The Ultimate Guide to

Understanding Fleet Utilization & Achieving a Right-Sized Fleet

By Ed Smith, President & CEO
Agile Fleet

In Cooperation with
NAFA Fleet Management Association

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Foreword

The mission of NAFA Fleet Management Association is to advance the fleet and mobility profession through its world-class certification, education, advocacy, and peer networking programs. Since our inception, we have explored nearly every facet of the fleet industry. From year to year, the topics that are important to the fleet community sometimes change. But one area of interest that has remained constant for more than 20 years is the topic of fleet utilization. For that reason, we decided it was time to create a comprehensive guide to understanding fleet utilization - what it is, what it isn't, and how organizations can improve in this area.

Why is there such interest in fleet utilization? The answer is simple. When you understand utilization, you understand how to right-size your fleet, maximize the efficiency of your fleet, and reduce costs. When you understand utilization, you can confidently modify the composition of your fleet. In doing so, it is almost certain there will be savings.

Advances in technology have changed the way we are able to understand and view utilization. And, no doubt, technology will continue to change the way we view utilization. Whereas we used to think of utilization in terms of miles/kilometers driven or fuel burned, today we can track actual use of a vehicle down to the minute - at each location for each class of vehicle. We can pinpoint usage to the minute vehicle usage starts and stops by tracking such actions as turning an ignition on or checking out keys from a self-service kiosk. By understanding vehicle use at this micro level, we can truly understand how many vehicles we need of each class, and at each location.

NAFA will continue to leverage expertise in the fleet and mobility industries to collect and share the knowledge and tools necessary to succeed in this rapidly changing field.

For this, our "Ultimate Guide to Understanding Fleet Utilization (…and Achieving a Right-Sized Fleet)" we are excited to collaborate with fleet technology provider Agile Fleet (www.AgileFleet.com). The folks at Agile Fleet have nearly 15 years of experience helping fleets unravel the challenges of fleet utilization with metrics and automated solutions. We welcome your feedback and truly hope that you find this to be a valuable resource for shaping the future of fleet and mobility management within your organization.

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1 Introduction: The Right-Sized Fleet

Having a right-sized fleet is the key to fulfilling the mission of your organization. Whether you are a community college with 15 vehicles or a large government, utility, or commercial enterprise with tens of thousands of vehicles, understanding and managing fleet utilization should be a top-of-mind thing that is at the core of right-sizing initiatives. Why? Because utilization metrics tell you about the size of your fleet relative to your needs. The size of your fleet directly impacts the ability to complete your mission, and, it has a significant impact on your organization's financial bottom-line. Too few vehicles and you can't get work done. Too many vehicles and you're burning money needlessly. The key is to have the "right" utilization when it comes to your fleet.

What is a right-sized fleet? Ed Smith, president of fleet solutions provider Agile Fleet, has been involved with fleet right-sizing initiatives for almost twenty years and has worked with many types of fleets. While he acknowledges that every fleet has some unique characteristics that change the importance of each component of utilization, he has concluded that the quantity and use of vehicles is not the only variable to focus on. Smith believes there are four key components of a right-sized fleet, namely:

1. The right **quantity** – Do you have the right quantity of vehicles, i.e., not too many and not too few?
2. The right **location** – Are the vehicles available where they are needed? If you have vehicles yet they are not affordably accessible at the location where the work or the drivers are located, then vehicles are effectively not available. Alternatively, if a seldom-used class of vehicle is accessible just a short distance away, perhaps that class of vehicle is not needed at each fleet location. This is also where we can take asset criticality into account. There are some pieces of equipment that are so critical to supporting an organization, that they are needed at several locations, regardless of use (think of a firetruck or other emergency response equipment).
3. Right **type / class** – Do we have the right type or class of vehicle? If I have ten box trucks available yet have a need for more small passenger vehicles, I really haven't fulfilled the need for small passenger vehicles.

   NAFA Fleet Management Association agrees that not only the overall fleet, but every vehicle in it, needs to be right-sized for their primary mission. When procuring a new asset, you should ask: Are the engines large enough to perform the recurring tasks but not oversized. Can the task be accomplished with a two-wheel drive vehicle instead of a 4-wheel drive vehicle? Can we get by with four radio speakers instead of 6? Can we use the treadplate platform on the liftgate instead of the extruded aluminum? A component of right sizing is choosing the right class of vehicle and upfitting just enough of the vehicles to do the job.
4. The **right** time – Do drivers have access to vehicles when they are needed? Are vehicles available after hours or on weekends? If access to vehicles requires access to a motor

pool office or an outside rental office that is closed, needs go unfulfilled. Your drivers need access to vehicles at the time the job needs to be done.

But what about the number of miles driven, hours operated, trips taken, hours billed, and other benchmarks we are often required to reach each month as part of a fleet utilization program? These are important. But at the end of the day, these metrics are tools for helping to understand the right quantity, location, class, and accessibility of vehicles.

2 What is Fleet Utilization?

Fleet utilization is a measurement of fleet asset performance or use. It's all about the numbers, i.e. the measurements. When we understand the metrics behind use of fleet vehicles, we have the information needed to affect positive change. Fleet utilization experts can probably tell you that they've heard the sentiments below hundreds, or thousands, of times:

"*My gut tells me we have too many vehicles*"

"*We really need more vehicles to do our job*"

One reason that fleet utilization is such an important aspect of fleet management is that our "*gut feel*" and the fact that we "*really need more vehicles to do our job*" aren't good enough to make decisions that may have an impact of hundreds of thousands or millions of dollars to a fleet. We need real measurements of vehicle use that we can use to manage our fleets and justify fleet acquisition or down-sizing.

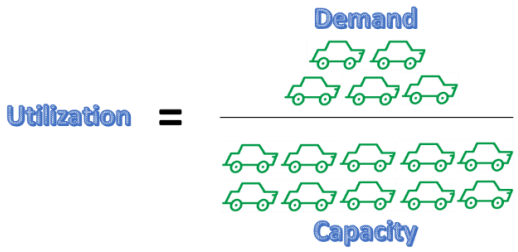
Finding hard numbers to characterize utilization of vehicles in a fleet is key to making positive change

But, what can I learn about fleet utilization metrics that I haven't learned from thirty years of observing a fleet. Lots! Consider this one example… the City of Stamford, Connecticut recently embarked on an initiative to quantify utilization of 80 passenger vehicles at their Government Center location. At the same time that analysts perceived there were too many vehicles, department managers thought that they needed more vehicles to effectively do their job. The truth is that both the analysts and the department managers may have been right. One department may have needed more vehicles on certain days while other departments had idle vehicles. The peak needs for vehicles across departments rarely coincided. The total fleet had plenty of vehicles. After capturing baseline utilization metrics and implementing an automated vehicle sharing solution, the city reduced their Government Center fleet from 80 vehicles to 50 vehicles immediately. Further monitoring of utilization resulted in a reduction of an additional 17 vehicles. The shared fleet of 23 vehicles (previously 80 vehicles) meets all needs. No driver has been denied access to a vehicle when it was needed.[i] The key was to understand

utilization metrics and to make more vehicles available to departments for peak demand via vehicle sharing.

2.1 Fleet Utilization Defined

If you asked 10 fleet managers to define fleet utilization, you'd probably get 10 different answers. That's ok. Each fleet is different and fleet managers need to look at utilization in a way that makes sense for their organization. Utilization is generally expressed as a measure of *demand* compared to some type of *capacity* or *threshold*. The value is often expressed as a percentage. For example, if 5 out of 10 vehicles in a fleet are used in a given period of time, we might say our utilization rate is 5/10 or 50% for that period of time. Similarly, if we have a target utilization rate of 1,000 miles driven in a month and we only travel 500 miles, we might say our utilization rate is 500/1,000 or 50% for that month.



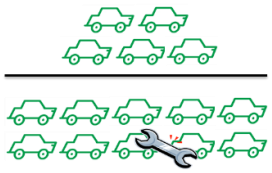
Utilization is often a comparison of "demand" to "capacity"

So, to a newcomer to the discussion on fleet utilization, it might seem straightforward to calculate, for example, utilization rates of a passenger vehicle fleet on a daily basis. Logic would dictate that you'd calculate *capacity* by counting the number of passenger vehicles in the fleet, i.e., *Capacity*. Then you'd count how many of those vehicles were used each day, i.e., *Demand*. Then you'd simply do the math of *demand* divided by *capacity*. But, consider these nuances relative to capacity and demand:

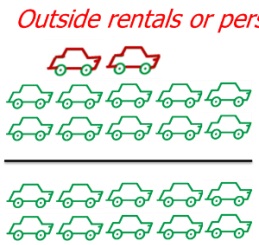
Capacity	Demand
• Are you accurately counting the number of available vehicles as they enter (new vehicles) and leave (disposed) the fleet? Capacity may change daily. • If a vehicle is out for service / maintenance, do you alter your capacity? • If a vehicle is awaiting a routine inspection before next use, does it count toward capacity since it may not truly be available for use? • If you augment your fleet with outside rentals, does your capacity increase?	• Does use of an outside rental vehicle count against demand? • Does use of a personal vehicle count against demand when a fleet vehicle is not available to fulfill the mission? • When I take a vehicle out of a fleet for service / maintenance, do I count that as "use" of the vehicle? • If I drop keys in a manual key-drop box and keys remain there until the next morning, am I still "using" the vehicle?

As straightforward as calculation of utilization may seem, there can be many variables to consider

So, there are variables to consider. Removing vehicles from service for preventive maintenance or augmenting the fleet with outside vehicles does impact utilization. While important to understand in the long run, variables like this do not need to be considered on day 1 of your fleet utilization initiatives.



How should a vehicle that is out of service impact daily utilization rates?



Should additional vehicles used to meet demand be included in utilization calculations?

Capacity and demand can change from day to day

It's easy to see that calculating utilization can be confusing. But, it doesn't have to be. A word of advice on where to start relative to utilization calculations is: Just start somewhere. You'll always be able to refine your utilization calculations as your fleet and fleet technologies mature. The key is to start understanding utilization even at the simplest level. Understanding different approaches to calculating utilization and understanding different approaches to measuring your capacity and demand will likely change over time.

2.2 Common Fleet Utilization Metrics

There are hundreds of different types of commonly used metrics for evaluating fleet utilization. The best metrics are those that are easily quantifiable. The table below represents some of the more common metrics used in utilization studies.

Table. Typical fleet metrics used for evaluating utilization

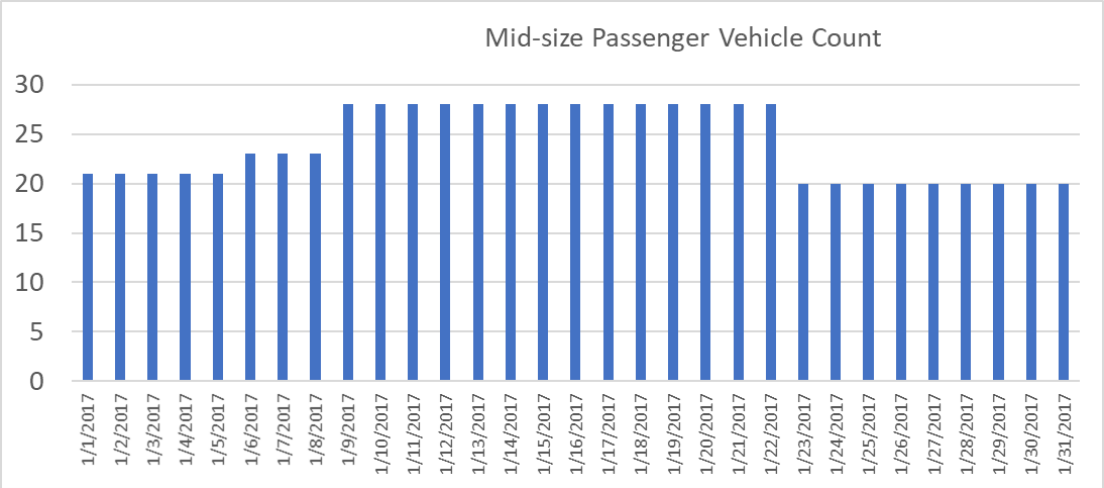
• Quantity of vehicles • Odometer • # of days used or idle • Hour meter	• Fuel consumption • # of trips • "Trips Turned Down" (unfulfilled vehicle requests)	• # of Outside rentals required • # of POV reimbursements due to lack of vehicles • Age of vehicle

Metrics must be defined, and captured, with the fidelity required to help analyze utilization. If a modern fleet management information system is being used to collect and manage the data, it is easy to correlate the data you are collecting with different classes of vehicles, vehicle owner, vehicle location, etc. If data is being collected and stored on log sheets or in spreadsheets, it may be necessary to capture the related information such as vehicle class, owner, location, etc. every time other metrics are captured.

A discussion of common utilization metrics is provided below.

2.2.1 Quantity of Vehicles

Knowing basic information about the quantity, class, owners, location, and basic attributes of vehicles is key to many utilization metrics. As straightforward as knowing the quantity of vehicles may seem, it is very common to initiate a utilization study and identify that key personnel do not have visibility of the quantity of vehicles or pieces of equipment in the fleet. In order to perform even basic calculations such as average distance driven per vehicle or average fuel burned per vehicle, it is key to know the count of vehicles in the fleet day by day.



*The quantity of vehicles may change from day to day or month to month as vehicles enter and leave the fleet (*Image courtesy of Agile Fleet)

Notes about this metric:

1. Avoid the temptation to exclude vehicles which people feel should not be counted for some subjective reason. It's not uncommon for a "ghost fleet" or "reserve fleet" to not be counted but these vehicles should be as they affect utilization and the organization's bottom line.
2. A vehicle that is awaiting pre-delivery inspection or awaiting remarketing is often on the books of the fleet organization yet is not counted when considering utilization. These vehicles, and vehicles that are out of service for other reasons, influence utilization rates and should be considered when evaluating utilization.

2.2.2 Odometer or Hour Meter Data

Understanding odometer and hour meter information for any desired period of time is important. Historically, odometer or hour meter data was ***the*** key metric for utilization. In fact, it is still used in many fleets today and it is of great value to capture and use if it is available to you. Odometer data is at the core of large utilization initiatives such as in the Federal government Vehicle Allocation Methodology (VAM) and in many state governments. While it is an objective, easy to capture data point, there are many variables that can heavily influence the value of odometer or hour meter data. As such, there are many other data points that may prove more valuable in evaluating the true needs of a fleet relative to utilization.

Odometers or hour meters can be a valuable source of data that can be used to compare one vehicle to another vehicle and even one fleet to another fleet. As reflected in the table below from 2017 Federal Fleet data summaries, odometer data is used to compare miles driven per vehicle class across different Federal agencies.

Section 4: Utilization

Table 4-2: Miles Per Vehicle

Department or Agency	PASSENGER				
	LSEVs	Sedans	Passenger Vans	SUVs	Passenger Subtotal
American Battle Monuments Commission	0	4,766	7,335	1,940	5,014
Broadcasting Board of Governors	0	0	6,601	7,027	6,925
Consumer Product Safety Commission	0	6,921	5,809	7,477	6,885
Court Services and Offender Supervision Agency	0	2,886	1,483	3,078	2,764
Department of Agriculture	479	12,686	6,503	7,840	9,704
Department of Commerce	0	8,318	6,751	8,665	8,097
Department of Education	0	11,413	9,072	9,855	10,758
Department of Energy	0	5,139	5,753	7,568	6,524
Department of Health and Human Services	0	9,143	9,796	7,279	8,641
Department of Homeland Security	3,558	9,628	10,322	12,630	11,479
Department of Housing and Urban Development	0	10,982	9,741	10,932	10,881
Department of Justice	1,007	9,689	7,519	10,406	9,777
Department of Labor	0	8,984	12,608	11,199	10,892
Department of State	0	4,316	5,080	6,058	5,589
Department of the Interior	29	7,395	5,499	8,713	8,047
Department of the Treasury	0	8,877	7,773	10,197	9,334
Department of Transportation	0	8,425	8,110	9,261	8,870
Department of Veterans Affairs	98	9,371	11,431	10,544	10,218
Environmental Protection Agency	0	11,129	9,559	10,742	10,741
Equal Employment Opportunity Commission	0	6,929	5,127	5,053	6,678
Federal Communications Commission	0	0	0	3,513	3,513
		876			[1]

Figure 1. FY2017 Federal Fleet Data

[1] Federal Fleet Report, Generated from GSA data visualization tool. 2017 [XLSX]. https://www.gsa.gov/policy-regulations/policy/vehicle-management-policy/federal-fleet-report

Notes about this metric:

- A miles-driven metric can vary significantly from one fleet to the next based on the geographic area of service of the fleet or even the pattern of use. An administrative vehicle on a small campus compared to a police cruiser of the same class driven across a large county will have very different odometer or hour readings even though they may both be used similarly over a given period of time.
- Odometer or hour meter data can be skewed by long trips. Authors of this paper have been told stories of fleets that drive unnecessary miles during the last week of each month just to achieve mileage and hour thresholds that justify retaining vehicles.

2.2.3 Number of Hours/Days Used or Idle

One of the most valuable metrics relative to monitoring utilization is generally some type of metric that shows how often a vehicle is being used or is otherwise unavailable to other drivers. Conversely, if the vehicle is *not* being used, it is not-in-use or idle. As straightforward as this sounds, there are two very different ways to interpret when a vehicle is "in use". These include:

1. The vehicle is in use by a driver, i.e., in possession of keys and/or vehicle.
2. The vehicle is actually moving or idling as measured by GPS or other telematics devices.

To understand the nuance of these very different ways of looking at vehicle use, consider the following:

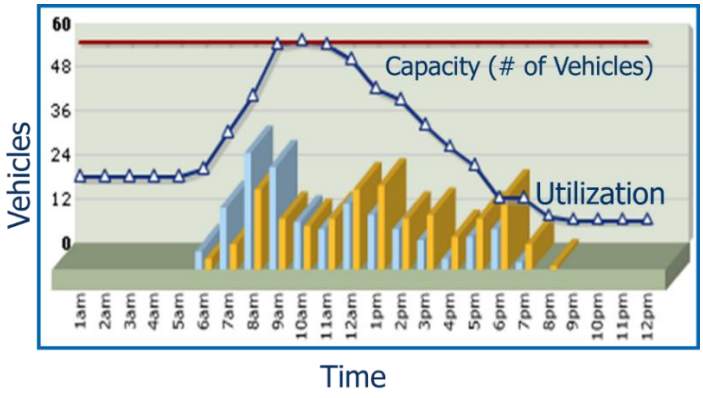
Time	Activity	Observation #1 - Vehicle in Use by Driver?	Observation #2 - Vehicle in Use per GPS or other Telematics Data?
08:00 a.m.	Pick up keys to vehicle from fleet	Yes	No
08:15 a.m.	Drive 1 mile to another location	Yes	Yes
08:17 a.m.	Park vehicle and attending meeting	Yes	No
03:30 p.m.	Drive 1 mile back to fleet garage	Yes	Yes
03:32 p.m.	Park vehicle at fleet garage	Yes	No
04:00 p.m.	Return keys to fleet	Yes	No
	TOTAL TIME IN USE	**8 hours**	**4 minutes**

How you measure utilization can have a large impact on your results

As you can see from the example above, looking at the same situation from two different perspectives results in a different view relative to utilization. One view of the vehicle's use reveals the vehicle is in use for 8 hours. Another view shows the vehicle was only used for 4 minutes. Make sure you are capturing the metrics that are important to you.

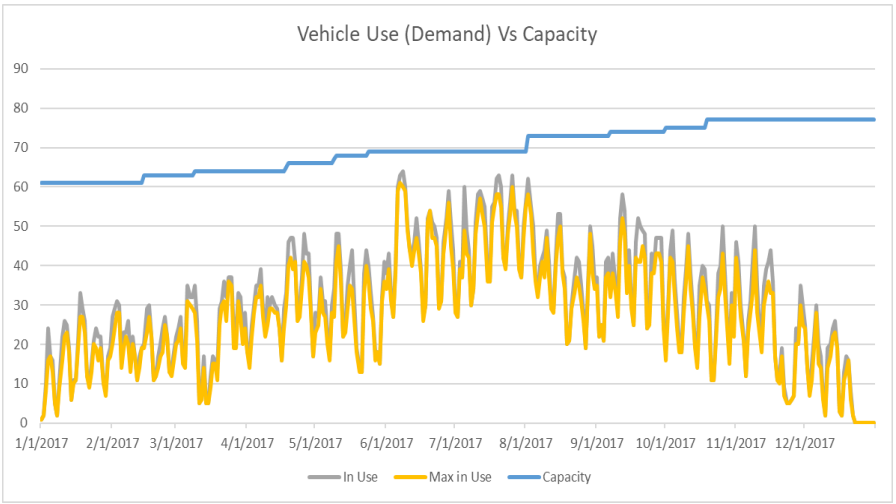
Notes about this metric:

- Collect data with the fidelity that you need to make decisions and changes to your fleet. In fleets with short duration trips, for example, understanding hour by hour utilization of each vehicle may be important as the same vehicle can be used many times per day. If the data were to be limited to presenting utilization only by the day, a true understanding of the number of vehicles required to fulfill the fleet's mission may not be presented.



It may be useful to monitor hour-by-hour utilization in fleets that have frequent, short-duration trips (*Image courtesy of Agile Fleet)*

- In most fleets, the ability to view day-by-day utilization is sufficient in order to understand the fleet's utilization. Some Fleet Management Information Systems can present statistics to show the ***actual*** number of vehicles that were used in a given period of time versus the maximum number of vehicles ***in use*** at any given time. The "Max in Use" line graph depicted in the figure below shows the minimum number of vehicles that could have been used to achieve the fleet's mission if the coordination of vehicle use was optimized.



When day-by-day use of a vehicle is compared with the inventory count of the fleet, it is often clear to see a clear picture of utilization (*Image courtesy of Agile Fleet)*

- Vehicle utilization statistics, in general, are very valuable. But, it's difficult to understand what fleet changes need to be made without considering vehicle class, location, and other important attributes. Knowing that you have a situation of under-utilization is good. Knowing which class of vehicle is contributing to that under-utilization is great.

Day of Month	30	31	1	2	3	4	5	6	7	8	**Average**
	T	W	R	F	S	S	M	T	W	R	
Midsize	85	85	85	85			83	87	89	91	86.31
Midsize Hybrid	62	69	62	62			58	58	58	75	62.98
Small SUV - 5 Pass	91	91	91	91			100	100	91	91	93.18
Minivan - 7 Pass	96	98	97	98			97	97	94	92	95.97
Large SUV - 8 Pass	89	67	81	96			81	81	100	100	86.75
15 Pass	66	64	59	64			70	72	72	74	67.5
Average	**85**	**84**	**83**	**86**			**84**	**86**	**88**	**89**	**85.75**

Utilization (in %) for vehicle class, day by day, by location (Image courtesy of Agile Fleet)

Utilization metrics should be able to be data-mined in a way that differentiates data by vehicle, class of vehicle, vehicle location, time frame, and other attributes.

2.2.4 Fuel Consumption

Fuel consumption closely mirrors odometer or hour meter data in its utility. It is often an easy-to-capture metric if electronic data capture of fuel records is enabled.

Notes about this metric:

- Idling can impact fuel metrics significantly. Idling represents a different type of utilization yet is equally important to understand.
- Differing classes or types of vehicles (e.g. gas, hybrid, electric) will provide metrics which can't be compared "apples to apples". Reporting should differentiate vehicles by class.

2.2.5 Number of Trips

Counting the number of trips a vehicle has taken is a simple metric to capture via technology or even manually. While this metric is good for comparing relative use across a fleet or across vehicles from one time period to the next, rarely does it provide the insights necessary to determine whether the right quantity and type of vehicles are available.

Notes about this metric:

- The value of capturing the number of trips may increase if there is a per-trip chargeback available. That is, if the number of trips metric can be used to cost-justify keeping a vehicle, this metric increases in value.

2.2.6 "Trips Turned Down" (unfulfilled vehicle requests)

This metric will leave a lot of fleet managers scratching their heads as it is rarely captured in fleets. Understanding the number of requests for vehicles that could not be fulfilled is one of the more powerful metrics relative to utilization in a shared fleet environment as it is a clear indication of how many vehicles were actually needed. Every time a vehicle is unavailable when needed, there is potential that necessary tasks are not being completed or, more likely, a more expensive mode of transportation is being used to meet the demand for vehicles or equipment.

Day of Month	11	12	13	14	15	Average
	M	T	W	R	F	
Active Vehicles	347	347	347	347	347	347
Vehicles In Maintenance	12	9	7	8	6	8.4
Vehicles Available	335	338	340	339	341	338.6
Vehicles In Use	276	298	275	278	294	284.2
Total Trips	279	304	278	284	296	288.2
Idle Vehicles	59	40	65	61	47	54.4
Requests Turned Down	1	3	1	0	0	1
% of Vehicles Used	82	88	81	82	86	83.93

Prepared by: Agile FleetCommander

Idle vehicles

Vehicle requests turned down

When there are idle vehicles yet requests for vehicles are being turned down, it is a clear indication that the mix of vehicles, i.e., classes of vehicles, at the location is not aligned with the organization's needs. (*Image courtesy of Agile Fleet)*

When there are vehicles not-in-use yet requests for vehicles are being turned down, it is a clear indication that the mix of vehicles, i.e., classes of vehicles, at the location is not aligned with the organization's needs. Analyzing the utilization of each class of vehicle at each location will highlight the type of changes that may need to be made to the fleet. Solutions to the problem may include changing driver behavior to use vehicles that are more readily available in the fleet, moving vehicles from one location to another to meet demand, or selling under-utilized classes of vehicles and acquiring the high-demand class of vehicles.

Notes about this metric:

- Requests turned down due to a lack of availability of the desired vehicle need to be clearly differentiated from requests turned down because a driver isn't authorized to drive, or a trip was cancelled, etc.
- If a fleet never has a request turned down, it is an indication that the fleet likely has too many vehicles. The key is to have an alternative if vehicles are not readily available and to analyze the cost-effectiveness of using alternative vehicles versus modifying the

composition of the fleet. Common alternatives include outside rentals, use of personal vehicles, a ride sharing service or public transportation.

- This metric is generally associated with centralized motor pools. However, even with intra-department sharing of vehicles that leverage a check-out and check-in system, this data can be captured.

2.2.7 Number of Outside Rentals Required

Monitoring the occurrence of, or expenses related to, outside rentals can be a useful metric to include when analyzing utilization. This is typically most useful when outside rentals are used to meet peak demand or when fleet vehicles are not available to fulfill requests. It is fairly straightforward to do a cost/benefit analysis that looks at the costs of outside rentals versus the cost of purchasing or leasing a vehicle long term.

Notes about this metric:

- As with all utilization metrics, analyzing outside rentals should be done over a long 'cycle' of fleet use. It is generally cost-effective to use outside rentals to meet short periods of peak demand. However, if the occurrence of using outside rentals continues over a longer period of time, it may be more cost-effective to purchase or lease additional vehicles or equipment.
- In some organizations, outside rental costs are not managed by fleet and therefore these costs are not managed in conjunction with other fleet matters. It is a good practice for fleet to have visibility of all fleet-related costs.

2.2.8 Number of POV reimbursements due to lack of vehicles

Discussion around the monitoring of reimbursements for personally owned vehicles (POV) mirrors the discussion in the previous section regarding outside rentals. Personal vehicle reimbursement has been found to be 35% more expensive than an internal motor pool alternative in many fleets. Therefore, understanding when personal vehicles are used in lieu of a fleet vehicle is important.

Notes about this metric:

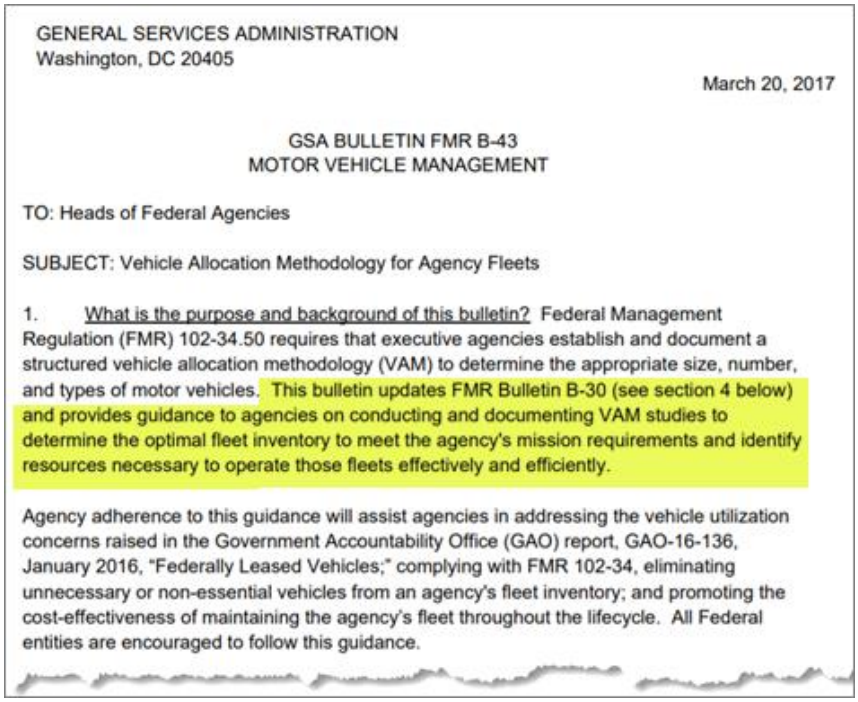
- It is a good practice for fleet to have visibility of all fleet-related costs and trips, including trips fulfilled using personal vehicles. It is fairly common for POV reimbursement data not to be provided to fleet staff.
- Reimbursement for use of personal vehicles is often a double-hit to an organization's bottom-line because money goes out for reimbursement while an existing vehicle sits idle. That idle vehicle carries an inherent cost even when not in use.

3 Fleet Utilization Studies

Fleet utilization studies are something that should be done continuously because fleet needs and conditions change frequently. Change is inevitable. Common reasons utilization often gets out of control in a fleet, and the reasons utilization should be revisited frequently, include:

- Insufficient data to understand basic fleet demographics and use
- Lack of fleet technology to easily understand utilization
- Lack of formal policies for acquisition, use, and disposal of vehicles and equipment
- Failure to adjust the size and composition of the fleet as organizational needs change
- A desire to keep old vehicles "in reserve" rather than dispose of them
- A tendency to manage the fleet size based on historical budgets
- Reluctance to change "*because that's how we've always done it*"

Your organization may require or recommend you do a formal study at a fixed interval. For example, GSA Fleet recommends that a Vehicle Allocation Methodology (VAM) survey be done every five (5) years[2]. Or, you may perform a utilization study to validate desired objectives such as purchasing new vehicles. Whatever the reason and timing for your fleet utilization studies, you should follow an established process that has clear objectives.



GENERAL SERVICES ADMINISTRATION
Washington, DC 20405

March 20, 2017

GSA BULLETIN FMR B-43
MOTOR VEHICLE MANAGEMENT

TO: Heads of Federal Agencies

SUBJECT: Vehicle Allocation Methodology for Agency Fleets

1. What is the purpose and background of this bulletin? Federal Management Regulation (FMR) 102-34.50 requires that executive agencies establish and document a structured vehicle allocation methodology (VAM) to determine the appropriate size, number, and types of motor vehicles. This bulletin updates FMR Bulletin B-30 (see section 4 below) and provides guidance to agencies on conducting and documenting VAM studies to determine the optimal fleet inventory to meet the agency's mission requirements and identify resources necessary to operate those fleets effectively and efficiently.

Agency adherence to this guidance will assist agencies in addressing the vehicle utilization concerns raised in the Government Accountability Office (GAO) report, GAO-16-136, January 2016, "Federally Leased Vehicles;" complying with FMR 102-34, eliminating unnecessary or non-essential vehicles from an agency's fleet inventory; and promoting the cost-effectiveness of maintaining the agency's fleet throughout the lifecycle. All Federal entities are encouraged to follow this guidance.

[3] *Some utilization studies may be required by a governing body*

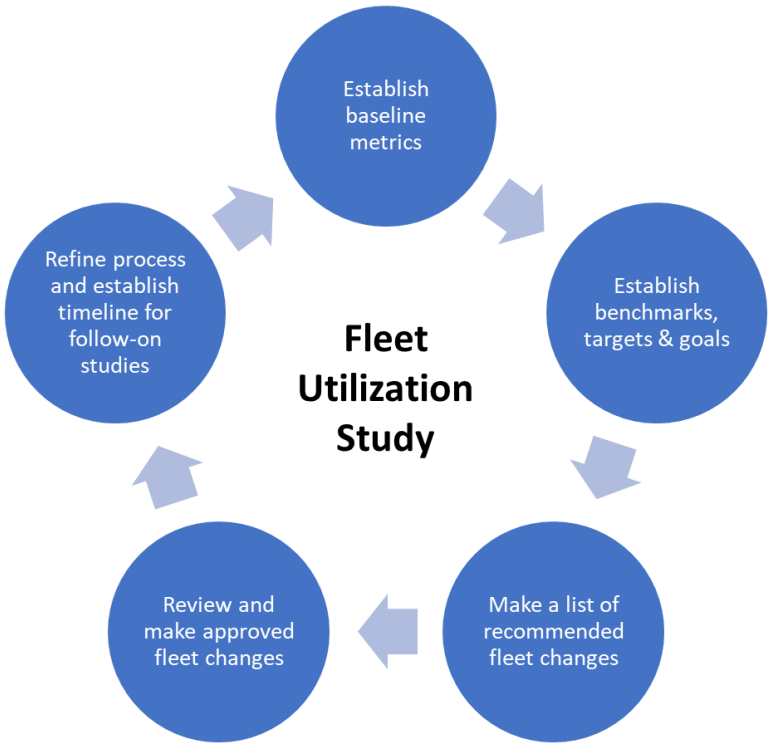
[2] https://www.gsa.gov/cdnstatic/Vehicle%20Allocation%20Methodology%20and%20Federal%20Fleets.pdf

Take a couple of steps back before jumping in to the "*how*" and the "*what*" of a utilization study. First understand "*why*" you are performing the study. At the highest level, goals of a fleet utilization study are ultimately to:

1. Capture and present vehicle use metrics in a way that provides a clear understanding of utilization, and
2. Make changes needed to operate the fleet more effectively and efficiently by:
    a. Providing the vehicles your enterprise needs to fulfill its mission efficiently
    b. Maintaining the "right" quantities and types of vehicles readily available at the "right" location at the right time

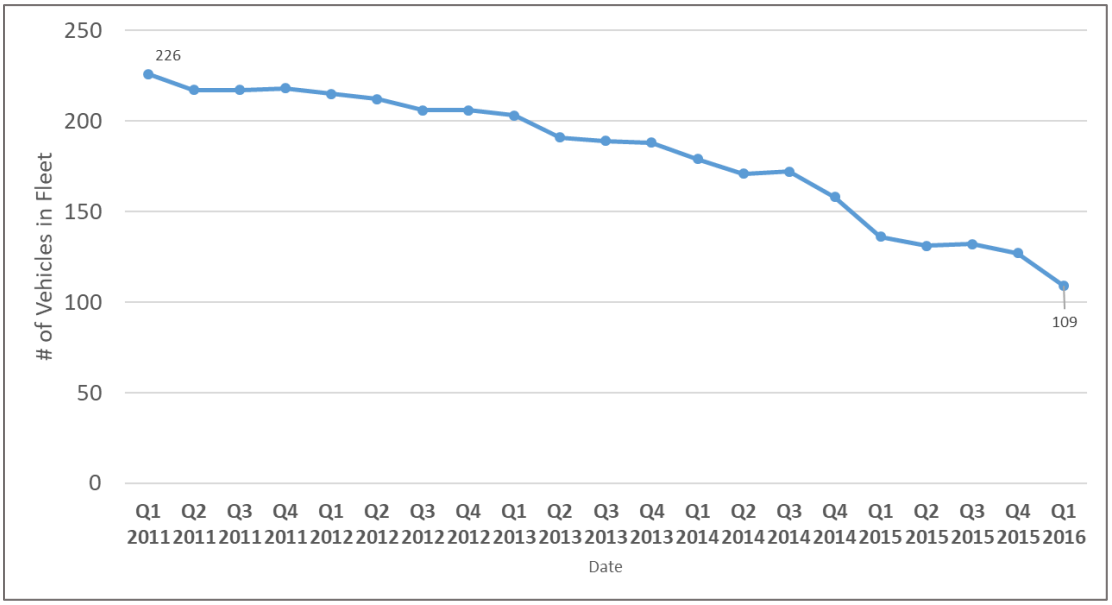
As basic as the above goals of a fleet utilization study sound, it's not uncommon for directives such as "*we need to reduce the fleet by 5% across every department*" to be the driving force behind your study. With a clear understanding of the result that the organization is attempting to achieve, and with a sound fleet utilization study process, great things can happen.

As reflected in the diagram below, the high-level review process involves starting by capturing baseline metrics and ultimately making changes to your fleet, revising the process, and starting over.



Fleet utilization studies follow a process starting with capturing baseline metrics and ultimately making changes to the fleet.

The process of completing a fleet utilization study will be continuous. The graph below reflects a fleet that iteratively kept removing vehicles based on utilization metrics. They were reluctant to believe that they had too many vehicles. So, they gradually kept removing vehicles and analyzing utilization. The result, in the end, was a reduction to a shared motor pool fleet of 117 vehicles… more than a 50% of the original pool of 226 vehicles!

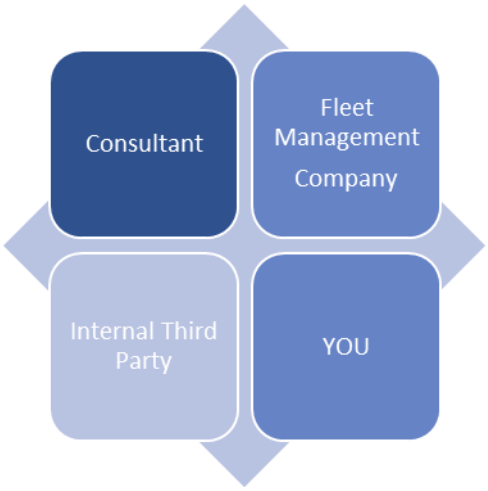


Change is hard. Managers of the fleet depicted in the above graph were reluctant to make major reductions in fleet size all at once. They periodically would analyze utilization data and then incrementally reduced the size of the fleet. Their total reduction was more than 50% of the shared fleet without impacting any operations. They realized more than $1.5M in savings over five years.
(Actual customer data provided by Agile Fleet)

Getting started may be the hardest part of any initiative. The good news is that there is no reason to start from scratch relative to defining what a utilization study should look like. A quick search of the Internet on terms such as "*fleet utilization study*" or "*fleet utilization assessment*" will provide examples of past studies that may be relevant. It may also be valuable to have an outside fleet consulting firm perform, or support, your initiatives. At the end of the day, a very comprehensive study is what is going to make the difference. Narrowing your focus will diminish the value of a study.

Who Should Perform the Utilization Study?

Performing a successful fleet utilization study can be a daunting task. Your alternatives are to take on this challenge using internal resources or use an outside group to help with the effort. As reflected in the figure below, you have options.



There are options for who performs your fleet study

There are advantages and disadvantages for each option relative to who performs your utilization study. Choose the option that suits your needs the best.

Source	Advantages	Disadvantages
Internal third party	Knows the organization Free or low cost	Not an SME Time Organizational bias
FMC	Low cost Familiar with fleet ops SME	Objectivity
Consultant	Objectivity SME You set timeline	Cost
You	Knows the organization SME	Time Objectivity

There are advantages and disadvantages for each option relative to who performs your utilization study

An outside group brings:

- Subject matter expertise for each segment of your fleet
- Experience with best practices and benchmarks for your specific type of fleet
- An objective perspective of your fleet that is not influenced by politics or internal influencers
- Dedicated resources that will complete the utilization study even when there are other pressing fleet matters within your organization

Regardless of who leads your efforts, the basic steps outlined below will be followed.

3.1 Establishing a Baseline

Objective, timely, and accurate fleet utilization metrics are the key to all fleet utilization studies. If any of these key characteristics of the basic fleet information you use to make fleet changes is questioned, so will the outcomes you generate from your fleet utilization study. So, be absolutely certain that data you collect is believable and valuable. Consider the following when determining which data will be at the center of our utilization study:

Characteristic	Ingredient for Success
Objective	• Avoid subjective criteria such as "used frequently", "necessary," "important" • Document the definition of the metrics clearly if there is any ambiguity in the meaning of the metric • Use technology to capture metrics when possible (e.g. GPS, electronic logs, or motor pool or fleet management systems) • Ensure that metrics are captured and reported in a consistent way across the fleet
Timely	• Ensure that data for different segments of the fleet are captured for similar time frames to ensure an "apples to apples" comparison of data can be made across the fleet • Consider cycles in fleet use when capturing data to ensure you gain a clear understanding of peak demand and low demand. Be certain you consider both peak and low demand. • Do not let data get stale, i.e., old. Fleet utilization changes should rely upon data that reflects the state of the fleet as it exists today.
Accurate	• Ensure that methods for capturing and manipulating fleet data are not subject to errors or miscalculations • If it's too complicated to capture and present, look for a simpler metric or method for capturing the same type of information
Valuable	• Data should be captured at the level of fidelity necessary to produce the desired utilization metrics. • Do not expend the energy collecting data that does not "move the needle" relative to what you are trying to accomplish. Many utilization efforts meet resistance due to the effort it takes drivers or analyst to capture data… some of which has limited value.

Data used for fleet utilization studies must be objective, timely, accurate, and valuable

Scoping the Baseline Data to be Collected

One of the first challenges that analysts often have when conducting a fleet study is determining which vehicles and equipment will be included. It is very common to have management teams want to exclude a class of vehicle or a segment of the fleet. If this must be done for legitimate reasons, those reasons should be clearly documented as part of the study.

Capturing Baseline Metrics

Gathering baseline metrics can be done in a variety of methods. These methods may be captured via manual means or automated means. Common data sources include:

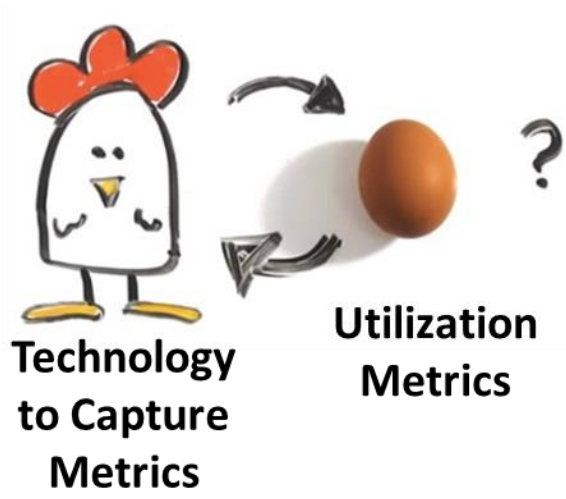
- Manual observations of parking lots, odometers, etc.
- Motor pool systems (check-outs & check-ins)
- GPS (e.g. odometer, trip data)
- Fuel files (e.g. odometer, fuel burned)
- Work Orders (e.g. odometer, maintenance cost)
- On-line expense and trip reporting records

It is important to capture data that can be used to make apples-to-apples comparisons of different vehicles or segments of your fleet. Plan for how you will normalize (make data comparable) before you start collecting data. For example, think about how EV fuel burn may be compared to traditional combustion fuel burn if that is a data point you will be focusing on.

How Do You Capture Baseline Metrics Without Technology?

You could probably predict which fleets have the biggest fleet utilization issues – fleets without modern technology to capture and report on utilization, right? Right! So, how exactly do fleets with limited automation capabilities capture utilization metrics and make sense of it all?

Former City of Norfolk Fleet Manager, Facundo Tassara, said that when he was championing the idea of implementing a fleet management information system in his city, his director almost squashed the entire project due to lack of metrics supporting it. Tassara said, "The whole point of the initiative is to finally get the metrics we need to understand how our fleet is being run. We had to change the mindset of the people."[3] Mr. Tassara's challenge is not uncommon. Ultimately, he successfully made the business case for vehicle sharing technology that automatically captures utilization metrics.



Fleet managers looking to modernize their fleet technology to improve utilization have difficulties justifying the worth of the technology because they don't have data to make the business case for the technology.

The answer to how to justify the technology is to capture your initial utilization metrics in any way you can. It doesn't have to be complicated. Look what these innovative fleet managers have done:

[3] http://blog.agilefleet.com/getting-to-start-how-to-assess-your-fleet-utilization-when-you-dont-have-fleet-technology

An innovative university fleet manager marked tires and would record the number of days a vehicle did not move.

A county business analyst successfully lobbied for new fleet technology by placing pennies on top of tires of fleet vehicles and recording the number of days the pennies remained intact.

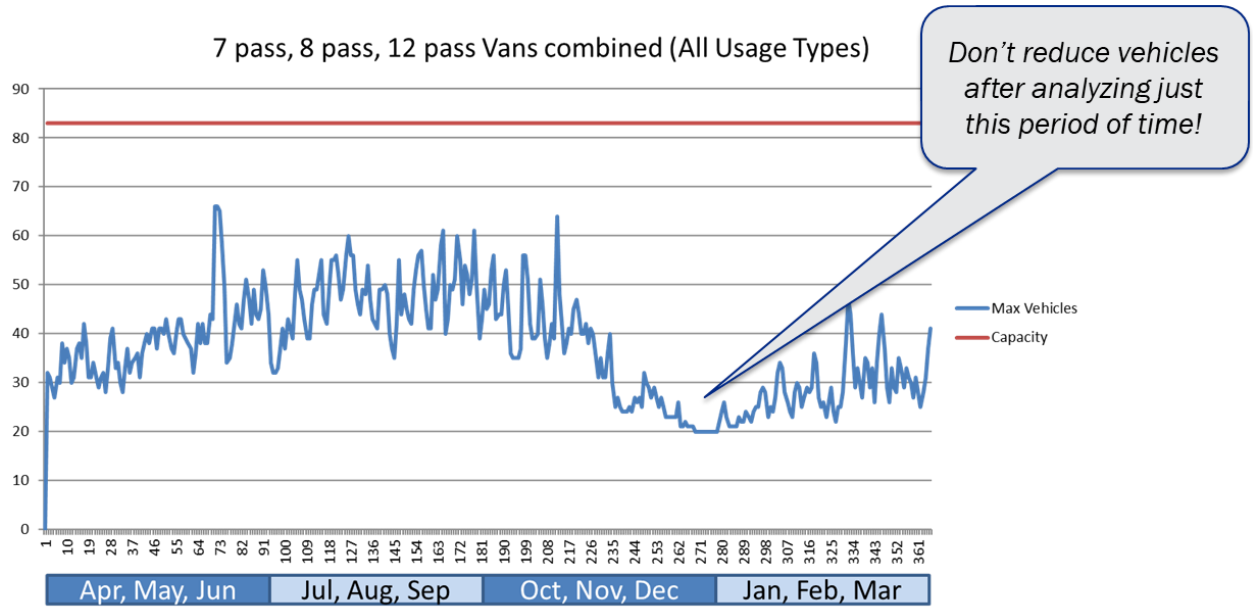
A large corporation started utilization initiatives by looking out the window and recording the number of idle vehicles in the lot at designated times throughout the day

Many utilization studies have been initiated after management teams notice snow or dirt remaining on vehicles for days or weeks at a time

Don't use a lack of technology as an excuse to not capture data for a comprehensive fleet utilization study. Use whatever means necessary to capture your baseline metrics.

Considering Cycles in Data

Capturing baseline metrics may not be a one-time event. Most fleets have different demands on their vehicles throughout the year. For example, a county government's tax department may be very busy from February through April while a university with an agriculture program may be busy in the summer. It is important to capture data that spans the duration of at least one cycle of your data.



Make sure you collect and analyze data across an entire cycle of your fleet's usage

You need to make sure that you cover peak, low, and average demand time periods. It would be catastrophic to only look at a low-demand time of the year and subsequently down-size the fleet. This would result in too few vehicles at peak demand later in the fleet's use cycle.

3.2 Benchmarking, Targets & Goals

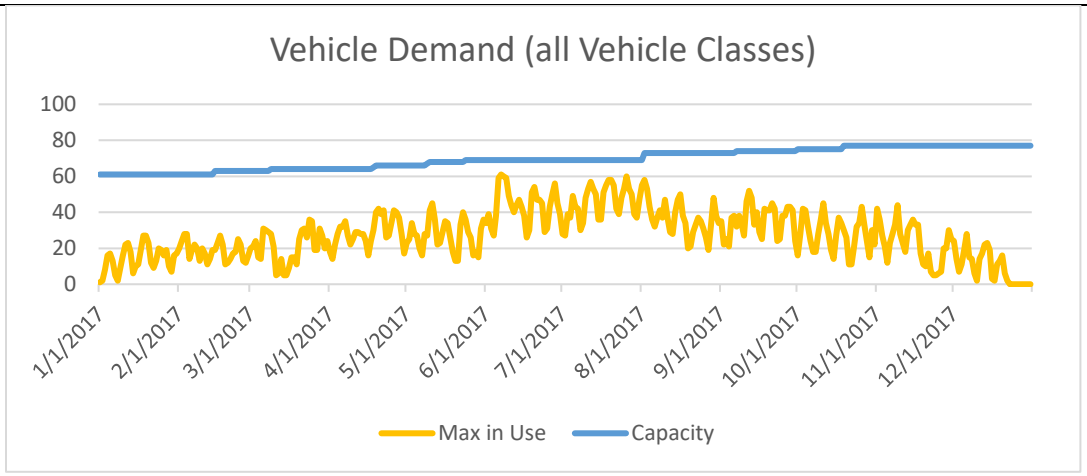
The key to affecting change is to compare your baseline ("as-is") metrics to your desired metrics ("to-be"). That is, you need to have a target to shoot for. It is perfectly fine to start conservatively on the target relative to what you'd like to achieve. On successive passes through utilization efforts, more aggressive goals can be established as needed.

Sources of Benchmarks, Targets & Goals

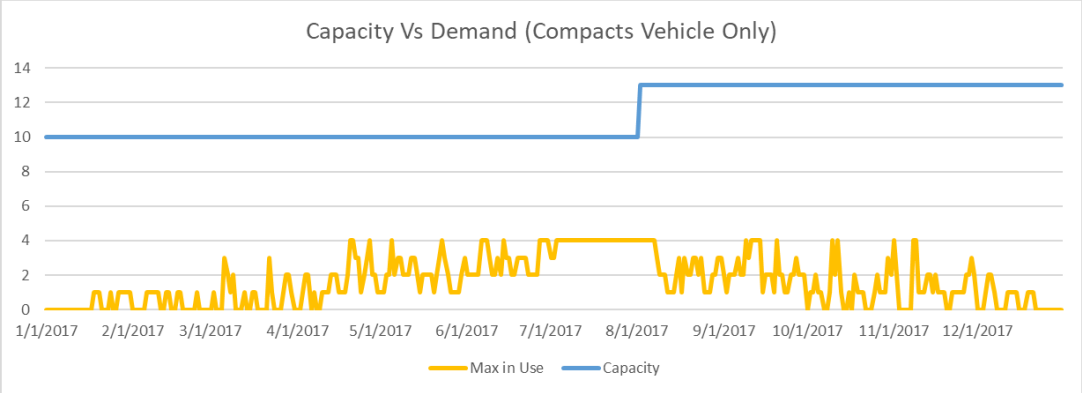
How exactly do you set targets for right-sizing a fleet? The answer may vary from fleet to fleet. Common sources of data used to determine goals to achieve include:

- Your baseline data (snapshot or a longer-term view of data trends)
- Benchmarks from peers
- Industry benchmarks available through trade associations or vendors
- Existing or new fleet policies (see more in Section 4, Fleet Policy)
- Governing documents or guidelines

Your baseline data, and trends in data over time, are the most common source of information that is used to set targets for changes to a fleet during a utilization study. Often, there is low-hanging fruit relative to opportunities to change the fleet. In the example below from a university fleet (top graph), it is clear that the fleet size keeps growing even though there is no demand that is affecting that change. By analyzing the data further and looking at vehicle demand for a specific class of vehicle (shown in the bottom graph), it is clear that at least six compact vehicles could be eliminated without any adverse impact on the fleet.



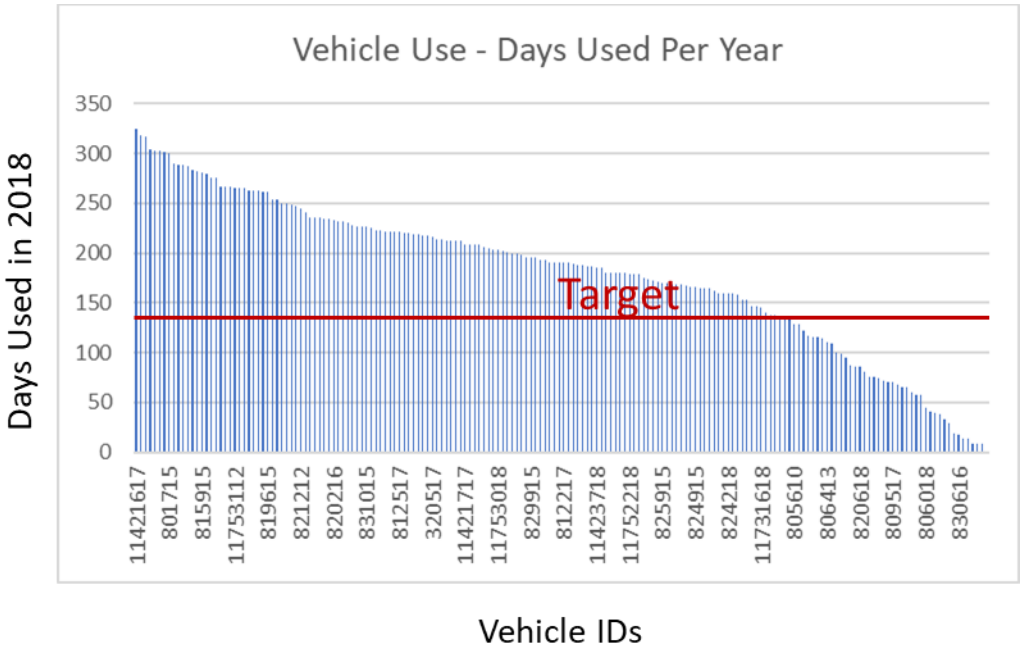
Utilization when considering all classes of vehicles



Utilization when considering only compact vehicles

Capture, and analyze, fleet data with the fidelity you desire. In the example above (top graph), we see the fleet size growing even though demand does not justify it. In the second graph, we see that there are at least 6 compact vehicles unused at any given time. (Image courtesy of Agile Fleet)

With data in hand, it is often useful to visually display it to help establish goals or to define changes. As reflected in the graph below, "Days in Use" is tracked for each vehicle in a fleet. The relatively modest vehicle use is clear to see for vehicles that are used less than 140 days per year. Vehicles used less than this amount warrant further investigation.



Organizing data visually sometimes helps make it obvious what goals or targets for utilization should be. *(Image courtesy of Agile Fleet)*

In the case above, the solution may be obvious once data is viewed graphically. Can utilization be evened out across the fleet? Over utilization can be as bad as under-utilization. Compare the utilization thresholds with established standards and analyze the results. Over-utilization may indicate the fleet size needs to be increased or it may mean that some vehicles are being used too much and others not enough. This could retult in a possible reliability issue for the under-utilized vehicle or it may mean that the under-utilized vehicle can't do the job and staff don't want to use it. Over-utilization of assets may require early replacement. Under-utilization can mean that the asset can be reassigned or remarketed and the proceeds reinvested to a more productive purpose.

Some fleet goals may be already established and simply need to be enforced. In the example below, a "Recommended Max Age" for each fleet vehicle was established for each vehicle at the time of procurement according to policy. Vehicle use, in this case, is measured in age (months). The fleet management information system simply makes it easy to see which vehicles are "OVER" the expected age or "UNDER" the expected age.

Vehicle Name	Description	Recommended Max Age	Actual Age (in Months)	Delta Age (in Months)	Age Over/Under
1001017	2017 Ford Explorer Interceptor	60	24	-36	UNDER
1001218	2018 Ford 4 pass Explorer	60	10	-50	UNDER
1003514	2014 CHEVROLET Equinox LS AWD	84	58	-26	UNDER
1004207	2007 FORD RANGER EC	120	144	24	**OVER**
1005007	2007 Ford Ranger EC	120	144	24	**OVER**
1005214	2014 CHEVROLET Equinox LS AWD	84	58	-26	UNDER
1009014	2014 CHEVROLET Equinox LS AWD	84	58	-26	UNDER
1009417	2017 Ford Taurus	36	24	-12	UNDER
1009517	2017 Ford Taurus	36	24	-12	UNDER
1009617	2017 Ford Taurus	36	24	-12	UNDER
1009717	2017 Ford Explorer Interceptor	60	24	-36	UNDER
1009815	2015 FORD EXPLORER 4X4	36	54	18	**OVER**
1011115	2015 Ford Taurus	60	52	-8	UNDER
1018606	2006 FREIGHTLINER M2	144	162	18	**OVER**
1019212	2012 CHEVROLET COLORADO EX	120	84	-36	UNDER
1021512	2012 CHEVROLET COLORADO EX	120	84	-36	UNDER

"Recommended Max Age" is the target age of vehicles for this fleet. (Image courtesy of Agile Fleet)

Discrete Goals & Target Dates

All targets established as part of a utilization initiative should be very clearly defined using numbers and should have a target date. If changes such as "reduce the fleet by 7 SUVs" is given with no time frame, delays could be expected. Be sure to include dates by which changes are to take place.

3.3 Make a list of Recommended Fleet Changes

The entire goal of any fleet utilization study is to make changes that will positively impact the fleet. Changes may include, but not be limited to:

- Decreasing or increasing the size of the fleet based on utilization metrics and/or changes to business processes
- Identifying vehicles that fall outside of acceptable governing documents or policy and therefore must be eliminated or brought in to compliance
- Identifying vehicles that do not fit mission requirements or otherwise are not suitable as currently used in the fleet
- Transitioning vehicles from an assigned use to a shared use, i.e., motor pool
- Changing the composition (i.e. Class) of vehicles at each location, including possibly the need to upfit certain vehicles
- Transitioning vehicles from one location to another, perhaps as needs vary throughout the year

There may be hundreds, or thousands, of changes proposed. You may find it easiest to summarize utilization study results and subsequently do a vehicle-by-vehicle presentation of proposed fleet changes. In the end, the sum of changes made to individual vehicles should marry up with the total summary of changes desired. For example, if the utilization study recommends that 6 vehicles be eliminated from a sub-fleet, the detailed vehicle assessment should have 6 vehicles identified for elimination.

The vehicle-by-vehicle assessment would include attributes such as those reflected in the table below:

Vehicle Name	Description	Keep - No Change	Alter Vehicle	Reallocate Vehicle	Dispose	Other	Comments
1001017	2017 Ford Explorer Interceptor	X					
1001218	2018 Ford 4 pass Explorer	X					
1003514	2014 CHEVROLET Equinox LS AWD		X				Upfit with lightbar to support security function then we can eliminiate 115214
1004207	2007 FORD RANGER EC				X		Exceeds age and mileage threshold. Dispose. Do not replace. Will use motor pool vehicles
1005007	2007 Ford Ranger EC				X		Exceeds age and mileage threshold. Dispose. Do not replace. Will use motor pool vehicles
1005214	2014 CHEVROLET Equinox LS AWD				X		1003414 will serve this function after upfitting with lightbar
1009014	2014 CHEVROLET Equinox LS AWD				X		Do not replace. Will use motor pool vehicles
1009417	2017 Ford Taurus			X			Transition to replace 1011115
1009517	2017 Ford Taurus			X			Transition to motor pool
1009617	2017 Ford Taurus			X			Transition to motor pool
1009717	2017 Ford Explorer Interceptor	X					
1009815	2015 FORD EXPLORER 4X4	X					
1011115	2015 Ford Taurus					X	Low utilization; high mleage, poor condition, high maintenance costs. Replace with 1009417
1018606	2006 FREIGHTLINER M2	X					
1019212	2010 CHEVROLET COLORADO EX				X		Exceeds age and mileage threshold. Dispose. Do not replace. Will use motor pool vehicles
1021512	2012 CHEVROLET COLORADO EX	X					
TOTALS		6	1	3	5	1	

A vehicle-by-vehicle assessment is useful data to help achieve changes identified in the utilization study

The summary of proposed changes and the vehicle-by-vehicle assessment are inputs to the process of reviewing and making approved changes. Depending upon who is involved in the approval process, you may tailor the amount and type of data that is needed to prepare for the review process. You may find the following are required:

- A one-page executive summary of the proposed changes including discrete metrics
- A summary of cost-savings or cost increases that are forecast to result from these changes
- A summary of the criteria used to recommend the changes
- Detailed changes, by vehicle
- Some type of priority or schedule that indicates the relative importance or timing of proposed changes

3.4 Review and Make Approved Fleet Changes

You should establish a formal process for reviewing and approving fleet changes. Roles and responsibilities regarding fleet changes should be clearly documented. Successful changes to fleet are often accompanied by communicating clearly and being transparent with all affected stakeholders.

3.5 Refine the Utilization Study Process and Set Timeline for Successive Studies

There's always room to improve, change scope, and do things differently in a fleet utilization study. Give yourself the flexibility to make these changes. Get input from all affected stakeholders. Communicate any changes that will be used for the next utilization study and set a timeline for when the next study will be done if that schedule is not dictated by current policies.

4 Fleet Utilization Policy

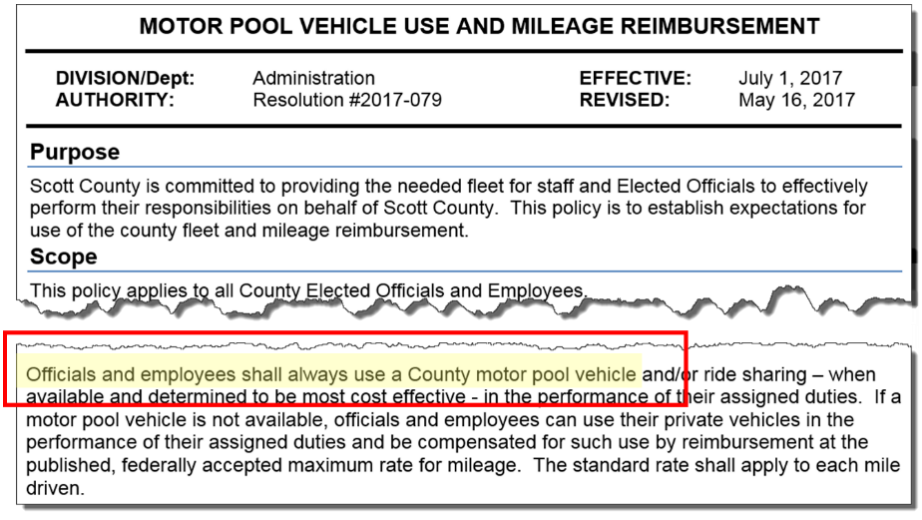
Almost no discussion related to fleet management would be complete without addressing fleet policy. Good fleet policy may very well be the key to success, or failure, of efforts to implement fleet changes related to utilization. Policy should support and dictate changes that will ultimately be made.

For example, here is a typical dialog in a fleet *without* policy regarding assigned vehicle versus shared vehicle criteria:

> **Fleet Manager:** Your admin vehicles are utilized at less than 50%. Based on our assessment with your team, we plan to transition 5 of your assigned, non-emergency admin vehicles to the motor pool located at your location. This initiative will save us $25,000 annually while still providing the vehicles you need.
>
> **Department Manager:** We need each of those vehicles.
>
> **Fleet Manager:** You will have access to more vehicles and more types of vehicles in the motor pool. They're available 24 x 7. We've analyzed the job function for each of the affected vehicles and the motor pool vehicles meet those requirements. Through pooling and increasing utilization, we reduce our costs by 40%.
>
> **Department Manager:** We need each of those vehicles.

Without policy to support proposed changes, change can be very difficult.

Consider the same discussion as shown in the figure above if fleet policy is already in place to support right-sizing changes. A good example of fleet policy supporting motor pools is shown below for Scott County, Minnesota.



MOTOR POOL VEHICLE USE AND MILEAGE REIMBURSEMENT

DIVISION/Dept:	Administration	**EFFECTIVE:**	July 1, 2017
AUTHORITY:	Resolution #2017-079	**REVISED:**	May 16, 2017

Purpose

Scott County is committed to providing the needed fleet for staff and Elected Officials to effectively perform their responsibilities on behalf of Scott County. This policy is to establish expectations for use of the county fleet and mileage reimbursement.

Scope

This policy applies to all County Elected Officials and Employees.

Officials and employees shall always use a County motor pool vehicle and/or ride sharing – when available and determined to be most cost effective - in the performance of their assigned duties. If a motor pool vehicle is not available, officials and employees can use their private vehicles in the performance of their assigned duties and be compensated for such use by reimbursement at the published, federally accepted maximum rate for mileage. The standard rate shall apply to each mile driven.

[4]

Utilization studies frequently recommend use of motor pools as a way to increase use of vehicles. When policy supports such decisions, fleet managers have a much better track record of achieving results.

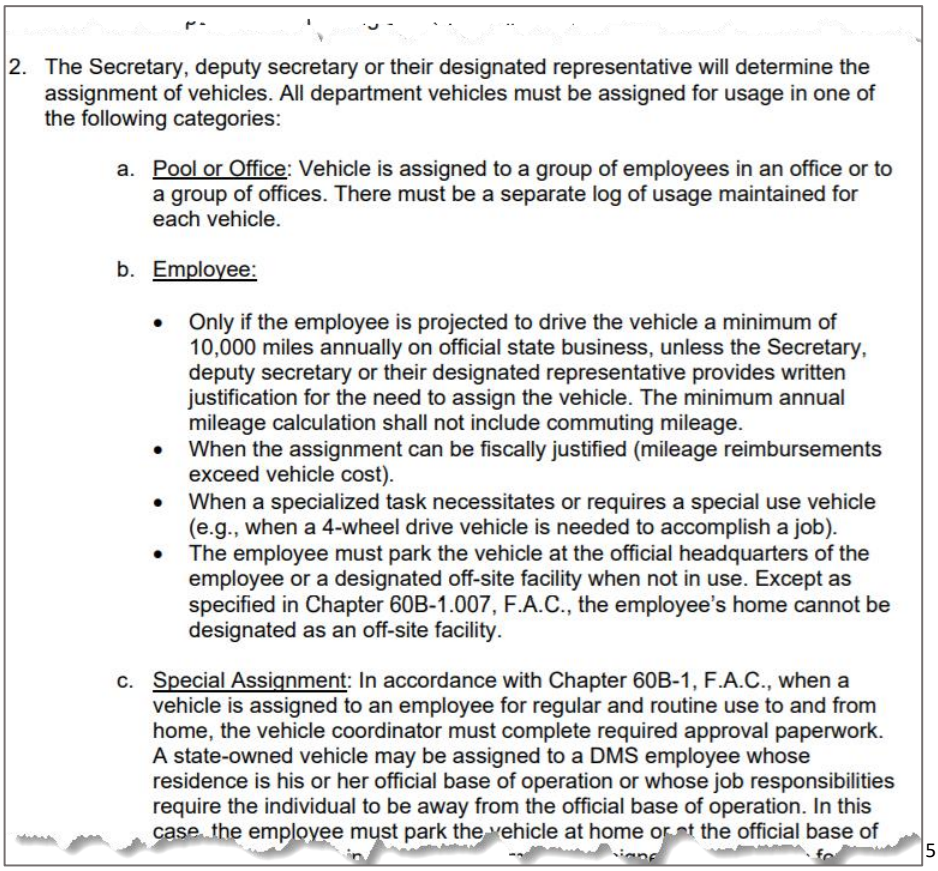
[4] https://www.scottcountymn.gov/DocumentCenter/View/11838/Finance-Policies-and-Procedures

Scott County manages six motor pool locations sharing 84 vehicles. They are successful, thanks in part, to the policy that supports their vehicle sharing initiatives. Their vehicle sharing policy is:

- County-wide in scope (sent to all employees)
- Approved by the county board
- Owned by the originating department, Office of Management and Budget

Scott County's policies are reviewed annually and updated as needs change.

Policy that define use of fleet vehicles (e.g. assigned, pooled) are very good at supporting efforts undertaken as part of a fleet utilization study. As reflected below in an excerpt from Florida Department of Management Services' Administrative Policy, criteria for having pooled, office, employee (assigned) or special assignments is clearly defined.



2. The Secretary, deputy secretary or their designated representative will determine the assignment of vehicles. All department vehicles must be assigned for usage in one of the following categories:

   a. Pool or Office: Vehicle is assigned to a group of employees in an office or to a group of offices. There must be a separate log of usage maintained for each vehicle.

   b. Employee:

   - Only if the employee is projected to drive the vehicle a minimum of 10,000 miles annually on official state business, unless the Secretary, deputy secretary or their designated representative provides written justification for the need to assign the vehicle. The minimum annual mileage calculation shall not include commuting mileage.
   - When the assignment can be fiscally justified (mileage reimbursements exceed vehicle cost).
   - When a specialized task necessitates or requires a special use vehicle (e.g., when a 4-wheel drive vehicle is needed to accomplish a job).
   - The employee must park the vehicle at the official headquarters of the employee or a designated off-site facility when not in use. Except as specified in Chapter 60B-1.007, F.A.C., the employee's home cannot be designated as an off-site facility.

   c. Special Assignment: In accordance with Chapter 60B-1, F.A.C., when a vehicle is assigned to an employee for regular and routine use to and from home, the vehicle coordinator must complete required approval paperwork. A state-owned vehicle may be assigned to a DMS employee whose residence is his or her official base of operation or whose job responsibilities require the individual to be away from the official base of operation. In this case, the employee must park the vehicle at home or at the official base of

[5]

Policy that defines types of use of fleet vehicles (e.g. assigned, pooled) is very good at supporting efforts undertaken as part of a fleet utilization study

[5] https://www.dms.myflorida.com/content/download/128134/796873/16-102_Vehicle_Management.pdf

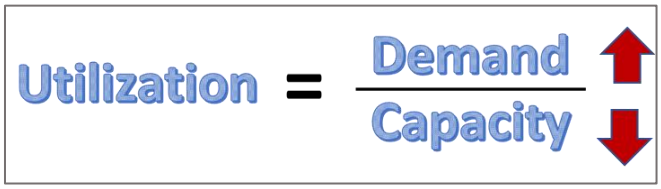
Policies that directly support utilization initiatives include, but are not limited to:

- Vehicle assignment policies that include a process for analyzing the need for a dedicated, assigned vehicle. This may include minimum mileage thresholds, minimum use thresholds, specialization exceptions, and exemptions.
- Motor pool use policies which encourage use of pooled vehicles versus assigned vehicles.
- Policies regarding use of, or reimbursement for, personally-owned vehicles in lieu of motor pool or other alternatives.
- Policies which require the lowest cost transportation alternative to be used.

It is recommended that policies that you anticipate will be needed to support utilization initiatives be developed and implemented prior to, or as part of, your fleet utilization efforts. Kathy Wellik, CAFM, Director of Transportation Services at Iowa State University, takes a unique and effective approach to policy management surrounding their shared fleet. She conducts quarterly "Customer Steering Committee" meetings. At these meetings, policy, fleet use, and any proposed changes to the fleet are discussed with stakeholders representing all facets of fleet use and fleet management. It is a great partnership and a way to share information about why changes are made and to collect input from fleet stakeholders.

5 Initiatives to Improve Fleet Utilization

The key to increasing fleet utilization is to decrease the number of vehicles or increase use of those vehicles. Simply speaking, utilization goes up by either: 1) Decreasing "capacity" or 2) Increasing "demand". So, how exactly do we do that?



While the answer for how to best increase utilization and right-size will vary by fleet, a few initiatives typically have a consistent impact across a wide cross-section of the fleet market space. These include:

1. Implement vehicle sharing technology or services
2. Disband unwarranted "sub-fleets"
3. Implement GPS to provide better oversight of vehicle use
4. Analyze reimbursement for use of personal vehicles for impacts on fleet use and costs
5. Identify options to fulfill peak demand for vehicles
6. Enhance fleet policy

5.1 Implement Vehicles Sharing Technology

Vehicle sharing is generally a solution that results in savings that are greater than any other type of solution that can be introduced to a fleet. Reason would dictate that, if you can create an environment where the total number of vehicles in the fleet is aligned with the total number of vehicles actually needed in the fleet, you would need fewer vehicles. Vehicle sharing does just that. Assigned vehicles are effectively consumed by an individual or department whether or not they are being used. Motor pools, i.e., vehicle sharing, offer the ability to provide vehicles on demand. By creating motor pools, the ratio of drivers-to-vehicles can grow. And, the size of a fleet can dramatically decrease while offering the following benefits to drivers:

- Access to more vehicles – A common misconception of motor pools is that vehicles may not be available when needed. In practice, the opposite is true. Pooling helps eliminate the situation in which a sub-fleet may have peak demand (run out of vehicles) yet another sub-fleet has vehicles sitting idle. Motor pools help even out the average demand and provide the additional vehicles needed to meet peak demand.
- Access to more classes of vehicles – Another benefit of a pool is that the pool can contain a variety of vehicles. A vehicle such as a cargo van that is seldom used within a sub-fleet may be available via a motor pool for those occasions that one is needed.
- Transitioning the administrative and maintenance functions from non-fleet staff – Typically, non-fleet staff do not enjoy taking care of administrative (insurance, registration, etc.) tasks related to a fleet. Administrative tasks, maintenance, and other

fleet-related tasks take time. When vehicles are transitioned to pools that are overseen by fleet staff, these tasks are shifted away from non-fleet staff. This is often a welcomed improvement.

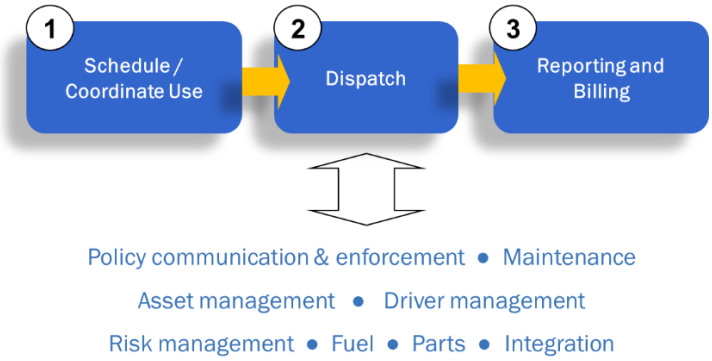
- Reducing costs to the end department or organization – "pay as you need it" is generally a much cheaper option than "pay all the time." Paying an hourly or daily charge for a motor pool vehicle only when it is needed can reduce costs significantly.

  Innovative fleet managers, such as Rick Hilmer,CAFM[6], at Prince George's County Maryland, encourages departments to transition to use of motor pools by providing a department-by-department assessment of how much money they will save by using pooled vehicles versus vehicles that are assigned to departments 100% of the time. His savings estimates are based on actual use of vehicles by department compared to the cost of taking those same trips using pooled vehicles. Mr. Hilmer's efforts have resulted in departments transitioning to shared use of vehicles.

Vehicle Sharing Technology

Vehicle sharing technology has evolved significantly over the past twenty years. Prior to the year 2000, if you mentioned motor pool technology or vehicle sharing technology, most likely you'd have to explain what you were talking about. Today, due to the success of vehicle sharing across nearly every segment of fleet and even in the consumer space, vehicle sharing is considered just another tool in the toolbox.

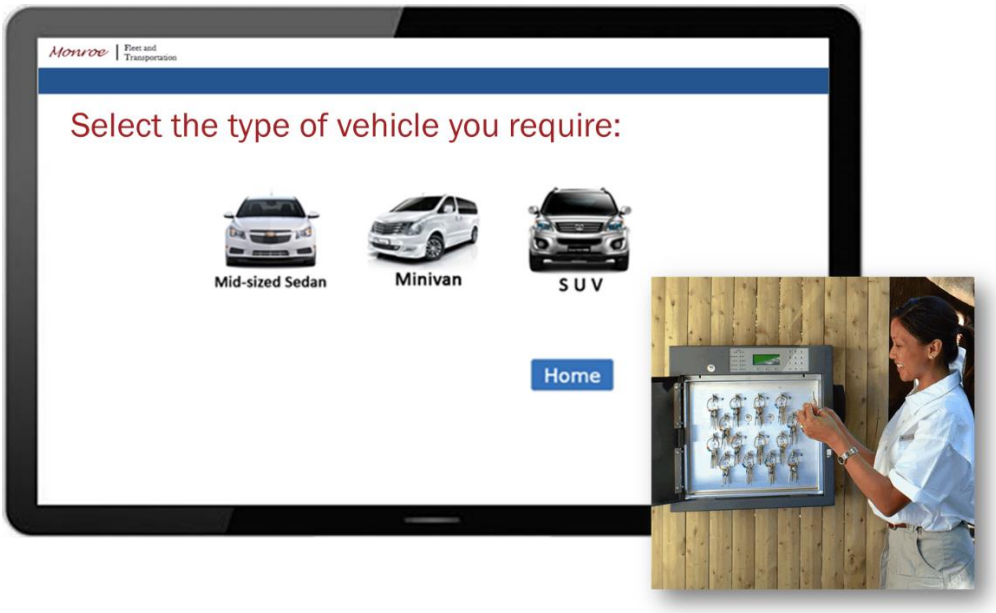
While there are many different types of technologies and services that ultimately enable vehicle sharing, the core functions of any vehicle sharing initiative are basically the same. They consist of 1) Scheduling or coordinating the use of vehicles, 2) Dispatching out and in (i.e., gaining access to vehicles), and 3) Generating the requisite billing or reports related to vehicles sharing. These functions are depicted in the figure below.



Vehicle sharing technology should be tightly integrated with your other fleet technology

[6] http://info.agilefleet.com/prince-georges-county-md-successstory?hsCtaTracking=e9a521f9-5e77-4915-a58d-2ec9c5de5251%7C25468aa2-3f62-4755-87d9-cc60a921907a

Modern tools offered to fleet managers overcome all objections regarding ease-of-use. Fleet vehicles can now be reserved any time of the day and conveniently picked up and returned through user-friendly technology such as a fleet service motor pool kiosk, similar to those commonly found in airports for retrieving boarding passes. Security, auto-dispatching, enforcing driver rules, and optimization of vehicle use should be included with offerings from most vendors.



Capabilities such as a self-service motor pool kiosk make sharing easier than ever (Image courtesy of Agile fleet)

Commonly used vehicle sharing technologies / functions today may include:

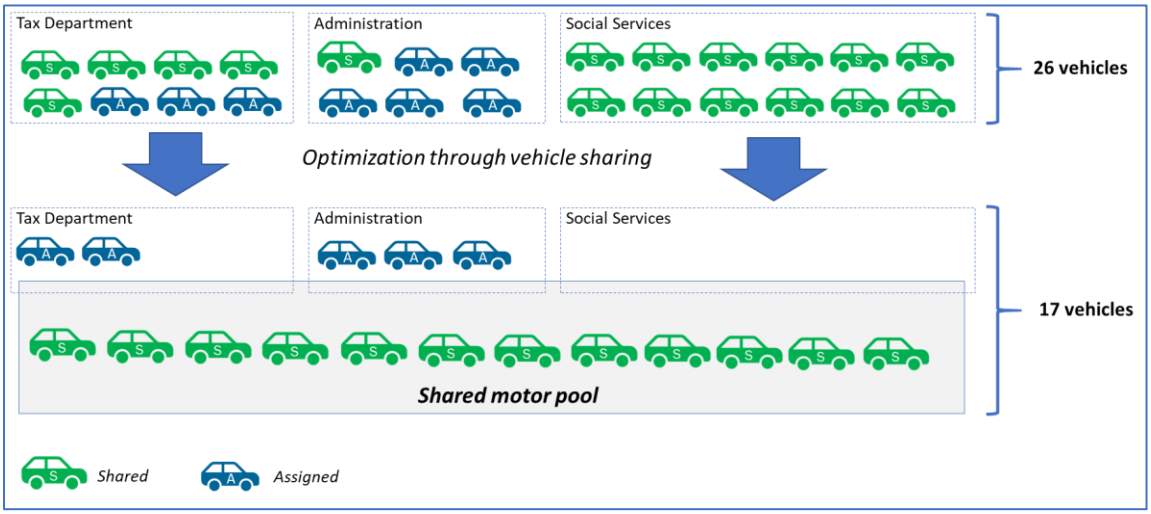
- On-line reservation capabilities (web browser, mobile)
- Vehicle sharing dashboards and dispatching tools
- Self-service motor pool kiosks
- Automated key control systems
- In-vehicle lock/unlock and mobilization/immobilization hardware
- Uber, Lyft, and other ride sharing services

Each type of vehicle sharing technology or service has its merits. And, the per-vehicle cost per vehicle for technology or service often varies dramatically. Different technologies may have their merits for different segments of your fleet. Use of the same technology in one segment of your fleet may need to be implemented or configured differently to consider the nuances of each segment of your fleet. When evaluating technologies or services, be leery of solutions

that offer only one method for scheduling, dispatching, and reporting/billing. These "one trick pony" solutions often fall short when expansion of sharing to other departments, other locations, and even other types of vehicles such as heavy equipment is needed.

5.2 Disband "Sub-fleets," AKA Department Fleets

By the numbers, operating small, geographically co-located sub-fleets in most environments can be one of the least efficient ways to operate a fleet. Why? Because you generally plan for worst-case scenarios when it comes to the size of a department fleet. For example, if a university admissions department has peak demands that require eight passenger vehicles for a few months out of the year, that department would have a fleet of at least eight vehicles. At other times of the year, their peak demand may be closer to three vehicles. At the same time that the admissions department needs eight vehicles, another department sharing the same parking lot may have five idle vehicles. And yet another department may have three vehicles not in use. The peak and low demands for vehicles across departments most likely average out. By pooling, a much smaller number of vehicles is required to fulfill the mission for the organization as a whole.



Transitioning from a department-centric fleet to a fleet that leverages vehicle sharing generally results in very significant decreases in the number of vehicles required to fulfill your mission

The reduction in fleet that can be realized through vehicle sharing initiatives is generally rather predictable… as are the savings. Fleet consultants or vendors that offer vehicle sharing technology or services can help you perform a return on investment analysis that considers the unique nuances of your fleet.

5.3 Implement GPS to Provide Better Oversight of Vehicle Use

Implementing GPS technology can be a great start to a vehicle right-sizing initiative. GPS technology, when used in conjunction with vehicle sharing, is a great resource for understanding utilization. GPS tracking systems can tell when vehicles are in use and when they are away from their home location and therefore not available for use by other departments. This type of data is key to understanding utilization.

So, GPS data reveals that vehicles are under-utilized. Now what? You can't simply remove assigned vehicles, for example, from the fleet without providing an alternative for easy access to vehicles. Use of vehicle sharing or motor pool technologies is often paired with GPS technology to achieve a great result. Alter fleet size and composition based on GPS data and fulfill the need for access to vehicles via motor pools.

5.4 Analyze Reimbursement for Use of Personal Vehicles

Use of personally-owned vehicles (POVs) often impacts fleet utilization because it decreases demand on the fleet. Use of personal vehicles makes sense in some circumstances. However, reimbursement for use of personal vehicle s often such a financial windfall for drivers that the privilege is abused. With just a few minor adjustments this problem can be overcome.

Why focus on personal mileage reimbursement? It is common for fleet vehicles to sit idle while drivers are being reimbursed for use of their personal vehicle. Reimbursement results in lower utilization and higher costs. It's a double hit to the organization's budget because the organization is reimbursing the driver while, at the same time, there are fleet vehicles that are not in use. Since that fleet asset is depreciating even when it is not in use, it behooves organizations to utilize their own vehicles, when financially practical, to avoid paying unnecessary expense reimbursements. To ensure reimbursement is only used when it makes sense, these rules should be followed:

1. Update fleet policy to promote minimal use of personal vehicles
2. Require that shared fleet vehicles be used as a first option, prior to use of a personal vehicle.
3. Mandate that supervisors approve any reimbursement
4. Ensure that fleet knows the annual allocation for reimbursement and the impact on fleet size

Small changes regarding personal mileage reimbursement really can make a difference. Scott County Minnesota implemented an automation capability that requires proof that a motor pool vehicle was unavailable prior to a driver being eligible for reimbursement for use of a personal vehicle. In just one year, the county reduced reimbursements from $234,263 to $82,210. This was done without increasing fleet size.

5.5 Enhance Fleet Policy

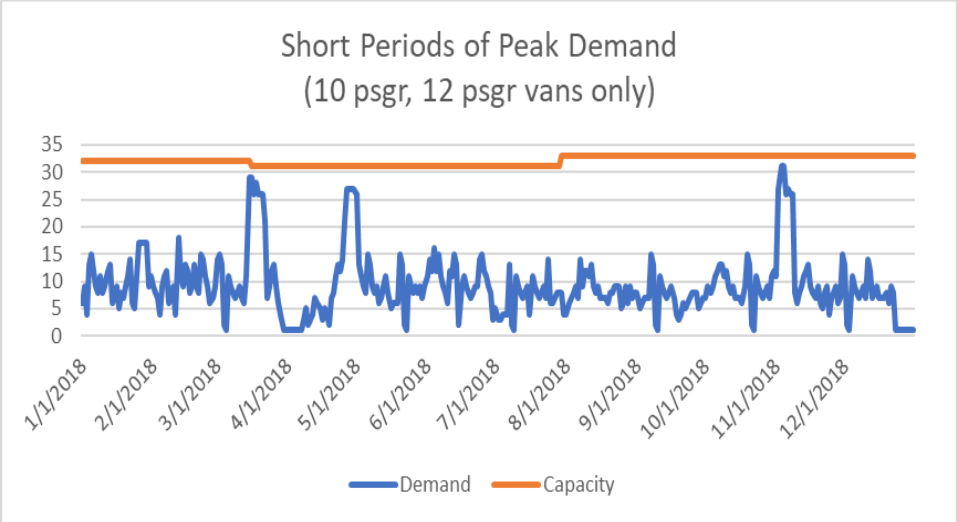
Plan to understand, and revise, your fleet policy. As discuss in Section 4, you will likely need to have policy in place in order to implement changes resulting from your utilization studies. Without fleet policy to back up your proposed changes, change is often difficult.

When reviewing your policy, do a quick Internet search such as "university fleet policy". Leverage what other organizations have done to achieve great results.

5.6 Identify Options to Fulfill Peak Demand for Vehicles

Once you have a solid understanding of fleet utilization, you may see trends in utilization data that show peak utilization for short periods of time. Often, fleets carry excess inventory to fulfill this need. As reflected in the graph below, although the fleet carries approximately 32 vans in inventory, there are only three periods throughout the year when more than 18 vans are needed. Likely, there is a cost-effective alternative to carrying this inventory. Options may include:

- Using outside transportation services (e.g. contract shuttles)
- Establishing agreements with outside van rental agencies



Analyzing peak demand may identify opportunities for using outside resources to meet demand (Data courtesy of Agile fleet)

In the case of the fleet reflected in the graph above, a minimum of ten vehicles could be eliminated from the fleet if other options are used for peak demand. The resulting cost savings would be approximately $75,000 in disposal income and $50,000 annually in reduced maintenance, depreciation and other costs related to these 10 vans.

6 Summary

Having the right quantity and class of vehicles available at the right location at the right time is the key to right-sizing a fleet. To achieve the right-sized fleet, fleet managers must understand the key components that affect utilization rates, effectively capture fleet metrics, continuously analyze utilization metrics, and maintain fleet policy that supports and maximizes utilization. All of these efforts can be streamlined and optimized by implementing fleet technology.

A process of continuously analyzing and improving fleet utilization is a fleet management best practice. Fleet utilization studies can be performed using internal resources or can be led by outside fleet consultants that specialize in utilization studies. Studies typically start with the baselining of fleet metrics. Ultimately, utilization studies result in changes that result in positive impacts for the fleet.

Few initiatives will have the cost-saving impacts on a fleet that utilization initiatives have on a fleet. High-impact initiatives focusing on utilization include:

1. Implement Vehicles Sharing Technology and share vehicles in a motor pool
2. Disband unwarranted "sub-fleets"
3. Implement GPS to provide better oversight of vehicle use
4. Analyze reimbursement for use of personal vehicles
5. Identify options to fulfill peak demand for vehicles
6. Enhance fleet policy

We hope readers of this *Ultimate Guide to Understanding Fleet Utilization and Achieving a Right-Sized Fleet* have gained insights and knowledge required to affect positive changes in their fleet. NAFA and Agile Fleet (www.AgileFleet.com) welcome your feedback and truly hope that you find this to be a value resource for shaping the future of fleet and mobility management in your organization. For more information, reach out to resources below.

Agile Fleet 14101 Willard Road, Suite A Chantilly, VA 20151 571-498-7555 x 1 info@agilefleet.com sales@agilefleet.com www.AgileFleet.com 	National Association of Fleet Administrators (NAFA) 180 Talmadge Road IGO Bldg Suite 558 Edison, NJ 08817 609-720-0882 info@NAFA.org www.nafa.org 

Attachment 1 – Additional Resources to Understand and Improve Utilization

Please access these resources at the below web address and enter the Promo Code: **NAFA**.

AGILEFLEET™ FLEET MANAGEMENT SOLUTIONS

www.AgileFleet.com/resources/NAFA
Promo Code: NAFA

Fleet Utilization

- E-Guide: Top 5 Fleet Metrics to Cut Costs
- E-Book: Show Me the Data: How to Cut Motor Pool Costs with Utilization Metrics
- 15-min Fleet Expert Podcast: Decoding Fleet Utilization Metrics

Fleet Policy

- Tip Sheet: How to Create Your Fleet Policies
- E-Guide: Developing & Enforcing Fleet Policy
- 15-min Fleet Expert Podcast: Cutting Costs with Fleet Policy
- E-Guide: Top Money-Saving Fleet Policies
- Blog Post: Beyond "Use it or Lose it." A better Way to Look at Fleet Utilization
- NAFA Fleet Policy Workbook

Fleet Success Stories

- City of Stamford, CT
- Sonoma County, CA
- Prince George's County, MD
- State of Colorado
- Forsyth County, NC
- State of Michigan
- Frederick County, MD
- Cornell University
- Illinois State University
- Iowa State University
- Sound Transit
- Multiple Fleet Success Stories: Slashing Personal Vehicle Usage Costs

Additional Resources

- E-Book: Getting Started Guide to Vehicle Sharing
- Podcast: 15-min with Fleet Expert: Expert Tips to Consider Before Starting a Motor Pool
- E-book: Expert Tips to Consider Before Starting a Motor Pool
- Podcast: 15-min with Fleet Expert: Top 10 Best Practices for Fleet Management
- Infographic: Quick Start Guide to Launching a New Motor Pool
- E-Book: Next Generation Fleet Management Information Systems & Motor Pool Automation
- E-Guide: Fleet Software: Build it or Buy it? What You Should Know
- Slide Deck: How to Make a Business Case for Fleet Automation

About Agile Fleet

Headquartered in the Washington, D.C. area, Agile Fleet is a fleet management solutions company that serves the government, university, utility, non-profit, and commercial sectors. Agile Fleet's software, hardware and services enable organizations to efficiently manage all aspects of drivers and vehicles to reduce costs, save time, and improve service. Agile Fleet's flagship product, FleetCommander, delivers the automated management of fleet motor pools, vehicle keys, maintenance, GPS & telematics, fuel, and risk. Additional services provided by Agile Fleet include seamless integration with other systems, fleet efficiency analysis, in-depth technical support, fleet consulting, and much more.

For more information, contact Agile Fleet at 571-498-7555 x1 or Ed Smith, esmith@agilefleet.com or visit http://www.agilefleet.com.

NAFA® Fleet Management Association

www.NAFA.org

Additional information on vehicle acquisition, remarketing, utilization, policy creation and more is available through NAFA. Browse our education website at https://www.nafa.org/Resource-Center/Research-Guides-Studies/Overview.aspx

A number of the Fleet Managers featured in this eBook have earned their Certified Automotive Fleet Manager certification from NAFA. This in-depth professional designation is college-accredited and teaches participants a wide-range of practical fleet management skills. See https://www.nafa.org/f/Why-Enroll/Why-Get-Certified.aspx

About NAFA

NAFA is the world's premier not-for-profit association for professionals who manage fleets of sedans, law enforcement vehicles, trucks, and buses of all types and sizes, and a wide range of military and off-road equipment for organizations across the globe.

NAFA Fleet Certification CAFM® and CAFS® Programs

CAFM® Program

The Certified Automotive Fleet Manager (CAFM®) is designed as a self-study program and everything you need is included in the Reference and Study Guides. If you learn better through audio and visual aids, we offer an enhanced enrollment package which includes 3 to 4 hours of recorded webinars (slides and audio) for each module.

The CAFM certification program offers the most up-to-date fleet management education. Successful completion of the CAFM program requires passing all eight disciplines within a three-year period. The eight disciplines are:

Asset Management (AM)

Business Management (BM)

Financial Management (FM)

Information Management (IM)

Maintenance Management (MM)

Professional Development (PD)

Risk Management (RM)

Vehicle Fuel Management (VFM)

The CAFM program is open to any individual with at least one year experience in any fleet-related position, as well as those enrolled in a college or university program in a fleet-related course of study.

CAFS® Program

CAFS® is designed as a self-study program and everything you need is included in the Reference and Study Guides. If you learn better through audio and visual aides, however, we offer an enhanced enrollment package which includes 3 to 4 hours of recorded webinars (slides and audio) for each module. Enhance registration options are available for $750 (members) and $1000 (non-members)

The Certified Automotive Fleet Specialist (CAFS®) program gives candidates the option of selecting any four of the eight disciplines to complete within a two-year period based on their education or employment needs.

Discipline: Business Management, Maintenance Management, Risk Management, Professional Development, Asset Management, Financial Management, Information Management, Vehicle Fuel Management.

The CAFS program is open to any individual with at least one year experience in any fleet-related position, as well as those enrolled in a college or university program in a fleet-related course of study. Those who successfully complete four disciplines are eligible to continue their studies in the remaining disciplines to earn their CAFM® designation.