How-to Guide: Government Motor Pools

This guide offers a step-by-step plan for government agencies to set up, expand, and effectively manage their motor pools.
Why motor pools?

In the US, government agencies operate approximately 3.7 million vehicles, costing an estimated $21 billion dollars each year. As agencies face pressure to lower spending and meet sustainability mandates, optimizing fleet operations has become a national priority.

“We owe a responsibility to American citizens to lead by example . . . Living up to that responsibility means the Federal fleet should operate only as many vehicles as needed to work efficiently, leveraging Federal purchasing dollars to build manufacturing capacity for more alternative fueled vehicles, and reducing petroleum consumption through efficiency and alternative fuels.”

- Presidential Memorandum on Federal Fleet Performance

Currently, many government departments operate their own fleets of vehicles to serve the needs of their employees. For many large fleets, this approach can be inflexible, since it is difficult and costly for individual departments to add, remove, and reallocate vehicles to match changes in demand.

Moreover, between 85% and 95% of publicly-owned vehicles are assigned to individual drivers or groups, many of whom drive only a few hours a day. As a result, only about 40% of assigned vehicles are on the road at any given time, even at peak hours. The rest sit in the parking lot, taking up space and losing value through depreciation.

That's where motor pools come in. When departments transfer control of their vehicles to a central motor pool, they only pay for the hours of transportation their employees actually use. What’s more, shared vehicles increase overall efficiency because they can take more trips, get more mileage, and serve more drivers per day than assigned vehicles.

Building and expanding your agency’s motor pool can be the key to maximizing usage, cutting costs, and reducing carbon footprint on a massive scale.

---

1 http://www.fhwa.dot.gov/policyinformation/statistics/2012/mv7.cfm, Local Motion's internal estimate
2 Local Motion's internal estimate
About this guide

This guide offers a step-by-step plan for government agencies to set up, expand, and effectively manage their motor pools to reduce expenses, decrease waste, and even generate a surplus to reinvest in their fleets.

Key Ideas:

- Establish your long term goal
- Find your baseline utilization
- Set up your motor pool
  - Identify the right vehicles to share
  - Choose a reservations management system
  - Select a key management process
- Create a pricing model
- Increase demand
  - Raise awareness
  - Gameify usage
  - Provide outstanding customer experience
- Adapt your fleet
  - Right-size your motor pool
  - Introduce alternative fuel vehicles
Establish your long term goal

Agencies build or expand their motor pools for different reasons. Before you begin, think about your overall strategy and goals for your fleet. This guide will discuss three primary outcomes you might aim to achieve:

- **Break even and become self-sustaining**
- **Create a surplus to reinvest in expanding or modernizing your fleet**
- **Increase vehicle accessibility and convenience for drivers**

Identifying a clear goal will allow you to navigate the trade-offs that all motor pool managers face. It will help you select the right tools to manage your operation, choose a pricing structure, and determine the ideal size and composition for your fleet.
Find your baseline utilization

Establishing a baseline for vehicle utilization can help you understand the current state of your fleet, make good strategic decisions, and measure your motor pool’s performance over time. In this guide, we define vehicle utilization as the percentage of working hours a vehicle spends on the road.

To measure utilization, track the average number of hours that vehicles of each type spend on the road per day, and divide by the number of working hours in a day. This task will be straightforward if you have tracking devices installed in your vehicles. Otherwise, you can gather information from reservation logs or ask a key manager to manually record information for a week. Create a graph like the one below to visualize the results.

Once you have established your baseline, assess utilization every six months to see how your motor pool’s performance improves over time.
Set up your motor pool

This section outlines best practices to organize a successful motor pool. To get started, decide which vehicles to reallocate, and then implement systems for drivers to reserve and access shared vehicles.

Select the right vehicles to share

While some government employees require an assigned vehicle to do their job, others could switch to using shared vehicles without much disruption to their day-to-day tasks. By allocating the right vehicles to your motor pool, you can increase efficiency without creating unnecessary hassle for drivers.

To determine whether a vehicle is a good candidate for sharing, ask yourself: **Are there specialized tools or personal items on board that would be difficult or impossible to move between vehicles?** If not, consider transferring the vehicle to your motor pool.

Expect that drivers will have some questions about the new system. Below are examples of conversations that might come up, and possible responses you might give:

**Driver:** “I have tools in my vehicle.”

**Fleet Manager:** “We’ll create a space to store your tool bag inside the office.”

**Driver:** “I prefer to have my own car.”

**Fleet Manager:** “I don’t want to lose my transportation benefit.”

**Driver:** “I keep my car very clean.”

**Fleet Manager:** “We’ll clean the cars in our motor pool frequently to meet our high standards.”

**Fleet Manager:** “Using the motor pool means that you won’t have to worry about maintaining your car anymore. Also, shared cars will be parked closer to the building entrance.”

**Fleet Manager:** “You now have access to more types of vehicles, giving you more flexibility to do your job. Plus, we’ll reinvest the savings in new vehicles or other employee benefits.”
Choose a reservations management system

The size of your fleet, the number of locations, and your budget will help to determine the best reservations management solution for your motor pool. The table below describes the pros and cons of each option.

<table>
<thead>
<tr>
<th>PROS</th>
<th>IMPROVISED METHOD</th>
<th>GENERIC TOOL</th>
<th>SPECIALIZED TOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Straightforward training</td>
<td>May already be familiar to staff</td>
<td>Drivers can instantly access available vehicles without the need to pick up keys</td>
</tr>
<tr>
<td></td>
<td>Quick and easy to implement</td>
<td>Drivers can book far in advance</td>
<td>Track the status of all vehicles and drivers</td>
</tr>
<tr>
<td></td>
<td>Works well for small departments</td>
<td></td>
<td>Ability to group drivers and add privileges and restrictions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Integrated with key management/vehicle access process</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Booking confirmation with GPS location of the vehicle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option to overbook to account for no-shows</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONS</th>
<th>IMPROVISED METHOD</th>
<th>GENERIC TOOL</th>
<th>SPECIALIZED TOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hard to book far in advance</td>
<td>Difficult to scale</td>
<td>More effort to deploy</td>
</tr>
<tr>
<td></td>
<td>Difficult to scale</td>
<td>Not integrated with key management/vehicle access process</td>
<td>Higher cost</td>
</tr>
<tr>
<td></td>
<td>Relies on trust/honor system</td>
<td>Additional software to manage</td>
<td>Too many features for smaller departments</td>
</tr>
<tr>
<td></td>
<td>Needs to be managed manually</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAMPLES</th>
<th>IMPROVISED METHOD</th>
<th>GENERIC TOOL</th>
<th>SPECIALIZED TOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White board in the building entrance that is updated weekly</td>
<td>Treat vehicles as resources within existing calendar applications (Outlook, Google Calendar, etc.)</td>
<td>Local Motion</td>
</tr>
<tr>
<td></td>
<td>Excel spreadsheet shared online</td>
<td></td>
<td>Invers</td>
</tr>
</tbody>
</table>

Local Motion offers a powerful reservations platform that handles instant and future bookings, multiple hubs, and driver groupings. It also allows fleet managers to grant and restrict access to specific vehicles. It is fully integrated with our keyless access system.
## Select a key management process

Like reservations management, key management is not one size fits all. The following table explores different strategies for distributing and keeping track of keys.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>WALL MOUNTS</th>
<th>KEY ADMINISTRATOR</th>
<th>AUTOMATED KEY BOX</th>
<th>KEYLESS ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hang and display keys on the wall for drivers to take</td>
<td>Pegboard</td>
<td>Dedicated staff assigned to distribute keys</td>
<td>Key box located near the parking lot, and drivers can unlock with a code</td>
<td>In-vehicle device unlocks doors with an ID badge</td>
</tr>
<tr>
<td>Dedicated staff assigned to distribute keys</td>
<td>Recruiter, LinkedIn</td>
<td>Assetworks, Fleetcommander</td>
<td>Local Motion, Invers</td>
<td></td>
</tr>
<tr>
<td>$100 to set up</td>
<td>$2-5k per month</td>
<td>Upfront: $10-50k Monthly subscription: $0-1k</td>
<td>Upfront: $0-2k/vehicle Monthly subscription: $30-100/vehicle</td>
<td></td>
</tr>
</tbody>
</table>

### PROS

- Simple and inexpensive to install
- Ideal for small, trustworthy teams
- Control over keys
- Potential for great customer service
- Control over keys when integrated with scheduling software
- 24 / 7 access
- Automated management
- Saves time with no pick up and drop off of keys
- Eliminates the expense and hassle of lost keys
- Easy to expand to multiple locations
- 24 / 7 access
- Expensive to scale to multiple locations
- Requires in-vehicle hardware
- More in-depth training necessary

### CONS

- Drivers may not return keys
- Difficult to enforce the schedule
- Requires additional personnel for multiple locations
- No access to keys after hours
- Expensive to scale to multiple locations
- User experience can be complicated or inconvenient

With no upfront cost and an affordable monthly subscription fee, Local Motion's keyless entry system integrates with existing RFID badges and offers one-tap access to all vehicles in your fleet.
Create a pricing model

Whether you aim to break even, generate a revenue surplus, or increase vehicle accessibility, choose a pricing structure that supports your goal.

The following matrix suggests the minimum hourly price you will need to charge to break even, based on cost estimates from Fleet-Central and Energy.gov. The first column shows the type of vehicle, while the top row represents the estimated number of hours a vehicle will be rented per day.

The more use a vehicle gets, the less you have to charge per hour to recoup all of your operating costs. Of course, the relationship between price and usage rate is not quite linear, because the more time a vehicle spends on the road, the more it costs to fuel and maintain.

<table>
<thead>
<tr>
<th></th>
<th>1 hr / day</th>
<th>2 hr / day</th>
<th>3 hr / day</th>
<th>4 hr / day</th>
<th>5 hr / day</th>
<th>6 hr / day</th>
<th>7 hr / day</th>
<th>8 hr / day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Speed Vehicle</td>
<td>$16</td>
<td>$9</td>
<td>$6</td>
<td>$5</td>
<td>$4</td>
<td>$4</td>
<td>$3</td>
<td>$3</td>
</tr>
<tr>
<td>Gas Sedan</td>
<td>$24</td>
<td>$13</td>
<td>$10</td>
<td>$8</td>
<td>$7</td>
<td>$6</td>
<td>$6</td>
<td>$5</td>
</tr>
<tr>
<td>Alternative Fuel Vehicle</td>
<td>$34</td>
<td>$17</td>
<td>$12</td>
<td>$9</td>
<td>$8</td>
<td>$6</td>
<td>$6</td>
<td>$5</td>
</tr>
<tr>
<td>Light Duty Truck</td>
<td>$42</td>
<td>$24</td>
<td>$18</td>
<td>$15</td>
<td>$13</td>
<td>$12</td>
<td>$11</td>
<td>$10</td>
</tr>
<tr>
<td>Medium Duty Truck</td>
<td>$43</td>
<td>$27</td>
<td>$21</td>
<td>$18</td>
<td>$17</td>
<td>$16</td>
<td>$15</td>
<td>$14</td>
</tr>
<tr>
<td>Heavy Duty Truck</td>
<td>$73</td>
<td>$45</td>
<td>$36</td>
<td>$32</td>
<td>$29</td>
<td>$27</td>
<td>$26</td>
<td>$25</td>
</tr>
</tbody>
</table>

Fig B. Estimated price to charge / hour to break even, depending on type of vehicle and number of rented hours / day.

The figures above are just estimates. Use data from your own fleet to arrive at more accurate numbers.
To find the yearly cost to operate a vehicle, you will need to know the following information:

- fixed cost of ownership per year (e.g., parking, depreciation, cost to lease)
- average number of rented hours per day
- average mileage per rented hour
- cost per mile (e.g., fuel, maintenance, cleaning)
- number of working days per year

Use this formula to find the yearly cost of operating a rented vehicle:

\[
\text{cost to operate} = \text{fixed cost} + (\text{rented hours per day} \times \text{mileage per rented hour} \times \text{cost per mile} \times \text{working days per year})
\]

Once you know the yearly cost of operating a vehicle, you can determine the price per hour needed to break even:

\[
\text{price per hour} = \frac{\text{cost to operate}}{\text{rented hours per day} \times \text{working days per year}}
\]

If your goal is to create a surplus, increase your hourly price by a small margin. Alternatively, you can choose to lower your prices if you can afford to operate at a loss and your main objective is to provide unrestricted access to vehicles.

Later in this guide, you will learn strategies to boost demand and reduce operational costs. As these factors change, so will your pricing. Revisit this section from time to time to make sure that your hourly rates keep pace as your operation changes.

At the end of each cycle, bill departments for the vehicles and hours their drivers used. If your motor pool is not centrally managed, each department may need to settle accounts with several others.
Increase demand

Once you have the foundation for your motor pool in place, start boosting demand for your vehicles to increase utilization. This section explores strategies to raise awareness, grow engagement, and build loyalty in order to attract new drivers and expand usage.

**Raise awareness**

**Getting started:**
- Target your promotional efforts toward your entire organization.
- Make sure that all communications have a consistent theme, message, and tone.

1. **Go digital**
   Create a webpage or downloadable document for your motor pool that clearly outlines up-to-date benefits, policies, and rental rates.

2. **Put cars in plain sight**
   Designate parking spaces for shared vehicles and mark them clearly so that they are easy to find and identify.

3. **Point the way**
   Post signs inside buildings and in parking areas to direct drivers to the vehicles.

4. **Get noticed**
   Post banners in high traffic areas such as break rooms and lobbies.

5. **Try before you buy**
   Offer free trials for departments who may want to join the motor pool.

6. **Spread the word**
   Advertise through internal channels such as email, department newsletters, or Facebook groups.
How-to Guide: Government Motor Pools

Gameify usage

Local Motion logs each ride, making it easy to track, reward, and grow driver engagement.

1. Create healthy competition
Provide non-monetary rewards such as “Best Driver” certificates to encourage frequent usage and good driving habits.

2. Go viral
Set up a referral program to allow drivers to invite their coworkers or friends in exchange for perks.

3. Encourage loyalty
Launch a “frequent pooler” program to reward consistent drivers with fuel credits, free rides, upgraded vehicles, or work from home days.

Provide outstanding customer experience

Getting started:
- “WOW” your customers to build loyalty and retain drivers
- Use positive reinforcement to encourage great driving habits and rule following

1. Build a community
Make sure that expectations for drivers are clear, simple, and easy to follow.

- Return on time
  Don’t leave the next driver hanging. If you’re running late, remember to extend your reservation.

- Fill it up
  No one likes to get a car with an empty tank. Always leave at least 1/4 of a tank and plug in EVs to charge.

- Report damage
  Inspect the vehicle before use and report any damages you find. Help keep the fleet in shape.

- Keep it clean
  Be considerate of your fellow drivers - throw away trash and take personal belongings with you after your ride.

Download Printable Guide
2

Keep vehicles in tip-top condition
Track fuel, mileage, and location to make sure that vehicles are maintained and cleaned on schedule.

- CLEAN
  - vehicles every 300 miles | 10 hours on the road

- DEEP CLEANSE
  - vehicles every 1,500 miles | 50 hours on the road

3

Bring the cars to the drivers
Track driver distribution and put vehicles where drivers need them.

With Local Motion, fleet managers can create custom alerts based on time, mileage, or driver feedback to serve as reminders to schedule cleaning or maintenance. The platform can even trigger maintenance tickets automatically.

4

Be accessible
Create a customer support team to assist drivers with any issues that might arise and collect feedback for improvement.

- Set up a support phone line or e-mail address
- Post FAQs and solutions to common troubleshooting issues online or in vehicles
- Create in-car signage with emergency contact information

ANY PROBLEM WITH THIS VEHICLE?
CONTACT:
LET US KNOW OF ANY ISSUES AND HELP KEEP THIS VEHICLE IN EXCELLENT CONDITION.

ANY PROBLEM WITH THIS VEHICLE?
CONTACT:
LET US KNOW OF ANY ISSUES AND HELP KEEP THIS VEHICLE IN EXCELLENT CONDITION.

ANY PROBLEM WITH THIS VEHICLE?
CONTACT:
LET US KNOW OF ANY ISSUES AND HELP KEEP THIS VEHICLE IN EXCELLENT CONDITION.

Download Printable Guide
Download Printable Template

3 Local Motion’s internal estimate
Nail the details
Survey drivers to find out which services and accessories they want most. Consider offering some of these frequently requested items:  

- Phone Charger
- Fuel Card
- Auxiliary Cable
- Tissue
- GPS Navigation
- Jumper Cables
- First Aid Kit
- Umbrella
- Headset
- Reusable Bags

4 Identified through an informal office poll and listed in order of preference
Adapt your fleet

Now that you have identified your goal, established a baseline utilization, and increased demand, you can optimize your operation even further by adjusting the size and composition of your fleet.

Right-size your motor pool

To determine the best number of vehicles for your motor pool, consider another useful metric of fleet usage, Number at Peak Usage.

Number at Peak Usage, or NPU, is the maximum number of vehicles that are in use simultaneously during peak hours.

To measure NPU, use data from your tracking devices or simply walk to your parking lot everyday for a week during peak hours and count the missing vehicles.

The chart below shows the number of vehicles in use at different times of day in a hypothetical motor pool. Around one in the afternoon, usage peaks. The number of vehicles on the road at this time represents the fleet's NPU. The solid horizontal line indicates the total number of vehicles in the motor pool. As you can see from the chart, current supply exceeds peak demand.

---

Local Motion’s advanced analytics let fleet managers effortlessly track their NPU.
The dotted horizontal lines marked Fleets A, B, and C in the two graphs below represent three possible courses of action. Fleet A downsizes slightly but keeps supply high enough to beat demand, even on heavy usage days. This strategy maximizes accessibility for drivers. Fleet B balances driver convenience with cost by just meeting the average peak demand.

Fleet C, on the other hand, drives up utilization by curtailing supply to a level below the NPU. As a result, it displaces some bookings to off-peak hours. Assuming that pricing is constant, fleet C stands to create the biggest revenue surplus, but risks leaving drivers frustrated by the shortage of vehicles.

Understanding your fleet’s NPU and how it relates to your goals can help you make informed decisions about the ideal size of your motor pool.
Introduce alternative fuel vehicles

Motor pools create an excellent opportunity to reduce costs and carbon footprint by introducing alternative fuel vehicles such as electric vehicles (EVs). **For cars in your fleet that average between 40 and 100 miles per day, the fuel and maintenance savings will outweigh the upfront expense.** Below that daily mileage range, it is more difficult to break even on the purchase.

Local Motion provides tools to successfully incorporate evs into motor pools:

- Provide usage data to help identify vehicles that could be replaced by evs
- See the position, status, and charge of every ev in your fleet
- Create alerts to notify managers and drivers when vehicles are low on charge
- Allow or restrict access for individual drivers as needed
- Collect data on driving behavior and encourage efficient habits

Most EVs cannot exceed 100 miles per day due to their charging time and limited range. As a result, EVs do not work well as a sole means of transportation for drivers who sometimes need to travel long distances. On the other hand, they can be ideal additions to shared fleets. Drivers can select gas vehicles on days when they drive over 100 miles, and choose EVs the rest of the time. Costs and emissions decrease while driver satisfaction remains high.

Fig F. Consider daily mileage to determine if replacing a gas vehicle with an EV will lower costs

Fig G. Identify the number of vehicles in your motor pool that could be replaced by EVs

---

5 Internal calculation based on federal highway administration fuel economy numbers
Conclusion

Now that you have the tools and strategies to operate an efficient motor pool, you can start enjoying the benefits of lowered costs and greater resources to maintain, improve, and expand your fleet. Remember to evaluate your motor pool’s performance regularly and adapt as demand and utilization change. Most importantly, keep your overall goal in sight to ensure the long term success of your operation.

About Local Motion

With keyless access for drivers and web-based controls for managers, Local Motion’s technology increases fleet utilization and makes sharing vehicles in a motor pool easier than ever before. To learn more, please visit: www.getlocalmotion.com

If you have a question about a specific use case or would like to schedule a consultation, contact Local Motion at: connect@getlocalmotion.com