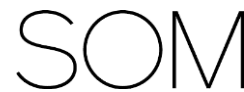




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# CHAPEL HILL STORMWATER REGULATIONS RECOMMENDATIONS

February 15, 2023  
Town Council Work Session





# Stormwater Regulations Recommendations

- Background
  - Petition of 5 councilmembers
- Project Stakeholder Engagement
- Recommendations

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# How will Climate Change Impact Stormwater?

- Projected temperature increases
- Rainfall and Drought
- Climate changes could impact



## Probability of Outcome for Likelihood Terms

Very likely = 90-100%

Likely = 66-100%



# Petition – Comprehensive Review of SW Regulations

- Chapel Hill’s stormwater management regulations were last comprehensively reviewed/rewritten in 2003. Since that time, environmental changes are accelerating.
- The Town undertook a comprehensive review of its stormwater management regulations to ensure that:
  - Goals for the 2003 regulations remain valid (and if not, are updated)
  - Regulations are directed toward meeting these goals.
- Topics for review listed but not limited to.

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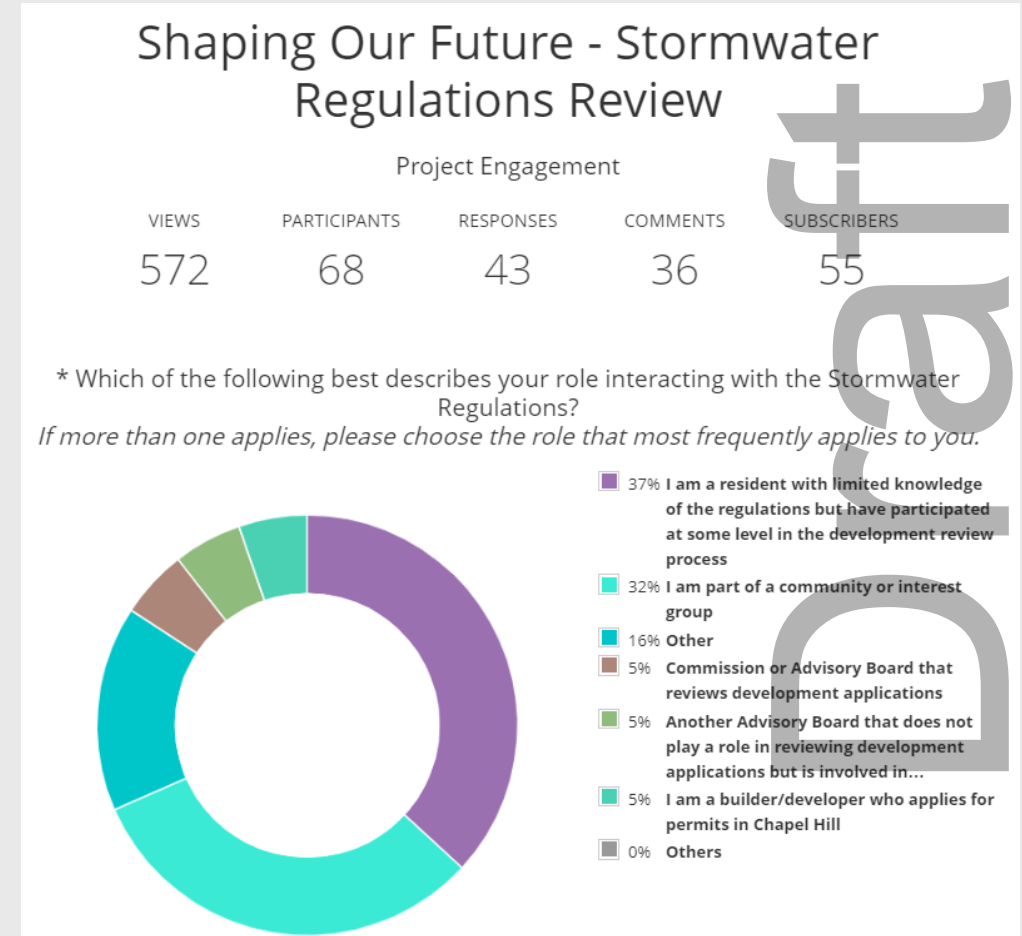
# What Has Happened Since the Petition Was Submitted

- On October 20th, 2021 at a work session, Town Stormwater Staff presented:
  - An array of possible areas of change to Stormwater related Ordinances
  - What would be included in a technical study
  - And next steps
- The Town has since contracted with SOM – the consultant for the overall Land Use Management Ordinance (LUMO) review and rewrite. SOM has partnered with SRF to provide technical support.

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# Stakeholder Engagement

- Current Stormwater Regulations
  - What's working?
  - What are the challenges?
  - Opportunities & Goals



# Recommendations

- Rate Control
  - Current: 1-yr, 2-yr, and 25-yr, 24-hour storm
  - Recommendation: 1-year, 10-year, and 100-yr, 24-hour storm
  - ★ Adopt Atlas-14
- Water Quality
  - Standard is sufficient and consistent with State
  - Rewording and clarification
  - 85% TSS removal from the first one inch of rainfall

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# How will Climate Change Impact Stormwater?

- Projected temperature increases
- Rainfall and Drought
- Climate changes could impact

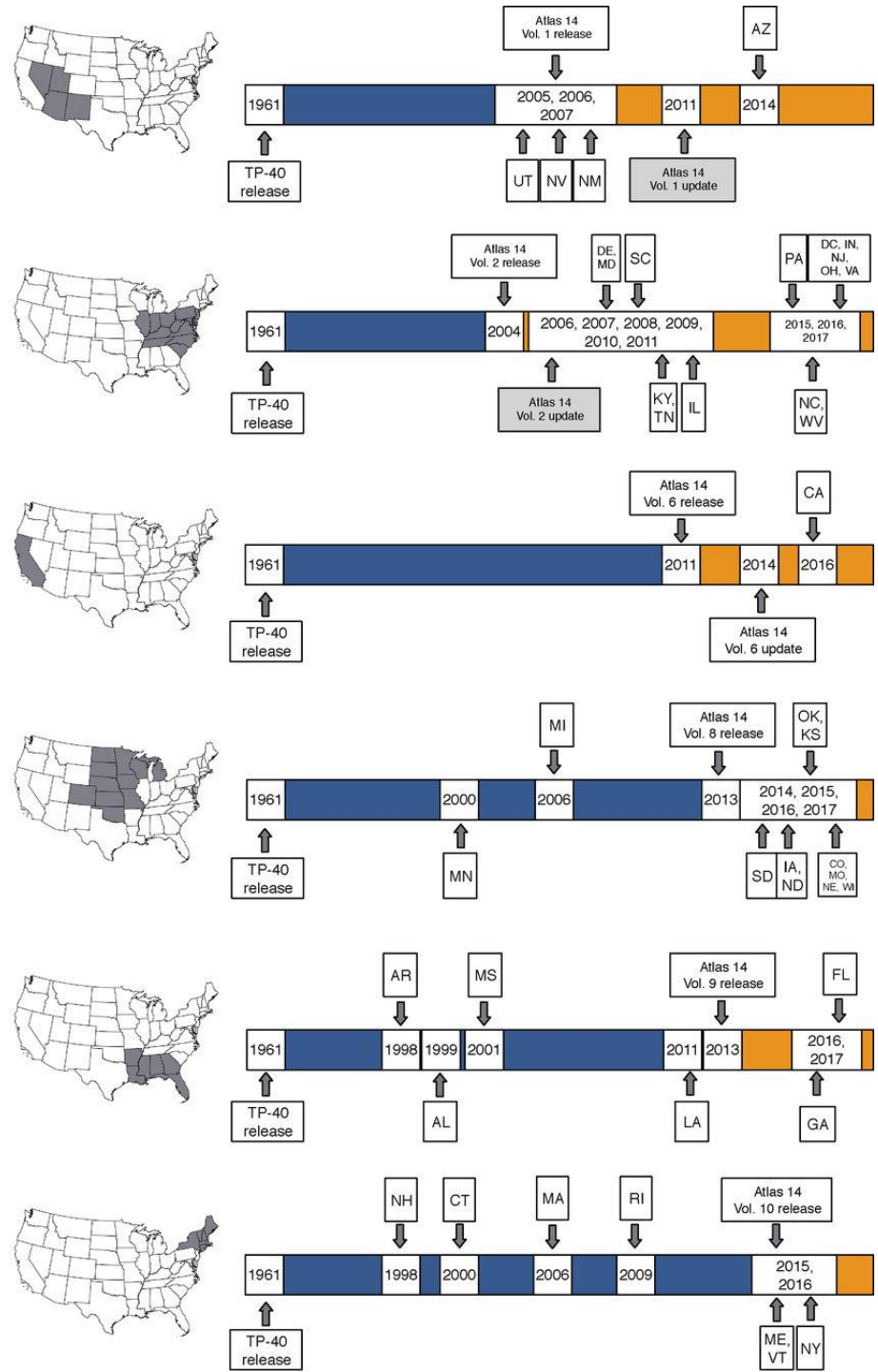


## Probability of Outcome for Likelihood Terms

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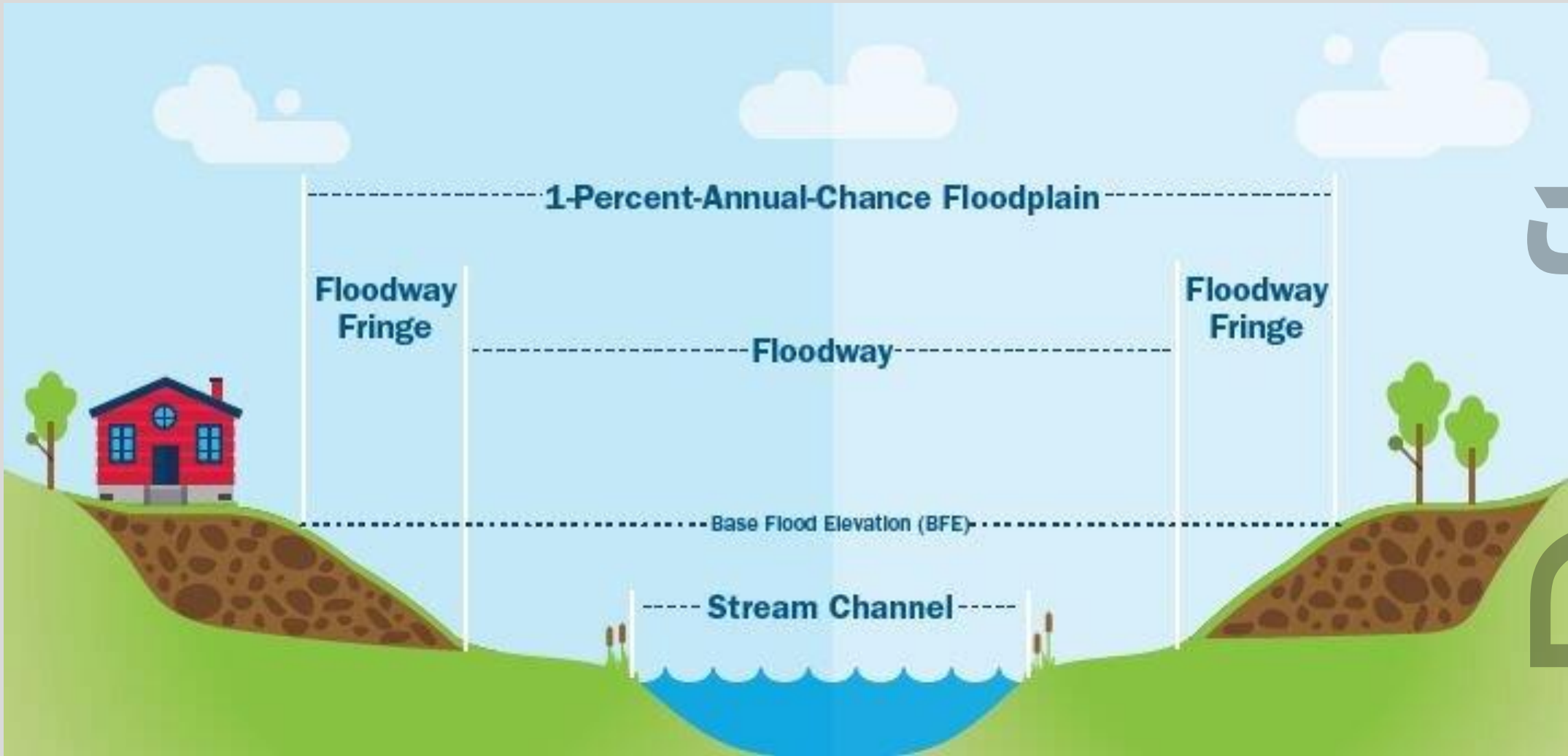
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# Recommendations

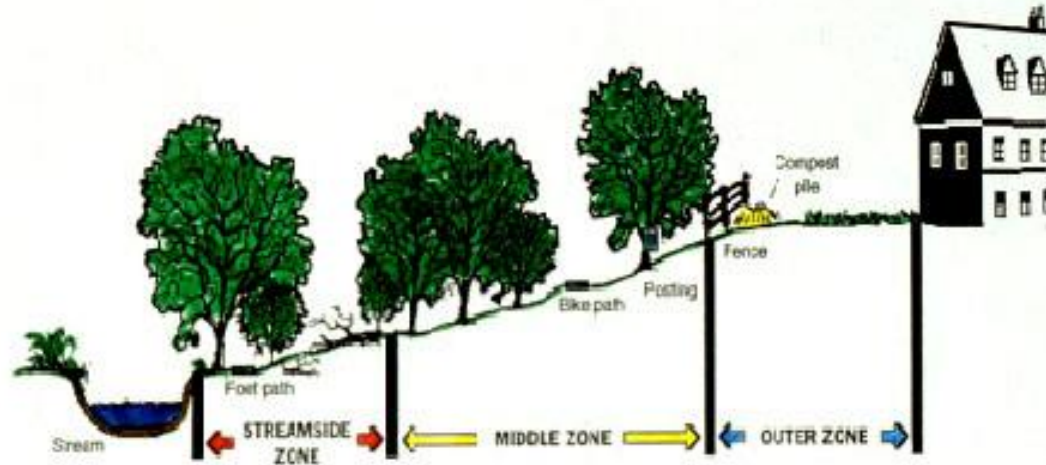
- Resource Conservation District/Floodplain Management
  - Review the provide clarity and consistency to prohibit encroachment & fill in the 100-year floodplain
- Wetland Protection/Buffers
  - Establish a wetland protection/buffer ordinance

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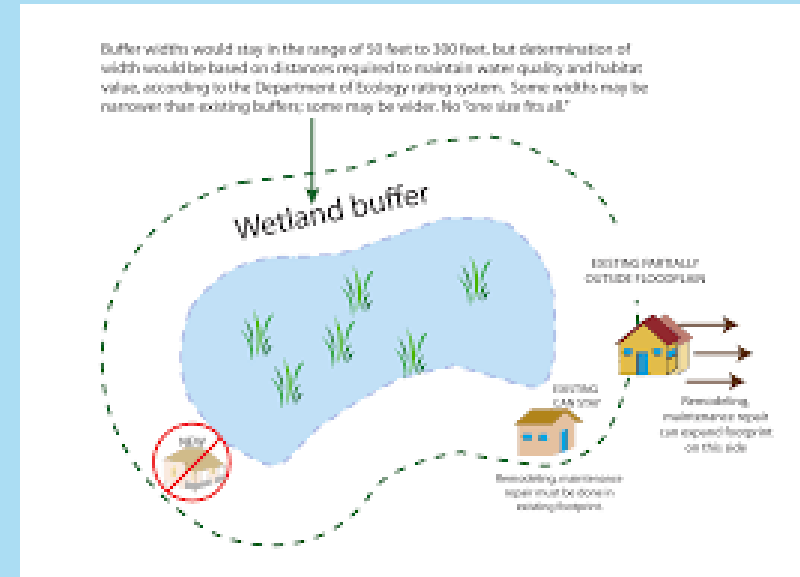


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## The three-zone urban stream buffer system



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 right-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



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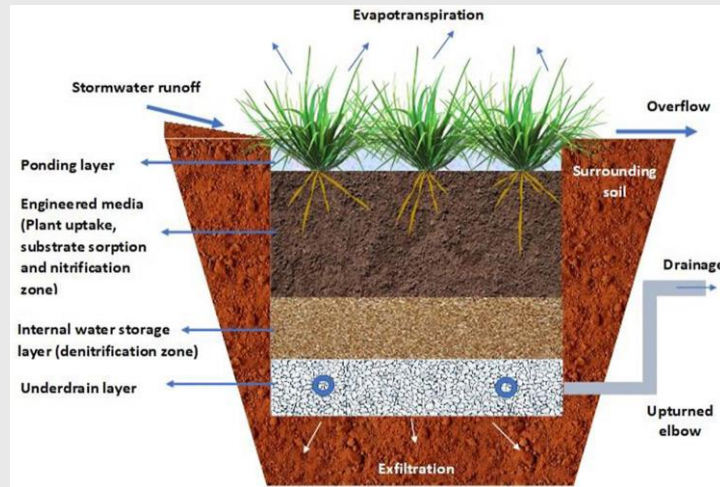
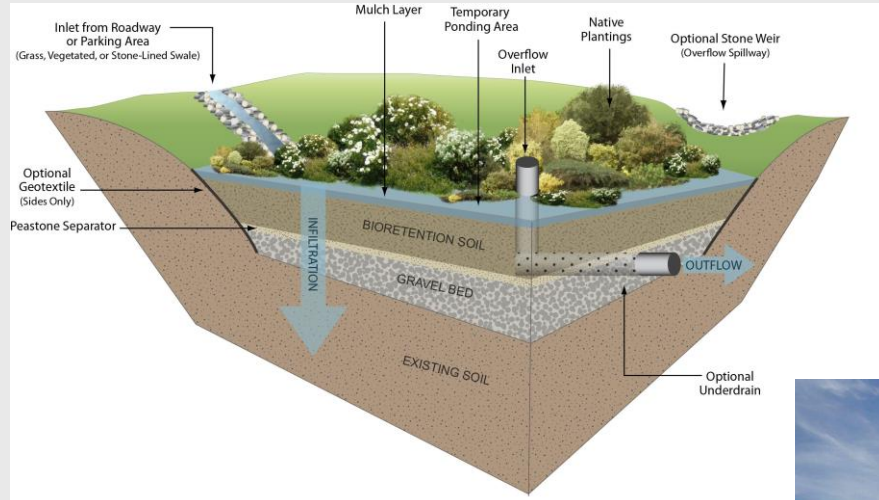


# Recommendations

- Stormwater Runoff Volume
  - Retain runoff onsite
  - Provide tiered and flexible treatment approaches
- Retain 2-year, 24-hour storm
- If not achievable, then retain first one (1) inch of rainfall
- If not achievable – alternative practices, design, credits

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# Stormwater Retention





# Additional Recommendations

- Stormwater regulations on development alone will not address impacts of climate change and change is precipitation patterns.
- Rewrite & update the stormwater management requirements in LUMO 5.4 to add clarity and improve understandability.
- Utilize greenways and TOD corridors as identified in the Complete Communities Strategy and TOD Plan.
- Regional Stormwater Control Measures on Town/public land

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# Greenways and TOD Corridors



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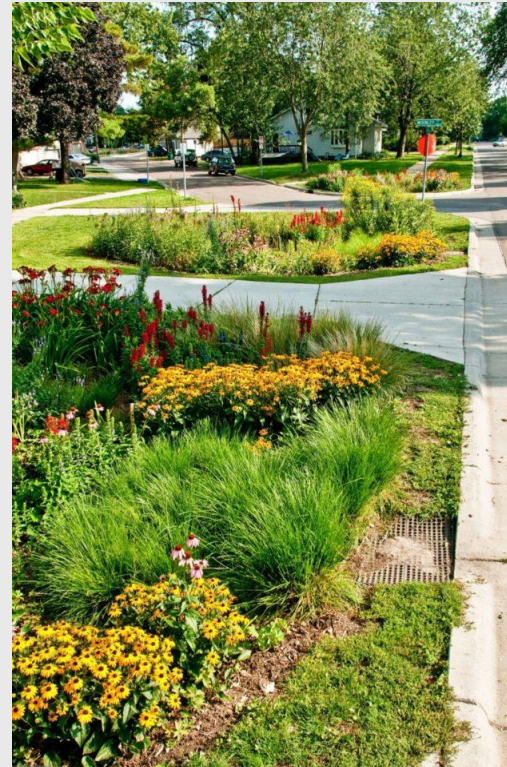
# Additional Recommendations

- Incorporate regional stormwater control measures into CIPs
- Pursue grants and other funding sources and partnerships to promote voluntary stormwater management
- Promote or incentivize individual residential stormwater management practices.

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# Regional Stormwater Control Measures & Treatment Train Approach



# Residential Stormwater Management



# Questions



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