

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6b

ACTION ITEM

Date of Meeting April 3, 2012

DATE: March 23, 2012

TO: Tay Yoshitani, Chief Executive Officer

FROM: Dave 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: \$8,000,000 **Source of Funds:** Existing Revenue Bonds

Est. State and Local Taxes: \$0 (tax exempt)

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

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to: 1) prepare full design documents for the Electrified Ground Support Equipment (EGSE) charging station project; 2) authorize Port Construction Services (PCS) to install approximately 20 chargers as a demonstration project; 3) authorize budget for the EGSE charging station project; and 4) authorize execution of contracts for long lead time electrical equipment for power center upgrades.

SYNOPSIS:

This request enables staff to move forward on the project to phase out fossil-fueled vehicles such as baggage tugs and aircraft pushback tractors, which will be owned and operated by the airlines, at Seattle-Tacoma International Airport (Airport). The Airport intends to install EGSE chargers throughout the passenger terminals for airline use. This action will help improve air quality while reducing the carbon footprint of the Airport. This request totals \$8,000,000 (\$7,900,000 capital plus \$100,000 expense for regulated materials) toward an overall program budget of \$30,700,000.

This project will ultimately reduce costs for the airlines by saving fuel costs, reducing maintenance costs, and enabling airlines to seek grant funds and tax benefits if they purchase electrified vehicles in the near term. Fuel savings could reach one million gallons annually and a Washington state sales tax waiver applies until 2016. The latest presentation of this project to the airlines was made on February 22, where the airlines made favorable comments. The airlines have begun the voting period regarding several projects, including EGSE, and results are expected on March 26.

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The overall EGSE program consists of four major components: PCS quickly installing up to 20 chargers in a demonstration project to be used by Horizon/Alaska Airlines, procurement of over 500 charging units, procurement of long lead-time electrical components, and a major construction contract to install all of the infrastructure. The total estimated cost of the project is \$30.7 million to make chargers available across the entire Airport. This budget doubled from original estimates based on additional information from preliminary design work and incorrect soft costs in the original budget.

Port staff is negotiating with the Western Washington Clean Cities Coalition (WWCCC) to update the interlocal agreement and extend the date by which grant funds must be expended. The original WWCCC grant was for \$5 million and directed towards EGSE vehicle purchases on or before December 2, 2011. The revision to the interlocal agreement will authorize the grant money to be used by (a) the airlines to offset their rolling stock equipment costs and (b) the Port to pay for some of the EGSE charger costs. Additionally, staff will pursue Federal Aviation Administration (FAA) grants next year to offset the cost of the chargers and/or electrical infrastructure.

The Commission authorized \$1,510,000 on October 26, 2010, to: 1) prepare preliminary designs; 2) use Port work crews; and 3) execute and amend contracts for materials, abatement, equipment, work, and services to move the EGSE project forward. Staff has conducted request for proposals (RFP) procurement processes for EGSE vehicles and EGSE chargers. The Port was unable to structure an acceptable vehicle lease for the airlines so the airlines will purchase their own EGSE vehicles. The Port will execute a contract with Aerovironment for the EGSE chargers. Depending on the outcome of negotiations with the U.S. Department of Energy (USDOE), the contract may contain a provision to allow the Port to make a down payment on the purchase of the chargers.

This project is included in the 2012-2016 capital budget and plan of finance and the additional cost will be covered by a corresponding reduction in the Aeronautical New Project Allowance. When designs are completed, additional authorizations will be requested to approve additional funding and to proceed with advertisement and execution of infrastructure construction projects.

BACKGROUND:

Since 2005, staff has been working with the airlines towards installing EGSE equipment at the Airport. In 2010, a USDOE grant awarded and administered through WWCCC was approved for \$5 million to offset the additional cost of EGSE vs. fossil-fueled ground support equipment (GSE). Since then, staff has been working with the airlines to procure EGSE equipment, which would be leased to the airlines, and to install the charging equipment at all aircraft gate parking locations on the terminal concourse ramps. In October 2011, an impasse developed with regard to purchasing the rolling stock because as a public agency we could not structure a lease that met the airline requirements. In spite of this, the airlines remain supportive of the EGSE project.

The WWCCC grant award has been renegotiated with the agency to allow airlines to utilize the grant for vehicle and equipment purchases and the Port will utilize the remaining grant funds to purchase the charging units. Currently, Washington's state law allows a waiver of state sales tax

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on the purchase and installation of energy saving equipment until 2016. This will save approximately \$2,000,000 in taxes for the Airport's portion of the work.

During the preliminary design, staff determined that there was insufficient power at two locations, the South Satellite and Concourse B. Due to the long lead time for major electrical equipment, staff determined that an equipment pre-purchase by the Port would reduce the total duration of the project.

In order to quickly demonstrate the feasibility of EGSE and let the airlines conduct training for staff, the airlines have requested that we construct a "demonstration" project consisting of up to 20 charging units this year. Having an active EGSE area will also help satisfy the USDOE grant requirements. When the chargers are ordered, 20 units will be for immediate delivery, which will be installed by PCS at an appropriate gate, possibly near gate C-2.

PROJECT JUSTIFICATION:

Project Objectives:

This project:

- Reduces carbon emissions
- Reduces airline fuel consumption by approximately one million gallons per year
- Reduces airline maintenance costs
- Takes advantage of grants and 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 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 PCS and contractors when needed. Power centers will be upgraded at two locations to support the additional electrical loads. PCS will install approximately 20 charging units on Concourse C as a demonstration project for the airlines to use and train on. 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 throughout the remainder of the Airport. The expense funds in this authorization will be utilized for design and removal of the regulated materials encountered in the demonstration project area.

Schedule:

Commission Approval	April 2012
Start Design	April 2012
Construct Demonstration Site (PCS)	July – October 2012
Advertise Phase 1	October 2012
Advertise Phase 2	February 2013
Phase 1 Complete	September 2013
Phase 2 Complete	September 2014

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FINANCIAL IMPLICATIONS:

<i>Budget/Authorization Summary:</i>	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	\$1,510,000	\$0	\$1,510,000
Current request for authorization	\$7,900,000	\$100,000	\$8,000,000
Total Authorizations, including this request	\$9,410,000	\$100,000	\$9,510,000
Remaining budget to be authorized	\$20,788,000	\$402,000	\$21,190,000
Total Estimated Project Cost	\$30,198,000	\$502,000	\$30,700,000

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.

<i>Project Cost Breakdown:</i>	This Request	Total Project
Construction	\$5,200,000	\$23,160,000
Construction Management	\$150,000	\$2,900,000
Design	\$2,100,000	\$2,500,000
Project Management	\$500,000	\$1,900,000
Permitting	\$50,000	\$180,000
State & Local Taxes (estimated)	\$0	\$60,000
Total	\$8,000,000	\$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. The source of funds for this project will be existing revenue bonds, FAA grants totaling \$7.7 million, and future revenue bonds.

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Financial Analysis and Summary:

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted discount rate	Not Applicable
Key risk factors	Not Applicable
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 and landing fees.
IRR/NPV	N/A
CPE Impact	\$0.16 in 2013; however, no change from business plan forecast as this project was included in the plan

Lifecycle Cost and Savings: Per industry data, EGSE charging equipment lifecycle is estimated between 13 and 20 years. Following design a more exact lifecycle will be identified. At full build-out of the EGSE system, maintenance and repair labor costs are estimated at approximately \$150,000 annually, not considering “charging cord” repairs/replacements, which may be an airline responsibility. Electrical costs, metering, and billing costs are still being assessed.

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. The U.S. Environmental Protection Agency considers electric vehicles one of the best alternative vehicle fuel options 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 CO₂. 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 annually, thus reducing demand for non-renewable natural resources.

BUSINESS PLAN OBJECTIVES:

The business plan objectives promoted by this project include the following:

- 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

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TRIPLE BOTTOM LINE SUMMARY:

This project helps to clean the environment by reducing greenhouse gases, which benefits the communities surrounding the Airport, creates short-term construction jobs, and potentially incorporates small business opportunities to encourage small business participation in a major construction contract.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1: 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 the Airport. EGSE provides significant financial benefit for carriers through fuel and maintenance savings. Because EGSE does not have tailpipe emissions, Sea-Tac will be able to document 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.**

Alternative 2: Do nothing.

In the do nothing scenario, the Port would let market forces determine the rate at which EGSE implementation would occur. Staff is concerned that without promoting the use of EGSE and providing the necessary infrastructure for it, the Airport 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. This is not the preferred alternative.

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

- On September 12, 2011, the Commission authorized signing 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 \$1,151,000 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.