Urban Stormwater Workgroup Meeting
Meeting Minutes
Tuesday, December 17th, 2024
10:00 AM - 11:00 AM
Meeting Materials

Summary of Actions and Decisions

Decision: The USWG approved the November USWG Meeting Minutes.
Decision: The USWG approved the following recommendation:

> The USWG recommends that the Solar Impervious relative land use loading rate be set equal to the relative loading rate of the Buildings and Other land use category. The USWG recommends that the Solar Pervious relative land use loading rate be set equal to the relative loading rate of the Turfgrass land use category. The USWG recommends that this decision be revisited 1) when new water quality data become available from active solar development sites such as the ongoing Virginia Tech study, and/or 2) if the current Urban Nutrient Management Expert Panel establishes a new land use category and loading rate for non-fertilized turfgrass.

The USWG will take another look at this decision as further research and numbers for other land uses become available.
Action: USWG Members with questions for Tyler and Jamie should email them (tytrostle@pa.gov and jeberl@pa.gov). The USWG will consider a decision on this topic at the January meeting.

10:00 Welcome and Review of November Meeting Minutes.
Norm Goulet, Chair.

Decision: The USWG approved the November USWG Meeting Minutes.

10:05 Announcements and Updates

- Update on GIT Funding Proposal
  - No updates, reviews have been done, no follow ups from CBT. David will let USWG when a contractor is selected.
- UNM Panel Update
  - Next meeting Jan 10th. Working with panelists to see if we can gather soil lab test data from urban lawns, particularly from Penn State
- MD has a new voting member, Gillian Adkins, MDE will be taking over from Sophia Grossweiler. **Welcome Gillian!**
- CSN BUBBAs (Best Urban BMP in the Bay Awards) are open. If you want to submit a project or get more info check out this link
- Martha Shimkin, Director of CBP is retiring at the end of December, and Lee McDonnell, EPA will be stepping in as interim director.

10:15 Proposed Relative Land Use Loading Rates for Solar Development

David Wood, CSN

At the November meeting, the USWG reviewed information on the current Mixed Open, Turf, and Suspended Succession land use categories, as potential proxies for Solar Pervious land uses. During the meeting, the USWG requested additional time to discuss the decision internally. At this meeting the USWG was asked to make a decision to recommend relative land use loading rates for the new Solar Impervious and Solar Pervious land uses.

***Decision Requested**:* The USWG will be asked to approve the following recommendation:

The USWG recommends that the Solar Impervious relative land use loading rate be set equal to the relative loading rate of the Buildings and Other land use category. The USWG recommends that the Solar Pervious relative land use loading rate be set equal to the relative loading rate of the Turfgrass land use category. The USWG recommends that this decision be revisited 1) when new water quality data become available from active solar development sites such as the ongoing Virginia Tech study, and/or 2) if the current Urban Nutrient Management Expert Panel establishes a new land use category and loading rate for non-fertilized turfgrass.

Discussion:

Samuel Canfield: I've mentioned this in other meetings, but WV leans towards solar pervious being rolled up into compacted pervious, because of how its related to suspended succession, herbaceous and scrub and shrub land. That's already defined within the data dictionary for the 2022 LULC definitions i.e. suspended succession, etc. With that in mind, I realize the relative loading rate is not determined for compacted pervious yet. WV leans towards standing aside on this decision, but I didn't know if that decision was an option. We lean towards the mixed open and what its relative loading rate is currently, I believe around 2.4. If that holds or stops the decision we're fine with going ahead with the turfgrass loading rate while keeping the door open after the nutrient management panel. In the general sense, we are fine with what's decided today.
David Wood: Thanks Samuel, appreciate that. As Samuel mentioned, the compacted loading rate hasn't been established yet. It's replacing the mixed open with a slightly pared down number of land uses. For turfgrass its about 11 lbs/acre for N and 0.8 lbs/acre for P. Comparing that to mixed open its about 2.5 lbs/acre for N and 0.4lbs/acre for P. So about half the P loading rate for mixed open, and a quarter to a fifth for N. KC, do you have more info on the compacted use?
KC Filippino: Just to say that it's probably not widely known yet, but we decided officially at the last land use meeting to get rid of the mixed open class and call it

compacted pervious. What that entails currently was extractive barren and the three suspended succession classes. Solar pervious was its own class for Phase 7. I'm going to post the slides from that meeting, and if you go to slides 18 and 19 you'll see some of this information there. The next decision will be what are the loading ratios for that new definition of mixed open. Likely it won't change much but it's just a redefining of that class just so everyone's aware that decision has been made by LUWG. It probably has to go to the WQGIT, but it hasn't made it that far yet.

Norm Goulet: I can see where you're coming from on the surface, Samuel, but I think we can get too wrapped up around the name of the classification. I haven't seen many of these sites, but I think they are not functionally acting like an easement for a power or gas line. They are certainly not as well established as those easements, which have been around for quite a long period of time. In terms of how it actually loads, I think it's truly loading at a much higher rate than that compacted pervious that is more typical of an easement.

Greg Hoffman: I was going to say that I tend to agree with Samuel. It does feel like compacted turf, in the long run, will be a better example for this. Given what KC said, is there any harm in waiting a while until the new suspended succession gets better defined?

Olivia Devereux: I think it would be fine to wait and say the workgroup is evaluating. Seeing results sooner than later is a benefit but I think it would be fine to wait. I would defer to KC who knows the LUWG schedule, but the modelers would be fine waiting.

KC Filippino: I don't think the next LUWG meeting is until March. I can see where Peter is heading but we hadn't had much conversation other than should we keep it. The question for this group is do we want to roll solar into something or keep it separate, and I believe we had planned all along to keep it separate.

Norm Goulet: I agree we should keep it separate. It is an up and coming land use even though there's already quite a bit of it out there. I know for some states its nothing, but for other states it's a pretty significant number. Given the fact that the LUWG is probably not going to be meeting until March, and they haven't started the discussion on that, I suspect they won't have a decision on this for quite a while. Like I said last time, this is just the initial decision. As more research becomes available, we can go back and revaluate it. We can revaluate when the land use for the compacted has been finalized. We always have that opportunity to go back and make some changes. At this point, I'd like to get the decision made, at least for the initial numbers, and then move forward.

Samuel Canfield: Some of my additional thoughts are that if we're assuming solar pervious is being fertilized, which I don't know, that's a consideration in terms of where it falls. As I was thinking about the loading rate for mixed open, which had a loading rate of 2.45 lbs/acre which was determined when there were a multitude of different land uses within that group, one would assume that the compacted pervious had a change in its loading rate given that many of the land uses are being removed and some that would have lower loading rates than the others if we just compared natural succession natural

succession should have a lower loading rate than suspended. Suspended succession and extractive barren is what's proposed to be left in compacted pervious. We would assume then that compacted pervious would increase in its loading rate above 2.45. That's one thought withing this. I don't think that either 2.45 lbs/acre or 11.19 lbs/acre represents solar pervious appropriately, its somewhere in between, since it's not being fertilized, but probably loading higher than the current rate for mixed open. Having an intermediate value is more likely. Eventually I think it would fit better into compacted pervious when that's been determined.

Cecilia Lane (in chat): Separate makes sense to me. It's unique compared to the other compacted LULC

Olivia Devereux: Remember that the modeling workgroup ultimately sets the loading rate and what this group advises is the ratio between loading rates. If the new compacted is going to be lower than solar, which makes sense to me, then whatever the one is that everything else is comparable to is 1, solar is 1.2, compacted is 1.1. Made up numbers, but they are all ratios to a single land use in the urban sector, and the model will calibrate and keep those ratios correct.

Norm Goulet: Other than Samuel, any other comments?

Cecilia Lane: DC discussed this and we agree with the workgroups proposed approach. We did talk internally about parsing out the solar pervious from solar impervious and looking to see if there are installs that might have other characteristics that would lead them to behave more like impervious than pervious (i.e. a steep slope versus a flatter area). We will look internally with our land use workgroup representative as to what kind of GIS layers might be available for us to do that in house, but we support the proposed land use.

Decision: The USWG approved the following recommendation:

The USWG recommends that the Solar Impervious relative land use loading rate be set equal to the relative loading rate of the Buildings and Other land use category. The USWG recommends that the Solar Pervious relative land use loading rate be set equal to the relative loading rate of the Turfgrass land use category. The USWG recommends that this decision be revisited 1) when new water quality data become available from active solar development sites such as the ongoing Virginia Tech study, and/or 2) if the current Urban Nutrient Management Expert Panel establishes a new land use category and loading rate for non-fertilized turfgrass.

The USWG will take another look at this decision as further research and numbers for other land uses become available.

10:30 PCSM BMP Load Reporting Tool Presentation

Jamie Eberl, PA DEP

Jamie presented on a novel method to capture PCSM BMPs in place but not currently reported in NPDES. Although PA is transitioning to electronic permits, previously implemented PCSM BMPs are not able to be reported using that system. PA DEP has developed a solution which addresses capacity issues inherent in other methods and can calculate a blanket county-specific PCSM BMP load reduction for reporting to the model. This solution may be useful to other jurisdiction dealing with similar issues. PA DEP has been in touch with the CAST team, and the presentation covered the calculation of acres treated and runoff in addition to CAST implementation. Jamie took questions and comments following the overview.

Discussion:

Greg Hoffman: Do you have any sense of what kind of BMPs these are? I assume since its two year storms its mostly dry ponds?
Jamie Eberl: A lot of extended detention. Not so much dry ponds because in 2010 we moved away from that. Dry ponds would be 80s, 90s, early 2000s. It moved more into extended detention in 2010 because it has the volume management. Prior to that we were just doing rate control, a lot of dry detentions in that time. Post 2010 there were volume, rate, and quality requirements. One of the things we see as an issue with our reporting is that some folks don't make a distinction between drainage area and treatment area. If we look at a volume approach, we know better what these facilities actually have the capacity to treat, versus what may be flowing to it and going through it.
Greg Hoffman: Extended detention does fall within the BMPs on the treatment curve, correct?
Cecilia Lane: I believe so.
Jamie Eberl: We picked that curve because it's a little more conservative. The biggest thing is figuring out how many treated acres we have and the volume from those. Using that, we can get a handle on what we should see in each county, and how far off we are from that.
Cecilia Lane (in chat): Seems like a good first step at capturing ~ what's out there. The results of the WQGIT funding (Beyond Bean Counting) may also be of use as you are setting up your electronic accounting systems.
Jamie Eberl: Focusing on the bean counting, you very much get lost in it. This is our take a step back, of how can we get realistic results and get an idea of what's out there without getting lost in the bean counting.
KC Filippino: This is really interesting and I'm trying to think of how it would apply in VA because we have quantity and quality requirements separate. This isn't going to be used for reporting, just to get a handle on things, right?
Jamie Eberl: We want to use it for reporting in the short term, because we know we're so far off right now. That's why this is more of a discussion than an actual presentation. We wanted to get everyone's reactions, and if some states say that's not a good idea, fine. We

wanted to discuss with the states if anything like this had been considered and what your hurdles were moving forward. We definitely want to get out there and get eyes on things, but it's not realistic for where we are right now. In five to seven years, maybe, but until we have more systems in place it's not something we can manage.
KC Filippino: I'm just thinking about that verification piece Cecilia brought up. Since you can't have eyes on it I wonder if there's another step. Now you could be overreporting what these are doing if many are failing.
Jamie Eberl: It's a regulatory requirement, so we know they went in the ground. After our permit requirements it rolls into the municipalities, and they all have stormwater ordinances. It's a requirement of every municipality's stormwater ordinance that if something fails, they need to go back to the property owner and tell them to fix it.
Norm Goulet: Since this is a regulatory requirement for the MS4s, don't the local MS4s have these records?
Jamie Eberl: They kind of do, but it varies wildly the level of effort put in there. We have a thousand permittees across the state and wildly different resources. I have little boroughs where this is the last thing on their mind and what they give is better than nothing but basically useless. As we transition to electronic systems, and those systems have requirements regarding good data, we're on the path to getting good data, but it's a process.
Norm Goulet: I get it, it's a process. I agree with Cecilia that this is a good first step to figure out what you're reporting versus what potentially might be out there. There are so many assumptions built into this that to claim it as credit for Bay purposes is a stretch.
Olivia Devereux (in chat): Here is the grant guidance. EPA evaluates against these requirements since the grants are for this type of tracking, staff associated with it, etc.
Cecilia Lane (in chat): Sounds like a great grant opportunity once you have an approximate number...BMP Find & Seek (and inspect)!
Jamie Eberl: What assumptions do you think we would need to get more detail on?
Norm Goulet: I understand you're going conservative with the ST, but there are a lot of assumptions that were built into using those curves to begin with. The fact that you're assuming a BMP installed in 2010 may still be functional in 2025 is a huge stretch. From my standpoint there are lots of assumptions that are being built into this. It's a great first step and will give you a view into the universe of what's out there that you could be claiming credit for. You're in a position a lot of the states were in the 2010 region when they turned to MS4s and said, 'give us what you have, it'll be a starting place,' and then the localities had to start documenting all of this in a more structured format, electronically. There is the stepwise position that I know you guys are looking at, but I think its still a huge jump to say based on this this is what we want to take credit for.
Jamie Eberl: Would it be easier to swallow if we looked at what's more current and said 'what's happened to impervious in the last 5 years?' We know this area is regulated by

permits, this volume is being managed, and in a shorter timeframe its more likely the BMPs are functioning even without a follow up inspection.
Cecilia Lane (in chat): Virginia had to do a historical BMP clean-up, Norm beat me to it, but they had to go back to 2009 and again to 2014. And then track and verify.
Norm Goulet: Yeah, because for most of them it's a 10-year window for credit duration. If you only went back 5 years, you're cutting down on the chances of something not being functional. This is all my particular reaction to it, I'm just trying to make it so it's fair for all of the states who have gone through this extremely expensive, tedious, bean counting over the years.
Greg Hoffman: How does this approach compare or differ from MDs approach of looking at historical BMPs and crediting by era?
Olivia Devereux: I'm not with MDE but I can answer that. That's something they did in 2007/8 and they have not done it since then. It's not something they do now. They do track every BMP and report the location and date it was installed as well as the inspection date, much like VA and all the other states do. That was something they did way back in the day, pre TMDL.
Ginny Snead (in chat): Yes, seems like a commitment to verify would be needed. I'd be concerned that this would be overestimating and then put the state in a hole after a future true-up.
Jamie Eberl: Ginny, I see your comment. That's a good point that we could overestimate to begin with, and it would then put us behind if we switched to the bean counting method.
Ginny Snead: I understand where you're coming from where you know there are things in the ground that you aren't able to get credit for. You're looking for something to bridge that gap, and maybe there would be a way to do this where you could present this and have a discount knowing not all of them were still there or functioning as they should be. A discount of maybe 50% applied to this calculation that you present, and recognize fully that it's a placeholder until you're able to get more verifiable data.
Jamie Eberl: That's a good idea. If we can be fairly confident in things implemented in the last five years and use 100% of that, but maybe 50% for the five years before that or something.
Ginny Snead: Maybe something like that.
KC Filippino: This is all really good. I think we should follow up within the Beyond Bean Counting project. This is something that when we have our consultant on board, we should think about this and how it could work for PA. I do have a lot of reservations as it stands right now. I don't know about the other states, but it would be a tough pill to swallow for them.
Jamie Eberl: Have any of the other states done something to verify their bean counting like a bigger picture estimation like this to compare back and forth?
Norm Goulet: I'm not aware of anybody.

Cecilia Lane: DC is doing something ancillary to this. We know where the BMPs are but many of them were not being credited because they had not been maintained, we didn't have eyes on them. We're going through a big rehab effort right now to put eyes on them, inspect them, identify what needs to be rehabbed, how much it will cost, how much we can afford, that kind of thing. The whole point is to bring them back online, both for credit but also for functionality. We also find BMPs as part of this effort, but it might be of interest, whether to PA or the workgroup to see what the scale of that effort was, the cost, and how successful we are at it. There are so many changes in the drainage areas in 10-15 years.
Ginny Snead (in chat): Perhaps an approach to field verify a certain percentage of them and then see how accurate the GIS data is that you presented is a first step for verification.
Cecilia Lane (in chat): Sub-sampling, good idea! Or take a 50% credit until they can be field verified.
Marty Hurd (in chat): Is this relevant? ['this' is a link to the CBP BMP Verification website]
Olivia Devereux (in chat): Yes, that is exactly the Partnership decisions/guidance on verification of BMPs. That document along with the Grant Guidance for CBRAP funding, along with the annual progress verification protocols here.
Norm Goulet: We'll probably have to take this up at our next meeting, but those are some pretty impressive numbers in terms of the difference.
Jamie Eberl: Those numbers are why we're very interested in pursuing something, whether its just a change in the years we use. We know we're far off and that's our concern right now. We can't make our slides available quite yet because we have a review process, but if there's anybody who wants to continue this conversation, or thinks their state has done something similar, we would appreciate a follow up email.
Norm Goulet: That sounds good. I think you've gotten a sense of some reaction already. One thing from the chat from Marty was the Bay programs verification principles, and Cecilia replied and also added the CBRAP guidance. That's one question I have for you Jamie, this is way too early in the process to have discussed this with the Bay Program and EPA. I can imagine a number of questions coming from the bean counting folks over there, because this will result in a huge jump in PAs progress numbers and that always sets off some alarm bells over there. Have you even broached this with anyone there yet?
Jamie Eberl: Just some preliminary conversations about how things would work in CAST and whether it was even possible. We wanted to talk to the other states first to get a gut check. If everyone had said this is bad we wouldn't move forward, but it sounds like there is interest in tandem with concern which we can work with to figure out some part of this to move forward with.
Norm Goulet: I think most of the states have overcome the gap due to time, they've been working on this for quite a number of years, so the gap has gotten smaller because

they've gone digital and has cradle to grave tracking of these things now. You're in a different place, starting now where many of the states were 10-15 years ago. Like I said, I understand why you want to start closing that gap while you're working on the whole process.
Samuel Canfield (in chat): Have you compared this to the monitoring network data? (Are we able to compare it?)
KC Filippino (in chat): That's a great question, but I don't think stormwater is one of the places where there's a disconnect between monitoring vs modeling, but I could be wrong.
Olivia Devereux: WRTDS and in many places in PA it shows the loads getting worse/higher. Not all places though, the loads are improving in some.
Samuel Canfield: If you could isolate some of these localities to the monitoring network and see how they relate to the numbers that would be interesting.
Norm Goulet: That would be nice, but unfortunately in many instances the monitoring data is not matching up with what's being forecasted by the models. One gut check might be to compare what's being calculated here and compare that to the other states that have a high MS4 concentration to see how those numbers might compare if you were to do a similar methodology. For instance, if you were to take the acres of northern VA or tidewater, their MS4 areas and do the same calculations, how would it compare to what the states have now in CAST for those areas.
Jamie Eberl: Thank you for that, that would give us a pretty good idea. We could use their acres of impervious to see how it lines up.
Tyler Trostle: That would be fairly easy to do using what we've done here. We can keep it on the same basis if we want to do five years back and do comparisons to make it a little bit more up to present, that's a good idea, thanks.
Olivia Devereux (in chat): Remember that the purpose of a model is to do source sector assessment. The water monitoring does not show the source of pollution, just the amount.
Scott Heidel (in chat): That is an interesting thought and our work with USGS is demonstrating the modeled reductions are not reflecting the reductions that we are seeing through monitoring. We are seeing more actual reductions than what is demonstrated in the model.
Marty Hurd: In the vein of what you just proposed, I was pulling up some numbers. In Fairfax County, we've been tracking BMPs put in place as part of the land development process and looking at how that contributes to the reductions we're seeing or reporting to VA DEQ and eventually the Bay Program. I think the majority of the reductions that we're seeing are more specific projects implemented specifically to reduce pollutants and not just those required through treating impervious surface increases. I'll take a look at that and see if I can provide some more information.
Norm Goulet: That's a good point. For those who don't understand what Marty is talking about, as part of the WIP process, VAs MS4s were required to have a substantial reduction. There's just not meeting the regulatory requirement in these MS4s, it's

meeting the requirement for the initial construction, and on top of that were the reductions necessary to meet the WIP goals in the localities. There is a bit of an apples and oranges there. I think the general approach is something that instead of relying on one state if you did a variety of the states or a variety of the MS4 regions in the bay, it'll give you some idea as to what it looks like

Scott Heidel: Just wanted to add something based on what I heard from Olivia. We are looking closely at the monitoring data. You can click into the link I put in the chat [METRIC] and pick a number of different stations. Those dots delineate the watershed upstream from that area and it shows you per pollutant type what the modeled reductions are expected to be versus the monitored actual reductions that we're seeing. In PA we're seeing quite a bit of progress, indicating we are implementing BMPs to a higher level, or potentially need to get more credit for the BMPs we are implementing but are struggling with verifying and reporting. Our monitoring is indicating we are above and beyond what the model shows.

Action: USWG Members with questions for Tyler and Jamie should email them (tytrostle@pa.gov and jeberl@pa.gov). The USWG will consider a decision on this topic at the January meeting.

Participants

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