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From: Luster, Tom
Sent: Thursday, September 16, 1999 9:28 AM
To: Hellwig, Raymond; Fitzpatrick, Kevin; Stockdale, Erik; Ehlers, Paula
Subject: SeaTac issues: Stormwater

One more in my series -- there are still a number of unresolved issues related to stormwater, including the ones listed below. These are all based on my understanding of where we are at currently with reviewing the Port's proposals -- Kevin, could you let me know if you concur that these are still issues or if you believe they've been resolved?

General Comment: we would still like to see a succinct and clear description of the Port's stormwater proposal. While the proposed Master Plan Expansion is a complex project, it seems that we could still have a much simpler and understandable explanation of what is being proposed for a stormwater management plan and how it will work. Some of the specific issues I've cited below serve as examples of areas where the Port could provide a more simple and straightforward description.

Definitions and Assumptions: we need the definitions for such terms as "modified Level 1" and "Level 2-type flow control". We also need a description of how these terms were developed and what assumptions were behind them, and how these assumptions affect the Port's various analyses of detention requirements, BMPs, baseline years, etc.

Role of the Des Moines Creek RDF: we are still deliberating on how the RDF fits into our review. Here's the dilemma -- the Port states that the RDF is not a part of its proposal, but at the same time, wants the RDF to provide its primary stormwater detention needs in the Des Moines Creek Basin. The Port believes, however, that the RDF should be considered a part of the basin planning effort, since the RDF is also intended for use by others in the basin. The Port has offered to use wet vaults as a contingency for stormwater detention if the RDF not built. They do not want the wet vaults to be considered their first option, though, since the wet vaults are so much more costly than the RDF and since that may affect the Port's ability to do cost-sharing with other basin planning members for the RDF. The RDF will have several acres of wetland impacts along with water quality impacts, none of which we are reviewing at this time. So -- if the RDF is the Port's primary detention method, should we be considering it as part of the Port's proposal?

Here are our options as I see them:

Option 1 -- much like last year's 401, a condition could be written that required the RDF to be built within a certain time period, and if it had not been built, require as a contingency that the Port provide the necessary detention in wet vaults in a pre-determined location (i.e., under the existing footprint of the runway, runway safety areas, etc.). This option would still require that we analyze the impacts of the RDF, since it would be a defacto part of this current project.

Option 2 -- is just the opposite. A 401 condition could be written that requires the Port to install wet vaults adequate to provide Level 2 detention, unless the RDF was built by a certain date. This option would not require us to analyze the impacts of the RDF, since in this instance, it would be a separate project only indirectly tied to the current SeaTac project. However, this option is apparently unacceptable to the Port, because they don't want to lessen the chances for the RDF being built and end up having to put in the more costly wet vaults.

A third option, which I do not recommend, is that we write a 401 condition that only establishes a performance standard (for example: "the Port shall provide Level 2 detention for all existing and proposed airport facilities. This level of detention shall result in xx stormflows being met at Point X in Des Moines Creek and Point Y in Miller Creek."). The difficulty with this option is that we would be requiring a condition that would likely result in additional unknown and unanalyzed water quality impacts and possibly additional wetland impacts. In fact, the only two detention scenarios we know of (vaults and RDF) would definitely have water quality and etland impacts, and absent any documentation of detention scenarios with no impacts, we would not be suing an adequate 401 for meeting water quality standards. Additionally, I think this approach could be considered piecemealing of the project, which is not acceptable.

I think what we need on this issue is for the Port to make a choice between Option 1 and Option 2, and then go ahead with whatever analysis is necessary based on that choice. I would be interested in hearing any other options you all or the Port may want to consider.

Pre-existing conditions: last year's 401 established that pre-existing conditions were 100% till-pasture for all existing facilities, unless the Port could provide documentation that other predeveloped conditions existed before the airport was there (per Lisa's analysis). We concurred at that time that 1994 was an appropriate base year for the new proposed facilities. In fact, I believe the Port provided a stormwater report (in November '98? -- I don't have it in front of me) that uses those base years.

The Port has recently changed the base years it is using, but we don't yet have the necessary justification for that change. We should, at the very least, have the Port provide analyses using the two different base years so we can see if there is a significant difference. Right now, absent that analysis, it appears that we have pulled back from last year's 401 requirement of 100% till-pasture, which could result in continued degradation of stream functions in Miller/Des Moines Creek.

[A related issue, which we haven't talked about recently is a 1972 legal settlement, between the Port and some downstream property owners in Miller Creek. This settlement includes a provision that the Port "prevent surface water from being collected and discharged to Miller Creek in excess of its natural capacity.", with a baseline year of 1974. We need to figure out how this fits into all the analyses.]

10% Impervious: the Port's analyses for detention requirements start with the two watersheds being at 10% impervious. This is a novel approach, one which the Port has explained is based on current channel configuration in each creek, but one that I have not seen used elsewhere. These analyses may not be adequate for purposes of supporting or maintaining beneficial uses in the two creeks, since the most recent literature identifies stream functions being degraded when watersheds are at 7 - 20% impervious. Therefore, the Port's analyses essentially ignore the effects of the first 10% of impervious surface in the watersheds, and would likely result in inadequate detention to protect stream functions. This is especially a concern, since Des Moines and Miller Creeks are above 30% and 20% impervious already -- ignoring the first 10% still leaves us with a level of impairment.

We will need to review and consider the Port's proposed analysis much more closely, and consider whether the existing channel configuration warrants an assumption that 10% impervious is a better starting point. At minimum, I would like to see the Port do the detention analysis based on 0% impervious (or 100% till-pasture) -- if there's not much difference between the two, perhaps this isn't a big issue. But I'd like to see the figures...

De-Icing/Dissolved Oxygen Report: we still need to review this more thoroughly before concurring with the Port's conclusions. Also, Kevin brought up a good point at last week's meeting -- regardless of the effect or non-effect of de-icing chemicals on dissolved oxygen levels, the report points out that dissolved oxygen levels are a problem in Des Moines and Miller Creeks and in Northwest Ponds, and regularly do not meet the water quality standards. Because of this and other related non-attainment issues identified in the Des Moines Creek Basin Plan, Ecology may be obligated to treat the creeks as impaired waterbodies, even though they aren't on the 303(d) list. This could mean we are not able to authorize further impairment until the existing problems are resolved.

Infiltration: the Port is proposing several elements of stormwater detention that will also provide some amount of groundwater/baseflow to the creeks, but I have not yet seen any analysis of infiltration rates. As part of 401/CZM review, we should know if proposed stormwater facilities will be constructed to infiltrate to groundwater or discharge to surface waters, and what contribution they are likely to make to base flows. This could be a significant factor in evaluating baseflow support and peak flow/low flow in the creeks.

Construction Schedule: the report states that detention facilities for the third runway area will be constructed just before the runway is paved - these facilities should be built sooner. The runway area will become an effective impervious surface and will have increased likelihood of erosion into Miller and Des Moines Creek as soon as it is cleared and graded. If these facilities aren't built until paving occurs, we will need to have assurance that the construction-related stormwater facilities are adequate.

Water Quality BMPs: I know we discussed this earlier, and Kevin and I have had our differences on this, but I'm

just bringing it up now as a defensibility issue -- the analysis Lisa did last year showed that the proposed BMPs were not adequate to meet several water quality criteria, and in fact, what I've heard from several water quality folks is that none of the BMPs provide assurance that the criteria will be met. If we continue down the path of requiring only those BMPs and monitoring, we are going to have to defend that decision against data showing exceedances. This may be even more difficult since we apparently have no data that provides us with assurance that the BMPs are adequate.

Net Effect of Master Plan Development on Stormwater Quality: the Port describes the changes in land use due to the proposal and states that there are likely to be positive changes in stormwater quality. Has the Port done (or do we have) any quantitative studies that compare the existing sources of stormwater (e.g., runoff from residential yards, vehicle trips per day, average household pesticide use, golf course pesticide use, etc.) with the proposed changes (e.g., number of aircraft takeoff/landings per day, loss of pervious surfaces, etc.), and then factor in the effectiveness of the proposed BMPs? This would be helpful to determine if the report's statement is accurate.