

MEMORANDUM

DELIBERATIVE – DO NOT DISCLOSE

TO: Ann Kenny, Washington State Department of Ecology
FROM: Katie Walter
DATE: August 7, 2001
RE: DRAFT 401 CONDITIONS FOR THE PORT OF SEATTLE NRMP

AUBURN MITIGATION SITE REVISIONS

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 mislocated. 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.

AR 018349

PERFORMANCE STANDARDS

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 use of 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. Both the U.S. Army Corps of Engineers, and Washington State Department of Ecology will be notified when monitoring field work is occurring, and given opportunities to observe the field work. (ANN MAY HAVE THIS COVERED.)
7. As-built 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.
8. 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.
9. 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.

10. Existing wetland and mitigated wetland boundaries (including all areas downslope 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.
11. 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)
12. 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 (Downslope 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."
13. 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."

14. In the revised low-flow submittal, direct and indirect impacts to wetlands must be addressed. **NEEDS MORE INFORMATION HERE**
15. 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 soil microbial inoculants or through introduction of well-decomposed organic matter.
16. The Port shall redevelop the sample data sheets to meet all of the monitoring requirements laid out in this order.

AUBURN

Emergent marsh plants shall be planted with rhizomes 12 inches on center (o.c.) instead of the 18 inches o.c. specified. Areas designated for hydroseeding that have visible surface water at the time of planting 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.

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."

LOW FLOW

Low-flow augmentation water shall pass through the wetlands and will not be directly discharged to the stream.

BORROW SITE 3

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 the drainage swale that 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 that includes 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 any vegetation or fill in the swale that 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 upslope of the wetlands within the property must be included in the wetland buffer. This area is depicted in Attachment ? Borrow Area 3 Wetland Buffer. A restrictive covenant will be drafted for this additional buffer area.

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 allow for monitoring of the surface water in wetland 30. The evaluation approach states that shallow groundwater monitoring wells will be used. The evaluation approach must be changed so that surface water depths are

Memorandum to Ann Kenny
Washington State Department of Ecology
August 7, 2001
Page 6

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measured monthly during the period from December through April and compared to pre-construction data.

BORROW SITE 1

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.

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