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September 27, 2000

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Subject: Preliminary Comments (Set 3) on August 2000 Stormwater Management Plan for Seattle-Tacoma International Airport Master Plan Update Improvements.

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This letter is our third installment of preliminary review comments on the August 2000 Stormwater Management Plan, and should be read as a continuation of our letters dated September 21, 2000 and September 25, 2000. As explained in the first installment, our comments are being provided on an incremental basis because of delays in our being provided the SMP and the lack of adequate time to provide comprehensive review comments.

This letter focuses on the SMP's failure to address basin boundary modifications as required in the Governor's Certification[1] for this project, and on problems with SMP assumptions/reliance on future modifications to the airport's Industrial Wastewater System (IWS).

**No Demonstration of Compliance with Governor's Certification**

The Governor's Certification for this project includes the following requirement:

> *"The Port of Seattle will design and construct the third runway such that the project will not cause changes in the location of the hydrologic divide between Miller and Des Moines Creeks in a manner that alters the average instream flow of either creek."*

The SMP does not demonstrate that this requirement is met. The title on SMP Volume 2-Appendix A, "Hydrologic Evaluation of Stormwater Drainage Basin Changes. . ." gives a misleading description of the contents of that document. Nowhere in the SMP is there a complete description of the proposed basin changes or an assessment of how basin changes would affect the average flows of the receiving streams.

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[1]Letter dated June 30, 1997, from Governor Gary Locke to Rodney Slater, Secretary, U.S. Department of Transportation.

All basin boundary figures in the SMP are based on the airport's proposed future (2006) condition, even Figure 4-3 which lacks a note to provide this clarification. Worse still, watershed pre-development "base" conditions are consistently shown and modeled based on the future (2006) condition subbasin/watershed boundaries[2]. Such assumptions are inconsistent with normal practices for making hydrologic assessments.

The SMP does not show pre-development basin boundaries or how basin boundaries and watershed divides are proposed to be altered. SMP hydrologic modeling results cannot be used for assessing the consequences of proposed sub-basin and watershed boundary changes because the SMP has used future-condition (2006) basin boundaries to establish pre-development flow targets. Because of these omissions, the SMP does not and cannot demonstrate compliance with the Governor's Certification.

**Feasibility of Stormwater Controls through IWS Improvements not Demonstrated**

Stormwater peak flow control for the SMP is proposed to be accomplished in part by past and future diversions of runoff from the Des Moines and Miller Creek basins to the Industrial Wastewater System (IWS). The King County September 2000 review of the SMP included a comment that the assumed IWS system processing rates might not be reasonable, and concluded that ". . .if either of the two improvements (doubling processing rate, and increasing storage capacity to 81.4 million gallons) did not occur, overtopping of the IWS lagoons would be [a] significant issue." As discussed below, there is no certainty that those improvements will be implemented.

Our most recent comments on the IWS system improvements were by email to Ecology (Tom Luster, Kevin Fitzpatrick) and others on July 31, 2000. The stated purpose of that email was: *"to record our initial comments following a review of materials describing the SeaTac International Airport Industrial Wastewater System (IWS) Lagoon # 3 Expansion Project. The focus of our review was to identify issues in that project which need to be addressed concurrently with plans for 3rd runway expansion and the Stormwater Management Plan for other (non-IWS) Master Plan Update Improvements."* An email response[3] from Ecology (Chung Yee) was received on September 7, 2000 but was non-responsive to many of the issues raised. Outstanding issues include the need for continuous simulation modeling and resolution of conflicts with FAA guidelines on Hazardous Wildlife Attractants.

<u>Lack of continuous simulation modeling for IWS lagoons</u> The Port has ignored past requests for an assessment of the IWS lagoons using continuous simulation modeling. To our knowledge, the most recent engineering report describing the IWS expansion project is the "Addendum to IWS Engineering Report" dated April 1998 by Kennedy/Jenks Consultants. The Ecology review of that report is

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[2]SMP Volume 1, page 4-4, Table 4-1: "Base condition of watershed drainage area at STIA defined by 2006 subbasin boundaries." SMP Volume 1, page 4-12, Section 4.4.3: "To derive the target watershed flow regime for the pre-developed condition, the HSPF models incorporating 2006 basin boundaries. . ." SMP Volume 2, page A-1: "The future project condition (2006) considered changes . . .(but not the watershed boundaries). . ."

[3]An email copy of the cited email correspondence chain is available by email request to bRozeboom@nhc-sea.com.

contained in a comment letter dated June 9, 1998 from Ecology (Lisa Zinner) to the Port of Seattle and states in part:

> *"An important consideration for the sizing of the expanded lagoon 3 is the estimated frequency of bypass that may occur. I would like more information on the predicted frequency of bypass using continuous flow modeling and the NOAA rain data for Sea-Tac Airport."*

It is our understanding that the Port has not responded to this request. And, more than two years after that request, the King County review comment of the August 2000 SMP includes what amounts to the identical observation: *"There should be results from the HSPF model runs of the IWS system in this section. SBUH is a poor choice to use in determining size requirements of the storage reservoir. . . KCSWDM does not allow sizing of storage reservoirs using event based models."*

The capacity of the IWS system to handle increased flows without storm drain overflow to the stream systems under flood conditions--even with the optimistic assumptions of greatly expanded storage capacity and doubling of the processing rate--is not confirmed in the SMP.

Proposed lagoon expansion is incompatible with safe airport operations. The FAA has published guidelines in Advisory Circular 150/5200-33 dated 5/1/97, titled "Hazardous Wildlife Attractants on or Near Airports." The proposed expansion of Lagoon 3 would be for the purpose of storing and pre-treating liquid industrial wastes, and would therefore fall under the Advisory Circular's definition of a wastewater treatment facility. Section 2 of the Advisory Circular, "Land Uses that are Incompatible with Safe Airport Operations" recommends that any new wastewater treatment facilities or associated settling ponds be sited no closer than 10,000 feet from turbine aircraft movement areas. The existing third lagoon is located within 2,000 feet of the runway, and the proposed new expansion area is within 3,000 feet of the runway. The proposed expansion of the lagoon facilities, as assumed for purposes of SMP facility design, appears to be in direct conflict with the FAA guidelines.

Feasibility of proposed IWS discharge rate is not established. To our knowledge, the future processing rate to be achieved from the IWS system is a variable which has yet to be designed and/or negotiated. If the Port intends to rely on system performance predictions in the latest (April 1998) IWS design report, then it can be inferred that the Port may be anticipating a processing rate which is very substantially less than the 4 MGD rate presented for purposes of the King County review of the SMP.

The amount of the presently-proposed Lagoon 3 expansion--to 72 MG--is not proposed or described in the IWS design report. Instead, the design report (page D-1) indicates that the required lagoon size is dependent on the available release rate--a 47 MG lagoon would be required for a release rate of 4 MGD while a larger 67 MG lagoon would be required for a release rate of 2 MGD. The report does not indicate what release rate would be associated with a 72 MG lagoon. The proposed expansion to 72 MG is understood to have been established as simply "the maximum possible capacity within the available area[4]."

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[4]Information provided by email from Ecology (Chung Yee), with reference to a letter dated November 10, 1999, from Michael D. Feldman of the Port to Kevin Fitzpatrick of Ecology.

The IWS design report provides information to suggest that there are benefits to having a lower processing rate. First, there are questions as to what local publicly owned treatment works will accept the IWS effluent, and at what maximum delivery rate. If King County will accept the IWS discharge, a permit will be required from the King County Department of Natural Resources through its Industrial Waste Program. The IWS design report (page 4-4, Alternative A3) cites a major cost incentive for having a reduced IWS processing rate of 1 MGD in that effluent "can be metered to KCDNR at a controlled rate during off-peak hours, which is an operating benefit to KCDNR and a cost savings to the Port. . . the annual operating costs are approximately half of Alternative A1[5]: $2.9 million versus $5.8 million."

In summary, the available design information for the IWS improvements casts doubt on whether the proposals to greatly expand lagoon storage capacity, and to double processing rates, are feasible or will be implemented as assumed for purposes of stormwater system planning. This is problematic for ensuring the adequacy of the proposed stormwater system because IWS capacity has a direct impact on the size of required stormwater facilities, yet the IWS system is being designed and permitted through processes which appear to be largely independent of the design and review processes for stormwater system planning.

Thank you for your consideration of this third set of comments.

Sincerely,

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[5]Alternative A1 involves enlarging Lagoon 3 to 47 MG and discharging 4 MGD to King County. Disadvantages to Alternative A1 include :"Very high annual operating costs for the first 20 years. . ." and "A new pretreatment permit with KCDNR must be obtained and complied with."