

Electric Vehicle Preparedness Task 1: Assessment of Data and Survey Results for Joint Base Lewis McChord

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June 2013



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June 2013

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Electric Vehicle Preparedness

Task 1: Assessment of Data and Survey
Results for Joint Base Lewis McChord

June 2013

Prepared for:

Joint Base Lewis McChord

Prepared by:

Idaho National Laboratory and
ECOtality North America

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CONTENTS

ACRONYMS	v
1. INTRODUCTION	1
2. GENERAL SERVICES ADMINISTRATION DATA SUMMARY	2
2.1 Data Summary for All Vehicles	2
2.2 Data Summary for Cars, Light Trucks, and Medium Trucks	3
2.3 Data Summary for Cars	9
2.4 Data Summary for Light Trucks	13
2.5 Data Summary for Medium Trucks	17
3. SURVEY RESULTS FOR ALL VEHICLES	20
Appendix A, Detailed Open-Ended Responses	26

FIGURES

1. Fuel-type distribution for all vehicles	2
2. Vehicle-type distribution for all vehicles.	2
3. Gross vehicle weight rating distribution for cars, light trucks, and medium trucks.	3
4. Model year distribution for cars, light trucks, and medium trucks	4
5. Cumulative mileage distribution for cars, light trucks, and medium trucks	4
6. Monthly mileage distribution for cars, light trucks, and medium trucks	5
7. Survey results: How much longer do you expect to keep the vehicle in your fleet?	5
8. Survey results: On a typical work day, how many miles is the vehicle driven?	6
9. Survey results: Is this vehicle used off-base?	6
10. Survey results: If this vehicle is used off base, how many miles does it typically travel on a single trip?	7
11. Is the vehicle used during specific hours or at any time during the day?	7
12. Gross vehicle weight rating distribution for cars	10

13.	Model year distribution for cars.	10
14.	Cumulative mileage distribution for cars.	11
15.	Monthly mileage distribution for cars.	11
16.	Fuel type distribution for cars.....	12
17.	Survey results: Is this vehicle used off-base?	12
18.	Survey results: If this vehicle is used off base, how many miles does it typically travel on a single trip?.....	13
19.	Gross vehicle weight rating distribution for light trucks.	14
20.	Model year distribution for light trucks.....	14
21.	Cumulative mileage distribution for light trucks.	15
22.	Monthly mileage distribution for light trucks.....	15
23.	Fuel type distribution for light trucks.	16
24.	Survey results: Is this vehicle used off-base?	16
25.	Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip?.....	17
26.	Gross vehicle weight rating distribution for medium trucks.	18
27.	Model year distribution for medium trucks.	18
28.	Cumulative mileage distribution for medium trucks.	19
29.	Monthly mileage distribution for medium trucks.	19
30.	Fuel-type distribution for medium trucks.	20
31.	Survey results: vehicle general use.....	20
32.	Survey results: vehicle location (where is the vehicle parked at night?).....	21
33.	Survey results: How much longer do you expect to keep the vehicle in your fleet?	21
34.	Survey results: On a typical weekday, how many miles is the vehicle driven?	22
35.	Survey results: When in use, how many people are typically onboard?	22
36.	Survey results: How many people have access to the vehicle?	23
37.	Survey results: Is this vehicle used off-base?	23

38.	Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip?.....	24
39.	Is the vehicle used during specific hours or at any time during the day?	24
40.	If it is an alternate fuel vehicle (e.g., E85), is the alternate fuel used?	25

TABLES

1.	Survey results: Where is the vehicle typically parked?	8
2.	Plug-in electric vehicle cars available for 2013.....	9
3.	Plug-in electric vehicle light trucks available for 2013.	13
4.	Plug-in electric vehicle medium trucks available for 2013.	17
A-1.	Survey results: Vehicle general use additional information.	26
A-2.	Survey results: On a typical weekday, how many miles is the vehicle driven per day? If you track miles separately, please identify total miles and measurement period:	27
A-3.	Survey results: When in use, how many people are typically on board? Any additional information.	27
A-4.	Survey results: How many people have access to drive the vehicle? Any additional information:.	28
A-5.	Survey results: Is this vehicle used off-base? Exactly how many times per period selected (e.g., per week, month, or year)?	28
A-6.	Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip? Additional information.....	29
A-7.	Survey results: Is the vehicle used during specific hours or at any time during the day? Specifically, what times is the vehicle used (e.g., 1000 to 1100 and 1500 to 1700):	30
A-8.	Survey results: If an alternate fuel vehicle (e.g., E85), is the alternate fuel used? Any additional information.	30
A-9.	Survey results: Does the vehicle typically carry specific materials or cargo? Please specify and include typical payload weights if available.	31
A-10.	Survey results: Please add any information pertinent to identify the mission of the vehicle(s).	33

ACRONYMS

BEV	battery electric vehicle
E85	ethanol fuel blend of up to 85% denatured ethanol fuel and gasoline or other hydrocarbon by volume
GSA	General Services Administration
JBLM	Joint Base Lewis McChord
PEV	plug-in electric vehicle
PHEV	plug-in hybrid electric vehicle

Electric Vehicle Preparedness

Task 1: Assessment of Data and Survey Results for Joint Base Lewis McChord

1. INTRODUCTION

The U.S. Department of Energy and the U.S. Department of Defense signed a memorandum of understanding on July 22, 2010, for the purpose of strengthening the coordination of efforts to enhance national energy security and to demonstrate federal government leadership in transitioning America to a low-carbon economy. The memorandum of understanding included efforts in the areas of energy efficiency, fossil fuels, alternative fuels, efficient transportation technologies and fueling infrastructure, grid security, smart grid, and storage.

In support of the memorandum of understanding, the Idaho National Laboratory, with funding provided by U.S. Department of Energy's Vehicle Technologies Office and Federal Energy Management Program, directed ECotality North America to conduct several U.S. Department of Defense base studies to identify potential U.S. Department of Defense transportation systems that are strong candidates for the introduction or expansion of electric drive vehicles. ECotality previously has conducted similar fleet, city, state, and country-wide studies using their micro-climate assessment process, which consists of the following four main tasks:

- Task 1: Conduct a fleet and infrastructure assessment
- Task 2: Develop target electrification vehicles
- Task 3: Perform a detailed assessment of target electrification vehicles and charging infrastructure
- Task 4: Perform an economic analysis of target electrification.

The assessment of the potential for replacing Joint Base Lewis McChord (JBLM) fleet vehicles with plug-in electric vehicles (PEV) starts with assessment of fleet vehicles' missions and vehicle characteristics. This assessment was conducted through a written survey instrument and field interviews. This Task 1 report provides a summary and assessment of General Services Administration (GSA) data and survey results.

PEVs generally are classified into two vehicle types: battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). BEVs are used to indicate that all motive power is provided by an onboard battery. PHEVs provide some of the motive power by an onboard battery, which is supplemented by another power source (e.g., a gasoline engine or generator). Collectively, BEVs and PHEVs are known as PEVs.

Section 2 provides a general summary for GSA vehicles, which is divided by vehicle type. Section 2.1 presents the data summary for all GSA vehicles. Section 2.2 provides information for all non-electric cars, light trucks, and medium trucks, including a list of parking locations, as obtained from survey results, and a list of suggested vehicles for use with data loggers. In addition, discussion on open-ended survey responses and their pertinence for mission analysis is provided (a selection of responses is listed in Appendix A). Sections 2.3 through 2.5 present data specifically for cars, light trucks, and medium trucks, respectively. Section 3 provides a general summary of survey responses for all vehicles.

2. GENERAL SERVICES ADMINISTRATION DATA SUMMARY

2.1 Data Summary for All Vehicles

The GSA fleet at JBLM consists of 1,921 vehicles, with fuel type distribution as shown in Figure 1, and vehicle type distribution as shown in Figure 2. As can be seen in the figures, gasoline-powered vehicles (including a significant number of ethanol/gas) comprise the majority of vehicles. In particular, cars and light trucks are powered predominantly by gasoline. These vehicle types make up the majority of the fleet and are the most likely candidates for replacement by electric vehicles because auto manufacturers have focused on providing electric vehicles of this size to date. Diesel-powered vehicles also make up a sizeable fraction of the fleet; diesel is the predominant fuel used in larger vehicles. In particular, medium trucks are likely candidates for replacement by EVs because manufacturers plan to provide more vehicles of this size in the coming years.

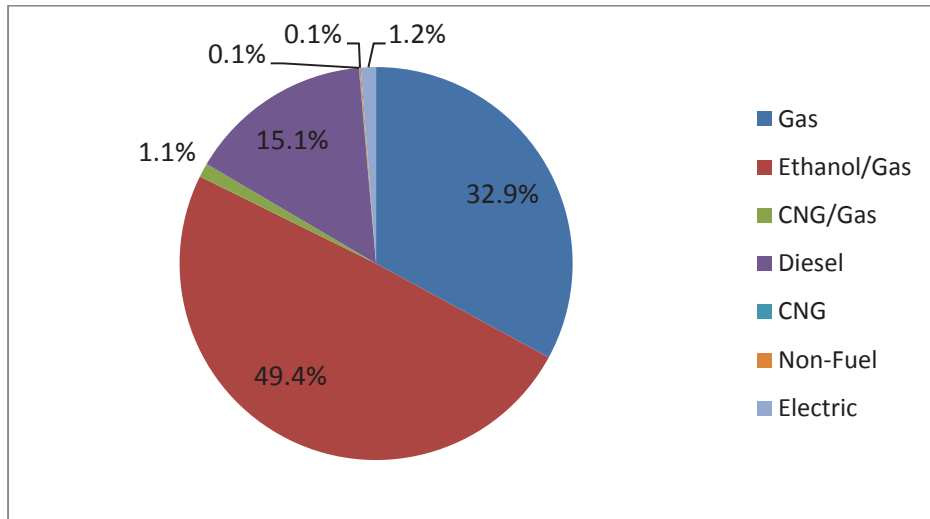


Figure 1. Fuel-type distribution for all vehicles.

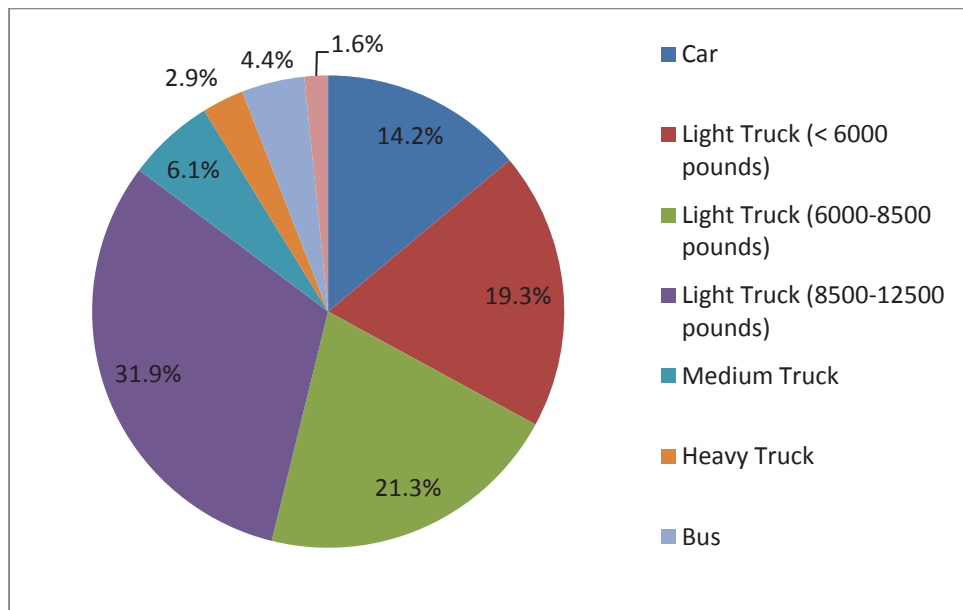


Figure 2. Vehicle-type distribution for all vehicles.

2.2 Data Summary for Cars, Light Trucks, and Medium Trucks

This section provides a summary of data for non-electric cars, light trucks, and medium trucks, because these vehicles are most likely to be replaced by PEVs in the near term. This section differs from Section 2.1 in that heavy truck, bus, and other vehicles of that type (Figure 3) have been removed. In addition, vehicles currently using electric power have been removed. Approximately 1,780 vehicles (Figures 4 and 5) of the total 1921 vehicles are in this category.

Of particular interest is the monthly mileage distribution (Figure 6). If one conservatively assumes a battery range of 75 miles for a PEV and 21 working days per month, then a vehicle that consistently travels the same distance each day would have to travel greater than approximately 1,500 miles per month to exceed the battery capacity. As can be in Figure 6, over 80% of JBLM cars, light trucks, and medium trucks have traveled less 1,500 miles per month during the last year. Therefore, barring charging constraints associated with the timing of daily mission activities and the range issues associated with off-base trips, a significant number of vehicles should be eligible for replacement by PEVs.

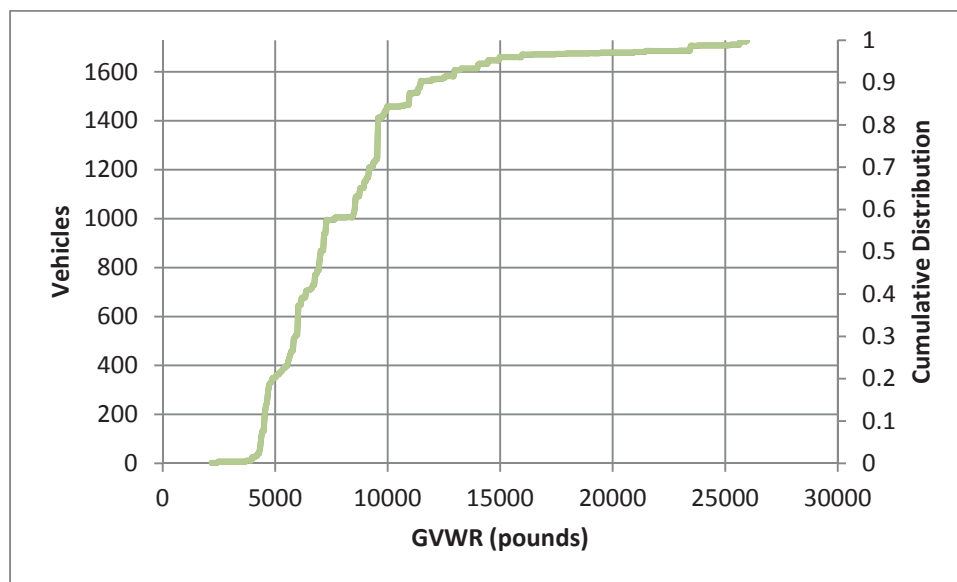


Figure 3. Gross vehicle weight rating distribution for cars, light trucks, and medium trucks.

As can be seen in Figures 7 through 11, surveys have been received for approximately 350 vehicles; however, the number of respondents for each question differs. Figure 8 shows that the majority of respondents travel less than 40 miles on a typical workday. This confirms that many vehicles should be eligible for replacement by BEVs (e.g., Nissan LEAF). This is further justified by responses to the request for additional information (see Table A-2 in Appendix A) on this question, where it can be seen that only three respondents specify that they travel over 1,300 miles per month. These vehicles are at the Yakima Training Center; therefore, there may be less potential to replace vehicles that are based at this location. Nevertheless, many vehicles can be replaced by PHEVs (e.g., Chevrolet Volt), allowing for electric power usage on a regular basis and gasoline to be used as needed for longer trips.

Figure 9 shows that many vehicles frequently make off-base trips. However, many survey respondents have indicated that these trips are relatively short. For example, some vehicles travel between Fort Lewis and McChord Field and others travel only to Tacoma. This type of driving is consistent with the results shown in Figure 10, where one can see that the majority of off-base trips are less than 100 miles in length. Tables A-5 and A-6 provide additional open-ended responses, which show that many drivers make short off-base trips very regularly. However, about 55 respondents indicate that they take trips that can exceed 100 miles at least a few times per year. Many of these vehicles are light trucks in the

191st infantry brigade, which performs training exercises that can require long travel distances. A few respondents specify that they make trips to locations such as Yakima, Sacramento, and Umatilla. Therefore, vehicles with similar missions may be better suited for replacement by a PHEV instead of a BEV. Yakima also is a common destination; therefore, there may be benefits associated with analyzing travel between JBLM and Yakima in more detail to see if some improvements in transportation efficiency on this route can be made.

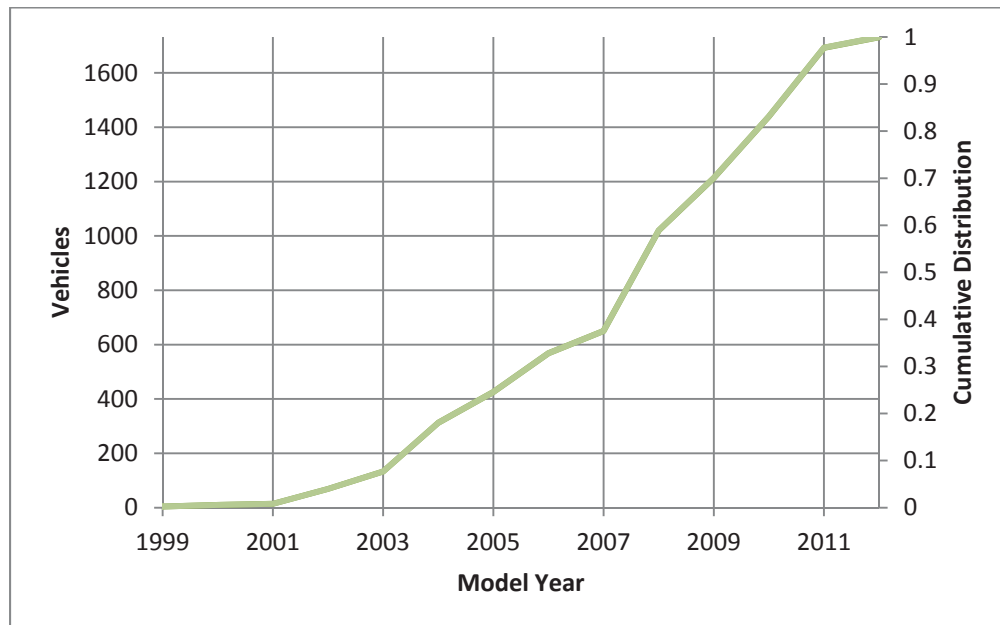


Figure 4. Model year distribution for cars, light trucks, and medium trucks.

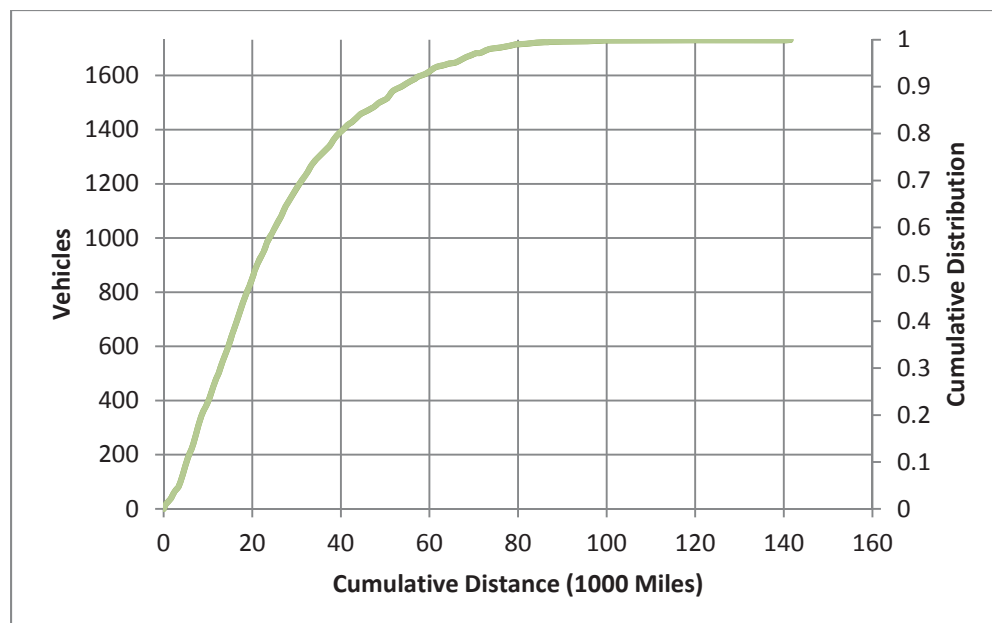


Figure 5. Cumulative mileage distribution for cars, light trucks, and medium trucks.

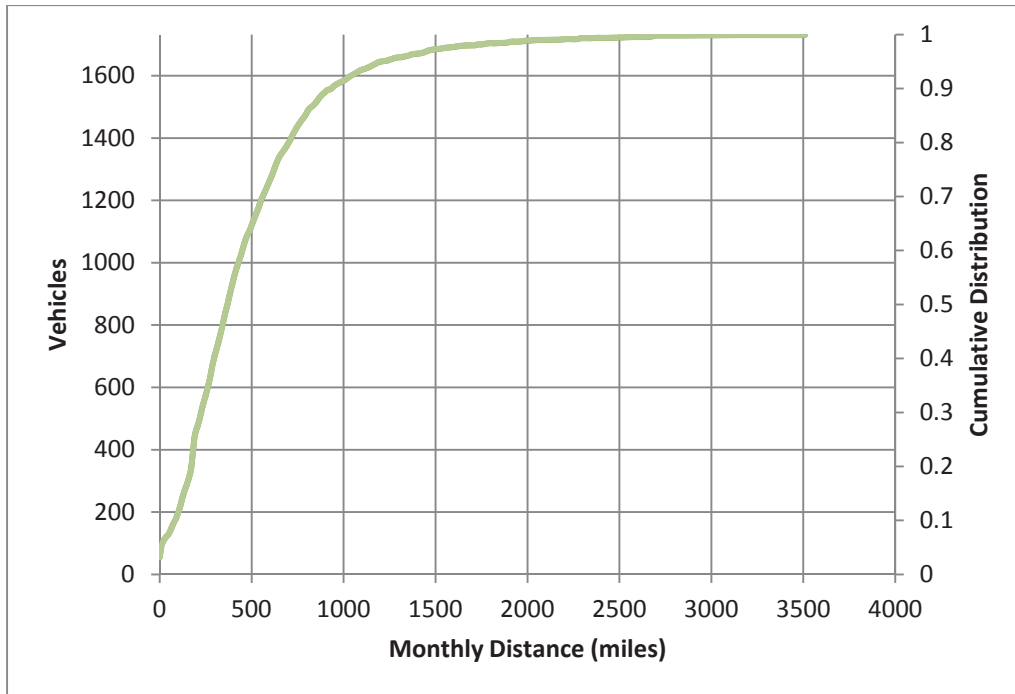


Figure 6. Monthly mileage distribution for cars, light trucks, and medium trucks.

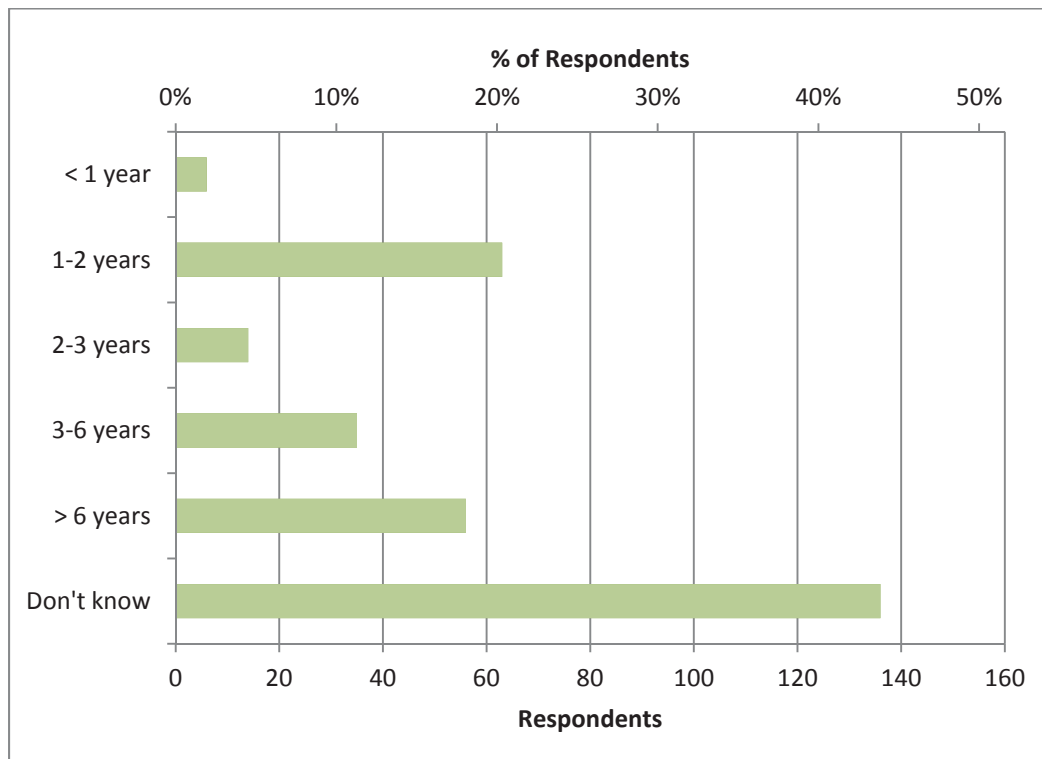


Figure 7. Survey results: How much longer do you expect to keep the vehicle in your fleet?

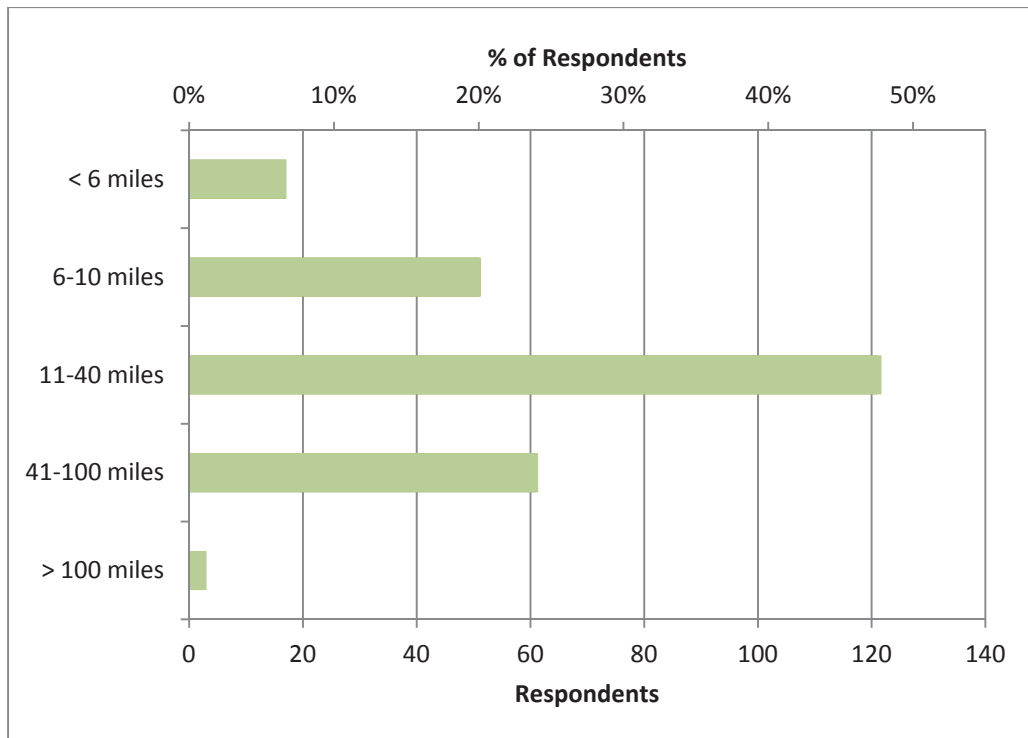


Figure 8. Survey results: On a typical work day, how many miles is the vehicle driven?

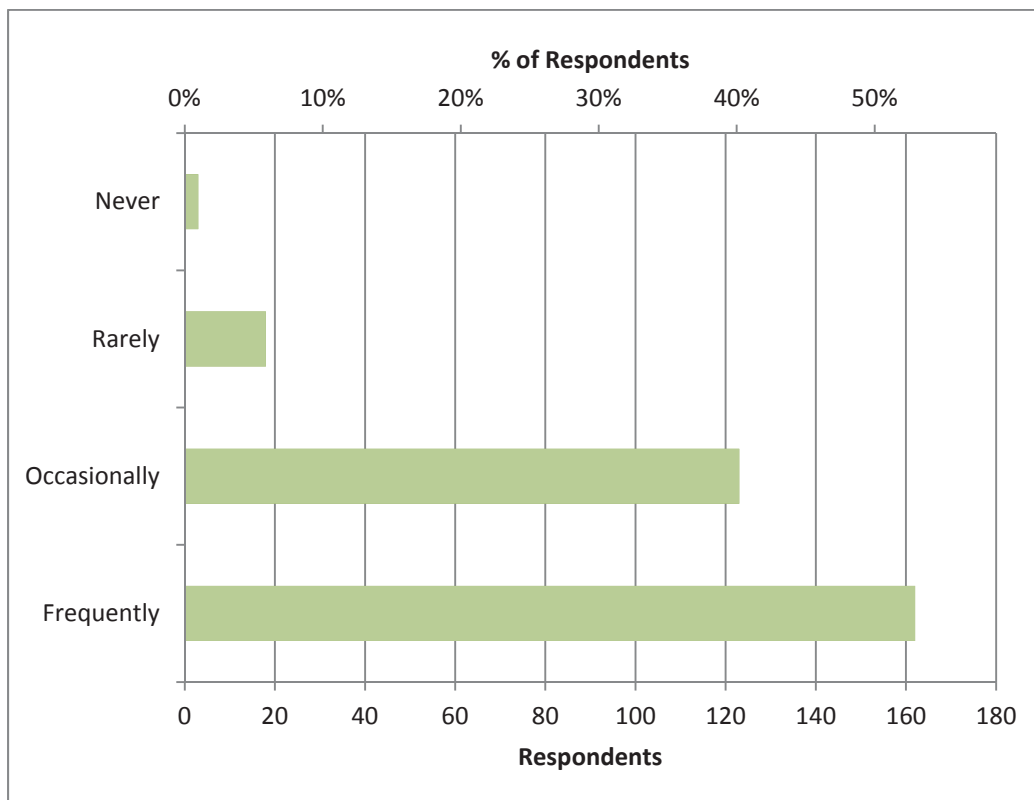


Figure 9. Survey results: Is this vehicle used off-base?

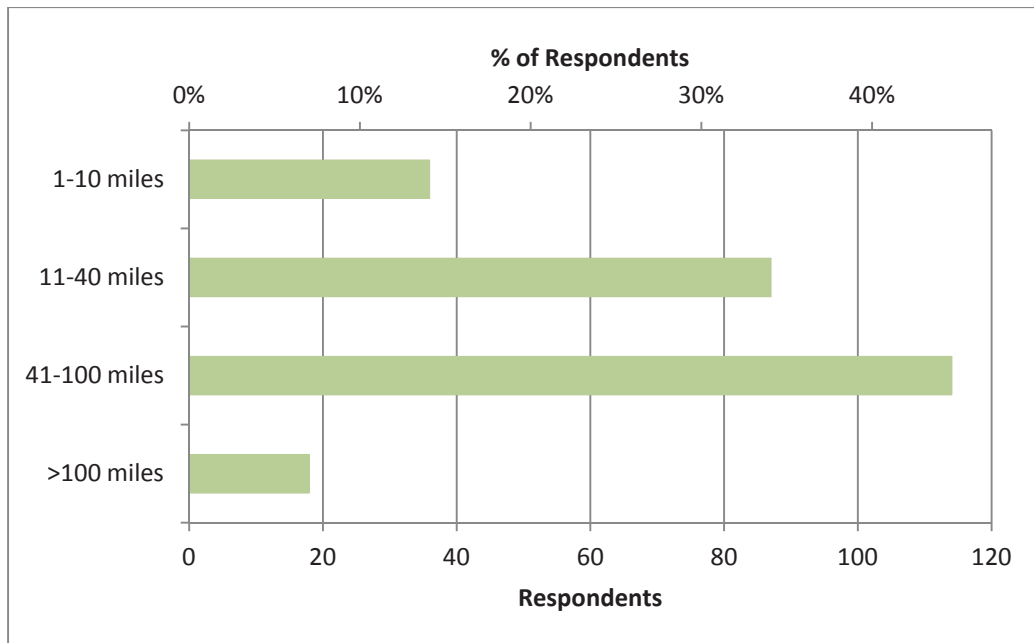


Figure 10. Survey results: If this vehicle is used off base, how many miles does it typically travel on a single trip?

Figure 11 shows that many respondents do not use the vehicle during set times of the day; the majority indicate that vehicles can be used either anytime or that usage is mission related. Table A-7 provides further detailed responses on timing of usage. Around 50 respondents indicate that they may need the vehicle as much as 24 hours a day. Many of these vehicles are pool vehicles that are designated for usage at any time. Table A-10 shows that many vehicles need to respond to emergencies, including aircraft incidents, critical generator problems, spills, and various safety and law enforcement concerns. These vehicle missions appear to be relatively common in the responses, potentially requiring PHEVs if they are to be replaced by electric vehicles. In particular, the public works department seems to have multiple emergency response vehicles.

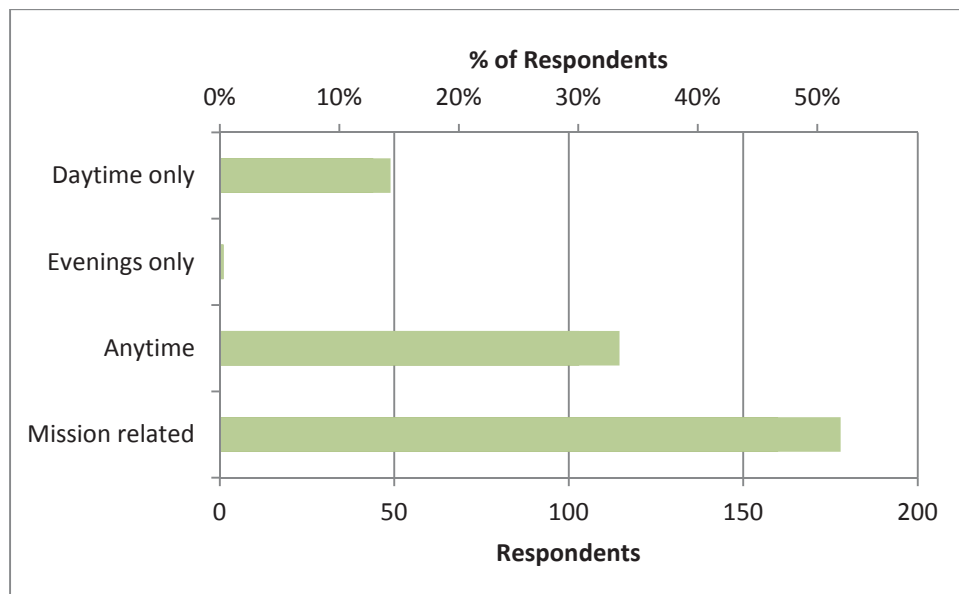


Figure 11. Is the vehicle used during specific hours or at any time during the day?

Some vehicles also are likely to have payload considerations, which may hinder their potential for replacement by a PEV (highlighted by Table A-9 and Table A-10). Around 25 respondents indicated that there are specific payload considerations, which may make the vehicle unsuitable for replacement. These considerations can vary greatly in both the type of cargo being transported and weight. For instance, the Directorate of Family and Morale, Welfare and Recreation has seven vans that carry up to 11 passengers on recreational trips. Although PEV manufacturers presently may not provide suitable replacements for these vans, there may be options in the future.

Other types of cargo can vary in load from less than 100 up to 1,000s of pounds (listed in Table A-9). Typical PEV cars and light trucks should have little problem carrying loads of a few hundred pounds; however, there may be restrictions beyond this point. The types of cargo also can be extremely variable, and several vehicles have received custom modifications for specific purposes. The types of cargo listed include construction materials, surveillance equipment, arms, tools, repair parts, air compressors, generators, radioactive materials, and video production gear.

Table 1 provides information on the number of vehicles that park near various buildings at JBLM. As can be seen in Table 1, many survey respondents are responsible for vehicles that park near buildings 1162 and 9980. However, the fleet near building 1162 is thought to be undergoing significant downsizing at the moment. During interviews with fleet managers, this has been noted as a significant concern when determining an optimal fleet replacement strategy. Nevertheless, the distribution of vehicle parking locations gives some indication of likely sites for electric vehicle infrastructure.

Table 1. Survey results: Where is the vehicle typically parked?

# Vehicles	Nearest Building	# Vehicles	Nearest Building	# Vehicles	Nearest Building
1	BLDG 1004	2	BLDG 3236	1	BLDG 9500
4	BLDG 1017	1	BLDG 3317	3	BLDG 9503
1	BLDG 11596	2	BLDG 3360	1	BLDG 9614
30	BLDG 1162	2	BLDG 340	2	BLDG 9630
4	BLDG 1210	1	BLDG 345	1	BLDG 9640
1	BLDG 12228	1	BLDG 345	2	BLDG 9653
1	BLDG 1401	2	BLDG 3476	5	BLDG 9660
1	BLDG 1517	1	BLDG 3486	2	BLDG 9665
2	BLDG 174	2	BLDG 3752	2	BLDG 9784
5	BLDG 2012	1	BLDG 3759	1	BLDG 9900
9	BLDG 2013	2	BLDG 3916	2	BLDG 9907
15	BLDG 2025	1	BLDG 4042	2	BLDG 9913
3	BLDG 2027C	1	BLDG 4043	1	BLDG 9927B
13	BLDG 2044	3	BLDG 4074	1	BLDG 9925
2	BLDG 2056	1	BLDG 4171	1	BLDG 9958
7	BLDG 2057	1	BLDG 4290	50	BLDG 9980
1	BLDG 2058	1	BLDG 5164	1	BLDG 9988
1	BLDG 2063	1	BLDG 540	1	BLDG 9997
2	BLDG 2107	1	BLDG 5498g	1	BLDG 9998
1	BLDG 2109	2	BLDG 555	1	BLDG F0006
1	BLDG 2111	1	BLDG 556	1	BLDG R1407
1	BLDG 2140	1	BLDG 578	3	BLDG R6003
2	BLDG 2160	1	BLDG 588	1	BLDG R9643

# Vehicles	Nearest Building	# Vehicles	Nearest Building	# Vehicles	Nearest Building
1	BLDG 2170	2	BLDG 690	1	BLDG R9653
1	BLDG 2171	1	BLDG 6993	2	BLDG R9654
2	BLDG 2295	7	BLDG 8050	0	BLDG 9656
2	BLDG 2400	1	BLDG 8559	2	BLDG T6194
1	BLDG 301	1	BLDG 8981	4	Madigan
1	BLDG 3032	2	BLDG 9040A	1	R9652
1	BLDG 3168	13	BLDG 9190	3	R9656
				3	T-5038

2.3 Data Summary for Cars

This section provides a summary of data for cars (Figures 12 through 18). There are 264 cars in the fleet of vehicles. Similar to Section 2.2, cars have a monthly mileage distribution that indicates the range generally should not be a concern. In addition, survey results indicate that the majority of off-base trips by cars are less than 40 miles long; therefore, many vehicles can usefully be replaced by PHEVs. Table 2 provides a list of PEV cars that are either confirmed or planned to be made available by 2013. The list aims to be comprehensive, although some of these vehicles are clearly unsuitable for inclusion in a standard military base fleet due to the high costs and lack of need for sports cars.

Table 2. Plug-in electric vehicle cars available for 2013.

Make	Model	Battery Size	Range (electric only)	Range (electric + conventional fuel)
Chevy	Volt	16 kWh	40 miles	380 miles
Nissan	Leaf	24 kWh	73 to 100 miles	
Mitsubishi	i-MiEV	16 kWh	62 to 98 miles	
Toyota	Prius	4.4 kWh	12.4 to 18.6 miles	540 miles
Coda	EV Sedan	31 kWh, 35 kWh	88 to 120 miles	
Fisker	Karma	20 kWh	50 miles	
Scion	iQ	20 kWh	50 miles	
BMW	ActiveE	32 kWh	100 miles	
Ford	Focus	23 kWh	100 miles	
Tesla	Model S	85 kWh	160, 230, 300 miles	
Honda	Fit	20 kWh	82 to 100 miles	
Ford	C-Max	20 kWh		620 miles
Honda	Accord	6 kWh	10 to 15 miles	500 miles
Fiat	500	20 kWh		
BYD	e6	60 kWh	186 miles	
Chevrolet	Crossvolt	10 kWh		
Chevrolet	Spark			
Fisker	Surf	20 kWh	50 miles	300 miles
Ford	Fusion	10 kWh		
Jaguar	XJ	10 kWh		

Make	Model	Battery Size	Range (electric only)	Range (electric + conventional fuel)
Volkswagen	E-Up!	18 kWh	80 miles	
Volvo	C30	24 kWh	94 miles	
Audi	E-Tron	45 kWh	Up to 155 miles	
Volvo	V70	11.3 kWh	12 to 19 miles	

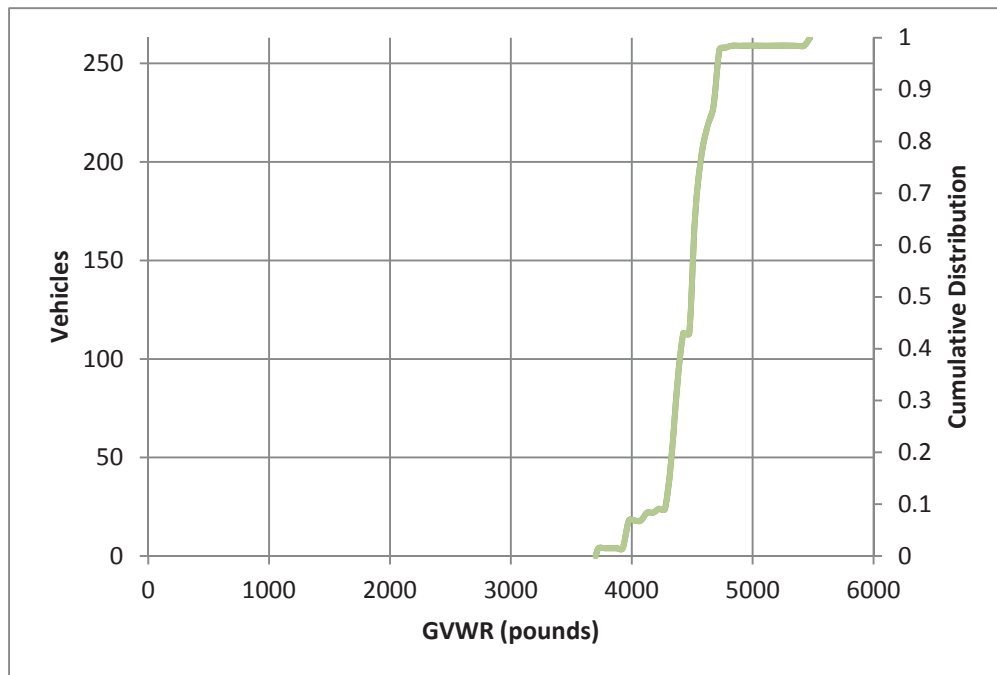


Figure 12. Gross vehicle weight rating distribution for cars.

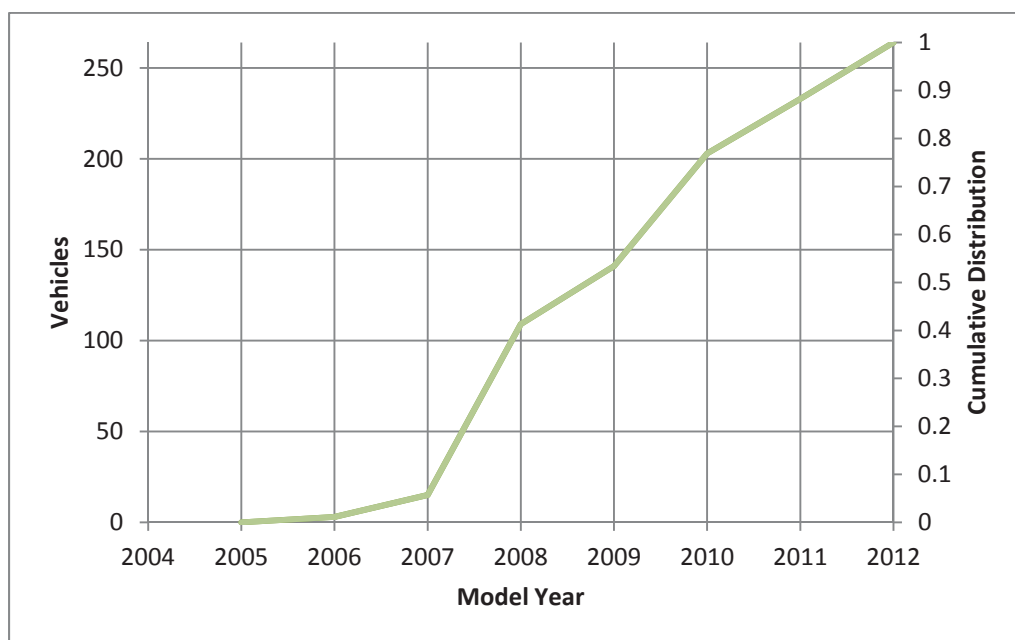


Figure 13. Model year distribution for cars.

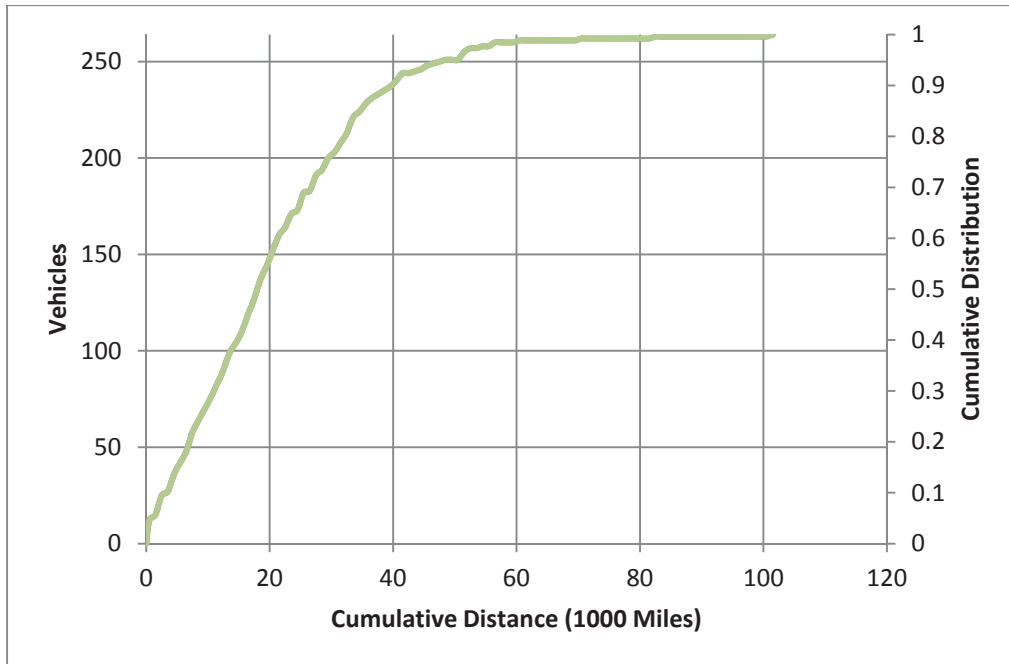


Figure 14. Cumulative mileage distribution for cars.

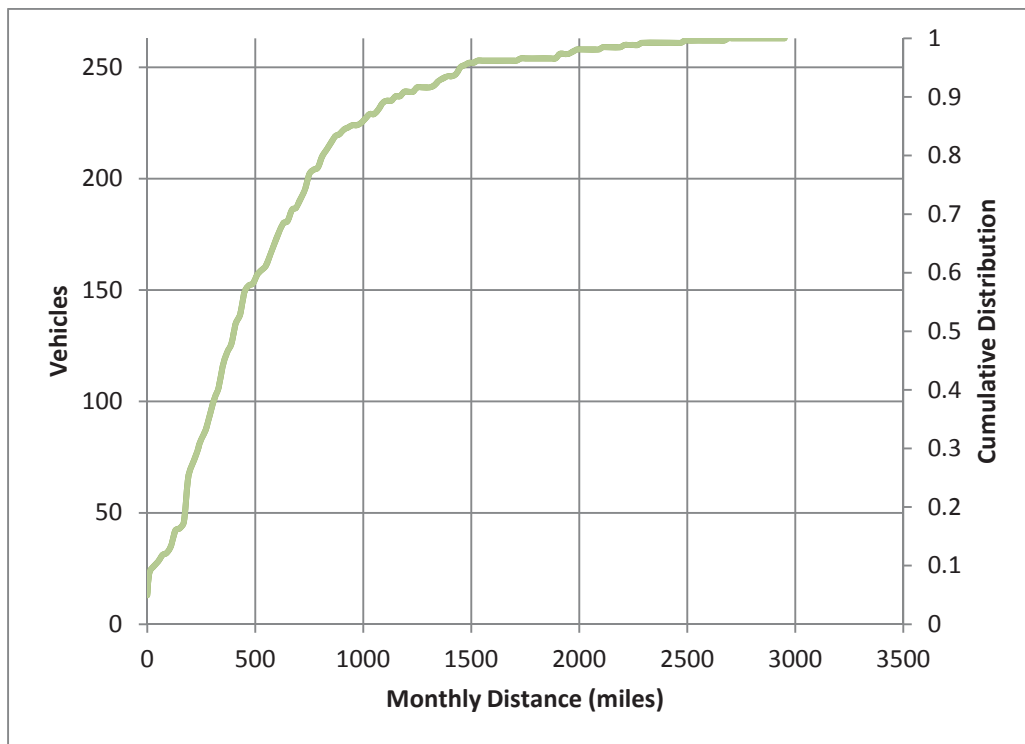


Figure 15. Monthly mileage distribution for cars.

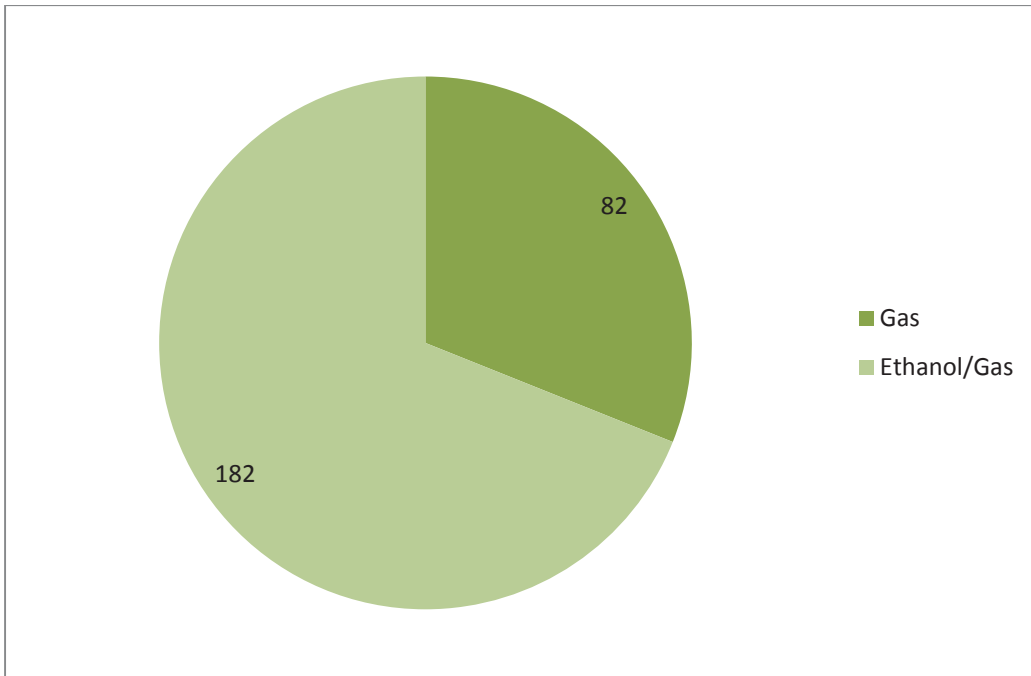


Figure 16. Fuel type distribution for cars.

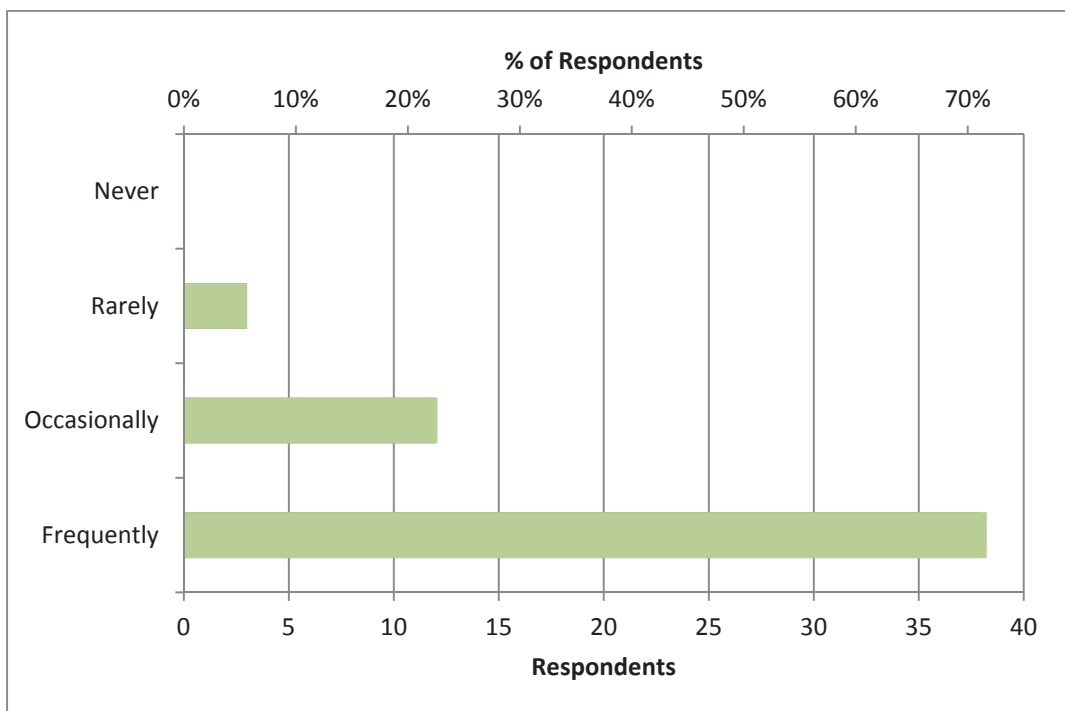


Figure 17. Survey results: Is this vehicle used off-base?

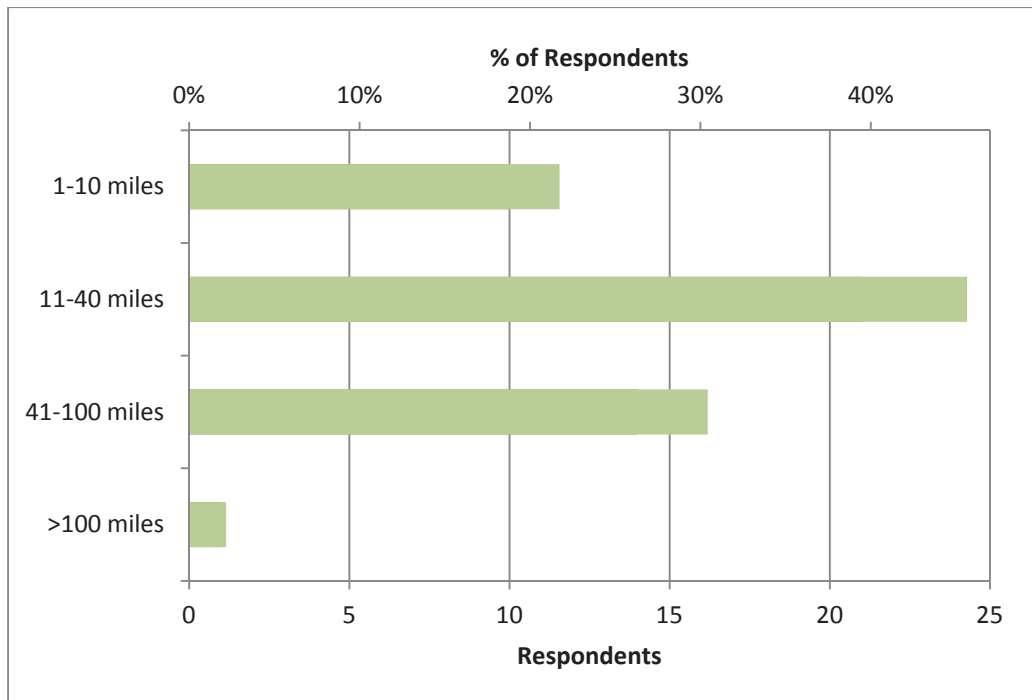


Figure 18. Survey results: If this vehicle is used off base, how many miles does it typically travel on a single trip?

2.4 Data Summary for Light Trucks

This section provides a summary of data for light trucks (Figures 19 through 25). Approximately, 1,353 light trucks are in the fleet. Similar to cars, the monthly mileage distribution for light trucks indicates that range should not generally hinder replacement with electric vehicles. However, survey results shown in Figure 25 indicate that light trucks make longer off-base trips. In turn, it generally may be beneficial to have more PHEVs than BEVs when replacing light trucks. A list of light trucks available in the market by 2013 is shown in Table 3.

Table 3. Plug-in electric vehicle light trucks available for 2013.

Make	Model	Battery Size	Range (electric only)	Range (electric + conventional fuel)
Toyota	RAV4	42 kWh	100 miles	
Kia	CUV			
Mitsubishi	Outlander	20 kWh	35 miles	540 miles
Volvo	XC60	12 kWh	35 miles	600 miles

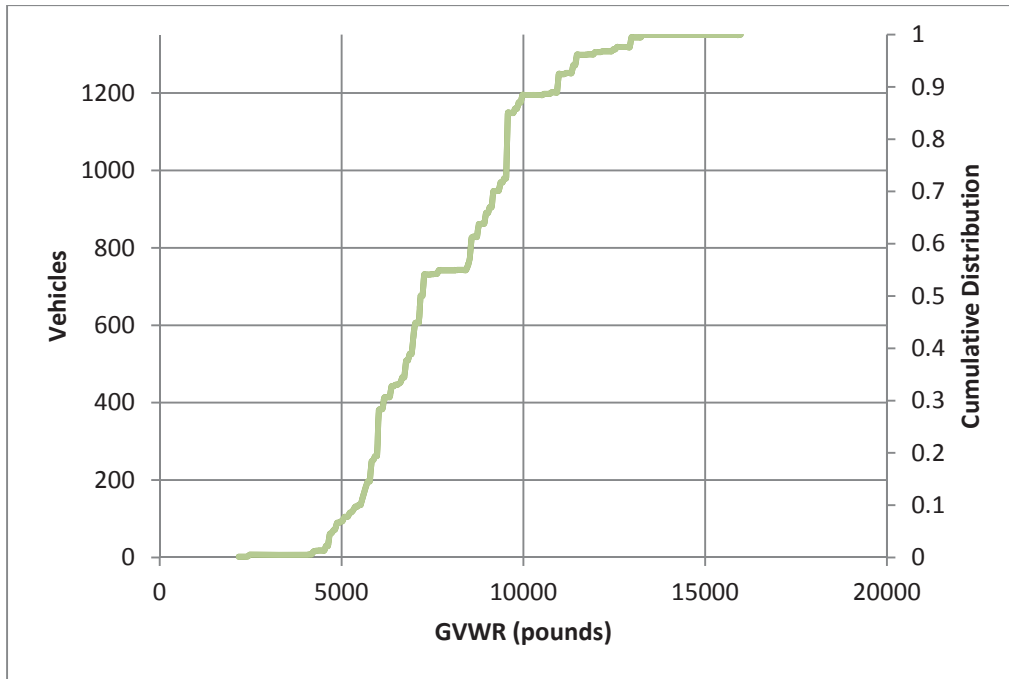


Figure 19. Gross vehicle weight rating distribution for light trucks.

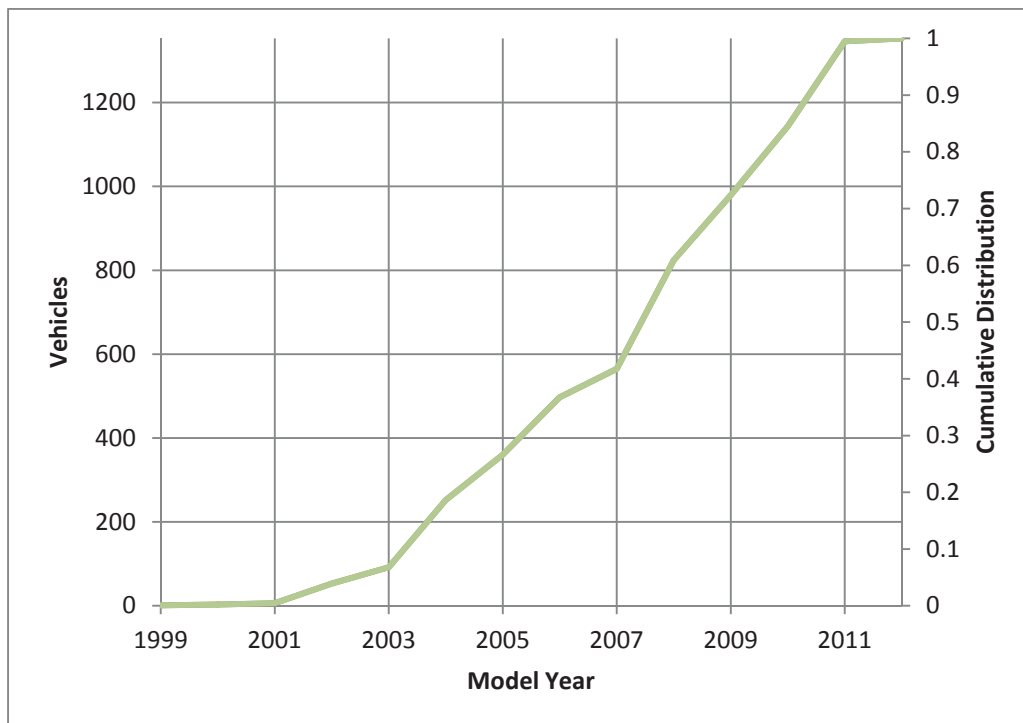


Figure 20. Model year distribution for light trucks.

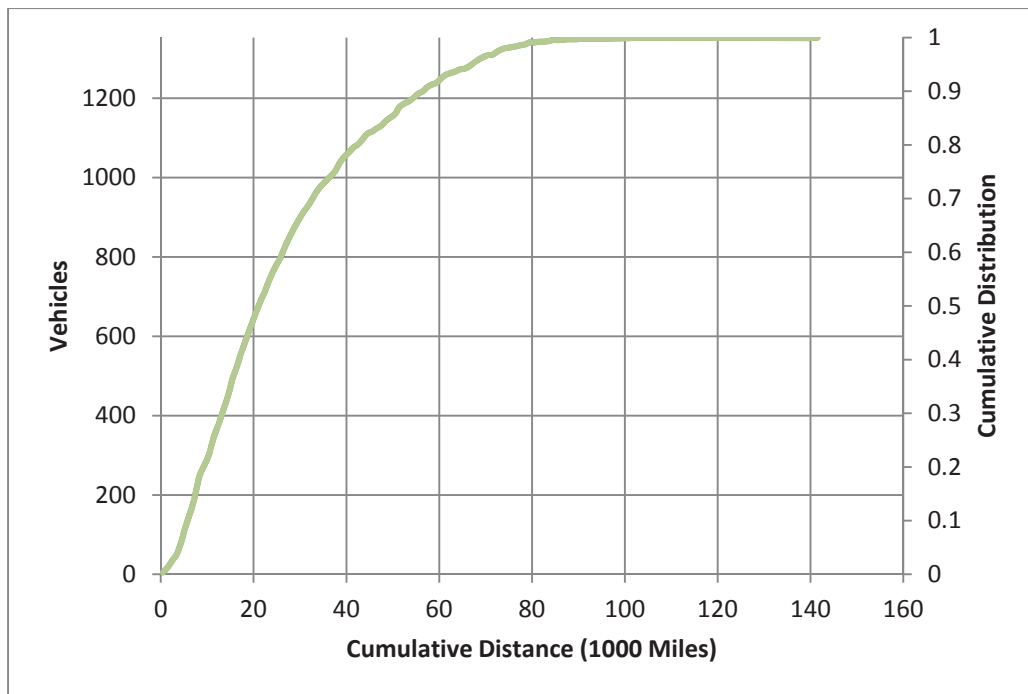


Figure 21. Cumulative mileage distribution for light trucks.

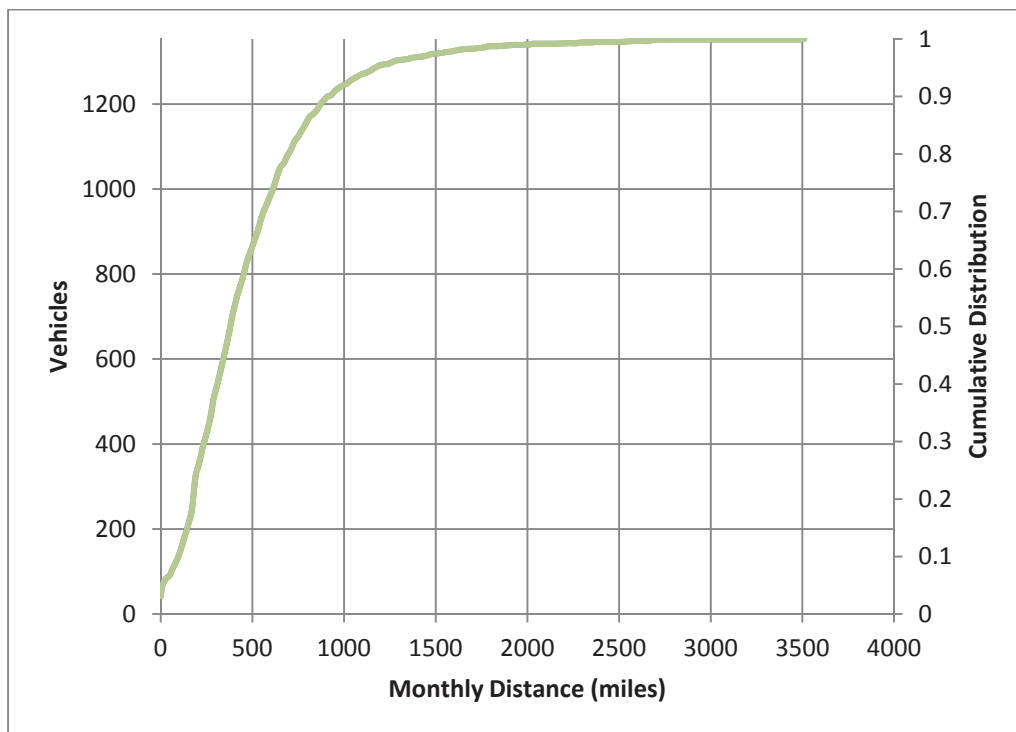


Figure 22. Monthly mileage distribution for light trucks.

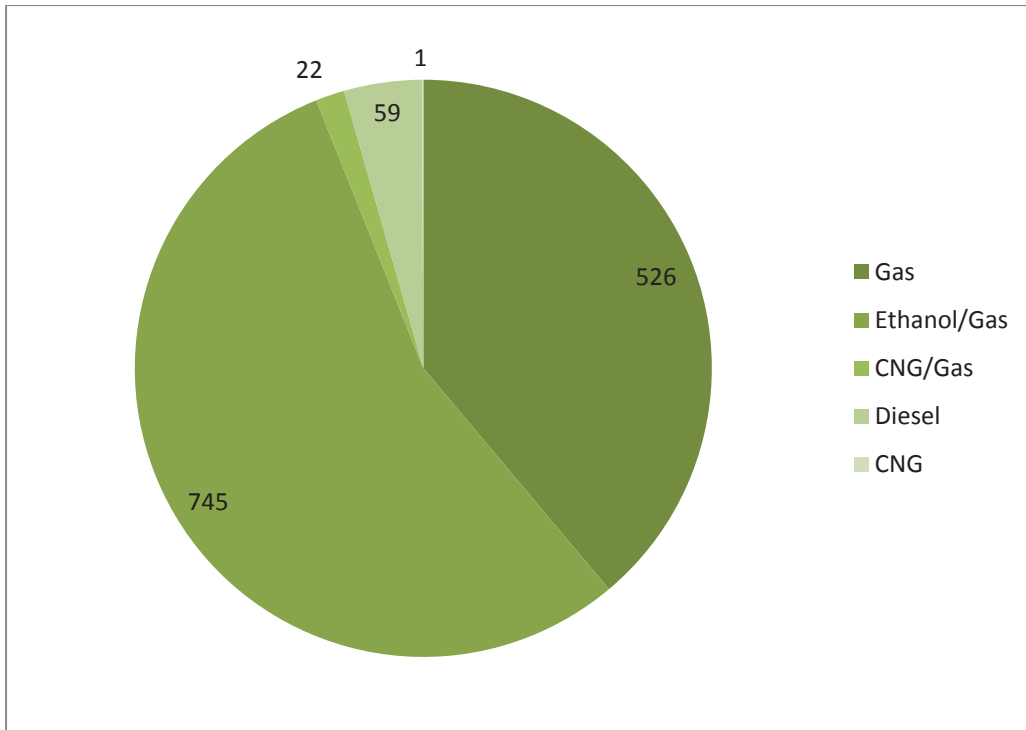


Figure 23. Fuel type distribution for light trucks.

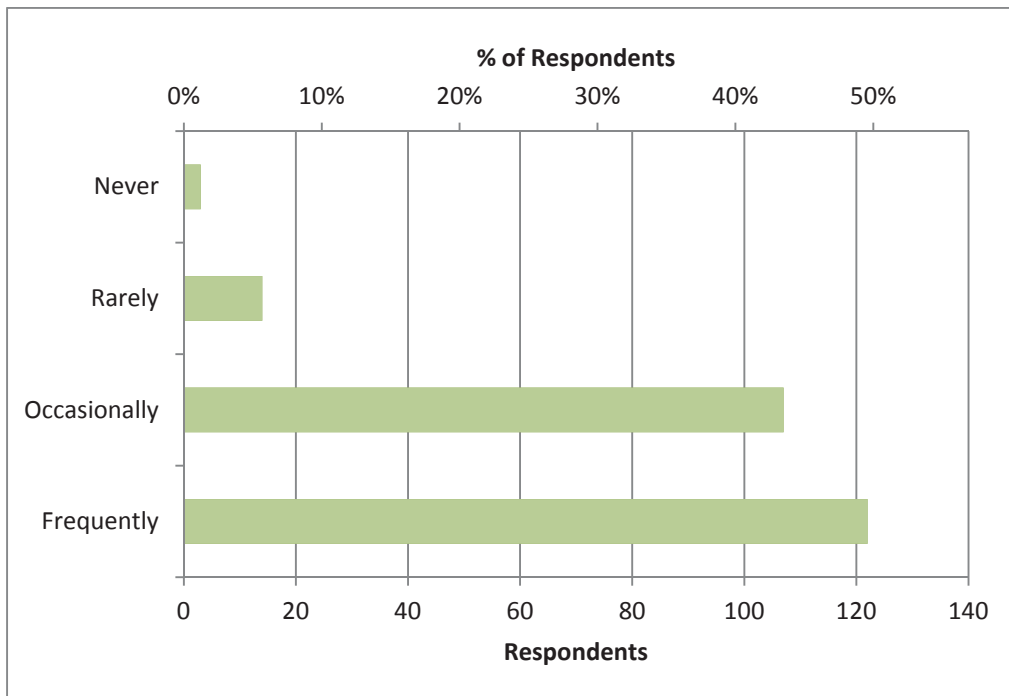


Figure 24. Survey results: Is this vehicle used off-base?

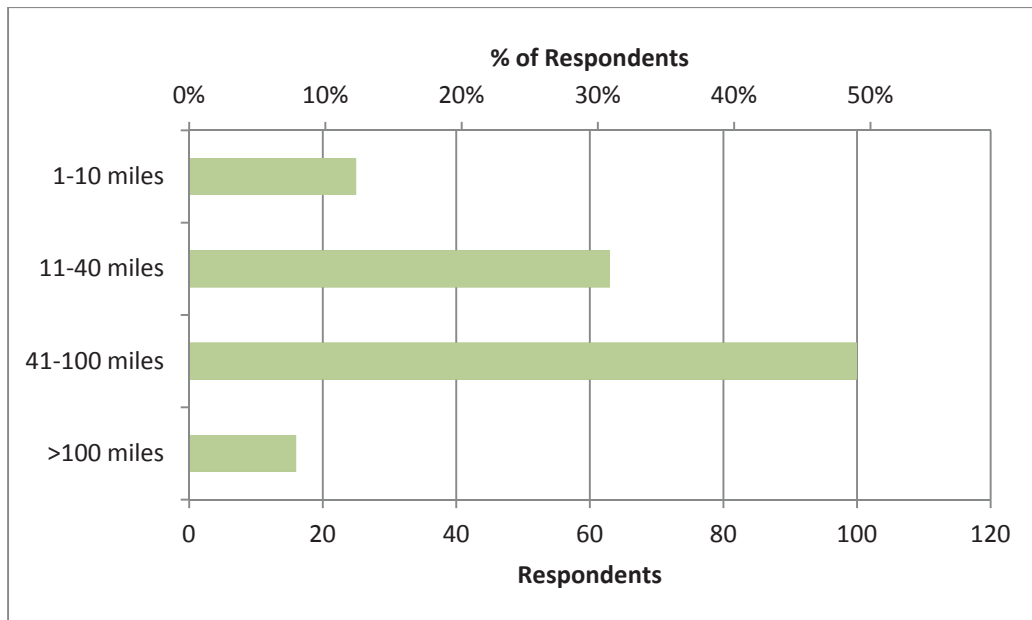


Figure 25. Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip?

2.5 Data Summary for Medium Trucks

This section provides a summary of the data for medium trucks (Figures 26 through 30). As can be interpreted from Figure 29, medium trucks are not generally expected to exceed range limitations, making them eligible for replacement by electric vehicles. Few surveys have been received for medium trucks; however, those that have been received indicate that off-base trips are relatively infrequent and are generally short. This correlates with the data shown in Figure 29.

The primary concern of replacing medium trucks with electric versions has to do with mission-specific requirements. Some trucks have been customized to specific activities, which can have high-power requirements. This has been noted as a concern for multiple vehicles in the public works division at JBLM. Table 4 shows a list of heavy trucks to be available by 2013.

Table 4. Plug-in electric vehicle medium trucks available for 2013.

Make	Model	Base MSRP	Body Style	Fuel Type	Range
Balqon	Nautilus	\$208,000	Truck	Electric	30 to 60 miles
Boulder	DV-500	\$70,000	Van	Electric	100 to 200 miles
Bremach	T-REX	\$120,000	Flatbed commercial truck	Electric	100 miles
Electrorides	ZeroTruck	\$130,000	Medium truck	Electric	
NaviStar	eStar	\$150,000	Box van	Electric	
Optare	Solo EV Bus		Passenger bus	Electric	60 miles
Proterra	EcoRide	\$275,000	Passenger bus	Electric	60 to 100 miles
Smith	Newton		Van	Electric	100 miles

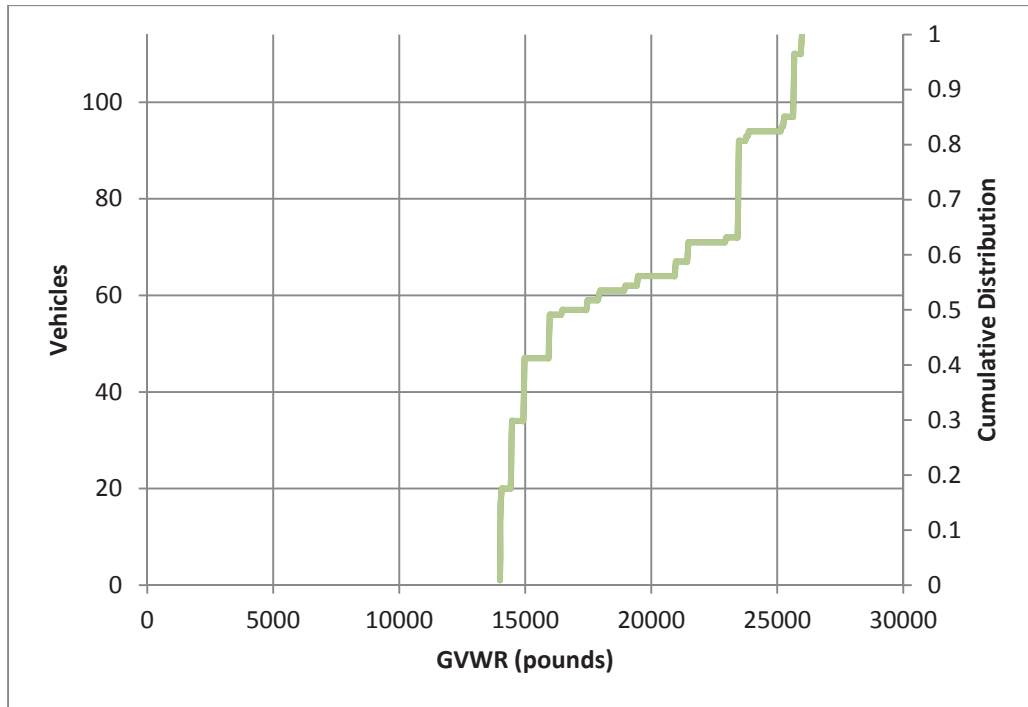


Figure 26. Gross vehicle weight rating distribution for medium trucks.

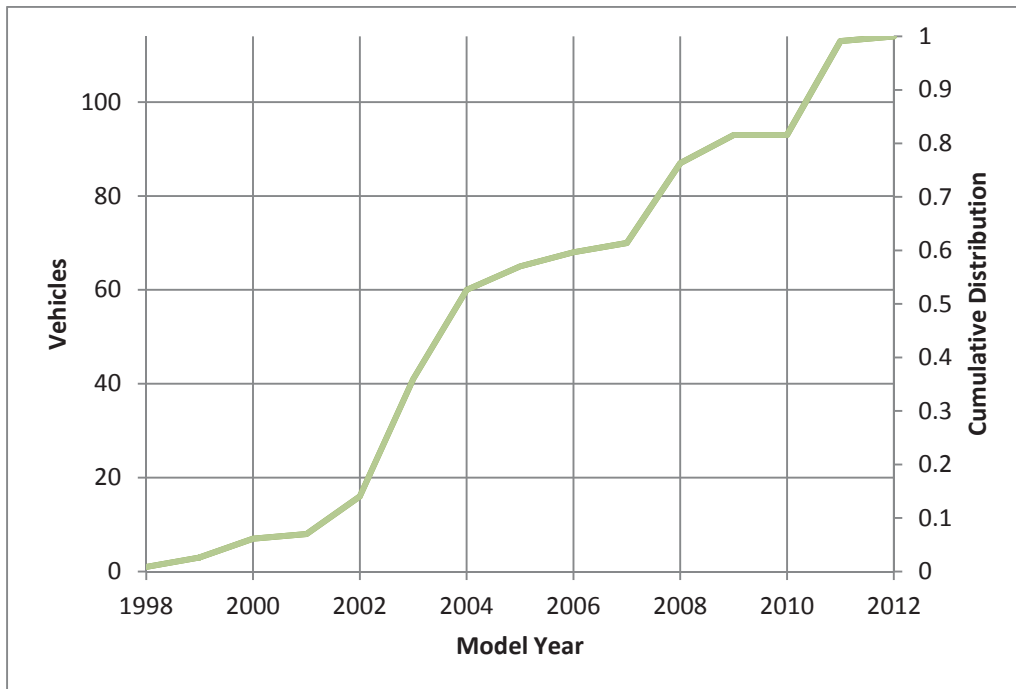


Figure 27. Model year distribution for medium trucks.

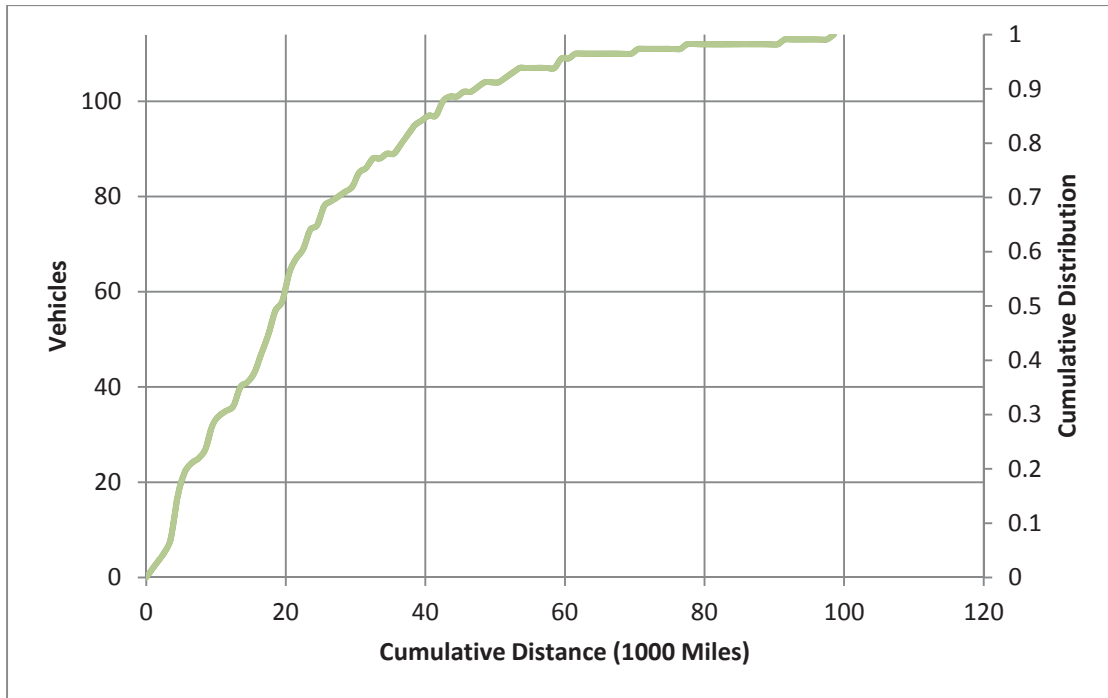


Figure 28. Cumulative mileage distribution for medium trucks.

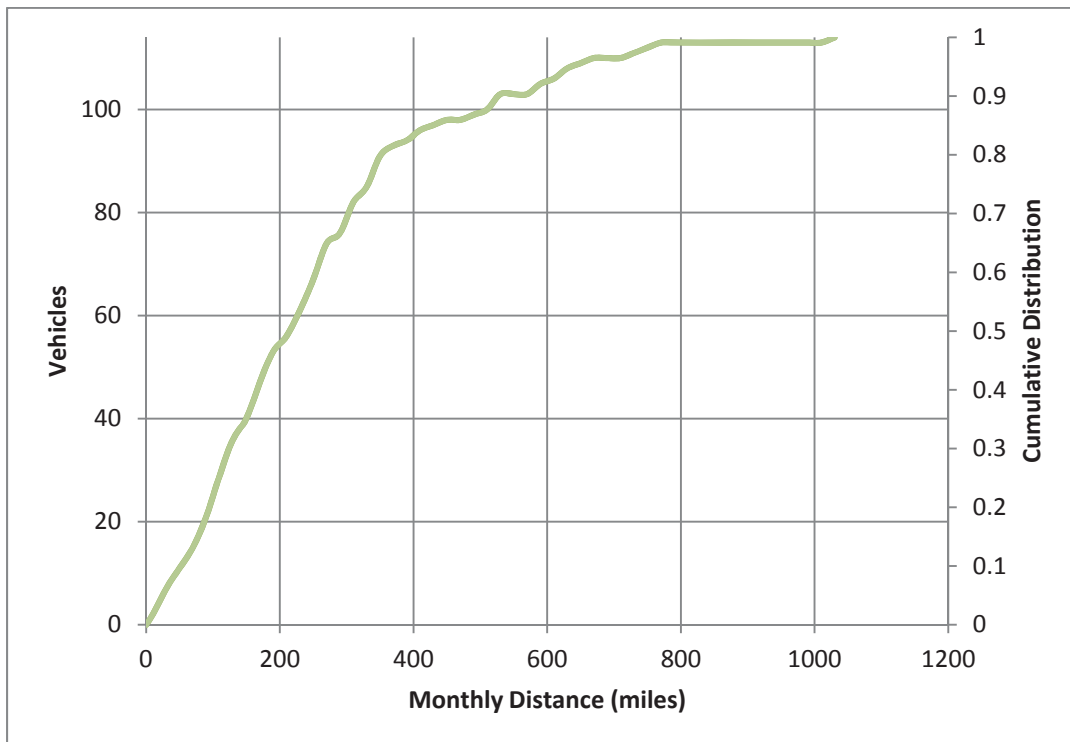


Figure 29. Monthly mileage distribution for medium trucks.

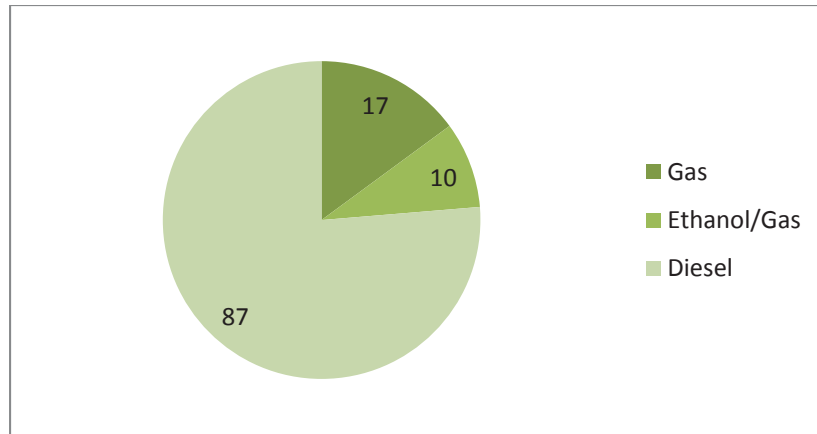


Figure 30. Fuel-type distribution for medium trucks.

3. SURVEY RESULTS FOR ALL VEHICLES

This section shows multiple choice survey results for all questions and for all types of vehicles (Figures 31 through 40).

Figure 34 shows that the majority of respondents travel less than 40 miles on a typical workday. This confirms that many vehicles should be eligible for replacement by BEVs (e.g., Nissan LEAF). In addition, many vehicles can be replaced by PHEVs (e.g., Chevrolet Volt), allowing for electric power usage on a regular basis and gasoline to be used as needed for off-base trips.

Figure 37 shows that many vehicles frequently make off-base trips. However, many survey respondents have indicated that these trips are relatively short. For example, some vehicles travel between Fort Lewis and McChord Field and others travel only to Tacoma. This type of driving is consistent with the results shown in Figure 38, where one can see that the majority of off-base trips are less than 100 miles in length.

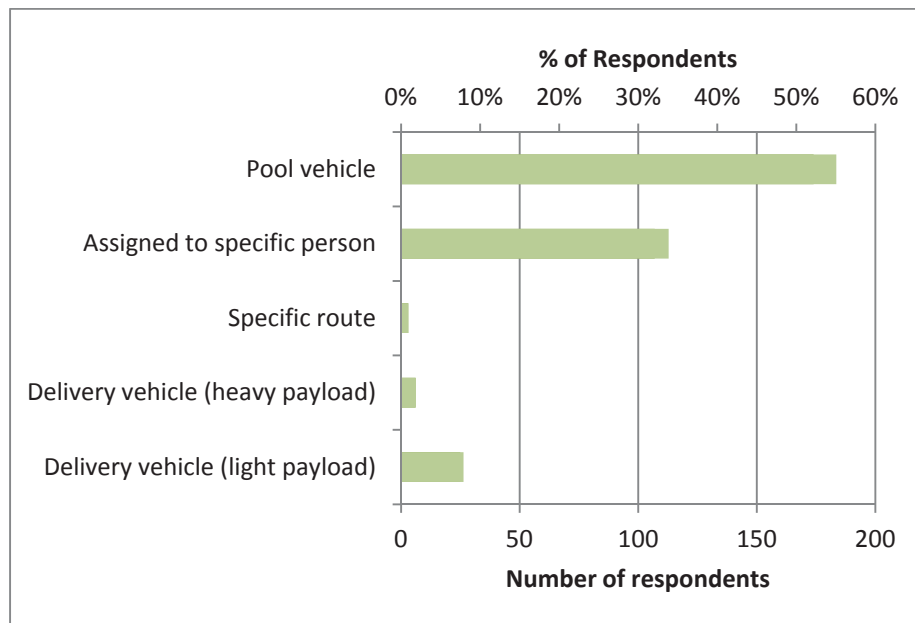


Figure 31. Survey results: vehicle general use.

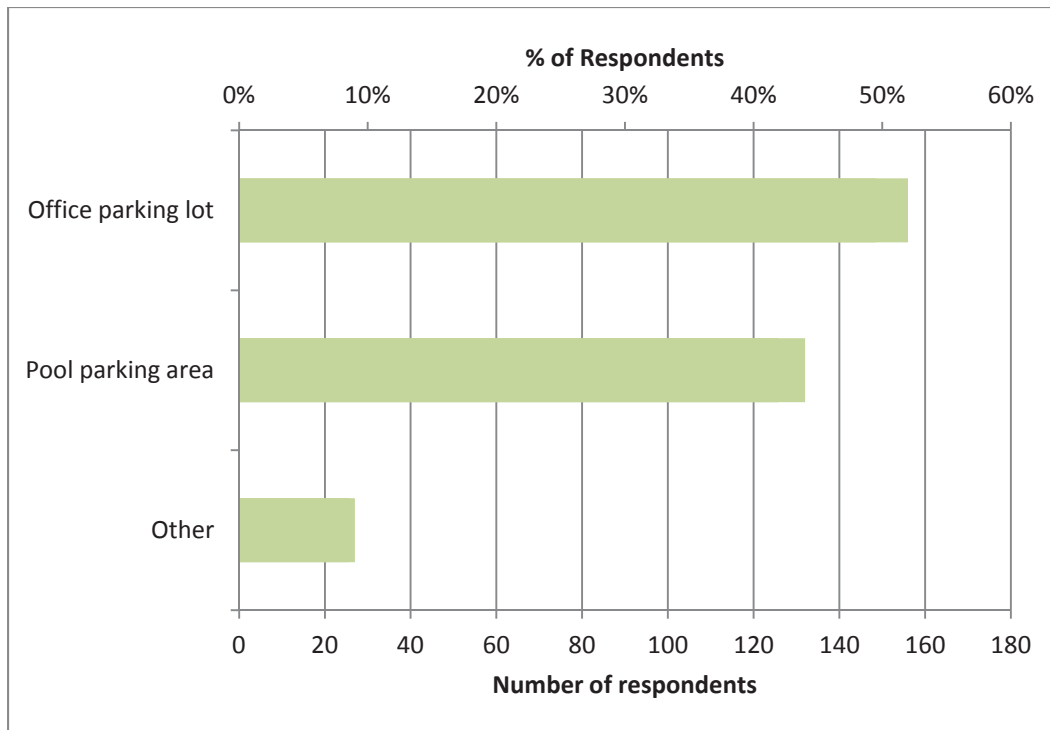


Figure 32. Survey results: vehicle location (where is the vehicle parked at night?).

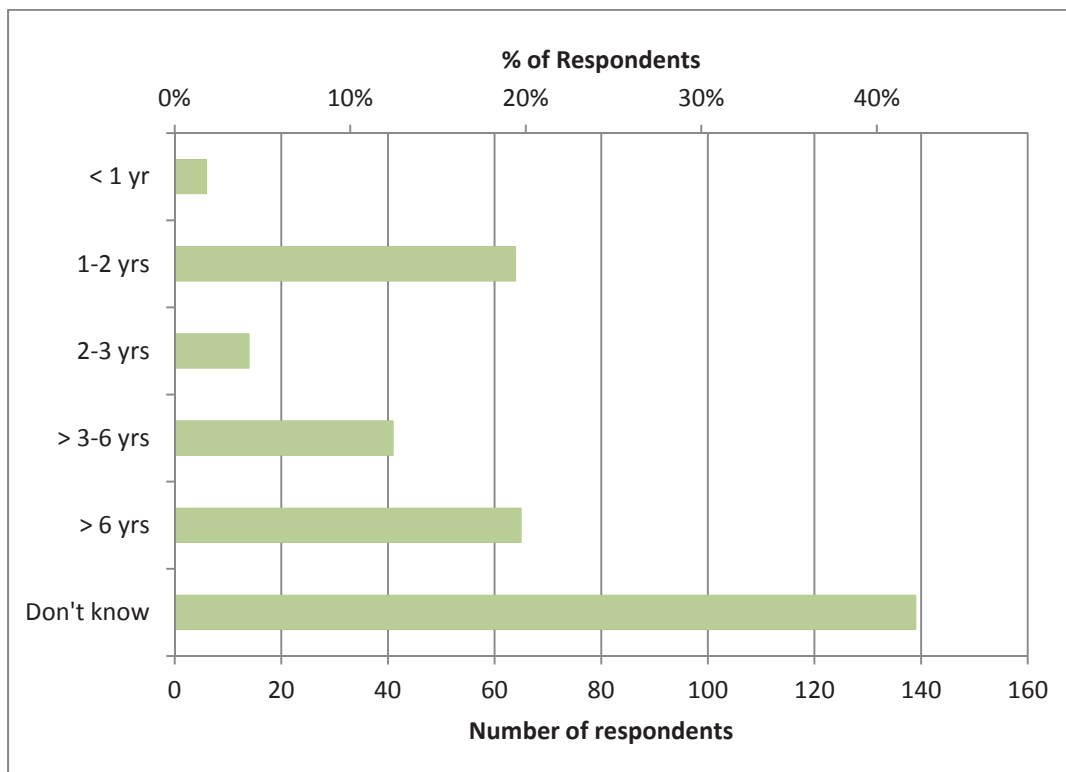


Figure 33. Survey results: How much longer do you expect to keep the vehicle in your fleet?

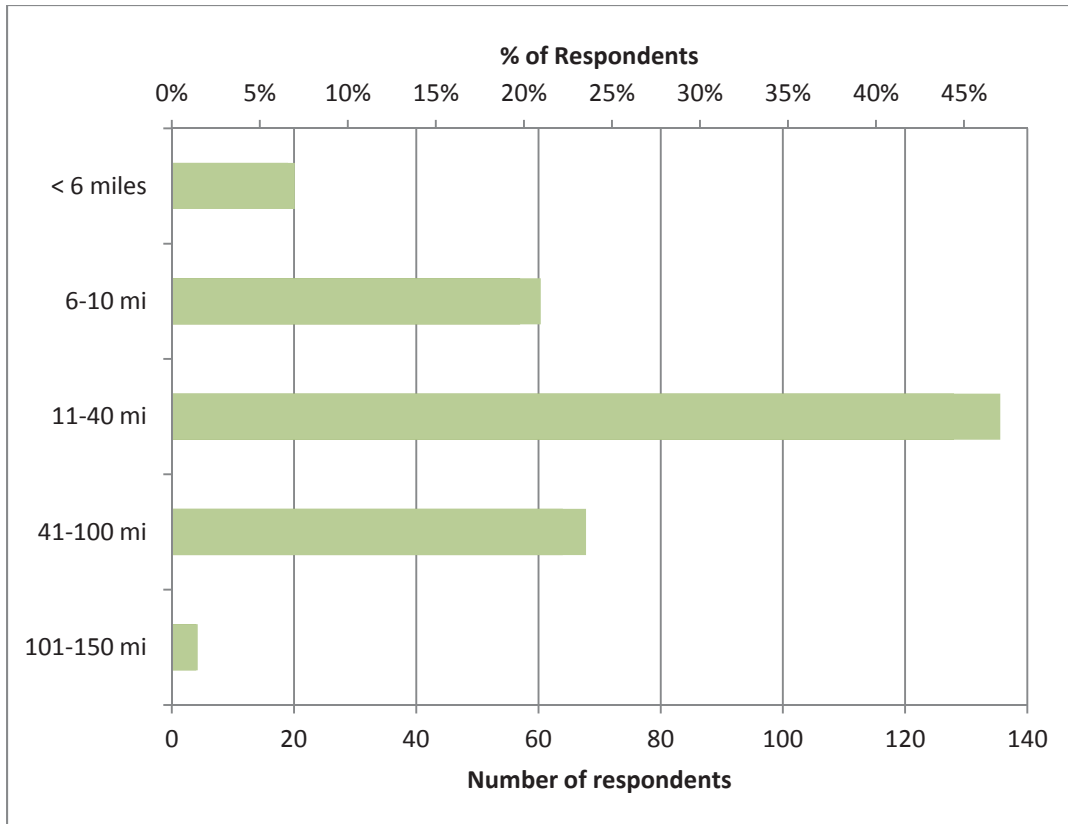


Figure 34. Survey results: On a typical weekday, how many miles is the vehicle driven?

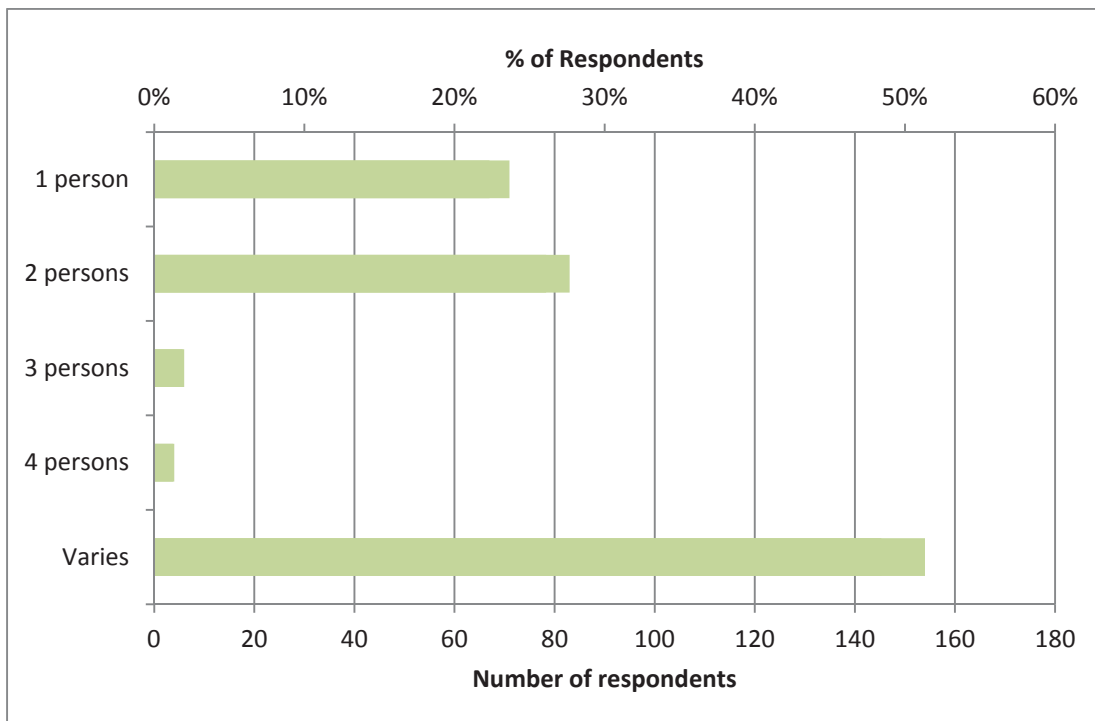


Figure 35. Survey results: When in use, how many people are typically onboard?

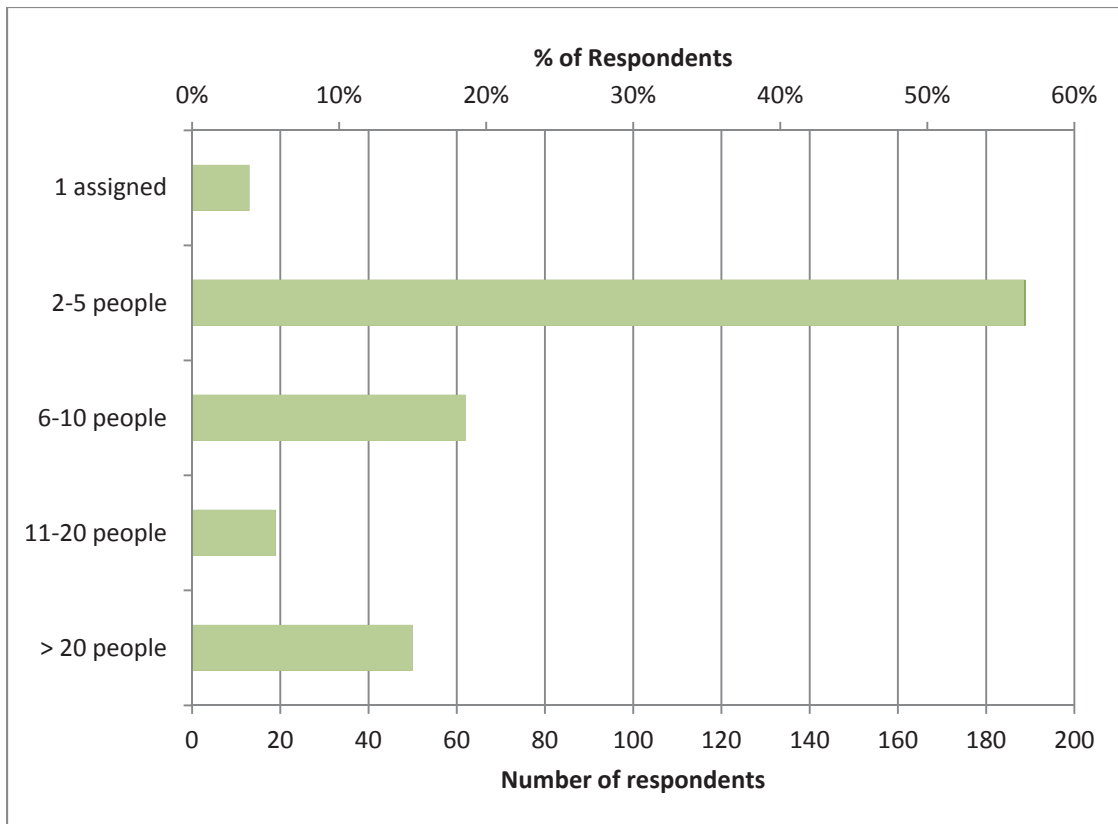


Figure 36. Survey results: How many people have access to the vehicle?

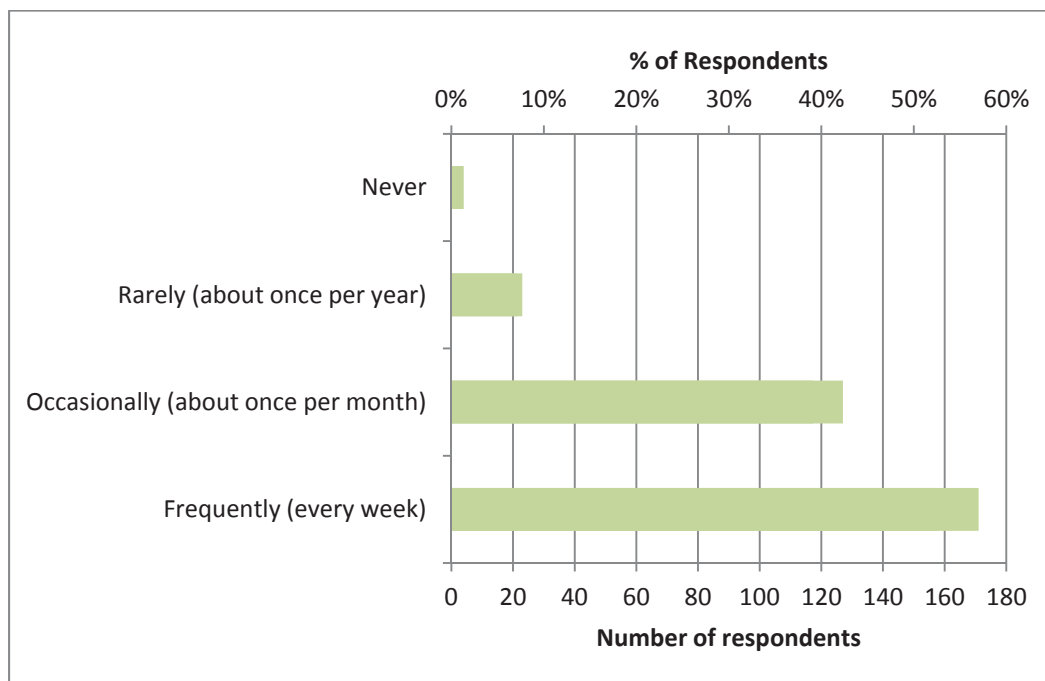


Figure 37. Survey results: Is this vehicle used off-base?

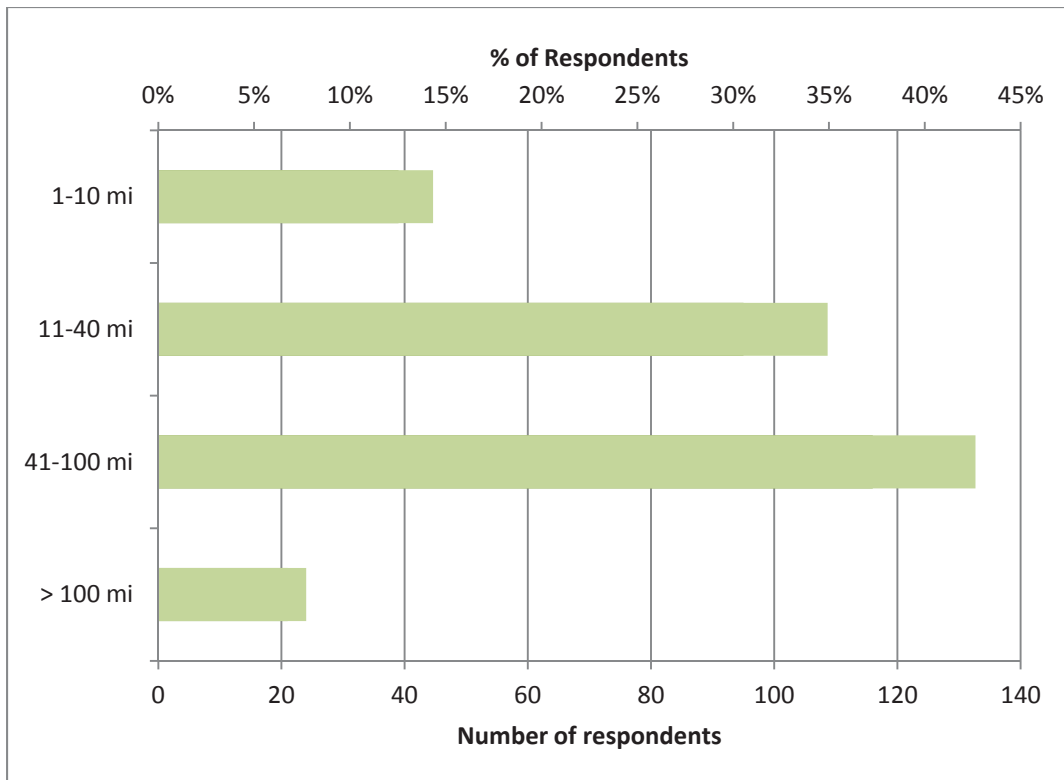


Figure 38. Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip?

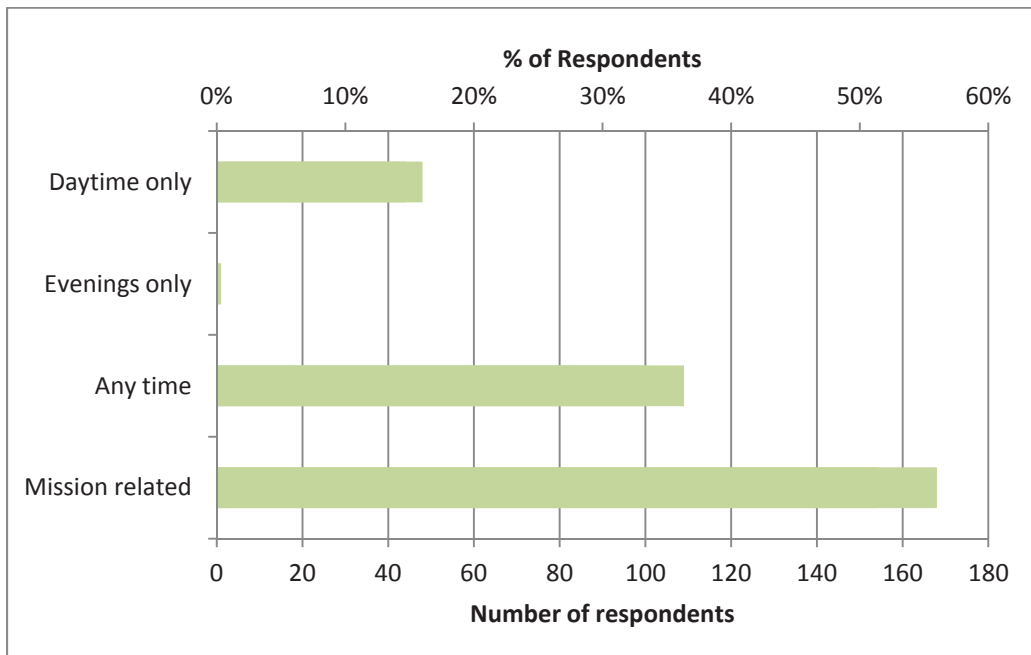


Figure 39. Is the vehicle used during specific hours or at any time during the day?

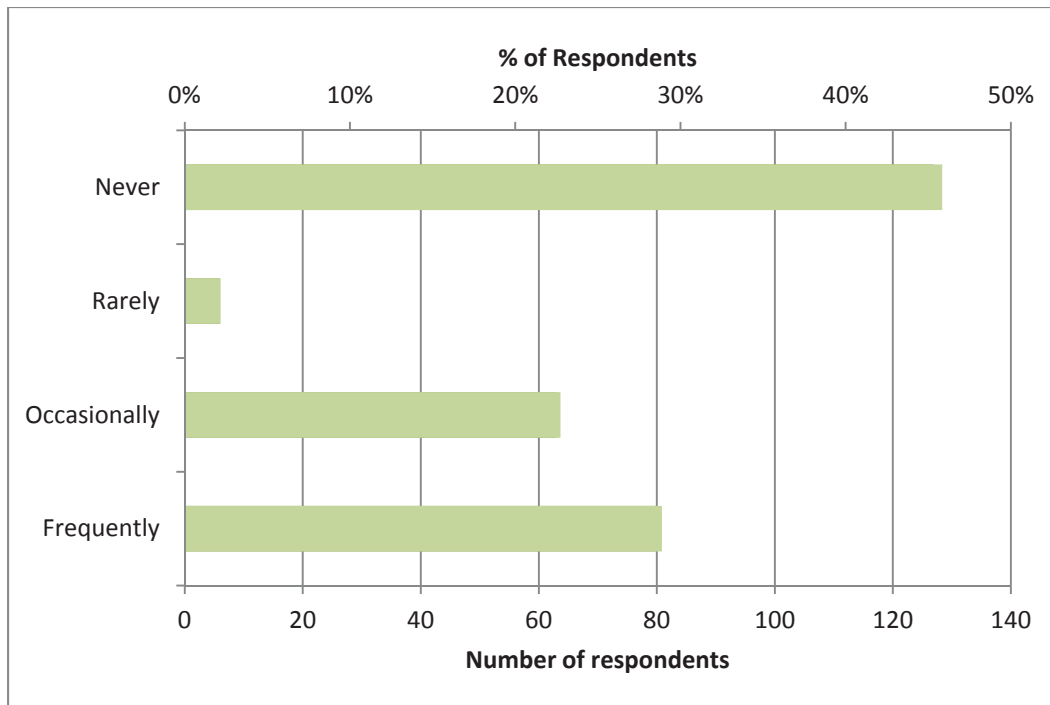


Figure 40. If it is an alternate fuel vehicle (e.g., E85), is the alternate fuel used?

Appendix A

Detailed Open-Ended Responses

This appendix presents selected open-ended responses to the survey. The aim in selecting particular responses is to include those responses provide information relevant to determining the characteristics of the vehicles that may not be suitable for replacement by a PEV. To reduce the size of the appendix, many redundant responses are not included and some responses that indicate a vehicle easily can be replaced with a PEV also are not included.

Table A-1. Survey results: Vehicle general use additional information.

Family child care outreach, home inspections
This vehicle's key control and reservations for usage is managed through a dual calendar system coordinated through Bldg 1210 and Bldg 2012; it is available for use by 30 drivers located in Bldg 1210; and it also available for use by 20 other drivers located on the third floor of Bldg 2012.
Shared and available to 30 drivers
Transport supplies to/from medical clinics
Transports all Class VIII items from Madigan to clinics on base
On location for video production, photo assignments, and graphic supply delivery
Transports personnel and GIS equipment
Personnel transport
Vehicle has light bar and is emergency response for airfield flightline and base emergency
Transport to GSA vehicle incidents, air field driver certification program, and civil engineering squadron
All have access
Spill response
Heavy equipment
Youth sports, recreational trips
Recreational trip
Recreational trip
Youth center mission support recreation trips
Maintenance of backup generator sites and aircraft systems on McCord Field
Electrical and safety inspections
Activity support grounds maintenance
16 safety personnel can use vehicle
36 engineers
Covert vehicle used by criminal investigator for surveillance
Multiple elements use vehicle
Police patrol vehicle
Vehicle assigned to command staff
Police patrol vehicle
Pollution prevention, hazardous waste section

Table A-2. Survey results: On a typical weekday, how many miles is the vehicle driven per day? If you track miles separately, please identify total miles and measurement period:

Miles	Measurement Period
6,964	10/2011 to 03/2012
4,927	10/2011 to 3/2012
48,100	To date
2,000	10/2011 to 03/2012
1,136	Monthly
1,025	Monthly
2,623	10/2011 to 3/2012
1,630	10/2011 to 03/2012
1,500 to 2,000	Monthly
12,210	10/2011 to 3/2012
3,722	10/2011 to 03/2012
4,800	10/2011 to 03/2012
8,467	10/2011 to 03/2012
3,300	10/2011 to 03/2012
1,155	10/2011 to 03/2012
5,988	10/2011 to 03/2012
2,583	10/2011 to 03/2012
8,160	10/2011 to 03/2012
7,380	10/2011 to 03/2012

Table A-3. Survey results: When in use, how many people are typically on board? Any additional information.

1 to 8 occupants
Personnel 3 to 12
Varies from 1 to 4
2 to 12 personnel
Personnel 2 to 12
Personnel 2 to 12
Personnel 2 to 12
5 to 12 children transported
5 to 12 person transported
5 to 12 person transported
12 to 15 people transported on each trip
12 to 15 people transported on each trip
5 to 12 children transported
5 to 12 children transported

Table A-4. Survey results: How many people have access to drive the vehicle? Any additional information.

JPPSO personnel in other sections
JPPSO personnel in other sections
JPPSO personnel in other sections
All PM Stryker personnel
Greater than 50
50 drivers
30
All in ENV division
Used by all Stryker personnel
Used battalion wide
All on reservation basis
All on reservation basis
All shop personnel
All
Shop truck
All ECS to support ops
Everyone in Stryker has access
4 assessors and ENV personnel
Available to all with DPW
36 engineers
36 engineers
All in ESD
All by reservation
All ECS to support operations

Table A-5. Survey results: Is this vehicle used off-base? Exactly how many times per period selected (e.g., per week, month, or year)?

Vehicle routinely driven off post for DFMWR function
Varies
1 to 4 times weekly
Once/week
Off post for National Guard requests
At least once a week
Used in auburn
A few times per week
Once for trip up, in and around town, then trip back
Travel to Camp Murray McChord, Umatill, and Sacramento
Tours, training seminars

McChord to Madigan
Once per quarter
Often off-base
Daily from JBLM to McCord Field
Driven between Lewis Main and McChord Field once or twice daily
Driven off post from McChord to Main
Mission dependent
Once for trip up, then around, then trip back
Used off post for airport transport
Transport to YTC and local training areas

Table A-6. Survey results: If this vehicle is used off-base, how many miles does it typically travel on a single trip? Additional information.

Occasional trips to Seattle
Vehicle may travel over 100 miles
Weekly trip to Yakima
Trips to/from airports
Used to travel to NS Everett (140 miles) and JBLM (258 miles)
Too many variables to predict
Too many variables to predict
About 140 miles and about 258-mile trips
Has only made one off-base trip
During training exercise, vehicles may go over 100 miles
During training, vehicle may go over 100 miles
Vehicle may go over 100 miles
Deliver medical supplies on and off-base
Support missions at YTC
Yakima, WA, and Vancouver, WA
Trips to Ft Lewis
Yakima WA, and Vancouver, WA
Vehicle may go over 100 miles
Driven between McCord Field, Lewis Main, and Lewis North
YTC trips exceed 325 miles roundtrip
Monthly inspection of post cemeteries in WA and OR
During training, vehicle may go over 100 miles
During training, vehicle may go over 100 miles
During training exercises, vehicle may go over 100 miles
Frequent trips to JBLM
During training exercise vehicles may go over 100 miles
Perimeter fence repairs

Yakima, WA, Vancouver, WA, Spokane, WA, Hayden Lake, UT, and Eugene, OR

Table A-7. Survey results: Is the vehicle used during specific hours or at any time during the day? Specifically, what times is the vehicle used (e.g., 1000 to 1100 and 1500 to 1700):

Mission dictates time of use
0600 to 1900
0800 to 1630 M through F
24/7
Anytime
Mission dictates time of use
Mission dictates time of use
24/7
Varies, available 7 days/week
0700 to 1645; 1645 to 0700 standby; 24 hours in winter for snow removal
24/7
As required by battalion duty officer
0800 to 1800
Varies, available 5 days/week
Varies, available 7 days/week
0800 to 1600
24/7
0700 to 1645; emergency calls after normal duty hours

Table A-8. Survey results: If an alternate fuel vehicle (e.g., E85), is the alternate fuel used? Any additional information.

Often used off-base, alternate fuel used when available
Uses E85
Uses unleaded only
Often used off-base; if alternate fuel available, it will be used
Only E85
Fill up off the CIF on duty hours
Often used off-base, alternate fuel used when available
E85
Alternate fuel not available
Often used off-base, alternate fuel used when available
Often used off-base, alternate fuel used when available
Often used off-base, alternate fuel used when available
Hybrid electric vehicle
E-85

Unleaded
Often used off-base, alternate fuel used when available
Unleaded only
Often used off-base, alternate fuel used when available
E85
Alternate fuel is used when available
When available
Gasoline
No E85 available
Biodiesel
Biodiesel and ultra low sulfur

Table A-9. Survey results: Does the vehicle typically carry specific materials or cargo? Please specify and include typical payload weights if available.

Computer equipment occasionally, computer tools frequently
Cargo varies depending on mission
Slave cables and computers
Personal (sic) only
180 lb
Payload up to 750
Transport ammo to and from range
Lightweight furniture and office supplies
Passengers
Ladder and tool bag
Small tools and ladders
Inspection tools and drawings
Police patrol equipment, maybe 100 lb
Personnel transport, some supplies, and equipment
Office supplies, furniture, and medical records
Weapons
Medical supplies, typical load 50 to 500 lb
Cargo dependent on mission
Office supplies, furniture, medical records
Video production gear and personnel, occasional tow video trailer 6,000 lb
Office supplies, parts, computers, palletized paper items
Banners and magazines
Equipment and personnel
Survey and GIS equipment
Not used for cargo
Construction materials and equipment

Coordination documentation and mobile radios
Small arms tools, large repair parts
Range supplies and equipment
Billeting and barracks supplies
Spill response
Materials to support RSC 1,500 lb
Troop transportation
Personnel with equipment
Ground support
Range Support
Recreational trip transport
Bldg supplies and materials
Passengers up to 11
Service members and staff
Tools and maintenance
Tools and testing equipment
Small arms tools, large repair parts
Yes, mamite, food service equipment
Materials to support RSC, 500 lb
Equipment for soldiers, payload over 800 lb
Equipment and personnel
Headstones
Meet with contractors
Plans, equipment, computers, construction supplies
Ladders and equipment
Carries an air compressor and a generator daily
Computer equipment occasionally, computer tools frequently
Yes, used to ship radioactive material
Carries safety equipment for confined space entry adding 100 lb
Surveillance equipment
Equipment and supplies
Cargo trailers stages
Equipment and personnel
Police vehicle
Range maintenance equipment possibly 1,000 lb
Range maintenance equipment and personnel
Police patrol equipment, maybe 100 lb
Pollution prevention equipment
Hazardous waste
Tows trailers, equipment, and supplies transport

Small arms tools, large repair parts

Table A-10. Survey results: Please add any information pertinent to identify the mission of the vehicle(s).

OPS Det Sedans are primarily used for level 1-3 ASO training conducted off post
Group MLE sedans are used primarily for numerous ASOT training with the group conducted in and around the installation
Primary usage is trips to R9651 and B3317 and Ranges
Our office conducts meetings and briefings all over JBLM and the nearby area; the vehicle enables us to extend our reach by meeting clients at their location
IT support
Mission related
PW mail messenger car
ASOT training
Deployment support
QA inspect household goods on and off post
QA inspect household goods on and off post
QA inspect household goods on and off post
IT support
Admin support
Family child care outreach support
Admin support
Admin support
IT support
Management of barracks, attend briefings, deployment events, etc
Management of barracks, attend briefings, deployment events, etc
Admin duties plus transport to doctors appointments
Long paragraph that says “don’t get rid of this vehicle”
Vehicle does not accumulate much mileage
QA inspection of household goods on and off post
Long paragraph paraphrased “this vehicle is important to us; you can’t get rid of it”
Transport Battalion Commander and Sgt major to and from training sites and missions
Transport personal (sic) assigned to Col Eagle training area
TBI has multiple missions in the Pacific Northwest
Provides ministry and religious services
Multiple uses
Used for a wide variety of missions
Vehicle does not accumulate much mileage due to mission
Used for mobilization/demobilization transport to North Fort
Admin support
Security

supplies
Admin/security
QA inspections as assigned
New construction, housing inspections
Used by shop supervisor
Inspects family housing
New construction inspections
Regular compliance checks
All work for Stryker
Transport supplies, unit postal vehicle, HR transactions
Supports entire BDE
required for regular & emergency deliveries
Mail cannot be transported via personal vehicle in accordance with Army regulations
Transportation support
Library support
Supply tech
Also first responders to military aircraft incidents
O&M electrical system
Emergency response
Supports base ops
Battalion duty officer's vehicle
Mission of vehicle varies
Admin Support
Linen supplies for cabins
Vehicle is an accreditation check list item
Support Air Force mission
Responds to critical generator sites
Only vehicle with medium payload capacity
Equipment and supplies
Supports base ops
Transports Battalion Commander and Command Sgt Major
Transports food service and TISA
All Stryker personnel have access to vehicle
All Stryker personnel have access to this vehicle
Transport supplies on and off post
Track soldiers during training and mission
Safety officers and managers have 24/7 access
None
One of 2 pool vehicles assigned for constant use
One of 2 pool vehicles assigned for constant use

QA inspection Lewis and McChord
Off road in training areas and range complex
Supports Warrior Training Academy
Vehicle does not accumulate much mileage due to mission
Used to transport mail
Needed for health physics mission
Transportation to all areas of base
Also used for personnel and equipment for range support
Community relations, internal strategies, media relations, legislative liaison
Natural resource management
Meeting attendance, PM duties, customer service



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