

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**

**Item No.** 5h

**Date of Meeting** December 13, 2011

**DATE:** December 2, 2011

**TO:** Tay Yoshitani, Chief Executive Officer

**FROM:** Elizabeth Leavitt, Director, Aviation Planning & Environmental  
Robert Duffner, Environmental Compliance Program Manager

**SUBJECT:** Department of Ecology NPDES Permit Agreed Order for the Seattle-Tacoma  
International Airport

**Amount of This Request:** \$0      **Source of Funds:** 2011 and 2012 Operating Budgets;  
Future Individual Project Authorizations

**ACTION REQUESTED:**

Authorization for the Chief Executive Officer to execute an agreed order with the Washington State Department of Ecology (Ecology), related to the Seattle-Tacoma International Airport's National Pollutant Discharge Elimination Systems (NPDES) permit, to conduct an environmental investigation, and to implement corrective actions as needed, to address stormwater discharges with elevated pH (alkaline).

**SYNOPSIS:**

Since July 2010, discharges from stormwater detention ponds have periodically exceeded the Airport's NPDES Permit upper pH effluent limit of 8.5 Standard Units. The pH exceedances have primarily occurred in stormwater discharging from large detention ponds. There have been 18 elevated pH measurements out of 126 discharge samples collected throughout the Airport. The acceptable pH range is from 6.5 to 8.5. The elevated pH readings have ranged from 8.7 to 9.6. Although the pH of discharges to streams has at times been elevated, no measurable effects have been found in the water quality of the streams.

The detention ponds associated with the elevated pH detain stormwater for extended periods of time and then slowly release the water to local streams. The ponds have been very effective in reducing erosive flows in our streams. However, the long-term water detention encourages the growth of naturally occurring algae, which is likely modifying the pH of water.

Airport staff has worked with Ecology to define the scope of this agreed order. It provides that the Port will implement a study plan to characterize and isolate the pH source, evaluate data collected and implement corrective actions, as needed, to eliminate future pH limit violations.

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Execution of this agreed order will require an estimated expenditure of up to \$90,000 through the end of 2012, for which funds have been included within the 2012 operating budget. Depending upon any necessary longer-term improvements, the ultimate cost of complying with the agreed order could be up to \$3,000,000. However, if necessary, those additional costs would not be expected to occur until 2013.

### **BACKGROUND:**

The Airport's NPDES Permit authorizes stormwater discharges associated with industrial activities, which includes runoff from runways and taxiways. The Permit contains numerical effluent limits for potential pollutants such as copper, zinc and oils, as well as limits for pH. These limits are set at levels designed to ensure stormwater runoff discharges associated with Airport operations do not adversely affect local streams and Puget Sound.

The Airport's NPDES Permit, as well as other environmental permits associated with Third Runway (16R/34R) construction, requires the Port to detain stormwater runoff from impervious surfaces that could otherwise increase erosion and flooding in local streams. Over the past 10 years, the Port has met this requirement through the construction of a series of stormwater detention ponds and vaults.

Beginning in July 2009, discharge monitoring identified a recurring pattern of elevated pH from three detention ponds located on the Airport's west side. These ponds receive runoff from runways and taxiways, and discharge directly to Miller and Walker Creeks. Staff immediately reported these permit exceedances to Ecology and initiated preliminary investigations. These investigations indicated that the elevated pH is not directly attributable to Airport operations and that the pH of Miller and Walker Creeks remains in the acceptable range when the ponds are discharging. Observations over this period noted increased algal growth in the west side ponds during the summer and other periods of extended sunshine, which appear to coincide with the increased pH levels.

The Airport's NPDES Permit requires the Port to not only investigate these pH exceedances, but take actions necessary to prevent exceedances. Port staff worked directly with Ecology to review potential control measures, and have implemented some operational changes to control algal growth in the ponds. However, after a review of preliminary investigation results and the results of these interim actions, both Port staff and Ecology agreed that additional investigations are needed before the most appropriate solution can be identified and implemented.

As a result of this decision, Port staff and Ecology worked collaboratively to develop a plan to further investigate and implement actions as needed to correct the pH exceedances. This plan is represented in the Agreed Order No. 8755, issued to the Port on November 2, 2011. The agreed order requires that the Port prepare and implement a study plan, submit interim and final reports, implement operational corrective actions and implement structural and/or treatment controls as needed. A compliance schedule for completing these efforts is contained in the order.

### **PROJECT JUSTIFICATION:**

This authorization request will allow the Port to continue to collaboratively work with Ecology to further investigate elevated pH in stormwater ponds and to identify necessary control

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measures. The agreed order provides an achievable compliance schedule for completing the investigation as well as time needed to define future actions as necessary, gain appropriate approvals and complete a project in the event that structural and/or treatment controls are needed to address the pH exceedances.

### **PROJECT SCOPE OF WORK AND SCHEDULE:**

Primary elements of the agreed order scope of work are as follows:

- Prepare and submit a study plan to Ecology for approval no later than December 15, 2011, to isolate and characterize factors that are causing elevated pH within the stormwater detention ponds. Port staff has completed this study plan and is prepared to submit it to Ecology.
- Submit an interim progress report to Ecology no later than June 30, 2012.
- Implement operational corrective actions no later than July 31, 2012.
- Submit a final report to Ecology no later than October 31, 2012.
- Implement and construct necessary structural and/or treatment controls no later than October 15, 2013.

### **FINANCIAL IMPLICATIONS:**

#### **Cost Estimate:**

The study plan investigation and reporting costs are estimated to be \$80,000. A minor expenditure will occur in December 2011 and the remaining study costs would be incurred in 2012.

Anticipated operational corrective actions in 2012 include modifications to the ongoing management of the stormwater ponds. The cost of these modifications is not expected to exceed \$10,000.

A preliminary assessment of potential structural and/or treatment controls has been completed. Although the need for these controls has not yet been determined, their cost has been estimated to be less than \$3,000,000.

#### **Budget/Authorization Summary:**

The study plan and potential operational corrective action have been anticipated and included in the Aviation Environmental and Maintenance 2011 and 2012 operating budgets.

Additional funding may be required for the design and construction of potential structural and/or treatment controls. Future Commission authorization will be requested in the event such controls are required, or if the total anticipated project costs exceed \$300,000.

### **ENVIRONMENT AND SUSTAINABILITY:**

Implementation of the agreed order will allow the Port to determine if the elevated pH discharges from stormwater ponds to Miller and Walker Creeks are adversely impacting these water resources and provide a mechanism to identify and implement necessary control measures.

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### **STRATEGIC OBJECTIVES:**

Implementation of the agreed order would support the Port's strategic objective of exhibiting environmental stewardship through our actions. Actions taken under the order would assure compliance with the Airport's NPDES Permit and provide an opportunity to improve water quality in Miller and Walker Creeks.

### **BUSINESS PLAN OBJECTIVES:**

The Aviation Division's business plan seeks to lead the airport industry in environmental innovation and minimize the Airport's environmental impacts. Implementation of the agreed order will allow the Port to characterize any potential impacts the elevated pH discharges may have on the environment and identify appropriate corrective actions if needed.

### **TRIPLE BOTTOM LINE SUMMARY:**

Implementation of the agreed order allows the Port to ensure its operations are protective of the environment and that its actions are transparent and open to the regulatory agency review and approval for the benefit of local communities and interested members of the public.

### **ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:**

The following alternatives were considered for accomplishing the work described in the scope of work:

#### **Alternative 1**

Do not execute the NPDES Permit agreed order for the Seattle-Tacoma International Airport stormwater discharges. This alternative could result in the issuance of a unilateral Ecology enforcement order to perform the work, which would eliminate Port control over the investigation and assessment of necessary corrective actions. The imposition of penalties would also be likely. This is not the recommended alternative.

#### **Alternative 2**

Execute the NPDES Permit agreed order and conduct the investigation and assessment of necessary corrective actions. This alternative will provide a mechanism to adequately evaluate the elevated pH and implement corrective actions as needed within an achievable compliance schedule. **This is the recommended alternative.**

### **OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:**

Attachment: Department of Ecology Agreed Order Number 8755

### **PREVIOUS COMMISSION ACTION:**

None.