CHAPTER 500 STAKEHOLDER ENGAGEMENT | TECHNICAL COMMITTEE MEETING #1 MINUTES

RE: **Chapter 500 Stakeholder Engagement, Technical Committee Meeting #1**
DATE: Monday, March 18th, 2024
TIME: **9:30am – 1:00pm**
LOCATION: Remote via Microsoft Teams
INVITEES: Cody Obropta, Jeff Dennis, Dave Waddell, John Maclaine, and Tracy Kreuger (Maine DEP)
Bina Skordas and Maggie Kosalek (FB Environmental Associates)
Chapter 500 Technical Committee

MEETING OVERVIEW:

TOPIC	WHO	ESTIMATED DURATION
1. Introduction of committee members	Bina Skordas (FBE)	10 mins
2. Overview of SC referral items	Bina Skordas (FBE) & Cody Obropta (DEP)	10 mins
3. Review Decision Tree DEP Proposal	Cody Obropta (DEP)	20 mins
4. LID standard discussion	Facilitated by Bina Skordas (FBE) & Cody Obropta (DEP)	150 mins
5. Next Steps	Cody Obropta (DEP)	20 mins

DISCUSSION TOPICS:

1. Introduction of committee members

- Bina Skordas: FB Environmental, facilitator.
- Maggie Kosalek: FB Environmental, project support.
- Cody Obropta: DEP stormwater engineering team, filling in for Kerem as project lead.
- Dave Waddell: DEP water bureau, assisting on this project.
- Jeff Dennis: Biologist in DEP watershed management unit, assisting on this project.
- Tracy Kreuger: TMDL coordinator DEP watershed management unit.
- John Maclaine: NPS training center in Commissioner's Office.
- Pete Newkirk: DOT stormwater engineer (15 yrs), DEP water bureau (4 yrs), ag engineer with NRCS (13 yrs).
- Chris Baldwin: District engineer Cumberland Country Soil & Water District (CCSWD).
- Aubrey Strause: Acorn Engineering, previously CCSWD engineer and DEP stormwater engineer.
- Phil Ruck: Stillwater Environmental Engineering, representing Bangor Area Stormwater Working Group.
- Al Palmer: Gorrill Palmer owner.
- Rodney Kelshaw: Flycatcher Environmental Consulting, soil scientist, President of Maine Association of Professional Soil Scientists.
- Joe Laverriere: City of Saco engineer.
- Andy Johnston: Atlantic Resource Consultants.
- Charlie Hebson: Maine DOT hydrologist/hydraulic engineer.
- Ryan Barnes: Maine Turnpike Authority, member of Maine chapter of American Public Works Association Executive Board.
- Angela Blanchette: Town of Scarborough engineer.
- Curtis Bohlen: Director of Casco Bay Estuary Partnership, working on stormwater as stream and wetland ecologist.
- Paul Ostrowski: Engineering design manager at Sebago Technics.

2. Overview of Steering Committee referral items

<u>Technical Committee tasks for LID</u>:

i. Clarify in the language that the goal is specifically to minimize impacts.
ii. Decipher between threatened and sensitive watersheds.
iii. Define low maintenance vegetation and consider – low maintenance to who?
iv. Specify requirements based on different applications. Potential examples include:
    1. Development vs redevelopment;
    2. Stream class;
    3. Sensitive vs threatened;
    4. Pollutants of concern;
    5. Rural vs urban (and how this is defined);
    6. Population type/resource access (i.e., EJ community, different regions of state).
v. Develop a framework for testing the rule changes under different scenarios. Potential considerations include:
    1. Project description: size; development vs redevelopment.
    2. Project location/impact characteristics: coastal vs inland; natural vs manmade channel; urban vs rural; threatened vs sensitive watershed; climate change impacts on the area; etc.
    3. Cost: social; construction; maintenance; the cost of doing something now vs restoration later due to continued pollution; etc. (state costs are a consideration out of the scope of TC to be handled by DEP).

- Should update the definition of LID itself. Often see "green infrastructure" used interchangeably with LID when it is actually very different.
- Will TC be receiving all information through attachments?
    - OneDrive folder was shared with TC.

3. Review decision tree DEP Proposal and LID proposal.

- Is the decision tree under the assumption that you've already met the threshold?
    - Yes, this is assuming you triggered the stormwater permit and/or SLODA.
- Has any thought been given to determine how much area will no longer be able to be developed as a result of soils which are unable to support recharge? If there happens to be large areas surrounding waterbodies that are unable to support recharge, this recharge requirement will be problematic.
    - DEP not aware of estimates for area considering this. GW recharge is certainly going to be a discussed topic.
- Concerned about the cumulative impacts of waiting until IC is 10% for some of these criteria to apply. This may turn out to become a policy challenge.
- Recharge is a big thing in Massachusetts, but they had the unintended consequence of having several aquifers with high sodium as a result of it. Want to make sure we are analyzing the unintended consequences.
- Does "developed area" mean area in the whole watershed or area in the proposed project?
    - Developed area in this context means the department definition of developed area per the current chapter 500 rules. It includes impervious area and any other area developed for the project that isn't allowed to revegetate to a natural condition (think lawn / landscaped areas).
- Must have clear definition around how the 10% is determined.
- There were issues that arose with using open-channel conveyance when it first started. The rules surrounding this will have to be tested for unintended consequences.
- Will areas where a site has 100% A or B soils be excluded from the LID standard?
    - If you cannot meet A or B soils, which are in the "LID Envelope" and "Major Natural Drainageways," you would have to meet the standards for sensitive and threatened watersheds, which includes the performance curves for the stormwater quality treatment. Having only A and B soils does not mean you cannot develop your site, it just means you have to meet some additional stormwater quality treatment and recharge standards.
    - The idea of this LID is two-fold: 1) it is something you want to encourage in impaired, sensitive, and threatened watersheds, and 2) make it easier for watersheds that are not impaired, sensitive, or threatened.
        - Making it easier for development in these smaller rural communities may lead to more development in these communities and SCMs that are not properly maintained.
            - DEP has observed the opposite of this happen. For example, Long Creek, which is a UIS with stricter standards, has actually seen more development. It appears that the stricter standards are not pushing people away from the location they wish to develop on. (in other words, it is being proven that urban sprawl is not occurring).
- The C and D soils is where it will be difficult to actually implement these standards, so we may be creating a situation where we have an ideal that is not feasible.
- It is interesting that we are trying to increase buffer zones and setbacks that would normally be land use for communities rather than the jurisdiction of DEP.
    - This may be related to soil compaction which is more likely to happen to A and B soils.
    - The point of this may have been to utilize these buffers for stormwater quality treatment to meet groundwater recharge and infiltration standards.
    - There are a number of LID resources that recommend protecting existing on-site permeable soils.
- Create subcommittee to fine tune definitions (see subcommittee list at end)

4. LID Discussion – preserving/protecting on-site hydrology.

a. How do we define "Low Impact Development?"
b. How do we create clear, specific, and measurable standards?
c. Discuss groundwater recharge / infiltration requirements.
d. Remember, this is a Chapter 500 Rule Update, we aren't currently touching Wetland/NRPA Regs, Site Law Regs, nor are we developing a comprehensive masterplan for the entire State of Maine.***

- The goal of the LID proposal is to 1) preserve and protect on-site hydrology, 2) controlling pollutant runoff, and 3) protecting natural resources in general.
    - Groundwater recharge and infiltration are large topics that are under 1).
    - Appendix D is so difficult to meet right now due to the valid concern that pollutants can accumulate in groundwater (chloride and sodium being the biggest ones). Chloride makes infiltration a difficult subject because you would not want to infiltrate chloride-filled runoff.
- Recharge requirement is long overdue. Some urban areas have tried to test the quality of water infiltrated through GI to find that no water comes out at all because it infiltrates sideways and downwards. Rate of infiltration is highly underestimated and has even been seen in some C and D soils. Natural soil is always the best way to treat pollutants.
- Have you had the discussion around infiltration with dep groundwater team AND drinking water team? It is important to include both.
    - The DEP groundwater team has been involved in discussions, but the drinking water team has not.
- In the infiltration table – are the measurements per design event?
    - It is based on the area you are impacting. You store and infiltrate X inches of runoff.
- Was any thought given to doing real infiltration modeling to see how good the SCS hydrology approach is?
    - DEP will likely lean on UNH Stormwater Center for information.
    - https://stormwater.pca.state.mn.us/index.php/Design_infiltration_rates
    - As an alternative, you could give people the option to use a more sophisticated model if they would like to collect that data on their site.
        - Doubtful that people will go for the option of doing more research, but every once in a while, someone might. Thinking of Richards equation and Green Amp type of infiltration that will get you much closer to modeling infiltration, though these are not design tools.
        - Potentially have standard approaches for infiltration rates in different soils and then a separate option for people to provide more site specific information if they think that will allow them more flexibility. There may be ways of taking advantage of greater infiltration than the soil types may suggest, and conversely, if a site has high infiltration rates, you need to figure out how to slow it down.
        - This will likely trigger full soil surveys for many sites. Jamie Houle stressed the importance of soil testing.
        - For a given site, depending on the size of the map unit, there could be a dissimilar limiting inclusion within that map unit, so it could be a completely different soil type that is larger than the whole site. Given this, you'll probably want at least a pit test to verify soil type.
            - Being able to access soil scientists has been a limiting factor on projects in the past.
    - Important to keep in mind, right now, there is channel protection storage and the flood standard which are both detention standards and do nothing about stormwater volume and thus are only marginally effective at protecting stream hydrology and geomorphology. Habitat, geomorphic, and hydrologic alterations in streams are the biggest stressor on aquatic life in streams after chloride. Only after that do you get into conventional pollutants (nutrients, heavy metals, hydrocarbons, etc.). In dealing with this, dealing with volume is likely a good way to avoid altering habitat.
    - Getting site-specific soil data should be a requirement. Perhaps you can have two tiers where larger projects require a soil scientist, and smaller projects can use licensed site evaluators which is faster and easier.
        - Have many people done infiltration testing over the years on stormwater projects? This is common in Geotech field studies.
            - DEP has not seen any infiltration testing, even on projects that propose infiltration.
        - In New Jersey, they have a groundwater recharge requirement, so they have to obtain data and do test pits for each site. They also do hantoush groundwater mounding analysis. Perhaps engineering consulting firms could do these.
    - Is it true that a soil evaluator actually cannot state whether a soil is of any specific kind/type?
        - Correct. The way the state rules are set up currently, only licensed soil scientists can practice pedology. There is a separate license for someone who is just doing septic designs in which they collect enough data to design a system. Wetland scientists are only able to make the call on if a soil is hydric or not. Allowing for other people to collect this type of data and make these types of

claims would be a larger conversation than this. That being said, there is a shortage of soil scientists, and it is difficult to get soil surveys done, so if there was streamlined process in which a smaller singular test could be done, such as is being done for stormwater controls, that may be helpful.
    - In developing standards for soil testing, it will be important to know how the data will be used and how the site is going to change through construction (i.e., if 12" of soil will be removed, this will change depth to groundwater table).
- The first table on the Groundwater Recharge Requirement sheet was derived using 30-year simulation model to test the recharge that occurred over the 30 years under various soil conditions. If this is changed, we'll have to figure out what the target infiltration is and how that relates to net recharge (if that is what we are concerned about – or maybe we are concerned about recharge for another reason that does not require us to simulate along a precipitation dataset).
- If you are doing a new development site in a place where land is scarce and soil is potentially difficult, it is recognized that infiltrating to the standard may be difficult. We have to figure out some different options to deal with this.
    - It is entirely appropriate that some sites are not developable. The different options will have to be for sites that are *almost* not developable. It is actually important that some sites can't get through the regulations because that means they shouldn't be developed.
    - Some places have a "get out" clause for sites that have impermeable soils or sites in which you don't want to infiltrate (asphalt plant). Important to have language that states 1) if it is not possible to infiltrate, or 2) if you should not infiltrate, then here is the alternative.
- The majority of the permits that DEP receives are in MS4 communities. The challenges with LID regulations are making them clear, specific, and measurable so that they can be implemented. The current regulations are not clear on this (i.e., what is meant by "minimize"?). We need to make sure our LID standard is clear so as to save time and money for developers, municipalities, DEP, etc. in the future.
- Although LID seems to be a holistic approach, it is important to remember that DEP cannot fully achieve this holistic approach based on certain restrictions. This is often why LID is boiled down to green infrastructure since this is what DEP actually can regulate.
- Do we all agree that at least some level of groundwater recharge where possible is beneficial and should be in the regulations?
    - It would be helpful to understand and see what this looks like when applied to specific examples to see how it may impact specific design decisions.
        - The designs likely wouldn't change very much. BMPs would probably just get a bit smaller.
    - It seems like a standard like this may land on applying to roof runoff or areas that are not salted.
    - What other changes is DEP considering for infiltration that is currently under appendix D? (i.e., groundwater table separation, soil types, ongoing maintenance and monitoring requirements, etc.).
        - Appendix D needs to be totally revamped. Some of the restrictions are valuable depending on drainage area, but for some cases they are overly restrictive.
            - These overly restrictive regulations deter people from utilizing infiltration. The more flexibility we have in the regulations, the more people will take advantage of infiltration.
- Chloride becomes particularly toxic in headwater streams that are urban/urbanizing and shows up in baseflow conditions when the stream is mostly groundwater. In this case, stormwater is a relief to aquatic life. In a third order stream, there is not significant salt being applied to the watershed. In first and second order streams where a high percentage of the watershed is developed, there is a high concentration of salt and no dilution from baseflow that isn't exposed to salt. There are some places where this is not so critical and some where it is very critical. We are even seeing chloride become an issue in watersheds that have little development but a few large parking lots (i.e., Stone Brook, Augusta).
    - Potentially address this through sensitive and threatened watersheds and provide additional restrictions on infiltration and stormwater control measures (i.e., cannot infiltrate water from a parking lot unless you meet certain requirements such as it will not be salted)
- A potential option could be to remove hydrologic soil group D (non-wetland) from the groundwater recharge table and supplement with language that allows developers to do more on site investigation to prove whether or not there is an adequate infiltration rate for treating stormwater.

    - Agree that the approach should be that it is not required in type D soils, but if you show there is an adequate infiltration rate, then you can use it.
        - Are you seeing infiltration as being a design benefit, giving flexibility and options, rather than it being negative and an obligation?
            - You will probably find different opinions on this, but from a resource consultant perspective, infiltration is what is opted for, unless there is a good reason to have a big landscaped wet pond, which there usually isn't.
    - The phrasing of "wetland soil" should be clarified. If wetlands shouldn't be used, just say that instead of wetland soils, especially since wetland soils can be found outside of a wetland.
    - Say you have a D soil that is marine clay, and you have some head to work with, so you can store your water above the clay. Is it a matter of storing it over a larger area to get it to infiltrate? Conversely you could store water over smaller area on group A soil because it will infiltrate faster?
        - This is correct but is a matter of "how much space do I need?" This may be worth doing some modeling on.
            - This is similar to septic systems. If there is not enough depth to groundwater or the underlying soil is clay, the system is made larger or raised higher.
        - There are absolutely some soils that are effectively impervious that will never allow for infiltration. It might be better to just say, for D soil, you don't have to meet groundwater standard, but if you can, you should, so show us why you can't. Group D soils are a unique example and thus should have a unique approach.
- There are many engineering groups that do the same BMP for every project and do not tailor the BMPs to the needs of the site. Because of this, there needs to be incentivization in order to reach the goals of the regulations. Important to think about how engineering companies will actually utilize the regulations.
    - May be able to, in part, accomplish this with clear education, especially targeted towards engineers.
    - What are NH and MA doing with their newer permits to incentivize?
        - NH and MA have very basic state standards, but the rest is up to municipalities, with hardly any review at the state level. It is comparing apples to oranges.
    - Many people will try to take the easiest path. Have to make regulations such that small projects that actually do not need intensive analysis are not required to do intensive analysis, and then utilizing intensive analysis as pathways to complete other projects that need it.
    - NH has a checklist for site evaluations for smaller projects (i.e., does it meet groundwater separation, have you met the percentages, etc.) that must be stamped and sent in with a permit application. This makes the review easier and certifies that it has actually been done if it is stamped.
        - In the past, DEP thought about doing this with spreadsheets that are for standard types of BMPs to confirm channel protection, water quality volume, etc. This is used internally but hasn't been made public.
        - A problem with these is that they are oftentimes not correct, despite being stamped.
        - There used to be a table that consultants used, but many would play with the numbers on it, so if this is done, make sure the equations are protected and can't be changed. This also requires delegated reviewers to have a lot more knowledge on the design to ensure numbers aren't messed with.
            - DEP is currently working to better train delegated reviewers.
    - It is easier to create incentives in a municipality that has zoning, and some of these incentives that fit into zoning regulations do not fit into a state stormwater rule. This makes incentives tricky.
    - In many instances, there is very little evaluation of the site before it is decided where parking lots, roads, buildings, etc. will go. At this point, you have probably buried a lot of BMP opportunities. Incentivizing developers to design with LID in mind can provide a lot of benefits, including saving time and money in the long run.
- In terms of preserving the contributing drainage area – it is an issue that development can increase the drainage area for a given drainage/stream, increasing the amount of water that goes into this drainage. This can completely destabilize the drainageway which sometimes creates more nutrient and sediment export. Preserving the natural drainageways would mean the watersheds post-development are as close to the same as possible as pre-development (at least <25%).
    - What are you trying to achieve by this? Volume reduction or volume maintenance?

        - DEP concern is energy maintenance. Increasing watershed area leads to more flow which leads to erosion because the drainageway/stream was not equipped to handle the added flow.
        - Infiltration can also contribute to this.
    - How often are you seeing sites that are actually in 2 or more drainage watersheds that make this impact?
        - See it often in subdivisions and large commercial developments where all runoff is collected and put through one BMP.
- We have to determine how groundwater recharge and LID will work together or if they are independent of each other.
    - Could develop a number of approaches for a given site. Recharge is an option for some sites but not all, so recharge is ONE of the ways you can incorporate LID concepts. There have to be other options if you cannot recharge. May be helpful for both of these subcommittees to identify that recharge is a subset/one tool in the LID kit but cannot be the only thing.
    - The core LID is currently phrased as if it is a baseline or a benchmark that everyone has to meet. If we are saying that some of these can't be achieved, we shouldn't call them "core".
        - The original thought behind core LID was to allow for varied restrictions on rural development versus denser development. The levels of what is required and what is passable are up for discussion along with the language we use.

- How should the TC incorporate Environmental Justice, particularly from a stormwater treatment standpoint?
    - Part of this is ensuring there is no unnecessary burden on EJ communities or on development such as low income housing with the requirements set forth by these regulations. Another part is ensuring the language is accessible to those who do not speak in the technical language of the engineers who are creating these rules. This will come through the actual rule language as well as proper education. Project team to share more information on this.

5. Discuss next steps, subcommittees, topic for the next meeting, research needed between now and next meeting.

- Subcommittees to meet between now and next meeting and report back.
    - Definitions subcommittee to revise Ch500 definitions to be clear.
        - Ryan Barnes
        - Aubrey Strause
        - Paul Ostrowski
        - Phil Ruck
        - *DEP: Dave Waddell*
    - Groundwater recharge subcommittee to iron out requirements for groundwater recharge in more detail. For example, determining requirements for separation to groundwater table, determining specific requirements based on soil type, thresholds for the requirement, etc.
        - Andy Johnston
        - Peter Newkirk
        - Rodney Kelshaw
        - *DEP: Cody Obropta & Jeff Dennis*
    - Core LID standards subcommittee to refine the proposed core LID standards.
        - Joe Laverriere
        - Angela Blanchette
        - Aubrey Strause
        - Chris Baldwin
        - Peter Newkirk
        - *DEP: Cody Obropta*
- Next TC meeting April 1st.
    - Subcommittees to report on work done.
    - Flooding standard discussion. TC to determine what precipitation estimates to use, among other topics.

Attendees

Bina Skordas
Cody Obropta
David Waddell
Jeff Dennis
John Maclaine
Maggie Kosalek
Tracy Kreuger
Al Palmer
Andy Johnston
Angela Blanchette
Aubrey Strause
Charles Hebson
Chris Baldwin
Curtis Bohlen
Joseph Laverriere
Mark Bergeron
Paul Ostrowski
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