

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

**COMMISSION AGENDA**

**Item No.** 6c

**Date of Meeting** October 27, 2009

**DATE:** September 29, 2009

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

**FROM:** Michael Ehl, Director, Airport Operations  
Paul Grace, Senior Manager, Airport Operations

**SUBJECT:** Request authorization to procure 29 low-floor, compressed natural gas shuttle buses for transportation services between the Consolidated Rental Car Facility and the Main Terminal at Seattle-Tacoma International Airport (Airport).

**ACTION REQUESTED**

Request Port of Seattle Commission authorization for the Chief Executive Officer to prepare contract documents, advertise a request for proposals, and procure 29 low-floor, compressed natural gas (CNG) shuttle buses for the estimated amount of \$16,000,000 as a part of the total Consolidated Rental Car Facility (CRCF) project cost of \$419,306,000, bringing the total authorized amount to \$374,371,346

**SYNOPSIS**

This memorandum requests authorization to advertise for and procure 29 new CNG buses for passenger transportation between the Main Terminal Baggage Claim/Arrivals level of the Airport to the Customer Services Building on the 5<sup>th</sup> Floor of the CRCF. The number of buses reflects the project goal to purchase a bus fleet with adequate capacity for a minimum of two years past the spring 2012 opening date of the CRCF. The Commission has previously authorized \$358,371,346 for the following program elements: 1) Construction of the CRCF, 2) Design of Off-Site Roadways, and 3) Design of the Bus Maintenance Facility. This authorization will increase the project authorization by \$16,000,000, for a total authorized project cost to date of \$374,371,346. Future authorization will be requested for construction of the Off-Site Roads, Bus Maintenance Facility, and Main Terminal Improvements design and construction.

**BACKGROUND**

Initial development of the Consolidated Rental Car Facility concept envisioned two alternatives for transportation service between the Main Terminal and the Customer Service Building:

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1) Transit-type Shuttle Buses or 2) Automated People Mover. Cost analysis and ridership projections based on Airport activity levels indicated that the transit-style bus is most cost effective.

Airport staff determined the magnitude of the bus purchase by combining real-world examples of rental car shuttle bus operations at other airports with historical rental car data and growth assumptions for Sea-Tac passenger demand. The analysis utilized the latest Airport passenger activity forecast from July 2009. The Airport passenger forecast indicates a flat growth rate for 2010 and slight growth in the following years. Rental car passenger demand was forecast to 2014 based on the assumption there is a stable relationship between passenger demand and rental car transactions. The table below summarizes the passenger forecast used for the fleet sizing analysis.

<b>Year</b>	<b>Growth Rate</b>	<b>MAP* Level</b>
2009	-4.5%	30.7
2010	0%	30.7
2011	1%	31.1
2012	2.5%	31.8
2013	2.7%	32.7
2014	2.7%	33.6

\*Note: MAP refers to Million Annual Passengers

Field data for existing rental car shuttle bus operations were collected at the following airports: Phoenix, Las Vegas, Dallas/Fort Worth, and Baltimore. Dwell times, occupancy and bag counts were combined with manufactures' specification data to complete a detailed peak-hour schedule. Buses were assumed to accommodate 30 passengers per trip. Passengers were assumed to take 5 seconds per person to either board or alight the bus. Distance to the facility is 2 miles and headways varied from 1 minute during the peak hour to a maximum of 5 minutes during the lowest traffic (late night) times.

The peak-hour scheduling exercise was extrapolated to future years based on the Airport's latest forecast. The extrapolation analysis resulted in a forecasting tool that staff used to determine that 24 buses will be necessary for the new rental car shuttle bus operation. A maintenance factor was included in the analysis to take into account the number of buses likely to be out of service due to mechanical or technical problems. Combined with a maintenance rate factor of 20%, the resulting analysis concluded that 29 buses will be necessary to begin service in March 2012 and provide enough fleet capacity to operate through at least 2014. As part of the initial purchase, staff intends to negotiate options for additional buses to meet future passenger activity levels. If necessary, Port of Seattle employee buses could be utilized on a contingency basis to increase capacity.

Recent conversations with bus manufacturers indicate bus production can range from 12 to 18 months, depending on the order. In the case of this purchase, fit-out activities would occur at the manufacturer. Examples of the fit-out include application of the exterior bus graphic and installation of Port of Seattle specific hardware such as digital voice recordings or driver cameras. Currently, bus delivery is scheduled for the fall of 2011. The analysis above has been shared with the rental car agencies and has received their support.

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### **PROJECT DESCRIPTION/SCOPE OF WORK**

**Project Statement:** Provide CRCF shuttle bus fleet capacity sufficient to meet demand for opening day of the CRCF plus two years based on the current Airport passenger growth forecast.

**Project Objectives:** Provide reliable and environmentally friendly transportation service between the Main Terminal and the CRCF Customer Service Building.

**Scope of Work:** Procure 29 CNG, low-floor, transit-style buses in a perimeter configuration to transport a minimum of 30 passengers and their luggage to and from the CRCF. The project will provide funding for the procurement and fit-out of all buses including mechanical equipment, interior finishes, exterior finishes, computerized diagnostic systems, and maintenance training.

### **STRATEGIC OBJECTIVES**

The CRCF project, including the requested shuttle buses, supports the Port's strategy to "Ensure Airport Vitality" and to "Exhibit Environmental Stewardship through our Actions." The RCF program provides a long-term solution for rental car operations at the Airport. The CRCF busing operation will be supported by a fleet of CNG-powered buses to minimize air emission impacts caused by combustion equipment.

### **FINANCIAL IMPLICATIONS**

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

Original Budget	\$17,327,000
Budget Increase	\$0
Revised Budget	\$16,000,000
Previous Authorizations	\$0
Current Request for Authorization	\$16,000,000
Total Authorizations, Including this Request	\$16,000,000
Remaining Budget to be Authorized	\$1,327,000

#### **Cost Summary**

Description	Unit	Quantity	Unit Cost	Line Total	Total
Bus Purchase					
Prepare RFP	LS	1	\$100,000	\$100,000	
Bus Purchase Price	EA	29	\$400,000	\$11,600,000	
Contingency		16%		\$1,856,000	
Sales Tax		9.5%		\$1,278,300	
Subtotal					\$14,834,000

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Bus Fit-Out					
Bus Fit-Out (Radios, Digital Voice Player, Cameras, etc.)	EA	29	\$34,000	\$986,000	
Startup/Training	LS	1	\$180,000	\$180,000	
Subtotal					\$1,166,000
<b>TOTAL ESTIMATED COST</b>					<b>\$16,000,000</b>

### **Source of Funds**

This project was included in the 2009-13 capital budget and plan of finance as a business plan prospective project. The Customer Facility Charge (CFC) provides 100% of the funding for the RCF shuttle bus purchase. The requested authorization is consistent with the original budget developed for the RCF program and consistent with past presentations. Once procured, operation and maintenance of the fleet will also be covered by CFCs.

### **Financial Analysis**

<b>CIP #</b>	800032
<b>CIP Category</b>	Capacity Growth
<b>Project Type</b>	Business Expansion
<b>Risk-adjusted Discount Rate</b>	N/A
<b>Key Risk Factors</b>	Increased procurement costs due to market conditions
<b>Project Cost Analysis</b>	\$16,000,000
<b>Business Unit</b>	Landside – Rental Cars
<b>IRR/NPV</b>	N/A
<b>CPE Impact</b>	No impact due to CFC funding source

Knowing that a rubber-tire type transit bus solution was necessary, Airport staff, in consultation with the rental car industry, investigated the life cycle cost impacts and environmental implications for various fuel types. Three bus types were explored: 1) Clean Diesel, 2) Compressed Natural Gas, and 3) Hybrid Diesel Electric. A total cost of ownership analysis was conducted using King County Metro records for hybrid and diesel buses and Port of Seattle records for CNG buses.

	<b>Clean Diesel</b>	<b>CNG</b>	<b>Hybrid Diesel Electric</b>
Initial Capital Costs	\$315,000	\$390,000	\$530,000
Annual Maintenance Costs	\$17,500	\$12,000	\$7,500
Annual Fuel Costs	\$27,345	\$28,037	\$24,965
<b>NET PRESENT VALUE</b>	<b>\$1,006,772</b>	<b>\$1,000,489</b>	<b>\$1,011,046</b>

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The total cost of ownership between all types of bus varied by 1%. This result is inconclusive. However, given the Port's familiarity with maintaining CNG buses and the established environmental benefits associated with natural gas, Port staff recommended CNG-fueled buses for the CRCF shuttle operation.

## **ENVIRONMENTAL SUSTAINABILITY/COMMUNITY BENEFITS**

Air emissions from vehicles utilizing CNG are significantly lower than versions using gasoline or diesel. Emission savings include: 35% nitrous oxides, 90% carbon monoxide and particulate matter, and 25% carbon dioxide in comparison to fossil fuels such as diesel fuel or gasoline.

## **TRIPLE BOTTOM LINE SUMMARY**

This project is budgeted with contingency and is expected to be at or below the authorized amount. Air quality considerations were a major factor in choosing CNG technology for the bus purchase. The Port currently operates a fleet of sixteen (16) CNG buses for its Employee Parking operation and is satisfied with their long life and durability. The buses discussed in this request will be built with similar material and handling specifications.

## **PROJECT SCHEDULE**

<u>Description/Task</u>	<u>Date</u>
Advertise Request for Proposals	December 2009
Proposals Due	January 2010
Bus Manufacturer Selection	January 2010
Negotiations and Execute Contract	February 2010
Initial Delivery	Fall 2011
Operation	March 2012

## **PREVIOUS COMMISSION ACTION**

The following list of previous Commission actions or briefings are only related to the design and construction of the RCF program and do not include the related property acquisition actions.

- February 9, 1998, the Commission authorized \$2,125,000 for the solicitation and execution of contracts for outside professional services for preparation of project analysis reports (PARs). The RCF project is one of three projects that undertook the PAR process with a total budget of \$790,000.
- June 27, 2000, the Commission authorized \$412,000 to complete post PAR pre-design and project definition for the RCF project.
- March 27, 2001, the Commission authorized \$3,500,000 for the completion of schematic development for the RCF project.
- July 8, 2004, the Commission was briefed on the status of the RCF program.
- October 12, 2004, the Commission was briefed on the status of the RCF program.

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- November 9, 2004, the Commission authorized \$18,675,000 for the completion of facility design for the RCF project, and for procurement of a GC/CM for the delivery of the project.
- May 24, 2005, the Commission heard the first reading and on June 14, 2005, the Commission passed Resolution No. 3542 which imposed a CFC on customers of rental car companies accessing the Airport for the purposes of financing, designing, constructing, operating, and maintaining a consolidated RCF and common use transportation equipment and facilities, which are used to transport customers between the consolidated RCF and other Airport facilities.
- January 9, 2007, the Commission was briefed on the status of the RCF program.
- February 27, 2007, the Commission authorized \$9,210,183, including \$6,460,183 in additional design funding for the RCF program and \$2,750,000 for preconstruction services and for demolition of buildings on the RCF site.
- April 30, 2007, the Commission authorized \$1,800,000 for a five-year Cost Advancement Agreement for technical consulting services to support the Airport rental car concessionaires in their deliberations with the Airport.
- June 12, 2007, the Commission authorized \$870,000 in additional design funding for technical consulting services to support the Airport Rental Car Concessionaires.
- January 22, 2008, the Commission was briefed on the reassessment of the RCF alternatives and the status of the RCF program. The Commission imposed a moratorium of undefined duration on the program.
- February 26, 2008, the Commission deferred action on the project and requested a Project Management Plan be created.
- March 11, 2008, the Commission authorized \$5,000,000, including \$850,000 for additional design funding for the RCF program and \$4,150,000 for additional preconstruction services and for preparation of the RCF site for construction.
- April 22, 2008 the Commission was briefed on the status of the RCF program.
- May 13, 2008, the Commission authorized 1) \$3,574,300 in additional design funds for the RCF program, 2) the award of the GC/CM contract to Turner Construction Company and \$286,500,000 for the construction of the RCF project, and 3) the execution of a change order in the amount of \$1,606,710 for additional construction staff and logistics facilities.
- June 3, 2008 the Commission authorized a Change Order exceeding \$200,000 for the RCF project.
- June 10, 2008, the Commission heard the first reading and on July 1, 2008, the Commission passed Resolution No. 3599, which amends and restates Resolution 3542 and requires Port staff to raise the CFC to satisfy all of the obligations of the Bonds.
- June 10, 2008, the Commission heard the first reading and on July 1, 2008, the Commission passed Resolution No. 3600, which authorized the issuance and sale of special facility CFC revenue bonds in series in the aggregate principal amount not to exceed \$425,000,000 for the RCF program.

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- June 24, 2008 the Commission was briefed on the status of the RCF program.
- August 5, 2008 the Commission authorized a Change Order exceeding \$200,000 for the RCF project.
- August 26, 2008 the Commission was briefed on the status of the RCF program.
- September 23, 2008 the Commission was briefed on the status of the RCF program.
- October 21, 2008, the Commission authorized the use of up to \$20,000,000 in general Airport funds to provide temporary funding for the RCF program.
- October 28, 2008 the Commission was briefed on the status of the RCF program.
- November 11, 2008 the Commission was briefed on the status of the RCF program and authorized \$552,000 for the ORI project for design and advance utility relocations.
- December 15, 2008 the Commission authorized the suspension of most work under the contract for construction of the RCF project for an indefinite period, not to exceed one year. Design for the BMF and ORI projects would continue.
- January 27, 2009 the Commission was briefed on the status of the RCF program and financial markets.
- March 5, 2009 the Commission was briefed on the status of the financial markets and financial plan options for the RCF program.
- May 12, 2009 the Commission was briefed on the proposed financial plan for the RCF program.
- June 2, 2009, the Commission heard the first reading and on June 9, 2009, the Commission passed Resolution No. 3619, which authorized the issuance and sale of revenue bonds in the aggregate principal amount not to exceed \$425,000,000 for the RCF program.
- June 2, 2009, the Commission heard the first reading and on June 9, 2009, the Commission passed Resolution No. 3620, which authorized the issuance and sale of Subordinate Lien Revenue Bond Anticipation Note in the principal amount not to exceed \$100,000,000 for the RCF program.
- June 2, 2009 the Commission authorized \$607,000 for the BMF project for design of the CNG Fueling Facility and the advance relocation of facilities.
- June 9, 2009, the Commission heard the first reading and on June 23, 2009, the Commission passed Resolution No. 3621, which authorized the issuance and sale of CFC Revenue Bond Anticipation Note in the principal amount not to exceed \$100,000,000 for the RCF program.
- June 23, 2009 the Commission was briefed on the upcoming action request to lift suspension and to restart the entire RCF program.
- June 30, 2009 the Commission authorized; 1) lifting the suspension and restarting the entire RCF program, 2) an additional \$591,670 design funds for the Bus Maintenance Facility (BMF) and Off-Site Roadway Improvements (ORI), 3) an additional \$27,826,000 construction funds for the RCF and Main Terminal Improvements (MTI) projects, 4) executing multiple change

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orders for the suspension/restarts costs and schedule impacts, and 5) a one-time change to increase the cumulative total of all change orders from 10% to 18% for the RCF GC/CM Total Construction Contract (TCC).