

# CHAPTER 500 STAKEHOLDER ENGAGEMENT | STEERING COMMITTEE MEETING #2 MINUTES

**RE:** Chapter 500 Stakeholder Engagement, Steering Committee Meeting #2  
**DATE:** Monday, February 5, 2024  
**TIME:** 9:30am – 1:00pm  
**LOCATION:** Hybrid: in-person (Deering Conference room 101- 90 Blossom Ln, Augusta ME) & remotely via Microsoft Teams  
**INVITEES:** Kerem Gungor, Naomi Kirk-Lawlor, and Rob Wood (Maine DEP)  
 Bina Skordas and Maggie Kosalek (FB Environmental Associates)  
 Chapter 500 Steering Committee  
 Chapter 500 Stakeholders

## MEETING OVERVIEW:

TOPIC	WHO	ESTIMATED DURATION
1. First Steering Committee Meeting minutes & overview	Bina Skordas (FBE)	5 mins
2. Stakeholder input	Stakeholders; facilitated by Bina Skordas (FBE)	5 mins
3. Presentations on (a) Taunton Project, (b) Impervious Cover Changes in Maine, (c) LID Standard Proposal Framework, (d) Other Major Proposals, (e) New MCGP Large Construction Standards And general discussion and questions	(a) Mark Voorhees (UNH) & Robert Roseen (Waterstone Engineering) (b) Kerem Gungor & Jeff Dennis (DEP) (c) Kerem Gungor (DEP) (d) Kerem Gungor (DEP) (e) <del>Kris Bears (DEP)</del> <i>Postponed to next meeting</i>	165 mins
Break (10 min)		
4. Identify & prioritize key topics	Steering Committee; facilitated by Bina Skordas (FBE)	10 mins
5. Stakeholder input	Stakeholders; facilitated by Bina Skordas (FBE)	5 mins
6. Next steps: future meetings	Bina Skordas (FBE)	10 mins

1. First Steering Committee Meeting minutes & overview:

- Minutes are approved.
- Process intentions: improve stormwater regulations via LID, climate change adaptation, and resiliency and improvement of day-to-day program. Develop a framework for the rules which will then go on to the rulemaking process.
- Feedback: Q&A / FAQ will go online.

2. Presentations on relevant information:

**Taunton Project: Holistic Watershed Management for Existing and Future Land Use Development Activities**

*Mark Voorhees (UNH) & Robert Roseen (Waterstone Engineering)*

- 2-year intensive analysis of stormwater management impacts, particularly relating to using flow duration curves and runoff duration curves. The purpose of the study was to better understand how to avoid having to fix problems with stormwater control measures (SCMs) after implementation.
- Analyzed groundwater recharge under four different conditions: Pre-development conditions, new IC with no control, new IC with [MA MS4 control](#), and new IC with [watershed protection standard \(WPS\)](#). [WPS](#) becomes more necessary to attain pre-development recharge conditions as soil becomes less permeable and drainage decreases.
- [Watershed Protection Standard](#) is intended to return development impacts to predevelopment hydrology, nutrient load, and landscape resiliency (peak flow controls).
- Although the monitoring results showed good results for both MA DEP and [WPS](#) standards, runoff duration curve modeling showed that the [WPS](#) will get you much closer to pre-development conditions under a variety of runoff conditions.
- Questions
  - How does roadway nitrogen get removed just by infiltration? Or is the assumption being that if it infiltrates, the nitrogen is not directly put into surface waters, but rather into the groundwater?
    - Mark: Yes, we recognize that dissolved nitrogen will move through the groundwater and that depending on location within the watershed will be attenuated further based on its path unless it's directly into sand adjacent to sensitive coastal waters. In the tracking of this we are contemplating accounting for the attenuation and/or lack thereof. Generally, we see dissolved inorganic nitrogen as being typical 30-50% of total nitrogen.
    - Robert: This is actually a design challenge which could be handled easily by putting runoff through vegetated infiltration before getting to subsurface infiltration. This wasn't done in the Taunton study because there was no TMDL to deal with.
  - How do you deal with densely developed urban watersheds and how do you determine what predevelopment conditions are?
    - Mark: One of the real-world applications was a commercial redevelopment. We assume natural land for pre-development (meadow-forest). Implementation of small-scale infiltration controls goes a long way to solve these issues.
    - Rob: Sometimes predevelopment condition is not being viewed as natural land from a permitting sense. Sometimes the existing load is the "uncontrolled" condition.
  - Maine DEP has been hesitant to allow roadway infiltration, because of salt issues. How do you handle this in MA?
    - Tom: In Boston, they have winter bypass of runoff flows in their stormwater systems.
    - Mark: Other than what Tom mentions about Boston, I'm not aware that this is being considered directly except lower salt applications in drinking water watersheds. I think it depends on the receiving waters (coastal marine, larger rivers or low order streams). I think diversion during high chloride runoff times of the year needs to be more fully vetted.
  - Did you monitor volatile organic compounds? Any impacts on groundwater with additional infiltration? Concerns about groundwater contamination?
    - Mark: I'm not personally aware of the volatile organic monitoring and think that it makes sense that hot spots for such source areas be excluded for infiltration.
  - How do you take what you learned on a watershed level and apply it statewide where some areas are rural and some are developed, like Maine?

- Rob: The larger the volume of infiltration for recharge the better. If we can manage peak controls in the form of infiltration, that's accomplishing it. Something surprising in the modeling data is that we were meeting peak flow control for MA DEP standards, but when you look at it under a runoff duration curve, it is substantially different.
- Mark: The costs of restoration are very high, so having good protection standards in place for a developing area can save a lot of money and protect resources.
- Do you have a lot of chloride being put down on your roads?
  - Rob: We used porous pavement at one project site which deterred the need for salt, but porous pavement has its own issues and can be challenging. The issue of chloride is really challenging.

## **Impervious Cover Changes in Maine**

*Kerem Gungor & Jeff Dennis, DEP*

- Analyzed how IC changed after the implementation of the IC law, using USGS (NHD), National Land Cover Database (2001-2019), and DEP/MEGIS data.
  - 57 HUC12 watersheds had IC increase of over 100 acres from 2001-2019, making these the watersheds of interest for rapidly increasing IC. Many of these are centered around major highways (I-95 & I-295).
  - 35 1<sup>st</sup> order and 10 2<sup>nd</sup> order catchments increased to over 10% imperviousness 2001-2019. Can use GIS to screen these catchments to understand which streams need to be further inspected to analyze stormwater standards performance.
- Case Study: Stone Brook watershed, Bond Brook Headwater catchment, and Meadow brook watershed, Augusta. Each of these areas has IC >10%. GIS screening will allow us to search for and find watersheds/catchments like this to analyze if further monitoring is needed.
- Main takeaway: stormwater regulations do not necessarily drive development sprawl.

## **Watersheds & Existing Chapter 500 Standards**

*Kerem Gungor (DEP)*

- Urban Impaired Streams Standard: Require General Standards AND mitigation of IC or pay compensation fee (Ch.501).
- Phosphorus Standard: different thresholds for at risk lakes versus all other lakes; potentially have to pay compensation fees.
- General Standards: apply to all non-lake and non-UIS watersheds. This results in too much regulation on rural watersheds and not enough for urban watersheds. LIDs are suggested and incentivized but not effectively. The standards need to be more watershed specific.

## **LID Standard Proposal Framework**

*Kerem Gungor, DEP*

- Proposed additions cover the following:
  - Groundwater recharge level of control;
  - Core LID standards;
  - Sensitive and threatened watersheds; and
  - Watershed stressor guided SCM selection.
- LID Implementation Chart: Specifies LID standards for specific waterbody types.
- Groundwater Recharge Requirement: Specifies groundwater recharge requirements for different soil types. Sets standards for amount of runoff infiltrated.
- Stormwater Control Measure Performance Curves: Used to determine design storage volume for SCM designs.
- Water Quality Level of Control & Performance Curves: DEP proposing stressor-guided SCM design to best treat stormwater for each different project/development. Pollutant removal will be 70% for UIS and 60% for other watersheds.

## Questions

- In the LID Standard Implementation Chart - are the definitions of watershed type (for example not in a UIS) static? Or will they be periodically updated, if so, how often?
- Are the "Core LID Standards" required for all Chapter 500 projects?

- Yes.
- The percent pollutant removal of 60-70% is not achievable with all pollutants of concern.
  - We are focusing on nitrogen and phosphorus, no other pollutants.

## **Other Major Proposals**

*Kerem Gungor (DEP)*

### Flood Control Proposal

- Peak flow attenuation, precipitation data, and storm distribution are important components of the flood control standards.
- See proposal for DEP proposed changes to the Ch500 flooding standard (“Flood Control” proposal).

### Two-Step Permitting: Post-Construction to Construction

- Decouple MCGP and Chapter 500 and specify Chapter 500 to post-construction phase and MCGP to construction phase.
- Contractor becomes a key actor in ESC planning and design.
- The goal is to create more effective and responsive construction stormwater management.

### Technical Guidance: Stormwater Manual

- This is a dynamic field as SCMs are constantly updated and created. The goal is to move the technical details of SCMs to the manual so they can be updated as needed.

### Other Proposals/Recommendations

- 5-year recertification.
- Construction oversight.
- As-built plan.
- Phosphorus (Chapter 501) revision.

## **Large Construction Activity Standards in New MCGP**

*Kris Bears, DEP*

- Moved to the next meeting due to time constraints.

## **Questions/Discussion**

- In the IC analysis, did you look at how the water quality changes from 2001 to today in relation to IC increase? This seems to be important in gauging how we have done in terms of current stormwater standards and treatment.
  - There is not enough data or any data for most of the catchments except for the urban impaired stream catch
- There seemed to be a big overlap between HUC12 watersheds with high IC increase and urban impaired streams. Wouldn't this mean you have data for these areas to address the previous question?
  - There still needs to be more in-depth analysis of first and second order catchments including types and timing of development, permitting data, etc. This will require more time and effort.
- What is the direction for solving the chloride issue?
  - This has been the hardest to address. Hoping the Steering Committee charges the Technical Committee with brainstorming ways to solve this problem.
- Will we discuss the MCGP more?
  - Yes, it will be presented and discussed next meeting.
- How can we look at all the different standards and programs we have out there – MS4, TMDLs, MCGP, Maine Climate Council recommendations, etc. – and make sure our recommendations align with/complement those and allow us to meet the goals of them? For example, if BMPs are not pollutant specific, it is more challenging for communities to meet TMDL requirements.

- Maine Climate Council (MCC) recommendations: DEP went through the MCC recommendations and commented on each as they relate to Ch500. This document will be shared with the Steering Committee. Note that not all of the recommendations fall under the jurisdiction of Ch500. Some fall under the jurisdiction of the laws other than the Stormwater Management Law. Limited number of projects permitted under Ch500 directly discharge to coastal wetlands and thus being impacted by sea level rise.
- There will be harmonization between MS4 and Ch500. Gregg Wood will be utilizing the conversation that comes from this process in updating LID ordinance requirements in the MS4 permit.
- Standards and tools created by other New England states and EPA will be leveraged in curating updates.
- For TMDLs, this is the first time Ch500 is aiming to address specific pollutants, so this is trying to accomplish harmonizing TMDLs. Clearly our watersheds are still impaired under current regulations, and we don't know the perfect solution due to lack of data, but if we wait for the data, it will take too long.
- The method in which we ensure all these aspects complement each other will undoubtedly be a part of conversation throughout this process.
- The rules have forced us away from infiltration for a long time, and now we are trying to focus on infiltration, so there will have to be thorough discussion on how we implement this. Implementing LIDs to accomplish this goal on site is already challenging. As an example, despite it being a great option, the LID credit for a rain garden is minimal compared to filter beds which are filtration systems instead of infiltration systems.
  - Our approach to stormwater control measure design needs to be changed. One of the key components will be limiting the drainage areas that each SCM treats. Once you start distributing smaller SCMs across a project site, you can stay on the surface and don't need to dig deep (which is causing issues under current practice in hitting bedrock, groundwater, etc.). We will need to get creative with our SCM toolbox (e.g., rainwater harvesting via rain barrels). The SCM manuals will be updated to include new SCMs and strong technical guidance.
  - Right now, Ch500 includes regulation framework as well as technical requirements which makes it difficult to modify over time. Ch500 should be the regulatory framework and the SCM manual should include the technical requirements and be able to be modified over time as these requirements change.
- What are the thresholds for MCGP and Ch500?
  - All permit structures are currently based on a threshold of 1 acre of soil disturbance, and this is not proposed to be changed. If we split permits as proposed in the presentation, we will do away with the current stormwater PBRs because they will be taken care of under MCGP. IC and developed area will be focused on under Ch500. Both regulations will still have a 1 acre threshold.
- Ch502 is for UIS and Lakes Most at Risk from New Development? And the 305b report is for impaired waters – is there going to be a regulatory process that identifies stressors?
  - We were not anticipating a regulatory process. If there is no data available, there will be default stressors. Identified or default stressors will serve as guidance when deciding which SCMs to use from the manual. Default stressors will be phosphorus for freshwater and nitrogen for estuarine waters.
  - The anticipated method will be to focus on the default stressor until we can use the IC tool to identify “sensitive and threatened” waterbodies then go through them one by one to identify stressors of concern. As this happens for each waterbody, the mitigation plan and chosen SCMs can be tailored to address the appropriate stressors.
  - Chloride may be a default stressor for some waterbodies considering how it is rapidly growing as an issue and is a clear pollutant in some watersheds.
- It used to be implied in the standards that there would be a pass for redeveloping from parking lot to building. This seems like a good opportunity to implement SCMs. Is this off the table now and will there be requirements to implement SCMs in this type of redevelopment?
  - This is to-be-decided as there needs to be more discussion on it. It is not necessarily off the table.
  - Looking at the watershed characteristics will be helpful in deciding this. Take a watershed that is already highly urbanized - if someone is planning a redevelopment of an already-developed area in poor shape and they are planning to remove a lot of IC, no additional stormwater treatment may required for this redevelopment.
  - We could potentially consider environmental justice aspects with redevelopment.
- Might the designation of a watershed being “sensitive/threatened” become a challengeable action that someone can complain about?

- What actually ends up dominating the way a stormwater design engineer implements their work on the ground? This will help guide our work by thinking about the practical implications of how Ch500 will be implemented in the field. Thinking about this process is how we will get real work done.
  - Dominating factors are cost, time, and determining what the easiest way to get through the DEP process is.
  - Many people are restricted to one lot and whatever comes along with that lot (i.e., fully IC lot vs. green lot). Sometimes there are very limited options for lots, so understanding these implications will be very helpful in shaping the regulations and manuals.
  - People are typically driven by location over what stormwater regulations are in the area. It is also interesting to note that the areas identified by the IC tool are primarily in MS4 communities. This gives us a good idea of where people are going to develop in the state.
  - Portland is incentivizing people to build out roof over parking lot since parking lots contribute more pollutant loading than roofs. If they increase roof runoff instead of parking lot runoff, they can reduce quality control and save money.
  - Maintenance is really important in implementing these SCMs as well and has to be included.
- There is a quote from NH in the Taunton materials that states at a 1 acre threshold, we are capturing 30% of IC, whereas at a 5,000 sq. ft. threshold, we are capturing 80% of IC. Why aren't we looking at a lower threshold to address this problem?
  - This brings up the point of legacy development that was created before stormwater laws. This is arguably a greater concern than <1acre developments. We don't have a method to address these legacy developments other than the redevelopment standards.
- Addressing <1acre developments becomes unmanageable by the DEP team when you are looking at the entire state. This is a responsibility that could be taken on at the municipal level by MS4s.
  - This goes back to understanding the considerations between MS4, Ch500, MCC recommendations, etc. This will allow us to address areas that need lower thresholds, redevelopment considerations, etc.
    - Some MS4s are already going above and beyond the 1acre threshold, though likely voluntary, so it is definitely worthy of discussion in how this may be implemented through regulations.
  - Looking at LID from a planning perspective instead of solely stormwater perspective will save time and money and help communities better address watershed issues.
- Chat: One of the major issues that I have seen over the years is the disconnect over time with residential subdivision especially, once the developer has sold all the lots, and when the homeowners association supposedly takes over responsibility for storm water structures. Many, many times, the homes get sold to new homeowners that have no idea when they purchase their properties that they are required to maintain storm water structures. In my opinion this is a major disconnect and issue with storm water treatment maintenance in future years. Many storm water structures are not maintained by homeowner associations, so not operating as originally designed.
- Chat: All of the hardships to developers and the task of maintenance are understood. But at the end of the day, we need to develop standards of practice that will not only preserve the characteristics of receiving waters, but improve those that are now impaired due to the lack of management in the past. It took us 400 years to get to this point, and we will not turn it around in one year or ten. The standards need to be developed with the long view in mind, and that they will ultimately need to adapt to future considerations.
- Chat: Agree with several of prior speakers - we should be working to incentivize re-development and Smart growth and providing more flexibility towards creative solutions where strict compliance with the BMP Design Standards cannot specifically met in tight urban areas... A single example is when using pervious pavers as a BMP the pavers count against you as impervious area in your SW impervious area calculations while that SW BMP is providing a positive benefit.
  - Permeable pavers are the least well-maintained BMP.
  - UNHSC research showed that after 3 years, most permeable pavements lost over 90% of their permeability, primarily due to lack of maintenance.
  - The lack of specifications in BMP designs has caused issues in the ability to maintain and inspect them.
  - Developing creative solutions will be key to handling the vast differences between sites and necessary designs.
- The criteria for the 5-year recertification are quite light compared to what is done for MS4 annual inspections. It would be nice to have consistency between these two.

3. Identify and prioritize key topics for discussion (facilitated by Bina Skordas, FBE)

- Poll results: there was a general consensus of priority topics between the stakeholders and Steering Committee.
- Topics vs Considerations: Considerations will be discussed for every topic. They will not be their own discussions as they touch on each topic and are important to consider throughout all parts of Ch500.
- The current lists are below with additions mentioned in the meeting. Please reach out to the Ch500 email ([Chapter500.DEP@maine.gov](mailto:Chapter500.DEP@maine.gov)) with feedback on any additions to either list.

**Topics**

- LID Standards & Green Infrastructure.
  - Groundwater recharge.
  - Water quality.
  - Channel protection.
- New development vs redevelopment.
- Flood control.
- Stormwater control measures/manual.
  - Specify BMP designs and respective reduction rates.
- Standard conditions.
  - Inspection & maintenance.

**Considerations**

- Climate change.
- Municipal effort.
- Clarity.
- Treatment level.
- Environmental justice.
- Watershed scale stormwater management.
- Permitting considerations.
- Regulatory implications.
- On-the-ground implementation.
- Legal challenges.

4. Stakeholder input

- Priority will be given to the Stakeholders who are not on the Steering Committee.

5. Next steps

- Steering Committee meeting #3: tentatively February 26<sup>th</sup>.
- Technical Committee meeting #1: tentatively March 18<sup>th</sup> or 20<sup>th</sup>.

**Resources provided to Steering Committee:**

- Meeting #2 presentations.
- DEP MCC Resiliency Proposal (DEP comments on MCC recommendations).
- DEP Flood Control Proposal.
- DEP LID Standard Proposal.

**In-person Attendees**

Tracy Krueger	Cody Obropta
Bina Skordas	Rebecca Graham
Jeff Dennis	Matt Marks
Kerem Gungor	Joe Laverriere
Ivy Frignoca	Dave Courtemanch
Curtis Bohlen	John Kuchinski
Cindy Dionne	Mark Bergeron
Rob Howard	Brian Ambrette
John Maclaine	Angela Blanchette
Fred Dillon	Kris Bears
Doug Roncarati	Rob Wood

**Online Attendees**

Maggie Kosalek  
Abby Sherwin  
Adam Bliss  
Ali Clift  
Aimee Mountain  
Amanda Campbell  
Andrew Hedrich  
Andrew Manzi  
Boyd Snowden  
Ben M  
Ben Torres  
Brenda Zollitsch  
Charles Norton  
Charlie Baeder  
Christine Rinehart  
Damon Yakovleff  
Derek Berg  
Shane Decker  
Derek Berg  
Ethan Moskowit  
Frank Crabtree  
Gretchen Anderson  
Alex Groblewski  
Charles Hebson  
Ashley Hodge  
Jan Wiegman  
Jeff Spaulding  
Jessa Kellogg  
Joe Marden  
Johnathan Malloy  
John McMeeking  
Ken Libbey

Kristie Rabasca  
Lauren Swett  
Lynn Geiger  
Lynn Leavitt  
Mark Arienti  
Mark Vorhees  
Matthew Orr  
Matt Provencher  
Mike Foster  
Morgan Jones  
Neil Rapoza  
Paul Ostrowski  
Peter Newkirk  
Alexis Racioppi  
Randy Stephenson  
Rich May  
Nathan Robbins  
Marybeth Richardson  
Rick Licht  
Robert Roseen  
Ryan Barnes  
Phoebe Scott  
S Jain  
Sean Donohue  
Stephen Salisbury  
Steve Blake  
Stuart Cole  
Tom Ballestero  
Lauren Walsh  
William Lane  
Emily Wood  
Gregg Wood