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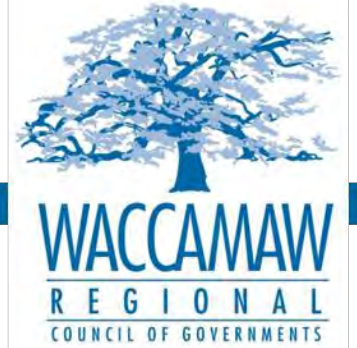
# Local Land Use Planning Tools for Watershed Protection

Leigh Kane, AICP

Local Planning Services Director

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# Introduction

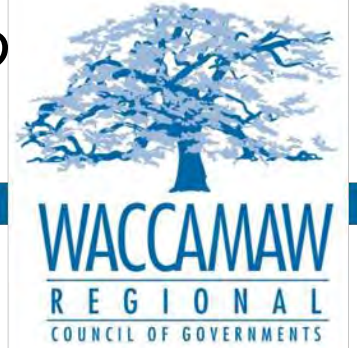


Leigh Kane, AICP



- Local Planning Services Director, WRCOG
- Horry County Planning, 9+ years
- Coastal Training Program Coordinator, North Inlet-Winyah Bay National Estuarine Research Reserve (USC and NOAA partnership)
- Coastal Management Fellow, NJ Office of Coastal Management
- Planner, Asset Properties Disposition

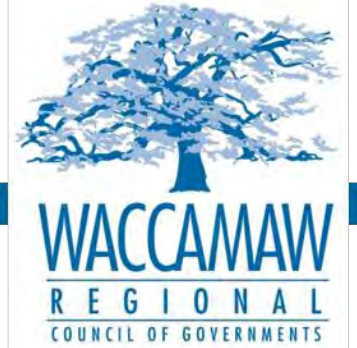
# Why the desire for local protections?



- Manage water quantity (infiltration/runoff)
- Protect water quality
- Mitigate future flood losses
- Protect habitat



# Local government tools?



- Zoning – regulates uses, lot dimensions, landscaping, lot coverage, impervious surfaces, aesthetics, character, overlays
  - **If you don't have zoning....land fill, mining operations, manufacturers...**
- Land Development/Subdivision Regulations – regulate lot design, ingress/egress, roads, open space, easements
- Stormwater Regulations – onsite stormwater retention, grading, plays a significant role in clearing and grading in major subdivisions

# Tree Protection

- Typically for large size trees
  - Historic/Grand Trees (ie. 36” dbh)
- Specimen and protected trees (ie. 18-24” dbh)
- Pine trees not usually protected
- **Local regulations don't have** authority over forestry practices.
- Usually requires an arborist on staff.



# Landscape Requirements

- Regulate landscape requirements for commercial and multi-family developments – often for ornamental purposes.
- Regulate non-natives and invasive species.
- Promote xeriscaping – drought tolerate plants.
- Not feasible to regulate single-family residential – **that's when** public education in appropriate.



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# Low Impact Development

- Ways to manage stormwater and promote infiltration.
- Can be regulated through zoning with impervious surface limits, **parking lot design, overlays...**
- **...but a stormwater department** really needs to be involved to evaluate if designed to meet onsite retention/infiltration requirements
- **...if it isn't maintained, it won't be effective.**



**LOW IMPACT DEVELOPMENT  
IN COASTAL SOUTH CAROLINA:  
A PLANNING AND DESIGN GUIDE**



<https://northinlet.sc.edu/lid/>



# Buffer or better stormwater regulations could **have protected this...**

- Can grade extensively right up to a wetland, altering the natural slope
- Can result in wetland turning into an open water body or drying out entirely.
- Can narrow the floodplain, impacting downstream areas
- Completely alters the hydrology of an area



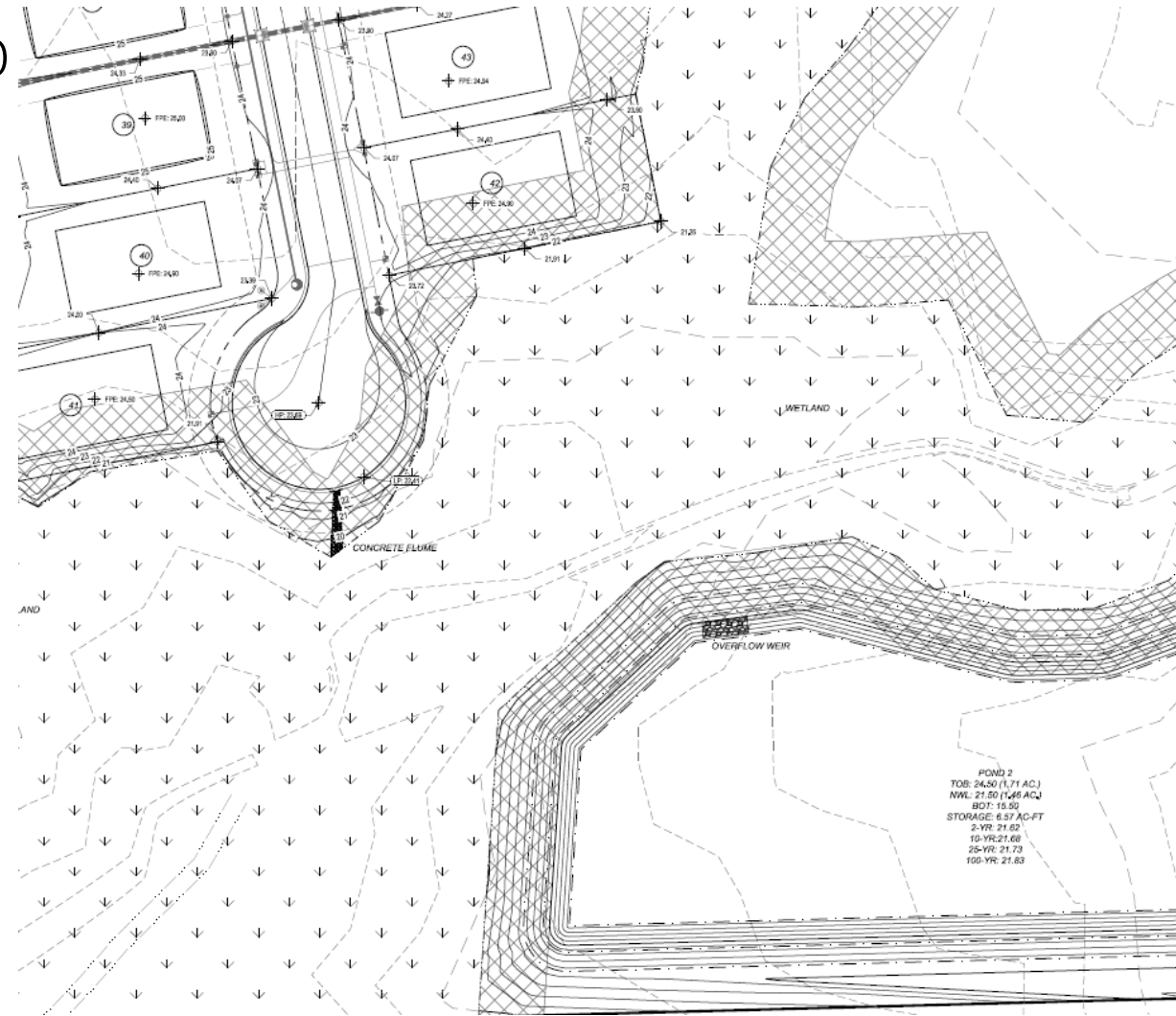
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# Other challenges

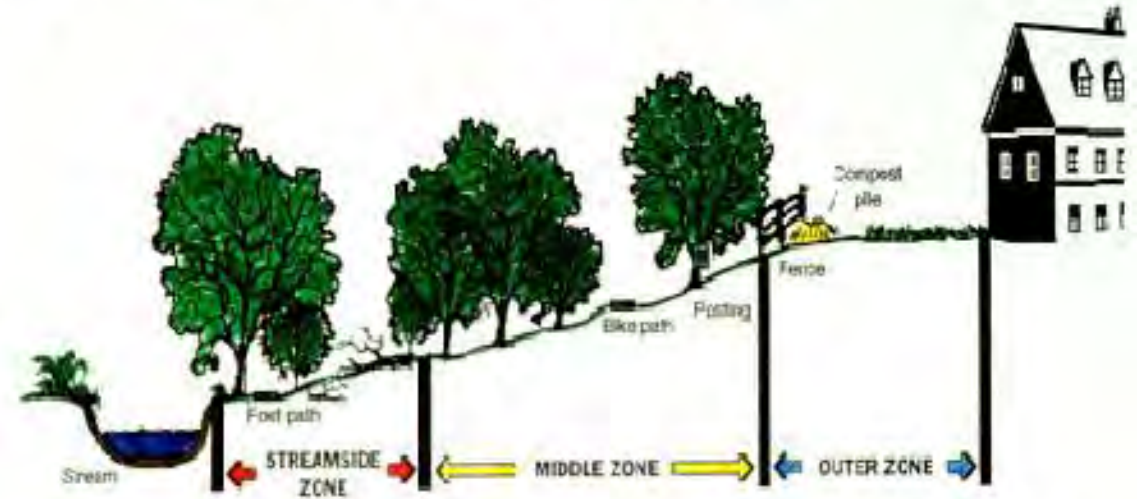
- Temporary buffers are required to keep sediment from entering wetland during grading – they **don't stick around through the** entire project development.
- Home can be feet away from **wetlands...**
- A grassed yard directly abutting a **wetland...**
- A stormwater pond allowed **directly abutting a wetland...**



# Onsite Land Protection

- Requiring a percentage of upland property to remain undisturbed is more effective.
- Could be open space in a neighborhood
- Could be a buffer from the river or wetlands.
- **Doesn't require watering.**
- Keeps the land in a natural state to allow infiltration.

The three-zone urban stream buffer system



CHARACTERISTICS	STREAMSIDE ZONE	MIDDLE ZONE	OUTER ZONE
FUNCTION	Protect the physical integrity of the stream ecosystem	Provide distance between upland development and streamside zone	Prevent encroachment and filter backyard runoff
WIDTH	Min. 25 feet, plus wetlands and critical habitats	50 to 100 feet, depending on stream order, slope, and 100 year floodplain	25 foot minimum setback to structures
VEGETATIVE TARGET	Undisturbed mature forest. Reforest if grass	Managed forest, some clearing allowable	Forest encouraged, but usually turfgrass
ALLOWABLE USES	<b>Very Restricted</b> e.g., flood control, utility rght. of ways, footpaths, etc.	<b>Restricted</b> e.g., some recreational uses, some stormwater BMPs, bike paths, tree removal by permit	<b>Unrestricted</b> e.g., residential uses including lawn, garden, compost, yard wastes, most stormwater BMPs

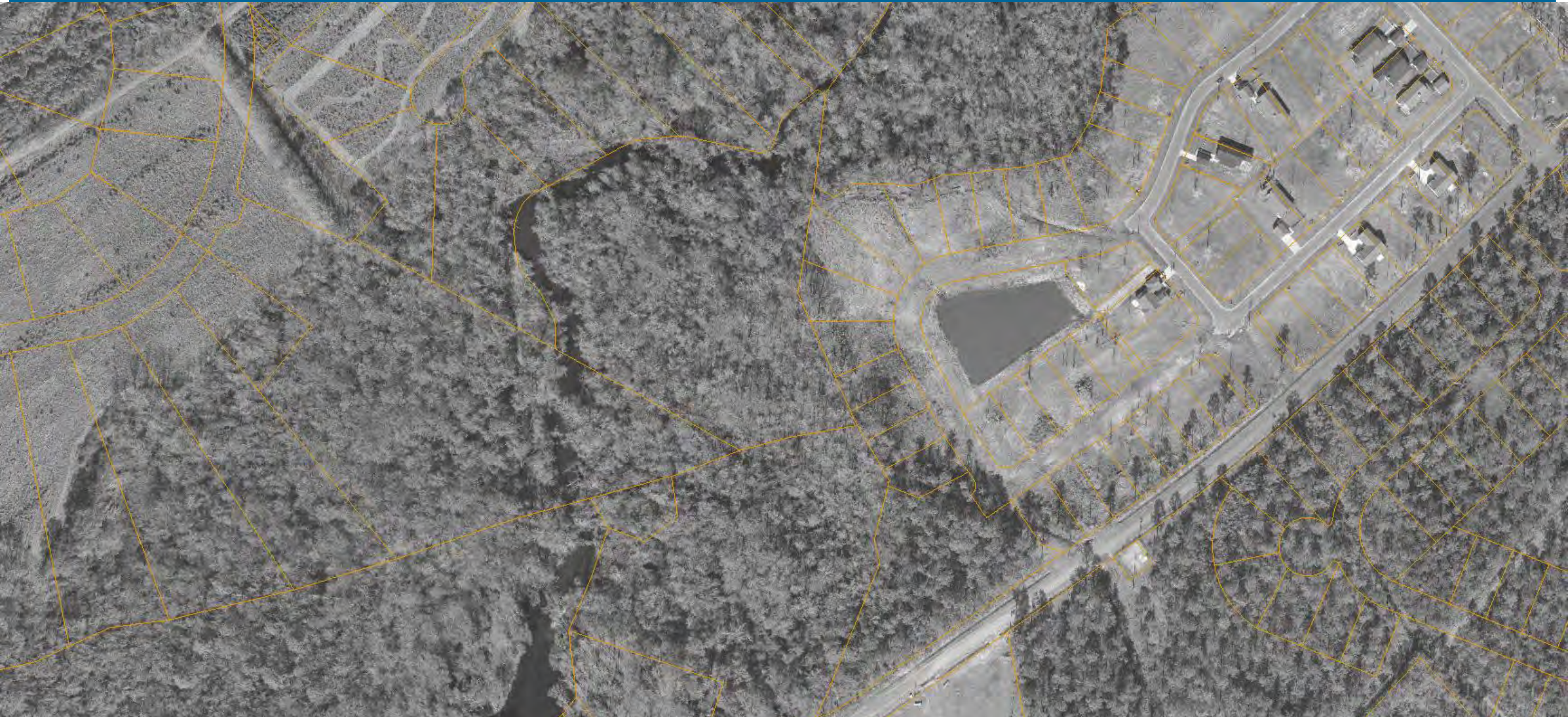
Buffer could have protected that...



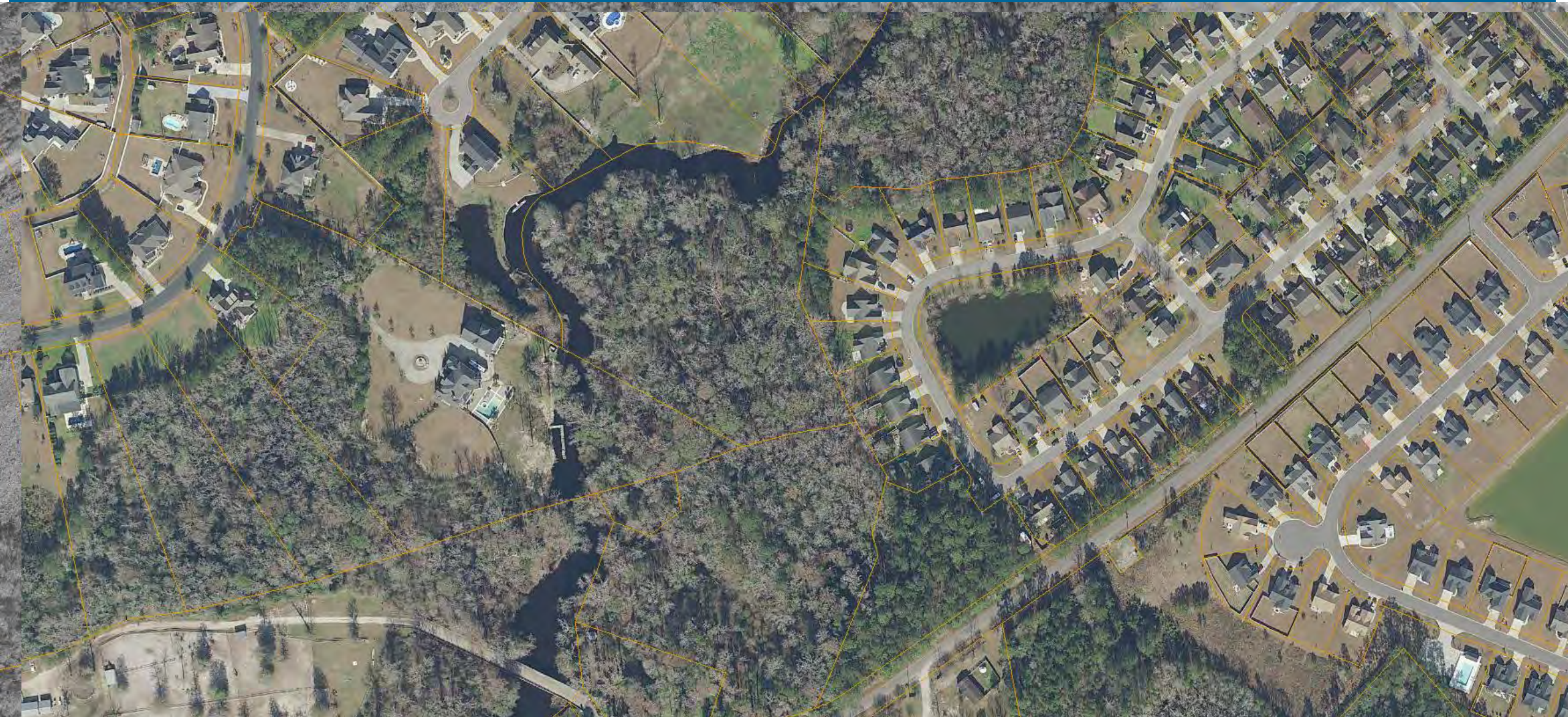
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Buffer could have preserved that...or better  
floodplain regulations...

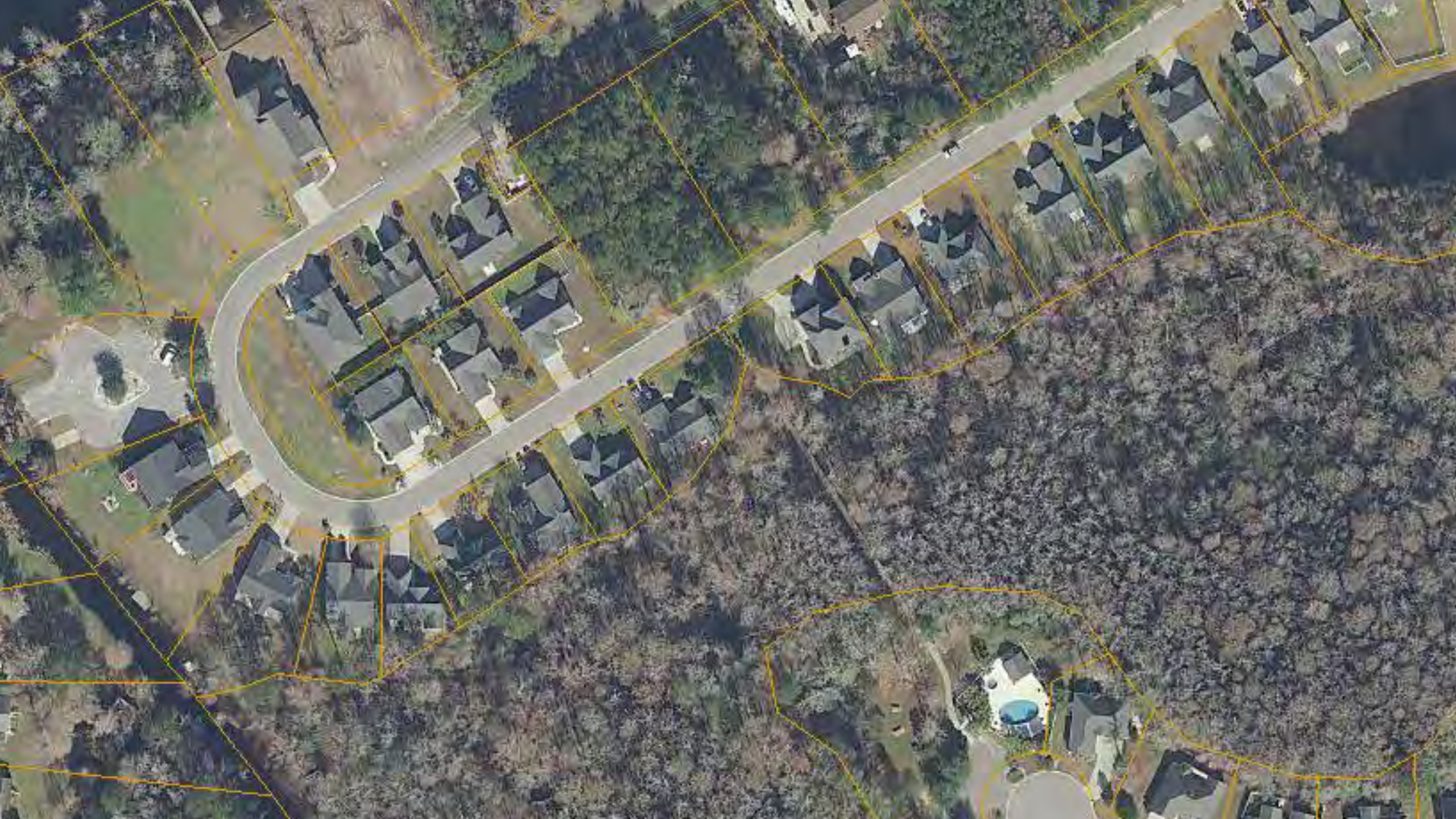


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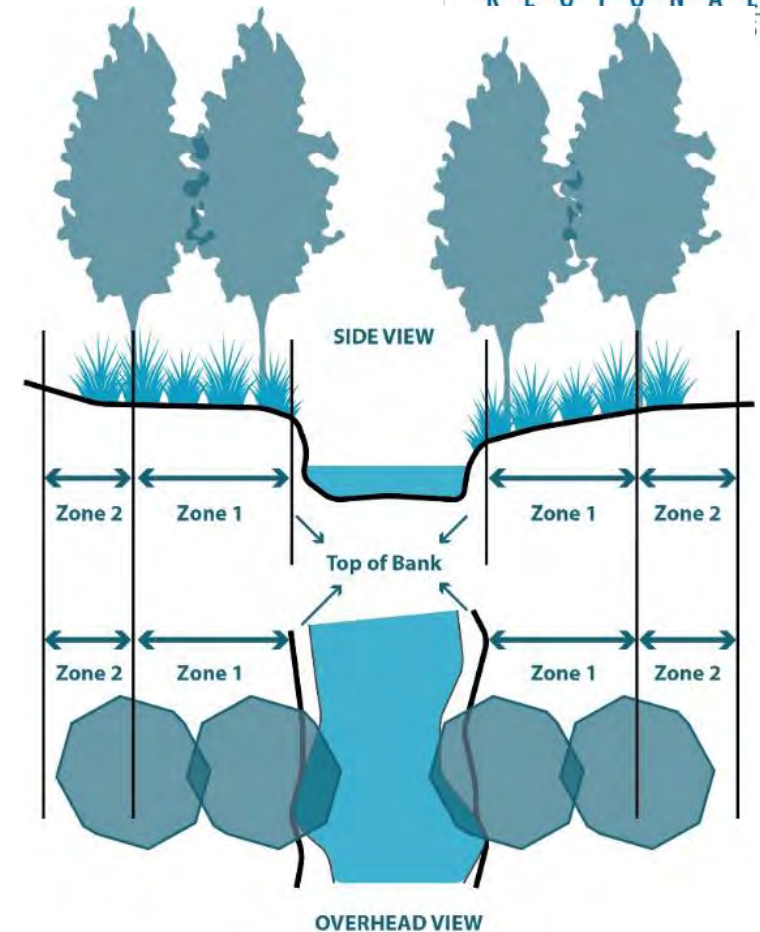


# What are some communities doing?



- Mt. Pleasant – 15 ft wetland buffer for marshfront properties
- Town of Summerville – Stormwater Ordinance (Chapter 22 of General Code) includes Stream and Wetland buffer requirements.

	Zone 1 Buffer	Zone 2 Buffer
Rivers	100 ft.	50 ft.
Intermittent and Perennial Streams	25 ft.	25 ft.
Wetlands	25 ft.	Not required



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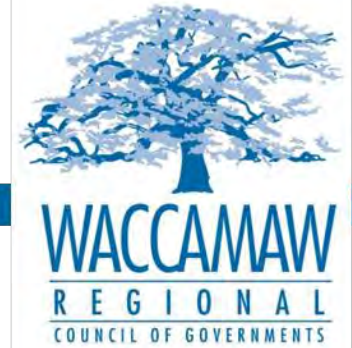
- Conway and Myrtle Beach have conservation subdivision ordinances.



# Local Capacity



- Local Regulations require local capacity.
- Many rural communities in the Pee Dee River Basin still do not have zoning or have limited staff to develop such ordinances and enforce them.
- Sometimes the best place to start is public education.
- Riverine/wetland buffer widths – many local governments are **hesitant to set a width and don't want to proceed with regulating** wetlands or requiring local wetland protections unless State or Army Corps leads an effort or sets the standard



Leigh Kane – Local Planning Services Director

843-436-6125

[lkane@wrcog.org](mailto:lkane@wrcog.org)