

**401 Permit Decision-Making
Sea-Tac International Airport, Third Runway**

FINAL MEETING NOTES

LOW FLOW ANALYSIS

**July 16, 2001
9:00 – 12:00**

These meeting notes have been prepared by Kate Snider, Floyd & Snider Inc.

ATTENDEES

Ann Kenny, Dept. of Ecology
Kelly Whiting, King County
Keith Smith, Port of Seattle
Paul Fendt, Parametrix
Rick Schaefer, EarthTech
Robert Farid, Parametrix
Joe Brascher, Aquaterra

MEETING SCOPE AND AGENDA

The purpose of this meeting was to review status of low flow evaluation materials.

MILLER CREEK

Mitigation flow rate and duration

- Proposed mitigation period: Aug 1 – Oct 31. This period captures all 7-day low flow events in the existing record with exception of three outliers in Nov & Dec.
- Mitigation Flow – propose 1991 as target year in post project conditions, because 1991 flows are closest surrogate to the 2-year event within post project conditions. Use of 1991 as target year results in a mitigation flow rate of 0.10 cfs. A mitigation flow rate of 0.10 covers all storms within the 2-year return frequency.
- Methodology for deriving target flow rate:
 - * Clear description should be provided of methodology used to determine target flow for the 4-year modeled period
 - * For both Miller & Walker watersheds, method used to determine target flow will be compared with alternate method that would initiate post-project conditions for the 4-year period with info from pre-project record – provide as crosscheck
 - * Comparison of gauge data & model results requested to substantiate calibration.

AR 029205

Reserve Storage Vaults

- Vault sizes designed to provide 92-day release of 0.10 cfs
- Proposing 14 ac-ft vault volume
- Requires 62 days of filling prior to Aug 1 based on worst year in record
- 5 vaults provided in Miller Basin for this aggregate storage and flow rate
- Drawings updating vault sizing will be provided in the low flow report – may not be updated in the final SMP
- It was agreed that Port would propose a date in winter in the operations plan when the vaults would be closed for filling, so that filling will not occur in the spring just before release
- Vault size is conservative enough that significant water will be remaining in vaults on Oct 31, which will continue to be released to the stream until empty or vault close date.

GENERAL

- Submitted information should include input files as well as results
- Post-project hydrographs with augmentation should be provided that illustrate a period prior to augmentation as well as the augmentation period (June – Nov).
- Low flow report should include biological impact statements.
- Biological impact questions raised by King County include the following:
 - What are biological impacts of lower flows mid-April – July? (food sources, trophic structure, fish spatiality/territoriality)
 - What do lower flows in April – July look like in stream? Look at with representative cross sections (dry bottom?, less pools, etc.?)
 - Long-term monitoring plan info relative to biology?
- Detail should be shown re: method to maintain constant flows from vaults

NON-HYDROLOGIC EFFECTS

- Formal policy determination by Ecology would require senior management team at headquarters in water resources and water quality to deliberate on the issue of whether mitigation for septic tank removal can be required under the 401. This policy determination has not been made.
- Ecology has a strong preference to have the Port mitigate for septic removal – because the Port identified septic tank removal as a low flow impact in the Port's December 2000 low flow document. It is understood that if the Port includes non-hydrologic effects in the low flow evaluation that the septic tank impact calculation will be revised.

WALKER CREEKMitigation flow rate and duration

- Mitigation duration proposed Aug 1 – Oct 31 captures all 7-day low flow events in the existing record with exception of outliers in Nov & Dec
- 1991 is proposed as the target year in post-project conditions for determination of the mitigation flow rate – 1991 flows are closest surrogate to 2-year event. Use of 1991 as the target year results in a mitigation flow rate of 0.065 cfs.
- Need to make decision re: rounding of mitigation flow rate & defend
- Impervious Area used to generate flow to reserve vault should be confirmed relative to area assumed to infiltrate into embankment. Water assumed in the model to infiltrate into the embankment should not be used to fill reserve vaults unless collected from the embankment toe drain.
- Effective impervious percentage in the non-contiguous areas selected to be 86% based on acceptable general practice unless Port provides site-specific rationale for alternate effective impervious percentage addressing presence of filter strips and site-specific soil type.

LOW FLOW EVALUATION NEXT STEPS

- Port will submit documentation of impact evaluation and mitigation proposal, with technical backup for each basin. The target date for this submittal is 7/23. The 7/23 submittal will additionally define proposed content and submittal date for final low flow report and mitigation operations plan.
- No additional technical coordination meetings are planned.

SMP STATUS

- King County provided the following verbal comment on deliverable D-10: Figure A-7 should be changed to show correct location of compliance points
- Final KC comments on D-10 will be provided by close of business 7/18. At that point, the final replacement page submittal can be finalized by the Port.