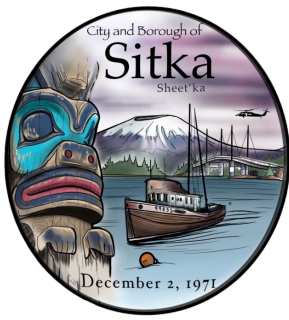


Discussion / Direction / Decision
on EV Transit Van Procurement for
Parks and Recreation Division.



CITY AND BOROUGH OF SITKA

A COAST GUARD CITY

MEMORANDUM

To: Mayor Eisenbeisz & Assembly Members

Thru: John Leach, Municipal Administrator

From: Amy Ainslie, Planning and Community Development Director

Date: October 4, 2024

Subject: Discussion of EV Transit Van Procurement for Parks and Recreation Division

Background

The CBS Parks and Recreation program (P&R) has now celebrated two solid years of growth and success. To continue this success, P&R has conducted surveys and needs assessments with program participants to identify barriers to program access and expansion. One of the primary challenges/barriers identified is transportation and access to enhanced activities (i.e. at more diverse sites/locations). This gap is impacting a vast array of community members, but is especially felt by low-income households, children whose families have inflexible work commitments and other scheduling issues, and our elders.

Currently, we have been trying to meet program participants' transportation needs by using other organization's vehicles, or relying on developing partnerships with transportation companies. These "stopgap" measures have significant drawbacks, as understandably, the primary vehicle needs of the other organizations/companies must be prioritized and loaning of vehicles can be administratively complicated. P&R acquisition of a passenger van would be a much more reliable, permanent solution for the transportation-related barriers to program access and expansion.

The Sitka Recreation Foundation (SRF), in partnership with CBS, strives to ensure the continued success and growth of P&R. SRF has generously committed to addressing the identified transportation needs of P&R by raising \$70-75,000 to donate towards the purchase of a Ford Transit 14 passenger van.

Analysis

The Sustainability Coordinator has completed an ICE Transit vs EV Transit Lifetime Cost Analysis for this van which is enclosed. In summary, the upfront cost of the ICE is considerably lower at \$75,000 versus \$115,000 for the EV. This heavily impacts the estimated lifetime cost per mile; the savings on maintenance and fuel costs for the EV are insufficient to close this gap (ICE upper range = \$1.30/mile and EV = \$1.38/mile).

The Sustainability Commission reviewed this at their October 7th and unanimously recommended approval of the EV transit van.

Fiscal Note

The full details regarding the fiscal notes/impacts are dependent on this discussion/direction and will be further explained in the memo for the supplemental appropriation.

Recommendation

Staff will need to bring a supplemental appropriation before the Assembly to accept the SRF funds for the van. Staff is seeking guidance on whether the supplemental appropriation should include an additional \$40-45,000 of CBS funds to bridge the funding gap between an ICE transit van and an EV.

Encl:

ICE Transit vs EV Transit Lifetime Cost Analysis

ICE Transit vs EV Transit Lifetime Cost Analysis

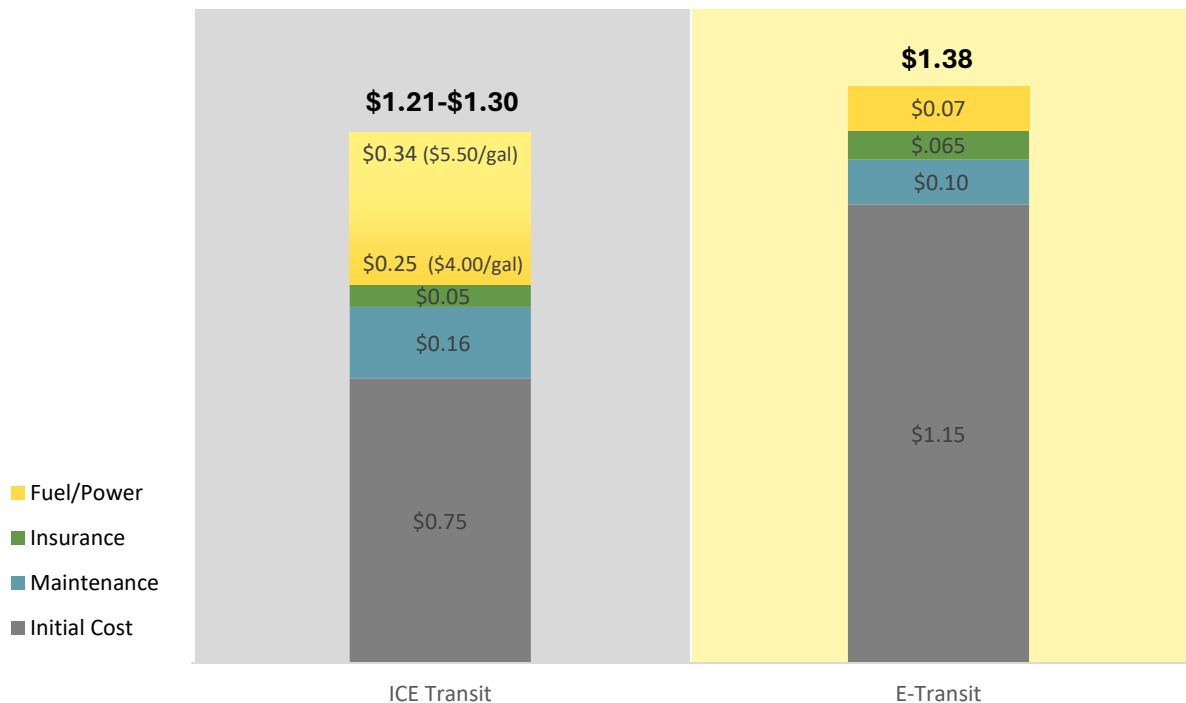
Ford does not make an electric passenger van, however, there are companies that build passenger vans from Ford E-Transit van (EV). These are commonly used in California by hospitals and nonprofit groups to provide transportation for people with limited mobility. With this identified as a possibility, the Sustainability Coordinator ran a preliminary Lifetime Cost Analysis.

Parks and Recreation Transit Van Preliminary Lifetime Cost Analysis

	Ford Transit Van (ICE)	Ford E-Transit Van (EV)
Model	2024 ICE 3.5L V6 Ecoboost	Forest River Van
Drive Train	AWD	FWD
Fuel Economy	City 16/Hwy 19	City 70/Hwy 58
Range	400-475	126-159 miles
Seating	Up to 15	Up to 14
Horsepower	310 @ 5000 RPM	266 HP
Torque	400 @ 5500 RPM	317 lb-ft
Battery		68 kWh
Level II Charging (240V)		0% to 100% in :
30A		12 hrs
48A		8 hrs
Price*	\$75,000	\$115,000
Shipping		
Federal Tax Credit		TBD
Total Cost	\$75,000	\$115,000

**Based on highest price available for Forest River Vans and SRF funding goals.*

Estimated Lifetime Cost per Mile (100,000 miles)



Assumptions and Metrics:

All Calculations were based on the 10 year or 100,000-mile replacement schedule that CBS unofficially follows and for simplicity, 10,000 annual miles was used as the baseline number for future vehicle use. Additionally, this baseline is the most commonly used within studies and allows for simple carryover.

Fuel Consumption for the internal combustion engine (ICE) Ford Transit was only calculated at the city estimate of 16 mpg as there are no substantial highways in Sitka that would allow for the vehicle to consistently reach its 19 mpg highway efficiency rating¹. The E-Transit has the efficiency of 55 kWh/100 miles¹.

Gasoline Price for CBS averaged \$4.05 per gallon in FY24. For simplification, \$4.00 was set as the lowest gas price. To account for volatility in oil prices, \$5.50 per gallon was also included to provide a top end of the range. Likely, these estimates will prove to be too conservative over a ten-year span.

The Electrical Rate was set at 16.45¢/kWh which is the Public Authority rate for FY25.

Maintenance Costs were \$0.16 for the conventional ICE F150 and \$0.10 for the Lightning battery electric vehicle (BEV) based on new 2023 data². On average, EVs cost 40% less to maintain.

It should be noted that these do not necessarily reflect the actual cost of maintenance to CBS or any price increases due to its remote location. However, since CBS vehicles are used less than their contiguous U.S. counterparts, it is likely safe to assume that frequency these repairs in which maintenance needs to be conducted is also less, offsetting the increased initial cost with the time interval in between. Any adjustments made in cost would likely scale with both powertrain types, therefore not significantly changing the overall outcome of the total cost of ownership by comparison.

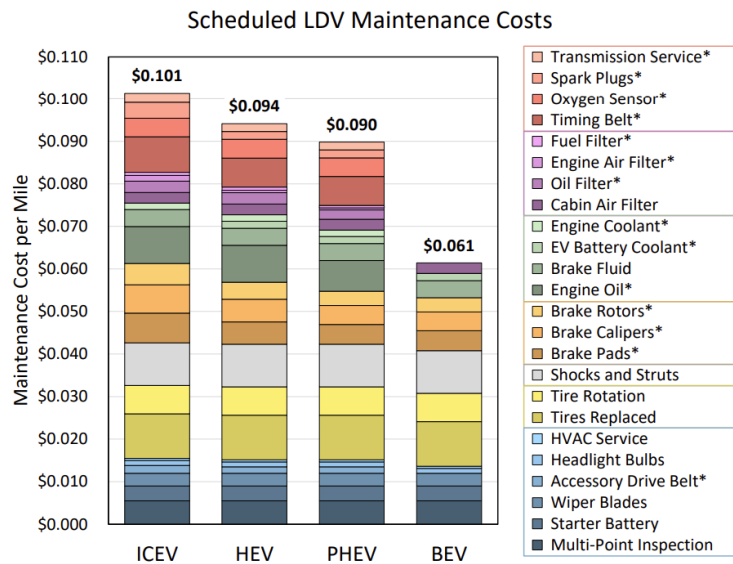


Figure 1: 2021 Per-mile maintenance costs by powertrain³. 2023 numbers are higher but EVs are still approximately 40% lower than ICEs.

(*Service intervals that vary by powertrain)

Annual Insurance Rate was set at \$500 per year for ICE and \$650 for the EV based on estimates given by Alaska Public Entity Insurance, the insurer for CBS. Rates reflect the premium for a new vehicle and do not account for adjustments for vehicle depreciation over time. This reflects similar differences in insuring ICE and EVs in other studies.

Charging Infrastructure was based on the based on the FordPro AC Charging Station 80A specifications which are \$2,499 for the base unit, approximately \$1,000-\$3,000 for installation, and a suggested \$25 annual maintenance fee for a total of approximately \$6,000 over the lifetime of the vehicle. As part of the Energy Efficiency and Conservation Block Grant, CBS has \$10,300 to cover EV charging infrastructure, so charging equipment is not included in the lifetime cost per mile estimate.

Federal Tax Credit Eligibility is currently unclear at the time of this calculation and is currently being determined. ICE vehicles do not qualify for the federal tax credit.

References:

¹2024 Fuel Economy Data from the Department of Energy and Ford Motors

²2023 AFLEET Tool, Argonne National Lab

³2021 Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains, Argonne National Lab