

**Kenny, Ann**

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**From:** Kenny, Ann  
**Sent:** Sunday, August 05, 2001 3:48 PM  
**o:** White, Gordon; Hellwig, Raymond; Stockdale, Erik; Fitzpatrick, Kevin; Drabek, John; Garland, Dave; Wang, Ching-Pi; 'Katie Walter'; 'Kelly Whiting'; Marchioro, Joan (ATG); Young, Tom (ATG)  
**Cc:** Summerhays, Jeannie  
**Subject:** Revised DRAFT 401 for Third Runway and attachments.  
**Importance:** High

All:

Attached is a revised Draft 401 for your review. I have incorporated all of the comments that I received last week (or least I have tried to). Now I need you to review this draft to be sure that I got your comments right. Some areas are incomplete and need more work.

The document still needs fine tuning in terms of flow, consistency, format, etc. Where I have questions, need to fill something in or have comments watch for BOLD and brackets.

I need to have your comments AS SOON AS POSSIBLE and preferably no later than 11:00 am on Tuesday. Ray and I are meeting with Gordon White and Tom Fitzsimmons on Tuesday afternoon and I want to have as complete a document as I can for that meeting.

The goal is to have this permit in the mail by the end of the week.



DraftRunwayWQC  
1.doc



AttachmentNRMPl contractorstmt.doc  
ansheets.doc



125 1-16-02  
White

AR 017930

**DRAFT**  
**DELIBERATIVE: DO NOT DISCLOSE**

August X, 2001

**REGISTERED MAIL**

Port of Seattle  
17900 International Blvd., Suite 402  
Seattle-Tacoma International Airport  
SeaTac, WA 98188-4236  
Attn: Ms. Elizabeth Leavitt

Dear Ms. Leavitt:

Re: Water Quality Certification for U.S. Army Corps of Engineers Public Notice 1996-4-02325; 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 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 revised JARPA application dated October 25, 2000, the U.S. Army Corps of Engineer's public notice and the Department of 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 U.S. Army Corps of Engineers.

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with the Port of Seattle's certification that this work is consistent with the approved Washington State Coastal Zone Management Program. This concurrence is based upon the Port of Seattle'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, Joint Aquatic Resource Permit Application (JARPA), the U.S. Army Corps of Engineer's Public Notice, and the plans submitted by the Port to the Department of Ecology for review and approval.

This certification shall be withdrawn if the U.S. Army Corps of Engineers (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 determine 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.

DOE 8/13/01 0296

AR 017931

Port of Seattle  
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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:

- Hydraulic Project Approval #00-XXXX-XX to be issued by the Washington State Department of Fish & Wildlife (WDFW).
- NPDES permit #WA-002465-1, issued by the Department of Ecology on February 20, 1998 and modified on May 29, 2001.

If you have any questions, please contact Ann Kenny at (425) 649-4310. Written comments can be sent to her at the Department of Ecology, Northwest Regional Office, 3190 160<sup>th</sup> Avenue SE, Bellevue, Washington, 98008-5452. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Gordon White, Program Manager  
Shorelands and Environmental Assistance Program

GW:AK  
Enclosure

cc: Michelle Walker, Corps of Engineers  
Gail Terzi, Corps of Engineers  
Tony Opperman, WDFW  
Tom Sibley, NMFS  
Nancy Brennan-Dubbs, USFWS  
Joan Cabreza, EPA

DOE 8/13/01 0297

AR 017932

**DRAFT**  
**DELIBERATIVE: DO NOT DISCLOSE**

**IN THE MATTER OF GRANTING A  
WATER QUALITY CERTIFICATION  
AND SHORT-TERM WATER QUALITY  
MODIFICATION 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**

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. 154<sup>th</sup> 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**  
Seattle-Tacoma International Airport  
Attn: Elizabeth Leavitt  
17900 International Blvd., Suite 402  
SeaTac, WA 98188-4236

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.

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 the Department of 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:

DOE 8/13/01 **0298**

**AR 017933**

- 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:**

Des Moines Creek (VX71MY), 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 303(d) list as exceeding state water quality standards for fecal coliform. This project shall not result in further exceedances of this standard.

Instream/Shoreline Work Monitoring Plan:

The Port shall submit a monitoring plan for each in-water or shoreline construction project. The monitoring plan shall be submitted to the Department for review and approval at least thirty (30) days prior to the start of construction.

The plan shall be deemed approved if Ecology does not respond to the plan at least five (5) days prior to the scheduled date of construction.

As part of the monitoring plan the Applicant shall demonstrate to the Department the mixing zone is minimized in conformance with WAC 173-201A-100(6). At a minimum, the monitoring plan will 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.

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

**AR 017934**

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.

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).

Monitoring will be reviewed for compliance with WAC 173-201A.. The Department will exercise its enforcement discretion in the event of non-compliance with these standards.

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.

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.

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

**B. Timing Requirements:**

1. This Order shall be valid during construction and long-term operation and maintenance of the project.
  - a) 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.
  - b) 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.
  - c) 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 approval prior to implementation.

2. In-water work is subject to a fishery closure window described in WDFW's Hydraulic Project Approval (HPA). 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.

**C. Notification and Reporting Requirements:**

1. Notification shall be made to Ecology's Federal Permit Manager at 425-649-4310, 425-649-7098 (Fax), mail: 3190 160<sup>th</sup> Avenue SE, Bellevue, WA 98008 or by e-mail at aken461@ecy.wa.gov for the following activities:
  - a) at least 30 days prior to the pre-construction meeting to review environmental permits and conditions,
  - b) at least 10 days prior to starting construction at the project site or any mitigation site, and
  - c) within 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, 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 (see Attachment X for an example) 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 160<sup>th</sup> 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.

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

DOE 8/13/01 0301

AR 017936

D1. 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, 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).
1. Update the NRMP to reflect 15 years of monitoring, instead of the 10 years.
  2. Table 4.2-1 outlines the performance standards for vegetation cover by vegetation zone and monitoring year. A note should be added to the table that states "Invasive plant species cover will be monitored during all monitoring years."
  3. In addition to the non-native invasive species listed in Table 4.2-2 of the NRMP, hedge bindweed (*Convolvulus sepium*), giant knotweed (*Polygonum sachalinense*) and evergreen blackberry (*Rubus laciniatus*) will be monitored and controlled in the mitigation sites.
  4. All performance standards addressing cover of non-native plants must read: "Cover of non-native invasive species will be no greater than 10% in any year in newly planted or enhanced areas."
  5. Table 5.1-7 of the NRMP proposes the proposed shade cloth over the new channel. Provide a map of the location for the shade cloth, details on how it will be installed, and a schedule of installation and removal.
  6. Ecology will require written documentation of all contingency measures and adaptive management measures implemented. TESC measures approved by Ecology will remain in effect for all adaptive management measures or contingency measures implemented. Any problems identified throughout the mitigation sites must be immediately rectified. Implementation of corrective actions will be done within the confines of the contingency measures identified in the NRMP. All contingency measures shall be implemented in a manner so they do not exceed State water quality standards.
  7. The Port shall monitor hydrologic conditions of all wetlands downslope of the embankment. Hydrologic monitoring using piezometers and shallow hand dug soil pits in undisturbed wetlands downslope of the new embankment must be conducted frequently enough to determine wet season trends. Ecology will require bi-monthly hydrologic monitoring before construction and for at least 3 years after completion during the wet seasons, November through May. 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 must be documented and submitted to Ecology on a monthly basis during that period. At the end of each water year a trends analysis must be completed with proposed contingencies identified and a schedule for completion.

8. Existing wetland and mitigated wetland boundaries (including all areas down slope of the embankment, Vacca farm, the borrow sites, and the Auburn mitigation site) will be delineated at years 5, 10, and 15. A licensed survey crew will survey the wetland points established. The delineation map and comparisons to previous delineation maps, will be furnished to Ecology by December 31 of each of the delineation years. If the delineation shows the wetland boundaries have decreased then additional in-basin mitigation will be required by Ecology.
9. Final performance standard 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)
10. Revised Table 5.2-12 (page 12 , #2) 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 will 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. This monitoring condition shall be amended to read: "Wetland indicator status (WIS) of the dominant noninvasive plant species will not differ from pre-project conditions during or at the end of the monitoring period. Each vegetative strata (trees, shrubs and emergents) will be assessed separately, and have separate conclusions. Statistically valid sampling procedures will be employed to monitor these 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."
11. In all areas where soil saturation is being monitored the performance standards must include: "Other wetlands with predominantly mineral soils will have soils saturated within the upper 16 inches to mid-April in years of normal rainfall."
12. The NRMP shall be revised to reflect the re-evaluation of wetland impacts required in the revised low flow report required in Section XX.
13. Soils stockpiled for mitigation purposes for over one year will require reintroduction of some naturally occurring microbes, prior to use in mitigation sites. This should be done through introduction of soils microbial inoculants, or through introduction of well decomposed organic matter.
14. The Port shall redevelop the sample data sheets to meet all the monitoring requirements laid out in this order.

AR 017938

DOE 8/13/01 0303

15. Auburn- Emergent marsh plants shall be planted with rhizomes 12" on center (o.c.) instead of the 18" o.c. specified. Areas that are designated for hydroseeding that have visible surface water at the time of planting those areas must be planted with plugs. Routine maintenance, such as, weeding, removal of non-native species, and watering, will occur at least twice a year in all areas and more often in areas if needed. The maintenance crew shall be overseen by a biologist to assist with identifying invasive species and identifying problem areas.
16. Vacca Farm- The revised Table 5.1-7 Final performance standards will have a note added that reads: "Observable surface flow must be present in the created channel at all times."
17. Low Flow- Low flow augmentation water shall pass through the wetlands and will not be directly discharged to the stream.
18. Contingency measures and additional monitoring of the mitigation areas may 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 15-year period if mitigation success is not achieved within the 15-year monitoring period.

b) Additional conditions:

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

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.

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. The Department of Ecology or its designee shall be allowed access to all mitigation sites for the entire monitoring period.

c) Restrictive Covenants: The Port has agreed to 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. Copies of the restrictive covenants are attached in Appendix X. The Port shall record the restrictive covenants with King County no later than 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 the Department of Ecology.

Violation of any term of the restrictive covenants shall be considered a violation of this Order. Ecology may require corrective action sufficient to cure the violation, including without

limitation, restoring or remediation of the covenant areas, or removal of any structure, development, or improvement not permitted by the covenant. In addition, Ecology may bring an action to specifically enforce the covenant, to enjoin the violation of the covenant, to require restoration or remediation of the covenant area, or to levy a penalty against the Port or any other party for the violation.

d) Submittal of a Revised Mitigation Plan: The Port shall submit to Ecology for its review and approval a revised NRMP which includes the changes or additions required by this Order for review and approval no later than November 30, 2001. The revised NRMP shall include revised plan sheets that address the corrections required in **Attachment X**.

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 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 no later than December 31, 2001. The Final NRMP shall include any changes required by the U.S. Army Corps of Engineers.

### D3. Mitigation for Temporary Impacts

The Final Natural Resource Mitigation Plan (NRMP) (December 2000) 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 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 approval. The plan shall be submitted to Ecology by XXX. Once approved by Ecology, the Port shall amend the NRMP to incorporate the approved mitigation plan. The plan must contain the following elements:

- The wetland/riparian zone comprised of wetland A17b/c/d and water D will be added to the wetland and buffer restoration/enhancement on Miller Creek. This area is depicted in **Attachment X** titled "Wetland A17 complex". A 100-foot buffer will be placed to envelop this system. The wetlands total 2.64 acres and "Water D" totals 0.16 acres for a combined total of 2.80 acres (not including the buffer). The buffer will be averaged, similar to the buffer on Miller Creek.
- The plan shall use the same goals and performance standards as the NRMP approved by this Order.

- The plan will evaluate the feasibility of improving the hydrologic connection of wetland A17 complex to Miller Creek via "Water D". If it is feasible to improve the hydrologic connection of wetland A17 complex to Miller Creek via "Water D", the Port shall include a plan for improving the connection in its submittal.
- Homes, driveways, concrete, fill, septic systems and other unsuitable material will be removed from the wetland complex, in a manner that meets the treatment protocol established for the Miller Creek restoration in the NRMP.
- The plan will develop a buffer restoration and revegetation plan for this area, that meets the treatment protocol for the Miller Creek restoration in the NRMP. This will include the removal of invasive species, and replanting of appropriate native species.
- The plan will evaluate the potential for wetland restoration and enhancement within this new mitigation zone.
- The buffer will be joined with the buffer on Miller Creek to the south.
- A restrictive covenant will be drafted for this additional mitigation area. The restrictive covenant shall be consistent with other restrictive covenants established for this project.
- A conceptual plan shall be submitted to Ecology for review and approval no later than September 30, 2001 for review.

D4. Borrow Site One -

The performance standards in Table 5.3-6 of the NRMP allow for monitoring of the wetland hydrology. The evaluation approach must compare the shallow groundwater data collected to data collected pre-construction. Wetlands 48, B15, 32, B12, B4, and B1 should all be evaluated. Ecology will require bi-monthly hydrologic monitoring before construction and for at least 3 years after completion during the wet seasons, November through May. 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 must be documented and submitted to Ecology on a monthly basis during that period. At the end of each water year a trends analysis must be completed with proposed contingencies identified and a schedule for completion.

D5. Borrow Site Three:

The site plan from Hart Crowser dated 6-15-01 titled Post Reclamation Topographic detail Borrow Area 3 Wetland Protection Swale HNTB revision (Draft) shows a flow dispersal trench overlapping with a small portion of Wetland 29. The trench must be constructed so that it is not in the wetland.

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. Memo from Michael Kenrick and Michael Bailey (Hart Crowser) to Jim Thomson (HNTB) on wetland hydrology and proposed drainage swale design (October 20, 2000).

Excess water from the stormwater overflow structure must 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. Memo from Michael Kenrick and Michael Bailey (Hart Crowser) to Jim Thomson (HNTB) on wetland hydrology and proposed drainage swale design (October 20, 2000)

The Port of Seattle 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 3 must be conducted frequently enough to determine wet season trends. Special emphasis should be given to the area near where the drainage swale will discharge into Wetland 29, to provide an early indication of hydrologic duress to plants in the wetland. Ecology will require bi-monthly hydrologic monitoring before construction and for at least 3 years after completion during the wet seasons, November through May. 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 must be documented and submitted to Ecology on a monthly basis during that period. At the end of each water year a trends analysis must be completed with proposed contingencies identified and a schedule for completion.

The wetland protection swale shall be inspected and maintained at a minimum frequency of twice a 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.

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 must be included in the wetland buffer. This area is depicted in Attachment XX Borrow Area 3 Wetland Buffer. A restrictive covenant will be drafted for this additional buffer area. A restrictive covenant will be drafted for this additional mitigation area. The restrictive covenant shall be consistent with other restrictive covenants established for this project.

Additionally, the Port of Seattle shall ensure protection of hydrology to these wetlands from future development. The wetland protection swale must be included in a protective covenant, with 25 foot buffers on either side of the swale.

The performance standards in Table 5.3-6 of the NRMP allows for monitoring of the surface water in wetland 30. The evaluation approach states that shallow groundwater monitoring wells will be used. The evaluation approach must be changed so that surface water depths are measured monthly during the period from December through April, and compared to pre-construction data.

D6. Wetland, Stream and Riparian Mitigation Monitoring and Reporting:

AR 017942

- a) Monitoring of all wetland mitigation sites identified in the December 2000 NRMP and

the June 2001 Auburn Grading and Planting Plan shall be completed as described in the Final NRMP submitted to Ecology except as revised by the following conditions:

- 1) Monitoring shall be completed at least yearly for a **fifteen-year** period with initial monitoring starting **XXX**. If the results of monitoring over **XXX** to **XXX** [specify period of time] shows that the success criteria established in the plan are not being met, Ecology may require additional monitoring and/or mitigation.
- 2) The Port shall prepare and submit annual monitoring reports to Ecology's **Federal Permit Manager, SeaTac Third Runway, Northwest Regional Office, 3190 160<sup>th</sup> Avenue SE, Bellevue, WA 98008-5452** no later than December 30 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. Permanent reference points shall be identified and incorporated into the revised NRMP.
- 3) "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 will include detailed plans showing locations of all monitoring transects and locations. All vegetation sampling and analysis will employ statistically valid sampling and analysis procedures during each of the monitoring events. Monitoring reports will show all sampling locations, discuss trends and changes, discuss problems, and give remedies for the problems which includes a timeline for their resolution. Supporting data and calculations shall be maintained by the contractor and made available to Ecology upon request.

- 4) The "As Built" report shall be sent to Ecology's **Federal Permit Manager, SeaTac Third Runway** within 60 days of completing the mitigation site.
  - b) 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 projects:**

E1. Borrow Sites

The use of imported fill for the proposed Third Runway embankment and associated construction projects of the Port of Seattle **Master Plan Update Improvements** 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 approval prior to fill placement.

E2. Fill Source/Documentation/Fill Criteria

The Port of Seattle shall adhere to the following conditions to ensure that the fill placed for the proposed Third Runway embankment and associated construction projects of the Port's **Master Plan Update Improvements** 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.

E2a. Fill Sources

Fill materials for the proposed Third Runway embankment and associated construction projects of the Port's **Master Plan Update Improvements** shall be limited to the following three sources:

- State-certified borrow pits
- Contractor-certified construction sites
- Port of Seattle-owned properties.

E2b. Prohibited Fill Sources

The following fill sources are prohibited for use on the proposed Third Runway embankment and associated construction projects of the Port of Seattle **Master Plan Update** improvements:

- 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 [ **Kevin, are the Phase assessments specific things the reader will immediately understand?**].
- 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.

E2c. Documentation

No later than five (5) business days prior to accepting any fill materials for use on the proposed Third Runway embankment and associated construction projects of the Port's **Master Plan Update Improvements**, the Port shall submit to Ecology's **Federal Permit Manager, SeaTac Third Runway**, documentation demonstrating certification of [confusing: documentation certifying that the proposed fill source meets the criteria of this Order?] the proposed fill source. 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 and approval of Ecology. 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:

1. **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 the proposed Third Runway embankment and associated construction projects of the Port of Seattle Master Plan Update improvements.
2. **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.

3. **Site Reconnaissance:** Conduct a site visit to identify 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.
4. **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<sup>1</sup>
  - Total Copper
  - Total Lead
  - Total Mercury
  - Total Nickel
  - Total Selenium
  - Total Silver
  - Total Thallium
  - Total Zinc
  - NWTPH-HCID



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 following table presents the minimum sampling schedule for fill sources with no likelihood of environmental contamination.

Cubic Yards of Soil	Minimum Number of Samples
<1,000	2
1,000 – 10,000	3
10,000 – 50,000	4
50,000 – 100,000	5
>100,000	6

Samples shall be collected at locations that are representative of the fill destined for the proposed Third Roadway embankment and associated construction projects of the Port of Seattle Master Plan Update Improvements.

For fill sources with suspected contamination identified by the Phase I Environmental Site Assessment or with complex site conditions, please consult with Ecology's Northwest Regional Office, Water Quality Program's John Drabek, for the appropriate sampling requirements.

**E2d. 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 the proposed Third Runway embankment and associated construction projects of the Port of Seattle Master Plan Update improvements. Presented in the following table is the fill criteria established for hazardous substances specified in Section E2c.4. [Unclear: How about, "The following table establishes the fill criteria limitations for the hazardous substances identified in Section E2(c)(4) of this Order.]

Hazardous Substances	Fill Criteria mg/kg <sup>2</sup>
Antimony	16
Arsenic	20
Beryllium	0.6
Cadmium	2
Chromium <sup>5</sup>	42/2000
Copper	36
Lead <sup>4</sup>	220/250
Mercury	2

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Nickel <sup>5</sup>	100/110
Selenium	5
Silver	5
Thallium	2
Zinc	85
Gasoline	30
Diesel <sup>6</sup>	460/2000
Heavy Oils	2000

<sup>2</sup> mg/kg = milligrams per kilogram

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> Fill with diesel range organics concentrations greater than 460 mg/kg and less than 2000 mg/kg may be placed to within six feet of the ground surface. No fill with diesel range organics concentrations greater than 460 mg/kg may be placed within the first six feet of the embankment.

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 Northwest Regional Office, Water Quality Program's John Drabek, for the applicable fill criteria.

### E3. As-Built Documentation

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

- Names and locations of fill sources placed for the previous quarter
- Quantities of fill materials from these fill sources
- Locations and elevations of fill source materials placed within the embankment and associated construction projects of the Port of Seattle Master Plan Update improvements.

Ecology may require additional compliance conditions and/or corrective actions upon Ecology's review of the as-built documents. The quarterly summaries shall be provided to Ecology no later than 30 days following the last day of the quarter.

E4. Post Construction Monitoring

~~In order to minimize the potential for migration of hazardous substances, the Department of Ecology expects the Port of Seattle to take appropriate measures to minimize precipitation and subsequent runoff coming into contact with the fill materials. Furthermore, † The Department of Ecology expects that The Port shall monitor runoff and seepage from the fill area [all fill areas or just the embankment?] shall be monitored 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. [This section needs more work. The first part that I've deleted makes no sense. The embankment will have some impervious surface (the runway, etc.) the remainder will be a grass over to allow for recharge. Kevin, didn't you have some thoughts re instrumentation that should be used for monitoring? What if monitoring shows exceedances of the water quality criteria? What is the contingency?]~~

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 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 adverse impacts to the receiving water/ground water exceedances of the water quality criteria in either surface or ground water, Ecology may revise the fill criteria and/or institute require corrective actions to address these impacts.

F. Conditions to Prevent Transport of Contaminants:

F1. All Master Plan Update projects 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 STIA areas. The Port shall develop 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 approval no later than September 21, 2001. The plan shall be submitted to Ecology's Federal Permit Manager, SeaTac Third Runway.

F2. 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.

F3. 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 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.

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F4. 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**

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 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. **Turbid water generated from construction activities, including turbid dewatering water, shall not be discharged directly to waters of the state. Turbid water shall be pumped to a treatment facility to allow the fine materials to settle and then discharged as per the NPDES permit requirements, or transferred offsite to a treatment facility.**
9. Dewatering water that is not turbid may be discharged directly to waters of the state provided that:
  - a) the waste water has not been in contact with raw concrete or other harmful material; and
  - b) the water will meet all the water quality standards at the point of discharge.
10. **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. The offset mitigation identified in these documents shall comprise the **minimum** amount of mitigation that the Port is required to provide to offset impacts to low flows. Ecology may require additional mitigation if it deems it is necessary based on further review. Ecology's review of the above documents noted inconsistencies and the need to further clarify some of the conclusions drawn in these documents. Therefore, the Port shall submit a Revised Low Stream Flow Analysis and a Revised Summer Low Flow Impact Offset Facility Proposal within 45 days of receipt of this order for review and approval by Ecology. Failure to submit the revised documents may result in revocation of this Order.
2. **The Port is prohibited from placing any fill in wetlands or waters of the state in the Des Moines, Miller or Walker Creek basins until Ecology has provided written approval of the Low Flow Offset Operations and Maintenance Plan. Violation of this condition may result in the revocation of this Order.**
3. The revised Low Streamflow Analysis and Summer Low Flow Impact Offset Facility

Proposal shall be combined into one report and the report shall, at a minimum include the following elements:

- a. General:
  - The revised Low Streamflow report shall be stamped by a licensed professional civil engineer.
  - All supporting document 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.
  - The revised Low Flow Analysis shall include a discussion of 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.
  - Revised conceptual drawings for reserve storage vaults shall be submitted 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.
  - The revised 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 [what about Walker Creek?].
  - Contingency plans for providing water if vaults fail to fill to the required mitigation level shall be identified.
  - The Port shall establish a monitoring protocol to determine whether place embankment fill meets fill specifications for type of material, meets specifications for compaction rates, and meets assumption for infiltration rates.
  - The Port shall establish contingency measures to offset reduced recharge in the event fill does not meet performance standards for infiltration rates.
  
- b. Des Moines Creek-
  - No data was found in the Low Flow Analysis or Summer Low Flow Impact Offset Facility Proposal 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.
  - The data show annual low flow events that occur outside of the proposed mitigation window. The Port shall evaluate a start date of between July 8 and 15<sup>th</sup> to see if the filling analysis continues to show enough remaining storage to continue mitigation through October.
  - SDS3 vault design indicates that not all inlet pipes are tributary to the reserve storage vault. The effects of having a reduced tributary area shall be factored into the vault filling calculations [sheet number].
  - SDS4 vault design 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 [is there a sheet number?] The Port shall evaluate the feasibility of providing reserve storage only in the SDS3 vault.

c. Walker Creek-

- The Port has proposed to add new impervious surface in the Walker Creek basin by covering Pond F and by lining 3.5 acres of filter strip adjacent to the new runway. Ecology has determined that adding impervious surface not anticipated in the CSMP creates inconsistencies with the assumptions used to size and evaluate the surface water facilities, as well as creating inconsistencies in the amount of water assumed to recharge groundwater and adjacent wetlands. Ecology has therefore decided not to allow the Port to add the proposed additional impervious surfaces (2 acres for Pond F cover and the 3.5 acres of lined filter strips). The Port shall submit a revised proposal for the Walker Creek basin that evaluates and selects one of the following alternatives: 1) the collection of the winter runoff from the 69 acres of impervious being added in the Walker Creek non-contiguous groundwater basin; 2) the collection of a percentage of water at the toe of the Walker Creek embankment, or 3) the diversion of some winter runoff from adjacent SDW1B drainage system.
- The current proposal assumes no contribution from the embankment fill. If the revised low flow report includes a reinstatement of the embankment model, the size of the fill embankment tributary to Walker Creek shall be verified and modeled accordingly.
- The revised proposal needs to specifically analyze the impacts to Wetland 44A and propose contingencies to provide sufficient hydrology to the wetland to maintain its current size and functions. If hydrology cannot be adequately maintained, the Port shall consider the impacts permanent and must provide additional **on-site, in-basin** wetland mitigation that meets the mitigation goals of the NRMP.

d. Miller Creek-

- The revised report shall verify whether the 1991 impact number is .11cfs or .12cfs. Unless shown otherwise, Ecology shall presume that .12cfs is the correct number.
- The revised report 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.
- The revised report will submit documentation that clarifies whether the existing (1994) condition 1991 low flow is 0.784cfs (used in electronic files) or 0.79cfs (presented in the July 23, 2001 memorandum).
- The revised report shall correct the impervious acreage figures provided for the new NEPL vault. The new NEPL vault serves 26.29 acres of impervious (Miller 2006 HSPF model), rather than the assumed 32.31.
- The revised report shall consider reducing the number of facilities to reduce the maintenance and monitoring needs. The percent of reserve storage in each vault could be updated to maintain similar depths and/or fill time in the facilities.
- The NEPL site design provides water quality treatment downstream of the vaults. This is inconsistent with the draft operational plan which assumes collection of treated runway runoff receiving water quality pretreatment and details additional concerns with runoff from areas subject to motor vehicle use. NEPL is currently proposed to provide 40 percent of the total mitigation water and the Cargo site accounts for an additional 10 percent. The current low flow plan does not demonstrate whether it is feasible to collect reserve stormwater in these locations. The revised report shall evaluate all vault locations for feasibility and special design considerations (e.g., upstream spill control, oil controls, downstream compost filters,

- etc.) to ensure that stormwater entering the vaults will receive adequate treatment to ensure water quality.
- The revised report shall develop BMPs to ensure infiltration into the embankment and into the embankment conveyance system. A monitoring protocol to verify embankment infiltration rates shall be developed.
  - The revised report shall include revised Grading and Drainage sheets 129 and 130. The revised sheets shall clarify the flow in the collection swale.
  - Revised conceptual drawings shall be submitted with the revised report that address water quality concerns for the NEPL and Cargo reserve storage areas.
- e. **Monitoring and Reporting Requirements:** The revised low flow report shall develop a comprehensive monitoring protocol that at a minimum addresses the following elements:
- collection of stream gage data and an evaluation/correlation to expected flow rates established by the model.
  - water quality sampling and reporting. Water quality shall be tested at vault outflow and instream at a point 100 feet downstream of the outflow
  - metering of water from vaults,
  - infiltration rate sampling and monitoring to evaluate performance of the fill
  - contingency if water quality in vaults does not meet water quality criteria (additional treatment, other source, flocculation, coalescing oil water separator, etc.)
  - instream biologic monitoring –in-stream 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 after construction and then yearly until completion of the 15-year monitoring period. In addition to the BIBI monitoring required above, the Port shall develop a plan 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**
    - **Augmentation 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).**
    - **The report shall identify and analyze all direct or indirect to wetlands as a result of low flow impacts and the proposed low flow mitigation. Low flow mitigation water shall pass through the wetlands and will not be directly discharged to streams.**

J. **Operational Stormwater Requirements and Low Flows?:**



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 plan shall be made without prior review and approval.

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 plan.

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: XXX. 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 180 days prior the date it seeks to commence construction.

**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 percent of new impervious surface added at the project site, the Port must demonstrate that an equal 10 percent of retrofitting has occurred. The Port shall document the implementation of retrofitting in quarterly progress reports. [John Drabek has suggested we develop a compliance schedule for this. I would prefer to have the Port develop and submit for review and approval a schedule for retrofitting which meets certain standards, i.e. for every 10 % of new impervious an equal amount of retrofitting occurs. Please comment on what a reasonable rate of retrofitting would be.]**

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 associated basin plan. If the Port decides to participate in future regional detention facilities the Comprehensive Stormwater Plan shall be amended to ensure that the following performance standard is met. 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:

No stormwater generated by operation of the facilities approved by this Order shall be discharged to state receiving waters until a Water Effects Ratio Study (WERS) has been completed and approved by Ecology and effluent limitations and monitoring requirements have been established in the Port's NPDES permit. A WERS shall be submitted to Ecology for review and approval. The Port shall consult with Ecology's Northwest Regional Office Water Quality Program's John Drabek to determine an appropriate time for submittal of the WERS.

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).

The Port shall design, construct, operate, and maintain stormwater treatment facilities to ensure that discharges will 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.

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 approval by Ecology.

The Port shall submit the final stormwater treatment and flow control facility design to Ecology for review and approval 60 days prior to the start of construction of the facilities. If Ecology has not approved the final stormwater treatment and control facility within 30 days after receipt it is deemed approved. [We need to determine staffing requirements for further review post issuance of the permit.] 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.

Within 180 days of issuance of this Order the Port shall submit to Ecology for review and approval a Stormwater Facilities Operation and Maintenance Plan which addresses maintenance and operation of all STIA stormwater facilities approved by this Order. If Ecology has not approved the final stormwater treatment and control facility within 30 days after receipt it is deemed approved. 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 storm events.

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

**K. Stormwater Discharge Limitations and Monitoring Requirements:**

**a. Limitations**

Stormwater discharges shall not cause a visible change in turbidity, color, or cause a visible oil sheen in the receiving water or any stormwater detention or retention pond. The following effluent limitations may be changed by Ecology in future NPDES

EFFLUENT LIMITATIONS: STORMWATER CONSTRUCTION OUTFALLS	
Parameter	Maximum Daily <sup>a</sup>
Oil and Grease	10 mg/L <sup>1</sup>
Oil and Grease	No visible sheen

Temperature	Temperature shall not exceed 18.0 °C due to human activities. Incremental temperature increases resulting from point source actives shall not, at any time, exceed $t=28/(T+7)$ .  For purposes hereof, "t" represents the maximum permissible temperature increase measured at a mixing zone boundary, and "T" represents the 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.
Turbidity	Turbidity in the receiving water shall not exceed 5 nephelometric turbidity units (NTU) over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU 5 NTU above background
pH	6.5 to 8.5
pH	Human caused variation within the above range of less than 0.5 units
*The maximum daily effluent limitation is defined as the highest allowable daily discharge.	

<sup>1)</sup>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).

b. Stormwater Monitoring Schedule for Construction Stormwater Discharges

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

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.

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.

Parameter	Units	Sample Point <sup>1</sup>	Minimum Sampling Frequency	Sample Type
Oil and Grease	Mg/l	Point of Discharge	When visible sheen observed	grab
Temperature	<sup>0</sup> C	Upstream <sup>2</sup> and downstream at the edge of the mixing zone	Weekly <sup>3</sup>	grab

<sup>1</sup>Samples shall be collected from the outfall or an on-line stormwater drain access point nearest the outfall terminus.

<sup>2</sup> 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.

<sup>3</sup> During the months of July, August, and September

6. 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 10-year 24 hour precipitation event estimated from data published by the National Oceanic and Atmospheric Administration.

7. 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.

8. Reporting - Construction stormwater

Monitoring result for construction stormwater discharges shall be submitted every other month.

9. 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.

10. In addition to the above, the Port shall submit a monitoring plan for stormwater and construction dewatering discharges from construction for each individual/separate (?) 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. **The plan shall be deemed approved if Ecology does not respond to the plan at least five (5) days prior to the scheduled date 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, distressed or dying 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 4325-649-7000, and within 24 hours of other events contact Ecology's Federal Permit Manager 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 take, 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 or dying 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 what to do with them. 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 conditioned 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 an 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.

**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.

Ecology reserves the right to revoke this certification if the Port fails to meet the compliance schedule requirements of Conditions X, X, etc. of this Order. Compliance with this schedule is

necessary for Ecology to have reasonable assurance that the proposed project will be constructed and operated so as to meet state water quality standards and other appropriate requirements of state law.

**O. Appeal process:**

Any person aggrieved by this Order may obtain review thereof by appeal. The Port can appeal up to 30 days after receipt of the permit, and all others can appeal up to 30 days from the postmarked date of the permit. The 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 160<sup>th</sup> 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 \_\_\_\_\_ at Olympia, Washington.

\_\_\_\_\_  
Gordon White, Program Manager  
Environmental Coordination Section  
Shorelands and Environmental Assistance Program

**AR 017960**

**Attachment X: 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.

**AR 017961**



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.

**AR 017962**

DOE 8/13/01 **0327**

Sheet L1.1: Provide revised sheet with note that says that if S. 157<sup>th</sup> 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. 160<sup>th</sup> 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. The sewer easement areas were not included in calculations for mitigation credit.

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 8<sup>th</sup> 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, they would supplement the existing trees with enhancement plantings to achieve this density.*

How will survival monitoring be performed in these areas to differentiate these two types of areas?

**Resolution: Discuss in revised section in NRMP on performance standards and monitoring. [delete, but be sure is covered in conditions.]**

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.

AR 017963

DOE 8/13/01 0328

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

Sheet C3: The relocated S. 154<sup>th</sup> Street may severely impact the hydrology of the remaining downstream sides of Wetland 11 and Wetland 9. Where or how will the hydrological support be provided to these wetlands after construction? This was overlooked and not discussed during our meetings.

*Wetland hydrology will be maintained by water seeping through the embankment.*

**Resolution: Provide additional information after low flow analysis work has been completed. [provide analysis in Low Flow study that addresses direct and indirect impacts to wetlands.]**

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: How will water get to Wetland 44a after the TESC channel is removed?  
*Existing groundwater and embankment seepage will provide hydrology. The TESC channel won't be removed, believes it discharges to Pond F.*

**Resolution: Verify whether TESC channel will remain in place. Provide information on what interim measures will be in place to provide hydrology to the wetland while temporary Pond B is located there?**

The flow monitoring locations are not shown on the stormwater management plan.

**Resolution: Provide revised sheet for SMP. [discuss with Kelly W.? Perhaps it will be shown on the map J. Kelley is supposed to send]**

Sheet C8: Provide additional information that addresses 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: Will the northernmost dirt piles on the western edge of the mitigation site be removed? 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 revised sheet.

Will the cut between phase 1 and phase 2 of the grading effectively drain portions of the existing wetland?

Parametrix is assessing this and will provide a map of the potentially impacted area. [was this resolved by the information they submitted re zone of influence?]

**Resolution: Provide map.**

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, will the perforated pipes sink into the substrate and become blocked? Is the prepared sub-grade compacted?

*The engineers will check this. [did we get any info on this?]*

**Resolution: Confirm with your engineers and let us know their determination. [permit condition: design substrate to prevent sinking of perforated pipe]**

Sheet TE1: There is no discussion on the 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. What about erosion? Can the ditch handle the maximum flows that may be encountered? Will it create downstream erosion? They could line the ditch with Visqueen and quarry spalls. Provide revised sheet with additional details to manage potential erosion and amend text in NRMP if necessary.

Text also discusses two retention ponds that are not shown. Shouldn't Area 1 have a sedimentation pond?

*This has not been resolved yet. The Corps also brought it up in their comments.*

**Resolution: Provide additional information on this issue. [do we have additional information on this yet?]**

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. Is this a typographical error? 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.

DOE 8/13/01 0330

AR 017965

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.

Attachment X: 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) 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