



**COMMISSION
AGENDA MEMORANDUM**

Item No. 9b

BRIEFING ITEM

Date of Meeting January 8, 2019

DATE: December 26, 2018
TO: Stephen P. Metruck, Executive Director
FROM: Michael Ehl, Director, Airport Operations
Wayne Grotheer, Director, Aviation Project Management
SUBJECT: Rental Car Facility Bus Purchase (CIP #800810) and Employee Parking Bus Purchase (CIP #800956)

EXECUTIVE SUMMARY

The purpose of this Commission briefing is to review the context and analytical framework staff used to evaluate different options for the Employee Parking and Rental Car Facility (RCF) shuttle bus purchase. The principal drivers for the fleet purchase are (a) the mandatory retirement of model-year 2002 compressed natural gas (CNG) buses from Employee Parking and RCF shuttle fleets, (b) modest growth in rental car transactions, and (c) potential expansion of employee parking. In short, staff recommends purchasing 24 new CNG buses fueled by renewable natural gas (RNG)—18 buses for Employee Parking and six for the RCF shuttle operation.

In evaluating bus purchase options, the Port considered cost, feasibility, and environmental impacts. To meet its Century Agenda goal for carbon reduction while considering that the total bus fleet contributes approximately 12 percent of the Port's greenhouse gas emissions, the Port evaluated the following three alternatives for the new buses:

- (1) New electric buses (6 for RCF, and 20 for Employee Parking),
- (2) Refurbished compressed natural gas (CNG) buses (6 for RCF, and 18 for Employee Parking) fueled with renewable natural gas (RNG) and
- (3) New CNG buses (6 for RCF, and 18 for Employee Parking) fueled with RNG.

All three project alternatives provide significant environmental benefits to the Port. Replacing the CNG buses with electric buses or CNG buses fueled with RNG will reduce the greenhouse gas emissions from airport activities by up to four percent. Port staff completed a decision analysis that resulted in the recommendation for alternative 3, new CNG buses fueled by RNG for the Rental Car Facility and Employee Parking.

Following this presentation and engagement with the Commission, staff will return on February 12, 2019 to request authorization for the Executive Director to (1) Procure new buses for the RCF shuttle operation. Based on the recommended alternative the amount of that request will

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be \$4,123,000 bringing the total RCF authorization to \$4,403,000 and (2) Procure new buses for the employee parking shuttle operation. Based on the recommended alternative the amount of that request will be \$12,152,000 bringing the total Employee Parking authorization to \$12,435,000.

JUSTIFICATION

Rental Car Facility

Although Sea-Tac rental car activity has experienced mixed results over the past three years, overall rental transactions have increased about 20 percent since 2012—the initial operating year for the consolidated RCF. The growth in transaction activity translates into increased shuttle bus passengers and without additional buses, presents a challenge to Aviation Operations commitment to meet the 5-minute peak service standard agreed upon by the Port and rental car industry.

Due to the immediate need for increased system capacity, five CNG buses were loaned from the existing Employee Parking bus fleet in 2015. The on-loan employee parking buses are model year 2002 and the 20-year legal useful life of the fuel tanks expires in Q2 of 2022. Thus, five new buses are required to replace these retiring units plus one additional bus for maintenance. Industry standard practice for fleet operations includes a 20 percent maintenance factor. In this case the Port recognizes a need for five additional buses plus one for maintenance for a total of six. Table 1 describes the composition of the RCF bus fleet now and as proposed.

Table 1: RCF Bus Fleet Composition Summary

	Existing Fleet	Retirements	New Fleet (as proposed)
No. of 2011 buses	29	0	29
No. of 2002 buses on-loan	5	5	0
No. of new buses	N/A	N/A	6
Total No. of RCF Buses	34	N/A	35

Employee Parking

More than 12,000 airport and airline employees park in the Airport’s NEPL and use the Port’s employee bus system to travel to and from work. The current fleet of 11 CNG buses is approaching its 20-year useful life and must be replaced by Q2 2022. The procurement process for new buses is 24 months, so the Port must select and order 18 new buses by Q3 2019. The quantity of 18 new buses includes the 11 replacement buses, three additional buses for maintenance (industry standard practice of 20 percent), and four additional buses to support future expansion of employee parking.

At the request of the airlines, Aviation Operations could expand its employee parking offerings to other lots with four new buses. The new buses would be integrated into the employee

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parking fleet and coordinated with the existing operation. The procurement will be structured such that these four additional buses could be deleted from the order if the employee parking need is addressed through alternative means.

Diversity in Contracting

We have engaged the Diversity in Contracting Department to assist in identifying potential Woman and Minority Business Enterprise (WMBE) vendors to help inform them of this potential procurement. This effort, through PortGen activities, is in support of Resolution 3737 to increase WMBE participation in Port’s contracting efforts.

Schedule

The existing model-year 2002 CNG buses face mandatory retirement in June 2022 due to the de-certification of the CNG fuel tanks on each bus—a regulatory requirement for CNG fuel systems of a certain age and configuration. To continue the Rental Car Facility and Employee Parking shuttle operations the established schedule for bus replacement must be met.

Activity

Commission authorization	2019 Quarter 1
Execute Bus procurement contract	2019 Quarter 2
Bus delivery	2021 Quarter 3
In-use date	2021 Quarter 4

Cost Breakdown

	This Request	Total Project
Rental Car Facility Bus Purchase	\$0	\$4,403,000
Employee Parking Bus Purchase	\$0	\$12,435,000
Total	\$0	\$16,838,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

The three alternatives were evaluated and scored for the following objectives:

- (1) Complies with Century Agenda Scope 1+2 greenhouse gas goals.
- (2) Minimizes impacts to current operations.
- (3) Minimizes current operational costs, initial capital costs, and 20-year total cost of ownership (TCO).

Risks were identified for each alternative, including their probability, and seriousness. The risk assessment was used in the final evaluation and selection of the recommended alternative. Environmental benefits were calculated and compared among the alternatives. TCO was calculated over a 20-year period that includes Electric and refurbished CNG bus replacements in year 13, and new CNG bus life of 20 years.

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Alternative 1 – Purchase 26 new electric buses (6 for RCF, and 20 for Employee Parking) and 16 new chargers (6 for RCF, and 10 for Employee Parking), including the associated infrastructure.

Cost Implications: Total estimated cost for this option is \$36.6M (\$9.7M for RCF, and \$26.9M for Employee Parking).

Pros:

- (1) Reduces approximately 1200 metric tons of CO₂/year. This alternative emits 20 metric tons more than Alternatives 2 and 3 because Port electricity has some carbon associated with it, while RNG does not.
- (2) Quietest bus operation.
- (3) Opportunity for drivers and maintenance staff to learn new skills associated with this emerging bus electrification technology.
- (4) Opportunity for FAA Zero Emissions Vehicle (ZEV) grant funding for the Employee Parking operation.

Cons:

- (1) Bus electrification is an emerging technology, which inherently carries risk. This technology is likely to improve significantly over the next ten years.
- (2) Charging significantly increases the time needed to prepare buses for operation.
- (3) Project costs for the electric buses are more than double the costs for CNG. Comparatively higher costs unique to this alternative include electric buses and the design and installation of charging infrastructure.
- (4) Higher weight of electric buses could require strengthening of RCF 5th floor and Access Bridge. This is a risk, which will require evaluation by a design consultant during the design phase.
- (5) Additional training will be required for bus drivers and maintenance staff.

This is not the recommended alternative.

Alternative 2 – Purchase 24 Refurbished CNG Buses (6 for RCF, and 18 for Employee Parking), fueled with RNG

Cost Implications: An estimated \$441,000 in costs to date will need to be expensed if this option is pursued. The total estimated cost for this option is \$11.6M (\$3.1M for RCF, and \$8.5M for the Employee Parking).

Pros:

- (1) Reduces 1220 metric tons of CO₂/year.
- (2) No operational changes required.
- (3) No new infrastructure required.
- (4) Lowest initial cost and low 20-year TCO due to the lowest bus cost.
- (5) Bus electrification is an emerging technology that is likely to improve significantly over the next ten years. This alternative allows the Port to delay transition to electric and allow technology to mature. This reduces cost and overall risk.

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Cons:

- (1) High potential for increased bus down time due to part availability, additional preventive maintenance and increased risk of failure of original equipment not replaced as part of the refurbishment (i.e. dashboard components, rebuilt transmission, original wiring, etc.).
- (2) Large variance in quality between the 3 major bus refurbishment companies.
- (3) Delayed opportunity in learning to use an emerging technology (electric buses).
- (4) No opportunity for FAA Zero Emissions Vehicle (ZEV) grant funding for the Employee Parking.

This is not the recommended alternative.

Alternative 3 – Purchase 24 new CNG Buses (6 for RCF, and 18 for Employee Parking), fueled with RNG

Cost Implications: An estimated \$441,000 in costs to date will need to be expensed if this option is pursued. The total estimated cost for this option is \$16.8M (\$4.4M for RCF, and \$12.4M for the Employee Parking).

Pros:

- (1) Reduces 1220 metric tons of CO₂/year.
- (2) No operational changes required.
- (3) No new infrastructure required.
- (4) Low initial cost and the lowest 20-year total cost of ownership due to 20-year bus life.
- (5) Bus electrification is an emerging technology that is likely to improve significantly over the next ten years. This alternative allows the Port to delay transition to electric and allow technology to mature. This reduces cost and overall risk.

Cons:

- (1) Higher initial cost than alternative 2, refurbished bus.
- (2) Delayed opportunity in learning to use an emerging technology (electric buses).
- (3) No opportunity for FAA Zero Emissions Vehicle (ZEV) grant funding for Employee Parking.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

Cost Estimate/Authorization Summary

	RCF C800810	Employee Parking C800956
COST ESTIMATE		
Original estimate	\$1,800,000	\$18,081,000
Budget Increase/(Decrease)	\$2,603,000	(\$5,646,000)
Revised estimate	\$4,403,000	\$12,435,000
AUTHORIZATION		

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Previous authorizations	\$280,000	\$283,000
Current request for authorization	\$0	\$0
Total authorizations, including this request	\$280,000	\$283,000
Remaining amount to be authorized	\$4,123,000	\$12,152,000

Annual Budget Status and Source of Funds

The Rental Car Facility project (CIP #C800810) was included in the 2018 – 2022 capital budget and plan of finance as a business plan prospective project with a total budget of \$1,800,000. The original CIP budget was lower as it only included four buses rather than the current quantity of six. The budget increase was transferred from the Non-aeronautical Allowance #C800754. The funding source for this project will be the Customer Facility Charges (CFC).

The Employee Parking project (CIP #C800956) was included in the 2018 – 2022 capital budget and plan of finance as a business plan prospective project with a total budget of \$18,081,000. The original CIP budget was higher due to the assumption of purchasing electric buses. The budget decrease was transferred to the Non-Aeronautical Allowance C800754. The funding source for this project will be the Airport Development Fund and future revenue bonds.

Financial Analysis and Summary

	RCF C800810	Employee Parking C800956
Project cost for analysis	\$4,403,000	\$12,152,000
Business Unit (BU)	Rental Car Facility	Employee Parking
Effect on business performance (NOI after depreciation)	NOI after depreciation will decrease.	NOI after depreciation will increase in 2022. Current NOI will decrease due to write off of \$215,000.
IRR/NPV (if relevant)	Recommended alternative has the lowest NPV of the total cost of ownership.	Recommended alternative has the lowest NPV of total cost of ownership.
CPE Impact	N/A	N/A

Future Revenues and Expenses (Total cost of ownership)

Rental Car Facility shuttle bus expenses are recovered through CFCs paid by rental car customers as part of their rental agreement. Operational and maintenance costs for the RCF facility are not anticipated to change due to this project if the recommended alternative is selected.

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Employee parking operates on a cost recovery basis and costs for this project will be recovered through increased monthly parking fees. The operational and maintenance costs for the NEPL are not anticipated to change due to this project if the recommended alternative is selected.

ATTACHMENTS TO THIS BRIEFING

- (1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None