Telematics & Electric Vehicle Suitability Assessment (EVSA)

A data-driven approach to EO 14057 Compliance

Desktop Workshop Training

May 24, 2023

Agenda

- GSA Fleet Telematics and Electrification Goals
  - Program Updates
  - EVSA Background/EO 14057
- EVSA Product Demonstration and Walkthrough
  - Mark Goody; Senior Business Development Manager, Sustainable Fleet Solutions - Geotab
- Getting Started
- Resources

GSA Fleet Telematics Program

GSA Fleet Telematics

THE ONLY...

Fully Integrated,

FedRAMP Authorized,

Shared Service,

Cradle-to-Grave Managed

...TELEMATICS PROGRAM IN THE FEDERAL GOVERNMENT

Telematics Program Updates

Deployment Progress*

- GO9 Devices: 57,365
- Ford OEM: 15,218
- GM OEM: 11,962
- Total Telematics Deployment: 84,580

- ProPlus Subscriptions: 29,914
- Adoption Rate Fleetwide: 35.4%

*Active vehicles as of May 22, 2023

OEM Telematics Phase 2

- Ford: CCS Connectivity Settings
- General Motors: Blue Button Key Press (BBKP)

Background

- GSA Fleet and Geotab have partnered together to offer the Electric Vehicle Suitability Assessment (EVSA) tool to federal agencies.
- To be eligible for an EVSA, the agency must participate in GSA Fleet's Telematics Program and adopt the ProPlus subscription.
- Self-Service and Full-Service implementation options available to agencies:
  - Self-Service option within the agency's MyGeotab database.
  - Full-Service EVSA run by GSA+Geotab with results presented to agency.
- Announcement to Agency HQ Fleet Managers sent on Thursday, May 11th, with an "Expression of Interest" for full-service EVSA to be run on eligible fleet.

Executive Order 14057

Executive Order (EO) 14057 on Catalyzing America's Clean Energy Economy Through Federal Sustainability.

As required in the EO 14057 Implementing Instructions, federal agencies ***"must deploy telematics and collect and use fleet operational data to inform fleet planning and vehicle acquisition strategies, as well as ZEV and EVSE operational management."***

EO 14057 requirements:

1. Achieve 100 percent acquisition of zero-emission vehicles (ZEVs) for light-duty vehicles by 2027 and all vehicles by 2035.

2. Each federal agency will acquire ZEVs in vehicle classes as vehicles come to market.

A Data-Driven Approach to 14057 Compliance

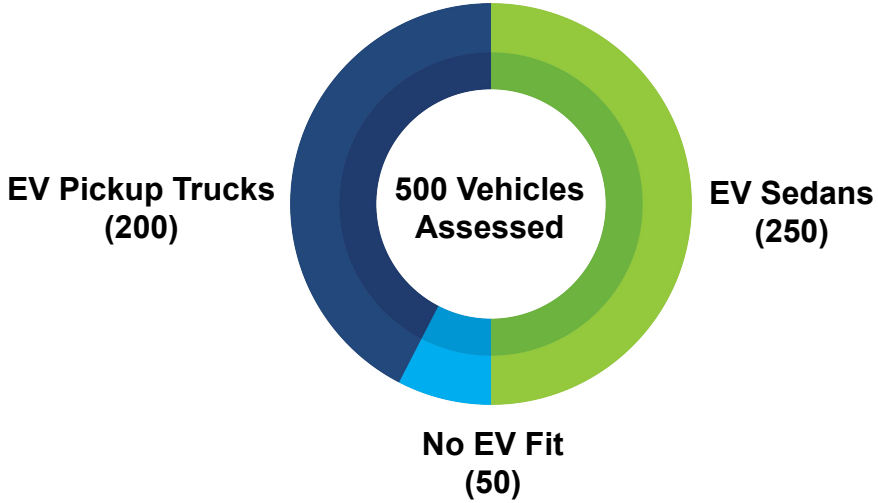
Going ZEV? ***Use telematics & EVSA*** *to do it effectively.*
Can't go ZEV? ***Use telematics & EVSA*** *to explain why not.*

EV Suitability Assessment

Electric Vehicle Suitability Assessment

The Electric Vehicle Suitability Assessment (EVSA) is an automated telematics-based **EV procurement recommendation tool** for optimizing EV acquisition and deployment strategies using **predictive analytics**.

Going EV? *Use telematics + EVSA to do it effectively*
Can't go EV? *Use telematics + EVSA to explain why not*



Best-fit electric vehicles to replace existing ICE vehicles in your fleet

Pinpoints ICE vehicles in your fleet that are suitable for EV replacement based on daily range and charge requirements.

Lifetime cost savings based on EV recommendations

Lifetime cost analysis (i.e., procurement including ZEV incremental costs, maintenance, fuel, electricity) compared with procuring comparable non-EVs for your fleet.

Estimated reduction in fuel consumption and carbon emissions

Data-driven estimates for anticipated fuel and carbon emissions reductions.

Customized GSA Fleet Data Inputs for EVSA

1.

Agency-Specific Report-Wide Parameters	Data Inputs
ICE vehicle selection for analysis	ICE vehicles with comparable EV SIN (GSA provides agency vehicle list to Geotab)
Data collection period	3-12 months (minimum of 3 months; suggested period is 12 months)
Lease period	7 years
EV models to evaluate	Selection of any EV model currently available for lease via GSA Fleet - ZEV Fact Sheet
Daytime charging requirements	Maximum number of days per month during which daytime charging may be required (e.g. 3 days/month)
EV Premium Threshold	Additional amount the agency is willing to spend over the 7 year lease period to acquire a ZEV vs. an ICE vehicle (e.g. up to $3,500/vehicle over the lifetime = ~$500/year)
Average overnight rate for electricity ($/kWh)	$0.13 (default is U.S. national average but can be customized if required)

2.

GSA Fleet EV Cost Estimates	Data Inputs (e.g. Nissan Leaf)
FY24 Monthly Rate	$265
FY24 Mileage Rate ($/mile)	$0.03
FY24 ZEV Incremental Cost	$5,096
Geotab real-world efficiency	Varies by vehicle utilization & mission

3.

GSA Fleet ICE Vehicle (Comparable) Cost Estimates	Data Inputs (e.g. Generic ICE Passenger Car)
FY24 Monthly Rate	$246
FY24 Mileage Rate ($/mile)	$0.12
Average fuel price ($/gal)	$0 (captured via mileage rate)
Geotab real-world default value for fuel economy (MPG)	33.13 MPG

ZEV Incremental Costs

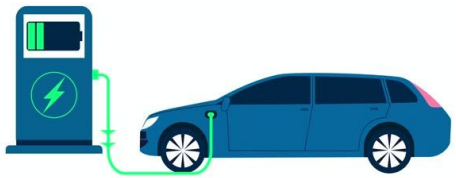
Energy Policy Act of 2005 Section 303 requires GSA Fleet to spread the incremental cost of Zero-Emission Vehicles (ZEVs) across the entire fleet.

Incremental cost is the difference between the ZEV and the similarly sized low-bid conventionally-fueled vehicle.

GSA spreads the cost of ZEVs over all vehicles in the fleet via a monthly per vehicle AFV Surcharge that is required to be paid by the agency in the first year of the lease period for that vehicle.

Methodology for Refining Population of Vehicles to Include in an Agency's EVSA

- Must be a ProPlus vehicle minimum 3 months of collected data → 12 months is generally recommended
- Must not be ordered against
- ICE SIN being replaced must have a comparable ZEV SIN awarded
  - Source: FY23 Eligibles with Crosswalk
- Vehicle projected Replacement Date (PRD) threshold *may* be considered for larger EVSAs (4K+) or for MyGeotab databases with massive amounts of historical data (i.e., 'pairing down' the analysis)



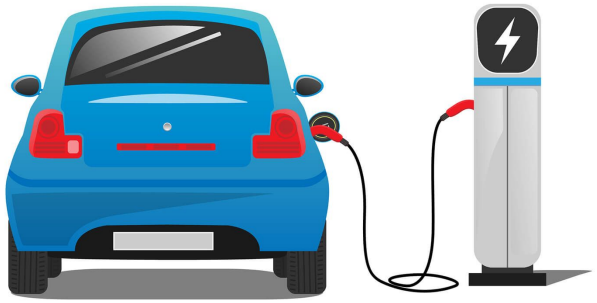
EVSA Implementation Options (Current)

Full-Service Model in MyGeotab

- Consultative approach
- Geotab running EVSA on behalf of agency
- GSA Fleet+Geotab analyze/present findings
- This model is prioritized for larger strategic fleets/customer agencies
- Goal is to teach agencies how to run their own (self-service) EVSA going forward

Self-Service Model in MyGeotab

- Always available for agencies to use EVSA tool within their database
- Geotab support available to assist agencies with set up (e.g., groups/subgroups for analysis and instructions, etc.)
- Geotab Public Sector Account/Support Team schedules meeting with agency following their full-service EVSA to teach them how to run it via their own user base



EVSA Roles and Responsibilities

	Project Tasks	GSA Fleet	Geotab	Customer Agency
Phase 1 - Configuration	Agency provides permission for Geotab to run full-service EVSA (e.g. creation of required grouping structures within agency database).	**Consulted**	**Accountable**	**Responsible**
	GSA provides Geotab with required data inputs for EVs. The ZEV team provides updated SIN crosswalk (based on availability and open) and leasing rates including incremental costs of each ZEV SIN. GSA/Geotab and confirms with agency which EV models to exclude (if any) in the EVSA.	**Responsible**	**Accountable**	**Informed**
Phase 2 - EVSA Analysis	Geotab creates EVSA group in the agency's database with subgroups based on vehicle class for 'like-for-like' analysis.	**Consulted**	**Responsible**	**Accountable**
	Geotab executes the EVSA using GSA methodology and 'fact-checks' the results.	**Accountable**	**Responsible**	**Informed**
Phase 3 - Present Findings	The EVSA pinpoints ICE vehicles suitable for EV replacement based on daily range and charge requirements.	**Consulted**	**Responsible**	**Informed**
	Geotab schedules preliminary meeting with GSA to review and discuss the results.	**Accountable**	**Responsible**	**Informed**
	Geotab and GSA schedule meeting with the agency to review/discuss the results together.	**Responsible**	**Accountable**	**Accountable**

Agency X

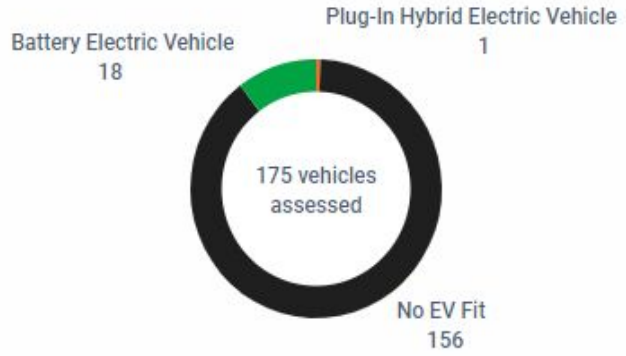
FY23 EVSA Findings

Agency X EVSA Summary Dashboard

BREAKDOWN						SAVINGS					
PHEV:	1	BEV:	18	No EV Fit:	156	Cost:	$ 32K	Energy:	$ -7,773	Carbon:	68 T

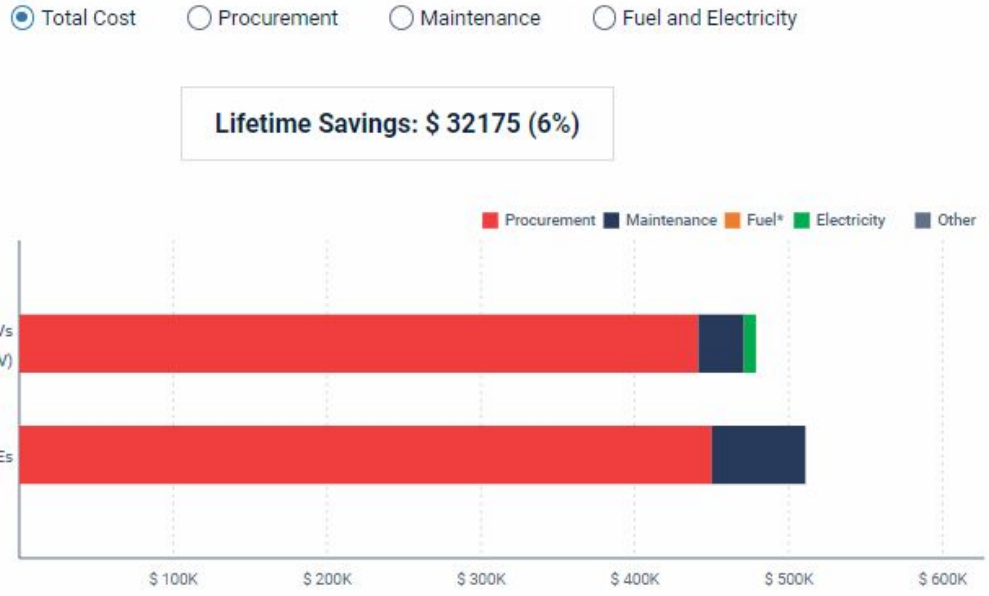
Assessment Recommendation Summary

Based on range and lifetime cost savings



Lifetime Replacement Cost Summary

Recommended EV vs. Comparable ICE Scenario



Conservative analysis identifies 19 vehicles that are suitable for EV (namely, the Chevrolet Bolt EUV) that are (i) range capable and (ii) have a lower total cost of ownership inclusive of incremental costs *without* requiring daytime charging (e.g., ground fruit).

Vehicles *Suitable* and *Not Suitable* for ZEV

Vehicles with Suitable EV Recommendations

Vehicle Name | Filter by Vehicle Name | PHEV (1) | BEV (18) | Download CSV

Vehicle Name	Model	Group(s)	Recommended EV	Type	Days with insufficient driving distance	Lifetime Savings ($)	Note
G10-0194R	2016 Hyundai Sonata / Sonata Hybrid	Field, Region 3, Sedan, Vehicle, Sedan/SUV	2023 Chevrolet Bolt EUV (GSA)	BEV	0/366	1889.91	
G12-0114W	2019 Ford Fusion	Region 4, ROB, Vehicle, Sedan/SUV	2023 Chevrolet Bolt EUV (GSA)	BEV	0/366	1777.33	
G61-0881Y	2021 Ford Escape	Vehicle, SUV	2023 Chevrolet Bolt EUV (GSA)	BEV	0/219	1179.61	
G61-0767U	2017 Chevrolet Trax	Vehicle, SUV	2023 Chevrolet Bolt EUV (GSA)	BEV	0/87	1754.26	

Vehicles without Suitable EV Recommendations

Vehicle Name | Filter by Vehicle Name | No EV Fit (156) | Download CSV

Vehicle Name	Model	Group(s)	Days with insufficient driving distance	Best EV Lifetime Savings ($)	Note
G62-3263W	2019 Ram 1500	NCR Motor Pool, Pick-up truck, Vehicle	0/366	-4270.96	
G13-1821Y	2021 Hyundai Ioniq Hybrid	Region 9, Field, Sedan, Vehicle	0/366	-4556.87	
G41-1238Y	2022 Ford Transit Connect	Vehicle, Minivan, Region 4	0/219	-13708.00	
G13-3901S	2017 Ford Focus	Region 8, ROB, Vehicle, Sedan	0/366	-6262.50	
G10-1872X	2020 Ford Fusion	Region 3, Field, Vehicle, Sedan/SUV	32/366	7826.54	
G13-4244X	2021 Hyundai Elantra	Region 9, Vehicle, Sedan	2/366	-6135.58	

Sample Individual Vehicle Suitable for ZEV

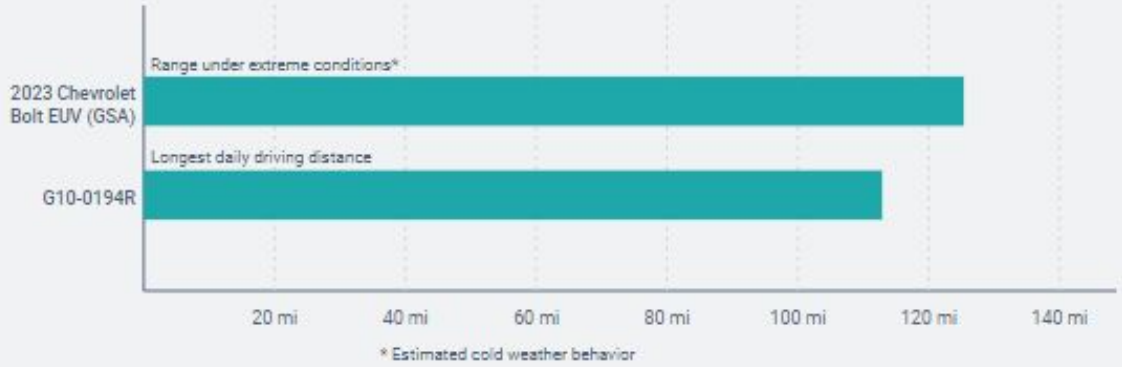
Vehicles with Suitable EV Recommendations

Vehicle Name | Filter by Vehicle Name | PHEV (1) | BEV (18) | Download CSV

	Vehicle Name	Model	Group(s)	Recommended EV	Type	Days with insufficient driving distance	Lifetime Savings ($)	Note
^	G10-0194R	2016 Hyundai Sonata / Sonata Hybrid	Field, Region 3, Sedan, Vehicle, Sedan/SUV	2023 Chevrolet Bolt EUV (GSA)	BEV	0/366	1889.91	

Range Assurance

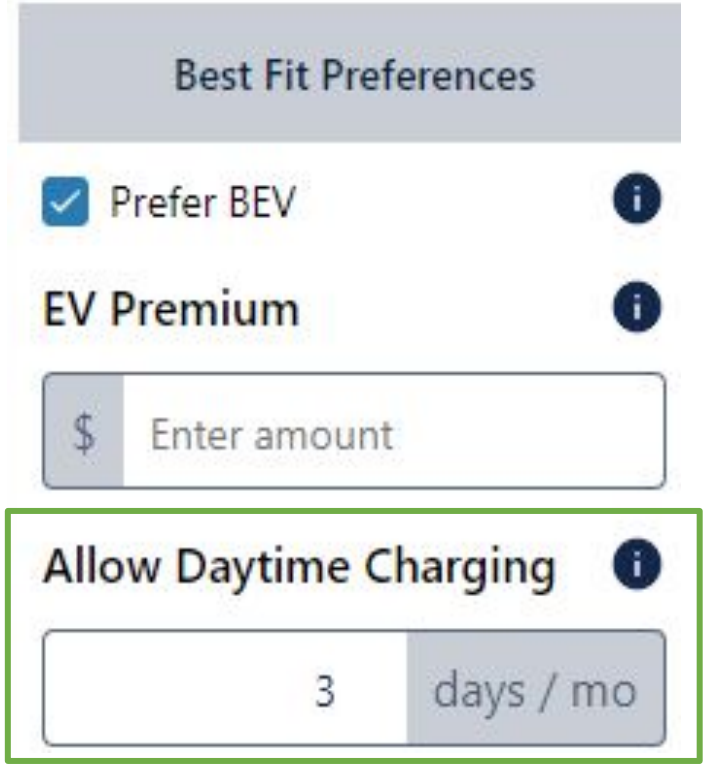
EV EoD Remaining Range: 57 mi



Lifetime Cost

Lifetime savings: $ 1890

Allow Daytime Charging Feature (adjusted)



Maximum number of days per month during which **daytime charging** may be required to complete daily job.

Ground Fruit

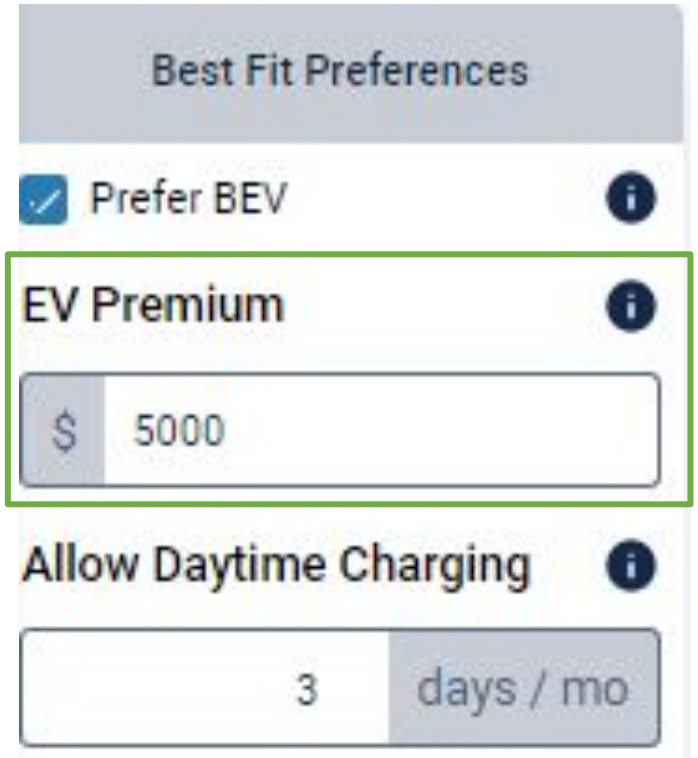
BREAKDOWN					SAVINGS				
PHEV:	1	BEV:	18	No EV Fit: 156	Cost:	$ 32K	Energy:	$ -7,773	Carbon: 68 T

Low-Hanging Fruit

BREAKDOWN					SAVINGS				
PHEV:	1	BEV:	83	No EV Fit: 91	Cost:	$ 251K	Energy:	$ -101K	Carbon: 697 T

By adjusting the daytime charging threshold to 3 days/month, Agency X EVSA results are automatically updated, indicating that 84 of their existing ICE vehicles are suitable for EV (namely, the Chevrolet Bolt EUV) with a **lower total cost of ownership *inclusive of* incremental costs**, representing **48 percent** of the study vehicles, as opposed to the initial 11 percent with zero daytime charging capabilities.

EV Premium Threshold (adjusted)



EV Premium is the additional amount an agency is willing to spend over the 7 year lease period per EV inclusive of (i) incremental costs and (ii) operational costs, which together = total cost of ownership.

Low-Hanging Fruit

BREAKDOWN					SAVINGS				
PHEV:	1	BEV:	83	No EV Fit: 91	Cost:	$ 251K	Energy:	$ -101K	Carbon: 697 T

Higher-Up-To-Reach Fruit

BREAKDOWN					SAVINGS				
PHEV:	2	BEV:	138	No EV Fit: 35	Cost:	$ 109K	Energy:	$ -169K	Carbon: 1,143 T

By adjusting the EV Premium threshold to $5,000, Agency X EVSA results are automatically updated, indicating that 140 of their existing ICE vehicles are suitable for EV, representing **80 percent** of the study vehicles, as opposed to 48 percent with *only* adjusting the daytime charging feature. The EV Premium threshold can be leveraged by agencies to recommend range capable EVs even if their total cost of ownership is negative to help with EV procurement prioritization and budget preparation to comply with EO 14057. **In aggregate, the total cost of ownership is still positive.**

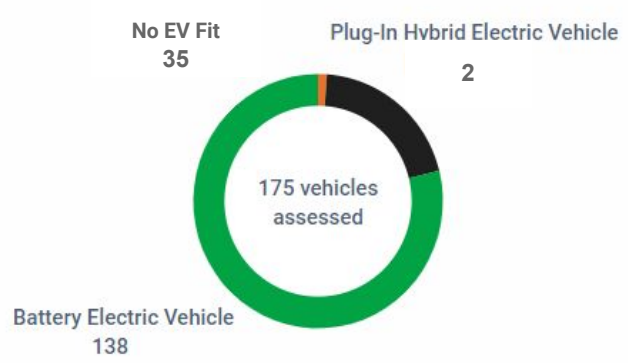
Updated EVSA Summary Dashboard

Daytime Charging Featured adjusted to *up to* **3 days/month**
EV Premium Feature adjusted to *up to* **$5,000/vehicle** over **7 year** lease period

BREAKDOWN					SAVINGS				
PHEV:	2	BEV:	138	No EV Fit: 35	Cost:	$ 109K	Energy:	$ -169K	Carbon: 1,143 T

Assessment Recommendation Summary

Based on range and lifetime cost savings

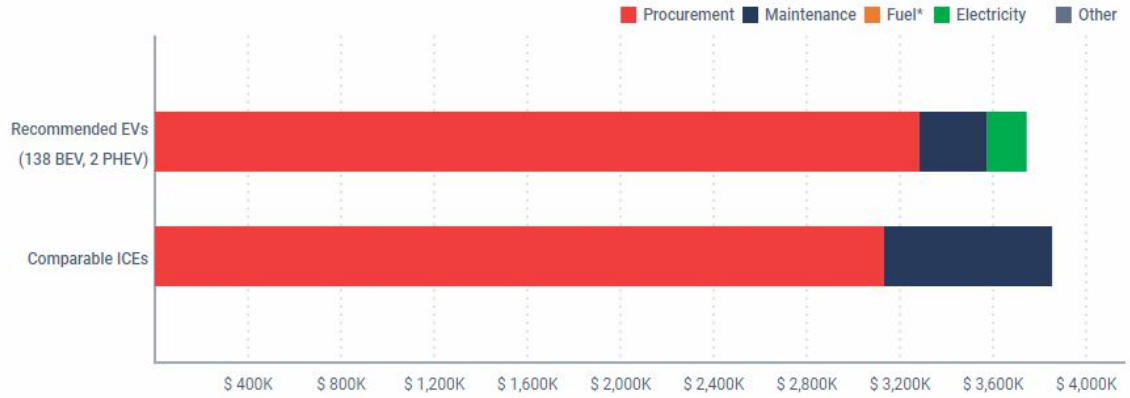


Lifetime Replacement Cost Summary

Recommended EV vs. Comparable ICE Scenario

Total Cost | Procurement | Maintenance | Fuel and Electricity

Lifetime Savings: $ 109444 (3%)



EVSA Portal Agency X

FY23 EVSA Findings

Are agencies required to transition vehicles identified by the EVSA?

- If a vehicle has a suitable EV replacement, it simply means **based on its current utilization, agency needs can be met with an electric vehicle.**

- Where feasible, ZEV replacements are encouraged, especially where infrastructure/EVSE availability exists; however, it is ultimately up to the customer agency to determine which vehicle is best for its mission.

EVSA - How to get started?

- If you would like to reserve a spot for a full-service EVSA analysis on your eligible fleet, including a presentation of results and recommendations, email fleetsolutions@gsa.gov using the title “**EVSA Expression of Interest**".

- For interested agencies, GSA Fleet will schedule a meeting to review the next steps, timeline, and expectations.

- The EVSA analysis is available to all eligible vehicles at no additional cost beyond the ProPlus subscription with very little time commitment from you or your agency, so you do not want to miss out on this opportunity!

EVSA
Support and Resources

- For program related questions please contact fleetsolutions@gsa.gov
- For questions and support related to the EVSA product/tool please contact Geotab's GSA Support Team at gsasupport@geotab.com
- Frequently Asked Questions

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