

# Chatham County

## Unified Development Ordinance

**Response to Request for Proposal**  
February 28, 2019



February 28, 2019

Robin James  
Chatham County Finance Office  
PO Box 608  
12 East Street  
Pittsboro, NC 27312



(via hand delivery)

Dear Ms. James,

Thank you for the opportunity to submit our proposal to assist Chatham County with the preparation of a new unified development ordinance. CodeWright is a boutique planning consultancy based in Durham, North Carolina and established in 2014 that is dedicated to the preparation of innovative development codes for small towns and counties across North Carolina. We are passionate about helping our clients reach their full potential as successful, environmentally-sound, and desirable 21<sup>st</sup> Century communities. I am Principal and the sole employee of CodeWright, and have over 25 years of experience as a public and private sector planner with more than 15 years of experience drafting development codes for communities across the country. CodeWright is excited to be joined in this pursuit by an exceptional team of highly skilled partners:

**Meg Nealon**, Principal of Nealon Planning, brings a wealth of experience with Chatham County as one of the primary authors of *Plan Chatham*. Meg is planner and landscape architect with extensive experience implementing comprehensive plans across the Southeast.

**Brian Starkey**, Landscape Architect with the Timmons Group, has 36 years of experience helping Triangle communities protect open spaces and enhance community character. Brian is assisted by **Jon Blasco**, a seasoned site planner, **Jeffrey Hochanadel**, a transportation engineer, and **Chris Petree**, a potable water and wastewater engineer.

**Victor D'Amato**, Associate Director of Tetra Tech, is a Chatham County resident, member of the Environmental Review Advisory Committee, and a long-term consultant to the County on on-site wastewater and water reuse programs. Vic is joined by **Bobby Tucker**, an agro-ecological engineer with expertise in LID, and **Christy Williams**, an environmental planner and green infrastructure expert.

**Al Benschoff, Esq.**, with the Brough Law Firm in Chapel Hill, NC, will be providing legal sufficiency review of draft code materials. Al is supported by **TC Morphis**, contract attorney to the Chatham County Board of Adjustment, as well as **Kevin Hornick**.

**JJ Zanetta**, Owner of Depiction, is a nationally-recognized expert in the preparation of architectural illustrations, visuals, and development-related graphics.

**Cara Isher-Witt**, Principal of Both& Planning, is a frequent collaborator with CodeWright on the preparation of development codes and regulatory studies for North Carolina communities. She brings a wealth of experience with GIS, digital technology, and social media platforms.

The CodeWright team has over 150 years of combined experience working locally in Chatham County, the Triangle, and across the country on innovative zoning and best practice techniques pertaining to growth management, environmental protection, agricultural preservation, community design, land use law, and the creation of visually rich and easy-to-administer development regulations. We regularly work on complex projects with a broad range of stakeholders and use broad-based public input as a cornerstone of our approach.

We believe we are uniquely suited to assist Chatham County in preparing a new unified development ordinance for the following reasons:

**Code writing is the core of our practice.** Code writing is not a sideline; it is what we do. We are pioneers in the development of design-conscious codes that are user-friendly, that incentivize preferred forms of development, and that strike the proper balance between predictability and flexibility. We understand the code drafting process from inception to execution and can help the County avoid pitfalls and misallocation of project resources.

**We know Chatham County.** The vast majority of team members live and work in or near Chatham County. We experience the growth pressures the County is facing on a daily basis, and are committed to helping the County protect its resources and maximize its quality of life.

**We “code for context.”** As practitioners who regularly work with counties, we understand that one size does not fit all. Counties are complex units of government occupying large land areas with a multitude of differing development contexts. There are villages, undeveloped areas, resource areas, and agricultural areas, each with differing needs. We understand how to encourage development in areas where infrastructure investment has already been made while at the same time managing development pressure in areas where resource protection is vital.

**We understand the legal climate.** Team members serve as leaders in planning legislation and land use law matters. We can ensure consistency with the ever-evolving legislative landscape and confidence that the new regulations are legally sound.

**We are committed.** CodeWright team members are passionate about furthering the practice of planning and zoning. We understand that learning and improvement comes with thoughtful evaluation and reflection. To further demonstrate our commitment to delivering quality products, CodeWright will provide 30 to 40 hours of code assistance on a pro bono basis within a year following adoption. This review provides the County with an opportunity to further refine its standards at no additional cost.

Speaking on behalf of the CodeWright team, we are very interested in this exciting project and hopeful about the opportunity to assist in the preparation of a new UDO for Chatham County. CodeWright is an independent firm licensed to practice in the State of North Carolina with no conflicts of interest and we take no exception to any requirements in the RFP. If the CodeWright team is selected, I would serve as the Principal-in-Charge, the lead code drafter, the primary point of contact, and the day-to-day Project Manager for the consulting team. I am authorized to bind the firm during contract negotiations. I can be reached at 919.593.2868 or via email at [chad@codewright.info](mailto:chad@codewright.info). Should you have any questions or need any additional information, I hope you will not hesitate to contact me.

Warmly,

A handwritten signature in black ink, appearing to read "Chad Meadows". The signature is stylized and cursive.

Chad Meadows, AICP  
Principal, CodeWright Planners LLC



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# I. Summary

The County's request for proposals goes into considerable detail in describing the needs for the UDO and the potential complexities of the project. Chatham County is the second fastest-growing county in the State, but at the same time, this growth and development has been concentrated in the northeast quadrant of the County. Growth pressures are expected to continue and perhaps even accelerate as planned developments like Chatham Park and others begin to come online. At the same time, there are other portions of the County, like the southwest quadrant, that are primarily rural in character. Preserving rural character is the most important goal identified in Plan Chatham. Despite the fact that 75 percent of the land area in the County is used for agricultural or forestry purposes, there are outside pressures on farmers and the farming 'way of life' that could lead to loss of agriculture and rural character. One of the most important aspects for the UDO project to recognize and address is the differing character areas in the County and the aspects influencing these different areas.

Agriculture is the leading industry in the State, and the leading economic activity in Chatham County. Indeed, Chatham County is among the state leaders in livestock sale and poultry production. In that regard, protection of agriculture in Chatham County is not simply a matter of County interest, it is also a matter of statewide significance. Despite this, most farmers in Chatham County are over 50 years old and most must also work off the farm to make ends meet. The socio-economic profile of farming families, the increasing desire for local food, and the need to limit carbon production from the transport of food products all combine to demonstrate the importance of agricultural protection.

Chatham County has over 70,000 people, many of whom are well educated and have very strong feelings about the community in which they live. The County has a rich blend of retirees, residents who work in nearby "high-tech" jobs, farming families, and entrepreneurs. The mix of livelihoods and world views lends itself to sometimes vigorous debate about what actions are in the best interest of the community. The County has a long tradition of giving residents a voice in how the County changes and evolves over time. This is perhaps most evident in the large number of commissions, advisory boards, and interest groups who are invested in how the County considers development proposals or expends resources. The RFP mentions the need for the UDO project to recognize and facilitate the input from the development community, Agricultural Advisory Board, Chatham Conservation Partnership, the Affordable Housing Advisory Committee, the NC Wildlife Commission, the Agribusiness Council, the Environmental Review Advisory Committee, and the Agricultural Review Board to name a few.

The new UDO must encourage compact, walkable, mixed-use development in certain portions of the County while at the same time protect existing farm and resource land from low-density residential encroachment. It will be important to establish standards that incentivize growth and development in designated areas and disincentivize growth outside designated areas.

The new UDO project must identify protections for agricultural land from encroachment. It must help farmers stay on the land and supplement their incomes with farm-related activities or help them recover a portion of the land's value while continuing to farm. It must also encourage farm-supportive uses.

The UDO process must ensure ample opportunity to hear from all interested individuals, record feedback from affected stakeholders, and assist the County in balancing disparate points of view. It requires a dynamic blend of careful planning and flexibility to deal with unpredictability.



The UDO project will need to integrate these disparate documents into a unified set of development

The UDO project needs to evaluate the County's current development regulations for consistency with recently modified state law and court precedent, and then propose revisions to any language that is inconsistent with these changes.

The new UDO will need to respond to the policy guidance with innovative tools and approaches like tiered cottage industry standards, agricultural zoning, conservation subdivision requirements, promotion of renewable energy, low impact development requirements, open space connectivity indices, sustainable development incentives, expanded flood hazard area designations, codification of context-sensitive street design, and coordination between utility policy and new infrastructure standards.

As recently as three years ago, portions of the County had no zoning provisions in place. As with any effort to establish zoning where it does not exist, mismatches between existing conditions and zoning requirements were created and nonconformities have resulted. Coupled with this issue is the logistical problem created by having zoning and development regulations spread across 15 different documents. There are numerous inconsistencies in terminology and overlap across these different documents that must be reconciled and calibrated to fit within the context of the County's new adopted policy guidance.


In 2010 there was a sea change in the composition of the General Assembly and significant changes to planning enabling legislation in the General Statutes has been the result. New provisions addressing single-family home design limitations, wireless telecommunications facilities, limitations on development moratoria, amendments to environmental regulations, changes to agricultural protection provisions, performance guarantees, limitations on enforcement, invalidation of impact fees, and new requirements governing comprehensive plan consistency have all been adopted as well as many other requirements not mentioned here. In addition, there have been significant court rulings regarding permitted uses, signs, and the exercise of staff discretion.

Adoption of the forward-looking and innovative Plan Chatham document in 2017 established a new series of 10 goals (with a series of related objectives) for the County to undertake in pursuit of the community's updated vision. Chief among these innovations are increasing opportunities for employment-generating uses, directing growth to designated centers, emphasizing open space as a component of development patterns, creating more workforce housing options, integrating health-based thinking into regulations, addressing climate change, connecting open spaces, link transportation system configuration to community context, and use utility policy to direct growth.

Addressing the legacy zoning districts, existing nonconformities, and implementing the new zoning district designations will require concentrated effort on the preparation and adoption of a new zoning map shortly after the new UDO is adopted (but before it is made effective).

The wide range of stakeholders, differing county contexts, and complex issues will require a robust and well-organized process. The project must be supplemented by dedicated project web resources, extensive use of technology to facilitate meetings and input collection, regular contact between staff and the consulting team, a detailed project scope, an innovative approach to budgeting for community engagement, reliance on focus groups and stakeholders to help evaluate proposed regulatory approaches prior to drafting, formulation of an advisory committee to vet the draft ordinance, and a package of training materials that can be used by staff to help inform appointed officials, interested citizens and stakeholders after adoption.

# 2. Project Team

	<p>Chad Meadows Principal Team leader, lead on code drafting, project strategy, and public outreach</p>
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	<p>Meg Nealon Principal Comprehensive Plan implementation</p>
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	<p>Brian Starkey Landscape Architect</p>
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<p>Jon Blasco Site Planner</p>
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<p>Jeffrey Hochandel Transportation Engineer</p>
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<p>Chris Petree Potable Water &amp; Wastewater Engineer</p>
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	<p>Victor D'Amato Associate Director On-site wastewater and water reuse expert</p>
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<p>Bobby Tucker Argo-ecological Engineer</p>
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<p>Christy Williams Environmental Planner &amp; Green Infrastructure Expert</p>
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	<p>Al Benschoff, Esq. Legal sufficiency review of draft code materials</p>
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<p>TC Morphis Contract Attorney to Chatham County BOA</p>
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<p>Kevin Hornick Legal review assistance</p>
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	<p>JJ Zanetta Owner Architectural illustrations, visuals, and development-related graphics</p>
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	<p>Cara Isher-Witt Principal GIS, social media, public outreach, assistance with code drafting</p>
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**Contact**  
**CHAD MEADOWS, AICP**  
[chad@codewright.info](mailto:chad@codewright.info)

9 Blue Bottle Lane  
Durham, NC 27705  
T. 919.593.2868  
F. 888.255.7920

CodeWright is a planning and zoning consultancy established in 2014 in Durham, North Carolina, by Chad Meadows, AICP, a planner with over 20 years of public and private sector experience, including 11 years of drafting award-winning development codes across the country. CodeWright is dedicated solely to the preparation of effective development codes, design standards, and growth management strategies for local governments.

Hallmarks of our work products include:

- Simple, concise language
- Clear and efficient review procedures
- Reliance on measurable criteria
- Incentives for preferred forms of development
- Pragmatic flexibility mechanisms
- Place-making to attract and retain a talented labor force
- Extensive use of graphics and imagery
- Consistency with national best practices

Our approach to projects relies on establishing a well-defined process that is iterative and inclusive of differing points of view. We strive to make complex regulatory concepts understandable to everyone. We are committed to providing deliverables that are clear, precise, and predictable through graphics and modern page layout techniques. Our projects often include incentives for preferred development forms, menu-based options for complying with development standards, and flexible methods for achieving compliance with requirements. We strive to understand and explain the economic benefits of land use regulations.

CodeWright is committed to long term relationships with our clients that are based on trust, communication, responsiveness, and value.





**CHAD MEADOWS, AICP**  
PRINCIPAL

CodeWright Planners, LLC  
Durham, NC



**PROFESSIONAL BACKGROUND**

Chad Meadows is founder and principal of CodeWright Planners, LLC. Chad has more than 25 years of experience in land use issues, and works primarily in the areas of planning, zoning, and growth management. He has conducted complex projects as a public sector planner and for public sector clients as a private consultant. Prior to founding CodeWright, Chad was a code drafter and illustrator for a national land use consulting firm. As a public sector planner, he oversaw the Land Development Ordinance Update in Cary, North Carolina, and worked on growth management issues in Monroe County (the Florida Keys). Chad is a frequent speaker at state and national planning conferences on the topics of design, regulatory efficiency, and modern coding techniques. He is a co-author of PAS Report #570, *The Rules that Shape Urban Form*.

**EMPLOYMENT**

- 2014 - Founder & Principal, CodeWright Planners, LLC
- 2003 - Senior Associate, Clarion Associates
- 2001 - Senior Planner, Town of Cary, NC
- 1998 - Senior Comprehensive Planner, Monroe County, FL
- 1995 - Project Manager, Koll Telecommunication Services
- 1993 - Planner (intern), Portland Bureau of Planning
- 1992 - Planner, Guilford County, NC

**EDUCATION**

- 1995 - Master of Urban + Regional Planning, Portland State University
- 1992 - Bachelor of Arts, Geography, University of North Carolina

**CERTIFICATIONS**

- Member, American Institute of Certified Planners
- Legislative Chair, American Planning Assoc., NC Chapter
- Regular member, Durham, NC City/County Board of Adjustment
- Former Chairman, Raleigh, NC Appearance Commission

**RELEVANT PROJECTS**

**Land Use Plans**

- Rockingham County, NC
- Nags Head, NC
- Chowan County-Edenton, NC  
(CAMA Joint Land Use Plan)
- Pinebluff, NC

**Development Codes**

- Atlantic Beach, NC
- Burlington, NC
- High Point, NC
- Camden County, NC
- Elon, NC
- Franklinton, NC
- Monroe, NC
- Southern Shores, NC
- Zebulon, NC
- Pulaski County, IN

**Special Projects**

- Southern Shores, NC
- Town Code update
- Morrisville, NC
- Ongoing UDO updates
- Raleigh, NC
- PDD district application materials
- Spartanburg County, SC
- Area Performance Standards
- Talbot County, MD
- Working Waterfront Standards
- Winston-Salem/Forsyth County, NC
- Code Assessment





**Nealon Planning** is a woman-owned consultancy assisting clients that seek creative ideas to strategically manage change. Established by Meg Nealon, AICP, PLA, a veteran community planner and landscape architect, Nealon Planning approaches each project with the intent of defining a realistic vision for the future. Nealon Planning specializes in developing public policy and design solutions that consider the natural and cultural heritage of each place to achieve economic stability. By balancing the desires of the community with the complexities of economic and environmental conditions, plans are created that are both aspirational and implementable.

<http://www.nealonplanning.com>

PO Box 2552  
Hickory, NC 28603  
nealonplanning.com  
704.904.0219





## Meg Nealon, AICP, PLA

Meg Nealon, a community planner and landscape architect, has been assisting clients in the public and private sectors with complex planning and design efforts for 25 years. She combines her analytical capabilities and knowledge with experience derived from a wide range of projects, which include plans that define sound public policies, establish regulatory frameworks, convey direction through scenario planning and conceptual design plans, initiate change with effective implementation strategies, and are based on inclusive public engagement programs. For most of her career, she was employed by a nationally recognized land planning and urban design firm. As a partner, she led the firm’s public sector planning practice. She has also worked with developers, assisting with master planning, entitlements, and due diligence for large-scale mixed-use developments, and she brings this private sector perspective to planning projects. As the founder of Nealon Planning, she is focused on assisting communities to manage change while respecting the natural and cultural assets upon which their identities and economic opportunities are based.

### EDUCATION

Master of City and Regional Planning, UNC Chapel Hill ('98)

Bachelor of Landscape Architecture, University of Georgia ('91)

### LICENSING

American Institute of Certified Planners

Landscape Architect, NC 827

### AFFILIATIONS / SERVICE

NC Board of Landscape Architects (current Chair)

Charlotte-Mecklenburg Planning Commission (2010-13)

Charlotte-Mecklenburg Historic District Commission (2004-09)

City of Hickory Appearance Commission (2015-Present)

### Relevant Project Experience

- Inspiring Spaces Master Plan, Hickory, NC
- Hickory Public Space Design Guidelines, Hickory, NC
- Fort Mill Mixed-Use Development District, Fort Mill, SC
- Cabarrus County Subdivision Regulations, Cabarrus County, NC
- Statesville Downtown & NC-115 Streetscape/Land Use Master Plan, Statesville, NC
- Ballantyne, Mecklenburg County, NC
- Birkdale, Huntersville, NC
- Central Franklin Area Plan, Franklin, TN
- Holly Springs Village District Area Plan, Holly Springs, NC
- Monroe Downtown Master Plan, Monroe, NC
- Brookberry Farms, Winston-Salem, NC
- Bridgehampton Mixed-Use Planned Development District (MUPDD), Southampton, NY
- Highlands Unified Development Ordinance, Highlands, NC
- Southern Pines Planned Unit Development (PUD) District, Southern Pines, NC

\* Indicates project work completed while employed by LandDesign.



**FIRM CONTACTS**

Brian Starkey  
Director of Landscape Architecture  
☎ 919.532.3240  
✉ brian.starkey@timmons.com

Jon Blasco  
Landscape Architect  
☎ 919.532.3243  
✉ jon.blasco@timmons.com

**OUR MISSION**

To achieve unparalleled understanding of our clients, their businesses and their visions resulting in unrivaled customer service and shared success.



**FOUR NORTH CAROLINA OFFICES:**

- Charlotte
- Greensboro
- Raleigh
- Elizabeth City

**WHO WE ARE**

Recognized for nearly 25 years as one of *Engineering News Record's Top 500 Design Firms*, Timmons Group provides landscape architecture, civil engineering, environmental, geotechnical, GIS/geospatial technology, and surveying services to a diverse client base. Our clients receive more than just the best engineering and professional services available. Our specialized market sector expertise makes us trusted advisors and valuable consultants on our clients' projects — from conception through completion. We provide:

- Landscape Architecture
- Site/Civil Engineering
- Stormwater Infrastructure
- Environmental Services
- Survey & Mapping
- Traffic & Transportation
- Structures & Bridges
- Economic Development
- Right of Way Services
- Geotechnical Engineering & Testing
- Water & Wastewater Engineering
- Geographic Information Systems (GIS)
- LEED® & Envision™ Sustainable Design



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STAFF

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CodeWright Planners  
Response to UDO RFP

# BRIAN STARKEY, PLA, ASLA

## Landscape Architect

### Overview

Brian With over 36 years of experience in landscape architecture, Brian H. Starkey has worked on the public and private sides of the profession.

Working within jurisdictional requirements for community development and commercial land use projects, Brian has led the preparation of planning documents that establish development requirements, define land use, preserve natural and cultural resources and encourage connectivity. He has a breadth of planning experience in communities both large and small.

Brian has helped shaped numerous planning documents, including municipal development codes, development plans for downtown areas, pedestrian and bicycle systems and open space plans for entire communities. He also has prepared master plans for municipal and county facilities, planned unit developments, parks and state forests. Brian's projects have also included the design of public spaces in diverse contextual settings as well as municipal streetscape plans.

Brian's experience includes leadership on several municipal advisory committees and boards. Brian is currently Vice Chair of Raleigh's Environmental Advisory Board. He has previously served six years on each of the following boards:

- **City of Raleigh Appearance Commission**  
Brian chaired the Development Review Committee providing review and advisory comments to Planning Commission and City Council on private development projects
- **City of Raleigh Arts Commission**  
( 2 years as chair )  
Brian led several of the city's first public art installation projects and was a member of the public art master plan committee
- **City of Raleigh Public Art and Design Board**  
( founding member / vice chair )  
Brian helped establish the city's first percent-for-art program for municipal projects

Brian is a board member of **Triangle Artworks**, a regional not-for-profit organization that supports artists and the arts in a five-county region. In addition, Brian is a leader in his professional society, the **North Carolina chapter of American Society of Landscape Architects**, serving in several capacities including Government Affairs Committee chair, President and currently Trustee.

His expertise and knowledge also include sustainable design and planning principles as well as an understanding of what makes communities healthy, vibrant and safe.

### Select Project Experience

- UDO Update, High Point, NC
- Whispering Pines Open Space Master Plan, Whispering Pines, NC
- Zebulon Greenway Bicycle and Pedestrian Master Plan, Zebulon, NC
- Downtown Master Plan, Clayton, NC
- Town Hall Complex Master Plan, Rolesville, NC
- Heritage Wake Forest / Several neighborhood plans
- North Carolina State Fairgrounds Master Plan, Raleigh, NC



### Education

- Bachelor of Science, Landscape Architecture, West Virginia University
- Academy of Building Arts, University of Amsterdam, Amsterdam, NL

### Registration

- Professional Landscape Architect: NC #549

### Experience

- 36 Years

### Affiliations

- American Society of Landscape Architects
- State Board of Landscape Architects
- City of Raleigh Appearance Commission
- City of Raleigh Arts Commission
- City of Raleigh Public Art and Design Board
- City of Raleigh Environmental Advisory Board

*All projects completed with obs landscape architects before merging with Timmons Group in 2018.*

# JON BLASCO, PLA, ASLA

## Landscape Architect

### Overview

Jon Blasco is a landscape architect with more than 6 years of experience and a diverse portfolio of projects for public, institutional, non-profit, and corporate clients developing plans for open space, parks, enhanced landscape, streetscapes and various public spaces. Jon has extensive experience navigating municipal development codes, having taken countless projects through complete city and town review processes. Jon also has permitted landscape and hardscape portions of projects through State Construction. Further, Jon has been involved with numerous university projects requiring internal review and coordination with state and local agencies and development codes.

Jon has been a member of the Town of Garner Planning Commission since July 2017 and currently is the vice chair. He also was an active participant as a steering committee member for the Comprehensive Plan and Transportation Plan updates for the Town of Garner between 2016 and 2018.

This breadth of experiences allows Jon to have a critical eye when evaluating landscape and open space regulations, among others. Jon is an enthusiastic and professional presence throughout the entire design process, working directly with clients and stakeholders to understand the needs of each project.

### Relevant Experience

#### ■ UDO Rewrite Project, High Point, NC

As part of the UDO rewrite for the Town of High Point, we collaborated with CodeWright to test proposed site development requirements. We were given several sites of varying uses and scales within the Town to test the proposed development code. Sites included residential subdivision development, small urban mixed-use development, adaptive re-use redevelopment and large retail. On each site, we prepared design development level drawings, first using the existing development code and then using the proposed code. This exercise was intended to show the ramifications of site development based on the proposed codes and whether the new code provided the intended outcomes. Through this type of testing adjustments to the new code could be made prior to the finalization of the code, limiting future amendments. Unique to this testing process, stakeholders ranged from Town officials to local developers, giving a wider breadth of critique.

#### ■ Town of Garner (NC) Planning Commission

Member (2017 - 2018) , Vice Chairman (2018 - Current)

As a volunteer Planning Commission member, Jon is responsible for reviewing applications for site plans, rezonings and UDO text amendments on a monthly basis. The Commission's task is to decide whether the application is appropriate in the given context of the Town and whether the application adheres to the Comprehensive and Transportation Plans. In his short tenure Jon has become a leader on the Commission and a vocal member. Jon is often looked to for his experience in the development industry and for his expertise as a landscape architect. Jon will be participating in the Town's UDO update process as one of the Commission's representatives, which is expected to begin in summer of 2019.

### Additional Experience

Projects Completed and Reviewed in the following NC Municipalities:

- |               |                  |              |
|---------------|------------------|--------------|
| ■ Raleigh     | ■ Town of Garner | ■ Smithfield |
| ■ Apex        | ■ City of Durham | ■ Zebulon    |
| ■ Cary        | ■ Wake Forest    | ■ Carborro   |
| ■ Morrisville | ■ Wilmington     | ■ Benson     |



#### Education

- Master of Landscape Architecture, NC State University
- Bachelor of Science, Visual Communication, Ohio University

#### Registration

- Professional Landscape Architect: NC #2069

#### Experience

- 6 Years

#### Affiliations

- American Society of Landscape Architects
- Garner Forward Steering Committee
- Town of Garner Planning Commission

*All projects completed with obs landscape architects before merging with Timmons Group in 2018.*

# JEFFREY HOCHANADEL, PE, PTOE

## Transportation Engineer

### Overview

Jeff is a Senior Project Manager responsible for transportation engineering. He is located in Timmons Group's Raleigh office. Jeff brings almost two decades of experience in traffic engineering design and analysis including: traffic signal / electrical wiring design, ITS design, traffic signal timings, capacity analysis, traffic impact analysis, traffic safety studies, data collection, traffic forecasting, and signing. Since 2000, Jeff has managed numerous projects with various public and private entities. He has managed several limited services agreements and projects with the NCDOT (including LSA's for traffic engineering, traffic forecasting, and data collection). He is currently managing traffic engineering on-calls for Wake County Public School System, Town of Swansboro, and the City of Durham.



### Select Project Experience

#### ■ On-Call Traffic Engineering, Swansboro, NC

Timmons Group has works as an extension of Town Staff to complete and review traffic analyses, provide guidance to Staff on transportation issues within the Town, and represent the Town's interests at Board meetings. As part of this agreement, Timmons Group has worked on various projects, including an update to the Town's UDO. Jeff provided revisions and clarifications to required analyses and added a section regarding fee-in-lieu as mitigation for offsite improvement recommendations.

#### ■ Falls of Neuse Area Plan Update, Raleigh, NC

Timmons Group performed an inventory of transportation conditions along the Falls of Neuse corridor from Durant Road to just north of the Old Falls of Neuse / New Falls of Neuse intersection. The inventory identified the existing roadway lane configurations, the presence and absence of pedestrian and bicycle facilities, and block connectivity. The inventory was used to create network connectivity recommendations as well as aide in the completion of the network transportation analysis. Utilizing information provided by the City and collected in the field, the transportation analysis analyzed the existing and projected future conditions along the Falls of Neuse corridor.

#### ■ Fairview Park (Formerly Westlake Subdivision), Raleigh, NC

Timmons Group was responsible for the completion of traffic management plans, pavement marking plans, and signing plans for off-site roadway improvements required due to the construction of the proposed 100-lot Fairview Park residential development in Cary, NC. The project included widening of West Lake Road and Ten Ten Road to Town of Cary and NCDOT design standards and requirements. Due to the proposed roadway widening, traffic signal / electrical wiring detail plans were completed for the existing traffic signal at West Lake Road and Ten Road. ITS communication cable routing plans were completed to ensure a continuous connection to the existing Town of Cary Signal System. Coordinated with Town of Cary and NCDOT Staff throughout the design process. Design plans were reviewed and approved by the Town of Cary and NCDOT.

### Education

- Master of Civil Engineering, North Carolina State University, 2000
- Bachelor of Science, Civil Engineering, North Carolina State University, 1998

### Registration

- Professional Engineer: NC, VA, SC, GA
- Professional Traffic Operations Engineer: NC

### Experience

- 18 Years

### Affiliations

- North Carolina Section Institute of Transportation Engineers (NCSITE)



# CHRIS PETREE, PE, DBIA

## Water / Wastewater Engineer

### Overview

Chris is a Senior Project Manager with the Water Infrastructure Group and has more than 12 years of experience in the planning, evaluation and design of water and wastewater infrastructure. He is highly experienced in water and wastewater treatment, storage, pumping stations and large-scale hydraulic modeling. Chris has completed several fast-paced utility projects for both public and private clients, utilizing both traditional and design-build project delivery methods. He works closely with the design team to create innovative solutions and transform them into reality. He earned his BS in Mechanical Engineering from the Virginia Military Institute and is a DBIA-certified Design-Build Professional.

### Select Project Experience

#### ■ Carillon Durham Pump Station, Durham County, NC

As part of total civil engineering design services for the Carillon Durham Assisted Living Community, Timmons Group provided the design of the on-site gravity collection network, on-site wastewater pump station and force main as well as a short portion of off-site gravity main. The pump station was designed as a rail-mounted submersible station with a pumping rate of 40 gallons per minute. The 2" PVC force main discharges to a new manhole approximately 210 LF from the station. The new 8" gravity sewer extends approximately 250 LF to connect to an existing manhole.

#### ■ Caroline Street Sanitary Sewer Improvements, Fredericksburg, VA

Timmons Group performed this PPEA-procured, design-build project for the City of Fredericksburg to provide an improved level of sanitary sewer service within the main business district of the City. The project included the design of approximately 3,000 LF of new and rehabilitated gravity sewer, including a crossing beneath a CSX Railway overpass. Due to its location within the busy main street business district, the project required close coordination and public outreach with businesses and residents along the project alignment. The Timmons Group design team and construction contractor also paid close attention to maintenance of service and construction sequencing requirements throughout construction.

#### ■ Nature's Crossing Technology Center, City of Waynesboro, VA

Timmons Group is currently designing the water and sewer infrastructure necessary to serve the Nature's Crossing industrial park, which includes a 500,000 gallon elevated water storage tank, water booster pump station, waterline design and 3,500 LF of 10" gravity sewer to serve the park. Timmons Group is performing the necessary surveying, geotechnical and environmental permitting to get the project approved and will be providing Program Management and Construction Management services when the project goes to construction.



#### Education

- Bachelor of Science, Mechanical Engineering, Virginia Military Institute, 2006

#### Registration

- Professional Engineer: NC

#### Experience

- 12 Years

#### Affiliations

- Society of American Military Engineers
- Water Environment Federation







Tetra Tech is a leading provider of consulting, engineering, and technical services with more than 16,000 associates worldwide. Our strength is in collectively providing integrated services and delivering the best solutions to meet our clients' needs. We understand water resource management science, policy, and implementation like no other consultant.

Established in 1996, Tetra Tech's Research Triangle Park (RTP) office staff have strong roots and unmatched expertise in North Carolina. Tetra Tech's leadership in water resources management stems from extensive work with local communities and utilities to assess and manage their water infrastructure and watershed resources effectively. Over the past decade, this work has increasingly focused on stakeholder-driven integrated water resources planning (water, wastewater, and stormwater), water reuse, green infrastructure, and water-food-energy nexus issues. For this project, Tetra Tech will leverage staff with deep root and local experience in Chatham County:



- Multiple Jordan Lake water quality modeling and watershed management projects over the past decade including developing the most recent water quality model and establishing best management practices for nutrient load reductions for NCDEQ, and collaborating with Chatham County and public and private sector stakeholders on alternative strategies for Jordan Lake nutrient reduction rule compliance as part of TJCOG's Jordan Lake One Water (JLOW) association.
- Support of Chatham County's efforts to plan and implement sustainable water and wastewater systems. This includes Tetra Tech's work as a subcontractor on the County's Water and Wastewater Master Plan as well as our longtime consulting support to Chatham County Schools.
- Work to enhance and protect one of Chatham County's most valued assets, the Rocky River, which lies entirely within the county. Past work included characterizing the watershed and identifying the greatest impacts and threats to watershed functions, followed by assessing and prioritizing management measures.

### **Stormwater, Low-Impact Development (LID) and Green Infrastructure (GI) Code Development**

Our team of planners and policy analysts has extensive experience assisting federal, state and local governments create plans and implement policies which support, require or incentivize GI approaches which align with local land use goals while complying with regulations. Our experience spans from the entire policy spectrum – from NPDES MS4 regulation and guidance development to the implementation of local stormwater management and GI plans. We have conducted nearly 50 GI policy, plan and regulation reviews for localities around the country.

### **Small-Community Water and Wastewater Management Program Development**

In addition to our previous work in support of Chatham County's water and wastewater management efforts, our staff have decades of experience in the development of standards, guidance and program capacity for the sustainable management of decentralized systems. We will help Chatham County craft a UDO that aligns the policy objectives of the Comprehensive Plan with concerns about increased use of decentralized water infrastructure in the county and its sustainable, long-term management.



Victor D’Amato is a registered professional engineer with 25 years of water quality and water resources planning and engineering experience. He currently leads Tetra Tech’s RTP-based engineering group, which focuses on integrated water, wastewater and stormwater planning, design and management. Mr. D’Amato has internationally recognized expertise in innovative water infrastructure planning and implementation approaches, including the use of distributed and decentralized systems (e.g., satellite reuse and sewer mining, sustainable onsite systems, utility-managed cluster wastewater systems), integrated water reclamation and waste-related resource (energy, carbon, nutrients) recovery and reuse at multiple scales, and aggressive energy management programs. A Chatham County resident, Mr. D’Amato served on the Environmental Resources Advisory Committee between 2009 and 2019 and has worked on multiple local projects for Chatham County, Chatham County Schools, the Rocky River Heritage Foundation, and area clients.

RELEVANT EXPERIENCE

**Chatham County (NC) Water and Wastewater Master Plan. 05/18-02/19.** Project Manager and lead engineer for Tetra Tech’s role as a subcontract teaming partner on a project to develop a countywide water and wastewater master plan. Tetra Tech’s role in the project focuses on incorporating One Water concepts into the master plan and, in particular, identifying and leveraging opportunities to integrate water and wastewater infrastructure for innovative and mutually reinforcing resource recovery and reuse for agriculture and other countywide efforts that enhance rural/urban economic development vis-à-vis the county’s recently completed Comprehensive Plan. As part of this effort, Tetra Tech located and characterized large decentralized systems in Chatham County, developed cost curves for decentralized land application systems near Siler City and helped Siler City plan to generate a high-value compost product at their wastewater treatment plant to support local farmers by minimizing nutrient imports to and runoff from farms.

**Moncure Megasite, Moncure Holdings, LLC. 08/16–11/16.** Provided engineering and other technical support for a county ordinance change to enable development of a priority economic-development effort to attract a high-tech manufacturing facility to rural Chatham County, NC.

**Seaforth High School Wastewater System Design, Chatham County Schools (Pittsboro, NC). 12/16-02/19.** Engineer-of-Record for new, relatively large onsite wastewater treatment and reuse system to serve a new 1,400 student high school in a rapidly growing area in northeastern Chatham County, NC. Because the site is about a mile away from Jordan Lake, a nutrient-impaired drinking water supply for communities in North Carolina’s Triangle

EDUCATION

M.S.E.E., Water Resources Engineering, University of North Carolina at Chapel Hill, 1994

B.S., Civil Engineering, Penn State University, 1991

AREAS OF EXPERTISE

- Distributed water reclamation, resource recovery/reuse
- Water and wastewater treatment system energy management
- Watershed-scale nutrient management
- Sustainability planning and design
- Wastewater treatment process and hydraulic engineering
- Applied environmental research and technology development
- Climate change adaptation
- Water conservation and loss reduction
- Outreach and training
- Project/contract management

LICENSES/REGISTRATIONS

Professional Engineer – NC, WV, SC, VA

PROFESSIONAL AFFILIATIONS

Water Environment Federation - Small Communities Committee (current Vice Chair); Technical Practices Committee

National Onsite Wastewater Recycling Association

North Carolina Water Resources Association – President Elect (2015), President (2016), Past President (2017), Programs Committee

Chatham County (NC) Environmental Review Advisory Committee (2009-2019), Chair (2012-2013)

YEARS OF EXPERIENCE

Tetra Tech: 11 Total: 25

region, nutrient treatment, resource recovery and reuse are important elements of the project. Scope includes site evaluation, engineering design and construction documents.

**Chatham County Schools Wastewater System Operational Consulting (Chatham County, NC Schools).** 4/16-present. Providing on-call engineering services to support client's operational contract, including operator training, system performance troubleshooting and optimization, data review, design tasks and related engineering support of operation, maintenance and compliance reporting for four discharging and non-discharging wastewater systems. Prepared multiple system condition assessments and State funding applications. Under separate contracts, Tetra Tech has designed and managed construction of several wastewater system upgrades at Bennett, Silk Hope and Chatham Central schools.

**Siler City Flow Monitoring (Rocky River Heritage Foundation).** 5/15-9/15. Managed study to provide engineering recommendations and probable costs for accurately measuring a range of river flows in order to confirm required dam releases needed to assure that water quality objectives including dissolved oxygen levels and ecological integrity are maintained.

**North Carolina Nutrient Technical Support, EPA-OWOW.** 10/14–06/17. Managed project to help the North Carolina Division of Water Resources finalize guidance on programs for local governments to reduce nutrient loading attributed to malfunctioning septic systems and discharging onsite systems and to develop a methodology to account for nutrient attenuation due to landscape characteristics for making nutrient reduction practice credits more location specific in the North Carolina Piedmont (Falls and Jordan Lake watersheds).

**North Carolina Piedmont Nutrient Load Reducing Measures Technical Report, Piedmont Triad Regional Council, NCDWQ.** 05/13–09/13. Project manager for development of technical report addressing six categories of stormwater and onsite wastewater nutrient load reduction measures intended to inform management strategies for existing developed lands in the Falls and Jordan Lake watersheds. The report identifies load-reducing measures, evaluates the feasibility and nutrient reduction benefits of the measures, and develops accounting for the measures. In addition, the report recommends methods and provides tools to help regulators, planners, and engineers estimate load reductions associated with specific designs across a range of likely field conditions using readily available site data.

**Jordan Lake Watershed Management (Triangle J Council of Governments)** 5/12-6/13. Managed inventory and analysis of non-discharging (onsite septic and cluster) systems in the watershed to determine locations of parcels which are currently served by onsite and cluster systems, and the specific locations of onsite and cluster soil dispersal areas within parcels, along with a refinement of estimates of net nutrient delivery from these systems using the latest and best available science to better inform water quality modeling.

**Washington County (MN) Septic System Risk Assessment Model.** 03/18-present. Lead engineer and technical specialist supporting a project to develop a spatial risk assessment model to help determine the relative and absolute risk to public health, ecological health and water quality associated with individual onsite wastewater treatment systems (OWTS) in Washington County. The project includes initial spatial data identification and collection, stakeholder engagement, risk factor identification and incorporation into a spatial model, and preparation of deliverables that allow stakeholders to assess the risks of individual OWTS, to identify areas with problematic OWTSs, and to support decision-making vis-à-vis management of OWTSs to mitigate risks.

**Town of Lake Santeetlah Sewer Feasibility Study** 7/15-3/17. Engineer-of-Record and Project Manager for project to develop a plan for providing Town-wide wastewater management considering a range of centralized and decentralized wastewater treatment alternatives. Includes detailed evaluation of existing parcels for wastewater dispersal, conceptual design and cost estimation, ownership and managerial evaluation, financial viability analysis, funding source evaluation and acquisition of funding, and negotiation assistance and policy development.

**Develop Approaches to Reduce Maryland's Onsite Sewage Disposal System (OSDS) Nitrogen Loads, MDE/USEPA Region 3 Chesapeake Bay Program.** 08/18-present. Project Manager and lead engineer for a project supporting the State of Maryland's Phase III Chesapeake Bay TMDL Watershed Implementation Plan (WIP) strategy for reducing nitrogen loading from OSDS by developing, evaluating and comparing options based on cost per unit load reduction and additional co-benefits (e.g., impacts to local drinking water sources and local water quality and resilience vis-à-vis climate change). Products of the analysis will include a prioritized list of nutrient reduction projects which could include sewerage, clustering and advanced onsite treatment, among others, based on spatially differentiated factors. Recommendations for the development of a data management framework to accommodate OSDS data and a user-friendly access interface will also be developed.

**When to Consider Distributed Systems in an Urban and Suburban Context (WERF, U.S. EPA-ORD)** 8/08-3/10. Principal investigator and project manager for project that identified and analyzed emerging applications for decentralized systems in areas where traditional sewerage options are available. Developed a website, database of case studies, detailed case study summaries, four white papers, and a multi-criteria analysis tool for making water infrastructure decisions.

**Decentralized Wastewater Treatment Technologies, System Design, and Management Strategies Educational Program, CTIC, EPA.** 09/10–12/10. Developed curriculum and presented three 1-hour webinar presentations on decentralized wastewater system design (parts 1 and 2) and integrated water resource management. <https://engineering.purdue.edu/watersheds/webinars/wastewater2010/>



Bobby Tucker is a licensed engineer with over 12 years' experience in stormwater and onsite wastewater planning, design, and program development throughout the U.S. and beyond. A Chatham County farmer since 2008, he has become a lead strategist with Tetra Tech regarding the Food-Water nexus, and currently runs a small design-build company that provides engineering, architecture, and regenerative-agriculture services to farmers and "eco"-based developments. His focus areas with Tetra Tech include Low-Impact Development and green infrastructure stormwater management, onsite wastewater design for water and nutrient reuse, integrating water resource planning with local/regional agriculture and food systems, and generally providing holistic solutions to complex environmental and municipal challenges. The culmination of his diverse experiences and background has positioned him to provide innovative approaches to water resource management, while creating multi-functional infrastructure options designed for efficiency and long-term community resiliency.

#### RELEVANT EXPERIENCE

**Advancing Green Infrastructure and LID, City of Raleigh, NC (2015-present).** Engineer and facilitator as part of strategic capacity building effort to implement green infrastructure and LID throughout the City. The project includes a code review and revision to eliminate barriers and build incentives; new design templates for roadways; a cost-effectiveness tool; site planning factsheets; and operation and maintenance guidance. Principal designer in development of new standard details for green infrastructure practices installed within City right-of-ways.

**Onsite Wastewater Support, Chatham County Schools (2011-Present).** Project engineer supporting repairs, upgrades, and planning for the school system's onsite wastewater systems. Tasks include retrofits to recirculating sand filters at Bennett Elementary, preliminary engineering evaluation for replacement system at Silk Hope School, as well as lagoon liner repairs for Silk Hope's existing spray dispersal system. Tetra Tech is currently under an on-call contract with Chatham County Schools for engineering services.

**Local Foods Local Places, US EPA (2016-present).** Lead technical expert and facilitator for several community workshops focused on strategic

#### EDUCATION

M.S., Biological and Agricultural Engineering, North Carolina State University, 2007

B.S., Environmental Engineering, North Carolina State University, 2004

#### AREAS OF EXPERTISE

- Watershed management and analysis
- LID/GSI stormwater planning and engineering
- Stormwater master planning and program development
- Cluster/conservation-based development
- Regenerative agriculture and urban agroecology
- Stormwater retrofit screening, prioritization, and design
- Hydrologic and hydraulic studies
- BMP technical specification development
- Distributed wastewater treatment process and hydraulic engineering
- Watershed and water quality modeling
- Holistic Management

#### LICENSES/REGISTRATIONS

Professional Engineer, North Carolina (040377)

NC Certified Professional in Low Impact Development

#### PROFESSIONAL AFFILIATIONS

American Ecological and Engineering Society

#### OFFICE LOCATION

Research Triangle Park, NC

#### YEARS OF EXPERIENCE

Tetra Tech: 11 Total: 12

planning to create more economic opportunities for local farmers and businesses, improve access to healthy, local food, and to revitalize downtowns, main streets, and neighborhoods. Program services included stakeholder engagement/organization, planning and facilitation of a two-day community workshop, and development of a final report that included detailed action plans and a list of available funding opportunities.

**NCDOT Reimagining Nutrient Management Pilot Project (2017-present).** Helping design and lead the facilitation of an alternative strategy for achieving Falls and Jordan Lake nutrient reduction requirements. The pilot project, which includes a diverse group of stakeholders from the Wake County community of Falls Lake, NCDOT, and NC DEQ, is a vision-based approach utilizing the Holistic Management framework as a planning and decision-making tool to achieve triple-bottom line (e.g., 'One Water') goals. The deliverable will include a proposed alternative framework to NC DEQ that can support community-based watershed management initiatives that equally value quality of life and economic development.

**Building Blocks for Sustainable Communities Technical Assistance – US EPA (2015).** For USEPA Office of Sustainable Communities, helped conduct community research and workshop presentations/facilitation to address local flooding and provided community outreach for workshops. Technical assistance included participating in on-site tours to review representative problem areas and green BMP opportunity sites; presenting to elected officials; conducting all-day workshop with staff, elected officials and key stakeholders; developing high priority action plan; and writing a Next Steps Memo for the elected board's consideration.

**Green Infrastructure Community Assistance Program, USEPA (2012 – present).** As a part of the USEPA's 2012-2014 Green Infrastructure Community Partners Project, providing technical assistance to communities throughout the country. Led and assisted with various GI implementation concepts and designs for communities in Sanford, ME, Atlanta, GA, Norfolk, VA, Albuquerque, NM, Falls River, MA, and Spartanburg, SC. Specific project needs included CSO reductions, urban redevelopments, urban agriculture, etc., and technical assistance work ranged from conceptual site layouts, construction detail development, preliminary calculations and construction cost estimates, and hydrologic modeling studies.

**Northeast High School Reclaimed Wastewater, Chatham County Schools (2017-present).** Lead design engineer for the proposed high school's onsite wastewater system. All wastewater generation will be treated onsite to reclaimed water standards and reused for landscape irrigation and toilet flushing. System components included recirculating sand filters and up-flow wood chip beds for advanced nutrient removal, 130,000 gallons of underground wet-weather storage, and multiple duplex pump controls that strategically redistribute treated wastewater for toilet flushing, ball field irrigation, and a spray irrigation dispersal field.

**Green Infrastructure Design, Alpharetta, GA. (2016-present).** Lead project engineer for several stormwater retrofits that include 38k-gallon rainwater harvesting and reuse system, bioretention, regenerative stormwater conveyance systems, and waste containment implemented as part of Foe-Killer Creek Watershed Improvement Plan. Also lead the cost-analysis in support of City's policy revisions for green infrastructure that evaluated stormwater management costs for several re-development scenarios, which supported the cost-benefit of GI stormwater management in urban redevelopment compared to conventional approaches.

**Green Infrastructure Retrofit Design, Gwinnett County, GA (2018-present).** As part of an on-call contract for the County, led the design and engineering of a large stormwater retrofit project receiving runoff from a large high school. The project site was located along a flood plain, the design included two bioretention cells, a large detention wetland, and integration of outdoor classrooms and trails throughout the site. Goals for the project were to maximize water quality treatment and peak flow reduction and integrate the BMP design/outfall locations into a previous stream restoration design for the adjacent creek.

**GI and Restoration Design, City of Griffin, GA (2013 – present).** Lead design engineer for two stormwater retrofit and stream restoration projects. First site involved conversion of an eroded channel into a constructed wetland designed to maximize peak flood reduction within a city-owned cemetery. The second project, located adjacent to a public school, involved two BMP retrofits (a vegetated dry detention basin and a series of bioretention cells) designed in conjunction with a stream restoration/culvert replacement. Both projects will be constructed to address various urban runoff water quality concerns as identified in a previous feasibility study.



Ms. Williams has worked in the water resources and land use planning and policy field for 25 years. She has assisted numerous localities across the country to incorporate green infrastructure principles and practices into private property and public spaces. Ms. Williams has coordinated and facilitated many public workshops and charrettes (e.g. Los Angeles, CA; Norfolk, VA, etc.) to help locality staff and community stakeholders understand the benefits of green infrastructure and help to select and/or design practices most suited to achieve community-developed objectives such as combined sewer reduction, flooding abatement, water quality protection, public health improvement, climate change resiliency, heat island reduction, and water conservation.

### RELEVANT EXPERIENCE

**City of Santa Fe Program Evaluation and Stormwater Management Strategic Plan, City of Santa Fe, NM.** Ms. Williams is currently developing a Stormwater Management Strategic Plan to ensure that the City is maximizing program efficiency while meeting regulatory requirements and level of service stormwater management goals. Ms. Williams conducted in-depth interviews as well as a code review and will make recommendations regarding how to optimize the management of stormwater quality and quantity while supporting the City's other goals, i.e. energy efficiency, sustainability, and climate resiliency. The final will also include a financial planning spreadsheet model to support recommended stormwater management strategies.

**Code Review and Ordinance Development, Detroit Water and Sewerage Department.** Reviewed city codes, ordinances and planning documents and developed recommendations to remove barriers to use of green infrastructure. Writing the city's first post-construction stormwater ordinance and updating the codes to provide additional support, incentives, and requirements to implement multi-functioning landscapes. Code development is being implemented as part of the City's CSO Long Term Control Program.

**City of San Marcos Green Infrastructure Code Updates and Manual Development, City of San Marcos, TX.** Ms. Williams reviewed the draft CodeSMTX zoning and subdivision regulations to determine how stormwater management and green infrastructure could be required, supported and incentivized in the City of San Marcos. Ms. Williams developed new code language and made recommendations for code updates. In addition, Ms. Williams is currently assisting the City with the update of the existing Low Impact Development Guidance Manual to reflect new code requirements and state of the practice updates for the planning, design and implementation of LID BMPs.

**Update and Revision of Conservation Subdivision Land Use Pattern, San Antonio River Authority.** Assisted SARA in update and revision of the City of San Antonio's existing conservation subdivision use pattern in the San Antonio Unified Development Code. Worked with SARA, City and outside stakeholders to update the language to include more incentives, specific conservation area management requirements and revised

### EDUCATION

M.A., Urban Planning and Environmental Planning, University of Virginia, 2002

B.A., Biology, Randolph-Macon College, 1993

### AREAS OF EXPERTISE

- Integrated water resource planning
- LID/GI code review and writing
- Permitting
- Technical writing
- Green infrastructure planning
- Stakeholder involvement
- Facilitation
- Guidance development
- Facility inspections/audits

### YEARS OF EXPERIENCE

Tetra Tech: 16 Total: 25

development to encourage the conservation of valuable open space in the City and the Extraterritorial Jurisdiction outside the City. Wrote multiple drafts of the code language for use during informal stakeholder meetings and the City's subsequent formal public involvement process. This effort was done in conjunction with Tetra Tech's assistance to SARA to develop a new LID/voluntary sustainable land-use and stormwater management alternative ordinance that combines the principles of LID and Natural Channel Design Protocols (NCDP).

**Green Infrastructure Code Review for Hillsborough County, FL.** On behalf of USEPA Office of Wetlands, Oceans and Watersheds Tampa Bay Estuary Program, conducted a code and manual review for the County of Hillsborough to determine what barriers to green infrastructure existed and to make recommendations for improvement to these codes and accompanying manuals.

**Green Infrastructure Municipal Technical Assistance, USEPA Office of Watershed Management.** Through USEPA's Green Infrastructure Community Partners program, conducted reviews of codes, ordinances and policy documents to locate barriers to the implementation of green infrastructure practices and principals for multiple municipalities around the country, including Spartanburg, NC, City of Dallas, TX, and multiple municipalities in upper Michigan. During these projects makes recommendations for improvements for removing these barriers in the code and guidance documents as well suggestion for how to better promote and finance green infrastructure to the development community. The technical assistance included both reports and charrettes with local staff to educate them about the applicability and benefits of green infrastructure.

**Green Infrastructure Municipal Technical Assistance, USEPA Office of Watershed Management.** Through USEPA's Green Infrastructure Community Partners program, conducted reviews of codes, ordinances and policy documents to locate barriers to the implementation of green infrastructure practices and principals for multiple municipalities around the country, including Spartanburg, NC, City of Dallas, TX, and multiple municipalities in upper Michigan. During these projects makes recommendations for improvements for removing these barriers in the code and guidance documents as well suggestion for how to better promote and finance green infrastructure to the development community. The technical assistance included both reports and charrettes with local staff to educate them about the applicability and benefits of green infrastructure.

**Lower Los Angeles River Revitalization Plan, Los Angeles County Flood Control District.** Ms. Williams was a primary technical lead in the development of a revitalization plan for the Lower Los Angeles River, a total of river length of 19 miles. The plan was developed in response to California Assembly Bill 530 (AB530), which requires the creation of the Lower Los Angeles River Working Group (Working Group) and the development of a community-based watershed revitalization plan that addresses the unique and diverse needs of the Lower Los Angeles River and the communities. Ms. Williams worked with the diverse team of planners, landscape architects, scientists, along with a large number of community organizations to develop an innovative plan that is a community-centric, watershed-based revitalization plan. To address the myriad interdependent technical challenges, Ms. Williams led the analysis of the how river revitalization would impact river communities and improve public health and other socio-economic conditions while promoting equitable private investment. Ms. Williams coordinated a local plan element committee to consider these issues, provide input and eventually reach consensus on 155 watershed-based, multi-benefit revitalization strategies to implement within the corridor.

**Resiliency Planning Technical Assistance, City of Los Angeles, CA.** Lead facilitator in a stakeholder design charrette developed to solicit community input regarding the use of green infrastructure practices to create neighborhoods resilient against climate change. The charrette explored options for using green infrastructure practices in transportation corridors to capture, treat and store stormwater for use and to infiltrate runoff into the groundwater for use later as drinking water while also providing other community resiliency benefits such as shade and energy reduction. Also facilitated a discussion among participations regarding how stakeholders can work more collaboratively to meet other local goals such as neighborhood enhancement, accessibility, public safety, transportation alternatives, biodiversity, environmental justice, and others. The outcome of the charrette was renderings for three streets within neighborhoods within the City each having very different resiliency and community goals.

**Los Angeles Green Infrastructure and Climate Resiliency Charrette, USEPA.** Assisted City of Los Angeles in evaluating how green infrastructure could be used to meet regulatory objectives while increasing water reuse, improving stormwater management and water quality and addressing resiliency issues. Coordinated and facilitated a charrette of local stakeholders in the region to discuss specific climate-change and water security initiatives and mandates to further integrated water planning efforts.



The Brough Law Firm, PLLC was founded by Michael B. Brough in 1988 in Chapel Hill, North Carolina. The firm has four lawyers and supporting administrative staff in Chapel Hill and Concord, North Carolina. The firm's practice is primarily devoted to representing local governments in state and federal court in areas of land use law, civil rights defense, employment law, general representation, and litigation and appeals. In addition, the firm also assists numerous individuals and corporations in a broad range of municipal and land use matters, such as seeking development permits or engaging in litigation at the trial and appellate levels.

The Brough Law Firm, PLLC has been named a Tier 1 firm in the areas of Land Use and Zoning Law by *US News and World Report* for 2016.

The firm serves as general counsel for the Towns of Aberdeen, Cameron, Carrboro, Carthage, Hillsborough, Hoffman, Hope Mills, Oakboro, Pinebluff, Robbins, Stem, and Vass; the Cities of Hamlet, Roxboro and Trinity; and the Villages of Foxfire Village and Whispering Pines. The firm also provides litigation services for the Town of Cary, and regularly assists numerous other cities and counties throughout the State in matters ranging from ordinance drafting to litigation.

The firm's private clients include individuals, citizen groups, businesses and corporations, and commercial and residential developers. We advise and represent these clients on a broad range of planning, zoning and land use related issues such as rezonings, variances, special and conditional use permits, annexations, condemnations, vested rights, subdivision development, historic district designations, and the N.C. Coastal Area Management Act, as well as other land use and environmental laws.

The members of the firm have extensive experience in litigation and appellate matters, and have argued over 120 cases in the N.C. Supreme Court, N.C. Court of Appeals, and the United States Court of Appeals for the Fourth Circuit. In addition, various members of the firm have taught on the adjunct faculties at the University of North Carolina School of Law, North Carolina Central University School of Law, Duke University School of Law, Campbell University School of Law, Elon University, National Institute for Trial Advocacy, and at the Institute of Government in Chapel Hill. Collectively, the members of the firm have published 12 books and monographs, and over 80 articles (including Continuing Legal Education papers) on various areas of law in which the firm practices.



## ALBERT M. BENSHOFF



Al Benshoff graduated from the University of Michigan with a Bachelor of Science in Natural Resources. He briefly worked as a contractor for the U.S. Department of the Interior, Bureau of Outdoor Recreation (now the National Park Service) before working in environmental compliance for National Steel Corp. He later received a Master's Degree in Regional Planning from the University of Michigan.

For many years, he worked as a planner, first for the Beaufort County, S.C. Planning Commission, and then for the City of Cary, N.C. where he oversaw the adoption of the first Unified Development Ordinance, the construction of the first five miles of greenway, and several comprehensive plans. While working in Cary, he attended the evening law program at N.C. Central University School of Law, in Durham, NC.

After receiving his law degree, Mr. Benshoff became the City Attorney for Lumberton, N.C. and then served as the City Attorney for Concord, N.C. Some of his accomplishments in Concord include litigating a major zoning challenge to the new Cabarrus County jail, rewriting the Concord Development Ordinance, obtaining and defending Inter-Basin Transfer Permits from the Yadkin and Catawba Rivers to Concord and Kannapolis, assisting with the redevelopment of "Brownfield" sites, and organizing community development and the construction of the joint Albemarle-Concord- Kannapolis water pipeline.

Mr. Benshoff provides general legal counsel to the Towns of Oakboro, Mocksville and Stanfield, as well as the City of Sanford Board of Adjustment and Historic Preservation Commission. He has worked with other local government clients, including the Towns of Aberdeen, Carthage, Carrboro, Creedmoor, Selma, Holly Springs, Pinebluff, Robbins, the Lumberton Convention and Visitors Bureau, the Cities of Kannapolis and Roxboro, and the Village of Pinehurst. He practices in the areas of real estate development, code enforcement, contracts, economic development, annexation, land use and zoning, eminent domain, housing authorities, personnel, and community development, including U.S. Housing and Urban Development programs.

Mr. Benshoff is licensed in the North Carolina state courts and U.S. District Courts of the Eastern, Middle and Western Districts of North Carolina, as well as the U.S. Fourth Circuit Court of Appeals. He is a member of the North Carolina Bar Association, where he is a member of the Zoning, Planning and Land Use section and on the Board of Directors of the Government & Public Sector section. He also serves as the President of the Board of Directors of two non-profit corporations providing housing to low income seniors in Cabarrus County, the Methodist Episcopal Senior Housing, Inc. and Housing Episcopal Methodist Presbyterian, Inc.

# DEPICTION

100 43rd Street - Suite 211  
Pittsburgh, PA 15201

www.depictionillustration.com  
team@depictionillustration.com

## Firm Profile

Depiction is a collaborative studio offering architectural renderings based in traditional media. Serving as one of only a few traditional media studios in the country, our artists work hand-in-hand with design professionals, developers, cities, and other organizations to tell the story of their projects.

Our artists have over three decades of experience, which allows us to identify and craft the visual narrative and present it through artful, engaging imagery. We pride ourselves in our ability not only to serve as an architectural visualization service, but to collaborate as part of the design team, inventing architecture and conceptualizing the public realm.

The illustration process has evolved into one of flexibility, efficiency, and collaboration. Having expertise in traditional media has provided our artists to tailor technology into a digital workflow which is intended to reflect the qualities of traditional media. This allows us to deliver hand-crafted visuals, both quickly and economically in a fast-paced, ever-changing environment.

### SELECTED PROJECT EXPERIENCE

#### MIXED USE

Central Riverfront, Cincinnati, OH  
Alexander Street Waterfront, Yonkers, NY  
Downtown Yonkers Plan, NY  
Strategic Growth Area, Virginia Beach, VA

#### URBAN NEIGHBORHOODS

Recovery Plan, Galveston, TX  
West Park, Tulsa, OK  
Craylands Redevelopment, Basildon, UK

#### NEW TOWNS AND SPECIAL DISTRICTS

Megagorod, Moscow, Russia  
Federal District, Moscow, Russia  
Ludhiana Township, Punjab, India  
Erie Station Village, West Henrietta, NY  
Silvertip Village, Canmore, Alberta, Canada  
Ellis, Tracy, CA,  
East Garrison, Monterey County, CA



**JOSEPH SKIBBA, ASAI**  
OWNER

A graduate of Madison Area Technical College (Madison, WI) with a degree in applied arts with an emphasis in print production and illustration, Joe has been engaged in architectural rendering since 1997. He also studied computer graphics at the University of Wisconsin and is proficient in all of the major digital design software. His passion for traditional media and enthusiasm for new technologies has pushed his career in a direction that blends the best of both worlds.

#### CAREER HISTORY

Anderson Illustration Inc.  
1997-2005 Madison, WI

Urban Design Associates  
2005-2013 Pittsburgh, PA

Skibba Illustration, LLC  
2013-2017 Pittsburgh, PA

DEPICTION, LLC  
2017-Present Pittsburgh, PA

#### AWARDS + RECOGNITION

American Society of Architectural Illustrators  
Award of Excellence 2008, 2009, 2011,  
2013, 2014, 2015, 2016, 2017

Congress of New Urbanism  
Art of the New Urbanism Exhibition  
Selection 2012



**JJ ZANETTA, ASAI**  
OWNER

JJ graduated with a degree in Art Education from Mercyhurst University. His interest in drawing and architecture led him to pursue a career in architectural illustration. In 2007, he received his first opportunity to work as an illustrator, and in 2009 he began his own practice. He has extensive experience in urban design and architecture projects of all scales, and has served an important role on design charrette teams creating conceptual renderings on site.

#### CAREER HISTORY

Urban Design Associates  
2007-2009 Pittsburgh, PA

Zanetta Illustration, LLC  
2009-2017 Pittsburgh, PA

DEPICTION, LLC  
2017-Present Pittsburgh, PA

#### AWARDS + RECOGNITION

American Society of Architectural Illustrators  
Award of Excellence 2015, 2016, 2017

The Institute of Classical Architecture  
John Russell Pope Award  
for Urban Planning 2015

Congress of New Urbanism  
Art of the New Urbanism Exhibition  
Selection 2012

## CARA ISHER-WITT, AICP, MPA



Both& Planning is a Durham, NC-based woman-owned LLC specializing in land use planning, GIS mapping and analysis, public outreach, and zoning services for local government clients. Cara Isher-Witt, AICP, founded Both& Planning in early 2017.

Both& is named in recognition of the key challenges in planning - making room for **both** economic development **and** conservation; **both** preparing for growth **and** preserving quality of life for long-time residents; seeking **both** high-quality housing **and** ensuring there are choices for people in all stages of life.

Both& seeks to achieve every client community's goals in a balanced, thoughtful way through both rigorous research and innovative problem-solving.

### KEY SKILLS

Writing, editing, and publishing beautiful, functional documents

GIS mapping and analysis that tells a story

Web design and management that keeps communities informed

Developing meaningful and actionable public engagement strategies

Racial equity training from REI and Dismantling Racism Works

Cara Isher-Witt is founder and principal of Both& Planning. She has worked in a broad range of issue areas, including land use planning, zoning, GIS, economic development, planning for the arts, and housing policy. While in graduate school, Cara served for two years as editor-in-chief of the Carolina Planning Journal, a publication of NC-APA and the University of North Carolina at Chapel Hill.

Cara's unique combination of education and experience enables her to translate the complexities of planning and policy into highly accessible and practical tools for all audiences. She uses her skills in writing, editing, graphics and illustration, and mapping to create code assessments, development codes, and plans that are not only easy to understand, but visually appealing and enjoyable to use.

### EMPLOYMENT

2017 - Both& Planning - Founder and Principal

2015 - CodeWright Planners - Planner

2014 - Urban Planning Analytics - Researcher

2013 - Carolina Planning Journal - Editor-in-Chief


### EDUCATION

Master of City and Regional Planning, University of North Carolina at Chapel Hill, 2015


Master of Public Administration, University of Colorado Denver, 2013

B.A. in Public Policy, University of North Carolina at Chapel Hill, 2009

# 3. Comparable Projects

	Camden County, NC Unified Development Ordinance City of Burlington, NC Unified Development Ordinance Currituck County, NC Unified Development Ordinance Rockingham County, NC Land Use Plan & UDO Update Town of Elon, NC Unified Development Ordinance
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	Chatham County, NC Comprehensive Plan City of Waynesboro, VA Land Use Guide & UDO Update
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	Guilford County, NC Water Feasibility Study Town of Swansboro, NC On-call Traffic Engineering Randolph County, NC Greensboro-Randolph Megasite Parks experience
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	Chatham County, NC Water and Wastewater Master Plan City of Charlotte and Mecklenburg County, NC Post-Construction Stormwater Ordinance City of Durham, NC Watershed Planning & Stormwater Support NCDOT Reimagining Nutrient Management Town of Lake Santeetlah, NC Decentralized Sewer Study
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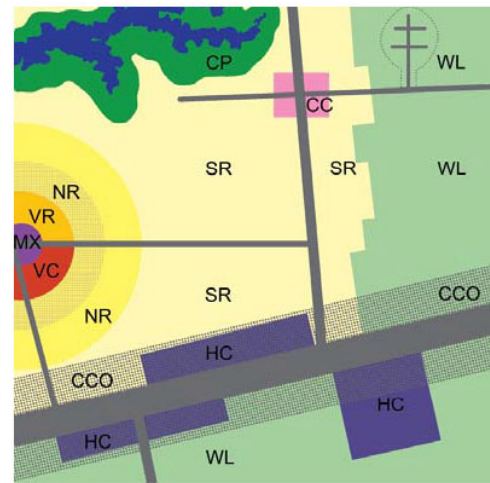
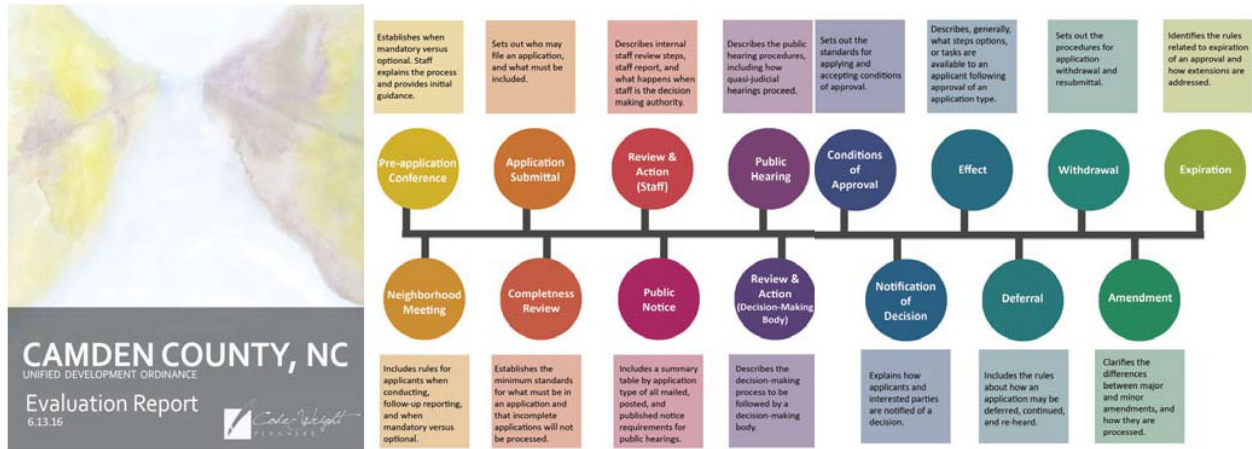
	Princeton, NJ Forrestal Village Raleigh, NC Arts District Revitalization Flemington, NJ Flemington Business Improvement Philadelphia, PA Melford Village
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	Towns of Chapel Hill and Carrboro, NC Rogers Road Neighborhood District Implementation
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# CAMDEN COUNTY NORTH CAROLINA

## Unified Development Ordinance

Dan Porter  
Planning and Community  
Development Director  
252.388.1919 ext. 263  
dporter@camdencountync.gov



### KEY PROJECT FEATURES

- *Balance commercial promotion with rural character protection*
- *Development of compact, mixed-use rural villages*
- *Stormwater management as a central project feature*
- *County code with municipal-style regulations*
- *Incentives for increased development quality*

Camden County is a rural county in northeastern North Carolina. As the only unified government in the state, Camden County has no incorporated areas and is authorized to regulate development under the enabling legislation for counties as well as municipalities. The County contracted with CodeWright to revise its unified development ordinance (UDO) to implement the County's new 2035 Comprehensive Plan.

The new UDO is a user-friendly, graphically-driven code that encourages mixed-use rural villages, protects farmland and sensitive environmental resources, and raises the bar for development quality generally. The code uses incentives to encourage preferred forms of development and sustainable development features.

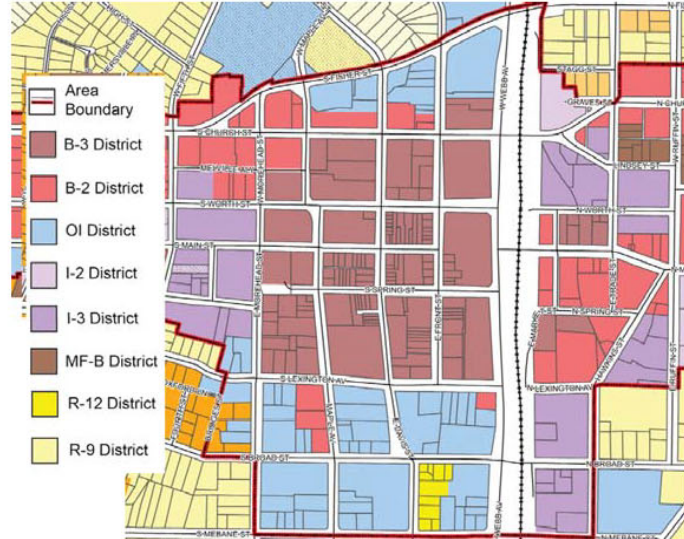
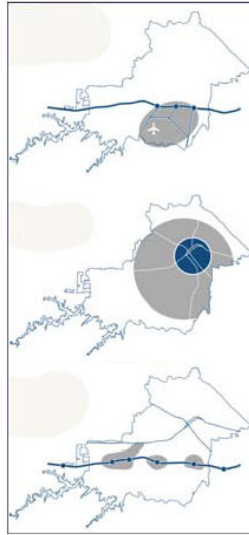
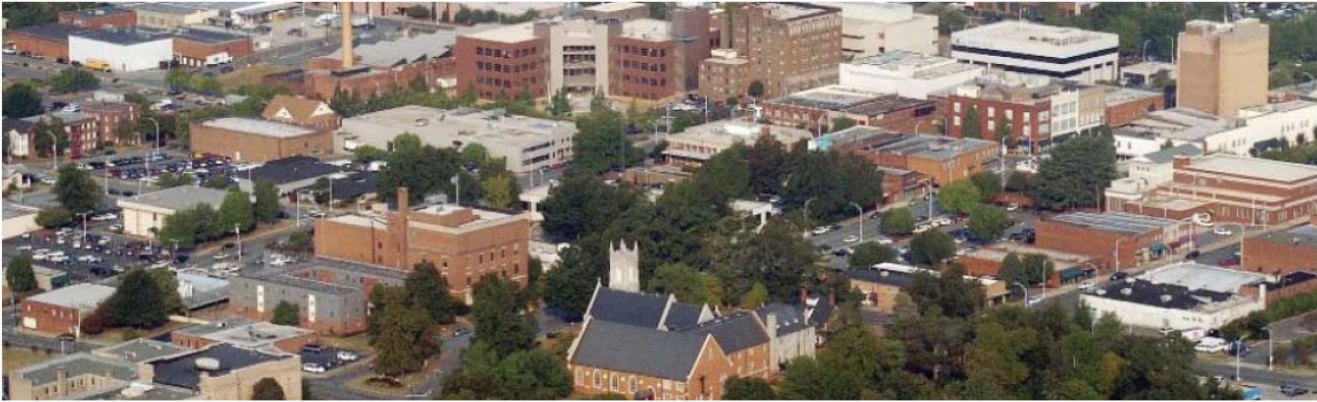
The new UDO was adopted on February 4, 2019.



# BURLINGTON, NORTH CAROLINA

## Unified Development Ordinance

Amy Nelson  
 Director of Planning and  
 Economic Development  
 336.222.5110  
 anelson@ci.burlington.nc.us



### KEY PROJECT FEATURES

- *Optional form-based code available in downtown*
- *New sign standards consistent with the “Reed” decision*
- *Development standards tailored to different contexts*
- *Menu-based design standards*
- *Incentives for infill and redevelopment*

CodeWright has been hired to prepare a new unified development ordinance for this historic textile community of 50,000 in central North Carolina. The City has adopted a new comprehensive plan that focuses on downtown revitalization, increased mobility options for residents, a wider array of housing choices, and infill development.

CodeWright is revising the City’s regulations to implement the comprehensive plan with a focus on predictability, efficient review procedures, revitalization, and encouragement of new investment. The purpose of the UDO is to help the City attract and retain a talented workforce through land use controls designed to create desirable places and recognize the importance of quality of life.



# CURRITUCK COUNTY NORTH CAROLINA

## Unified Development Ordinance

Ben Woody  
Former Planning and Community  
Development Director  
828.259.5679  
bwoody@ashevilenc.gov

Chapter 3: Zoning Districts  
SECTION 3.4: RESIDENTIAL BASE ZONING DISTRICTS  
Subsection 3.4.2: Single-Family Residential Standard (SFR) District

**D. TYPICAL BUILDING FORMS**

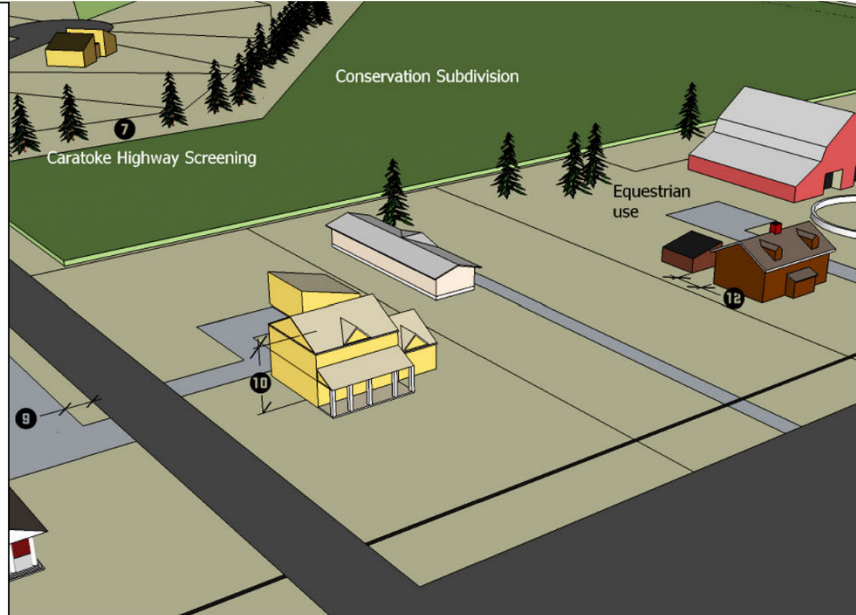
**E. BUILDING CONFIGURATION**

**F. DIMENSIONAL STANDARDS**

	TD	CS	TD	CS
Max. Gross Density - Traditional Dev. (du/acre)	1.0	-	2.0	N/A
Max. Gross Density - Conservation Subdivisions	-	-	2.0	N/A
In Limited Service Areas (du/acre)	-	1.5	1.0	2.0
In Full Service Areas (du/acre)	-	1.0	1.0	N/A
Max. FAR (%)	0.40	N/A	1.0	N/A
Min. Lot Area (sf)	40,000	N/A	5,000	10,000
Min. Lot Area (acres)	N/A	1.0	1.0	2.0
Min. Lot Width, Interior Lot (ft) [1]	125	N/A	10	N/A
Min. Lot Width, Corner Lot (ft)	150	N/A	10	10
Max. Lot Depth	175	N/A	315	180
Max. Lot Coverage (%)	20	N/A	50	10
			Min. Spacing Between Buildings (ft)	10
			Min. Front Setback (ft) [2]	20
			Min. Corner Side Setback (ft) [4]	20
			Min. Rear Setback (ft)	10
			Min. Side Setback (ft)	10
			Min. Rear Setback (ft)	10
			Min. Agriculture Setback (ft) [5]	50
			Min. Accessory Use Setback (ft) [6]	10
			Min. Driveway/Parking Setback (ft)	10
			Min. Setback From Lot Lines (ft)	10
			Max. Building Height (ft)	31.5
			Min. Wetland Surface Water Setback (ft)	50
			Min. Spacing Between Buildings (ft)	10

[1] All lots shall maintain a minimum street frontage of 50 feet.  
[2] For setbacks shall not exceed four times the lot width.  
[3] From setbacks shall be measured from ultimate ROW line.  
[4] For setbacks shall be measured from ultimate ROW line.  
[5] Easements shall provide 50-foot setbacks from stream banks for roads.  
[6] Applied to subdivisions approved after 1/30/2012.  
[7] Prohibited in front of principal building when principal building is less than 300 feet from street.

CURRITUCK COUNTY, NC UNIFIED DEVELOPMENT ORDINANCE  
PUBLIC REVIEW DRAFT | AUGUST 2011 **3.12**



### KEY PROJECT FEATURES

- Coastal barrier island and agricultural development contexts
- Comprehensive farmland protection standards
- Reduced corridor development potential outside designated nodes
- Incentives for sustainable development
- Innovative HOA operating standards

Currituck County, northernmost of the North Carolina coastal counties, has been undergoing intense development pressure. The county has a variety of different development contexts including agriculture on the mainland and remote vacation homes on the Outer Banks. The county hired Chad Meadows (while employed with another firm) to rewrite its unified development ordinance. Goals for the project included implementation of the 2006 Land Use Plan, better responses to recent development pressures, and tailoring development regulations to different contexts.

The project included a website, the use of a citizen survey to gain input about development preferences, several public forums, citizen-friendly executive summary pamphlets, and code testing with a developer's focus group.

The UDO was adopted in December, 2012. The project received an honorable mention for implementation by the North Carolina Chapter of the American Planning Association in 2013.

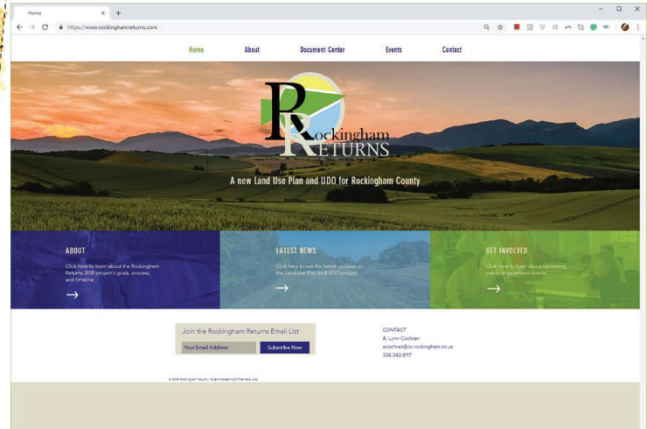
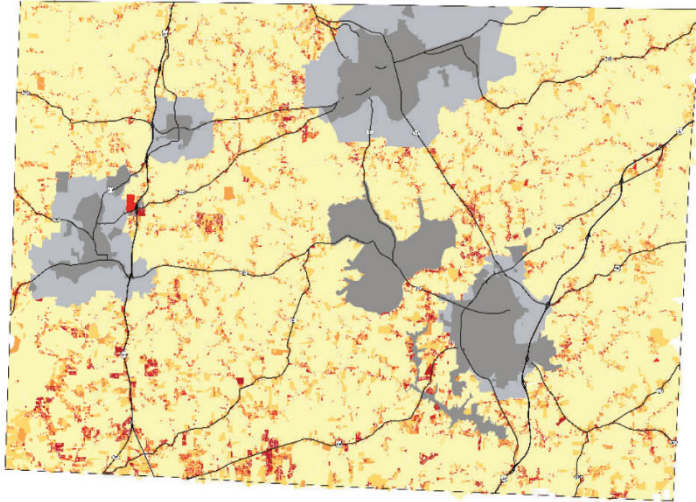


# ROCKINGHAM COUNTY NORTH CAROLINA

## Land Use Plan and UDO Overhaul



Land Value Per Acre



Rockingham County is an urbanizing county of 573 square miles in the northern portion of the Greensboro-High Point-Winston-Salem MSA with a population of 93,000 people. As the Piedmont Triad Region grows, new growth and development are spreading northward into Rockingham County from Guilford County to the south. The County's current land use plan is outdated and ill-equipped to address new growth pressures. CodeWright Planners is leading a team of consultants in preparation of a new land use and development plan as well as an updated set of development regulations.

The project has been branded "Rockingham Returns", and is focused on placemaking and economic development efforts intended to ensure that Rockingham County attracts and retains a talented workforce and remains a place where County residents may age in place.

The plan also addresses broadband deployment, workforce development, community health resources, perception of school quality, the energy sector generally (given that it accounts for a large portion of the County's ad valorem revenue), and how the County's open space network can contribute to its framework for growth and development.

Following completion of the land use plan, the CodeWright team will overhaul the County's development regulations for consistency with the new plan, changes in state law, and national best practices. The project is anticipated to be complete in June, 2021.

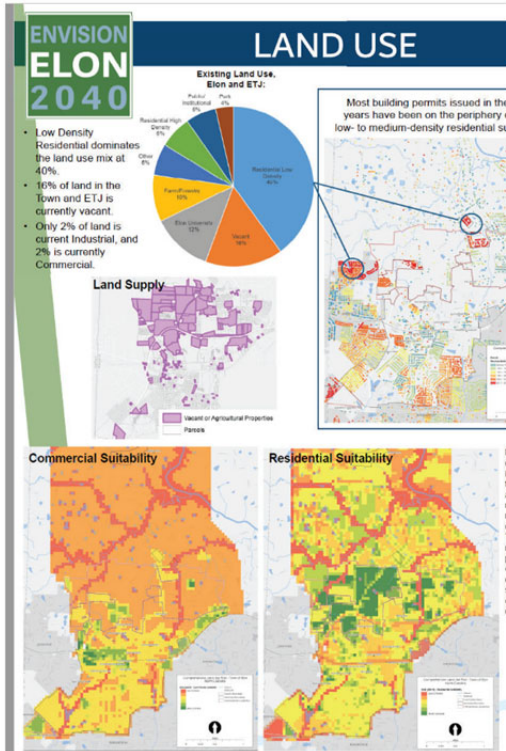
### **Carrie Spencer**

Planning & Inspections Director, Rockingham County, NC  
336.342.8137  
cspencer@co.rockingham.nc.us



# TOWN OF ELON NORTH CAROLINA

## Land Use Plan and LDO Update



CodeWright and Both& Planners are part of a team currently underway assisting the Town of Elon with an update to its future land use plan and land development ordinance.

The plan is being updated to address the college town's anticipated growth while protecting the small-town character cherished by long-time residents and newcomers alike. The plan update project featured a three-day public engagement workshop anchored by two community open house-style meetings, an advisory committee made up of staff and community members, and a coordinated social media effort aimed at reaching a broad range of Town residents. Key land use issues incorporated into the future land use map and policy guidance include: growth management that steers development toward areas well-served by utilities and infrastructure; introduction of new and diverse housing types; protection of historic neighborhoods; promotion of downtown economic development; improved integration of the University with surrounding neighborhoods; and preserving key areas for future commercial and industrial growth in a land-locked community.

CodeWright and Both& are under contract for a subsequent phase of the project to revise the Town's land development ordinance based on the land use plan update and future land use map. The two stages of the project (the plan and LDO update) are being coordinated to maximize efficiency and decrease the lead time on plan implementation.

**Richard White**  
Town Manager, Town of Elon, NC  
336.584.3601  
rwhite@ci.elon.nc.us

# Chatham County Comprehensive Plan

Chatham County, NC



One of North Carolina's largest counties geographically, Chatham County is relatively undeveloped. It is situated at the southern edge of the Triangle Region, one of the fastest-growing metropolitan areas of the US. Known for its thriving agriculture and scenic rural landscape, Chatham offers an alternative to the urbanizing environments of its neighboring counties of Wake and Orange, home to Raleigh and Chapel Hill, respectively. The

Comprehensive Plan was developed to help County leaders manage change to increasing development pressures. Protecting the natural assets that define the county's identity is a priority. The Plan sets forth strategies to maintain the special characteristics of the county while encouraging development that provides the jobs, services, housing, and amenities that the community deems necessary and appropriate, and builds the tax base to support such necessities. It also seeks to enhance the quality of life for county residents by addressing the seven dimensions of wellness. An important outcome of the planning process was the Future Land Use and Conservation Map, a visual representation of the future development pattern that the community supports. Plan Chatham was the recipient of the Award of Excellence in the Comprehensive Plan – Large Jurisdiction, 2018 [American Planning Association (APA), County Planning Division (CPD)/National Association of County Planners (NACP)] and the Spotlight Award in the Healthiest Cities & Counties Challenge, 2018 [Aetna Foundation/American Public Health Association (APHA) /National Association of Counties (NACo)].

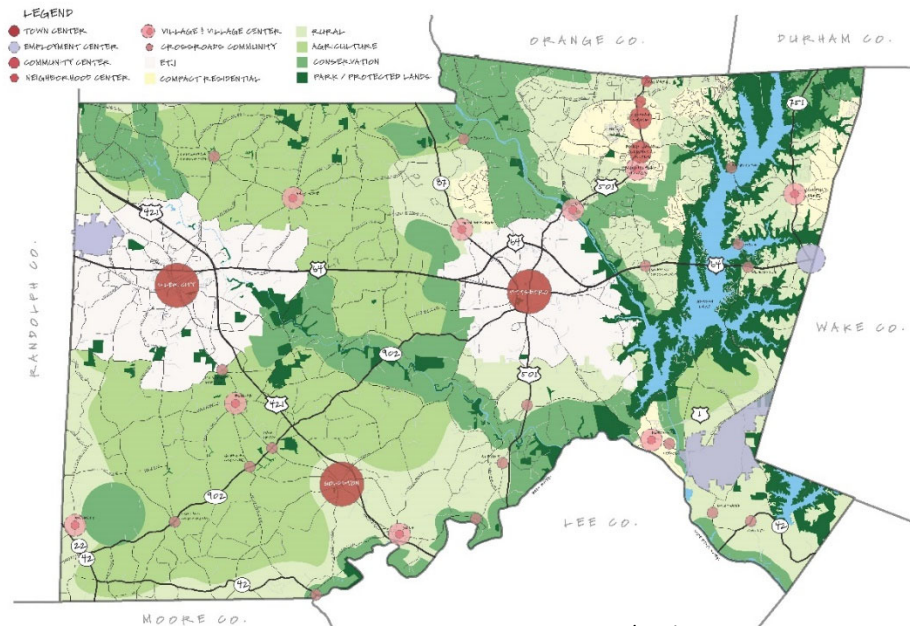


Image source: LandDesign, Inc.

due

CLIENT: Chatham County  
CONTACT: Jason Sullivan, Planning Director  
80-A East Street, Pittsboro, NC 28312  
919.542-8233 | jason.sullivan@chathamnc.org

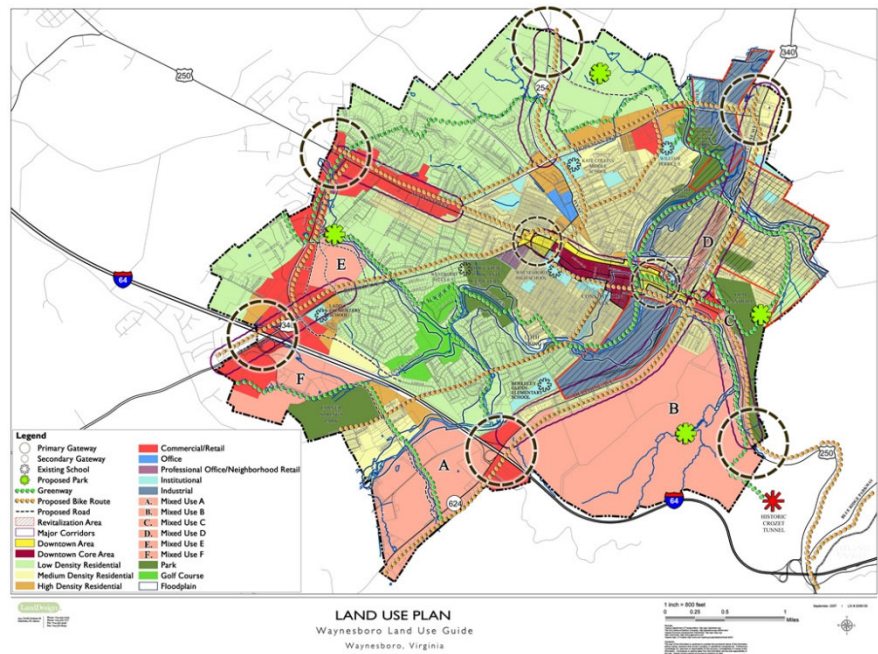
*As a subconsultant to LandDesign, Nealon's role included land use analysis, creation of the Future Land Use and Conservation Map, direction of conceptual development design, preparation of land use recommendations and implementation strategies, strategies for addressing community health and well-being in all plan elements, and assistance with presentations to elected and appointed boards.*

# Waynesboro Land Use Guide and UDO Update

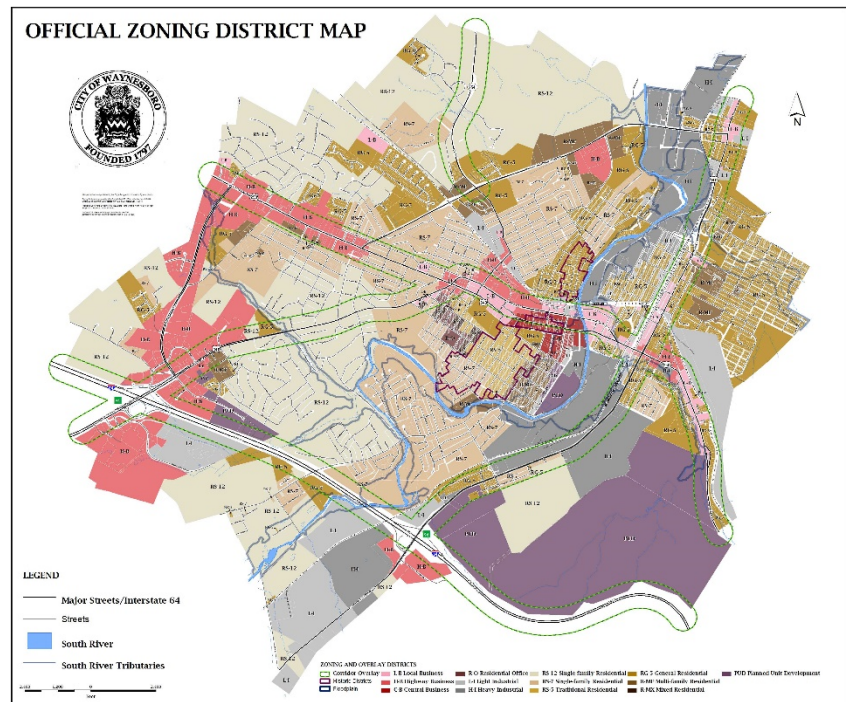
City of Waynesboro, VA



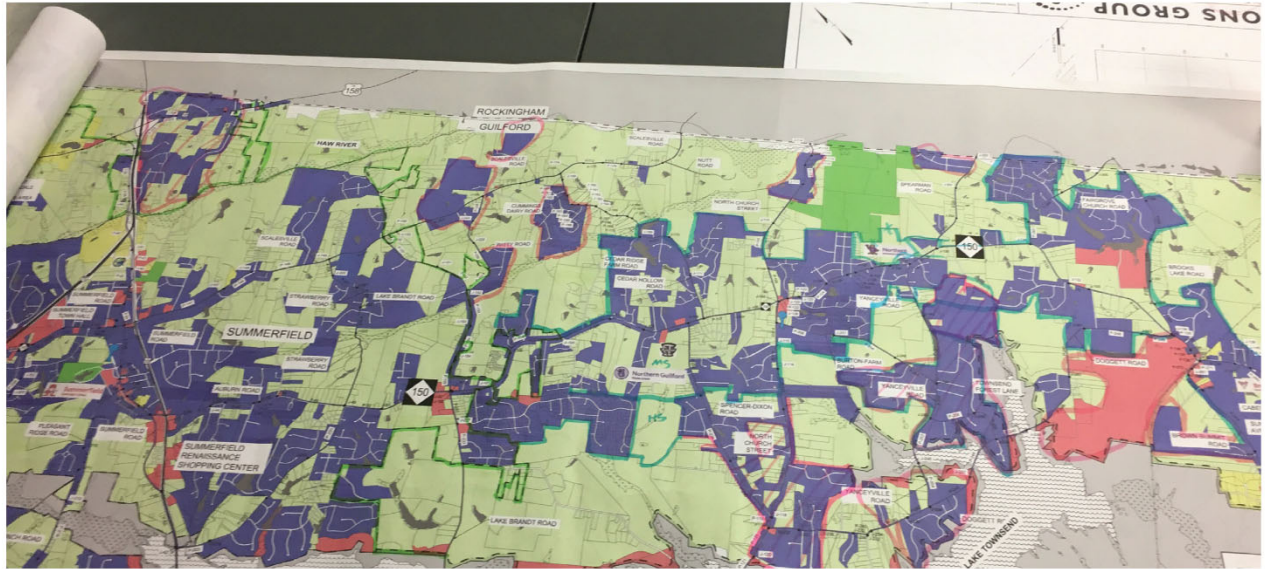
Waynesboro, a city in Virginia situated along the I-64 corridor and a short drive from Charlottesville and Staunton, needed a new comprehensive land use guide to direct near-term and future land use decisions in order to address challenges related to the transition of the local economy away from its manufacturing roots. This guide addresses opportunities for growth in key areas to respond to changing market and employment conditions while preserving the assets that make this city such an attractive destination and place to live.



Following adoption of the Land Use Guide, Nealon was part of the team hired to implement the guide into an updated Unified Development Ordinance.



# EXPERIENCE



## Guilford County Water Feasibility Study

Guilford County, NC

Timmons Group is preparing a feasibility study for the development of a public water system to provide potable water service to portions of northwest Guilford County that are currently served by groundwater sources. This study will be used to determine steps, challenges and probable costs to plan, design, construct and operate the required water infrastructure. The results of the study will be utilized by local government officials from the towns of Oak Ridge, Stokesdale and Summerfield and Guilford County to determine if a regional water system should be developed and how the system should be governed. A Regional water model was created for this study to assist with sizing of all proposed water infrastructure, locations of elevated storage tanks and pressure zone boundaries.

### Client

- Guilford County, NC

### Contact

- Marty Lawing  
mlawing@myguilford.com  
336.641.3383

### Key Team Members

- David Saunders, Chris Petree



www.timmons.com

# PROJECT EXPERIENCE



## Town of Swansboro On-Call Traffic Engineering

Swansboro, NC

On-call Traffic Engineer for the Town of Swansboro, NC. As part of this agreement, Timmons has completed four (4) traffic impact analyses (TIAs) for projects within Town limits, including a TIA for a 158,583 square-foot Walmart Development. The Walmart TIA included two (2) site driveways and four (4) off-site intersections with analyses completed during the AM and PM peak hours of the Fall and Summer seasons. Analyzed each intersection and determined capacity mitigation recommendations that will allow each intersection to operate at a LOS C during the 2018 build-out year. Timmons Group was recently given notice to proceed on a Downtown traffic analysis studying nine (9) intersections and offering recommendations for vehicular, pedestrian, and bicycle flow along the Town's riverfront. In addition to the completion of traffic studies, Timmons Group has reviewed six (6) TIAs submitted to the Town by private developers. Each study was reviewed in accordance with the standards described in the Town's Unified Development Ordinance (UDO). Timmons Group coordinated with the Town and NCDOT Staff to discuss final project recommendations. Finally, Timmons Group worked with Town Staff to update the existing TIA Section of the Town's UDO. Included in the UDO were revisions / clarifications to the required analysis processes. As part of this on-call, Timmons Group has represented the Town at several Board of Commissioners meetings.

### Client

- Town of Swansboro

### Contact

- Scott Chase, AICP  
Town Manager  
910-326-4428  
schase@ci.swansboro.nc.us

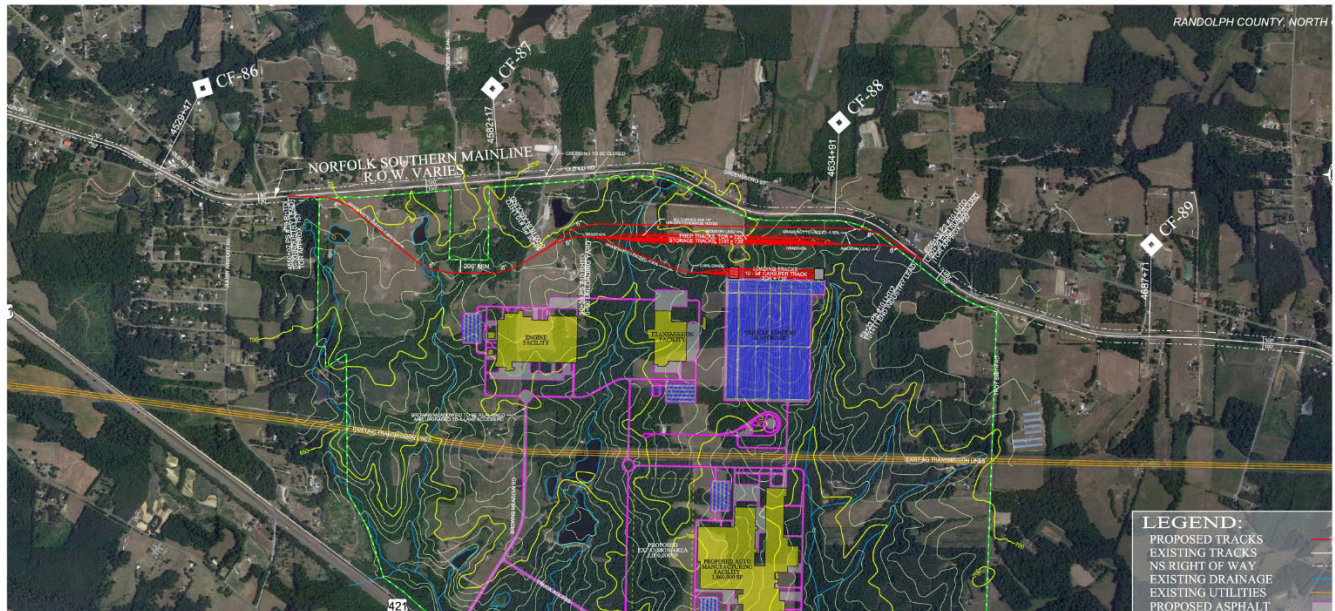
### Completed Date

- Ongoing



TOWN OF  
SWANSBORO

# EXPERIENCE



## Greensboro-Randolph Megasite

Randolph County, NC

Timmons Group has been engaged in the development of the Greensboro-Randolph Megasite since July 2011. The firm recently completed a master plan for the site, which includes approximately 2,030 acres located just north of Highway 421 in Randolph County and south of the Guilford and Randolph County line.

In addition, Timmons Group was contracted by the City of Greensboro to develop a conceptual design of new water and sewer infrastructure capable of supporting three new development sites in close proximity to the city. The evaluation primarily included the following design and construction considerations: estimated construction costs, surface topography, potential for rail crossings, potential for stream crossing, proximity to major roads, prevalence of subsurface rock, proximity of existing water/sewer infrastructure, and expected ease of right-of-way acquisition.

Following the evaluations, Timmons Group developed conceptual drawings showing proposed water and sewer alignments with plan and profile sheets and conceptual pump station floor plans.

### Infrastructure

The Master Plan identifies areas for supporting infrastructure, including fiber optic communications to along Old 421 Rd, natural gas, electricity, railroads, and roads. The site is somewhat divided north and south by a Duke Energy high-voltage transmission line. This will serve as a natural dividing line where heavy manufacturing will likely be located in north of the transmission right-of-way, while office and management space will be in the south. This dividing line also helps with the road and rail infrastructure. Truck and rail traffic will be located in the northern segment with personal owned vehicles primarily in the south. The Timmons Group has also worked with Duke Energy to ensure adequate electricity is available for the Megasite.

### Client Contact

- Jim Melvin  
Greensboro Randolph Megasite  
Foundation  
336.387.8303  
jimmelvin@aol.com

### NCDOT Contact

- Brandon Jones  
Division Engineer  
910.944.2344  
bhjones@ncdot.gov

### Completion Date

- 2018

### Key Team Members

- Joe Hines, Blake Hall, Brian  
Crutchfield, Anna Reusche, Dave  
Brubaker



www.timmons.com

## Park Projects

### PROCESS

obs specializes in parks and recreation projects. Our experience planning parks and recreation facilities is diverse. We have completed nature parks, athletic facilities, trails, greenways, neighborhood parks, playgrounds, historic park revitalization, and interpretive gardens.

Plans for nearly all of our park projects have resulted from a participatory community design process. We have the capabilities and experience to bring stakeholders together to generate meaningful input and use that input to develop a final design that reflects the needs and aspirations of the community.

One of our strengths is our comprehensive approach to parks and recreation projects. We provide a full range of services from master planning through construction administration which has provided us the knowledge to evaluate the effectiveness of various design solutions and construction applications.

obs has also designed numerous children's environments including traditional playgrounds as well as natural learning playgrounds which connect children with the natural environment through play experiences. These play environments focus on providing access to nature while encouraging creative, imaginative and inventive play.

### PARK PROJECTS

- Erinsbrook Park - Raleigh
- Sierra Lineberry Park - Raleigh
- Veterans Park Phase 3 - Wilmington, NC
- Southern Community Park - Chapel Hill, NC
- North Wake Landfill District Park - Wake County, NC
- Rock Ridge Park - Pittsboro, NC
- Walnut Street Park - Cary, NC
- Halifax Community Park - Raleigh, NC
- Isabella Cannon Park - Raleigh, NC
- Charles Summey Park - Forest City, NC
- Piedmont Environmental Center - High Point, NC
- White Deer Park - Garner, NC
- White Oak Park - Cary, NC
- Church Street Park - Morrisville, NC
- Cedar Falls Park Playground - Chapel Hill, NC
- Meadowmont Park - Chapel Hill, NC
- Hargraves Park Playground - Chapel Hill, NC
- Pritchard Park - Chapel Hill, NC
- Caswell County Arboretum - Caswell County
- Hanging Rock State Park - Stokes County
- Dupont State Recreational Forest - Henderson County



Walnut Street Park Master Plan - Cary, NC



North Wake Landfill District Park - Raleigh, NC



White Deer Park - Garner, NC

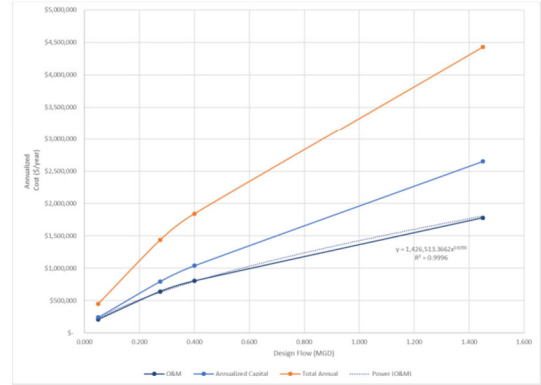


Erinsbrook Park Master Plan - Raleigh, NC

## CHATHAM COUNTY WATER AND WASTEWATER MASTER PLAN

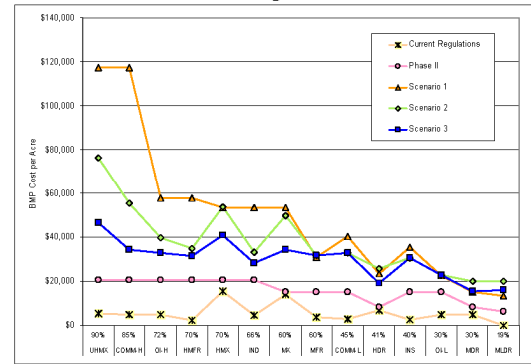
<b>LOCATION</b>
Chatham County, NC
<b>CLIENT</b>
Chatham County/Hazen and Sawyer
Dan LaMontagne, County Manager
919-545-8531
<a href="mailto:dan.lamontagne@chathamnc.org">dan.lamontagne@chathamnc.org</a>
<b>DURATION</b>
May 2018 – February 2019
<b>BUDGET</b>
\$10,000

Tetra Tech was a subcontract teaming partner on a project to develop a countywide water and wastewater master plan for Chatham County. Tetra Tech's role in the project focused on balancing centralized and decentralized water management and incorporating One Water concepts into the master plan to enhance rural/urban economic development vis-à-vis the County's recently completed Comprehensive Plan.



As part of this effort, Tetra Tech located and characterized large decentralized systems in Chatham County, developed cost curves for decentralized land application systems near Siler City and helped Siler City plan to generate a high-value compost product at

their wastewater treatment plant to support local farmers by minimizing nutrient imports to and runoff from farms.



## CITY OF CHARLOTTE AND MECKLENBURG COUNTY POST-CONSTRUCTION STORMWATER ORDINANCE

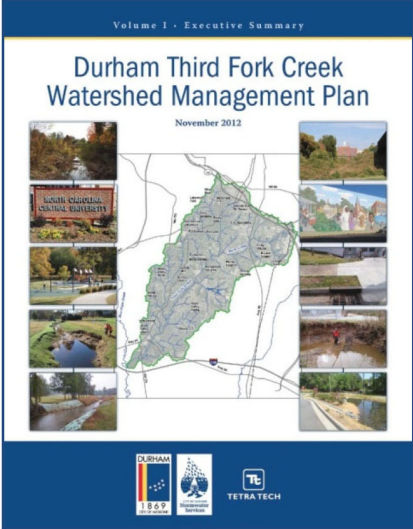
<b>LOCATION</b>
Charlotte, NC
<b>CLIENT</b>
Rusty Rozzelle
Mecklenburg Land Use & Environmental Services Agency
700 N. Tryon St. Charlotte, NC
(704) 336-2831
<b>DURATION</b>
May 2004-December 2005
<b>BUDGET</b>
\$535,000

Tetra Tech supported Charlotte-Mecklenburg Storm Water Services and the Mecklenburg County Phase II jurisdictions (Mecklenburg County and the Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill and Pineville) in stormwater master planning to guide the development of ordinance provisions that control and manage stormwater runoff and meet the state and federal NPDES Phase II stormwater post-construction requirements. Tetra Tech's approach linked goals and objectives, indicator assessment, land use analysis, watershed modeling, stakeholder involvement, alternatives development and evaluation, and ordinance development.

Tetra Tech co-facilitated a Stakeholder Group with 15 different constituencies represented. Discussion at 10 meetings focused on alternative management measures and use of technical information to guide policy-making and ordinance development. Central to the discussion and technical evaluations was the cost and benefits of alternative stormwater performance standards and the appropriate role and use of LID. The proposed ordinance, with strong performance standards, LID incentives, and cost-effective off-site mitigation options was unanimously adopted by the Stakeholder Group, and enacted, with refinements, by all eight jurisdictions.




## WATERSHED PLANNING AND STORMWATER PROGRAM SUPPORT, CITY OF DURHAM, NC

<b>LOCATION</b>	Tetra Tech provided extensive and varied support to the City of Durham, NC for its stormwater program over a critical five-year period.	
City of Durham, NC		
<b>CLIENT</b>	Tetra Tech prepared a Watershed Management Plan for the Third Fork Creek watershed and developed a comprehensive implementation strategy for restoring watershed function and protecting the downstream public water supply in Jordan Reservoir. Throughout the project, Tetra Tech facilitated coordination with a team of City staff from programs needing to integrate efforts. Results from the watershed characterization, goals development, prioritization analyses, strategy development, pilot project preliminary designs, and implementation studies were compiled into a master watershed management plan document for the City. Public outreach was conducted in the form of three public meetings and coordination with various community groups.	
Michelle Woolfolk City of Durham Department of Public Works Stormwater Services Division (919) 560-4326, ext. 30219		
<b>DURATION</b>		
2009-2014		
<b>BUDGET</b>		
\$1,500,000		

In addition to tasks specific to the Third Fork Creek watershed, Tetra Tech provided services that pertain to the larger City stormwater program. Local stormwater codes, ordinances, policies and procedures were reviewed for refinement needs. Similarly, BMP maintenance standards, protocols and policies were reviewed for potential refinement. Tetra Tech also helped to update the City's Riparian Management Manual, including specifics on invasive species for the Third Fork Creek watershed. Support was also provided for its Water Quality Recover Plan as part of its NPDES MS4 stormwater permit including reporting and water quality trend analysis.

## CHATHAM COUNTY SCHOOLS WASTEWATER SYSTEM SUPPORT

<b>LOCATION</b>	Tetra Tech has provided a variety of engineering services in support of Chatham County Schools' wastewater system planning, design and operation. This support has included extensive analyses of existing systems and engineering of retrofits to existing underperforming onsite wastewater treatment systems at schools in Silk Hope and Bennett. Tetra Tech currently works closely with the County's contract operators, maintenance staff, and superintendent on optimizing the operation of wastewater systems at Perry Harrison, Bennett, Chatham Central, Silk Hope and Bonlee Schools.	
Chatham County, NC		
<b>CLIENT</b>	Tetra Tech coordinated preliminary soil evaluations to support the County's purchase of land for the new Seaforth High School and designed a large wastewater treatment and reclaimed water reuse system for the new school under subcontract to the County's design firm.	
Chatham County Schools Randy Drumheller, Director of Maintenance and Construction Phone: 919-548-1062		
<b>DURATION</b>		
October 2011-present		
<b>BUDGET</b>		
\$170,000		

## REIMAGINING NUTRIENT MANAGEMENT THROUGH A ONE WATER APPROACH IN NC

<b>LOCATION</b>
Wake County, NC
<b>CLIENT</b>
NC DOT Highway Program Andy McDaniel, Manager of the Highway Stormwater Program Phone: 919-707-6737
<b>DURATION</b>
April 2017-present
<b>BUDGET</b>
\$110,000

Under contract with the NCDOT Highway Stormwater Program and in partnership with the NC Department of Environmental Quality, Tetra Tech is facilitating a pilot project work group for Reimagining Nutrient Management through a Holistic One Water Approach. The purpose of the pilot project is to work collaboratively to develop a vision-based approach for nutrient and water management that emphasizes stronger and more resilient communities and regions in the State of North Carolina by balancing economic, quality of life, and environmental objectives and applying One Water concepts. Tetra Tech is providing conceptual framework development, facilitating stakeholder input, and documenting results and a recommended path forward for the State of North Carolina.



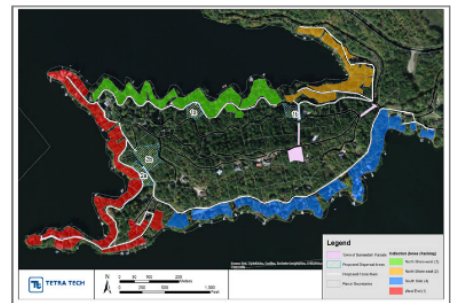
Conceptually, framework endorses transferring planning leadership from the state regulatory agency back to local governments. By leading with economic and quality of life objectives more integrated with environmental stewardship, the approach represents a transition from regulatory drivers to community and regional triple bottom line objectives that can be supported by local leaders and citizens while achieving

better results for the environment than with the existing approach. Building economic connections between rural and urban sectors, and connecting sustainable agriculture to water master planning is being emphasized. The results of the work group's efforts are intended to form the foundation for meaningful transformation of nutrient and water management in North Carolina.

## TOWN OF LAKE SANTEETLAH DECENTRALIZED SEWER STUDY

<b>LOCATION</b>
Town of Lake Santeetlah, NC
<b>CLIENT</b>
Kim Matheson, Town Administrator Phone: 828-479-8190
<b>DURATION</b>
Aug 2015 – Mar 2017
<b>BUDGET</b>
\$57,000

Tetra Tech was selected by the Town of Lake Santeetlah to develop a wastewater management plan in order to protect and maintain Lake water quality and to promote economic development by protecting and enhancing property values and allowing for new growth where appropriate, potentially including a small “downtown” commercial area. Previous studies by other engineers suggested connecting to the Town of Robbinsville’s wastewater treatment plant, the cost of which was estimated to be prohibitively expensive as it is over five miles away through rugged mountainous terrain with steep slopes, widely varying grades, extensive rock, numerous stream crossings, and other obstacles to installing a traditional sewerline.



In close collaboration with community leaders, Tetra Tech developed a plan that begins with additional community capacity development including education and

survey of residents and supplementing Tetra Tech’s database of onsite systems in the Town with field inspections and information gleaned from additional, strategic lake water sampling in areas with high concentrations of homes and during high use times (e.g., holiday weekends). Tetra Tech also recommended that the town purchase vacant property that is suitable for cluster treatment and dispersal systems and adjacent to homes with high priority onsite systems. Tetra Tech developed a full built-out decentralized wastewater management plan based on using four cluster systems strategically located throughout the community.

# DEPICTION

100 43rd Street - Suite 211  
Pittsburgh, PA 15201

www.depictionillustration.com  
team@depictionillustration.com



**PROJECT NAME & LOCATION**

**Forrestal Village  
Princeton, NJ**

**DATE OF PROJECT INVOLVEMENT**

**August 2016**

**CLIENT**

**BSB Design, Inc.**

**PROJECT DESCRIPTION**

**New Site Development  
Residential Use**

**SERVICES PROVIDED**

**Architectural Design Development  
Illustration Services**

**REFERENCE**

**Mike Rosen  
BSB Design, Inc.  
Philadelphia Regional Office  
1250 Old York Road, Suite 201  
267-317-4400**



**PROJECT NAME & LOCATION**

**Arts District Revitalization  
Raleigh, North Carolina**

**DATE OF PROJECT INVOLVEMENT**

**June 2016**

**CLIENT**

**Clearscapes**

**PROJECT DESCRIPTION**

**New Site Development  
Mixed Use**

**SERVICES**

**Architectural Design Development  
Illustration Services**

**REFERENCE**

**Jon Zellweger, AIA  
Clearscapes  
311-200 W. Martin Street  
Raleigh, NC 27601  
919-821-2775**



# DEPICTION

100 43rd Street - Suite 211  
Pittsburgh, PA 15201

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**PROJECT NAME & LOCATION**

Flemington Business Improvement  
Flemington, NJ

**DATE OF PROJECT INVOLVEMENT**  
October 2014

**CLIENT**  
Jeffrey A. Fleisher Architect

**PROJECT DESCRIPTION**  
New Site Development  
Residential Use

**SERVICES PROVIDED**  
Architectural Design Development  
Illustration Services

**REFERENCE**  
Jeffrey A. Fleisher, AIA  
56 Main Street  
Flemington, NJ 08822  
908-782-5382



**PROJECT NAME & LOCATION**

Melford Village

**DATE OF PROJECT INVOLVEMENT**  
December 2013

**CLIENT**  
The Martin Architectural Group

**PROJECT DESCRIPTION**  
New Site Development  
Mixed Use

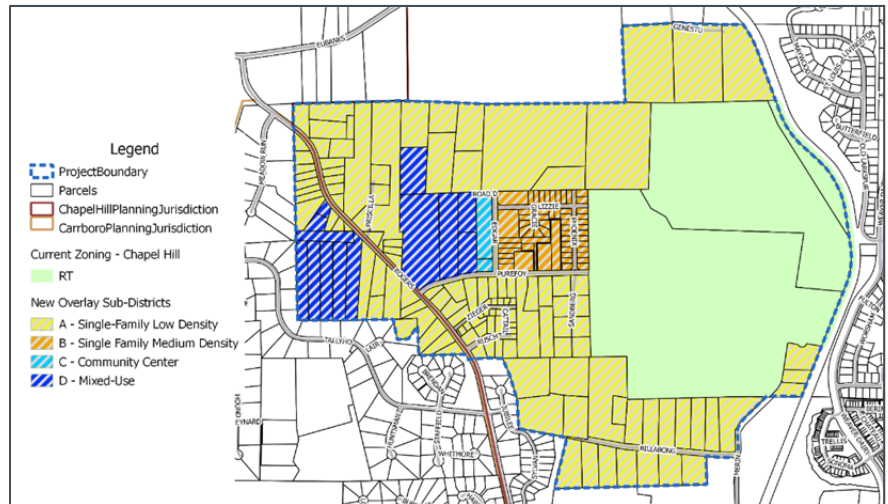
**SERVICES**  
Architectural Design Development  
Illustration Services

**REFERENCE**  
Daniel McCauley, AIA, LEED AP  
The Martin Architectural Group  
240 N. 22nd Street  
Philadelphia, PA 19103  
215-665-1080



## HISTORIC ROGERS ROAD NEIGHBORHOOD DISTRICT IMPLEMENTATION

Towns of Chapel Hill & Carrboro, NC



The Historic Rogers Road Neighborhood, located on the boundary of the Chapel Hill and Carrboro, NC planning jurisdictions, is a neighborhood of long-time residents with deep roots in the area. In 2016, the community produced a master plan for the area, titled *Mapping Our Community's Future*. The plan describes the desired future for the neighborhood, including future development, land use, and character preservation. Major goals include retaining long-time residents, increasing housing choice and affordability, increasing connectivity, and improving employment opportunities for residents while maintaining a rural character.

In August, 2018, Both& Planning, as part of a team led by Renaissance Planning, was hired to implement the *Mapping Our Community's Future* plan through the creation of new zoning districts for each jurisdiction.

Both& Planning has been heavily involved in public outreach and is leading the development of new zoning standards for each jurisdiction. Adoption of the new districts is expected in May-June 2018.

Ben Hitchings, Planning Director, Town of Chapel Hill  
919.968.2731  
bhitchings@townofchapelhill.org

Martin Roupe, Development Review Administrator, Town of Carrboro  
919.918.7333  
mroupe@townofcarrboro.org

# 4. Approach

This section outlines a preliminary work program for preparing a new UDO, a new procedures manual, conducting training, and assisting with adoption of an associated zoning map for Chatham County. It is developed based upon our review of the RFP, our understanding of Plan Chatham, and our prior experience in drafting development regulations. We consider this a preliminary work program and are flexible and willing to make refinements and adjustments to meet the County's specific objectives for the project. The work program is organized into nine tasks.

We are firm believers in establishing a **well-defined process** where everyone understands what to expect in terms of process and deliverables. Our work programs establish an interactive process that provides all involved “numerous bites at the apple”—or a number of opportunities to review and provide comments on the project deliverables.

We prefer an approach that is **inclusive of many points of view** and tools that communicate planning and zoning concepts to as many interested parties as possible. Achieving this goal in ordinance-related projects can be difficult since they involve complex and technical issues and specific and detailed language. We address this challenge by incorporating elements in the work program that make the concepts behind the provisions more accessible and understandable to the layperson.

We are committed to providing deliverables that are **clear, precise, and predictable**. To ensure documents meet this objective, we rely heavily on graphics, process flow charts, summary tables, simple page layouts, and intuitive document organization typically found in a design-based code. We eliminate needless repetition and establish expedited review processes for preferred development types (to the extent allowed by law). We establish clear, measurable standards.

We believe in **incentive-based approaches to preferred forms of development**. Applicants are more likely to follow preferred development forms if they can see and understand the “upside” in doing so. Our projects often include incentives for preferred development forms, menu-based options for complying with development standards, and flexible techniques for achieving compliance with code requirements.

We are **pragmatic (not dogmatic)** in our approach to solving problems and finding solutions for our clients. We know and understand the private sector and the issues that motivate development applicants. Team members have spent time on both sides of the planning counter and can examine situations from different points of view. We build in a testing component to ensure the draft standards will perform as intended, and to help ensure acceptance of the proposed provisions by the development community.

We know that **timely communication** with the staff is key to project success. As such, we will establish a standing monthly meeting date and time with staff as one of our first project tasks. We suggest building in regular and on-going check in meetings with the elected officials to ensure they are aware of project status and direction.

We understand the distinctions between effective public engagement between comprehensive plans and development codes. Engagement on code projects tends to be more technical, focused, and conducted with knowledgeable experts. We will finalize a **comprehensive public engagement strategy** with staff as one of the first tasks of the project. For the sake of clarity, we include our recommendations for public engagement within each of the tasks in the following work program.



## **Task I: Project Initiation**

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The main purpose for the project initiation task is to establish a common background and understanding of the project and the current conditions in the County. As a first step, team members would review the background materials of relevance to the project as identified by the staff.

Following completion of the background review, team members will travel to the County to undertake several subtasks. First, the team will conduct a kick off meeting with key staff members to review and finalize the scope of work and public engagement strategy. Team members will also conduct meetings with County leadership to inform them about the project and collect initial input about how success should best be measured and the political landscape.

In addition to discussions on the public engagement strategy, the team will overview the relevant provisions in the County's adopted policy guidance to gain a deeper understand of priorities and any related activities. The team will also discuss potential project names and branding designs (project name, logo, project imagery etc.) to be used on the project webpage.

The team will also conduct an initial introductory presentation with the elected officials to introduce the team and the project.

Either during the same visit or on a second visit, as determined by staff, team members will participate in a staff-led reconnaissance of the County to better understand how development issues are playing out on the ground.

Shortly after completion of the team's trip(s) to the County, the team will prepare and launch a project web page. The web page will provide information on the project, deliverables, and serve as a single source of information for interested individuals. The team will ensure the web page is kept current and informative throughout the process and will provide a conduit for residents and business owners to provide direct feedback about the project.

In addition to the project web page, the team will also develop an on-line internal project site (using Basecamp software) to simplify electronic communications between team members and County staff and to allow a forum for on-line collaboration on documents. The team will also establish a date and time for standing monthly teleconference/video conferences with staff to discuss project status.

### **Key Tasks:**

Document review, finalize scope and public engagement strategy (as needed), conduct meetings and presentations, tour, collect resources

### **Timing:**

One month to complete from the date of contract execution (May 2019)

### **Trips:**

One to two trips by the consulting team

### **Public Engagement Elements:**

Web page development, Basecamp site, presentation to the elected officials

## Task 2: Audit

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Following completion of the work in Task 1, the team will begin development of the audit report. The report serves as a gap analysis between the goals, objectives, and actions identified in the Plan Chatham document and the County's current development regulations. It also documents the issues of concern in the County's development regulations as identified by County staff and related agencies.

The audit serves as the "jumping-off point" for discussions about the plan and current development regulations with County residents and stakeholders.

The first subtask in the process is a day of meetings between members of the consulting team and County staff (including department heads in other County departments) about what is and is not working with the current development regulations. Discussions should involve desired changes and aspects in the regulations that are in need of change based upon County staff perspectives.

With a few weeks of completion of the meeting, the consulting team will deliver an initial draft of the audit report for staff review. The audit report will summarize the comments from staff and be supplemented with additional recommendations made by consulting team members. Following receipt of the initial draft, County staff will review the document and provide comments. The consulting team will then revise the report and make it available on the project website.

Shortly after publishing the audit report, the consulting team will conduct the first public open house of the project to introduce the project to the public, share the results of initial investigation, and collect additional feedback on issues the project should address.

The structure and content of the open house can be discussed with County staff during Task 1, but the basic intent is to introduce the project, provide citizens with key details from the audit report and solicit feedback on issues of concern. Proceedings at the forum would likely include a presentation, facilitated question and answer session and a series of self-guided activities for attendees to provide input or ask one-on-one questions of County staff or the consulting team. The presentation and Q&A session will be videotaped and a link to the video will be uploaded to the project web site.

Shortly after the public forum, the consulting team will travel to the County to work with staff to identify members for a series of focus group meetings to be formulated in Task 3 as part of the annotated outline drafting process. If possible, the consulting team will, during the same trip, review the audit report and the results of the first public forum with the elected officials.

### **Key Tasks:**

Initial meeting with County staff and department heads, preparation of staff draft version of the audit report, staff review and comment, revision and publication of the report, conduct of the first public forum

### **Timing:**

Three months to complete following completion of Task 1 (August, 2019)

### **Trips:**

Two one-day trips to the County by members of the consulting team

### **Public Engagement Elements:**

Audit report, web posting, public forum





## Task 3: Annotated Outline

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The purpose for the annotated outline portion of the project is to identify options for revision to the current regulations based on research, input, and discussion with the focus groups. The composition of the focus groups would be established in coordination with County staff in Task 2, but the basic concept is to establish a series of seven different focus groups, each convened based upon their expertise or interests in the particular topic.

At this preliminary stage, the consulting team has identified the possibility of convening up to seven different focus groups, covering the following topics:

- Agriculture
- Environmental Protection
- Infrastructure
- Design Standards
- Uses and Districts
- Development Standards (parking, landscaping, signage, etc.)
- Administration (procedures, enforcement, definitions, etc.)

The basic charge of a focus group is to assist the consulting team in developing recommendations for the code language associated with the particular topic. For example, the Agriculture focus group would discuss and identify the tools needed in the new UDO to protect existing farms and to foster increased robustness in the agricultural industry.

Each of the seven focus groups would follow a somewhat similar meeting sequence, starting with an introductory meeting to discuss topics and concerns, a scoping meeting to discern the relevant topics that need further research and investigation by the consulting team, a meeting to discuss research results, a meeting to discuss preferred alternatives based upon the research, and a follow up meeting (after an initial draft of the relevant annotated outline text has been drafted). Input on the draft language will be used by the consulting team to refine the language to be included in the annotated outline.

The process is structured to include at least six meetings with each focus group in order to identify recommendations for inclusion in the annotated outline. The likelihood of each focus group accomplishing its task after only six meetings may be remote. Some topics or focus groups may require more meetings and deliberation than others. In recognition of these issues, the consulting team is recommending the establishment of a meeting budget (instead of a set number of meetings or a set meeting cost) in order to accommodate extra meetings, if needed.

Since each topic may require a variable number of meetings to produce recommendations for the annotated outline, Task 3 is configured to be somewhat open-ended in terms of its timing. The consulting team expects to meet weekly with each focus group and to conduct no more than two focus group meeting series at any given time. In other words, the consulting team would likely start with the agriculture and environmental protection groups at the beginning of Task 3 and only move on to the infrastructure group once one of the prior two groups has completed its work.

It is hoped that the consulting team can complete its work with all seven focus groups within eight months of starting Task 3. In the event the consulting team believes the work will not be completed within the time period provided, it may either accelerate the schedule, or reduce the scope of discussion associated with a particular topic area to ensure the project stays on track.

Following completion of the stakeholder meetings, the consulting team will then assemble the input collected from all seven groups into a consolidated annotated outline.

The annotated outline is intended to be a graphical representation of the new UDO structure, layout, and content organization. In addition, it will include a section-by-section discussion of the anticipated regulations, including key changes and their rationale (based on the input collected and discussed with the focus groups). The annotated outline is a “road map” or a “blue print” for the UDO, so it is not appropriate for the annotated outline to be vague or incomplete on a particular issue. In the event a focus group cannot come to consensus on a direction to take or how text should be drafted this issue will be raised during discussion with the elected officials.

A comprehensive legal review of the draft annotated outline is included as a standard within our scope of services. We believe that a thorough legal review by a third party expert will ensure that the new provisions and concepts in the ordinances are legally defensible and follow state law.

The first draft of the annotated outline would be for internal staff review only. That review allows staff to provide the team with feedback and identify any issues in the document in need of adjustment prior to public review. Following receipt of comments, the team will discuss staff comments and make revisions to the annotated outline. Following revision, the annotated outline is posted on the webpage for review by the public.

Shortly after posting the annotated outline, the consulting team will travel to Chatham County to conduct the second public forum. The document will be presented and discussed during the public forum. To the extent possible, the annotated outline will also be presented to the elected officials during the public forum trip.

Following presentation of the annotated outline, the team will commence with the drafting process.

**Key Tasks:**

Convene and conduct the sequence of meetings with each of the identified focus groups, preparation of staff draft version of the annotated outline, legal review, staff review and comment, revision and publication of the outline, presentation to members of the public at the second public forum, and presentation to the elected officials.

**Timing:**

Up to 12 months to complete following completion of Task 2 (August, 2020)

**Trips:**

Numerous trips and phone calls by members of the consulting team

**Public Involvement Elements:**

Annotated outline, 2nd public forum, meetings

## Task 4: Initial Draft of UDO

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Following presentation of the annotated outline, the team will begin preparing the initial draft of the UDO. To assist in this effort, we suggest the County establish an Advisory Committee (comprised of one member from each focus group plus a representative from the Planning Board) to provide comments and initial reaction to proposed text.

The new regulations will be consistent with the structure, contents, and layout described in the annotated outline, and will be developed in Microsoft Word. The new regulations will be written in plain English and supplemented with summary tables, flow charts, and page layout techniques that make the document easy to navigate. It will include footnotes and other annotations about new standards, items for additional consideration, and chapter-based summary lists of the key changes between the current regulations and the draft provisions. Illustrations will be added after the testing is complete in Task 5.

Because the new regulations will likely include a substantial amount of new information, it will be difficult to digest in a single review or meeting. Therefore, we recommend dividing the drafting process into two modules or groups of related chapters, each to be reviewed separately. For example, the drafting process might be organized as follows:

Module 1: Introductory provisions, procedures, districts, and uses

Module 2: Development and design standards, environmental provisions, definitions, and illustrations

This approach has been used successfully in numerous code projects and helps ensure an efficient review.

Legal review of each module will be included prior to delivery of the staff draft. In addition, the County Attorney should also review and comment on module text.

As with the annotated outline, the team will prepare a staff draft version of each module for internal review. Following receipt of staff comments on a module, the team will conduct a teleconference with staff to discuss the comments and then make the agreed upon revisions. The public review version of the module will then be forwarded to the Advisory Committee and placed on the project website.

Three weeks after delivery of the public review version of a module, members of the consulting team will travel to the County for a day of meetings with staff and the Advisory Committee to present the module and answer questions.

### **Key Tasks:**

Preparation of the staff draft standards in two modules, staff review and comment on each module, preparation of a public review draft of each module, legal review of each module

### **Timing:**

Nine months to complete following completion of Task 3 (June, 2021)

### **Trips:**

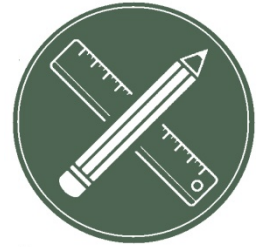
Up to four one-day trips to the County by members of the consulting team

### **Public Engagement Elements:**

Web-page updates of each revised module, meeting with the Planning Board

## Task 5: Testing

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The purpose for the testing task is to ensure the draft regulations perform as intended and render the kinds of development anticipated. Following the presentation of the second code module to the Advisory Committee in Task 4, the consulting team will conduct a focused test of the draft standards through a comparison of recently approved development and comparable hypothetical development produced in accordance with the proposed provisions. The test includes a side-by-side comparison of five examples (case studies) of recently approved development (e.g., single-family residential subdivisions, stand-alone retail or commercial development, multi-family development, mixed-use, and industrial or institutional development, alongside comparable hypothetical development on the same site under the new provisions. The objective of the comparison is to measure the impact of the proposed regulations and their ability to produce the desired forms of development.

Prior to the commencement of the testing process, the consulting team will travel to the County to conduct an all-day retreat-style session with the Planning Board (and other boards or commissions as deemed appropriate by County staff) to overview the document and come to consensus on the development standards and types to be tested.

Following the meeting with the Planning Board, the consulting team will collaborate with County staff and members of the local development community to prepare the hypothetical site plans to be tested. These site plans may include formal drawings of new development or mark ups of drawings of existing development.

Following preparation of the five case studies, the team will travel to the County for a half-day of meetings with City staff, the development community, the Planning Board (and any other appropriate boards or commissions), and interested members of the public to review and discuss the hypothetical developments.

The results of the testing exercise will be summarized in a short memorandum to the staff that can be placed on the web site. This information will be used to revise the adoption draft of the UDO to be prepared in Task 6.

### **Key Tasks:**

Overview of document with Planning Board, selection of five recently approved developments, preparation of five hypothetical case studies (completed in collaboration with County staff and members of the local development community), work session with County staff and development community to examine and compare hypothetical developments

### **Timing:**

Four months after completion of Task 4 (October, 2021)

### **Trips:**

One one-day and one one-half-day trip by the consulting team

### **Public Engagement Elements:**

Work session with The Planning Board, work session with the development community; memorandum on testing results published to the web site

## Task 6: Adoption

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Following completion of the testing in Task 5, the consulting team will activate the dynamic cross references, embed the index, and insert the graphics.

This work program allocates \$12,000 to the preparation of graphics. The exact number and type of graphics will be discussed during review of each public review draft. Graphics will likely be a blend of three-dimensional sketch-up drawings, annotated photographs, and line drawings. The exact number of graphics will be determined based on the complexity of the illustrations discussed and agreed to during module review. Typically, a budget of \$12,000 results in the inclusion of between 100 and 120 different illustrations, but the exact number can be fewer if complex graphics are desired.

The adoption draft will be prepared in Microsoft Word, will include dynamic headers and footers, hyperlinked cross references, and dynamic tables of contents. It will consolidate the material from Modules 1 and 2, include a consolidated table of contents, illustrations, and an index for ease of use by reviewers. The document will be configured to retain its hyperlinking capabilities, searchability, and page layout characteristics during the process of conversion to a “.pdf” document format for posting on the County’s webpage. Use of Microsoft Word and Adobe Distiller to create a dynamic pdf will allow County staff to easily update and post fully functional versions of the UDO as the text is subsequently modified over time (unless it chooses to retain a codification consultant for this function).

Additional discussion with staff is necessary to determine if the UDO will continue to be located within the body of the City Code or if it will become a stand-alone appendix. In either instance, American Legal, the County codification contractor, can use the Microsoft Word version for codification purposes. Retention of the page layout and hyperlinking capabilities is not possible as American Legal does not use Microsoft Word as its codification platform.

Following completion of the adoption version of the UDO, the document will be posted on the web page and delivered to the Planning Board and County Commissioners in advance of the adoption hearings.

Three weeks after delivery of the adoption version, the consulting team will travel to the County for the first of three public hearings to present the UDO to the Planning Board or Board of County Commissioners, as appropriate. Following adoption, the consulting team will prepare a final version of the UDO with all changes recommended during the adoption process and deliver both the digital copies of the document and graphics as well as the requested 32 copies.

One issue for discussion is whether or not the County wishes to delay the effective date beyond the adoption date to allow the zoning map changes proposed in Task 8 to be completed.

### **Key Tasks:**

Preparation of public hearing draft of the UDO and associated illustrations; three public hearings on the draft document; delivery of final document

### **Timing:**

Four months after completion of Task 5 (February, 2022)

### **Trips:**

Three half-day trips for hearings

### **Public Engagement Elements:**

Adoption version of the UDO on project web page; public hearings, paper copies



## **Task 7: Procedures Manual**

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After adoption of the UDO the consulting team will prepare a procedures manual for the UDO. The manual is not part of the codified UDO, but will serve as a supplement to the ordinance that explains provisions, and how the development review procedures work in practice. It will include details about review procedures, the review schedule, the application forms and requirements for all applications, and additional contact information for those with more detailed questions.

Since the manual is not part of the adopted UDO, it may be updated without public hearings and significant re-codification. It will consist of a single, bound document, which can be placed on the project and County's website. It will be produced in both a digital or hardcopy format, and it is anticipated that the manual would be a "living" document that was modified somewhat frequently.

As with the UDO modules, the consulting team will prepare an initial draft of the manual for staff review and comment, then conduct a discussion on the comments, and make revisions to the manual. The exact contents and structure of the manual will be decided by County staff in collaboration with the consulting team following completion of the adoption version of the UDO in Task 6.

The manual will be illustrated and formatted to resemble (but not copy) the new UDO and will be provided in Microsoft Word format as well as a digital .pdf format suitable for placement on the County's website.

### **Key Tasks:**

Preparation of an initial and final version of the procedures manual

### **Timing:**

Delivery of final version within four months of adoption of the UDO

### **Trips:**

Three one-day trip for to meet with County staff about manual content

### **Public Engagement Elements:**

Initial and final versions of manual; training sessions

## Task 8: Training

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Following adoption and concurrent with Task 7, the consulting team will begin preparation of training materials. This scope of work anticipates an initial meeting with County staff to discuss the proposed break down of training sessions, potential audiences, and issues County staff would like highlighted. Following this meeting, the consulting team will prepare a series of training materials, primarily taking the form of differing powerpoint presentations. This scope of work anticipates a total of four training sessions conducted over two consecutive days.

### Staff Training

Staff training consists one general three-hour session with staffers from numerous departments in attendance. This is a general overview session that highlights the new UDO and key changes between the prior and new regulations. In addition, there is a detailed two-hour one-on-one session with CodeWright staff and the County staffers who will be responsible for maintaining the document. This session will focus on document functionality and maintenance issues.

### Public Sessions

In addition to staff training, this scope of work anticipates one general public sessions of one-and one-half-hours to overview the document and explain how it differs from the prior ordinance. The consulting team will make arrangements to film one of these sessions, and make the digital footage available to the County for its use. Both sessions are anticipated to be identical, and should be conducted on different days at different times of day.

### Developer's Session

Ensuring the development community is aware of the new UDO is important, and this scope of work anticipates conducting a two-hour session with members of the development community. Unlike the other sessions, this session will include a very brief overview of the new UDO and will focus on key issues of concern in a question and answer format. This session, while open to the public, is intended primarily for developers and development professionals who will use the UDO on a regular basis.

### Board Training

Finally, this scope anticipates a one-hour training sessions geared to the affected boards and commissions. These sessions will overview the UDO generally and then deal in detail with specific procedures or code sections applied by a particular board. Copies of the powerpoint presentations with notes pages can be provided as a future reference.

### Key Tasks:

Four training sessions with different audiences

### Timing:

Completion within four months of adoption of the UDO

### Trips:

Four half-day trips for public meetings and hearings

### Public Engagement Elements:

Public meetings, training powerpoints

## Task 9: Zoning Map Update

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Throughout the entire process of reviewing existing documents, preparing a draft UDO, and testing the new UDO the consultant team will concurrently review and prepare recommendations for change to the existing zoning map to correspond with the new regulations that are being developed.

This work program anticipates that effective date of the new UDO will be delayed by approximately six months to ensure sufficient time to complete necessary rezonings (and prepare the manual in Task 7). In addition, this work program anticipates that the new UDO will be adopted with a set of transitional standards that address how some of the current zoning districts may be carried forward or converted to new zoning districts without requiring additional public notice or public hearings associated with zoning map amendments.

Following adoption of the UDO, this work program anticipates the County will prepare a mass mailing informing landowners about the upcoming zoning map modifications. Prior to the mailing, the consulting team will commence preparations for a series of public meetings to explain the proposed map amendments and collect input from landowners.

Typically, the consulting team will conduct up to four public meetings on different days at different times and in different places to explain the new UDO and associated proposed zoning map changes. It may also be necessary for a County staff member to take responsibility for managing a telephone call-in number where interested residents may call or send e-mails with questions about the process. Materials will be prepared for the public meetings that explain the changes, the rationale for change, and options available to landowners who wish to have their recommended classifications reconsidered prior to commencement of the public hearing process. Generally speaking, we suggest the County adopt the stance that this process is being undertaken to repair issues with the zoning map, not provide free map amendments at the whim of a landowner.

Following completion of the public meeting series, this work program anticipates participation by the consulting team in up to two public hearings with the Planning Board or Board of County Commissioners, as appropriate in regards to the new zoning map. Following each hearing, the consulting team will prepare a list of input received, and an overview of the necessary edits to the draft of the new zoning map.

Once the new zoning map has been adopted by the County Commissioners, the consulting team will make all final revisions and prepare a final version of the adopted zoning map (in ARCGIS) and deliver one paper copy and digital copies of the new zoning map and all related files.

### **Key Tasks:**

Notice mailing (by County), four public meetings, presentation at three public hearings, final revisions following adoption

### **Timing:**

Completion six months after adoption of the UDO

### **Trips:**

Seven half-day trips for public meetings and hearings

### **Public Engagement Elements:**

Mailed notice, public meetings, public hearings



# 5. Proposed Fee

The table below sets out a preliminary not-to-exceed project budget of \$388,100. This is a draft budget, and we are willing to consider ways to make adjustments as necessary to meet with the County's expectations. CodeWright staff never charge for travel or for brief phone calls. This budget sets out a single line for meeting costs to allow greater flexibility, and meetings that are not conducted will not be charged to the project. Most subcontractor charges are also handled as line item expenses as it is almost impossible to discern the number of hours that will actually be necessary to accomplish listed tasks.

<b>Proposed Task or Expense</b>	<b>Total</b>
Task One: Project Initiation	\$10,000
Task Two: Audit	\$25,000
Task Three: Annotated Outline	\$32,000
Task Four: Initial Draft of UDO	\$40,300
Task Five: Testing	\$29,500
Task Six: Adoption	\$24,500
Task Seven: Procedures Manual	\$25,000
Task Eight: Training	\$12,000
Task Nine: Zoning Map Update	\$60,000
Meeting Budget	\$90,000
Legal Sufficiency Review	\$10,000
Graphics	\$25,000
Additional Services	\$4,800
<b>TOTAL (not to Exceed)</b>	<b>\$388,100.00</b>
Post-Adoption pro bono follow up	\$0.00

# 6. Vendor Form



## ATTACHMENT A

### Vendor Information & Signature Form

Name of Vendor:	CodeWright Planners, LLC
Trade License # (if applicable)	
Contact Person(s)	Chad Meadows
Street Address with City, State & Zip Code	9 Blue Bottle Lane Durham, NC 27705
Mailing Address (if different than above)	N/A
Phone #	919.593.2868
Fax #	919.593.2868
Email	chad@codewright.info
Proposer will do the work as:	<input type="checkbox"/> Individual <input type="checkbox"/> Joint Venture <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Corporation
Date & state of incorporation	Date 2014    State NC
Name of partnership or joint venture	N/A

By signing below, the respondent acknowledges he/she is authorized to act on behalf of the stated vendor and bind the firm in the contracted services if selected.

Bidder Signature:	
Date Signed:	2.28.19
Title of Signatory:	Principal

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