

Review of Town Stormwater Regulations



Town of Chapel Hill Council Work Session
October 20, 2021

Purpose

- Preliminary response to Council Petition for a comprehensive review of Town Stormwater Regulations considering impacts of climate change

Agenda

- What is urban stormwater runoff and how do we regulate it?
 - ❖ Focus: Runoff generated from new development and redevelopment
- How will climate change impact stormwater management goals and regulations?
- What are possible next steps for a comprehensive review and report?
 - ❖ Request Council feedback on proposed technical study scope

What is Urban Stormwater Runoff?

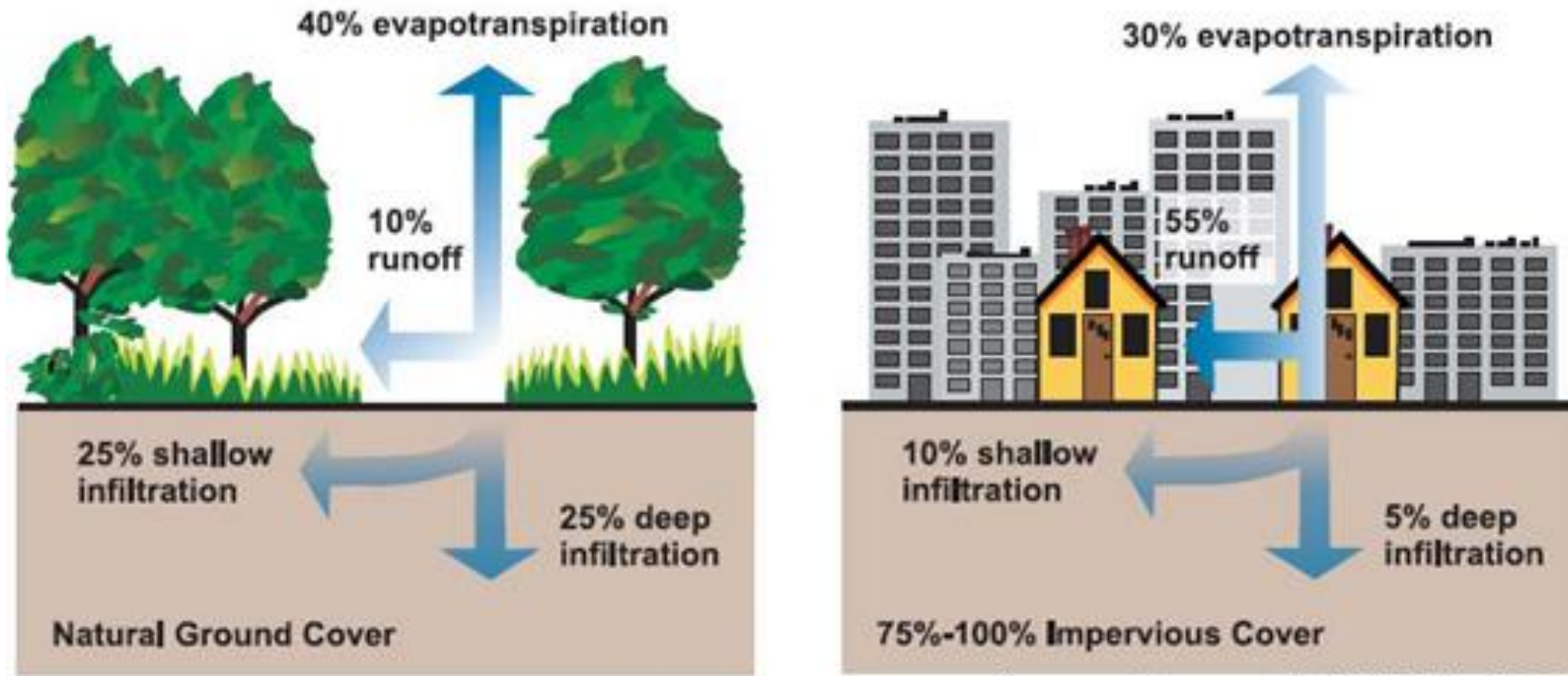


Image Source: U.S E.P.A, 2007

Impacts of urban stormwater runoff:

Surface Water Pollution





Flooding

Erosion

How Does the Town Regulate Stormwater Runoff?

LUMO 5.4 Stormwater Management

- Applies to new development and redevelopment projects with some single-family exceptions
- Performance Criteria

	Performance Objective	Engineering Design Criteria	Regulatory Authority
	Water Quality Treatment	Pollutant removal from 1-inch rainfall	State
	Peak Flow Control	1-year, 2-year, and 25-year, 24-hour rain events	Town
	Volume Control	2-year, 24-hour rain event	Town
	Protect Ephemeral Streams	Minimize disturbance and demonstrate necessity	Town

- Requires Stormwater Control Measures (SCMs) to have recorded access easements and inspection and maintenance covenants
- Encourages low impact design techniques

What are Stormwater Control Measures (SCMs)?

- Engineered devices that remove pollutants, control runoff flow rate, and/or reduce runoff volume
- Designed to meet specific performance criteria per stormwater regulations
- Must be appropriately selected for each unique project based on site conditions and proposed uses
- Maintained by property owner per Operations and Maintenance Plan



Are Low Impact Design (LID) and Green Infrastructure (GI) allowed by the regulations?

GI (Community/watershed scale)

“An integrated system of natural elements and LID practices that provide broad environmental benefits.” (US EPA)

Conservation and Restoration

- Stream corridors
- Wetlands
- Forests
- Wildlife connectivity

Green Stormwater Infrastructure (GSI)

- Large and small scale structural LID practices (engineered systems)

Urban Greening

- Green Streets
- Urban Tree Canopy
- Open Spaces

LID (Site scale)

“An approach to land development that works with nature to manage stormwater as close to its source as possible.” (US EPA)

Structural practices

- Bioretention cells
- Constructed wetlands
- Green roofs
- Permeable pavement
- Rain barrels/cisterns

Non-structural practices

- Minimize land disturbance and impervious area
- Distribute smaller SCMs throughout site
- Disconnected impervious

How do State Laws Limit Local Stormwater Regulations?

	Law/Bill	Impact
➔	Session Law 2018-145	Prohibits local governments from requiring stormwater controls for existing impervious areas.
➔	Session Law 2013-395	Prohibits implementation of Jordan Water Supply Nutrient Strategy requirements for existing and new development.
➔	Senate Bill 2021-105 (Budget Bill currently under consideration)	Would prohibit local governments from implementing stormwater regulations that exceed state or federal stormwater laws. If enacted, may effectively eliminate stormwater regulations intended to protect against flooding and stream erosion.

How will Climate Change Impact Stormwater?

- Projected temperature increases
- Rainfall and Drought
 - “Wide range of potential outcomes, from drier to wetter conditions”
 - Increased annual rainfall **likely**
 - Increased risk of extreme weather events **very likely**
 - More frequent and severe droughts **likely** due to increased temperatures
- Climate changes could impact
 - SCM goals and design standards
 - Stormwater Capital Project prioritization

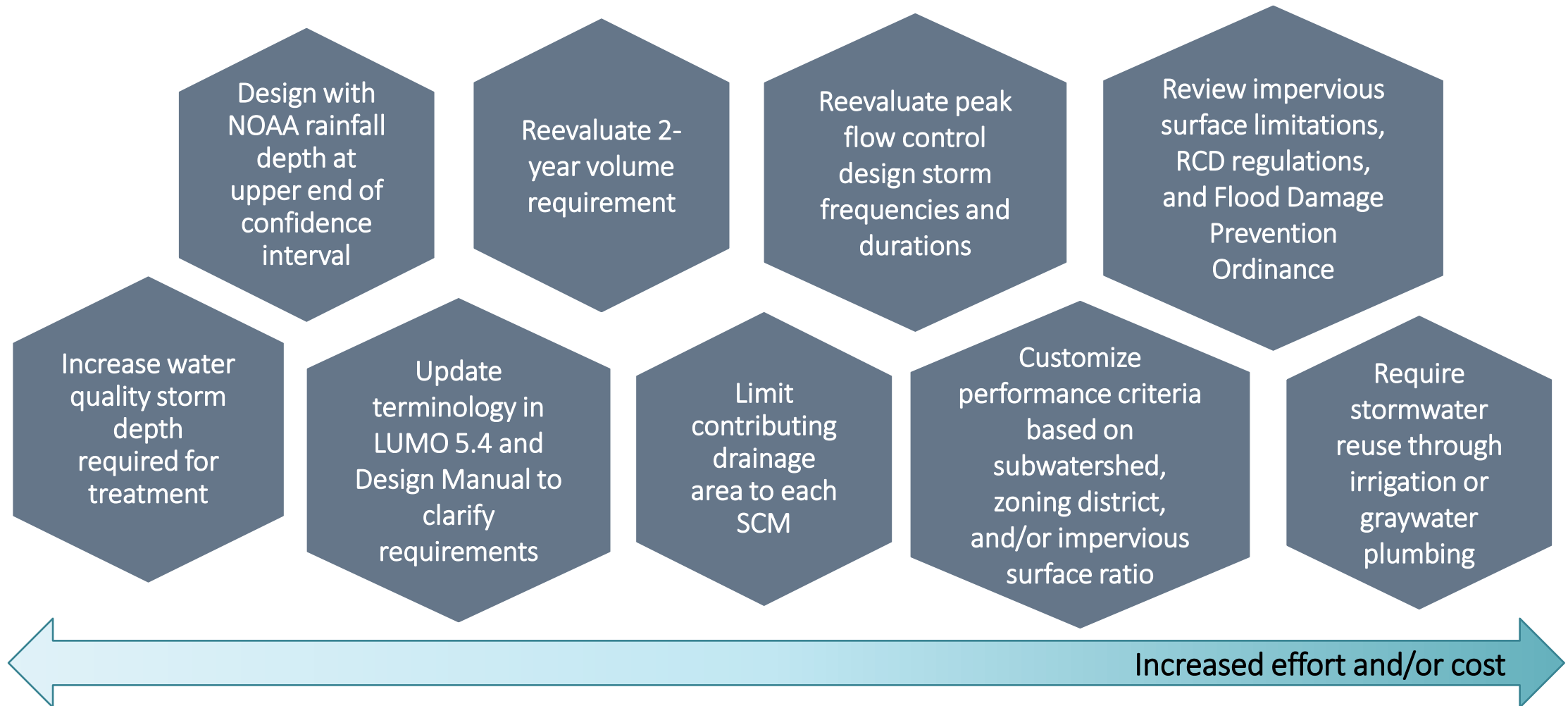


Probability of Outcome for Likelihood Terms
Very likely = 90-100%
Likely = 66-100%

Are the Town's Stormwater Objectives Still Valid and Being Achieved?

- Purpose and Objectives in LUMO 5.4.1
 - Purpose: Establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within this jurisdiction
 - Objectives – see LUMO 5.4 handout in packet
- Objectives are still valid, but could be updated to better reflect current priorities.
- Objectives vs. requirements
 - Requirements such as Performance Criteria and Design Standards are enforceable; objectives are not.
 - Objectives and requirements could benefit from more precise language.

What are Possible Changes to the Town's Stormwater Regulations?



Technical Study

Tasks

Review existing Town plans and studies for relevant data, recommendations, and historical information

Compare Chapel Hill stormwater regulations with those of neighboring communities

Reach out to regional community partners and academic institutions

Coordinate with LUMO rewrite consultant

Coordinate with Town initiatives on Green Infrastructure

Engage the public and other stakeholders

Evaluate benefits, tradeoffs, and challenges associated with different options

Deliverables

Recommend revisions to Town Stormwater Management Regulations (LUMO 5.4)

Recommend revisions to Town Engineering Design Manual

Report associated costs for private property owners, developers, and the Town

Next Steps

- Should we move forward with the technical study?
 - ❖ Requesting Council feedback on proposed scope
 - ❖ If approved, staff will bring a resolution for formal Council adoption
- Exploring options for consulting
 - ❖ Partner with LUMO Rewrite Contract
 - ❖ Partner with Green Infrastructure Ordinance
 - ❖ Determine funding source to hire an independent consultant
- Report to Council on preliminary study progress
 - ❖ Goal of finalizing report December 2022