

**STORMWATER ORDINANCE UPDATE
TECHNICAL ADVISORY COMMITTEE (TAC)
Meeting #4: Wednesday, September 19, 2007
Washington Department of Fish and Wildlife
2108 Grand Boulevard
1:30 - 3:30**

N O T E S

Agenda / Introduction

Members Attending

Gordon Euler, Tom Grange, Patrick Harbison, Tim Kraft, Robin Krause, Jennifer McClure, Chad McMurry, Mike Misiak, Ali Safayi, Fereidoon Safdari, Mike Soliwoda, Ron Wierenga

Members Absent

None

Staff

Trista Kobluskie, Sue Stepan

Audience

Sean Darcy, Eric Golemo, Andrew Stoeckinger, Stephen Hale

Mr. Krause encouraged members to attend SAC meetings; the next is Oct. 2nd.

Mr. Krause will invite members to the Ecology work group tentatively scheduled for Oct. 12 regarding modeling specifics for Clark County when the date and time are confirmed.

TAC will take until Friday, September 21 to review the TAC #3 notes. E-mail Ms. Kobluskie with comments. If not comments are received, staff will post the notes to the Web.

Action Items

Mr. Kraft and Mr. Krause reviewed each entry on the "Action Items" list.

Review 4 redevelopment value options

We continue to work on value system for non-road related redevelopment. The Marshall System is a proprietary system, costing about \$600.

Mr. Safayi is still getting examples of approved redevelopment projects. Currently, there is no clear formula for determining proportionality. It is a negotiation. Mr. McMurry will provide an example of a redevelopment project on Hwy 99. Mr. Safdari also has an example he will send.

Review single family exemption with new manual

In all likelihood, rural single family homes will not be exempt under proposed code, but may only have to use dispersion BMPs. A technical memorandum will be sent to the TAC when completed.

Review 7 industrial items under 40.380.040(B)7 for coverage under new manual

In proposed code, industrial use-types probably will not be called out specially; it looks like all use-types will appear under Applicability. A technical memorandum will be sent to the TAC when completed..

Revise sections .010-.030 based upon comments

Concept codes have been out for several weeks. Does TAC have additional thoughts on these?

Definition comparison between Ecology and Clark County

Mr. Kraft asked for comments on the handout from the last meeting.

Mr. Safayi asked what is "effective impervious area". It seems like the area contributing to the stormwater system; if it goes someplace else, it is not calculated. Mr. Krause cited the *2005 Manual* Volume 1, Section 2-4 - everything unless it is dispersed. Ms. McClure noted that it lends itself to LID BMPs. Mr. Kraft noted that WWHM "credits" for dispersion. Mr. Krause stated that it impacts whether or not flow control is required.

Concept Code for .040(B), Runoff Treatment

Mr. Kraft: the list in current code leaves out a lot of available BMPs. Are we going to allow the use of all the BMPs from the *2005 Manual*? We are preparing a comparison of the list in current code - those left out compared to 1992 and those left out compared to the *2005 Manual*.

Revise .040(B) with recommendations

This is the topic of today's meeting.

Minimum Requirement #6, Water Quality

Reference 40.380.040 sections A-B. The concept code was presented at the last meeting and is up for additional discussion.

Treatment Design Storm

Mr. Kraft: Appendix 1-B of the *2005 Manual* discusses the development of the water quality treatment design storm. It currently is 70% of the two-year 24-hour rainfall volume. Table B-1 shows 69.9% as the 6-month recurrence. That is how the county decided on 70%. In Appendix 1-B, Table B2, the average ratio is 72% across western Washington. Mr. Grange: the goal is to treat 90% over the season.

Mr. Misiak said that two components are not captured until you get to a design standpoint: flow-based vs. volume-based BMPs. WSDOT uses a regression equation to help match. Mr. Kraft: correct. Single-event methodology is only for BMPS sized using design storm volumes. Continuous modeling will be used for BMPS sized using flow rates.

Mr. McMurry noted that a locally established percentage is allowed. Mr. Grange replied that work is required to establish one. Mr. Kraft: a local ratio is 75%, so Ecology's 72% is an easier standard for Clark County. Mr. Misiak: the difference is minimal. Mr. Krause recommended deleting 40.380.040(B)(1)(b), which would default it to Ecology's 72%, in order to be consistent with the *2005 Manual*.

Phosphorous Treatment

Mr. Grange asked about phosphorous treatment in the Lacamas Lake drainage. Mr. Misiak asserted that continued monitoring does not show substantial improvement. Mr. Harbison questioned how much existing development drains to Lacamas Lake; it is just starting to hit now. Mr. Wierenga countered that the phosphorous treatment is working. Levels have remained constant or have risen less slowly than they otherwise would have. Also, as urban development replaces farms, phosphorous input might change, but will still exist. He suggested consulting

Public Works, Water Resources for more information about it. Mr. Grange concluded that the requirement should remain. Ensuring that we have the right BMPs and are using the right tool for the problem is important. Mr. Krause will circulate data to the group.

UIC

The committee discussed whether to include Underground Injection Control (UIC) regulations in code. There are no equivalent rules in county code now. UIC regulations are referenced in the *2005 Manual* but not specified, likely because UIC wells are not considered part of an MS4.

Mr. Kraft, Ms. McClure, Mr. Misiak and Mr. Safayi discussed the timing and responsibility of UIC well registration – during development review, before stormwater enters it, by the county, by the developer. Mr. Kraft argued that the county should ensure that registrations are done correctly because it will end up the owner. The county could require proof.

Mr. Misiak asked if the NPDES Permit annual report requires a list of registered UIC wells.

The committee discussed how long the county has to implement regulations. Mr. Safdari: we are required to register our drywells in the next 5 years.

Mr. Krause asked if private owners are registering drywells. Ms. McClure replied that her company prepares the paperwork for clients, though she can't ensure that clients submit it. Mr. Golemo said they register theirs online and list Clark County as the owner.

Mr. Darcy warned that the Department of Health is going after UICs.

Mr. Misiak noted that UIC is just a rule; it is not in WAC or RCW.

Mr. Kraft argued that if pretreatment is going to be required for all UICs, the county should require pretreatment now, so it does not have retrofit when requirements kick in.

Mr. Krause will research the various issues and report back.

40.380.040(B)(4)(d), sand filtration BMPs

Mr. McMurry asked whether the blanket prohibition of sand filtration on commercial sites is warranted. Can it be targeted to specific source control items? Mr. Krause promised to include the issue in a later technical memorandum.

40.380.040(B)(6), Source Control BMPs

Mr. Harbison asked for confirmation that this section will move to Minimum Requirement #3. Yes, that topic will be addressed only in Minimum Requirement #3.

40.380.040(B)(4)(f)

Mr. McMurry said that the Infiltration Standards Review Group has suggested that permanent infiltration BMPs *could be* used as temporary erosion control devices if treated appropriately during construction, such as leaving a soil horizon above final depth during construction. Mr. Krause said that the restriction has more to do with long-term functionality of infiltration systems than anything. Mr. Kraft: likely, the erosion control section of code will address this issue. Mr. McMurry noted that the section beginning on line 319 also seems to contradict this.

Minimum Requirement #7

Reference concept code 40.380.040(C), Quantity Control. This is the initial review of this concept code.

Mr. Kraft explained that TAC primarily has discussed *removing* language from code to comply with the *2005 Manual*. That will continue for now. When TAC begins dissecting the manual and running examples, language that need to be *added* to code will become more apparent.

To that end, Mr. Krause requested the group to give any examples they could think of.

Infiltration

Ms. McClure noted that the county's current minimum infiltration rate of 8"/hour will conflict with Low Impact Development (LID) design criteria, which can use 2.5"/hour. Mr. Kraft: LID techniques like rain gardens don't need high infiltration rates because they only take water from an adjacent area; infiltration ponds that take water from an entire subdivision understandably might need higher rates to function.

The committee discussed viable testing methods for determining infiltration rate and other criteria, including perc tests, pit method, gradation method, seasonal differences in groundwater levels, reliability, and probability of soil compaction during construction affecting infiltration rates. Mr. McMurry suggested the group consult the Infiltration Standards Review Group, which worked on methodologies for achieving consistent results using small-scale tests.

Mr. Krause clarified the two questions for TAC to consider:

- A method for determining infiltration rate
- Should the county continue to impose a universal minimum rate for infiltration?

Mr. Misiak recommended also specifying a standard model method for applying test results. Different models and different data input techniques can generate extremely different results.

Mr. Safayi explained that in current code, infiltration rate *and* certain soil classification are both required to permit an infiltration system.

Mr. Harbison argued that north county has soils that do not fall into the soil classifications used by the county. Mr. McMurry argued that distributed infiltration techniques can work in many soils that are traditionally not considered "infiltratable". On the east coast, they routinely build working, successful infiltration facilities on 2"/hour soils. Mr. Kraft quipped: we're routinely putting them in on 20"/hour soils that fail. How you treat the water before it reaches the facility is key. Mr. McMurry agreed: new techniques affect what can safely be allowed.

Mr. Safayi stated that the 1992 manual prohibits infiltration in soils exceeding certain percentages of silt & clay. Mr. McMurry thought the *2005 Manual* abandoned that restriction in order to encourage infiltration as much, as early, and as often as possible. Mr. Krause: the environmental community prefers infiltration because it helps baseflow in streams.

The committee discussed the origin of the 8"/hour minimum and the reasons for applying it both to roof downspouts and to larger facilities. In larger facilities, a failure is extremely damaging; the county is trying to be conservative in protecting property. Mr. Safayi noted that very few applicants have sought multiple distributed infiltration facilities, which might be able to make use of a lower infiltration rate. Several members thought that would change soon.

Mr. Soliwoda asserted that most failures in Clark County result from poor construction practices, soil compaction, and high groundwater table. He recommended requiring monitoring of the proposed site for a wet season before you can build; that requirement is in the manual.

Mr. Safdari asserted that code must address two problems: prohibit tests done in dry months and provide clear procedures for test location. One or two pits on a 5-acre site is insufficient.

Mr. Krause: a minimum rate is less critical than addressing process issues that cause failures.

Mr. Safayi recommended modifying 40.380.040(C)(4)(b) to require an on-site infiltration test for the preliminary, rather than allowing the use of a test within ¼ mile. Experience has shown that substitute tests often are not indicative of infiltration rate on-site. But, once preliminary plans are approved, requiring changes at the final review is difficult. Mr. Harbison wondered if requiring similar soil types in an off-site test could suffice. Mr. Safayi: there are too many other factors, like groundwater elevation; an on-site test is required at the final, so why not early on? Mr. Soliwoda: put it in the testing requirements; monitor before you begin designing.

40.380.040(C)(2)(i)

Mr. Kraft: the paragraph about concentrating stormwater on adjacent parcels is confusing.

Mr. Euler asked what projects it applies to. Mr. Safayi explained that in most cases the developments and redevelopments will trigger the code anyway, so they will need some type of treatment. This provision allows those projects to avoid having to re-grade the entire site, but still requires them to address quantity control in some ways. It prohibits piping flow to adjacent parcels. Mr. Krause: some issues are addressed in Minimum Requirement #4.

Mr. Krause tabled the discussion until legal input is given.

40.380.040(C)(4)(c)

Mr. Kraft: why did we strike the paragraph? Mr. Krause: it is covered in the *2005 Manual*.

Mr. McMurry asked what constitutes a mounding analysis? Hydrogeologic literature lacks sufficient discussion of the question. Mr. Soliwoda replied that some software includes models for it; he recommended studying Ponds or ModFlow. Mr. Harbison requested the opinion of Stu Albright.

40.380.040(C)(5), Discharge to large water bodies

Mr. Soliwoda asked why the Columbia River was removed. Mr. Misiak: it is in the *2005 Manual* already. Mr. Krause: the county must decide if it will continue to allow direct discharge to the other water bodies in the list: Lacamas and Round Lakes, Vancouver Lake, and Lake River. Mr. Misiak warned that allowing direct discharge to a water body not on Ecology's list requires extensive testing. The *Highway Runoff Manual* has an approved list.

Mr. Harbison noted that the Columbia River affects the Washougal River for six miles, so the city defines discharges to the Washougal as discharges to the Columbia. Mr. Misiak said that sloughs generate the same questions.

Mr. Soliwoda recommended allowing direct discharges to Lake River and Vancouver Lake. Mr. Misiak will provide a WSDOT report on the topic.

The committee discussed whether discharges to the floodplain of a large water body would work. This could overlap requirements about floodplains & wetlands.

Mr. Safayi would prefer the section to appear in Applicability. It should be struck out of code and reference the *2005 Manual*. Mr. Krause added: but allow discharges to Vancouver Lake.

Mr. Misiak suggested separately listing water bodies requiring basic vs. enhanced treatment.

Mr. Soliwoda asked if Minimum Requirement #7 addresses direct piping. Mr. Krause: yes, it must be manmade conveyance with capacity.

Mr. Krause stated that staff is working with the GIS Department to produce maps showing which areas of the county were 40% impervious in 1985. For flow control, you have to go back

to forested as the existing condition unless the downstream area was 40% impervious in 1985. Areas that qualify under that criteria can be listed in code.

Mr. Safayi said that standard flow control requirements seems to conflict with the redevelopment code. He requested staff to look into it.

LID

Reference Technical Memoranda #7 on LID Definitions from Otak. Mr. Kraft requested feedback from TAC, especially on the suggested definition of LID in Clark County.

Reference Technical Memorandum #6, "LID ordinance outline" from Otak.

Mr. Kraft: the memo reviews the structure of LID ordinances in other jurisdictions. It also lists reasonable LID BMPs. Let's look at design standards and applicability to these.

Mr. McMurry suggested referencing design standards in existing references like the Puget Sound manual. Mr. Kraft: yes, our intent is to adapt existing standards to work for Clark County.

The committee discussed whether LID standards will be adopted from existing manuals, adopted from existing ordinances of other jurisdictions, or written into code. Mr. Safayi opposed writing design standards in code because code updates are difficult. He recommended referencing the county's standard details manual. Mr. Euler added that the County Engineer is now allowed to update the county's standard details manual.

Mr. Grange asked if credits are listed. Mr. Krause: yes, in Appendix 3c of the *2005 Manual*.

Ms. McClure recommended talking to Maintenance & Operations staff. Mr. Krause agreed.

Mr. Misiak warned that sometimes projects with a federal nexus may not be allowed to use LID.

Next Steps

Mr. Krause reviewed some upcoming meetings:

- Board work session in October
- Planning Commission meeting tomorrow
- SAC meeting October 2

Mr. Krause mentioned a new initiative to allow digital submittal of Stormwater As-Builts.

At the next meeting, TAC will finalize the discussion on Flow Control then move to Maintenance & Operations.

The meeting adjourned at 3:30 p.m.

Respectfully Submitted,

Trista Kobluskie