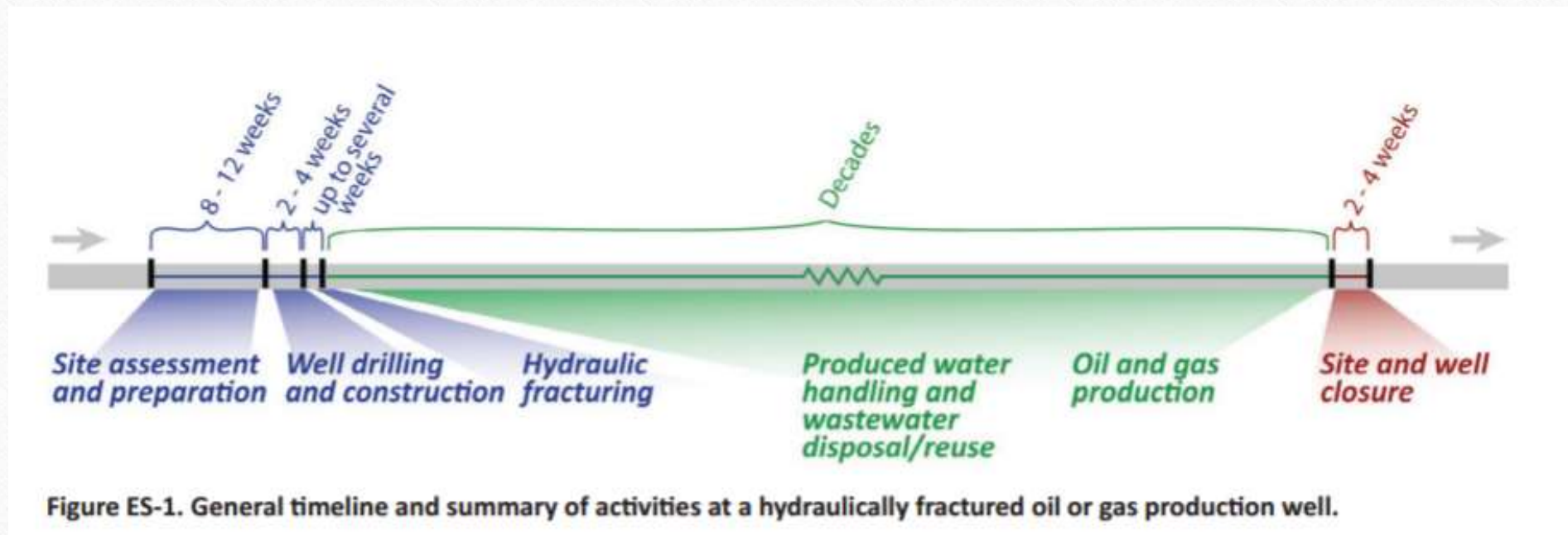


# A typical well site and well pad

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- 8 to 15 acres
- Total area
  - 60% can be restored after construction and well development – revegetation, water control, and other mitigation
  - Well pad – 25% of area will remain disturbed –
  - Pipelines 4% remains disturbed after revegetation
  - Ponds 5%
  - Roads 7%

# Typical timeline for a hydraulically fractured gas well.



Source: USEPA 2016.

# Potential environmental impacts

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- **Site preparation and drilling**
  - Seismic – minor issues
  - Well pad, roadway and pipeline construction – governed by state regulations
    - Erosion and sedimentation
  - Local roads – heavy vehicles and raw materials haulage
  - Drilling cuttings disposal – treated as hazardous waste – removed to offsite for disposal or treatment.
- **Accidents / equipment failures**
  - Surface water pollution
  - Accidents generally impact surface water and borehole failures impact groundwater



# Fracking impacts

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- Water use – one to four million gallons of water per frac – water is from local surface and / or groundwater sources
  - 200 or more tanker trucks per frac
- Potential leakage of fracking chemicals
  - Typically 30 trucks sand and 10 chemicals trucks per frac
- Leakage in aquifers is generally due to well casing or concrete failures
- Leakage in storage facilities generally impacts surface water

- 
- Produced / flow water treatment and disposal
    - Injection
    - Storage, evaporation and landfilling
    - Treatment using specialized treatment facilities – water can be recycled
  - Methane and other fugitive gas
    - Condensers
    - Flaring – limited usage

# Gas production impacts

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- Gas leakage
- Noise – primarily from traffic and compressors – compressor noise can be significant
- Fugitive gases from compressor stations
  - Fugitive leaks in compressor hardware
  - Pollution emitted by compressors
- Continued well defects – monitoring has greatly improved



# A couple of notes

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- Seismic impacts have received a great deal of notoriety – however drilling and fracking have proven to have negligible impacts – significant impacts have been due to injection wells
- Methane gas has received a great deal of press as well – negligible methane escape during drilling and fracking – during well operation fugitive methane releases have been a common occurrence.

# Some often overlooked impacts

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- Well pads, roads, and pipelines result in significant landscape fragmentation
  - Loss of quality forests
  - Loss of interior forests
  - Loss of quality forest edges
  - Fragmentation of agricultural fields
- Community impacts
  - Perceptions of community health
  - Perceptions about environmental quality and health
  - Residential structures and land not being leased decreased in value

# Fracking 2017

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- Methane flaring use is on the decline with improved hardware removing 98% of the methane produced that typically escapes. Example in Pennsylvania wells can now flare a maximum of 30 days a year encouraging use of improved hardware.
- Injection well usage is on the decline with specialized treatment options on the rise.
- Specialized landfills are being developed to handle the most hazardous wastes once water and solids have been separated



# A Case Study – Washington County PA

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- **Marcellus Shale**
- **Heavy hydraulic fracturing in the County**
- **Location of a number of major problems and fracking related issues**

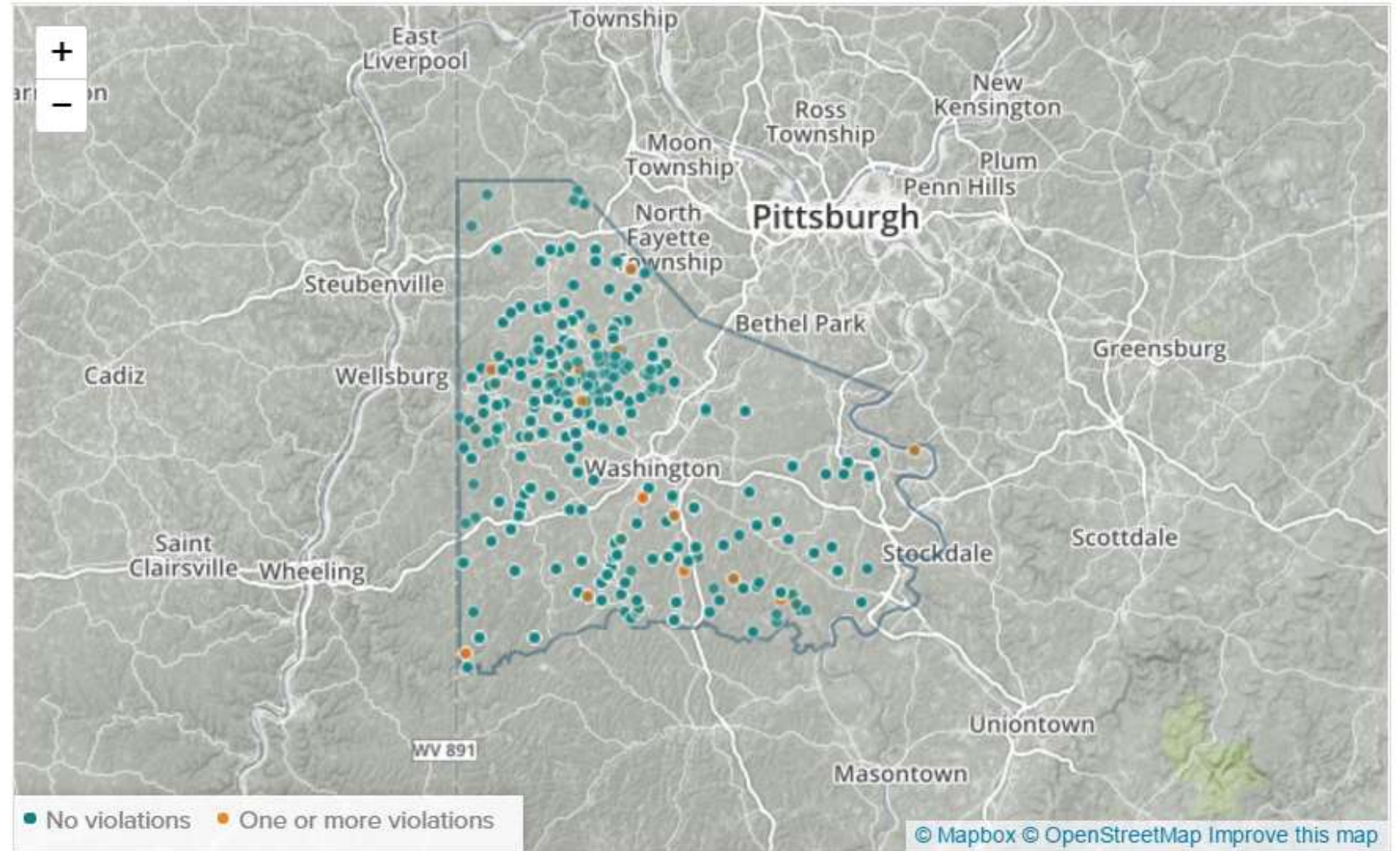
# Washington County

ACTIVE WELLS

1,146

VIOLATIONS

153





# Site preparation

















# A storage / evaporation basin and a compressor / gathering facility

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# Washington County summary

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- **Major companies**
  - Range Resources
  - Chevron
  - Chesapeake Appalachia
  - Noble Energy
  - EQT
- **Issues**
  - A number of violations – drinking water well damage – over 100 complaints since 2015 with fewer violations.
  - Number of spills and accidents with resultant short-term surface water and shallow ground water damage
  - One township – East Findlay – without public drinking water wells since 2015.
  - A major well pad fire in January 2017. Fire was rapidly extinguished though limited evacuations were required – hardware malfunction. Human error accidents are rare



While we are in Washington County – one more topic to discuss – site restoration

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A large, stylized graphic of a leaf or flame shape, split vertically. The left half is light green and the right half is light blue, with a white outline. It is positioned behind the title text.

## **RECOMMENDED PRACTICES: Site Planning, Development and Restoration**

MSC RP 2012-1 April 26, 2012, Updated June 20, 2013

**Table 2-1. Site Planning, Development and Restoration Process Recommended Practices**

Each step in the following table may be implemented as appropriate.

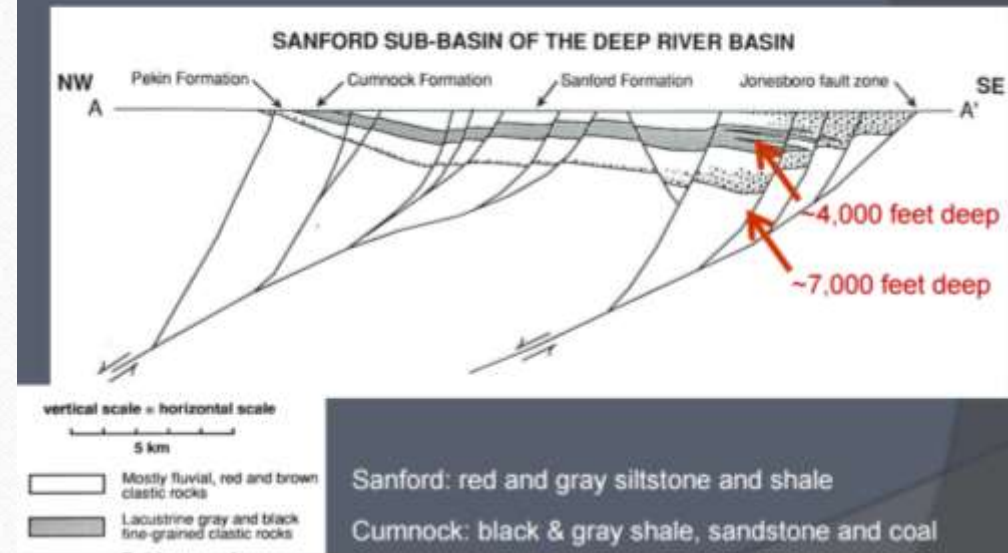
Major Steps in the Process	Elements for Reducing Impacts, and for Improving Restoration and Final Reclamation Outcomes
Identify Local Need for Site	Determine the operational needs and ideal location(s) for well pad(s), access road(s), pipelines, gas compression and processing facilities, water pipelines and impoundments, and other necessary facilities.
Generate Unconstrained Conceptual Site Plan	Prepare an unconstrained conceptual site plan free of potential landowner, regulatory or environmental constraints based on what would be ideal from an operational perspective.
Conduct a Constraints Analysis	Conduct fact-finding to identify constraints including regulatory/zoning/siting constraints, landowner and local community desires/preferences, environmental and public resource constraints, highway access constraints and the presence of other sensitive locations.
Refine Concept	Adjust the conceptual site plan to account for known constraints. Consideration should be given to minimizing surface disturbance. Impacts may be reduced by using brownfield or industrial areas and previously cleared land, if practical. It may be possible to use existing logging roads and trails when planning access roads or pipeline right of ways. Another option is to plan for pipelines adjacent to existing roads. In addition, there may be opportunities for coordination of infrastructure with other companies, for example: use of shared right of ways for pipeline corridors, pooling of mineral rights to optimize the number of well pads, etc.
Discuss Plans with Surface Owner(s); Alter Site Concept as Needed	Welcome input from the surface owner(s) and consider changes to the overall design. This may include a discussion of the refined concept plan and how this concept would fit within their existing and planned future uses of the site, making adjustments as appropriate.
Identify Site Features to Retain or Protect	Identify features to be retained – including timber, stumps, slashing, mulch, topsoil, ponds or stock watering devices, access roads, etc. – and account for retention of these items in site planning.
Prepare Final Site Plan from Previous Concepts; Highlight Retained Features	Prepare context-sensitive site plan while accounting for potential future oil and gas extraction from other formations.
Implement E&S and Other Environmental Controls	Build the site. Ensure that planned erosion and sedimentation (E&S), stormwater and other environmental controls are installed and maintained. Consider using permanent controls such as sedimentation basins, with potential future use, over temporary measures that can be damaged and may require multiple replacements over time.
Implement Partial Restoration During Operational Life	Reclaim portions of the site that will not be needed during the post drilling, production phase so as to minimize the impact of the project. Try to avoid additional disturbance of stable soils while minimizing soil compaction and new disturbances required to access other formations. Note that the original development phase of well pads, as well as of pipelines, gas compression and processing facilities, often requires a larger footprint than operational phases.
Implement Final Restoration Conducive to Surface Owner's Plans and Objectives	Conduct final restoration upon completion of the project. Well pads will be in use for decades, whereas surface disturbances for buried gathering or transmission pipelines can be fully reclaimed soon after installation. In re-contouring a site, control erosion and storm water runoff, minimize site compaction, apply lime and fertilizer as necessary, seed with use-adapted mix, mulch appropriately, and plant trees and shrubs as appropriate.
Conduct Site Monitoring, Maintenance and Repair	Conduct site monitoring, maintenance and repair throughout the life of the project. Although listed last in this process, site monitoring, maintenance and repair begins with initial site development and continues until the site is fully restored and the site is permanently closed. Critical elements include repair of access controls and gates, security fencing, ruts or washouts (often caused by uncontrolled all-terrain vehicle access), and revegetation of areas where initial efforts did not yield desired results.



## Chatham County Geologic Map



## Generalized cross section



# Some background

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- The County has been concerned about potential fracking since 2009
- The USGS and NCGS have been focused in the region with current estimates being about 1.7 tcf of gas in the Deep River Basin
- The Cumnock Formation is the primary potential gas bearing formation in the Basin.
- This means
  - The gas bearing formation is extremely shallow in the County
  - The formation also is in less than 5% of the County.

# Introducing a new concept – shallow fracking

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- Shallow fracking – less than 3,000 foot depths – some as shallow as 100 feet. Shallow fracking places fracking closer to potential formations of concern such as aquifers.
- Generally vertical borehole fracking with limited horizontal fracking.
- Water usage is only minimally reduced
- Construction and fracking can occur more rapidly
  
- Shallow wells typically have a higher percentage of aquifer leakage
- If fracking ever occurs in Chatham County it will be shallow fracking due to the relatively shallow depths of the Cumnock Formation.



# Shallow wells

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- Many times do not have the depth for horizontal fracking – horizontal drilling can turn only 1 to 4 degrees per 50 feet of depth so up to 500 feet of additional well depth is required for horizontal drilling.
- Fracking with vertical wells does reduce well spacing – often on 40 acre or less spacings. Spacing is generally a function of geology and well performance which can be estimated from a test well.

# Shallow wells

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- Most feasible in areas with deep fracking or existing convention gas infrastructure in place.
- May be in smaller basins over the large deeper basins.

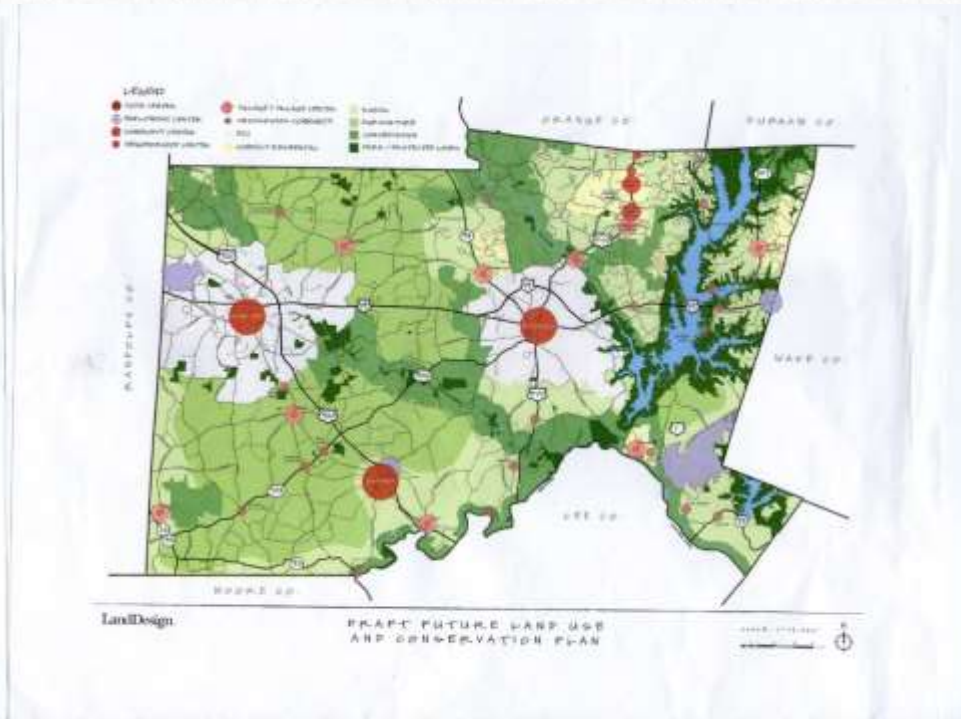
# The Cumnock Region of the County

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- The Duke Power Station eliminates a significant area for fracking – 5 mile radius around the plant that can be expanded by the NRC.
- Public lands in that portion of the County eliminate much of the area for fracking.
- Landscape values as illustrated in the following maps are of moderate to high importance when compared with much of the county.
- Most Cumnock areas in the county are either outcrop areas (where the shale is at the surface of the ground) or extremely shallow – generally too shallow for the development of hydraulic fracture wells.
- A cursory GIS analysis identified less than 1,000 acres that could be fracked.

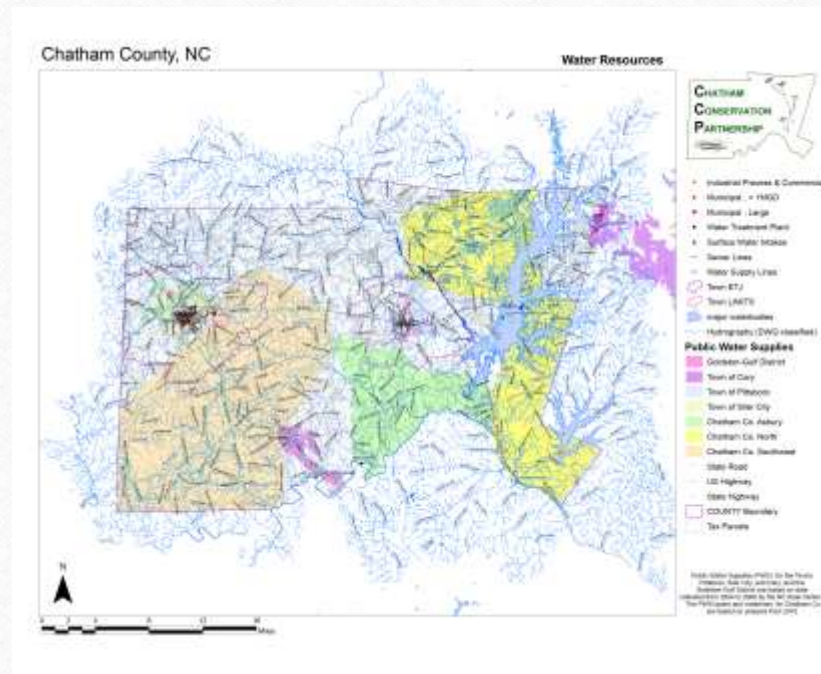


The County has had and is in the midst of comprehensive planning efforts



- From the comprehensive planning effort – the Cumnock region in the southern portion of the County is being planned as conservation, industrial, and mixed rural and agriculture.

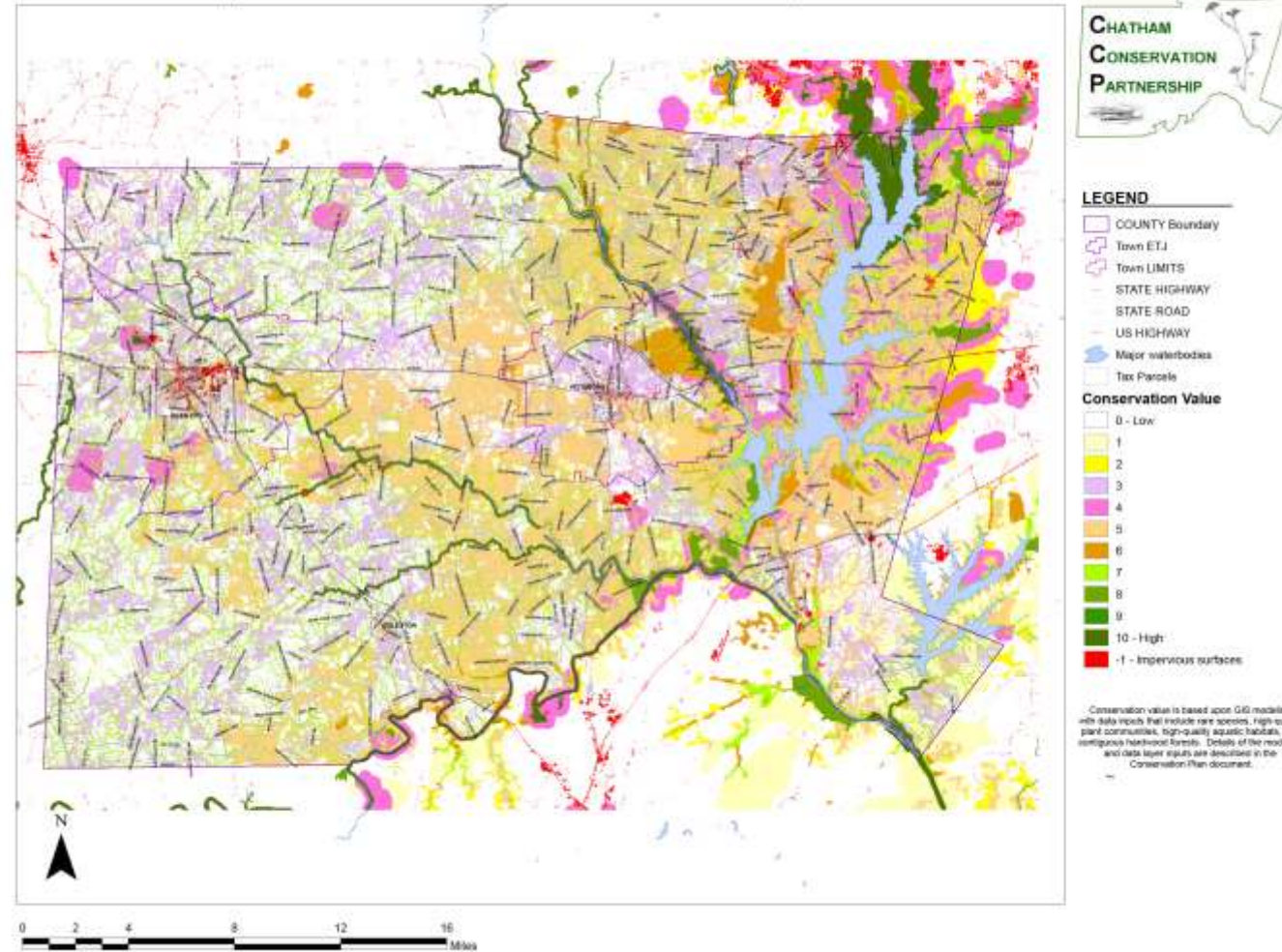
# The Cumnock regional context



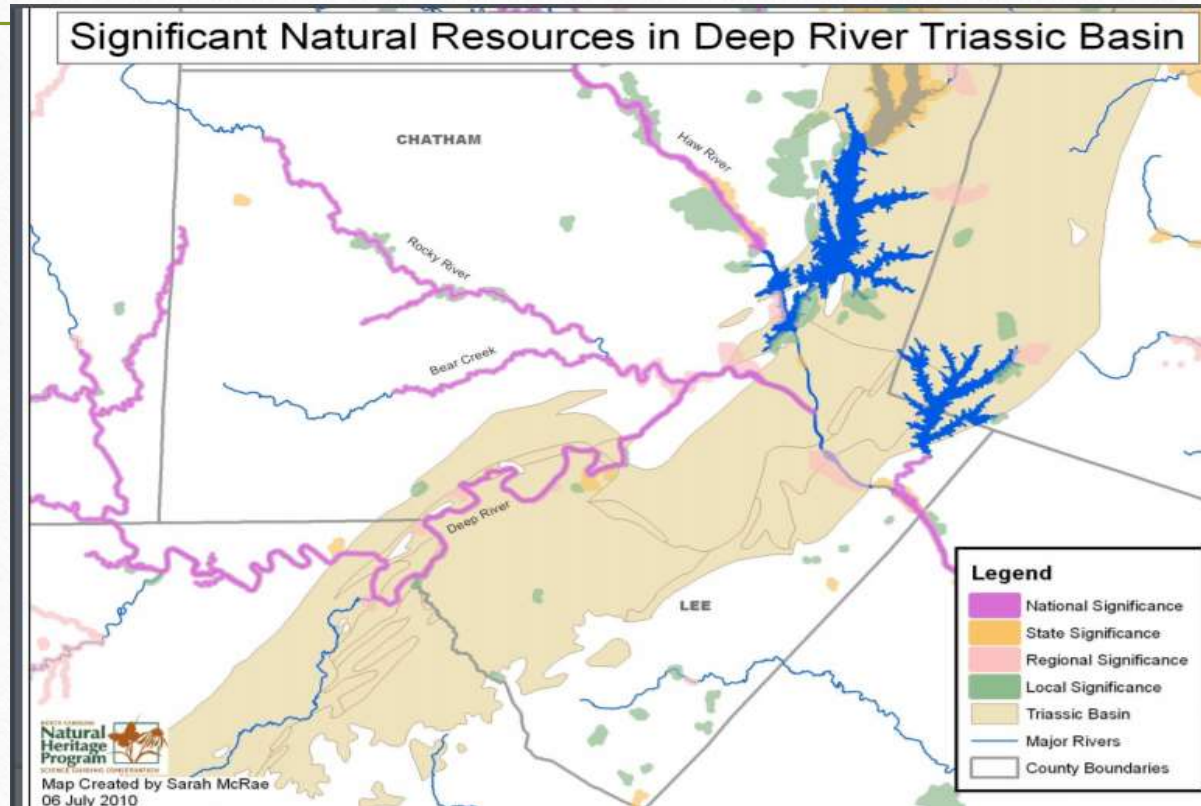


## Chatham County, NC

## Biodiversity/Wildlife Habitat Resources

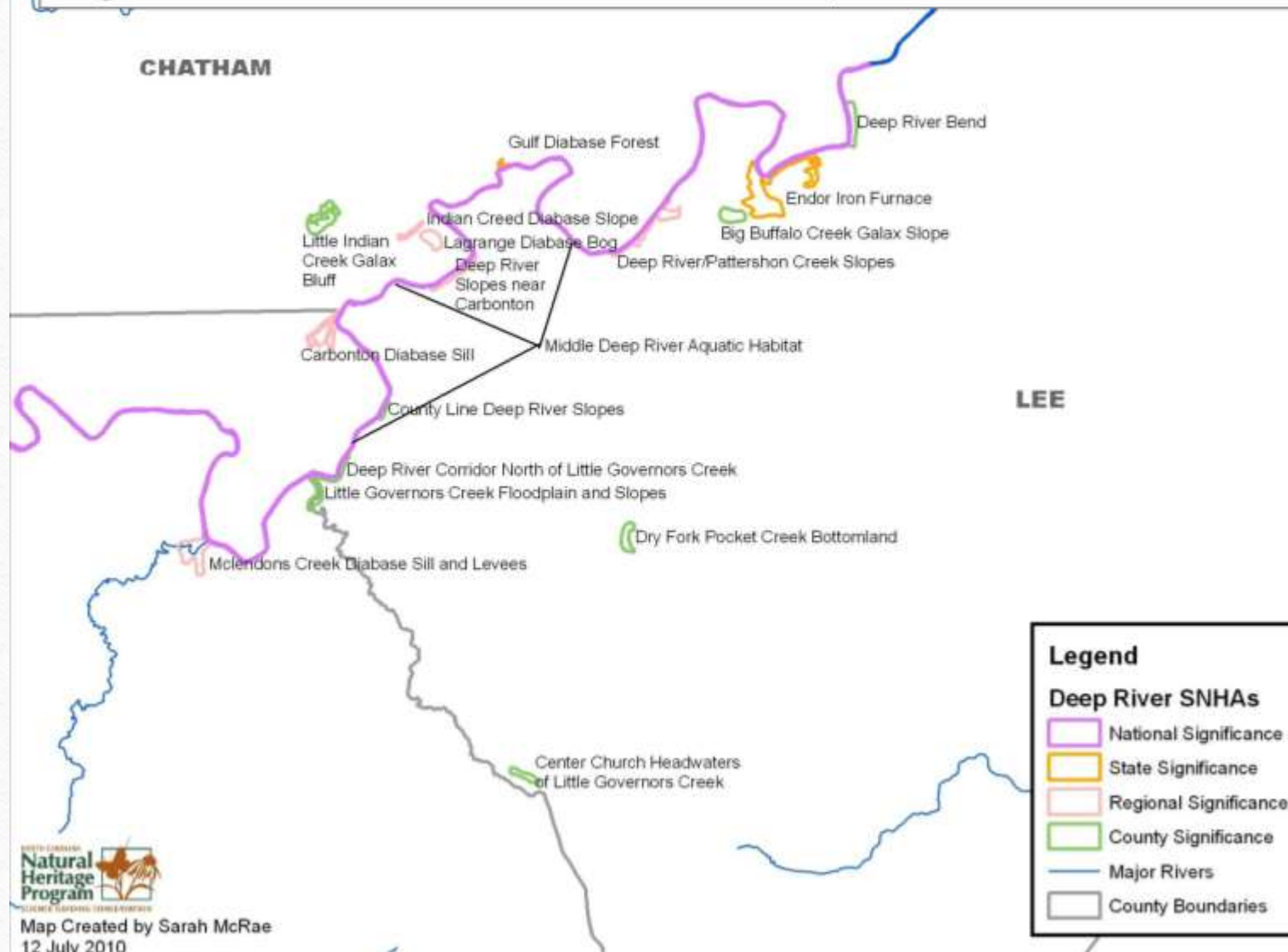


# North Carolina State Heritage Program identified significant environmental resources in the Basin





# Significant Natural Resources in Deep River Triassic Basin



# A brief summary

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- Fracking in Chatham County is unlikely but possible in a very small area of the County – probably less than 1,000 acres – acres are spread over a number of non-contiguous areas so fracking feasibility is extremely low based on shale depth and surface ownership and conditions. A more detailed spatial analysis could be completed with the available geologic data, available Lidar data, updated land use, and exclusion zones such as the power station buffer.
- The Cumnock deepens while maintaining formation thickness clearly making Lee County more attractive for development. Due to the infrastructure requirements of the fracking process it would be conceivable that small portions of Chatham County could be developed from infrastructure developed in Lee County.

# Recommendations

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- Formation of a multi-county working group focusing on larger geographic issues of unconventional shale development.
- Develop voluntary guidelines for shale gas development in the County similar to those developed by the working group in the Marcellus region.
- Modify land use regulations to include a conditional use permitting process that is consistent with state laws targeting protection of water quality.



## For more reading – I would suggest the following references

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- Physicians for Social Responsibility. Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking Unconventional Gas and Oil Extraction. November 2016.
- United States Environmental Protection Agency. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States. December 2016.
- Any readings on shallow fracking.
- Chatham County Geologic Map – May 2017.

# A special thanks

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- Walt Haven and the NC Geologic Survey for providing up to date geologic mapping and data as well as personal observations.

# Summary and questions

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- Final comprehensive report with responses to questions /comments will be prepared
  - Outline
    - Summary of potentials and issues associated with fracking in Chatham County
    - Responses to all questions with relevant citations
    - Appendices – environmental issues, infrastructure issues, health and safety issues, ecological issues, and community issues
- Additional questions can be submitted through June 16 to by email address – [jason.sullivan@chathamnc.org](mailto:jason.sullivan@chathamnc.org).
- Questions



# Chatham County, NC

## Text File

**File Number: 17-2341**

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**Agenda Date:** 10/16/2017

**Version:** 1

**Status:** Board Priorities

**In Control:** Board of Commissioners

**File Type:** Resolution

Vote on a request to adopt a Resolution Setting the Time and Place for Meetings of the Chatham County Board of Commissioners for Calendar Year 2018.

Action Requested: Vote on a request to adopt a Resolution Setting the Time and Place for Meetings of the Chatham County Board of Commissioners for Calendar Year 2018.

Introduction & Background: Each year the Board must establish a meeting schedule for the next calendar year and adopt that schedule by resolution as the official schedule of regular meetings for the Chatham County Board of Commissioners. Said schedule shall be posted in a location at or near the Historic Courthouse, the place of the Board of Commissioners' regular meetings; be distributed to the local news media, and be kept on file by the Clerk to the Board of Commissioners in the County Manager's Office.

Budgetary Impact: N/A

Recommendation: Motion to Adopt a Resolution Setting the Time and Place for Meetings of the Chatham County Board of Commissioners for Calendar Year 2018.





## CHATHAM COUNTY COMMISSIONERS

Jim Crawford, Chairman  
Diana Hales, Vice Chairman  
Mike Cross  
Karen Howard  
Walter Petty

## COUNTY MANAGER

Renee Paschal

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P. O. Box 1809, Pittsboro, NC 27312-1809 • Phone: (919) 542-8200

## Resolution of the Chatham County Board of Commissioners

### SETTING THE TIME AND PLACE FOR MEETINGS OF THE CHATHAM COUNTY BOARD OF COMMISSIONERS FOR CALENDAR YEAR 2018

**WHEREAS**, G. S. § 153A-40 provides the manner by which the Board of Commissioners may establish regular meeting dates; and

**WHEREAS**, in order that the Board, staff and public may plan as far in advance as is practical and reasonable the Board of Commissioners has deliberated the establishing of a meeting schedule for calendar year 2018; and

**WHEREAS**, the Board believes that this is the most appropriate manner to schedule the meetings to conduct the public's business.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Commissioners of the County of Chatham, North Carolina that:

**SECTION 1.** The meeting schedule shown as Attachment A to this resolution shall be the official schedule of regular meetings for the Chatham County Board of Commissioners for calendar year 2018.

**SECTION 2.** Said schedule shall be posted in a location at or near the Historic Courthouse, the place of the Board of Commissioners' regular meetings; be distributed to the local news media, and be kept on file by the Clerk to the Board of Commissioners in the County Manager's Office.

**SECTION 3.** Any subsequent changes to those scheduled shall be made, posted and distributed in accordance with G. S. § 153A-40 and G. S. § 143-318.12.

Adopted, this the \_\_\_\_ day of \_\_\_\_\_.

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James G. Crawford, Chairman  
Chatham County Board of Commissioners

ATTEST:

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Lindsay K. Ray, NCCCC, Clerk to the Board  
Chatham County Board of Commissioners



# Chatham County Board of Commissioners' Official Schedule for Regular Meetings

## Calendar Year 2018

Date	Day/Time	Location
*January 16 <sup>th</sup>	Tuesday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*MLK Holiday Jan 15 <sup>th</sup>		
*January 23 <sup>rd</sup>	Tuesday at 9:00 AM	TBD
*BOC Retreat		
*January 24 <sup>th</sup>	Wednesday at 9:00 AM	TBD
*BOC Retreat		
*January 26 <sup>th</sup>	Friday at 9:00 AM	TBD
*BOC Retreat		
*January/February	TBD	TBD
*Legislative Breakfast		
*February 5 <sup>th</sup>	Monday - TBD	Historic Courthouse, Pittsboro, NC
*BOC reserves the right to hold a meeting on this date. Followed by the Annual Cooperative Extension Luncheon at Noon		
February 19 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*March 5 <sup>th</sup>	TBD	Historic Courthouse, Pittsboro, NC
*BOC reserves the right to hold a meeting on this date		
March 19 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*April 2 <sup>nd</sup>	Monday - TBD	Historic Courthouse, Pittsboro, NC
*BOC reserves the right to hold a meeting on this date		
April 16 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*May 7 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*Present the Budget		
*May 21 <sup>st</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*Budget Public Hearing		
*May 22 <sup>nd</sup>	Tuesday at 6:00 PM	Siler City Courtroom, Siler City, NC
*Budget Public Hearing		
*May	TBD	TBD
*Budget Work Session		
*May	TBD	TBD
*Budget Work Session		
*May	TBD	TBD
*Budget Work Session		
*June 4 <sup>th</sup>	Monday - TBD	Historic Courthouse, Pittsboro, NC
*BOC reserves the right to hold a meeting on this date		
June 18 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
July 16 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*August 6 <sup>th</sup>	Monday - TBD	Historic Courthouse, Pittsboro, NC
*BOC reserves the right to hold a meeting on this date		
August 20 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
September 17 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC

*October 1 <sup>st</sup> *BOC reserves the right to hold a meeting on this date	Monday - TBD	Historic Courthouse, Pittsboro, NC
October 15 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*November 5 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*Present the CIP		
*November 19 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*CIP Public Hearing		
*November 20 <sup>th</sup>	Tuesday at 9:00 AM	TBD
*CIP Work Session		
*December 3 <sup>rd</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*Swearing In of newly elected officials		
December 17 <sup>th</sup>	Monday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*January 22 <sup>nd</sup> , 2019	Tuesday at 6:00 PM	Historic Courthouse, Pittsboro, NC
*MLK Holiday Jan 21 <sup>st</sup>		

## Holiday Schedules for State Employees

Note: These schedules shall be used by all state agencies operating under the policies, rules and regulations of the Office of State Personnel. Institutions of higher education and agencies requiring a twenty-four hour operation may adopt varying holiday schedules in keeping with operational needs provided the employees are given the same number of holidays as approved by the [State Personnel Commission](#). Such special holiday schedules must be filed with the Office of State Personnel.

It is recognized that some agencies may need to adopt an additional holiday schedule **applicable to their employees working on assigned shifts** to maintain a twenty-four hour operation; this schedule would designate as holidays the specific dates of the legal observances rather than substitute weekdays when the observance occurs on Saturday or Sunday. This would be in keeping with the purpose of the holiday premium pay policy. [Click for the State's Holiday Policy.](#)

New Year's Day	January 1, 2018	Monday
Martin Luther King, Jr. Birthday	January 15, 2018	Monday
Good Friday	March 30, 2018	Friday
Memorial Day	May 28, 2018	Monday
Independence Day	July 4, 2018	Wednesday
Labor Day	September 3, 2018	Monday
Veteran's Day	November 12, 2018	Monday
Thanksgiving	November 22 & 23, 2018	Thursday and Friday
Christmas	December 24, 25 & 26, 2018	Mon., Tues. and Wed.