

Stormwater Text Amendment Public Information Meeting

Evening Meeting Chat Transcript

February 13, 2024 6:00 PM

18:13:19 From Judy Johnson : LUMO Rewirt public meetings are scheduled for March 25, April 29, and May 20 6-7:30 at the library

18:14:36 From Sammy Bauer : Can you hear us now?

18:18:49 From Sammy Bauer : Good evening. This chat box is used for quality of service and public comments. Your messages

are seen by the panelists. This chat is a public record.

18:18:56 From BJ Warshaw : Hello, everyone! In case it hasn't been noted, the link for this session is incorrect at <https://www.townofchapelhill.org/government/departments-services/public-works/stormwater-management/construction-stormwater-regulations/proposed-lumo-amendments-stormwater-quality-and-peak-flow-rate-requirements>

18:19:25 From BJ Warshaw : Replying to "Hello, everyone! In ..."

Found correct one at <https://www.townofchapelhill.org/Home/Components/Calendar/Event/21626/15>

18:20:03 From Sammy Bauer : Replying to "Hello, everyone! In ..."

Thank you for letting us know.

18:25:21 From Sammy Bauer : If you have questions or comments, you can raise your hand or use the chat.

18:31:03 From Sammy Bauer : <https://www.townofchapelhill.org/government/departments-services/public-works/engineering/design-manual-and-standard-details>

18:32:13 From Sammy Bauer : Share your feedback with Council by emailing mayorandcouncil@townofchapelhill.org

18:39:34 From BJ Warshaw : Clarification: Is that volume calculation for two years prior to the time of development breaking ground?

19:06:44 From Sammy Bauer : According to the 2023 Q3 report of the NOAA project, they expect to publish results in Q4 of 2025. I found the report here: <https://www.pooledfund.org/Details/Study/702>

19:07:12 From BJ Warshaw : Reacted to "According to the 202..." with 👍

19:18:11

From BJ Warshaw : Will this recording be available somewhere?

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Afternoon Meeting Chat Transcript

February 13, 2024 12:30 PM

00:02:20 Zoom1 Webinar1: Good afternoon. This chat box is used for quality of service and public comments. Your messages

are seen by the panelists. This chat is a public record.

00:02:52 Zoom1 Webinar1: Can you all hear us?

00:07:12 Zoom1 Webinar1: The chat should be enabled now.

00:10:44 Zoom1 Webinar1: For specific details about the changes, go to this website:
<https://www.townofchapelhill.org/government/departments-services/public-works/stormwater-management/construction-stormwater-regulations/proposed-lumo-amendments-stormwater-quality-and-peak-flow-rate-requirements>

00:11:04 Zoom1 Webinar1: The text is available here:
<https://www.townofchapelhill.org/home/showpublisheddocument/55210/638434229719855660>

00:26:34 Zoom1 Webinar1: Engineering Design Manual:
<https://www.townofchapelhill.org/government/departments-services/public-works/engineering/design-manual-and-standard-details>

00:29:22 Zoom1 Webinar1: To send feedback to Council, email
mayorandcouncil@townofchapelhill.org

01:05:02 Cameron Rice: thank you all.

Ernest Odei-Larbi

From: Cameron Rice <crice@advancedcivildesign.com>
Sent: Monday, February 12, 2024 12:12 PM
To: Chris Roberts
Cc: Ernest Odei-Larbi; Sue Burke; Sammy Bauer; Shay Stevens; Holly Fraccaro; George Retschle; Bill Derks; Chuck Hill; Ramsden, Wendi; Dillon Smith; Royster, Preston; Phil Koch; Phil Post; Justin Brown; Christina Strauch
Subject: RE: Share your feedback on the draft amendments to the Chapel Hill Stormwater Ordinance

Caution external email: Don't click links or attachments from unknown senders. To check or report click the Phish Alert Button

Chris,

In the past NCDEQ's 85% TSS removal was the standard. NCDEQ no longer uses this criterion. Their case studies have shown it not reflective of the actual field performance. According to the NCDEQ most SCMs do not remove 85% of TSS, especially at lower concentrations of TSS in the influent.

Per 15A NCAC 02H .1002 (37) "Primary SCMs" include bioretention cell, infiltration system, permeable pavement, wet pond, stormwater wetland, sand filter, rainwater harvesting, or an approved new stormwater technology that is designed, constructed, and maintained in accordance with the minimum design criteria.

If Town Council approves adding the 100-yr/24-hr storm event to the required runoff rate it will limit which SCM(s) can be used. Wet ponds will likely be the only choice. I don't believe most soils in Orange County work well for infiltration of large drainage areas.

Table 3: Potential Siting Constraints for SCMs

SCM	Size of Drainage Area	Space Needed	Space Allowed	Works with Steep Slopes	Works with Shallow Water Table	Works with Shallow Depth to Bedrock	Works with High Sediment Input	Works in Poorly Drained Soils
Bioretention without Underdrain	S	L	Low	Y	N	N	N	N
Bioretention with Underdrain	S	L	Low	Y	N	N	N	Y
Stormwater Wetland	S-L	L	Low	N	Y	N	Y	Y
Wet Pond	M-L	M-L	High	N	Y	N	Y	Y
Sand Filter	S	S	Medium	Y	N	N	N	Y
Permeable Pavement	S-M	N/A	Low	N	N	N	N	Y
Infiltration Device	S-L	S-L	High	N	N	N	N	N

I reviewed the hydraulic calculations for an Advanced Civil Design project titled Chandler Woods, a single-family subdivision off Homestead Road. This project has two wet ponds and one bio-retention. When evaluating the 25-yr and 100-yr/24-hr storm events the post development peak runoff rate without a SCM increased by 37%. The post development runoff volume without a SCM increased by 38%. To account for this increase in both run-off rate and volume wet ponds will need to increase in area and depth.

According to the USGS the 100-yr storm event is used to define limits of floodplains. The 100-yr storm event statistically has a 1% chance of occurring in any given year. The effects of development on peak flows are generally much greater for low-recurrence interval floods than for high-recurrence interval floods, such as 25- 50- or 100-year floods. I's unaware of how much floodplain is currently located within the Town limits and if this amendment is the best solution the Town's problem.

Thanks,
Cameron M. Rice, P.E.
Senior Project Manager

Advanced Civil Design, Inc.
Engineers and Surveyors
51 Kilmayne Drive, Suite 102
Cary, NC 27511
main: 919.481.6290 (ext 241)
direct: 919.535.4056
cell: 919.780.8005
crice@advancedcivildesign.com
www.advancedcivildesign.com

From: Chris Roberts <croberts@townofchapelhill.org>

Sent: Tuesday, February 6, 2024 4:29 PM

To: Holly Fraccaro <holly@hbadoc.com>; Phil Post <philip.n.post@gmail.com>; George Retschle <GeorgeR@ballentineassociates.com>; Bill Derks <Derks@mcadamsco.com>; Chuck Hill <hill.chuck@tandh.com>; Ramsden, Wendi <ramsdn.w@tandh.com>; Cameron Rice <crice@advancedcivildesign.com>; Dillon Smith <dillons@ballentineassociates.com>; Royster, Preston <royster.p@tandh.com>; Tony Whitaker <tony.whitaker@civil-consultants.com>; Ernest Dodson <ernie.equinox@gmail.com>; John Harris <johnharris@harriseng.net>; Phil Koch <Phil.Koch@EarthCentric.com>; Gleason, Sean <gleason@mcadamsco.com> <Gleason>; Sean gleason@mcadamsco.com; Justin Brown <JBrown@trinsicres.com>; Ethan Mindrebo <EMindrebo@Pennoni.com>; Timmons Group <info@timmons.com>; BOHLER Engineering NC <BOhlerEngin.com>; Will Swaringen <wswaringen@bohlereng.com>
Cc: Ernest Odei-Larbi <eodei-larbi@townofchapelhill.org>; Sue Burke <sburke@townofchapelhill.org>; Sammy Bauer <sbauer@townofchapelhill.org>; Shay Stevens <sstevens@townofchapelhill.org>; Christina Strauch <cstrauch@townofchapelhill.org>

Subject: Share your feedback on the draft amendments to the Chapel Hill Stormwater Ordinance

Good afternoon,

Last November, Town Staff held several public engagement meetings to speak about a review of the Stormwater sections of the Land Use Management Ordinance (LUMO). Many of you attended and provided good comments. Staff have now begun the ordinance amendment process and would like to invite you to another public engagement meeting. You will have the option to attend in-person or virtually. This is not your only opportunity to provide comments as there will be several other ways provide them.

Please see the below for information about the amendment, the comment opportunities, and a timeline. This is a public meeting so please feel free to forward this invite.

The proposed text amendment LUMO Section 5.4.6 Stormwater Management will

- Address the peak flow rate requirements and
- Clarify the Total Suspended Solids (TSS) water quality requirements.

Share your feedback with Council by April 24, 2024 by:

- **Joining the hybrid public information meetings** on February 13 at the Town Public Library or virtually:
 - 12:30 pm - 2:00 pm (See more information on the [Town calendar](#))
 - 6:00 pm - 7:30 pm (See more information on the [Town calendar](#))
- **Emailing your comments to Council** at mayorandcouncil@townofchapelhill.org with "stormwater ordinance changes" in the subject line.
- **Sharing your feedback** during the Town Council's [public hearing on March 20](#) and the [regular meeting on April 24](#).

To learn more about the text amendment, see the [Town website](#).

Sincerely,
Chris R

[Chris Roberts, PE](#) | Manager of Engineering and Infrastructure | [Town of Chapel Hill](#)
Public Works Department | 6850 Millhouse Rd. | Chapel Hill, NC 27516
(o) 919-969-5091 | (m) 919-624-8984 | (f) 919-969-2003 | Email: croberts@townofchapelhill.org

Sue Burke

From: Ernest Odei-Larbi
Sent: Thursday, February 8, 2024 8:55 AM
To: Phil Post; Chris Roberts
Cc: Holly Fraccaro; George Retschle; Bill Derks; Chuck Hill; Ramsden, Wendi; Cameron Rice; Dillon Smith; Royster, Preston; Phil Koch; Justin Brown; Sue Burke; Sammy Bauer; Shay Stevens; Christina Strauch; Eric Chupp
Subject: RE: Share your feedback on the draft amendments to the Chapel Hill Stormwater Ordinance

Phil,

Page 5 of Chapter C-2 of the design manual allow up to 18 inches above the planting surface for peak attenuation volume.



Ernest Odei-Larbi, PE, CFM | Senior Engineer | Stormwater Management Division |
Public Works Department | 208N. Columbia St. | Chapel Hill, NC 27514
Phone: 919-968-2717 | Fax: 919-968-7276

From: Phil Post <philip.n.post@gmail.com>
Sent: Wednesday, February 7, 2024 4:23 PM
To: Chris Roberts <croberts@townofchapelhill.org>
Cc: Holly Fraccaro <holly@hbadoc.com>; George Retschle <GeorgeR@ballentineassociates.com>; Bill Derks <Derks@mcadamsco.com>; Chuck Hill <hill.chuck@tandh.com>; Ramsden, Wendi <ramsden.w@tandh.com>; Cameron Rice <crice@advancedcivildesign.com>; Dillon Smith <dillons@ballentineassociates.com>; Royster, Preston <royster.p@tandh.com>; Phil Koch <Phil.Koch@earthcentric.com>; Justin Brown <JBrown@trinsicres.com>; Ernest Odei-Larbi <eodei-larbi@townofchapelhill.org>; Sue Burke <sburke@townofchapelhill.org>; Sammy Bauer <sbauer@townofchapelhill.org>; Shay Stevens <sstevens@townofchapelhill.org>; Christina Strauch <cstrauch@townofchapelhill.org>; Eric Chupp <erichchupp@bellsouth.net>
Subject: Re: Share your feedback on the draft amendments to the Chapel Hill Stormwater Ordinance

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Chris,

By my rough back of envelope calculation is this change might increase storage by 25%.

It will probably result in more wet ponds or wetland solutions, which are fine for larger projects which can be excavated to get volume.

I worry about smaller, infill projects that typically use bioretention and I worry about the increase in footprint size for a bio solution on a small project.

Can we figure out a way to credit LID solutions on a smaller project? For instance if an increase in impervious has been substantially reduced by demolishing existing impervious, or if we propose green top paving or if we propose a reduction in standard impervious dimensions to reduce runoff?? Roadside ditches? Etc Etc, or any other clever LID solution?

I know these ideas do not need to be in LUMO, but can we add a paragraph to the Design Manual that will allow creative, leading edge LID solutions for a small project? Maybe even an exemption amount for

small projects, where anything below 750 sf of added impervious can be approved if it does not increase the 100 yr rate more than say 5%??? or a similar cfs threshold??

Or can we store more than 12 inches in a Bio on a small infill project???

Phil

On Tue, Feb 6, 2024 at 4:29 PM Chris Roberts <croberts@townofchapelhill.org> wrote:

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Chris Roberts, PE | Manager of Engineering and Infrastructure | Town of Chapel Hill

Public Works Department | 6850 Millhouse Rd. | Chapel Hill, NC 27516

(o) 919-969-5091 | (m) 919-624-8984 | (f) 919-969-2003 | Email: croberts@townofchapelhill.org

--

Philip N. Post , PE, PLS
Phone / Text (919) 818-7862

Sue Burke

From: Ernest Odei-Larbi
Sent: Thursday, February 8, 2024 9:07 AM
To: ericbchupp; Chris Roberts; Phil Post
Cc: Holly Fraccaro; George Retschle; Bill Derks; Chuck Hill; Ramsden, Wendi; Cameron Rice; Dillon Smith; Royster, Preston; Phil Koch; Justin Brown; Sue Burke; Sammy Bauer; Shay Stevens; Christina Strauch
Subject: RE: Share your feedback on the draft amendments to the Chapel Hill Stormwater Ordinance

Eric,

The previous design manual required design engineers to check for 100-year peak discharge elevation for detention/retention/infiltration facilities. This amendment is just adding 100-year -24 hour storm event to the stormwater runoff rate analysis in LUMO.



Ernest Odei-Larbi, PE, CFM | Senior Engineer | Stormwater Management Division |
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Sent: Wednesday, February 7, 2024 5:06 PM
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Cc: Holly Fraccaro <holly@hbadoc.com>; George Retschle <georger@ballentineassociates.com>; Bill Derks <derks@mcadamsco.com>; Chuck Hill <hill.chuck@tandh.com>; Ramsden, Wendi <ramsdn.w@tandh.com>; Cameron Rice <crice@advancedcivildesign.com>; Dillon Smith <dillons@ballentineassociates.com>; Royster, Preston <royster.p@tandh.com>; Phil Koch <phil.koch@earthcentric.com>; Justin Brown <jbrown@trinsicres.com>; Ernest Odei-Larbi <eodei-larbi@townofchapelhill.org>; Sue Burke <sburke@townofchapelhill.org>; Sammy Bauer <sbauer@townofchapelhill.org>; Shay Stevens <sstevens@townofchapelhill.org>; Christina Strauch <cstrauch@townofchapelhill.org>
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Dear Earnest,

Did anyone in Storm Water conduct a cost benefit analysis on the proposed amendments? For example, looking at the additional land that would be needed for the larger ponds and what that would add to the cost of housing in comparison to the incremental increase in water quality or flow rate? It seems to me that in a time when the affordability of homes has become a national crisis, with home ownership being out of reach for those who work in or around Chapel Hill, the cost of the additional regulations should be analyzed against real water quality metrics. Chapel Hill already has some of the toughest storm water regulations in the State of North Carolina, and the widest stream buffer of any jurisdiction that I am aware of. When looking at the width of stream buffers all the research that I have seen is in agreement that the first 100' of stream buffer yields the vast majority of improvements in water quality. The benefits from the last 25' of a 150' buffer are negligible. Do we regulate water quality to the point where nothing can be built? I think we are almost there in Chapel Hill. Has any cost benefit analysis been done?

Best Regards, Eric Chupp

Director of Development
Capkov Ventures Inc.
(919) 260-7262

On Wednesday, February 7, 2024 at 04:24:09 PM EST, Phil Post <philip.n.post@gmail.com> wrote:

Chris,

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—
Philip N. Post, PE, PLS
Phone / Text (919) 818-7862

Sue Burke

From: Chris Roberts
Sent: Wednesday, November 15, 2023 9:26 AM
To: Ernest Odei-Larbi; Sue Burke; Zachary Strickland; Joao Pereira; Robert Gehris; Jay Paskins
Cc: Allison Weakley
Subject: FW: 100-year Detention

From: George Retschle <GeorgeR@ballentineassociates.com>
Sent: Monday, June 6, 2022 3:57 PM
To: Chris Roberts <croberts@townofchapelhill.org>
Cc: Judy Johnson <jjohnson@townofchapelhill.org>
Subject: 100-year Detention

External email: Don't click links or attachments from unknown senders. To check or report forward to reportspam@townofchapelhill.org

Chris,

I took a look at the Weavers Grove SCM #8 (wetland) and found that increasing the detention from 25-year to 100-year resulted in the following from the 4.85 acre drainage area:

- Required detention storage increased by 3,209 cubic feet
 - At \$15/cu ft estimated cost for stormwater wetland construction, this totals just over \$48,000.
- Increase retaining wall height by 8" x 410 lf = 275 sf to accommodate additional pond volume. At \$20/sf, this totals approximately \$5,500.

There wasn't a significant increase in the footprint of the SCM because there was already no room to expand it. We provided the additional volume by increasing the retaining wall height inside the pond.

This "upgrade" cost Habitat well over \$50k.

It must be noted that on projects where underground stormwater facilities are necessary, the cost of going from 25-year detention to 100-year detention will be much higher. In the case above, the increase was roughly \$10,000 per treated acre (\$50k over 4.85 acres of post-dev DA). With a precast underground system it would be somewhere on the order of double that, or \$20,000/treated acre.

For the record, I am against requiring all projects to provide 100-year peak flow attenuation across the boards. I do believe there are times when it is warranted, though, but it should be required only when there is objective evidence provided by a competent professional with stormwater expertise demonstrating that it is needed.

I hope this helps.

Regards,

George J. Retschle, PE*

President

Ballentine Associates, PA *Since 1979*

221 Providence Road | Chapel Hill, NC 27514

O: 919.929.0481 D: 984.884.4625 M: 919.796.1131

georger@ballentineassociates.com | ballentineassociates.com

* NC, VA

Please note new email address and update your records