PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 6b

Date of Meeting April 28, 2009

DATE: April 9, 2009

TO: Tay Yoshitani, Chief Executive Officer

FROM: Richard Ottele, General Manager, Aviation Facilities and Infrastructure
Bob Riley, Director, Airport Capital Improvement Program

SUBJECT: Industrial Wastewater System (IWS) Hydraulics Improvements Project at Seattle-Tacoma International Airport.

ACTION REQUESTED

Request for authorization for the Chief Executive Officer to advertise for construction bids and to award contracts and employ Port crews and construct the IWS Hydraulics Improvements Project at Seattle-Tacoma International Airport (Airport) for a total project cost of $1,185,000.

SYNOPSIS

This memorandum requests authorization to use Port crews and small works construction contracts to complete the IWS Hydraulics Improvement Project. This work is the final modification in completing the IWS Improvement program. The IWS upgrades began in the 1990's under the National Pollution Discharge Elimination System (NPDES) permit. This project will prevent high biological oxygen demand (BOD) stormwater from leaking from IWS lagoons 1 and 2 into low BOD IWS lagoon 3. This leakage contaminates the water stored in lagoon 3 resulting in increased treatment and discharge costs. No additional budget is being requested as the budget for the project has been previously authorized.

BACKGROUND

The IWS system collects stormwater runoff from 375 acres of impervious surface where planes are fueled and de-iced. The water is separated according to its BOD level, with high BOD water stored in lagoons 1 and 2 and low BOD water stored lagoon 3. All of the water is treated in the Airport's Industrial Wastewater Treatment Plant (IWTP). The IWTP removes suspended solids and oil. After treatment, high BOD effluent is sent to the King County South Treatment Plant for secondary treatment, while low BOD effluent is discharged to Puget Sound in accordance with the Airport's NPDES permit. Treatment through the South plant is significantly more expensive, so it is important to keep the high and low BOD water separated.

PROJECT DESCRIPTION/SCOPE OF WORK

Project Statement:

Make improvements to the hydraulic piping and controls for the IWS system by the fall of 2009 for an estimated cost of $1,185,000.

Project Objectives:

- Improve the capability to control IWS stormwater flows between the IWS lagoons.
- Reduce IWS stormwater treatment costs.
- Maintain compliance with the Airport's NPDES permit requirements.

Scope of Work:

The hydraulic improvements at the IWTP plant will:

- Relocate an electrical power and control ductbank.
- Construct a new 24-foot deep vault at manhole 491-A.
- Install a 48-inch valve, piping, controls, and actuator.
- Connect the new valve into the existing IWTP control system.

The work is planned to be accomplished through a combination of Port Construction Services (PCS) self-performed work employing Port crews, plus small works construction contracts for the specialized trades that PCS does not do. The contracted work will be less than $200,000. Port will also lease equipment to perform the work.

STRATEGIC OBJECTIVES

This project supports the Port strategy to "Exhibit Environmental Stewardship Through our Actions". The hydraulic improvements will prevent unintentional contamination and provide control so that the IWTP can be operated in the most efficient and cost effective manner, while treating water in compliance with the NPDES permit.

ALTERNATIVES CONSIDERED/RECOMMENDED ACTION

Alternative 1: Do nothing. Treatment and discharge costs cannot be optimized due to high BOD leakage into the low BOD storage lagoon. There also is a possibility fines could be assessed, if the Airport does not meet discharge regulations.

Alternative 2: Proceed with the project to correct the hydraulic leakage. This is the recommended alternative.

FINANCIAL IMPLICATIONS

The costs of this project are included in the current budget and have been previously authorized. This project will complete the IWS Improvements program.

Budget/Authorization Summary	Previous IWS Work	CIP C100451
Original budget	$31,000,000	$14,700,000
Budget transfers	$484,899	($379,815)
Revised budget	**$31,839,696**	**$14,320,185**
Budget savings	($354,797)	($2,308,000)
Current budget	$31,484,899	$12,012,185
Previous authorizations this CIP	$31,850,000	$21,782,000
Authorizations for budget transfers	($10,304)	($7,461,815)
Current request for authorization	$0	$0
Total authorizations, including this request	**$31,839,696**	**$14,320,185**
Remaining budget to be authorized	$0	$0

Project Cost Breakdown	**Total Project**
Construction costs	$698,000
Purchase long-lead material	$75,000
Sales tax	$75,000
Outside services	$201,000
Other	$136,000
Total	$1,185,000

Source of Funds

This project is included in the 2009-2013 capital budget and plan of finance as a committed project under CIP C100451. The funding source will be existing bond proceeds.

ECONOMIC IMPACTS

This project will minimize stormwater treatment costs by preventing uncontrolled contamination of high BOD water from IWS lagoons 1 and 2 into IWS lagoon 3. Specific savings are variable and difficult to calculate because they depend on many factors including the size, duration and timing of large rain events and the fill status of the three IWS lagoons when rain and deicing events occur.

ENVIRONMENTAL SUSTAINABILITY/COMMUNITY BENEFITS

This project will increase the effectiveness of operation of the IWS system in meeting environmental permit requirements that benefit both the surrounding communities and Puget Sound.

TRIPLE BOTTOM LINE SUMMARY

This project will decrease long term operating costs for the airport, reduce volumes of effluent that must be treated offsite, and help ensure that only clean water enters Puget Sound.

PROJECT SCHEDULE

Start construction	July 2009
System in operation	October 2009
Project completion	June 2010

Every effort will be made to complete the construction by October 1, 2009, before the onset of the rainy season. If the new pipe and valve cannot be operational by that date, the site will be restored to a stable condition and construction will be suspended until the following spring.

PREVIOUS COMMISSION ACTION

Pre-Phase 1 Capital Improvement Program Authorizations

On January 26, 1994, the Commission authorized $407,500 to prepare preliminary tenant and Port pollution prevention plans, conduct chemical and biological water quality sampling, verify existing drainage systems, pay for the NPDES permit for the Airport's Industrial Wastewater Treatment Plant, and conduct stormwater system maintenance to meet new NPDES requirements.

On April 26, 1994, the Commission authorized $515,000 for a comprehensive IWS plan, which was incorporated into the Engineering Report, required by the draft NPDES permit submitted to the Washington Department of Ecology (WDOE) in December 1995.

On October 24, 1995, the Commission authorized $3,628,000 for the NPDES permit process for the IWS including sampling and testing, engineering support, coordination with WDOE, design and construction of interim improvements and thirty percent design of Lagoons No. 1 and No. 2 improvements and other miscellaneous improvements.

On June 10, 1997, the Commission authorized $350,000 to create snowmelt runoff facilities to comply with the requirements of the NPDES permit.

On July 9, 1999, the Commission authorized $8,372,000 for sampling and testing, engineering support, coordination with WDOE, design and construction of Lagoon No. 1 and No. 2 improvements, and other miscellaneous improvements, and thirty percent design of Lagoon No. 3 expansion.

Phase 1 Capital Improvement Program Authorizations

August 24, 1999, the Commission authorized $19,000,000 for the expansion of Lagoon No. 3 to seventy two (72) million gallons and IWS piping within South 154th Street.

On July 9, 2002, the Commission authorized $500,000 for Industrial Wastewater System Upgrade Phase IVA on a project-wide basis, for a total estimated cost of $19,391,000.

Phase 2 Capital Improvement Program Authorizations

On September 12, 2000, the Commission authorized $600,000 for preliminary design work on a project-wide basis to optimize the ability to meet the requirements of the proposed Engineering Report and the current NPDES permit.

On September 25, 2001, the Commission authorized $509,000 for construction of the section of the AKART pipeline within International Boulevard (State Route 99). This was a portion of the authorization request for utility improvements within International Boulevard.

On March 26, 2002, the Commission authorized $1,500,000 for the design work to meet the AKART requirements for the IWS. The design includes piping, a pump station, treatment plant improvements to segregate flows and a connection to the King County Renton Treatment Plant for treatment of the high BOD IWS flow after pre-treatment at the Airport's Industrial Wastewater Treatment Plant and other miscellaneous improvements.

On November 11, 2003, the Commission authorized $19,173,000 for the Industrial Wastewater System Upgrade Project.