

Selection and Implementation of Low Impact Development (LID) Practices along the SC Coast



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Stormwater Ponds

- Flood control
- Water quality concerns
 - Accumulation of toxins
 - Harmful algal blooms (HABs)
 - Fish kills
- Human Health Implications
 - Amenity (Human exposure to toxins)
 - Connection to tidal creeks?

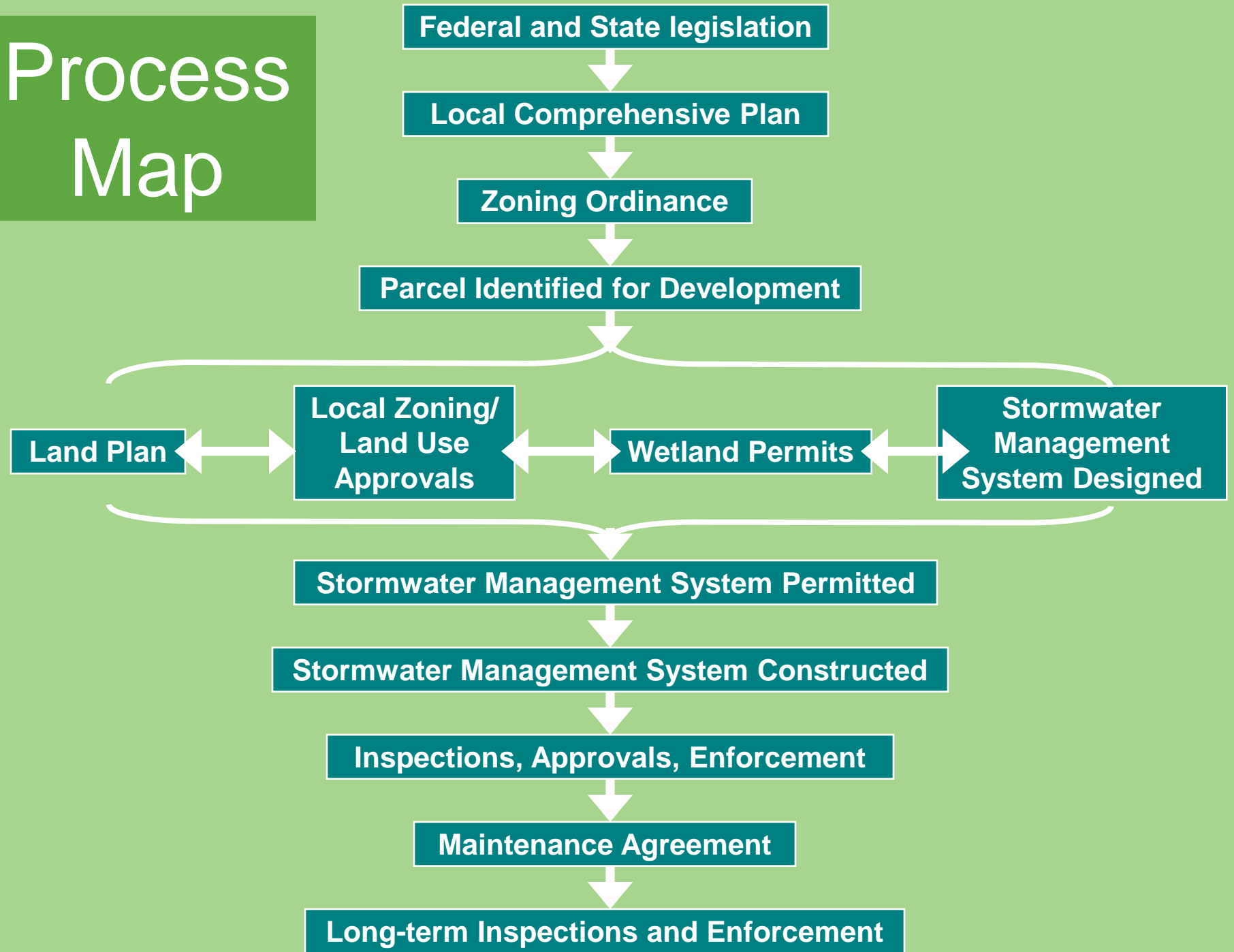


Low Impact Development (LID) Practices



- Network of Best Management Practices (BMPs) to disperse stormwater throughout the site
- Water quantity and quality control
- Minimal use in coastal South Carolina

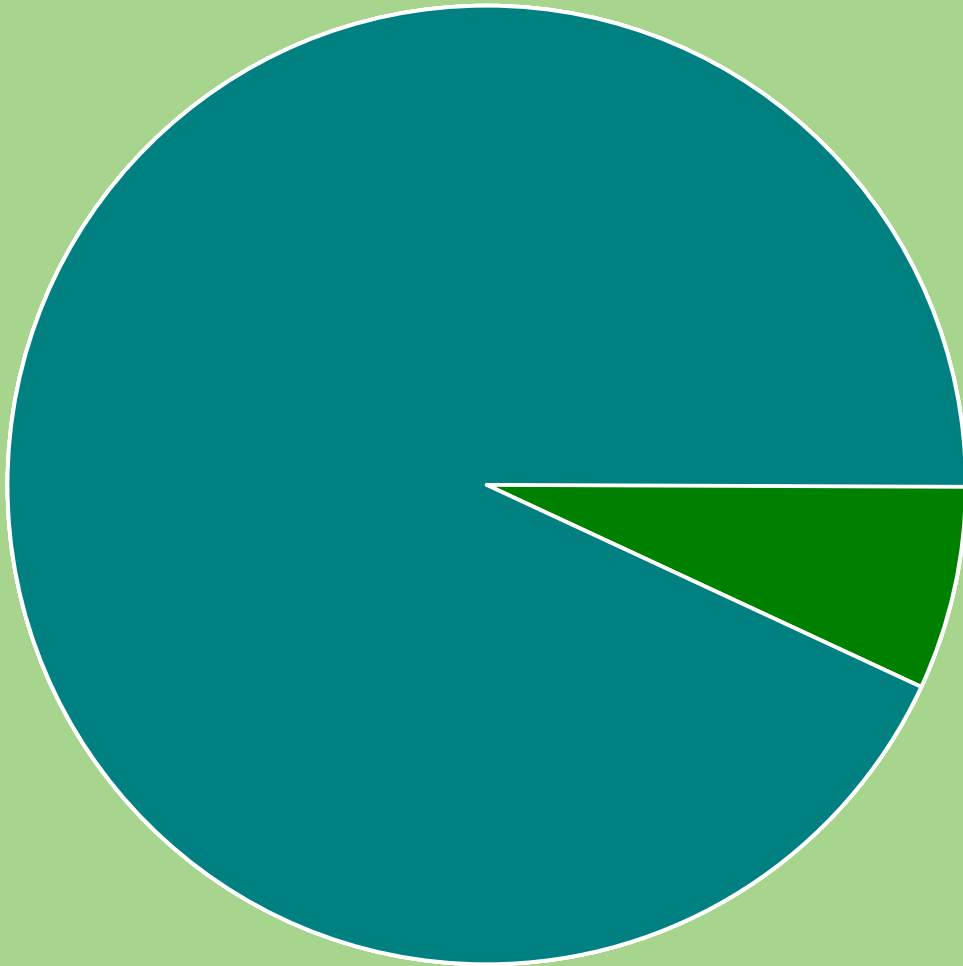
Process Map








Interview Questions

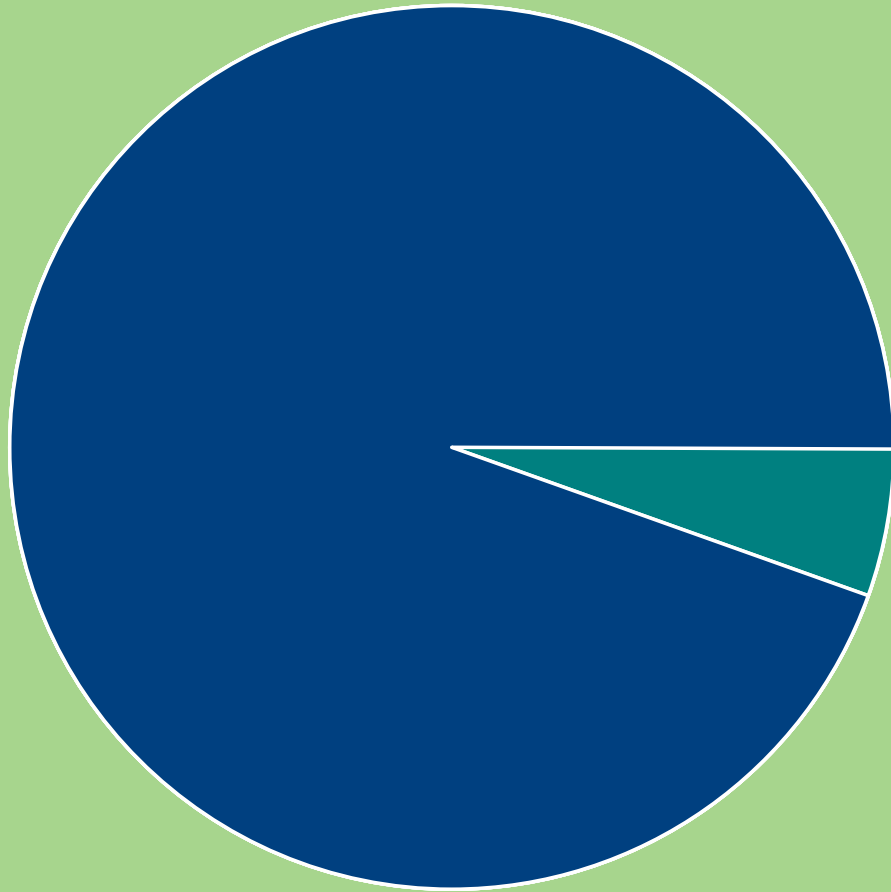
- Have all the critical steps in the process been identified?
- Who are the key decision-makers in each step?
- What does the term Low Impact Development (LID) practices mean to you?
- Are there stormwater practices that you would consider lower impact (than stormwater ponds) and if so what are some examples?
- How would you describe the advantages of LID in terms of managing stormwater?
- How would you describe the disadvantages of LID in terms of managing stormwater?
- How prevalent are LIDs in the SC coastal region?
- From your perspective, where in the process do road blocks or constraints to utilizing LID exist?
- What do you think needs to be done to increase the number of LIDs that are constructed in the coastal region?
- What stakeholder in the process would have the greatest influence on the number of LIDs installed in the area?

Advantages of LID



-  Water quality/quantity
-  Cost-savings
-  Aesthetics
-  Marketing tool
-  Alternative to ponds

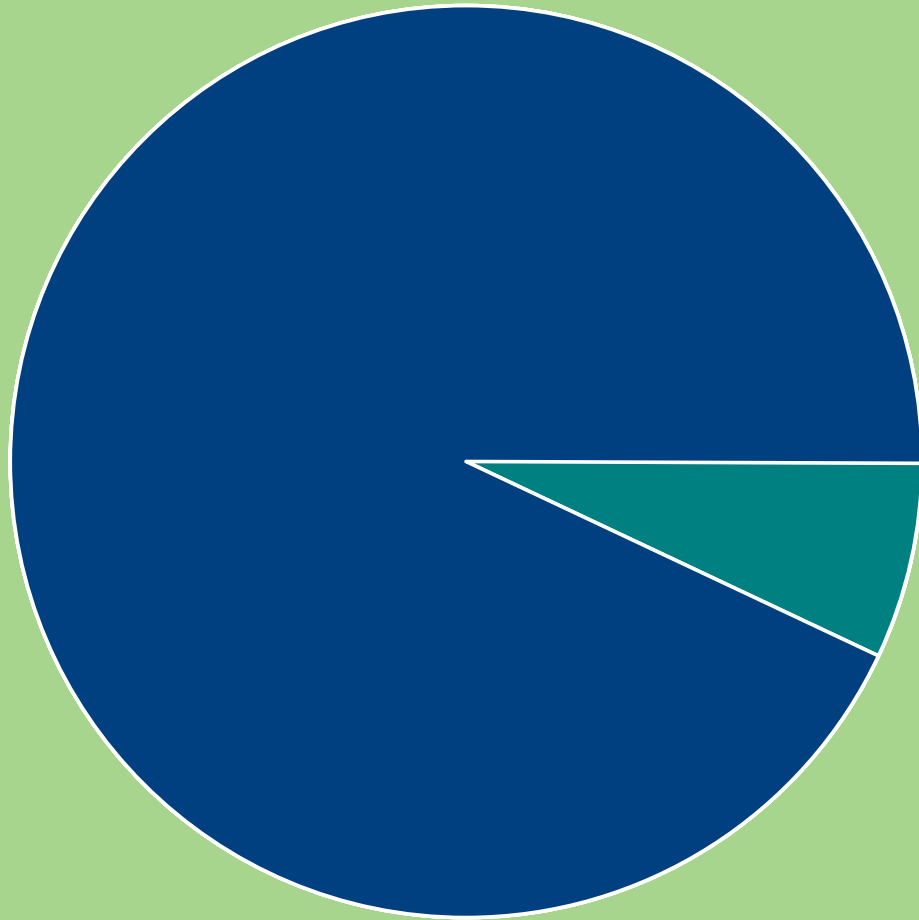
Disadvantages of LID



“There is a need for a cultural change which includes personal stewardship and education [of municipal officials and consumers]”

- Educational need
- Lack of information
- Cost
- Geographic/hydrologic challenges
- Regulatory process is harder
- Ponds are easier

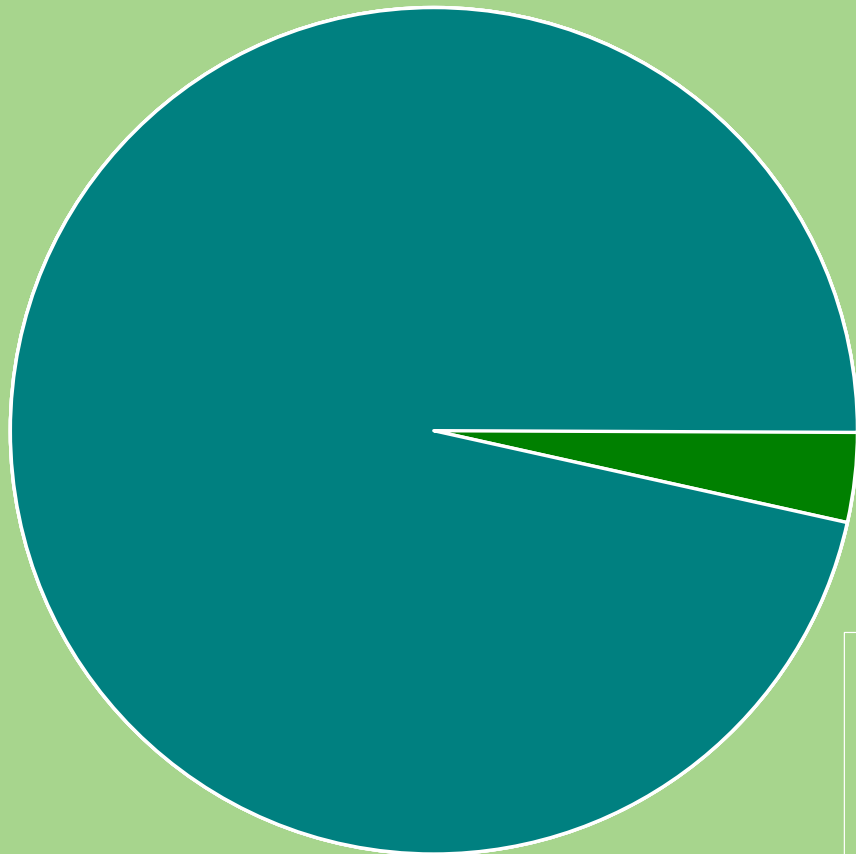
Road blocks to utilizing LID



“Regulations make innovation impossible”

- Educational need
- Regulatory process
- Lack of information
- Cost
- Geographic/hydrologic challenges
- Maintenance apprehension

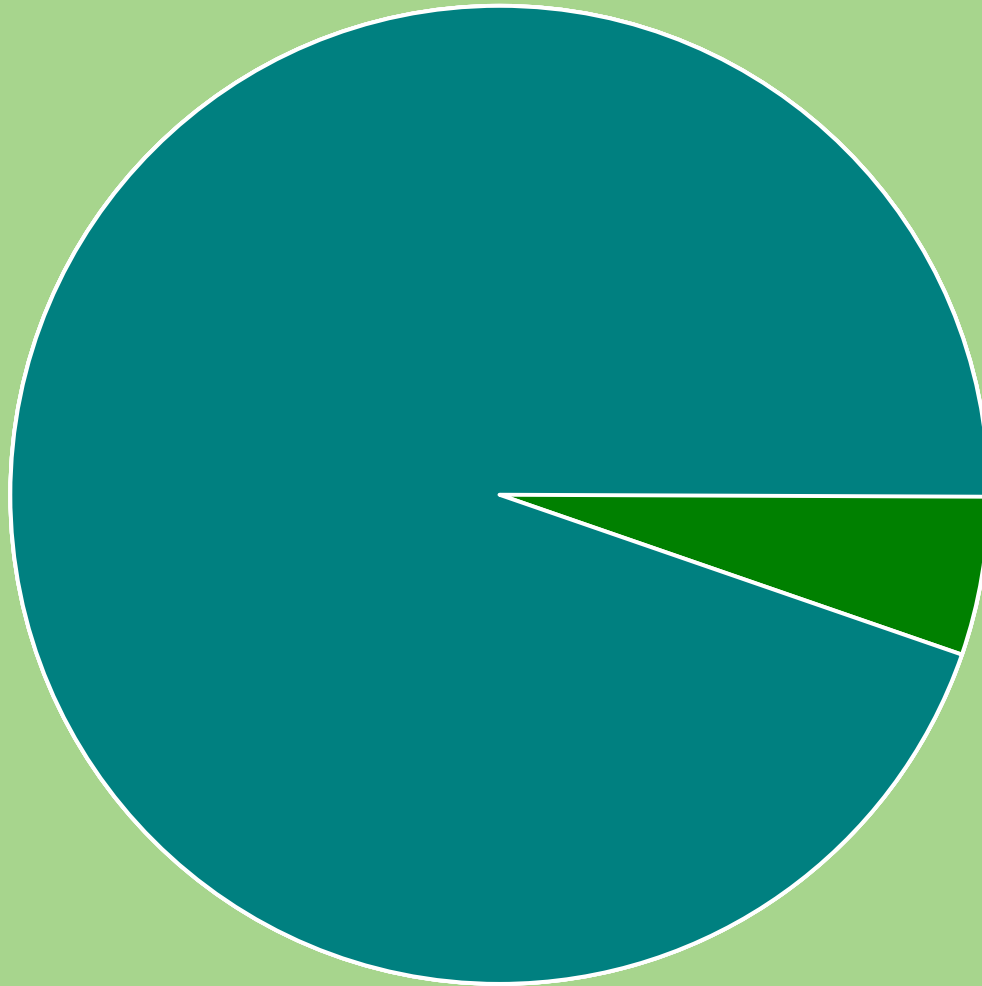
Stakeholder that has the biggest influence



“There are so many regulations and approvals needed that the development strategy becomes how to get through the regulatory process”

- Regulatory agencies (state and municipal)
- Developer
- Engineer
- Consumer
- Local stakeholder

Options for increasing LID use



“When developing the mindset is:
1) easier is better and 2) what
incentives are there to develop one
way versus another”

- Regulatory mandates
- Education
- Incentives
- Research
- Success stories

Additional notes

- LID prevalence is limited along SC coast
- Need to clarify the definition of LID
- Need for regional flexibility in regulations to consider geographic/hydrographic constraints
- Internal politics of municipalities
- Regulatory concerns with LID maintenance

LEED certification as a marketing tool for LID practices

- “People want green to say they are saving the world, but they don’t understand what it really is”
- “LEED is a branding, the stormwater portion is not”
- “Buyers are interested in the visible, tangible things associated with LID, they don’t notice the advantages of stormwater LID practices”



Additional Implementation Obstacles

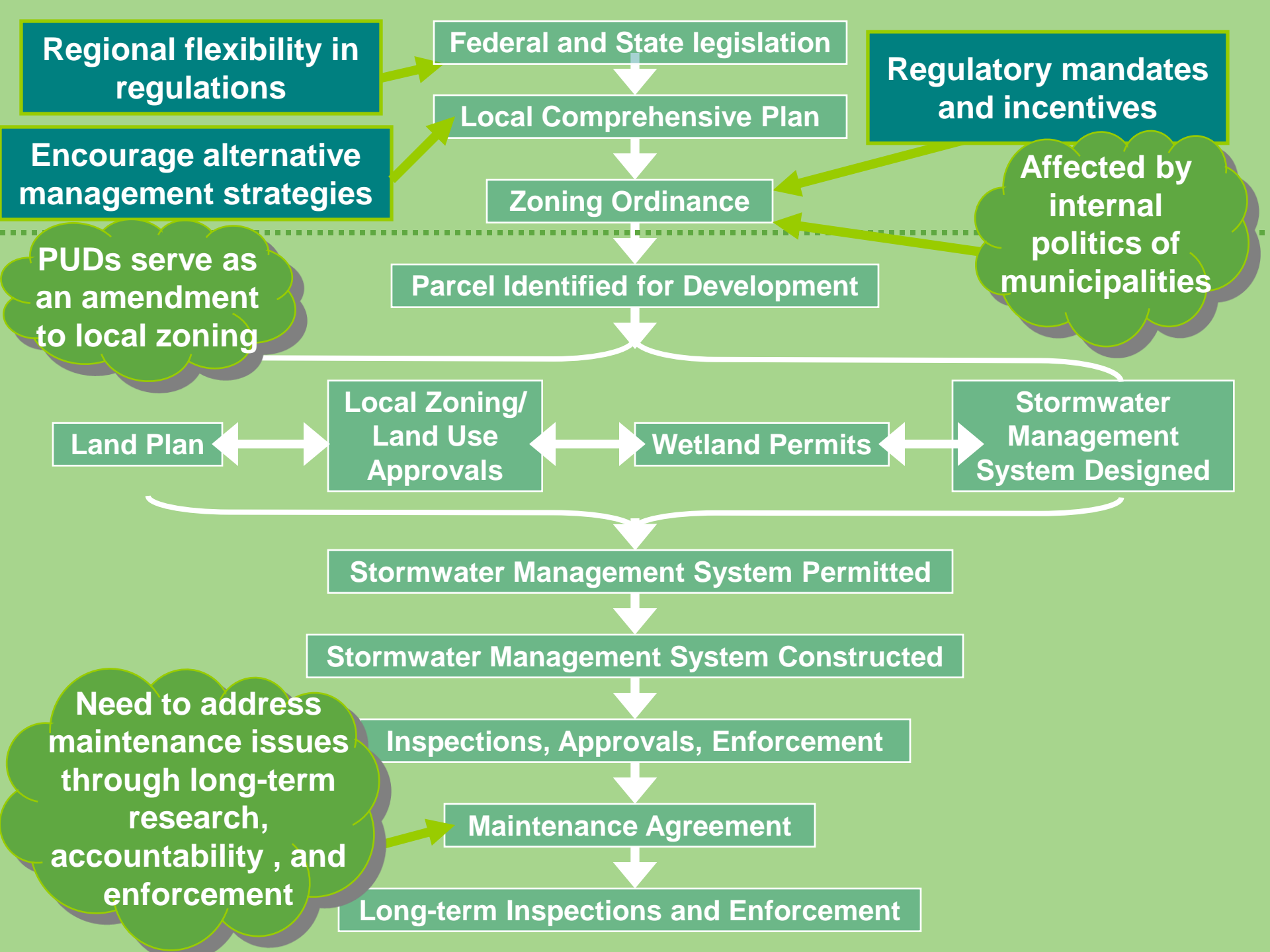
- Contractor lack of knowledge



Installation



Sediment Control



Regional flexibility in regulations

Federal and State legislation

Regulatory mandates and incentives

Encourage alternative management strategies

Local Comprehensive Plan

Affected by internal politics of municipalities

Zoning Ordinance

PUDs serve as an amendment to local zoning

Parcel Identified for Development

Land Plan

Local Zoning/ Land Use Approvals

Wetland Permits

Stormwater Management System Designed

Stormwater Management System Permitted

Stormwater Management System Constructed

Need to address maintenance issues through long-term research, accountability, and enforcement

Inspections, Approvals, Enforcement

Maintenance Agreement

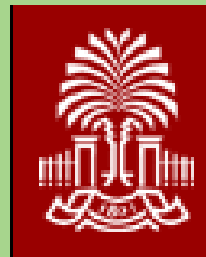
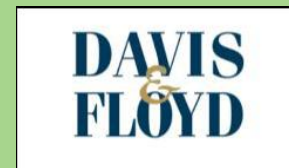
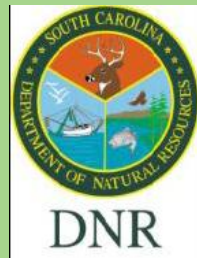
Long-term Inspections and Enforcement

Opportunities for addressing obstacles

- Regional research needs
 - Long-term performance and efficiency
 - Development of models and standards
- Educational needs
 - Contractors, Municipal officials, Engineers, Developers, Consumers
- Regulatory suggestions
 - LID mandates
 - Incentives for LID (e.g., tax incentive, reduced impact fees, bonus density, expedited review, initial flexibility in enforcement, LEED certification)

Next Steps

- Draft assessment report
- Workshop in January 2009
- Final assessment report with identification of obstacles and suggestions for solutions
 - Knowledge dissemination





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