

STORMWATER ORDINANCE UPDATE  
TECHNICAL ADVISORY COMMITTEE (TAC)  
Meeting #12: Wednesday, January 30, 2008  
Washington Department of Fish & Wildlife  
2108 Grand Blvd.  
1:30 - 3:30 p.m.

N O T E S

**Agenda / Introduction**

Members Attending

Jennifer McClure, Fereidoon Safdari, Mike Soliwoda, Ron Wierenga, John Milne, Patrick Harbison, Ali Safayi, Chad McMurry

Members Absent

Mike Misiak

Staff

Tim Kraft, Robin Krause, Trista Kobluskie

Audience

Sean Darcy, Michael Rafferty, Byron Woltersdorf, Andrew Stoeckinger

The notes from the January 9, 2008 meeting were approved as submitted.

**Forested Condition Review**

Mr. Harbison asked for an update on the forested condition flow control standard.

Mr. Krause replied. The draft code already contains an alternate concept. After last TAC meeting, staff met with Ecology to discuss four or five potential alternatives. Ecology staff thought that only one *might* have merit, and it appears in the draft code.

To put it very simply, use the site land cover from 1955 if the basin was more than 60% cleared in 1955. For example, if the basin was 70/30 in 1955, then you use 70/30. That is the basic concept, but there is a lot of work to do to support it technically. 1955 is the earliest year for which we have aeriels for the entire county. Also, it is 20 years prior to 1975, when the Clean Water Act required that we don't do anything to preclude restoration of surface water beneficial uses.

Mr. Harbison asked if the concept could be supported technically by February 15, when the draft code is due to Ecology. Mr. Krause replied that the county will know whether or not the concept has enough merit to pursue by the 15<sup>th</sup>, but will not be able to fully support it by then. If not supportable, the BOCC will have to make a policy decision about whether to leave it in.

Mr. Safdari said that Commissioner Stuart had asked staff to find out how Seattle and King County justified the 1985 40% impervious cover of their basins. Mr. Krause: Ecology published

the 40% Urbanized Drainage Basins paper, and that was the justification. Mr. Kraft stated that the paper is based on some research, but not heavily scientific. Mr. Krause: heavily urbanized areas have lost natural resource functions, too. In rural Clark County, some natural resource value is still there and should be protected. There are only a couple of areas in the state meeting the 1985 40% TIA rule. Downtown Seattle and downtown Tacoma for the most part are the only significant areas that meet this rule. Most of King county does not meet it. A map is available at [http://www.ecy.wa.gov/programs/wq/stormwater/flow\\_control.html](http://www.ecy.wa.gov/programs/wq/stormwater/flow_control.html).

#### Draft Code

Reference the January 11, 2008 preliminary draft code documents. The group discussed its comments on the draft.

Mr. Safdari previously sent his written comments.

#### *40.380.020(B)(3) - List of Preferred Water Quality Treatment BMPs*

Mr. Kraft noted that the BMP ranking list for publicly owned facilities in 40.380.020(B)(3) had drawn the most comments from TAC and also come from the Stakeholder Advisory Committee (SAC). The list is not intended to exclude any BMPs, but it prefers those BMPs that are both effective and less expensive to maintain. The intent was to address long-term maintenance costs. However, what criteria do review staff use to say which BMPs are infeasible on a site?

Mr. Krause said the Prosecuting Attorney's Office has concerns about the section, too, from a review standpoint. Legally, there is no issue with having a preference list. The county has the authority to limit publicly owned BMPs in any way it chooses. He asked for ideas from the group.

Mr. Safdari suggested lumping 1-5 into a single group, then lumping 6 & 7, sand filters and StormFilters, into a second group. However, the question will remain, what criteria will allow you to use BMPs in the second group? Mr. McMurry said that one consequence of the limitation may be an increase in private facilities, which runs counter to stated county and SAC preferences. Mr. Krause agreed; the county's intent is to make it easier to put public facilities in subdivisions where they want to do things differently.

Mr. Milne and Mr. Darcy asked what criteria were used for the rankings. Mr. Krause: the basis was a long-term cost analysis. Mr. Krause will provide the cost analysis to Mr. Darcy.

Mr. McMurry wondered why combined detention/wetpool is on the list when it just acknowledges that you can use those BMPs together. Mr. Kraft: these BMPs are in the Ecology Manual.

Mr. Krause relayed SAC's suggestions. 1) eliminate list and replace it with specific criteria (e.g. cost) for how to choose a BMP for a publicly owned facility. 2) leave list and add criteria. Mr. Kraft stated that the criteria are not intended to be onerous. Both maintenance costs and effectiveness were considered. Submittal requirements can have some fairly loose criteria.

Ms. McClure wondered how experimental and new BMPs would fit into the lists. Mr. Krause: just using the criteria and removing the list would work.

Mr. Harbison asked what kind of criteria might suffice. Mr. Krause: Compare cost of long-term maintenance to the developer's capital cost.

Ms. McClure asked if costs such as dredging and replanting treatment wetlands were considered. Mr. Krause replied that those costs were considered for swales and wetponds.

An audience member asked for the definition of long term. Mr. Krause replied that the value has not been established. It may be perpetual with an inflation factor, or 20 years.

Mr. McMurry said that there is a strong market preference for small, single family, medium density developments vs. town homes. How would you factor in the loss of revenue from less desirable product? Ms. McClure suggested tax revenue could be considered - a more maintenance-intensive facility will be worth it if it leads to a stronger tax base.

Mr. Krause said that one option is to remove the ranking list entirely. Current code allows the county to reject a facility for public ownership based solely on long-term maintenance costs; that could continue.

Mr. Milne and Mr. McMurry discussed how the ranking list might affect the workflow of design and review; having to know what BMP can be used, and will be accepted, on day one will be impossible.

Mr. Safayi asserted that the list can be re-prioritized during code updates every six months.

Mr. Krause stated that some assumptions on maintenance change. For example, the county has three sand filters. At first the county did not want them, but now we've found that the maintenance is not so bad.

Mr. Soliwoda suggested making the first five basic treatment BMPs available for public facilities, since the maintenance costs are essentially the same. To use the StormFilter or sand filter, have some criteria. Mr. Harbison said that Volume 5 of the Ecology Manual, page 2-11 already has a list.

Ms. McClure was concerned that leaving a preferential order will deter the use of experimental BMPs. Mr. Soliwoda: use experimental BMPs in private facilities. How else is there to find out maintenance costs? Mr. Krause: we already have the ability to refuse a facility due to maintenance costs and risk.

Mr. Milne liked Mr. Safayi's idea to wait to put list in until some of the BMPs are known & experienced under new the regulations. Or, leave it in a change "shall" to "may" and "precedence" to "preference." Mr. Krause: demonstrates the county's preference but is not binding. Mr. Safayi: as soon as the analysis of which work and are feasible, then put in the ranking list.

Mr. Darcy asked how does the ranking work if the developer wants to use a combination of BMPs. Ms. McClure suggested dividing the site into basins to be evaluated separately. Mr. Krause responded that the list may limit flexibility, and that is not desirable.

An audience member wondered if a stormwater utility with a fee had been considered. Mr. Krause: yes. Both the TAC and SAC have brought this up, but it is outside of our scope for this ordinance update.

Mr. Milne asked how much of the county is eligible to use only basic treatment facilities.

Mr. Krause asked if TAC members agreed that the list should remain, but be reworded to relay only a preference, not a requirement. Ms. McClure disagreed. First, if designed and built correctly, BMPs are presumed to work, so ranking for treatment efficacy is not needed. Second, different conditions (like slopes) will be suited for different BMPs, and those decisions should be up to the engineer. If the engineer designs something ridiculously complicated and expensive to maintain, the county can reject it as a public facility. She advocated deleting the list. Mr. Soliwoda agreed except he suggested requiring justification for selecting a mechanical

method (StormFilter or sand filter) because the of maintaining costs are so much higher than the natural methods.

Mr. McMurry asserted that staff and the BOCC must fully understand the tradeoffs between density requirements and runoff BMPs that consume a comparatively large amount of land. Mr. Krause replied that the BOCC is very concerned about space lost to stormwater BMPs, but most of the space will be consumed by detention BMPs, not these treatment BMPs. Mr. Safdari and Mr. Safayi said that review staff has not been preventing mechanical facilities, but have more frequently allowed them in private facilities.

Mr. Darcy suggested that water quality is the issue. The StormFilter is the only BMP to have demonstrated compliance with Ecology's standards.

Mr. Milne suggested that a priority list is moot when a treatment train is needed.

Mr. Soliwoda reiterated that his suggestion is only to require justification for using the StormFilter or sand filter BMP; it does not preclude using those BMPs. Mr. Safdari agreed that it is reasonable to favor those BMPs that county staff knows from experience are more effective and more economical to maintain. However, he recommended not numbering the list - keep it flexible.

Mr. McMurry does not want to get boxed into using BMPs that are not realistic for the site. Many sites cannot accommodate a treatment wetland, for instance.

Mr. Milne agreed with the idea of using the list as a preference, not a requirement. Mr. Krause stated that he is reluctant to include advisory, instead of regulatory, language to code. He liked Mr. Soliwoda's idea of requiring a justification for installing the mechanical systems. He asked what would be fair criteria for using the mechanical BMPs.

Mr. Wierenga wondered which party is recommending a preference list - Operations & Maintenance staff, BOCC? Mr. Krause: Operations, and the Clean Water Commission believes that StormFilters are expensive to maintain. Mr. Wierenga replied that accepting facilities for public maintenance is a policy decision, and is related to the level of the Clean Water Fee, which may be increased. Operations & Maintenance can request a larger budget. Mr. Krause: there is a perception that the county is making up for the capital cost that the developer maybe should have taken on. That's the tradeoff - long term maintenance vs. initial capital cost. If we could get to that number without an onerous analysis, that could be done at preliminary stage with preliminary design, then we could have something. But if it can't be done with preliminary, it is not reasonable to ask somebody to figure out that piece so early.

#### *40.380.010(B) - Applicability*

Mr. McMurry was concerned that the way the development and redevelopment thresholds are repeated precludes the application of the second-tier requirements, in the flow control standard, for instance. By only restating part of the threshold from the Ecology Manual, it could be interpreted to supercede the second-tier requirements in each Minimum Requirement. He suggested one of two solutions: 1) restate all of the first and second-tier thresholds in code or 2) do not restate any thresholds in code, since thresholds are identical to those in the Ecology Manual.

Mr. Krause clarified that Ecology does have two sets of thresholds: 1) the project-level thresholds, and 2) TDA-level thresholds under each Minimum Requirement. He asked if restating TDA thresholds in code would rectify the problem.

Mr. Milne agreed with Mr. McMurry; since the project-level thresholds do not vary from the Ecology Manual, remove them from code.

Mr. Safayi disagreed. Instead, restate the entire applicability section of the Ecology Manual in the code. That would be helpful to smaller engineering firms and to individual citizens who want to look at county code. Asking those folks to reference a huge technical manual simply to understand what activities are regulated would make the code inaccessible.

Mr. Krause: we decided early on that our code would only state what differs from Ecology, except for the Applicability section. Every agency we looked at repeated the Applicability section in their code. We followed those examples.

Mr. McMurry: it is not immediately obvious from the Applicability what must be done to comply with code. He suggested listing at least the title of the Minimum Requirements in code. Mr. Krause: we have received that comment several times, and it has merit.

Mr. Krause: I am not sold on adding the TDA-level applicability for Minimum Requirements 6-8 in code.

Mr. Harbison questioned the concern about sending folks to manual right away? They have to reference the manual to complete a project anyway. Mr. Krause the intent was for folks to be able to tell roughly (not explicitly) what they'll have to do by looking at the code. However, the way the preliminary draft is worded, you can't. To achieve that, we would have to list out the Minimum Requirements and include the TDA-level thresholds. That would make the code too long.

Mr. McMurry: my strong recommendation is to remove Applicability language and reference the Ecology Manual.

Mr. Kraft disagreed. The Applicability section guides staff and engineers to find out which Minimum Requirements apply. Then, in the Ecology Manual, each Minimum Requirement gives its own set of criteria for what must be done (if anything) to comply with it. It would be a stretch for staff to interpret the project-level applicability as superceding the more specific thresholds in each Minimum Requirement. Mr. McMurry stated that he has seen such stretches of interpretation in the past.

Mr. Kraft stated that a larger problem is that the Ecology Manual is not listed until page 4, but Minimum Requirements from it are referenced right off the bat. Somebody new to the county code would not understand where the Minimum Requirements are when reading 40.380.010(B). It does not make sense to me to repeat everything. If you eliminate the Applicability section, and begin by addressing the Ecology Manual, and the applicability section of the manual, as the standard. That eliminates repeating language.

Mr. Krause countered that code experts, such as Mr. Euler, have already clearly affirmed that applicability must be codified. Applicability cannot be adopted by reference and be valid. Mr. Safayi agreed: legally, the Ecology Manual is a guide, not code.

Mr. Harbison asked if the draft code does actually adopt the Ecology Manual.

An audience member stated that having the applicability in code would be useful to new engineers and those who are new to the area. Ms. McClure: plus the code needs to serve private individuals, not just engineers.

Mr. Harbison suggested a solution to Mr. McMurry's concern - state in code that the TDA-level thresholds within each Minimum Requirements apply. That way, code captures the major ideas and the technical manual captures the details.

Mr. Safayi asked why not use a flow chart for applicability. Mr. Kraft: a flow chart cannot be published using Code Publishing.

Mr. Krause stated that it appears that much of the code may be converted to a manual.

Ms. McClure asked why not list a brief summary of the Minimum Requirements at the beginning of the Applicability section. Mr. Milne: plus an introduction to the Ecology Manual. Mr. Krause agreed that those ideas have merit.

#### *40.380.020 - General Standards*

Mr. Soliwoda suggested adding to (3) that stormwater facilities shall be constructed also in accordance with the Clark County Standard Details Manual, not just WSDOT. Mr. Harbison added that an order of precedence must be used, in case of conflict.

Ms. McClure suggested adopting the LID Manual, too. Mr. Harbison wondered if the LID Manual should be referenced in the definitions. Mr. Krause: the LID stuff may become an appendix to the general manual.

Mr. McMurry pointed to the language in (4). The word "only" is vague and possibly confusing. Ensure that the intent is clear. Also, it should be more clear that it is applicable to frontage improvements.

Mr. Safayi: so we are talking about equal area exchange? Mr. McMurry: we have that in current code, and we need to ensure new code doesn't preclude it if we intend to allow it. Mr. Soliwoda: you need to define the limits equivalent to Ecology Manual (threshold areas) only have it drain to ¼ mile. Mr. McMurry: it says the limit is draining to same receiving water. Mr. Soliwoda: is a receiving water defined? Mr. Kraft read the definition from the Ecology Manual, "a body of water or surface water system to which surface runoff is discharged via a point source of stormwater or via sheet flow." Mr. McMurry: that would preclude a pipe but not a ditch. Mr. Krause: so, your equal area exchange would have to discharge to the same tributary.

#### *40.380.020(B)(9) - Infiltration BMPs on Industrial and Commercial Sites*

Mr. Safdari wondered if (a) and (d) are contradictory. Mr. Safayi said that (a) simply says that the facilities are not automatically allowed and (d) lays out the conditions under which they are allowed. Mr. Harbison stated that (a) cannot be defined. Ms. McClure stated that the UIC regulation lists uses that qualify as a significant threat; since we're held to that standard, why repeat it?

Mr. Safayi: Community Development staff use this section quite a bit. We try not to allow infiltration on sites like gas stations. Mr. Krause: but that is already not allowed under UIC, and our code can't trump that. Mr. Safayi: relying on the UIC regulations completely is not feasible because registration of UIC takes place after the project is completed. Developers need to know at the beginning if an infiltration facility will be acceptable, therefore the stormwater code should not be looser than or contradict the UIC.

Mr. McMurry noted that UIC will not apply to surface infiltration BMPs, so the code needs to describe it.

Mr. Wierenga asked about the distinction between "commercial industrial site" and "industrial and commercial sites." Mr. Krause listed various uses from the UIC regulation vehicle maintenance; repair & service; fleet vehicle washing; airport de-icing; storage of treated lumber; storage or handling hazardous waste materials; generation, storage, transfer, treatment, or disposal of hazardous waste; handling of radioactive material; recycling facilities.

Mr. McMurry questioned whether that list includes gas stations. Mr. Harbison: storm drains in gas stations must be separate for spill control. Mr. McMurry: plus additional treatment.

Mr. Kraft clarified that the language in question should be kept. Mr. McMurry: the concept is good, but the wording should be evaluated for consistency with other regulations while still prohibiting open infiltration on commercial and industrial sites, if that is what is intended.

Mr. Soliwoda stated that there should be a reference to 40.410, CARA requirements. Mr. Safayi: in CARA Zone 1, infiltration on commercial and industrial sites are not allowed, even if the other requirements from (9) are met. Mr. Krause: we'll reference 40.410 and we will make sure we can deny infiltration where it poses a threat. Mr. Safayi: CARA, habitat and wetland protection should all provide reasons for disallowing an infiltration BMP on a commercial or industrial site. Ms. McClure requested a quantitative standard rather than "significant threat."

#### *40.380.020(B)(7) - Sand Filtration BMPs*

Mr. McMurry asked if (7) would be more appropriate under (9). Mr. Harbison asked further if the provision is even needed. The Ecology Manual has treatment requirements for treatment trains. Mr. Krause: if that is already covered under the selection matrix in Ecology, there is no reason to have it in code.

#### *40.380.020(B)(8) - Swales shall have a free discharge*

Mr. Soliwoda suggested replacing "minimum swale elevation" with "base elevation of the underdrain" to avoid backwater in flatter sloped swales. Backwater on flatter swales inundates vegetation, killing it. The group discussed swale slopes, pond discharges, and swale vegetation. Mr. Krause clarified that the free discharge must be from the underdrain system, if one exists.

Mr. Harbison asked about the definition of "free discharge." Is discharge into a pipe a free discharge? Ms. McClure: as long as there is no backwater.

Mr. Krause wondered why free discharge would be specified in a detention basin only. We want free discharge on swales during the water quality event, regardless. Mr. McMurry asked if the Ecology Manual already contains this. Mr. Krause: we'll look.

#### *40.380.020(E) - Design Methodology for Stormwater Infiltration Systems*

Mr. Safayi asked if in (3), 15' separation between the bottom of the facility and groundwater would be a difficult standard to meet. Mr. Krause: it allows for fluctuation of up to 10' in groundwater level and still comply with UIC.

Mr. Safayi also asked if equations should be in code. Mr. Krause replied that the BOCC prefers it to be in a technical manual.

#### *40.380.020(C) - Quantity Control*

Mr. Soliwoda requested the section to address tailwater effects on discharge. Mr. Kraft: we have added a requirements for a hydraulic analysis of pipes to & from control structure in the Conveyance section 40.380.020(P)(4). Mr. Soliwoda stated that that does not address his question. How do you model it?

Mr. Kraft: the Submittal Requirements state "by a hydraulic analysis of pipes or channels leading to and/or from the outlet structure. The analysis should confirm the capacity of pipes and channels to convey from peak flow rates from the 2, 10, 50, 100 year return period flow rate with the water surface elevation of the pond at the elevation for the return period flow rates." The group discussed which software and methods could be used to achieve the analysis. Mr. Soliwoda emphasized that his question is about tailwater *for ponds*. There is no code language addressing it. Mr. Safayi: if we put it in code, we must have an idea, some type of

design criteria, for how to achieve it. The group agreed that the situation is not very common. It should be between the design engineer and the review engineer.

*40.380.020(1)(2) and 40.380.020(L)*

Mr. Safdari and Mr. Krause discussed system development charges in a stormwater utility. There are some inconsistencies that need to be resolved. Mr. Safayi argued for keeping the language. Mr. McMurry warned about leaving developers in the lurch if they build regional facilities and then stormwater regulations change.

*Definition of Development Site*

Mr. McMurry: definition of development site. Especially for phosphorus control basins, where all the water from the development site must be captured. What about when the bottom of my property is a 150-foot buffer before it runs into a ditch that runs to Lacamas Creek. Is the site the back line of the lots we create or the property line? Mr. Krause: also relevant to how Minimum Requirements read, too. Ecology's take is that you only have to mitigate for what you are disturbing. Mr. McMurry: text needs to be more clear.

*Other Comments*

Mr. Krause asked for additional comments to be submitted by e-mail to him by the morning of January 25, 2008.

**Next Meeting**

The next meeting will be held on February 6, 2008.

Respectfully Submitted,

Trista Kobluskie