STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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June 7, 2004

REGISTERED MAIL

Port of Seattle, AV/ENV
Attn: Ms. Elizabeth Leavitt
P.O. Box 68727
Seattle, WA 98168

Dear Ms. Leavitt:

Re: Water Quality Certification for U.S. Army Corps of Engineers Public Notice 1996-4-02325 (Amended-2); Construction of a Third Runway and related projects at the Seattle-Tacoma International Airport (STIA) in the Miller, Walker, and Des Moines Creek watersheds and in wetlands at the Seattle-Tacoma International Airport, located within the vicinity of the city of SeaTac, King County, Washington; and in wetlands at the mitigation site in Auburn, King County, Washington.

The public notice from the U.S. Army Corps of Engineers (Corps) for proposed work has been reviewed. On behalf of the state of Washington, we certify that the work proposed in the Port of Seattle's (the Port's) revised Joint Aquatic Resource Permit Application (JARPA) dated October 25, 2000, the Corps' public notice and the Department of Ecology's (Ecology's) public notice complies with applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, as amended, and other appropriate requirements of state law. This letter also serves as the state response to the Corps. This letter also serves as notification that Ecology has rescinded Order Number 1996-4-02325 (Amended-1) issued on September 21, 2001 and replaced it with Order Number 1996-4-02325 (Amended-2) issued on June 7, 2004. This order was amended to incorporate changes required by the Washington Supreme Court through its decision in *Port of Seattle, et al. v. Pollution Control Hearings Board, et al.*, ___ P.3d ____, 2004 WL 1075236 (May 14, 2004).

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with the Port's certification that this work is consistent with the approved Washington State Coastal Zone Management Program. This concurrence is based upon the Port's compliance with all applicable enforceable policies of the Coastal Zone Management Program, including Section 401 of the Federal Water Pollution Control Act.

Work authorized by this certification is limited to the work described in the October 25, 2000, JARPA, the Corp's Public Notice, and the plans submitted by the Port to Ecology for review and written approval.

This certification shall be withdrawn if the Corps does not issue a Section 404 permit. It shall also be withdrawn if the project is revised in such a manner or purpose that the Corps or Ecology determines the revised project must obtain new authorization and public notice. The Port will then be required to reapply for state certification under Section 401 of the Federal Clean Water Act.
This certification is subject to the conditions contained in the enclosed Order and to the water quality and aquatic resource related conditions of the following permits and approvals:

- The Hydraulic Project Approval (HPA) issued by the Washington State Department of Fish & Wildlife (WDFW).
- NPDES permit #WA-002465-1, issued by the Department of Ecology on September 4, 2003.
- NPDES General Stormwater Permit for Construction Activity #SO3-00491 issued by the Department of Ecology on April 4, 2001.

If you have any questions, please contact Ann Kenny at (425) 649-7128. Written comments can be sent to her at the Department of Ecology, Northwest Regional Office, 3190 160th Avenue SE, Bellevue, Washington, 98008-5452. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Gordon White

Gordon White
Program Manager
Shorelands and Environmental Assistance Program

GW:AK
Enclosure
cc: Michelle Walker, Corps of Engineers
Keith Gordon, Corps of Engineers
Larry Fisher, WDFW
Tom Sibley, NMFS
Nancy Brennan-Dubbs, USFWS
Joan Cabreza, EPA
Stuart Chreighton Airport Communities Coalition

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO:

the Port of Seattle, in accordance with 33 U.S.C. 1341 FWPCA § 401, RCW 90.48.260 and WAC 173-201A.

ORDER #1996-4-02325 (Amended -2)
Construction of a Third Runway and related projects. Components of the project include construction of a 8,500-foot-long third parallel runway with associated taxiway and navigational aids, establishment of standard runway safety areas for existing runways, relocating S. 154th Street north of the extended runway safety areas and the new third runway, development of the South Aviation Support Area and the use of on-site borrow sources for the third runway embankment.

TO: Port of Seattle, AV/ENV
Attn: Elizabeth Leavitt
P.O. Box 68727
Seattle, WA 98168

The Port of Seattle (Port) requested a water quality certification from the state of Washington for the above-referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA§ 401). The request for certification was made available for public review and comment through the U.S. Army Corps of Engineer's Second Revised Public Notice No. 1996-4-02325 dated December 27, 2000, as amended by the Corps' Amendment and Erratum to the Second Revised Public Notice dated January 17, 2001. Ecology issued a 401 certification for this project on August 10, 2001. Ecology later decided to amend that certification. Accordingly, Ecology rescinded Order Number 1996-4-02325 and replaced it in its entirety with Order Number 1996-4-02325 (Amended-1).

The amended 401 certification was appealed to the Pollution Control Hearings Board, which added 16 conditions. A further appeal was then taken to the Washington Supreme Court. In a decision dated May 14, 2004, the Washington Supreme Court affirmed some of the Pollution Control Hearings Board's conditions, overturned others, and modified certain provisions of the amended 401 certification. Ecology hereby rescinds Order Number 1996-4-02325 (Amended-1) in its entirety and replaces it, in its entirety, with Order Number 1996-4-02325 (Amended-2) to incorporate changes required by the Washington Supreme Court's decision.

The Third Runway site and related Master Plan Update projects and on-site mitigation are located in Sections 4, 5, and 9, Township 22N, Range 4E and Sections 20, 21, 28, 29, 32, 33, Township 23 N, Range 4E in King County. Offsite mitigation will be located in Section 31, Township 22N, Range 5E in King County. The project areas, on-site mitigation and the proposed offsite mitigation are located within Water Resource Inventory Area 9. The projects covered by this Order are described in detail in the December 27, 2000 Public Notice issued by the U.S. Army Corps of Engineers, the October 25, 2000 Joint Aquatic Resource Permit Application (JARPA) and in the plans approved by Ecology as a part of this Order.

For purposes of this Order, the term "Port" shall mean Port of Seattle and its agents or

contractors.

Work authorized by this Order is limited to the work described in the October 25, 2000, JARPA, as amended, unless modified by this Order or by conditions contained in other permits sought for the Master Plan Update Improvement projects.

AUTHORITIES:

In exercising authority under 33 U.S.C. 1341 and RCW 90.48.260, Ecology has investigated this application pursuant to the following:

A. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 302, 303, 306, and 307);

B. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC, and authorized by 33 U.S.C. 1313 and Chapter 90.48 RCW, and with other appropriate requirements of state law; and,

C. Conformance with the requirement to use all known, available and reasonable methods to prevent and control pollution of state waters as provided by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

In view of the foregoing and in accordance with 33 U.S.C. 1341, RCW 90.48.260 and Chapter 173-201A WAC, by this Order water quality certification is granted to the Port, subject to the following conditions:

A. Water Quality Standard Conditions:

1. Water Quality Criteria

Des Moines Creek (WA-09-2000), Miller Creek (WA-09-2005) and Walker Creek (1223370474523) are Class AA waters of the state. Certification of this proposal does not authorize the Port to exceed applicable state water quality standards (173-201A WAC) or sediment quality standards (173-204 WAC). Water quality criteria contained in WACs 173-201A-030(1) and 173-201A-040 shall apply to this project, unless otherwise authorized by Ecology. This Order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-110(3). Furthermore, nothing in this Order shall absolve the Port from liability for contamination and any subsequent cleanup of surface waters or sediments occurring as a result of project construction or operations.

Des Moines Creek has been identified on the current FWCPA Section 303(d) list as

exceeding state water quality standards for fecal coliform. This project shall not result in further exceedances of this standard.

2. Instream/Shoreline Work Monitoring Plan

a) The Port shall submit a monitoring plan for each in-water or shoreline construction project. The monitoring plan shall be submitted to Ecology for review and approval at least thirty (30) days prior to the start of construction. No construction shall begin until the Port receives written approval of the monitoring plan from Ecology.

b) All monitoring will be reviewed for compliance with WAC 173-201A.

c) Port staff or contractors qualified to monitor for water quality compliance shall be on-site during project construction to carry out monitoring and inspect erosion and sedimentation control measures in order to ensure that water quality standards are not exceeded.

d) In the monitoring plan, the Port shall demonstrate to Ecology that any mixing zone is minimized in conformance with WAC 173-201A-100(6).

e) At a minimum, the monitoring plan shall include the measurement of turbidity and pH at an agreed point upstream of the point of in-water work or shoreline work and an agreed downstream point not to exceed 100 feet. The monitoring method shall be by a portable turbidimeter and a pH meter following the prescribed maintenance, operating, and calibration procedures in the instrument's instruction manuals. Alternatively, a grab sample can be analyzed by a laboratory accredited under the provisions of Accreditation of Environmental Laboratories, Chapter 173-50 WAC.

f) If a visual sheen is observed the Port shall sample for oil and grease.

The Minimum Detection Level (MDL) for oil and grease is 0.2 mg/L using trichlorotrifluoroethane extraction and gravimetric analysis using EPA Method 413.1. The quantitation level (QL) for oil and grease is 1.0 mg/L (5 x MDL). An equivalent method is Method 1664 using normal hexane (n-hexane) as the extraction solvent in place of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113; Freon-113). An equivalent method is total petroleum hydrocarbons with a MDL of 0.1 mg/L using Gas Chromatography and Flame Ionization Detector (FID) and Method WTPH-Dx Diesel (WTPH-D) from the Washington State Department of Ecology Method WTPH-D. The quantitation level (QL) for TPH-Dx is 0.5 mg/L (5 x MDL).

g) If monitoring indicates turbidity standards are not being met at the boundary of the mixing zone, measures shall immediately be taken to reduce turbidity rates, such as slowing the rate of work, placement of additional sediment curtains, etc. A field log in

which the results from the turbidity sampling have been recorded shall be maintained at the project site. The field log shall be made available to Ecology staff upon request.

h) Monitoring results shall be submitted every other month to Ecology's Federal Permit Manager, SeaTac Third Runway.

B. **Permit Duration:**

1. This Order shall be valid during construction of the project. The following provisions of this Order shall be valid during long-term operation and maintenance of the project:
a) In Condition D, Wetland, Stream and Riparian Mitigation, as follows: The mitigation areas to be protected by restrictive covenants, and the Final Natural Resource Mitigation Plan as amended, shall remain in effect in perpetuity.

b) In Condition D(7), provisions regarding wetland, stream, and riparian mitigation monitoring and reporting shall remain in effect as specified therein.

c) In Condition E (3), the Surface Water and Ground Water Monitoring plan shall remain in effect as specified in that plan but in no event for a duration less than eight (8) years from the conclusion of construction, and, should monitoring reveal exceedences, Ecology shall further extend the period of monitoring.

d) In Condition F (1), the plan to monitor potential contaminant transport to soil and groundwater via subsurface utility lines shall remain in effect as specified in that plan but in no event for a duration less than eight (8) years from the conclusion of construction, and, for as long as there are contaminants in the AOMA.

e) In Condition I, Conditions for Mitigation of Low Flow Impacts, as follows: The low streamflow facilities, and the revised low streamflow plan as amended, shall remain in effect in perpetuity.

f) In Condition J, Operational Stormwater Requirements, as follows: Those provisions of this condition, including the Comprehensive Stormwater Management Plan, that are incorporated into and superceded by any future Ecology-approved NPDES permit for the Seattle-Tacoma International Airport (STIA), shall be superceded as determined in that permit. Any conditions not incorporated into a future Ecology-approved NPDES permit for STIA shall remain in effect as provided in this condition.

2. The Port shall reapply with an updated JARPA if **seven years** elapse between the date of the issuance of this Order and completion of the project construction and/or discharge for which the federal license or permit is being sought.

3. The Port shall submit an updated application to Ecology if the information contained in the October 25, 2000 JARPA is altered by subsequent submittals to the federal agency and/or state agencies. Within 30 days of receipt of an updated application Ecology will determine if a modification to this Order is required.

4. Any future construction-related activities that could impact waters of the state at this project location, emergency or otherwise, that are not defined in the October 25, 2000 JARPA, this Order, or have not been approved in writing by Ecology, are not authorized by this Order. Such proposed actions shall be reviewed with Ecology for its written approval prior to implementation if the activity requires §401 certification or is otherwise within Ecology's statutory authorization.

C. **Notification and Reporting Requirements**:

1. Notification shall be made to Ecology's Federal Permit Manager, SeaTac Third Runway at 425-649-4310, 425-649-7098 (Fax), mail: 3190 160th Avenue SE, Bellevue, WA 98008 or by e-mail at aken461@ecy.wa.gov for the following activities:

   a) at least thirty (30) days prior to the pre-construction meeting to review environmental permits and conditions,

   b) at least ten (10) days prior to starting construction of each of the projects identified in Table A-3 (Comprehensive Stormwater Management Plan, Volume 2) and each of the mitigation sites identified in the Natural Resource Mitigation Plan, and

   c) within seven (7) days after the completion of construction of each of the projects identified in Table A-3 (Comprehensive Stormwater Management Plan, Volume 2) and each of the mitigation sites identified in the Natural Resource Mitigation Plan.

NOTE: The required notifications shall include the Port's name, project name, project location, the number of this Order, the name of contractor and any subcontractor, contact and contact's phone number.

2. The Port shall ensure that all appropriate Project Engineer(s) and the Lead Contractor(s) at the project site and/or mitigation sites have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order.

   a) The Port shall provide to Ecology a signed statement, **Attachment A,** from each Project Engineer(s) and Lead Contractor(s) that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals.

   b) These statements shall be provided to Ecology no less than seven (7) days before each

Project Engineer or Lead contractor begins work at the project or mitigation sites.

3. All reports, plans, or other information required to be submitted by this Order shall be submitted in triplicate to Ecology's Federal Permit Manager, SeaTac Third Runway, at 3190 160th Avenue SE, Bellevue, WA 98008-5452.

4. Documents required to be submitted to Ecology for review and/or approval by this Order shall be submitted to Ecology by the time specified in this order. Failure to submit documents by the required time may result in the revocation of this Order. The Port may, on a case-by-case basis, submit a written request for an extension of the specified submittal deadline for a document. Ecology will consider the reasonableness of the request for an extension and may grant an extension for a period of time it deems appropriate. **Ecology will provide any such extension to the Port in writing only.**

No document, report or plan required by this Order shall be deemed approved until the Port receives written verification of approval from Ecology.

D. **Wetland, Stream and Riparian Mitigation:**

1. Required Mitigation: Mitigation for this project shall be completed as described in the following documents with the following additions and clarifications:

- the Final Natural Resource Mitigation Plan (NRMP), Master Plan Update Improvements, STIA, dated December 2000 (Parametrix, Inc.).
- Appendixes A-E, Design Drawings, Natural Resource Mitigation Plan, STIA, dated December 2000 (Parametrix, Inc.).
- the Revised Grading and Planting Plan for the Auburn Wetland Mitigation site dated June 28, 2001 (Parametrix, Inc.).
- the revised NRMP performance standards found in Tables 4.2-1, 4.2-2, 5.1-7, 5.2-3, 5.2-8, 5.2-12, 5.2-16, 5.3-2, 5.3-6, and 7.7-1 received July 31, 2001 (Parametrix, Inc.).
- the revised Borrow Site Three plan sheets and drawings dated June 2001 and received by Ecology on June 18, 2001 (Hart Crowser).

The Port shall amend and/or clarify the documents identified in Condition D.1 as follows:

a) The Port shall increase the duration of monitoring from ten (10) to fifteen (15) years.

b) Table 4.2-1 of the NRMP (July 31, 2001) outlines the performance standards for vegetation cover by vegetation zone and monitoring year. A note shall be added to the table that states: "Invasive plant species cover will be monitored during all monitoring years."

c) In addition to the non-native invasive species listed in Table 4.2-2 of the NRMP (July 31, 2001), hedge bindweed (*Convolvulus sepium),* giant knotweed *(Polygonum sachalinense)* and evergreen blackberry *(Rubus laciniatus)* shall be monitored and controlled in the mitigation sites.

d) All performance standards addressing cover of non-native plants shall read: "Cover of non-native invasive species will be no greater than 10% in any year in newly planted or enhanced areas."

e) Table 5.1-7 of the NRMP (July 31, 2001) states that shade cloth will be placed over the new channel. The Port shall provide a map of the location for the shade cloth, details on how it will be installed, and a schedule of installation and removal.

f) The Port shall provide Ecology with written documentation of the implementation of any of the contingency measures and adaptive management measures set forth in the NRMP. Temporary erosion and sedimentation measures approved by Ecology shall remain in effect for all adaptive management measures or contingency measures implemented. Any problems identified throughout the mitigation sites shall be immediately corrected. Implementation of corrective actions shall be done within the confines of the contingency measures identified in the NRMP. All contingency measures shall be implemented in a manner such that they do not exceed state water quality standards.

g) The Port shall monitor hydrologic conditions of all wetlands downslope of the Third Runway embankment in the Miller, Walker and Des Moines Creek sub-basins. Hydrologic monitoring using piezometers and shallow hand dug soil pits in undisturbed wetlands downslope of the Third Runway embankment shall be conducted with sufficient frequency to determine wet season trends. The Port shall immediately begin conducting twice-monthly hydrologic monitoring during the wet season, November through May, and shall continue such monitoring for at least three (3) years after completion. Maps of sample locations and vegetation in the surrounding areas, observation of stressed vegetation, any adaptive management implemented in the surrounding areas, comparison to baseline data, and conclusions shall be documented and submitted to Ecology on a monthly basis during that period. The performance standard for wetlands is modified so that the Port matches the hydroperiods of the wetlands pre and post project, in order to assure the long-term maintenance and perpetuation of wetland characteristics, such as standing or flowing water, wetland resources, and wetland functions. At the end of each water year, the Port shall complete a trends analysis with proposed contingency measures identified and a schedule for completion of proposed contingency measures.

h) Existing wetland and mitigated wetland boundaries (including all areas down slope of the Third Runway embankment, Vacca farm, the borrow sites, and the Auburn mitigation site) shall be delineated at years five (5), ten (10), and fifteen (15). A licensed survey crew shall survey the wetland points established. The delineation map and comparisons to previous delineation maps shall be furnished to Ecology by December 31st for each of the years in which a delineation is conducted. If the delineation shows the wetland boundaries have decreased then additional in-basin mitigation shall be required by Ecology.

i) Final performance standards for the replacement drainage channel shall read: "Construct the replacement channel to convey all storm events equal to or less than the 100-year, 24-hour design storm and seepage water collected by the embankment drains layer and adjacent areas." (Revised Performance Standards, Table 5.2-12 NRMP)

j) Revised Table 5.2-12 of the NRMP (July 31, 2001) proposes a performance standard that monitors the change in plant species in undisturbed wetlands, where the hydrology is being replaced through inputs from the replacement drainage channel. Emergent non-invasive plants provide a better indicator for general plant species trends over time than trees and shrubs because typically their root structures are shallower, and subsequently respond to hydrologic changes more quickly. The Port shall amend the monitoring condition in Table 5.2-12 to read: "Wetland indicator status (WIS) of the dominant noninvasive plant species shall not differ from pre-project conditions during or at the end of the monitoring period. Each vegetative strata (trees, shrubs and emergents) shall be assessed separately, and have separate conclusions. Statistically valid sampling procedures will be employed to monitor theses potential changes, in all areas where there is a potential to change the post construction hydrology (down slope of the embankment, and the borrow sites). WIS status of the vegetation will be calculated as described in the 1987 USACE or Washington State Department of Ecology delineation manuals."

k) In all areas where soil saturation is being monitored the performance standards shall include the following conditions: "Other wetlands with predominantly mineral soils shall have groundwater within the upper 10 inches from at least March to mid-April in years of normal rainfall."

l) Soils stockpiled for mitigation purposes for over one year require the reintroduction of naturally occurring microbes, prior to use in mitigation sites. This shall be accomplished through introduction of soils microbial inoculants, or through introduction of well decomposed organic matter.

m) The Port shall redevelop the sample data sheets to meet all the monitoring requirements set forth this order.

n) Auburn Mitigation Site- Emergent marsh plants shall be planted with rhizomes 12" on center (o.c.) instead of the 18" o.c. currently specified. Areas that are designated for hydroseeding that have visible surface water at the time of planting those areas shall be planted with plugs. Routine maintenance, such as, weeding, removal of non-native species, and watering, shall occur at least twice a year in all areas and more often in areas if needed. The maintenance crew shall be overseen by a wetland biologist to assist with identifying invasive species and identifying problem areas.

o) Vacca Farm Mitigation Site- Revised Table 5.1-7 of the NRMP (July 31, 2001) Final performance standards shall have a note added that reads: "Observable surface flow must be present in the created channel at all times."

p) Contingency measures and additional monitoring of the mitigation areas shall be required by Ecology if wetland monitoring reveals that vegetation establishment or wildlife use of the wetland is not sufficient to meet the success standards. Additional monitoring may be required beyond the fifteen (15) year period if mitigation success is not achieved within the fifteen (15) year monitoring period.

q) The wetland mitigation planting plan shall be field inspected by Parametrix, Inc. or another qualified wetland consulting firm during construction and planting to ensure proper installation.

r) The boundaries of the mitigation area and buffers shall be permanently marked with stakes at least every 100 feet or with construction fencing. The marking shall include signage that clearly indicates that mowing and fertilizer/pesticide applications are prohibited within mitigation areas.

s) Ecology and the U.S. Army Corps of Engineers shall be notified a minimum of three days in advance of field monitoring work by the Port. Ecology or its designee shall be allowed access to all mitigation sites for the entire monitoring period.

2. Restrictive Covenants:

The Port shall place restrictive covenants on the deeds for the following mitigation sites: Miller Creek Mitigation Area; Miller Creek/Lora Lake/Vacca Farm Wetland and Floodplain Mitigation Area; Tyee Valley Golf Course Mitigation Area; Auburn Wetland Mitigation Area; and Des Moines Creek Mitigation Area (June 28, 2001, Foster, Pepper and Shefelman). The Port shall record the restrictive covenants with King County no later than sixty (60) days after the issuance by the U.S. Army Corps of Engineers of the Section 404 required for construction of the Master Plan Update projects.

Any changes to the restrictive covenants shall require written approval by Ecology.

Violation of any term of the restrictive covenants shall be considered a violation of this Order.

3. Submittal of a Revised Mitigation Plan

The Port shall submit to Ecology for its review and written approval a revised NRMP which includes the changes or additions required by this Order for review and written approval no later than December 31, 2001. The revised NRMP shall include revised plan sheets that address the corrections required in **Attachment B**.

If, after revision of the NRMP required by this Order, the Port submits a further revised NRMP to the U.S. Army Corps of Engineers for review, the Port shall simultaneously submit the same revised NRMP to Ecology for its review and written approval. No fill shall be placed in waters of the state until the revised NRMP submitted to the U.S. Army Corps of Engineers has been approved by Ecology.

A Final NRMP shall be prepared and submitted to Ecology within three months after a Section 404 permit has been issued by the U.S. Army Corps of Engineers.

4. Mitigation for Temporary Impacts

The December 2000 NRMP indicates that up to 2.05 acres of wetlands will be affected by the construction of temporary stormwater management ponds and other construction impacts (p. 4-8 and other). Approximately 1.25 acres will result from the construction of the stormwater ponds in the Miller Creek basin. Ecology has determined that the impacts characterized as "temporary" in the NRMP are not temporal in nature because they will last for longer than a one-year period. The agency considers these impacts to be permanent and has determined that additional in-basin mitigation is necessary in the Miller Creek basin. Additional mitigation is necessary in order to mitigate for hydrologic, water quality and general habitat impacts that will result from the "temporary" impacts. In-basin mitigation is necessary to provide a "temporal lift" of wetland water quality and general habitat functions.

In order to compensate for these unmitigated impacts in the Miller Creek basin, the Port shall prepare a mitigation plan for submittal to Ecology for its review and written approval. A conceptual plan shall be submitted to Ecology for review and written approval by November 9, 2001. Upon receipt of Ecology's written approval of the mitigation plan, the Port shall amend the NRMP to incorporate the approved mitigation plan. The plan must contain the following elements:

a) The wetland/riparian zone comprised of Wetlands A17b/c/d (Wetland A17 Complex) and "Water D" shall be added to the wetland and buffer

restoration/enhancement on Miller Creek. This area is depicted in **Attachment C** titled "Wetland A17 Complex". A 100-foot buffer shall be placed to envelop this system. Wetlands A17b/c/d comprise a total of 2.64 acres and "Water D" totals 0.16 acres for a combined total of 2.80 acres (not including the buffer). The buffer shall be averaged, similar to the buffer on Miller Creek. The buffer area may include location of the airport detection system (ADS) to the extent that its footprint has been minimized to the extent practicable.

b) The plan shall use the same goals and performance standards as the NRMP approved by this Order.

c) The plan shall evaluate the feasibility of improving the hydrologic connection of the Wetland A17 Complex to Miller Creek via "Water D", including but not limited to removing the underground pipe. If it is feasible to improve the hydrologic connection of the Wetland A17 Complex to Miller Creek via "Water D", the Port shall include a plan for improving the connection in its submittal.

d) Homes, driveways, concrete, fill, septic systems and other unsuitable material with be removed from Wetlands A17b/c/d, in a manner that meets the treatment protocol established for the Miller Creek restoration in the NRMP.

e) The plan shall develop a buffer restoration and re-vegetation plan for this area that meets the treatment protocol for the Miller Creek restoration in the NRMP. This shall include the removal of invasive species, and replanting of appropriate native species.

f) The plan shall evaluate the potential for wetland restoration, creation and enhancement within this new mitigation zone. This shall include evaluation of the reconnection of Wetlands A17b and A17c by removal of the road between them and removal of the road that separates Wetlands A17a and A17b. Ecology recognizes the need for an access road to the TRACON facility between Wetlands A17c and A17d.

g) The buffer shall be joined with the buffer on Miller Creek to the south.

h) A restrictive covenant shall be drafted for this additional mitigation area. The restrictive covenant shall be consistent with other restrictive covenants established for this project. The Port shall record the restrictive covenants with King County no later than sixty (60) days after the issuance by the U.S. Army Corps of Engineers of the Section 404 required for construction of the Master Plan Update projects.

5. Borrow Site One –

The performance standards for Borrow Site One in Table 5.3-6 of the NRMP (July 31, 2001) allow for monitoring of the wetland hydrology. The evaluation approach shall compare the shallow groundwater data collected to data collected pre-construction. Wetlands 48, B15, 32, B12, B4, and B1 shall be evaluated using this approach. The Port shall provide to Ecology bi-monthly hydrologic monitoring during the wet seasons, November through May, for at least three (3) years after completion. Maps of sample locations and vegetation in the surrounding areas, observation of stressed vegetation, any adaptive management implemented in the surrounding areas, comparison to baseline data, and conclusions shall be documented and submitted to Ecology on a monthly basis during that period. At the end of each water year the Port shall complete and submit to Ecology a trends analysis with proposed contingency measures identified and a schedule for completion of the proposed contingency measures.

6. Borrow Site Three- The following conditions apply to Borrow Site 3:

a) The site plan from Hart Crowser titled Post Reclamation Topographic detail Borrow Area 3 Wetland Protection Swale HNTB revision (June 15, 2001 Draft) shows a flow dispersal trench overlapping with a small portion of Wetland 29. The flow dispersal trench shall not be constructed so that it is in the wetland.

b) The wetland protection swale shall be lined (with HDPE or other similar liner material) where necessary to minimize infiltration of captured seepage water through the bottom of the swale (as described in Hart Crowser 2000b Sea-Tac Airport Third Runway – Borrow Area 3 Preservation of Wetlands; memorandum from Michael Kenrick and Michael Bailey (Hart Crowser) to Jim Thomson (HNTB) on wetland hydrology and proposed drainage swale design (October 20, 2000)).

c) Excess water from the stormwater overflow structure shall be diverted away from the wetland protection swale to a stormwater detention pond (as described in Hart Crowser 2000b Sea-Tac Airport Third Runway – Borrow Area 3 Preservation of Wetlands; memorandum from Michael Kenrick and Michael Bailey (Hart Crowser) to Jim Thomson (HNTB) on wetland hydrology and proposed drainage swale design (October 20, 2000)).

d) The Port shall monitor hydrologic conditions of wetlands remaining in and adjacent to the borrow sites. Hydrologic monitoring using piezometers and shallow hand dug soil pits in undisturbed wetlands associated with Borrow Site Three shall be conducted with sufficient frequency to determine wet season trends. Special emphasis shall be given to the area near where the drainage swale discharges into Wetland 29, to provide an early indication of hydrologic duress to plants in the wetland. The Port shall provide to Ecology bi-monthly hydrologic

during the wet seasons, November through May, before construction and for at least three (3) years after completion. Maps of sample locations and vegetation in the surrounding areas, observation of stressed vegetation, any adaptive management implemented in the surrounding areas, comparison to baseline data, and conclusions shall be documented and submitted to Ecology on a monthly basis during that period. At the end of each water year the Port shall complete and submit to Ecology a trends analysis with proposed contingency measures identified and a schedule for completion of the proposed contingency measures.

e) The wetland protection swale shall be inspected and maintained at a minimum frequency of two (2) times per year. Swale maintenance shall include adjustment of flow control weir boards to provide appropriate flows to Wetland 29, and removal of vegetation or fill in the swale which may interfere with the seepage collection and diversion functions of the swale. The weir shall be calibrated so that flow rates can be observed at any time.

f) **Increased Buffer Area**: In order to protect the hydrologic functions, and hydrology supporting Wetlands 29, 30, B5, B6, B7, and B9, all areas up slope of the wetlands within the property shall be included in the wetland buffer. Additionally, the Port shall ensure protection of hydrology to Wetlands 29, 30, B5, B6, B7, and B9 from future development. The wetland protection swale shall also be included in a restrictive covenant, with 25 foot buffers on either side of the swale. Those areas are depicted in **Attachment D (Revised)**, Borrow Area 3 Wetland Buffer. A restrictive covenant shall be drafted for this additional buffer area. The restrictive covenant shall be consistent with other restrictive covenants established for this project. The Port shall record the restrictive covenants with King County no later than sixty (60) days after the issuance by the U.S. Army Corps of Engineers of the Section 404 required for construction of the Master Plan Update projects. This condition applies only to property currently owned by the Port.

g) The performance standards in Table 5.3-6 of the NRMP (July 31, 2001) allow for monitoring of the surface water in Wetland 30. The evaluation approach states that shallow groundwater monitoring wells will be used. The evaluation approach shall be changed to provide that surface water depths are measured monthly during the period from December through April, and the monitoring results compared to pre-construction data.

7. Wetland, Stream and Riparian Mitigation Monitoring and Reporting:

a) Monitoring of all wetland mitigation sites identified in the December 2000 NRMP and the June 2001 Auburn Grading and Planting Plan, as revised below, shall be incorporated into the Final NRMP submitted to Ecology.

i) Monitoring shall be completed at least yearly for a fifteen (15) year period with initial monitoring starting after the first growing season after installation of plants. If at any point during the monitoring period the results of monitoring show that the success criteria established in the plan are not being met, Ecology may require corrective action, additional monitoring, and additional mitigation.

ii) The Port shall prepare and submit annual monitoring reports to Ecology's Federal Permit Manager, SeaTac Third Runway, Northwest Regional Office, 3190 160th Avenue SE, Bellevue, WA 98008-5452 no later than December 31st of each year following the first year of the mitigation site work. Each year's monitoring report shall include photographic documentation of the project taken from permanent reference points. The Port shall identify and incorporate permanent reference points into the Final NRMP.

iii) As-Built Report: An as-built report documenting the final design of all wetland mitigation sites shall be prepared when the initial planting is completed. The report shall include the following:

- final site topography;
- photographs of the area taken from established permanent reference points;
- a planting plan showing species, densities, sizes, and approximate locations of plants, as well as plant sources and the time of planting;
- habitat features (snags, large woody debris, etc) and their locations;
- drawings in the report shall clearly identify the boundaries of the project;
- locations of sampling and monitoring sites; and
- any changes to the plan that occurred during construction.

The As-Built Report shall include detailed plans showing locations of all monitoring transects and locations. All vegetation sampling and analysis shall employ statistically valid sampling and analysis procedures during each of the monitoring events. Monitoring reports shall show all sampling locations, discuss trends and changes, discuss success in achieving performance standards or other implementation difficulties, provide remedies to address implementation problems, and set forth a timeline for their resolution. Supporting data and calculations shall be maintained by the contractor and made available to Ecology upon request.

iv) The As Built Report shall be sent to Ecology's Federal Permit Manager, SeaTac Third Runway within sixty (60) days of completing the mitigation site.

v) Any proposed changes to the wetland mitigation and monitoring protocol

established in the NRMP and as revised by this Order, must be approved in writing by Ecology prior to implementation of any changes.

E. **Conditions for Acceptance of Fill to be used in Construction of the Third Runway and Associated Master Plan Update Improvements:**

The use of imported fill for projects for which the §404 permit was sought, e.g., Third Runway, Runway Safety Areas, South Aviation Support Area, and other appropriate Master Plan Update Improvements as determined by Ecology (Port 404 Projects) may result in impacts to wetlands or other waters of the state. To ensure compliance with measures designed to minimize potential impacts, the Port shall submit borrow site clean fill certification documentation described in the following sections to Ecology for review and written approval prior to fill placement.

1. Fill Documentation/Fill Criteria/Fill Source

The Port shall adhere to the following conditions to ensure that the fill placed for Port 404 Projects does not contain toxic materials in toxic amounts, thereby preventing the introduction of toxic materials in toxic amounts into waters of the state which includes wetlands.

a) Documentation

No later than five (5) business days prior to accepting any fill materials for use on Port 404 Projects, the Port shall submit to Ecology's Federal Permit Manager, SeaTac Third Runway, documentation certifying that the proposed fill source meets the criteria of this Order. The documentation shall contain an environmental assessment of the fill source and shall verify that excavated soil from the proposed fill source complies with the fill criteria set forth below. Findings of the environmental assessment are subject to the review of Ecology. Ecology reserves the right to disapprove fill materials following review of the Port's supporting documentation and a determination that the fill criteria were not met. In the event of such disapproval, Ecology reserves its rights to enforce the terms of the Order and require appropriate remedial measures.

The environmental assessment shall be conducted by an environmental professional in general conformance with the American Society for Testing and Materials Standard (ASTM) E 1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, and E 1903-97 Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process. At minimum, the document shall contain the following information:

i) Fill Source Description: Provide a description/location of the fill source, general characteristics of the fill source and vicinity, current use, and a site plan identifying the extent of the excavation, project schedule and the estimated

quantity of fill to be transported to Port 404 Projects.

ii) Records Review: Obtain and review environmental records of the proposed fill source site and adjoining properties. In addition to the standard federal and local environmental record sources, the following Ecology environmental databases shall be reviewed:

- Confirmed & Suspected Contaminated Site Report
- No Further Action Site List
- Underground Storage Tank List
- Leaking Underground Storage Tank List
- Site Register.

Records review shall also contain historical use information of the fill source and the surrounding area to help identify the likelihood of environmental contamination.

iii) Site Reconnaissance: Documentation of visits to each site that identifies current site use and site conditions to assist in identifying the likelihood of environmental contamination and/or the potential migration of hazardous substances onto the site from adjoining properties.

iv) Fill Source Sampling: Collect and analyze fill materials for the potential contaminant(s) identified in the Phase I Environmental Site Assessment. At a minimum, fill materials from each fill source shall be analyzed for the following hazardous substances

- Total Antimony
- Total Arsenic
- Total Beryllium
- Total Cadmium
- Total Chromium[1]
- Total Copper
- Total Lead
- Total Mercury
- Total Nickel
- Total Selenium
- Total Silver
- Total Thallium
- Total Zinc
- NWTPH-HCID

[1] Chromium (VI) shall be analyzed if the results of the Phase I Environmental Site Assessment show a

likelihood of Chromium (VI) contamination.

For fill source characterization, the **minimum** number of samples of the proposed fill shall reflect the number of samples required by MTCA.

Samples shall be collected at locations that are representative of the fill destined for Port 404 Projects.

For fill sources with suspected contamination identified by the Phase I Environmental Site Assessment or with complex site conditions, please consult with Ecology's Federal Permit Manager, SeaTac Third Runway for the appropriate sampling requirements.

b) Fill Criteria

The results of the Phase II Environmental Site Assessment sampling and testing shall be compared to the fill criteria to determine the suitability of the fill source for Port 404 Projects.

The following table establishes the fill criteria limitations for the hazardous substances identified in Section E1(a)(iv) of this Order.

Hazardous Substances	Fill Criteria **mg/kg**[2]
Antimony	16
Arsenic	20
Beryllium	0.6
Cadmium	2
Chromium[3]	42/2000
Copper	36
Lead[4]	220/250
Mercury	2
Nickel[5]	100/110
Selenium	0.75
Silver	0.28
Thallium	2
Zinc	85
TPH	0[6]

2 mg/kg ≡ milligrams per kilogram

[3] Fill with total chromium concentrations greater than 42 mg/kg and less than 2000 mg/kg may be placed to within six feet of the ground surface. No fill with total chromium concentrations greater than 42 mg/kg may be placed within the first six feet of the embankment. No fill with chromium (VI) concentrations greater than 19 mg/kg may be placed within the embankment.

[4] Fill with total lead concentrations greater than 220 mg/kg and less than 250 mg/kg may be placed to within six feet of the ground surface. No fill with total lead concentrations greater than 220 mg/kg may be placed within the first six feet of the embankment.

[5] Fill with total nickel concentrations greater than 100 mg/kg and less than 110 mg/kg may be placed to within six feet of the ground surface. No fill with total nickel concentrations greater than 100 mg/kg may be placed within the first six feet of the embankment.

[6] The limit of 0 means nondetectable, as determined by Ecology.

For hazardous substances other than those identified in the above fill criteria table that have been identified in the Phase II Environmental Site Assessment, the Port shall consult with Ecology's Federal Permit Manager, SeaTac Third Runway for the applicable fill criteria.

As an alternative to applying the limitations listed above for the material within the top six feet of the existing ground surface and/or within the first six feet of the embankment (as noted in footnotes two through six above), the Port may construct a "drainage layer cover" (that layer immediately above the drainage layer of the embankment) that will measure at least forty (40) feet thick at the face of the embankment and will reduce in height to the east at a rate of two (2) percent. The fill criteria listed above for the first six feet of the embankment will apply to the drainage layer cover. If proposed fill (for either the drainage layer cover or the rest of the embankment or other Port 404 Projects) does not meet the fill criteria in Condition E.1.(b), the Port can demonstrate the suitability of that fill by employing a Synthetic Precipitation Leaching Procedure (SPLP), SW-846 Method 1312. SPLP testing shall conducted in accordance with the SPLP work plan, **Attachment E**, or as amended in the future. SPLP results must be compared against both surface and groundwater quality criteria. Where the Port utilizes the SPLP method to demonstrate the suitability of fill, SPLP test results shall be provided to Ecology at least ten (10) business days prior to fill placement. As per Condition E.1.(a), Ecology reserves the right to disapprove the use of fill analyzed under the SPLP method.

c) Fill Sources
Fill materials for Port 404 Projects shall be limited to the following three sources:

i) State-certified borrow pits
ii) Contractor-certified construction sites
iii) Port of Seattle-owned properties.

d) Prohibited Fill Sources
The following fill sources are prohibited for use on Port 404 Projects:

- Fill which consists in whole or in part of soils or materials that are determined to be contaminated following a Phase I or Phase II site assessment.

- Fill which consists in whole or in part of soils or materials that were previously determined to be contaminated by a Phase I or Phase II site assessment and have been treated in some manner so to be considered re-mediated soils or fill material.

2. As-Built Documentation

The Port shall provide to Ecology for review monthly summaries of:

- Names and locations of fill sources placed for the previous month
- Quantities of fill materials from these fill sources
- Locations and elevations of fill source materials placed within the Port 404 Projects.

Ecology may require additional compliance conditions and/or corrective actions upon Ecology's review of the as-built documents. The monthly summaries shall be provided to Ecology no later than fifteen (15) days following the last day of the month.

3. Post Construction Monitoring
The Port shall monitor runoff and seepage from Port 404 Projects where fill is placed for compliance with applicable Washington State surface water criteria. Ground water down-gradient from the fill area shall be monitored for compliance with applicable ground water criteria.

Within 60 days after the issuance of the 401 Water Quality Certification for the Master Plan Update Improvements, the Port shall submit to Ecology for review and written approval a Surface Water and Ground Water Monitoring Plan. The monitoring plan shall be designed to detect impacts of the fill embankment to the receiving water and to the ground water during fill placement and post fill placement. In the event monitoring detects exceedances of the water quality criteria in either surface or ground water; Ecology shall take action to eliminate the exceedences. This may include a revision to the fill criteria and/or require corrective action.

F. **Conditions to Prevent Transport of Contaminants:**

1. All Master Plan Update Improvements and all associated utility corridors shall be

constructed in a manner that will prevent the possible interception of contaminated groundwater originating from the Airport Maintenance and Operations Area or other potentially contaminated Seattle-Tacoma International Airport (STIA) areas. The Port shall submit to Ecology proposed construction BMPs to prevent interception of contaminated groundwater by utility corridors and a plan to monitor potential contaminant transport to soil and groundwater via subsurface utility lines at the STIA and submit it to Ecology for review and written approval no later than November 9, 2001. The plan shall be submitted to Ecology's Federal Permit Manager, SeaTac Third Runway.

2. The Port shall have staff trained in the detection of hazardous materials and contaminated soils or water inspect on a regular basis all areas where there is clearing and grading, or construction under way by Port contractors or employees. If hazardous materials or contaminated soils or other indications of contamination are discovered the Port shall immediately cease construction in the suspect area, secure the site and clean up the area in accordance with the Model Toxics Control Act (MTCA), Chapter 70.105d RCW, the Hazardous Waste Management Act, Chapter 70.105 RCW, and with generally accepted best management practices.

3. The Port shall administer and periodically update the contaminant database and contaminant maps and figures for the STIA. The database shall be updated as new information is received. The maps and figures shall be updated annually and delivered to Ecology's Federal Permit Manager, SeaTac Third Runway in a report of findings for review. Maps and figures shall be similar to the maps and figures shown in the Port's "Analysis of Preferential Ground Water Flow Paths Relative to Proposed Third Runway," dated June 21, 2001.

4. The Port shall collect all new environmental data generated by construction activities, cleanup actions, or any other environmental investigations of soil and groundwater throughout the STIA. The information shall be used to update the contaminant database. The Port, airport tenants, and other entities conducting environmental investigations shall continue to provide reports of ongoing cleanup actions and any new contamination discovered to Ecology as required by the MTCA.

G. **Dam Safety Requirements:**

1. All facilities identified in Table 3-1 of the Comprehensive Stormwater Management Plan (CSMP) that meet the requirements of Chapter 173-175 WAC (Dam Safety Regulations) shall obtain a Dam Safety Permit from Ecology prior to commencement of construction. If any stormwater facilities identified in the CSMP change during final design such that they meet the requirements of Chapter 173-175 WAC, those facilities shall obtain a Dam Safety Permit from Ecology prior to commencement of construction.

H. **Conditions for Upland Construction Activities:**

1. During construction the Port shall comply with all stormwater requirements within the National Pollutant Discharge Elimination System (NPDES) Permit No. WA-002465-1 as modified on May 29, 2001 for this project.

2. The project shall be clearly marked/staked prior to construction. Clearing limits, travel corridors and stockpile sites shall be clearly marked. Sensitive areas to be protected from disturbance shall be delineated and marked with brightly colored construction fence, so as to be clearly visible to equipment operators. All project staff shall be trained to recognize construction fencing that identifies sensitive areas boundaries (wetlands, streams, riparian corridors, buffers, etc.). Equipment shall enter and operate only within the delineated clearing limits, corridors and stockpile areas.

3. The Port shall follow and implement all specifications for erosion and sediment control specified in the Stormwater Pollution Prevention Plan (SWPPP) and/or Erosion and Sediment Control (ESC) plan as required in the NPDES permit. The erosion control devices shall be in place before starting construction and shall be maintained, so as to be effective throughout construction.

4. Stormwater Detention for New Outfalls: Any new diversion ditch or channel, pond, trap, impoundment or other detention or retention BMP constructed at the site for treatment of stormwater shall be designed, constructed, and maintained to contain and provide treatment for the peak flow for the ten (10)-year 24 hour precipitation event estimated from data published by the National Oceanic and Atmospheric Administration.

5. The Port shall periodically inspect and maintain all erosion control structures. Inspections shall be conducted no less than every seven (7) days from the start of the project to final site stabilization. Daily inspections of sedimentation ponds shall occur during wet seasons. Additional inspections shall be conducted after rainfall events greater than 0.5 inches per 24-hour period, to ensure erosion control measures are in working condition. These inspections shall be conducted within 24 hours after the event. Any damaged structures shall be repaired immediately. If it is determined during the inspection that additional measures are needed to control stormwater and erosion, such measures shall be implemented immediately. Inspections shall be documented in writing and shall be available for Ecology's review upon request.

6. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall not be discharged into state waters except as authorized by an NPDES permit or state waste discharge permit.

7. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in order to prevent contamination to surface waters.

8. Grading/Construction in Borrow Areas: The depth of the excavation at the borrow areas shall be limited to a depth ten (10) feet above the maximum seasonal groundwater table. The maximum seasonal ground water table shall be determined by the monitoring wells on Port property. Depth of excavation and maximum seasonal ground water elevations shall be submitted annually to Ecology's Federal Permit Manager, SeaTac Third Runway.

I. Conditions for Mitigation of Low Flow Impacts:

1. Ecology has reviewed and approved the December 2000 Low Streamflow Analysis and the Summer Low Flow Impact Offset Facility Proposal dated July 23, 2001. In order to ensure clarity, within 45 days of receipt of this Order the Port shall submit a revised plan integrating the Low Streamflow Analysis and Summer Low Flow Impact Offset Facility Proposal into a single document that addresses the following issues:

   a) General:

      i) The revised plan shall be stamped by a licensed professional civil engineer.
      ii) All supporting documents shall be clearly labeled and included in a technical appendix and/or on one clearly labeled CDROM. Only those files which directly correspond to results presented in the report should be included.
      iii) The plan shall include a specific section discussing the accuracy of the calibration in predicting low flows at upper stream gauges, and a statement of adequacy of the calibrations for the purpose of low flow simulation.
      iv) Revised conceptual drawings for reserve storage vaults shall be submitted that include any changes required by this Order and that include details on how constant discharge will be maintained in reservoirs with variable hydraulic head pressures. Reserve vault inlets and outlets shall be configured so that water is added/discharged from the middle of the reserve storage depth in order to avoid disturbing sediments and/or floatables that could be present in the reserve vault. In order to ensure that reserve water is well aerated, reserve storage vaults shall include open ventilation consistent with King County Surface Water Design Manual wetvaults. Mechanical aeration shall be provided if grating is not feasible. Conceptual drawings shall include detail on reserve water outfalls. Where feasible, outfalls shall discharge directly to wetlands that are adjacent (in

hydrologic continuity) to streams rather than directly to streams.

v) A final Operations and Maintenance Plan shall be included in the revised plan. The Operations and Maintenance plan section of the report shall require the release of any water remaining in the reserve vaults during the month of November or until substantial rains occur. The Operations and Maintenance Plan shall address management of accumulated sediments in reserve storage vaults. All accumulated sediments shall be disposed of in an appropriate upland disposal site.

vi) The revised plan shall include a monitoring protocol to determine whether placement of the Third Runway embankment fill and other fill used for Master Plan Update Improvements meets fill specifications for type of material, meets specifications for compaction rates, and meets assumption for infiltration rates.

vii) The revised plan shall include contingency measures to offset reduced recharge in the event the Third Runway embankment fill and other fill used for Master Plan Update Improvements does not meet performance standards for infiltration rates.

viii) The revised plan shall include information demonstrating that low flow mitigation (vault releases) can be conveyed to streams without being lost to soil.

ix) The Port shall develop a pilot program to test one reserve stormwater vault for performance. The Port shall include a proposal for a pilot in the revised plan. The pilot shall be completed within three years after receipt of the Section 404 permit from the U.S. Army Corps of Engineers.

x) The revised plan shall identify and analyze all direct or indirect impacts to wetlands as a result of low flow impacts and the proposed low flow mitigation. The revised plan shall contain contingencies to mitigate for impacts to wetlands if wetland impacts are identified as a result of monitoring.

b) Des Moines Creek-

i) The revised plan shall provide data comparing the existing simulation of low flows against the Tyee Golf Course weir gauge data. The Port shall provide representative hydrographs, associated discussion and statement of adequacy of the calibration for simulating low flows.

ii) SDS3 vault design (sheet C141) indicates that not all inlet pipes are tributary to the reserve storage vault. The revised plan shall factor into the vault filling calculations the effects of having a reduced tributary area.

iii) SDS4 vault design (sheet 139) shall be reconfigured to show the vault inlet pipe at a lower elevation. A note similar to the one found on exhibit C131 should be included here. The Port shall evaluate the feasibility of providing reserve storage only in the SDS3 vault.

c) Walker Creek-

i) In place of the Port's proposal to line 3.5 acres of filter strip within the SDW2 subbasin, the Port's revised plan shall provide that low flow mitigation water for Walker Creek will be obtained from the collection of winter runoff from the 69 acres of impervious surface being added in the Walker Creek non-contiguous groundwater basin. Reserve stormwater collected from this area may be stored in either the proposed 15-acre foot vault in Walker Creek or in the SDS3 vault. If, within thirty (30) days of receiving this order, the Port submits to Ecology information demonstrating that another feasible and implementable alternative exists, Ecology will review the alternative and consider amending this Order to allow implementation of the alternative.

ii) The current proposal for Walker Creek assumes no contribution from the Third Runway embankment fill. If the revised plan includes a reinstatement of the Third Runway embankment model, the area of the fill embankment tributary to Walker Creek shall be verified and modeled accordingly.

d) Miller Creek-

i) The revised plan shall verify whether the 1991 impact number is 0.11cfs or 0.12cfs. Unless shown otherwise, Ecology shall presume that 0.12cfs is the correct number.

ii) The revised plan shall include the correct "Low Flow Miller 91-94.xls" file and back-up data that produce a future 1991 7-day low flow of 0.67cfs shall be included on CDROM.

iii) The revised plan shall include documentation that clarifies whether the existing (1994) condition 1991 low flow is 0.784cfs as was used in electronic files or 0.79cfs as was presented in the July 23, 2001 memorandum.

iv) The revised plan shall correct the impervious acreage figures provided for the new North Employees Parking Lot (NEPL) vault to reflect 26.29 acres of impervious (Miller 2006 HSPF model), rather than 32.31 acres.

v) The Port shall evaluate orifice sizing and determine whether a change in orifice size and/or a reduction in the number of reserve stormwater vaults is warranted. The revised plan shall evaluate vault locations for feasibility and special design considerations (e.g., upstream spill control, oil controls, downstream compost filters, etc.) to ensure that reserve stormwater from the NEPL and cargo vaults will receive adequate treatment to ensure water quality.

vi) The revised plan shall include BMPs developed to ensure infiltration into the Third Runway embankment rather than into the Third Runway embankment

conveyance system.

vii) The revised plan shall include revised Grading and Drainage sheets 129 and 130. The revised sheets shall clarify the flow in the collection swales.

viii) Revised conceptual drawings, and supporting analysis, shall be submitted with the revised plan that address water quality concerns for the NEPL and Cargo reserve storage areas.

e) Monitoring and Reporting Requirements: The revised plan shall develop a comprehensive monitoring protocol that, at a minimum, addresses the following elements:

i) Collection of stream gage data and an evaluation/correlation to expected flow rates established by the model.

ii) Water quality sampling and reporting. Water quality shall be tested at vault outflow and instream at a point 100 feet downstream of the outflow.

iii) Metering of water from vaults.

iv) Infiltration rate sampling and monitoring to evaluate performance of the fill.

v) Contingency if water quality in vaults does not meet water quality criteria (e.g., additional treatment, other source, flocculation, coalescing oil water separator, etc.).

vi) Instream biologic monitoring shall occur in Des Moines, Miller and Walker Creeks to assess the impacts of the Port's low flow offset proposal. The Port shall develop an instream monitoring protocol that shall at a minimum include the following elements:

- Existing low-flow conditions of Des Moines, Miller and Walker Creek will be evaluated by conducting Benthic Index of Biotic Integrity (BIBI) monitoring (Karr and Chu 1999). Monitoring shall occur four times per year and shall continue through year five (5) after construction and then yearly until completion of the fifteen (15)-year monitoring period. In addition to the BIBI monitoring required above, the Port shall develop a that monitors at a minimum temperature, turbidity, channel morphology, substrate quality, type and amount of large woody debris and other habitat features, riparian habitat cover and fish use. Representative stream channel cross-sections shall be utilized. Information must be synthesized to determine how these elements may be impacting overall stream health.

- Mitigation during the proposed period appears to effect low flow frequencies during June and July. Monitoring shall specifically address potential adverse impacts to fish or aquatic biota during June and July. If monitoring shows an adverse effect during this time period the Port shall implement contingencies to address the impact (such as providing additional mitigation water during June and July).

J. Operational Stormwater Requirements:

1. Approved Stormwater Plan: The Comprehensive Stormwater Management Plan (CSMP), Volumes 1 through 4, December 2000 as revised by the July 2001 Replacement pages is the approved stormwater management plan for this project. It shall be implemented in its entirety. No changes to the CSMP shall be made without prior review and written approval from Ecology.

   a) The Port shall provide Ecology with draft proposed changes to the Plan no later than 60 days prior to the date it seeks to implement a change to the .

   b) The Port shall implement the project in accordance with the schedule provided in Table A-3 (July 2001). Any changes to the schedule must be reviewed and approved in advance by Ecology. The Port shall provide Ecology with a draft revised schedule no later than 60 days prior to the date it seeks to implement the change to the schedule. The following facilities/projects listed in Table A-3 (July 2001) do not yet have approved stormwater treatment facilities, proposed: expansion of NEPL to 6000 stalls, additional taxiway exits on 16L/34R, additional expansion of main parking garage, additional expansion of NEPL, expansion of North Unit parking structure, SR 509 extension/South Access, ASDE, and NAVAIDS. If the Port decides to build any of these facilities/projects the Port must submit conceptual drawings that meet the performance standards of the CSMP to Ecology no later than sixty (60) days prior to the date it seeks to commence construction.

   c) Retrofitting of stormwater management facilities at the STIA shall occur at a rate commensurate with the construction of new impervious surface at the STIA. For every ten (10) percent of new impervious surface added at the project site, the Port must demonstrate that twenty (20) percent of retrofitting has occurred unless demonstrated that a twenty (20) percent rate isn't feasible. One hundred (100) percent of the stormwater management facility retrofit shall be completed by the time fifty (50) percent of the impervious surfaces have been constructed. The Port shall document the implementation of retrofitting in quarterly progress reports. The Port shall develop and submit for review and written approval a schedule of construction of stormwater management facilities within 60 days after receipt of the Section 404 permit from the U.S. Army Corps of Engineers. Where the project schedule in the Stormwater Management Plan (including Table A-3) conflicts with this condition, the Port and Ecology shall discuss an appropriate retrofit schedule.

   d) Nothing in this Order shall be deemed to prohibit continued participation

by the Port in planning efforts to establish regional detention facilities for Des Moines or Miller Creek. The Port may request to amend this Order and the Comprehensive Stormwater Management Plan if it decides to route stormwater to future regional detention facilities and it is demonstrated that under future build-out conditions the combination of on-site and regional flow controls will achieve the performance goals of the CSMP and the corresponding basin plan. If the Port decides to participate in future regional detention facilities, the Port shall submit documentation to Ecology that substantiates that Regional Detention Facilities will be constructed and that the Port may legally route stormwater to a RDF before Ecology will allow a change to the CSMP.

2. Discharge of operational stormwater to state receiving waters:

a) No stormwater generated by operation of new pollution generating impervious surfaces of projects for which the §404 permit was sought (excluding surfaces not to be included in the airport NPDES permit, e.g., South 154th Street which is a City of SeaTac facility) shall be discharged to state receiving waters until a site specific study, e.g., a Water Effects Ratio Study (WERS), has been completed and approved by Ecology and appropriate limitations and monitoring requirements have been established in the Port's NPDES permit. The study may use existing impervious surfaces as a surrogate for future new impervious surfaces, and it shall be submitted to Ecology for review and written approval. The Port shall consult with Ecology's Northwest Regional Office Water Quality Program's SeaTac NPDES Manager to determine an appropriate time for submittal of the study.

b) All stormwater discharges from the project shall be in compliance with state of Washington surface water quality standards (Chapter 173-201A WAC), sediment management standards (Chapter 173-204 WAC) and ground water quality standards (Chapter 173-200 WAC).

c) The Port shall design, construct, operate, and maintain stormwater treatment facilities to ensure that discharges shall not result in exceedances of state water quality criteria in receiving waters. Ecology may require changes to the approved CSMP as a part of future NDPES permits.

d) BMPs shall be selected from the enhanced treatment list for better removal of dissolved metals. If monitoring indicates a need for additional BMPs, the Port may propose other BMPs for stormwater treatment if it can be demonstrated that they will result in stormwater discharges that meet the state water quality standards. Any proposed changes are subject to review and written approval by Ecology.

e) The Port shall submit the final stormwater treatment and flow control facility designs to Ecology for review and written approval 60 days prior to the start of construction of the facilities. During final design the Port shall evaluate the likelihood that stormwater facilities will intercept groundwater and make modifications to the designs so as to either prevent the interception of groundwater or increase facility sizing to accommodate the groundwater. If facility sizes increase the Port shall evaluate potential impacts to wetlands and other waters of the state and whether the increase facility size triggers Dam Safety requirements under Chapter 173-175 WAC.

f) Within 180 days of issuance of this Order the Port shall submit to Ecology for review and written approval a Stormwater Facilities Operation and Maintenance Plan which addresses maintenance and operation of all STIA stormwater facilities approved by this Order. For the purpose of meeting this condition the Port may submit other existing documents or updates of other existing documents that meet this requirement. The Port shall identify methods to prevent overtopping of stormwater facilities and the Industrial Wastewater Treatment System to streams during design storm events.

g) The Port shall sample stormwater above and below stormwater outfalls and monitor the hardness of the receiving waters.

h) Water quality testing for toxicity to sensitive organisms, by the Port and approved by Ecology, shall measure injury, as well as mortality of those organisms.

K. Construction Stormwater Limitations and Monitoring Requirements:

1. Stormwater Pollution Prevention Plans shall be prepared in conformity with the Construction Stormwater/Dewatering requirements the NPDES permit.

2. Limitations

Stormwater discharges shall not cause a visible change in turbidity, color, or cause a visible oil sheen in the receiving water from any stormwater detention or retention pond.

3. Stormwater Monitoring Schedule for Construction Stormwater Discharges

The Port shall monitor each stormwater outfall discharge according to the following schedule:

a) Turbidity and pH:

i) The Port shall monitor turbidity and pH in any surface water discharge from construction sites within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period. The storm events shall be measured by an on-site rain gauge. The monitoring method shall be by a portable turbidimeter and a pH meter following the maintenance, operating and calibration procedures in the instrument's instruction manual. Alternatively, a grab sample shall be analyzed by a laboratory accredited under the provisions of Accreditation of Environmental Laboratories, Chapter 173-50 WAC.

ii) During each rain event the turbidimeter and pH meter shall also be used for the measurement of turbidity and pH upstream of the point of discharge to the receiving water and downstream of the thorough mixing of the discharge and the receiving water.

b) Oil, Grease and Temperature:

i) The Port shall sample for oil, grease and temperature as follows:

Parameter	Units	Sample Point[1]	Minimum Sampling Frequency	Sample Type
Oil and Grease	Mg/l	Point of Discharge	When visible sheen observed	grab
Temperature	^{0}C	Upstream[2] and downstream at the edge of the mixing zone (no greater than 100 feet)	Weekly[3]	grab

[1]Samples shall be collected from the outfall or an on-line stormwater drain access point nearest the outfall terminus.

[2] Background temperature measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge.

[3] During the months of July, August, and September

ii) Sampling method for Oil and Grease: The MDL for oil and grease is 0.2 mg/L using trichlorotrifluoroethane extraction and gravimetric analysis using EPA Method 413.1. The quantitation level (QL) for oil and grease is 1.0 mg/L (5 x MDL). An equivalent method is Method 1664 using normal hexane (n-hexane) as the extraction solvent in place of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113; Freon-113). An

equivalent method is total petroleum hydrocarbons with a MDL of 0.1 mg/L using Gas Chromatography and Flame Ionization Detector (FID) and Method WTPH-Dx Diesel (WTPH-D) from the Washington State Department of Ecology Method WTPH-D. The quantitation level (QL) for TPH-Dx is 0.5 mg/L (5 x MDL).

c. If monitoring indicates a need for additional BMPs, the Port may propose other BMPs for stormwater treatment if it can be demonstrated that they will result in stormwater discharges that meet the state water quality standards. Any proposed changes are subject to review and written approval by Ecology.

4. Stormwater Detention for New Outfalls
Any new diversion ditch or channel, pond, trap, impoundment or other detention or retention BMP constructed at the site for treatment of stormwater shall be designed, constructed, and maintained to contain and provide treatment for the peak flow for the ten (10) year 24 hour precipitation event estimated from data published by the National Oceanic and Atmospheric Administration.

5. Vehicle Trackout
Vehicles shall be cleaned of mud, rock, and other material before entering a paved public highway so that tracking of sediment onto the highway does not occur.

6. Reporting - Construction stormwater
Monitoring results for construction stormwater discharges shall be submitted every other month to Ecology's Federal Permit Manager, SeaTac Third Runway. Monitoring shall be reviewed for compliance with WAC 173-201A.

7. The Port shall document the use of any additives in the treatment of discharge water. Documentation shall identify the additives used, their commercial source, the material safety data sheet, and the appropriate application rate. The Port shall retain this information on-site or within reasonable access to the site and make it immediately available, upon request, to Ecology.

Additives to enhance solids settling before discharge to surface water must be applied according to the manufacturer's recommended dose. In addition, only additives of low toxicity to aquatic organisms, an LC_{50} equal to or greater than 100 mg/l, shall be used. The use of additives to enhance settling before discharge to surface water will not be allowed if the toxicity to aquatic organisms is not known.

8. In addition to the above, the Port shall submit a monitoring plan for stormwater and construction dewatering discharges from all construction projects including grading and construction of the Auburn mitigation site. The monitoring plan shall be submitted to Ecology for review and written approval at least thirty (30) days prior to the start of construction.

L. **Emergency/Contingency Requirements:**

1. The Port shall develop a spill prevention and containment plan for all aspects of this project, and shall have spill cleanup materials available on site.

2. Any work that is out of compliance with the provisions of this Order, causes distress death of fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Port shall immediately take the following actions:

   a) Cease operations at the location of the violation.

   b) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.

   c) Notify Ecology of the failure to comply. Spill events shall be reported immediately to Ecology's 24-Hour Spill Response Team at 425-649-7000, and within 24 hours of other events contact Ecology's Federal Permit Manager, SeaTac Third Runway at 425-649-4310.

   d) Submit a detailed written report to Ecology within five days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

   Compliance with these requirements does not relieve the Port from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

3. In the event of finding distressed, dying or dead fish, the Port shall collect fish specimens and water samples in the affected area, within the first hour of the event. These samples shall be held in refrigeration or on ice until the Port is instructed by Ecology on their disposition. Ecology may require analyses of these samples before allowing the work to resume.

4. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.

5. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent

spills into state waters.

6. If at any time during work the Port finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the Port shall immediately notify the Ecology's NWRO Regional Spill Response Office at 425-649-7000.

M. **General Conditions:**

1. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

2. This Order does not exempt and is conditional upon compliance with other statutes and codes administered by federal, state, and local agencies.

3. Ecology retains continuing jurisdiction to make modifications hereto through supplemental Order, if it appears necessary to further protect the public interest.

4. The Port shall have a designee on-site, or on-call and readily accessible to the site, at all times while construction activities are occurring that may affect the quality of ground and surface waters of the state, including all periods of construction activities.

5. The Port's designee shall have adequate authority to ensure proper implementation of the Erosion and Sediment Control (ESC) Plan, as well as immediate corrective actions necessary because of changing field conditions. If the Port's designee issues a directive necessary to implement a portion of the ESC Plan or to prevent pollution to waters of the state, all personnel on site, including the construction contractor and the contractor's employees, shall immediately comply with this directive.

6. The Port shall provide access to the project site and all mitigation sites by Ecology or WDFW personnel for site inspections, monitoring, necessary data collection, or to ensure that conditions of this Order are being met.

7. Copies of this Order and all related permits, approvals, and documents shall be kept on the project site and readily available for reference by the project managers, construction managers and foremen, other employees and contractors of the Port, and state agency personnel.

8. The Port shall comply with all provisions of any Hydraulic Project Approval issued by the Washington Department of Fish and Wildlife. Work in or near the water that may affect fish migration, spawning, or rearing shall cease immediately upon a determination by WDFW that fisheries resources may be adversely affected.

N. **Violations of the Order**:

Any person who fails to comply with any provision of this Order shall be liable for a penalty of up to ten thousand dollars ($10,000) per violation for each day of continuing noncompliance. Violations of this Order shall be addressed in accordance with the requirements of RCW 90.42 and RCW 43.21B. Upon Ecology's determination that the Port is violating any condition of this Order, it shall serve notice of the violation to the Port by registered mail.

O. **Appeal process**:

Any person aggrieved by Order 1996-4-02325 (Amended-2) may obtain review thereof by appeal. Pursuant to ch. 43.21B. RCW, a person can appeal this order to the Pollution Control Hearings Board within 30 days of the date of receipt of this Order. Any such appeal must be sent to the Washington Pollution Control Hearings Board, PO Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Northwest Regional Office, Shorelands and Environmental Assistance Program, Attn: Ann Kenny, 3190 160th Avenue SE, Bellevue, WA 98008-5452. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Dated June 7, 2004 at Lacey, Washington.

Gordon White

Gordon White
Program Manager
Shorelands and Environmental Assistance Program

Attachment B: NRMP Plan Set Revisions

Appendix A – Miller Creek Relocation and Floodplain Enhancement

Sheet C3: Note 13. Provide revised sheet showing design of irrigation system and discuss irrigation plan in NRMP (timing, amounts of water, etc.).

Sheet C4: Provide revised sheet C4 showing no work in streams. Provide revised Grading plan C-129 showing no work in streams.

Sheet C7: Provide revised sheet with note detailing how woody debris will be anchored using cable or hemp.

On the swale section provide revised sheet showing that swale area will be seeded.

Sheet C-8: Provide revised sheet that shows steel anchors for all the logs in the stream channel with note that hemp rope anchors are expected to remain in place for 3-5 years.

Sheet TE1: Provide revised sheet with note on how the ditches will be blocked to prevent sediment migration.

Provide schedule or table that shows the sequence in which the different elements of the mitigation will be installed. (This applies to the Auburn site as well.)

Sheet L2: Revise sheet to show how young plants will be protected from sun exposure until they are well enough established to withstand exposure to the sun.

Revise Note 6 to state that except where needed to protect roots of conifers, care must be taken not to seed mulch collars.

Revise sheet to remove staking notes and details from sheet.

Appendix B – Miller Creek In-stream and Buffer Enhancements

Sheet C3: Revise sheet to show construction access points and add a note to the plans to minimize wetland and stream impacts. Provide note detailing how access points will be restored.

Sheet C4: Note 5. Add note to see sheet TE2 and add more details detailing how the channel will be de-watered during re-grading.

Sheet C5: Provide revised sheet if log orientation at 42+00 changes.

Note 2. Provide revised sheet with note. Discuss disposal of solid wastes in text of NRMP or in an Appendix. Provide information on how hazardous materials will be managed if discovered during the course of constructing the mitigation site.

Sheet C7: Provide revised sheet with note that details how project areas will be accessed. Also provide details on how access locations will be restored after the work has been completed.

Sheet C8: On Section 2, the coir lift is shown on the section but is not present on the plan. Provide revised sheet.

On Section 3, the logs on the plan view are not present on the section. Provide revised sheet.

On Section 5, the log shown on the plan view is not present on the section. The coir lift shown on the section is not shown on the plan. Provide revised sheet.

On Section 6, the log shown on the plan view is not present on the section. Provide revised sheet.

Sheet C9: In typical detail of coir fabric lifts, develop a specification for the quantity of willow cutting. Provide revised sheet.

Sheet C10: Provide revised sheet and include note on sheet that indicates that the geotextile fabric will be biodegradable. If this is discussed in text, then text must become part of final plan set.

Sheets TE1-TE4: Provide revised sheets adding note in notes section that states that equipment should not be driven in the streambed except where necessary to complete construction.

Sheet TE2: Provide revised sheet showing details for stream diversion structure and flow dispersion structure.

Provide revised sheet showing detail for the flexible by-pass pipe. Note that pipe should not be trenched in.

Indicate on plan sheet direction of sump discharge water with note that it is pumped to a treatment pond. Provide specific pond. Provide revised sheet.

Sheet TE5: On the live stake detail, specify the density of staking (inches on center). Provide revised sheet.

Sheet L1.1: Provide revised sheet with note that says that if S. 157th Place is determined not to be needed for access purposes it will be revegetated.

Sheet L2: Provide revised sheet with note that says that if S. 160th Street is not needed for access it will be revegetated.

Sheet L3: It is unclear how much of this area will be cleared. Provide revised sheet with correct cross-hatching in wetland.

Sheet L5: Clarify why some of Wetland R11 shown as revegetated and others are not. Provide revised sheet with note indicating that the Corps of Engineers is requiring that the sewer easement will not be revegetated.

Provide revised sheet correcting hatching error for the replacement drainage channels buffer areas that will be graded. This area should be in darker (cleared and revegetated areas) hatch.

Sheet L5.1: Provide revised sheet with note that says that if 8th Avenue South is not needed for access it will be revegetated.

Sheet L5.2: Provide revised sheet with note indicating that any irrigation installed in the field shall be shown on the As-Built Report.

Sheet L6: Areas that are cleared and revegetated should be planted at a higher density than enhancement areas. Densities or quantities should be stated on the plan.
A performance standard of 280 trees per acre is proposed for the buffer. In cases where some forest vegetation is present, the Port shall supplement the existing trees with enhancement plantings to achieve this density. Clarify in NRMP how survival monitoring will be performed in these areas to differentiate these two types of areas.

Provide revised plan detail/notes to allow for use of phased planting in areas that lack suitable shade or soil moisture. Discuss in text of NRMP.

On tree planting and staking detail, the plan needs to state when the stakes will be removed. If it is determined that staking is not necessary then remove the stake details. Provide revised sheet.

Sheet P2: Provide revised sheet showing approximate locations of the sandbags and the abutments to be removed. Provide note on TESC controls that will be in place for the timber removal in order to minimize sediment mobilization.

Appendix D – Replacement Drainage Channels and Restoration of Temporarily Impacted Wetlands

Sheet C3: Clarify how hydrologic support will be provided to Wetland 11 and Wetland 9 after construction.

Sheet C5: Provide revised plan sheet with details regarding flow spreaders and spalls.

Sheet C6: Provide revised sheet clarifying whether the dark hatched area in the vicinity of Wetlands R9a, R10, R11, A10, and A11 will be graded and revegetated.

Sheet C7: Show how will water get to Wetland 44a if the TESC channel is removed.

Show flow monitoring locations on the stormwater management plan.

Sheet C8: Clarify how the drainage channel discharge structure controls flow to the wetland. Address how often these structures will be monitored and how modifications be made if a problem is identified. Provide information in note on revised sheet.

Sheet L1: Provide revised sheet to allow for phased planting to provide shading for western red cedar and the western hemlock.

Appendix E – Auburn Wetland Mitigation

Sheet C5: Provide revised sheet with note saying that if hummocks remain in place options for removing reed canary grass will be evaluated.

The Sheet C6 grading plan shows proposed contours for re-grading the SW portion of the mitigation site. These contours do not continue onto Sheet C5. Provide revise sheet.

Sheet C8: Provide revised sheet with a note added to the plans to include culverts at the low spots if needed to eliminate ponding.

On Section 3, design to ensure the perforated pipes do not sink into the substrate and become blocked.

Sheet TE1: There is no discussion on dewatering except in the NRMP text on page 7-50. Sheet C2 (Appendix E) shows the discharge point located along a ditch, which is slated to be recontoured. Provide revised sheet with additional details to manage potential erosion and amend text in NRMP if necessary.

If it is determined that Area 1 should have a sedimentation pond submit revised sheet showing the pond.

Page 7-47 of the text discusses major construction activities limited to a period from October 31 to March 31 to avoid winter bald eagles. Provide revised sheet correcting error regarding construction window to avoid winter bald eagles.

Sheets L7 and L8: Provide revised sheets to show plant pattern layout areas for each phase.

Sheet L9: Provide revised sheet with a note added to the plans so that ponded areas or areas that are anticipated to be ponded shortly after planting will be planted with plugs representative of the seed mix specified. Add Hydro seeding specifications.

Revised Auburn Grading Plan (June 28, 2001):

1. The revised grading plan (June 28, 2001) shows a culvert in the northwest corner of the site in the proposed new drainage swale. The culvert will pass flows under the site access path. The drawing shows this culvert approximately 60 feet long, passing under a path that is only approximately 15 feet wide. This culvert should be no longer than is necessary to pass the water under this pathway.

2. The revised grading plan (June 28, 2001) shows a culvert in the south central portion of the mitigation site. This culvert appears to be mis-located. It appears that the culvert should be shown in the wetland directly east of the shown location, where the wetland passes under the

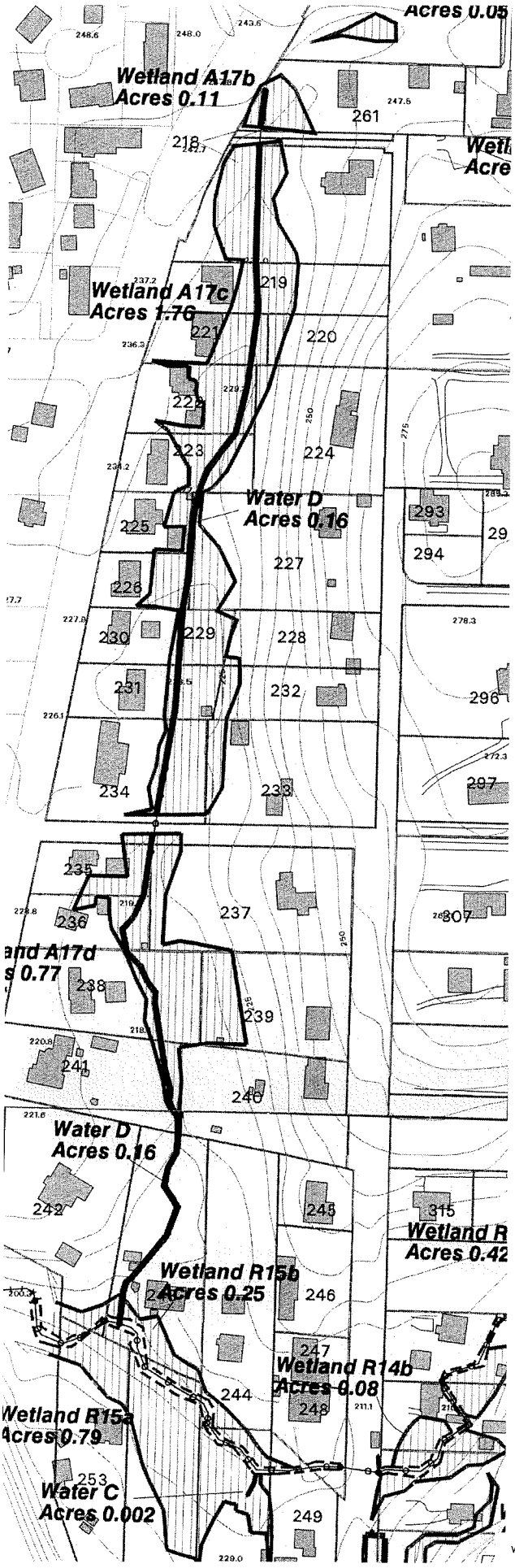
proposed maintenance path. This culvert should be no longer than is necessary to pass the water under this pathway.

3. Two additional culverts need to be shown along the new drainage swale where the water outlets the southwestern basin, under the maintenance pathway.

4. Culverts should be placed during construction under the paths/roads in all areas where there is a potential for impounding water. A note should be added on the construction documents.

5. Provide revised grading plan that addresses items 1 through 4 above.

Attachment C
1996-4-02325
(Amended-2)
June 7, 2004
Wetland A17 Complex



wetland A17 image.doc

Attachment A: Contractor Statement

PROJECT: Port of Seattle Third Runway & Master Plan Update Projects

I have read the Water Quality Certification/Coastal Zone Consistency Determination/Section 401 Permit (Order #1996-4-02325, Amended-2) and the National Pollutant Discharge Elimination System (NPDES) Permit for the above referenced project and, to the best of my ability, understand the requirements of those permits as they relate to those portions of the work that are being conducted under my supervision.

_____

Name (Signature)

_____

Name (Printed)

_____

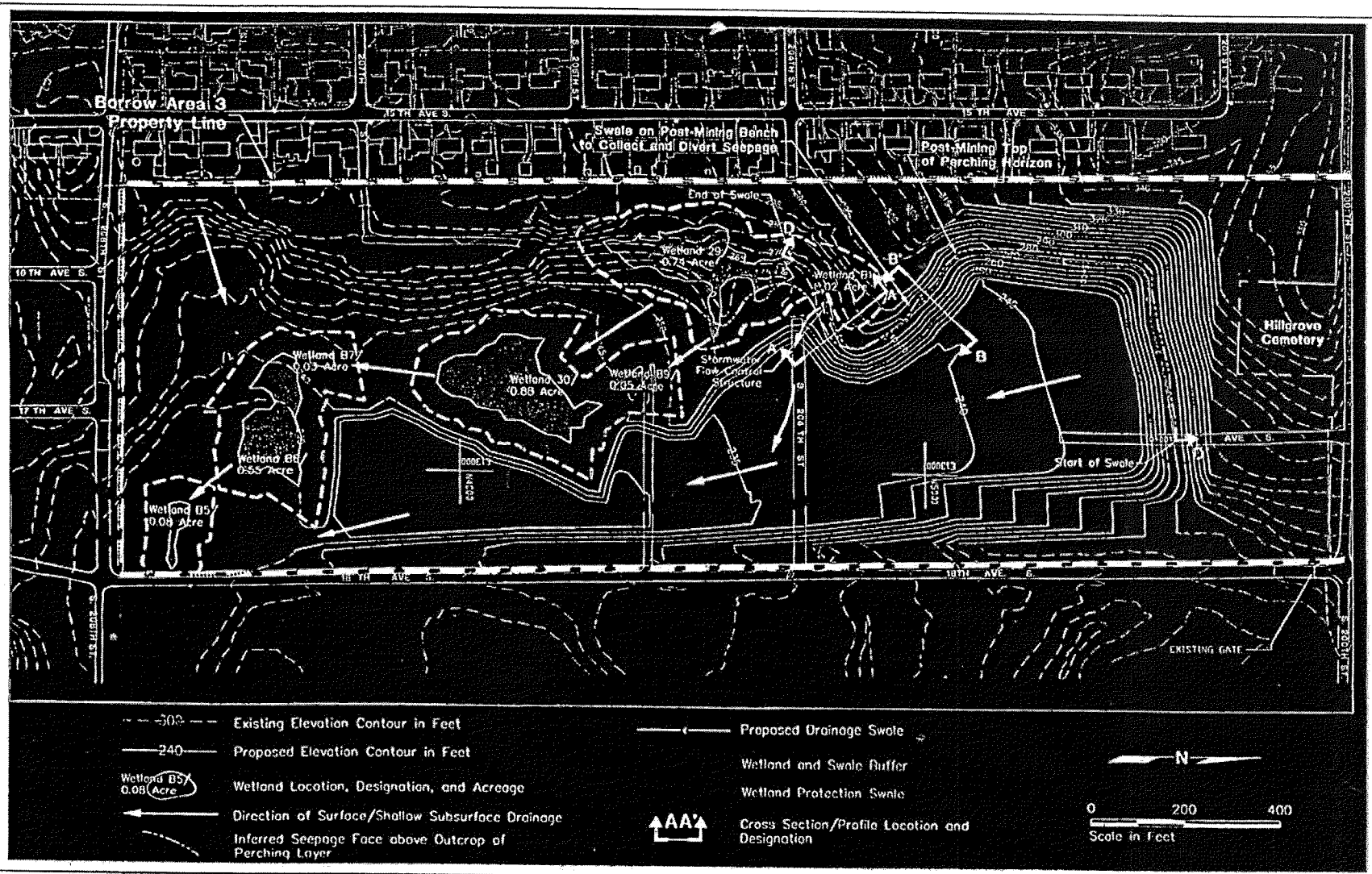
Title

_____

Company or Organization

ATTACHMENT D

Borrow Area 3 Wetland and Swale Buffer



Attachment E

SECTION 401 CERTIFICATION SYNTHETIC PRECIPITATION LEACHING PROCEDURE WORK PLAN

This Work Plan provides an alternative methodology for meeting the fill suitability criteria found in Section E.1(b) of the Department of Ecology's Water Quality Certification #1996-4-02325 (the "Certification")issued to the Port of Seattle ("Port"). This Work Plan describes procedures for use of the Synthetic Precipitation Leaching Procedure ("SPLP") to determine the suitability of fill for the Port's third runway embankment and other Port projects for which the fill criteria of the Certification are applicable (defined in the Certification as "Port 404 Projects").

I. Summary of Requirements

Requirements applicable to the Port include those of the Certification and also those contained in the U.S. Fish and Wildlife Service's ("FWS") May 22, 2001 biological opinion ("BO") (FWS Reference Number 1-3-00-F-1420). The Ecology Certification and the FWS BO both have screening level criteria for Port 404 Projects, including the third runway embankment (the "Embankment"), as well as special screening criteria that apply to a zone of material above the drainage layer at the bottom of the embankment. Special criteria for this zone (referred to as the "drainage layer cover" in the BO and in this document) are applicable to a zone that is 40 ft thick at the face of the embankment and reduces in height to the east at a rate of 2 percent until it meets the drainage layer at the existing ground surface to the east.

Table 1 shows the soil criteria that have been developed for the third runway embankment by FWS and Port 404 Projects by Ecology. Ecology's Certification specifies soil criteria for 14 metals and TPH (column 5 – the last column on the right). In addition, the Certification soil criteria for chromium, lead, nickel, and diesel in the drainage layer cover of the Embankment are more stringent than for the rest of the Embankment and other Port 404 Projects (column 2). The FWS BO specifies soil criteria for the drainage layer cover as shown in column 3 for the RCRA 8 metals. Because the FWS and Ecology soil criteria differ, the Port will use the most stringent criteria of the two for the drainage layer cover (shown in column 4) and for the remainder of the Embankment (shown in column 5).

Because metals are naturally occurring, they have widespread concentration variability throughout the Pacific Northwest. Many of the soil criteria in Table 1 are at Puget Sound background concentrations calculated at the 90th percentile. Thus, by definition a constituent, even at a naturally-occurring, unaltered concentration will fail these criteria10% of the time. When testing is done for multiple constituents, the probability that naturally-occurring concentrations will disqualify a fill source rises. For fill constituents that do not meet the screening criteria of the Certification and BO, fill acceptability can be demonstrated using the SPLP test procedure.

In accordance with the BO, upper bounds are established for constituent concentrations that cannot be accepted even following a successful SPLP test (referred to in this document as "upper bound limits"). For the drainage layer cover, the upper bound limits are set in the BO at applicable MTCA Method A standards. However, Method A values were not available for barium, selenium and silver. As a result, the upper bound limit for barium was backcalculated using the MTCA three phase partitioning approach (WAC 173-340-747) and selenium and silver soil criteria were set at the PQL. Upper bound limits for the drainage layer cover and the remainder of the Embankment are incorporated into this Work Plan to avoid any potential inconsistency with the BO. As such, any material that is unacceptable for the Embankment under the BO is also unacceptable for the Embankment under this Work Plan and the Certification.

At proposed fill sources for which sampling is required in accordance with the Certification, the appropriate number of samples of proposed fill material (per Certification requirements) will be collected and analyzed for the constituents listed in Condition E.1(b). Constituent concentrations will be compared to the lower screening criteria in Condition E.1(b) and in the BO for the drainage layer cover (Table, 1, column 4) or for the rest of the embankment (Table 1, column 5). If the screening criteria are not exceeded, fill from that source will be considered suitable for placement in the appropriate portion of the embankment, or on other Port 404 Projects. If the screening criteria are exceeded, but the upper bound limits are not exceeded, the Port must demonstrate fill suitability by employing the SPLP testing protocol discussed below prior to accepting fill from that source.

II. SPLP Testing Protocol

The purpose of the SPLP is to evaluate the potential for metals and organic constituents to mobilize and move through soils in fluid form. The SPLP is an accepted laboratory leaching test, as discussed in WAC 173-340-747(7). The SPLP will be conducted in accordance with the procedures contained in SW-846 Method 1312. In the SPLP, fluid representing acid rain is passed through a soil sample and the liquid is collected and analyzed.

SPLP testing will be conducted and the results will be evaluated relative to the applicable ambient water quality criteria of WAC 173-201A and the ground water quality criteria of WAC 173-200, as discussed below. In the event that SPLP results consistently show that criteria for specific metals are not exceeded across a range of sites and soil conditions, the Port may elect to submit such information to Ecology for its review as evidence that the Port may discontinue the requirement to implement SPLP for specific metals. Upon approval by Ecology, the Port may then adopt the applicable upper bound limit, or some intermediate figure as determined by Ecology, as its new soil screening criterion for that constituent.

Use of SPLP to demonstrate fill acceptability will require sampling of the material proposed as imported fill. At a minimum, one SPLP sample will be collected for each original sample that exceeds the screening criteria. This sample will be representative of the area where the original sample indicating an exceedence of the screening criteria was collected. The SPLP will only be conducted for the specific chemical constituent that exceeds the criteria.

III. Screening Procedure

Results from the SPLP will be compared to freshwater ambient water quality criteria according to guidelines outlined in WAC 173-201A-040 and the ground water quality criteria in WAC 173-200-040 (adjusted for PQLs). As an initial screening tool, the constituent concentrations as determined from the SPLP will be divided by a dilution factor of 20. The default dilution factor of 20 was established by Ecology for use in the Three Phase Partitioning Model (WAC 173-747). This dilution factor represents a very conservative estimate because it accounts only for the dilution that occurs between the pore water at the spot in the embankment where the constituent exceeded water quality criteria, and ground water in the saturated zone directly below, without accounting for attenuation processes. The actual dilution factor, first from a specific point in the embankment through the underlying drainage layer and then transport to Miller Creek, is much greater. If the adjusted SPLP results are equal to or below the freshwater ambient water quality criteria and the ground water quality criteria, the material will be considered suitable for placement in the embankment (including the drainage layer cover, provided applicable upper bound limits were not exceeded for any constituents in the initial soil test prior to SPLP use). If adjusted SPLP results are above freshwater ambient water quality criteria or ground water quality criteria, the material will be rejected and will not be considered suitable for placement at any location within the embankment.

Table 1
Criteria for Drainage layer cover and other Port 404 Projects.

Constituent	Ecology special criteria for drainage layer cover (mg/kg)	FWS drainage layer cover criteria (mg/kg)	Final drainage layer cover criteria (most conservative of FWS and Ecology values) (mg/kg)	Ecology criteria for remainder of embankment and other Port 404 Projects (mg/kg)
Antimony		NA	16	16
Arsenic		7	7	20
Barium		12,000	12,000	NA
Beryllium		NA	0.6	0.6
Cadmium		1	1	2
Chromium	42	48	42	2000
Copper		NA	36	36
Lead	220	24	24	250
Mercury		0.07	0.07	2
Nickel	100	NA	48	110
Selenium		5	0.75	0.75
Silver		5	0.28	0.28
Thallium		NA	2	2
Zinc		NA	85	85
TPH	0 (a)		0 (a)	0 (a)

(a) The limit of 0 means nondetectable, as determined by Ecology.