PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 6d

ACTION ITEM **Date of Meeting** October 23, 2012

DATE: October 15, 2012

TO: Tay Yoshitani, Chief Executive Officer

FROM: David Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Electrified Ground Support Equipment (EGSE) Charging Stations CIP #C800335

Amount of This Request: $16,200,000 (including $200,000 expense)

Source of Funds: Airport Development Fund, Grants, Existing Revenue Bonds, Future Revenue Bonds

Est. State and Local Taxes: $0 (tax exempt) **Est. Construction Jobs Generated:** 35

Total Project Cost: $30,700,000 (including expense funds)

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to: (1) advertise and execute a construction contract for Phase 1 of the Ground Support Equipment-Electrical Charging Stations Project-Installation of Chargers; and (2) pre-purchase electrified ground support equipment (EGSE) chargers for Phase 2 of the project. This authorization totals $16,200,000 (including $200,000 expense) of the total estimated project cost of $30,700,000.

SYNOPSIS:

This request enables staff to continue to move forward on the project to enable the phase-out of fossil-fueled vehicles such as baggage tugs and aircraft pushback tractors at Seattle-Tacoma International Airport. The new electrified ground support equipment will be owned and operated by the airlines. The Airport intends to install EGSE chargers throughout the passenger terminals for airline use, which will help improve air quality, reduce the carbon footprint of the Airport, reduce airline maintenance costs, and save fuel costs. It is estimated 20 chargers will power 40 EGSE vehicles. With full airline participation, a fuel savings of $2.8 million per year is anticipated, with CO_2 reduction of 10,000 tons per year (the equivalent of 1,700 cars being removed from local roadways).

The overall EGSE program consists of the following three major components:

- Port Construction Services (PCS) has installed 20 chargers in a demonstration project and Horizon Air is ordering EGSE equipment to replace its existing fossil-fueled GSE fleet.

- Phase 1 will install approximately 124 chargers on Concourses C and D and the North Satellite.
- Phase 2 will install approximately 112 chargers at the remaining passenger terminals.

The entire program will install approximately 256 chargers throughout the Airport capable of charging 512 pieces of GSE simultaneously. The total estimated cost of the project is $30.7 million.

The previous Western Washington Clean Cities Coalition (WWCCC) $5 million grant for EGSE vehicles is being revised so that the funds can be used to offset the cost of the charger procurements. Alaska Air Group is utilizing approximately $1 million of the grant to assist with its purchase of approximately 226 EGSE units. The remainder of the grant will be utilized to offset the costs of procuring and installing the chargers in Phase 1. Additionally, staff is pursuing anticipated Federal Aviation Administration (FAA) Voluntary Airport Low Emission (VALE) program grants of up to $6 million for Phase 1 in fiscal year 2013, and up to $9 million for Phase 2 in fiscal year 2014. Phase 1 design has been expedited to allow the Port and Alaska Air Group to meet the dates for grant eligibility for the WWCCC grant.

In March 2012, the airlines approved the full project in a Majority in Interest vote. Previous Commission authorizations include $1.51 million on October 26, 2010, for preliminary design, and $8 million on April 3, 2012, to install 20 chargers at the demonstration site, order charging units, and design the installation. This project was included in the 2012 – 2016 capital budget and plan of finance.

BACKGROUND:

Since 2005, staff has been working with the airlines towards installing EGSE equipment at the Airport. In 2010, a WWCCC grant was approved for $5 million to offset the additional cost of EGSE vs. fossil-fueled GSE. Staff has renegotiated the WWCCC interlocal agreement to extend it until September 2013. Alaska Air Group will utilize approximately $1 million for EGSE equipment and the Port will attempt to utilize the balance of the grant by September 2013.

Currently, Washington law allows a waiver of state sales tax on the purchase and installation of energy-saving equipment until 2016, which will save approximately $2 million in taxes for the entire project.

Project design and construction have been accelerated in order to meet grant funding deadlines. Although this poses project risks, staff believes that these risks are manageable and that the Port should continue on this accelerated schedule.

- Design - The design is the multiple repetition of the same basic charger layout at various locations. However, the compressed design schedule adds change order risk given the amount of conduit being run from existing electrical rooms out to the charging stations, possible lack of information about the existing conditions along the route, insufficient panel descriptions, and deletion of final detailed design review from the schedule.
- Advertising for bids - Going from 100% design to advertisement without a detailed design review means there is a likelihood of addenda to the advertisement for bids on this project and depending on the depth and breadth of information conveyed, this could lead

to a postponed bid date, thereby putting additional pressure on the compressed construction schedule to meet the WWCCC completion date of September 2013.

- Construction schedule - Should the project be delayed, the contractor may have to double shift or work overtime (which may result in additional costs) in order to meet the grant deadline for completion. Staff will assess that risk should the project encounter unforeseen delays. As it is now, a good portion of the work will need to occur at night.
- Operational coordination - As is typical for this type of project, all work at the stations will require close coordination with airline operations with limited space, little flexibility, and tight windows of opportunity to complete the work, including electrical shutdowns that could cause contractor delays. However, most of the work can be accomplished without disrupting airline operations, so the coordination risk is small.

PROJECT JUSTIFICATION:

Project Objectives:

This project:

- Reduces carbon emissions
- Reduces fuel consumption by approximately one million gallons per year
- Reduces airline maintenance costs
- Uses available grant funding
- Takes advantage of Washington state sales tax waivers that expire in 2016 for the project elements related to utilizing electrical power vs. fossil fuel

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

This project will ultimately install electrical chargers throughout the passenger terminal ramps. The chargers and the long-lead electrical equipment will be pre-purchased by the Port and delivered to contractors when needed. PCS has installed 20 charging units on Concourse C as a demonstration project for airline training as well as operational use. These units will be energized on October 24th. Concurrently, Horizon is converting their existing EGSE equipment so that they can utilize the new chargers. The installation of the remaining charging units will be done in two phases. Phase 1 will consist of the North Satellite, Concourse C, and Concourse D. Phase 2 will upgrade two power centers and install chargers on the remainder of the Airport.

Schedule:

Advertise Phase 1	November 2012
Prepurchase Phase 2 Chargers	January 2013
Advertise Phase 2	February 2013
Phase 1 Complete	September 2013
Phase 2 Complete	September 2014

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary:	Capital	Expense	Total Project
Original Budget	$14,410,000	$0	$14,410,000
Budget Increase	$15,788,000	$502,000	$16,290,000
Revised Budget	$30,198,000	$502,000	$30,700,000
Previous Authorizations	$9,410,000	$ 100,000	$9,510,000
Current request for authorization	$16,000,000	$200,000	$16,200,000
Total Authorizations, including this request	$25,410,000	$300,000	$25,710,000
Remaining budget to be authorized	$4,788,000	$202,000	$4,990,000
Total Estimated Project Cost	$30,198,000	$502,000	$30,700,000

Project Cost Breakdown:	This Request	Total Project
Construction	$13,604,000	$23,160,000
Construction Management	$1,067,300	$2,900,000
Design	$0	$2,500,000
Project Management	$1,458,700	$1,900,000
Permitting	$70,000	$180,000
State & Local Taxes (estimated)	$0	$60,000
Total	$16,200,000	$30,700,000

Budget Status and Source of Funds:

EGSE Charging Stations CIP #C800335 is included in the 2012-2016 capital budget and plan of finance with a budget of $14,410,000. The cost increase was covered by a corresponding reduction in CIP #C102165, Aeronautical New Project Allowance, resulting in no net change in the total Aviation capital budget. As described in the April 3, 2012, design and pilot-project authorization memo, the budget increase was a result of the preliminary design efforts that revealed: 1) that two power centers did not have sufficient capacity to support the additional power requirements of the EGSE system on Concourse B and the South Satellite, and 2) that the original estimate did not have the appropriate soft costs applied. The source of funds for this project will be existing revenue bonds, FAA grants totaling up to $15 million, the WWCCC grant of up to $4 million, and future revenue bonds.

Financial Analysis and Summary:

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	$30,700,000
Business Unit (BU)	Terminal & Airfield
Effect on business performance	Costs will be recovered through various rates and charges mechanisms: electrical energy through utility charges; infrastructure improvements through terminal rents.
IRR/NPV	N/A
CPE Impact	$0.16 in 2014; however, no change from business plan forecast as this project was included in the plan

STRATEGIC OBJECTIVES:

- Exhibit Environmental Stewardship through our Actions.
- Be the greenest and most energy efficient port in North America; Reduce air pollutants and carbon emissions.

The Port's purchase and installation of EGSE charging stations will promote and expedite carrier adoption of EGSE vehicles such as electric pushback tractors and tugs. Implementation of EGSE reduces emissions at the Airport. EPA considers electric vehicles the best alternative vehicle fuel option for emission reductions.

ENVIRONMENTAL SUSTAINABILITY:

The project will promote the use of energy efficient electric equipment, reduce use of fossil fuel, and reduce greenhouse gas emissions by up to 10,000 metric tons of CO_2. Sea-Tac's electrical needs come from nearly 100 percent renewable sources providing air quality improvements both locally and regionally. This project eliminates the need of up to one million gallons of fossil fuel, resulting in a reduced demand for non-renewable natural resources.

BUSINESS PLAN OBJECTIVES:

- Operate a world-class international airport by anticipating and meeting the needs of our tenants, passengers and the region's economy
- Lead the airport industry in environmental innovation and minimize the Airport's environmental impacts

TRIPLE BOTTOM LINE SUMMARY:

This project helps to clean the environment by reducing greenhouse gasses, creates short-term construction jobs, and incorporates small business opportunities to encourage small business participation in a major construction contract.

This project helps the environment by reducing energy consumption at the Airport and allows our business partners to expand their operations.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1: Do nothing.

In the do-nothing scenario, the Port would let market forces determine the rate at which EGSE implementation would occur. Staff have concerns that without promoting the use of EGSE, and providing the necessary infrastructure for it, Sea-Tac may inadvertently condone the use of fossil fueled GSE for an extended period. Specifically, as carriers invest in EGSE at airports with poor air quality, their legacy fossil fueled equipment will be redeployed in areas that do not have immediate air quality concerns such as Sea-Tac.

Alternative 2: Port purchases and installs EGSE charging stations.

The Port of Seattle proposes to purchase and install the necessary infrastructure for Sea-Tac airline carriers to utilize EGSE. By providing EGSE charging stations, carriers are encouraged to preferentially upgrade their GSE fleet with electric vehicles at Sea-Tac Airport. EGSE provides significant financial benefit for carriers through fuel and maintenance savings. Because EGSE do not have tailpipe emissions, Sea-Tac will be able to document and quantify air quality benefits from the project as well. The fuel savings associated with an Airport-wide EGSE program could reach one million gallons annually. **This is the preferred alternative.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

- On April 3, 2012, the Commission authorized $ 8,000,000 to: 1) prepare full design documents for the Electrified Ground Support Equipment charging station Project; 2) for PCS to install approximately 20 chargers as a demonstration project; 3) approve budget for the EGSE overall project; and 4) contract for long lead time electrical equipment for power center upgrades.
- On September 12, 2011, the Commissioned authorized signing no-cost contracts for EGSE vehicles and EGSE chargers.
- On May 10, 2011, the Commission was briefed regarding progress on the EGSE project prior to soliciting pricing for rolling stock.
- On October 26, 2010, the Commission authorized $1,510,000 for preliminary design, necessary contracts, and work by Port forces to begin to implement the ultimate project; pre-purchase specialized equipment and materials through competitive bid processes; and to authorize Port Construction Services to perform Regulated Materials Management (RMM) investigations and self-perform necessary associated work.
- On September 28, 2010, the Commission was briefed on the 2011 capital budget that included the above-mentioned EGSE projects.
- On September 8, 2005, the Commission was briefed on the benefit of changing from fossil fuel based GSE vehicles to EGSE based vehicles at Seattle-Tacoma International Airport.