

Stormwater Ordinance Update Workshop – Part 1 New Development Regulations & Design



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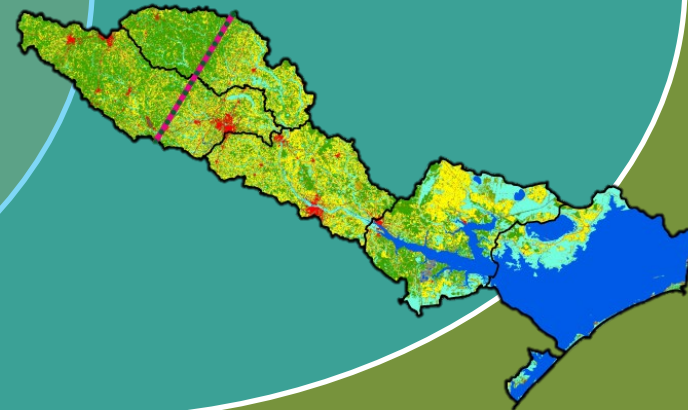
Current SW Regulations

MS4 Phase II

- Construction Runoff
- Public Involvement
- Good Housekeeping

Tar-Pam NSW

- SCMs
- Public Education
- Illicit Discharge Elimination
- Annual Reporting
- Nutrient Mitigation
 - Riparian Buffers



New SW Regulations

MS4 Phase II

- Construction Runoff
- Public Involvement
- Good Housekeeping

Tar-Pam NSW & Neuse

- SCMs
- Public Education
- Illicit Discharge Elimination
- Annual Reporting
- Nutrient Mitigation
 - Riparian Buffers
 - **24% High Density threshold**



Stakeholder Committee

Developers, Engineers, and Others
Council Liaison

Objectives:

1. Satisfy state and federal requirements
2. Review existing City ordinances & policies
3. Recommend changes to ordinances & policies

Commitment:

12 month process with
12 meetings



SW Ordinance Update Part 1

- State NSW Rule Changes
 - Water Quality Controls
- Additional Local Options
 - Greater Flexibility
 - Water Quantity Controls
- SCM Acceptance



Exemptions

- Single Family & duplex residential & recreational that disturbs < 1 acre
- Other dev. that disturbs <.5 acre and does not expand existing structure
- Other dev. that disturbs <.5 acre and cumulative BUA < 24%
- Individual single family or duplex not part of common plan and BUA < 5%
- Existing Development
- Vested Development
- Submitted prior to rule adoption
- Subject to Agricultural Rule
- Preempted by federal, state, or local agencies



Definitions

- **Built Upon Area** – same as G.S.143-214.7(b2)
Any Impervious except
 - slatted deck
 - Water surface area of pool
 - Trails if conductivity >1.41 "/hr
 - 4"+ #57 stone on filter fabric
 - Landscaped areas of California driveways
- **Existing Development** – BUA or equivalent on the ground or approved on 7/1/24

Definitions

- **Common Plan of Development** - a site where multiple separate and distinct development activities may be taking place at different times on different schedules but governed by a single development plan regardless of ownership of the parcels. Information that may be used to determine a "common plan of development" include plats, blueprints, marketing plans, contracts, building permits, public notices or hearings, zoning requests, and infrastructure development plans.



Definitions

- **Surface Drainage** – grading & sheet flow
- **Swale** – Treatment or Conveyance
 - Treatment = per MDC in SCM Manual
 - Conveyance = grassed, 3:1 side slope, 36” max depth, easement 5’ from TOB, not allowed for public runoff, 10yr
- **Ditch** – 2:1, stable, easement 15’ from TOB
- **Vegetated Conveyance** – 3:1 side slope, private maint., OMA required, 10yr
- **Jurisdictional Stream** – blue line waters of state or US



Definitions

- **Public runoff** – wholly or partially from City or DOT ROW or City property
- **Public drainage** – system that carries public runoff excluding SCMs & detention facilities
- **Private drainage** – any system that isn't public



Definitions

- **Primary SCM** - required for High Density
 - wet pond,
 - stormwater wetland,
 - infiltration system,
 - sand filter,
 - bioretention cell,
 - permeable pavement,
 - green roof,
 - rainwater harvesting,
 - approved proprietary devices

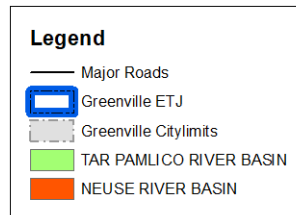
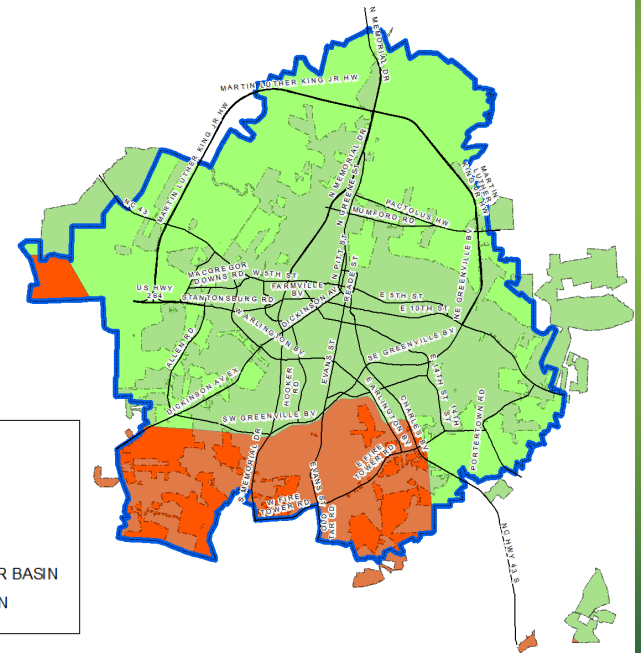
Definitions

- **Secondary SCM** – not sufficient by itself for High Density
 - dry pond,
 - level spreader filter strip,
 - disconnected impervious surface,
 - swale,
 - any other scm that is not primary,



State NSW Rule Changes

- Neuse limits N=3.6lbs/ac/yr
- Tar limits N=4.0lbs/ac/yr & P=0.8lbs/ac/yr
- Compliant if no net increase of runoff volume
- Uses SNAP Tool
- Allows Public Private Partnerships



State NSW Rule Changes

- $\text{Project Area} = \text{Total site area} - \text{existing BUA}$
- $\text{Subject BUA} = \text{Cumulative BUA} - \text{existing BUA}$
- $\text{Project Density} = \text{Total BUA} / \text{Project Area}$



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State NSW Rule Changes

- 10 acre parcel
- 4 acres of BUA existing on July 1, 2024
- Proposed to tear down and rebuilt with 7 acres of cumulative BUA

- Project Area = 6 acres
- Subject BUA = 3 acres
- Project Density = 50% High Density



State NSW Rule Changes

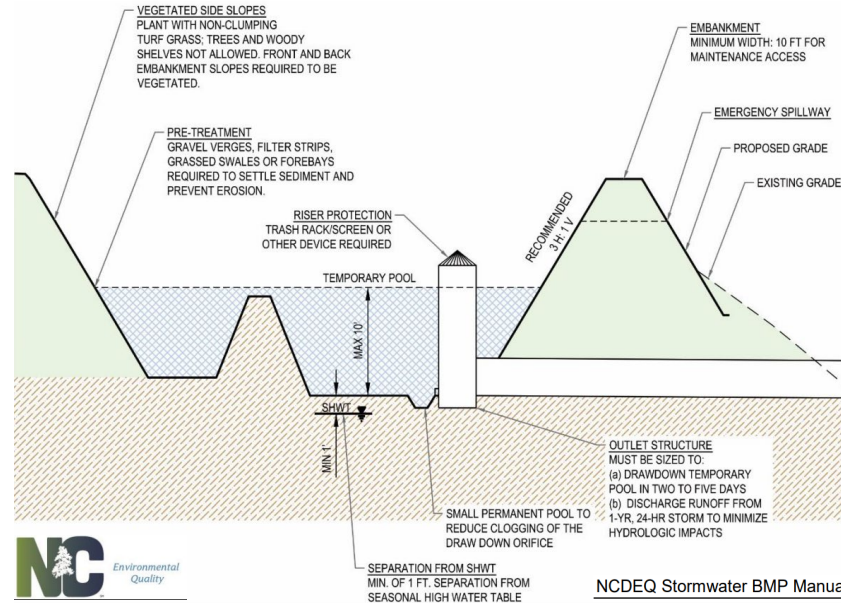


- Establish HD/LD BUA thresholds
 - Low Density (LD)= <24% BUA
 - High Density (HD) = >24% BUA
- Require veg. conveyances or diffuse flow for LD projects
 - curb cuts or outlet to swales or level spreader
- Require primary SCMs for HD projects
 - wetpond, wetland, bioretention, sand filter, infiltration, etc.
- Phased plans may have HD and LD phases, or LD may become HD later

State NSW Rule Changes

- State's Minimum Design Criteria
- Eliminate exemption for redevelopment district
New rules don't allow this.

Figure 1: Dry Pond Example: Cross-Section



State NSW Rule Changes Summary

- Stricter nutrient & density requirements
- Establishes Minimum Design Criteria
- Provides more flexibility to meet requirements
- Grandfathers existing development

I just need
the main ideas



Additional Local Options

Impervious Surface Averaging

- pair an undeveloped conservation lot (floodplain or wetlands) with developed lot to increase overall project area and decrease density calculation
- allows what would be HD projects to count as LD
- requires vegetated conveyances for developed lot.
- platted together conservation easement recorded
- protects sensitive areas like floodplains and wetlands
- avoid Primary SCM requirement
- adds value to undevelopable lots
- does not affect peak flow calculations



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Additional Local Options

Impervious Surface Averaging

- 2 acre parcel wants to build gas station
- 0 acres of BUA existing on July 1, 2024
- Proposed 1.5 acres of new BUA
- Density without ISA = 75% High Density

- Pair 5 acres of conservation lot
- Project Area = 7 acres
- Project Density = 21.43% Low Density

- Peak flow pre and post still based on 2 acre developed parcel.



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Additional Local Options

Fee-in-lieu of Detention

- Establish a fee-in-lieu for compliance
 - pay fee to the City instead of providing onsite controls
 - City invests in capital projects that have greater impact
 - Developer saves on land, construction, and ongoing inspection and maintenance
 - City must not have any capacity issues downstream



Additional Local Options

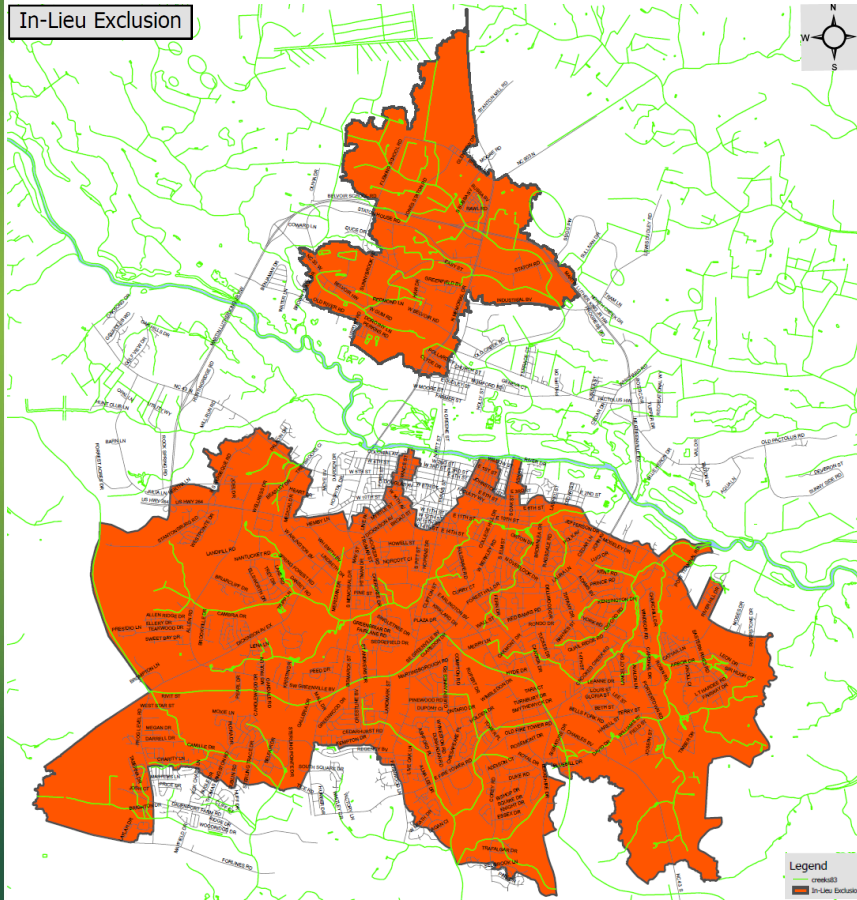
Peak Flow Control

- Eliminate exemptions from attenuation for <10% increase of peak flow or parcel adjacent to a floodway
 - may use fee-in-lieu instead
 - Provides better protection where some developments would have been exempt
 - Increases fairness



Additional Local Options

Fee-in-lieu of detention



Areas shown in **RED** are upstream of identified level of service issues and therefore

NOT eligible to use the fee-in-lieu at this time.



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Additional Local Options

- Disconnected Impervious Surface as an SCM is not allowed for single family developments
- Ditches carrying public water must be piped if 48" diameter pipe or less

**Minimum Easement Requirements
for Storm Drain Pipe**

Pipe Size	Easement Requirement
15"	20'
18"	20'
24"	20'
30"	20'
36"	20'
42"	25'
48"	25'
54"+	30' MIN. (VARIES)

**Additional Easement Width
Requirements by Depth of Pipe**

Depth	Add'l Easement Required
0'-6'	0'
6'-8'	5'
8'-10'	10'
Over 10'	15'

SCM Acceptance

- Require existing SCMs compliant or approved plan of action prior approval of site plan or residential plat
- Require existing SCMs compliant or bonded prior to issuance of CO.



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Currituck County

SCM Acceptance

- Developer responsible for repairs & maintenance of SCM's for minimum first 12 months
- Developer request warranty inspection at 11 months
- City must inspect within 30 days
- Developer given 90 days to make repairs or submit plan of action
- Developer request reinspection
- Passing = “Like-new condition”
- Once approved, Developer may transfer to permanent owner or HOA/POA.



SCM Acceptance

- Clarify SCM acceptance & erosion control for phased dev.
 - Once accepted, SCM and street is part of the stormwater system and must be protected.
 - Individual home sites must keep sediment from entering an accepted street, pipe, or pond.



SWMP Process

- E-submittal & review through Energov portal
- Complete submittal
 - Narrative
 - Drawings / Plans
 - Drainage Area Map
 - Routing Calculations
 - Nutrient Calculations (SNAP Tool, .csv file)
- 30 day review period
- 6 months for revisions or plan becomes withdrawn
- Approval vested per 160D (2 yrs or 7 yrs for phased)



Important Dates


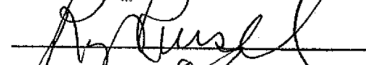



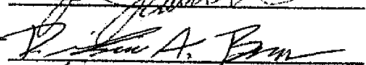
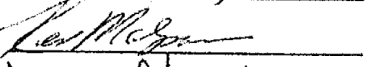
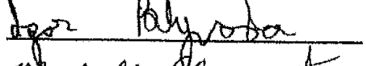
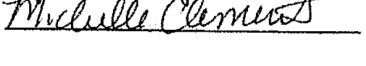

- May 29, 2024 SW Workshop Part 1 – New Dev Regs
- June 5, 2024 SW Workshop Part 2 – SCM O&M
- June 10, 2024 SNAP Tool Webinar
- July 1, 2024 Ordinance Effective Date



Thank you

Stormwater Regulatory Committee

We, the members of the City of Greenville Stormwater Regulatory Committee, do provide the attached recommendations to the City Council for proposed updates and revisions to the Stormwater Management Ordinance and Program.

<u>Committee Member</u>	<u>Firm or Organization</u>	<u>Signature</u>
Landon Weaver	Bill Clark Homes	
Rocky Russell	Russell Property Management	
Jill Howell	Sound Rivers	
Michael O'Driscoll	East Carolina University	
Bryan Fagundus	Ark Consulting	
Steve Janowski	Rivers and Associates	
Richie Brown	Stroud Engineering	
Ken Malpass	Malpass and Associates	
Igor Palyvoda	Baldwin Design Consultants	
Michelle Clements	The East Group	



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