



# Data-Driven Policing

Leveraging telematics for optimized police fleet performance

# Introduction



Advances in technology have changed how police safety teams deal with more sophisticated criminal activity and keep themselves and the communities they serve well-protected. Telematics has also evolved beyond GPS to a rich data source, helping optimize a police fleet and underpin data-driven policing.

As police vehicles become an office on wheels for many officers, first-class fleet management is essential. Telematics help power that change, creating a data-connected fleet that generates operational efficiencies and safety benefits for the public and officers.

This ebook highlights what telematics can unlock for a police fleet and how a data-driven approach to fleet management supports smart policing.

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## CHAPTER 01

# Harnessing data for peak police fleet performance

Telematics may have originated to connect GPS & real-time tracking to vehicles, but it has evolved into a cutting-edge technology that gathers intelligence on a fleet's health and performance. The actionable insights from a modern telematics solution are key in maintaining a healthy fleet and rightsizing the vehicle mix to have the best assets available.

## How to take a proactive approach to fleet maintenance

Whether patrolling neighborhoods for suspicious activity or quickly responding to emergency calls, police officers rely on their equipment, and their vehicle is a critical front-line tool. Keeping vehicles healthy and performing optimally is crucial.

Police vehicles are driven more miles, more harshly than civilian vehicles and must be in top condition to enable officers to attend to incidents quickly and safely.

Proactive fleet maintenance means peace of mind for the front line. The impact of a car breaking down when responding to a critical call would be catastrophic.

Telematics acts as a diagnosis tool, providing a first-hand account of what is under the hood, allowing fleet teams to pinpoint faults and for them to understand with meticulous precision the condition of every vehicle in the fleet. Understanding vehicle health allows you to maximize vehicle uptime and only assign vehicles to officers you know are in proper working condition.



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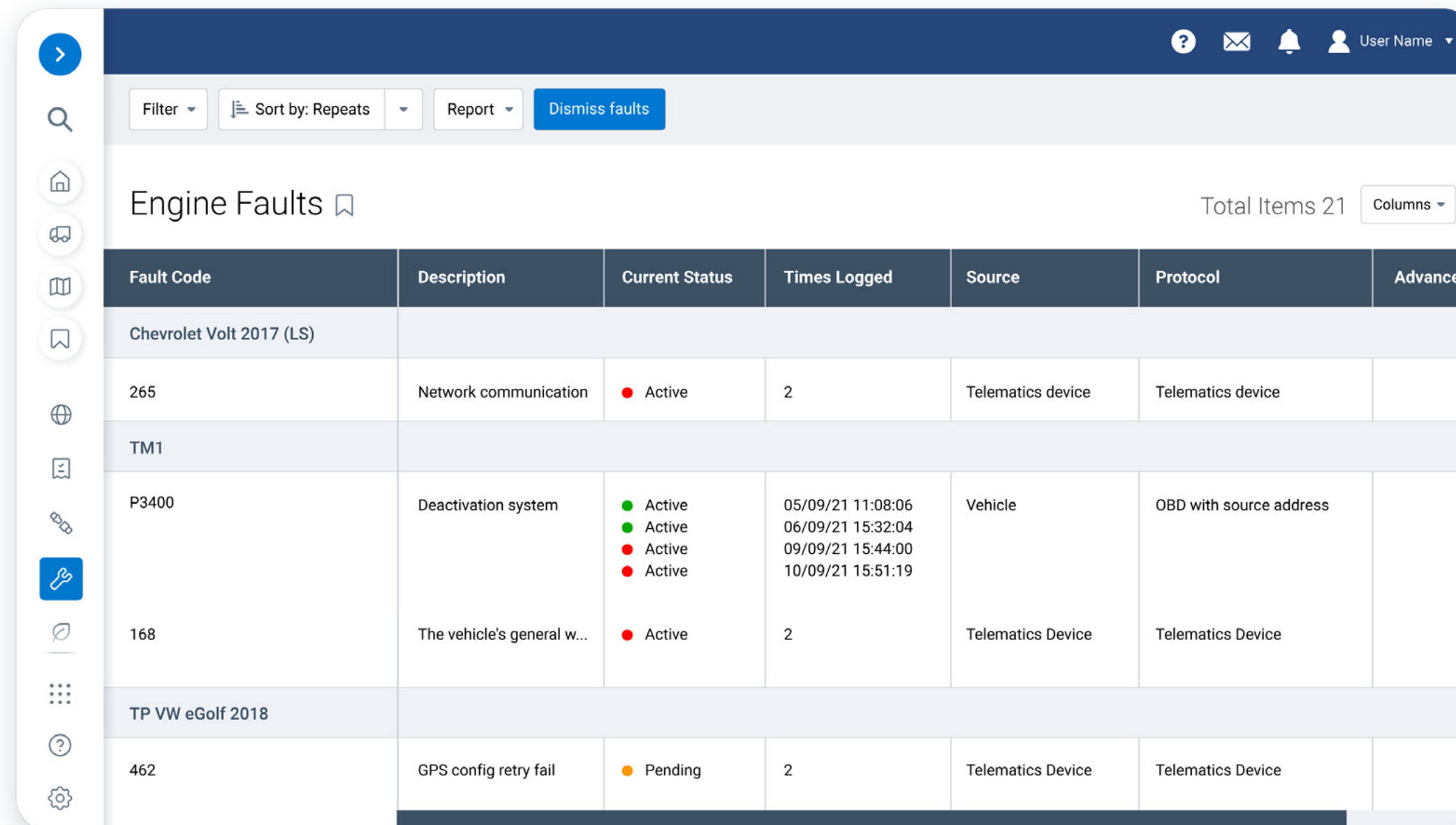
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With the right telematics platform powering your fleet maintenance practices, you can enable:

- Remote monitoring of key vehicle performance characteristics (warning lights, brake pads, fuel economy, battery charge and health, tire pressure, etc.)
- Track your fleet inventory and see when vehicles have been serviced
- Create predictive maintenance scheduling and custom in-system reminders
- Manage seamless work order management, including maintenance cost reports
- Customize pre and post-shift vehicle inspections via **DVIR** (driver vehicle inspection reports) for specific sensors and equipment on-board your police fleet like sirens, lights or gun rack.

By actively monitoring the need for maintenance on a vehicle, law enforcement agencies can keep their vehicles in good condition while saving money on unnecessary repairs. Supply chain issues are hindering new vehicle purchases for police fleets that can't afford to be short of vehicles. Maintaining vehicles in the fleet and keeping them healthy means longer vehicle life expectancy.



The screenshot shows the 'Engine Faults' dashboard in the Geotab interface. It features a table with columns for Fault Code, Description, Current Status, Times Logged, Source, Protocol, and Advanced. The table lists several faults, including 'Network communication' (Active), 'Deactivation system' (Active), 'The vehicle's general w...' (Active), and 'GPS config retry fail' (Pending). The interface also includes a search bar, filter options, and a 'Dismiss faults' button.

Fault Code	Description	Current Status	Times Logged	Source	Protocol	Advanced
Chevrolet Volt 2017 (LS)						
265	Network communication	Active	2	Telematics device	Telematics device	
TM1						
P3400	Deactivation system	Active	05/09/21 11:08:06 06/09/21 15:32:04 09/09/21 15:44:00 10/09/21 15:51:19	Vehicle	OBD with source address	
168	The vehicle's general w...	Active	2	Telematics Device	Telematics Device	
TP VW eGolf 2018						
462	GPS config retry fail	Pending	2	Telematics Device	Telematics Device	



### TIP

Geotab has a comprehensive list of Diagnostic Trouble Codes (DTC) for quicker and more accurate diagnosis of vehicle issues. With Engine Status Reports, you can even detect early signs of vehicle engine health issues to help reduce breakdowns and avoid costly repairs down the road.



### IMPACTFUL INSIGHT

The maintenance team with the Belleville Police Services noted that before adding Geotab to their technology stack, it was a challenge to stay on top of oil changes and routine maintenance of their vehicles.

"We're now proactive with Geotab, staying ahead of oil changes and keeping the fleet in the best shape it's ever been in," says Police Inspector Sheri Meeks with Belleville Police.



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## A rightsized police fleet has all the right moves

Fleet maintenance is a top priority as it impacts costs and fleet performance. Knowing how your police vehicles are used allows for predictive and preventative maintenance as well as other opportunities to improve the fleet. With fleet usage data, teams can highlight which cars get driven more frequently, allocating more maintenance time to these, rather than the lesser-used vehicles. This data provides actionable insights and supports moderating vehicle usage. More balanced use across the fleet helps to increase the average life expectancy of these vehicles.

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Utilization Report (Previous 30 Days)

Most Utilized Vehicles						
	Vehicle	Days Driven	Vehicle	Drive Time	Vehicle	Mileage
1	Vehicle 1	1	Vehicle 76	20:21:47	Vehicle 109	119.32
2	Vehicle 3	1	Vehicle 93	20:08:51	Vehicle 93	116.15
3	Vehicle 5	1	Vehicle 71	20:02:37	Vehicle 76	111.51
4	Vehicle 6	1	Vehicle 87	19:46:35	Vehicle 87	105.80
5	Vehicle 8	1	Vehicle 77	19:18:41	Vehicle 77	105.79

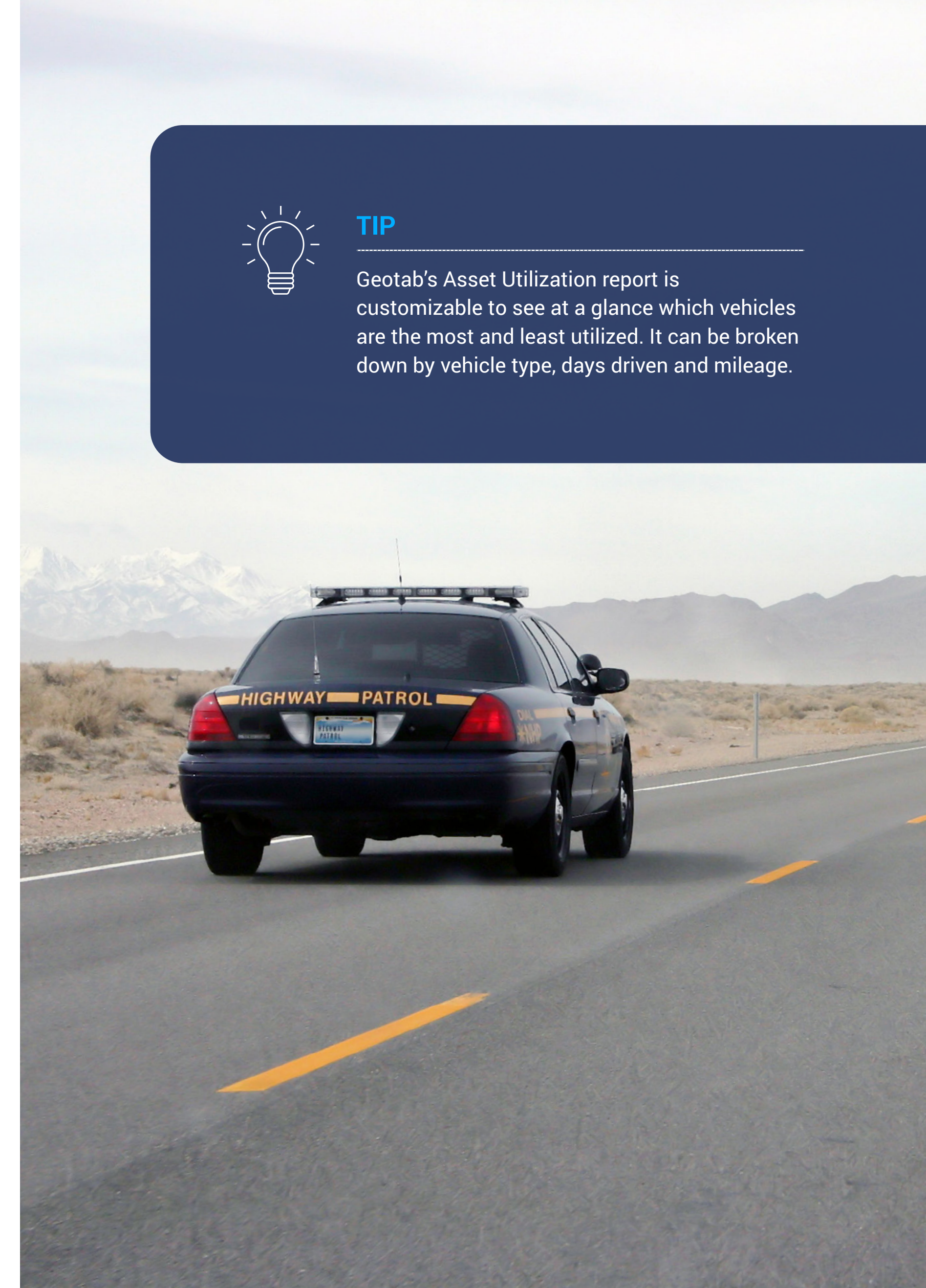
Least Utilized Vehicles						
	Vehicle	Days Driven	Vehicle	Drive Time	Vehicle	Mileage
1	Vehicle 2	0	Vehicle 2	00:00:00	Vehicle 2	0.00
2	Vehicle 4	0	Vehicle 2	00:00:00	Vehicle 2	0.00
3	Vehicle 9	0	Vehicle 2	00:00:00	Vehicle 2	0.00
4	Vehicle 10	0	Vehicle 2	00:00:00	Vehicle 2	0.00
5	Vehicle 11	0	Vehicle 2	00:00:00	Vehicle 2	0.00

Armed with an understanding of how the fleet is used, managers can quickly reallocate assets and identify rightsizing opportunities. Rightsizing can help reduce costs and improve overall fleet efficiency.



### TIP

Geotab's Asset Utilization report is customizable to see at a glance which vehicles are the most and least utilized. It can be broken down by vehicle type, days driven and mileage.



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#### DID YOU KNOW?

When the **State of Utah's police** service, known as the Department of Corrections (DOC), realized its fleet was bloated with low-mileage vehicles, it set out to improve utilization. Specifically, they wanted to tackle the critical components of a rightsizing analysis – measuring vehicle utilization more accurately, then tracking on-duty versus off-duty use.

Telematics data quickly pulled the relevant information the DOC needed and correlated real odometer mileage and engine hours for more accurate vehicle utilization reporting. Then with Geotab's IOX integrations, the vehicle usage was broken down even further, showing time spent using the lights and sirens versus time parked or time spent patrolling. The DOC has now included the vehicle status "in pursuit" in their vehicle fleet utilization studies for a much easier way to see what is happening with a vehicle.

This level of analysis into how the vehicles were truly used helped the State of Utah downsize its fleet by 60 vehicles, saving money and freeing up the budget for other essential expenses for the service.

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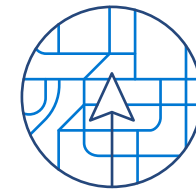
# Amplifying community protection

Police departments work tirelessly to create safer communities, developing safety initiatives and advocating for resources to help those communities address local crime. With technological advances, police services can react faster to emergencies in the community and proactively plan to help reduce future incidents. Data-driven policing also shows the public the amount of police activity taking place and a positive presence, demonstrating the ever-increasing need to be highly transparent and accountable.

Here is how telematics aid in more efficient and transparent policing for the community:



**More accurate dispatching** of nearby officers means resources are allocated faster and more efficiently to emergency calls



**Route completion reporting** by zone demonstrates that highly volatile areas are being patrolled by police vehicles



**Time and date stamps** show when and where there was a police presence and in what zones



**Historical pattern tracking** shows where police vehicles were in relation to crime hot spot and by location

Telematics data can aid in creating a new level of transparency between police departments and their communities. For example, vulnerable communities can see comprehensive reports of miles patrolled in their neighborhood. This data-based accountability can help restore trust in police action and helps engage members of the public through open lines of communication.

With social media being one of the first places members of the public go for information, technology can play a part in proactively communicating with the public about ongoing incidents. By keeping the public updated on a need-to-know basis with information, officers can prioritize the safety of the public and those attending the scene.



### IMPACTFUL INSIGHT

Being able to see the live location of vehicles nearest to a call is a surprise benefit that dispatchers are enjoying with Geotab telematics, according to the **Director of IT Services for Belleville Police, Joe Myderwyk**.

Another benefit has been the amount of vehicle data captured, helping to quickly answer public inquiries about how often police cars were patrolling in certain areas of concern.



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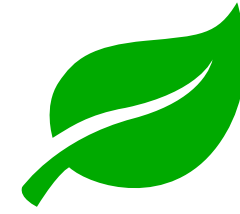
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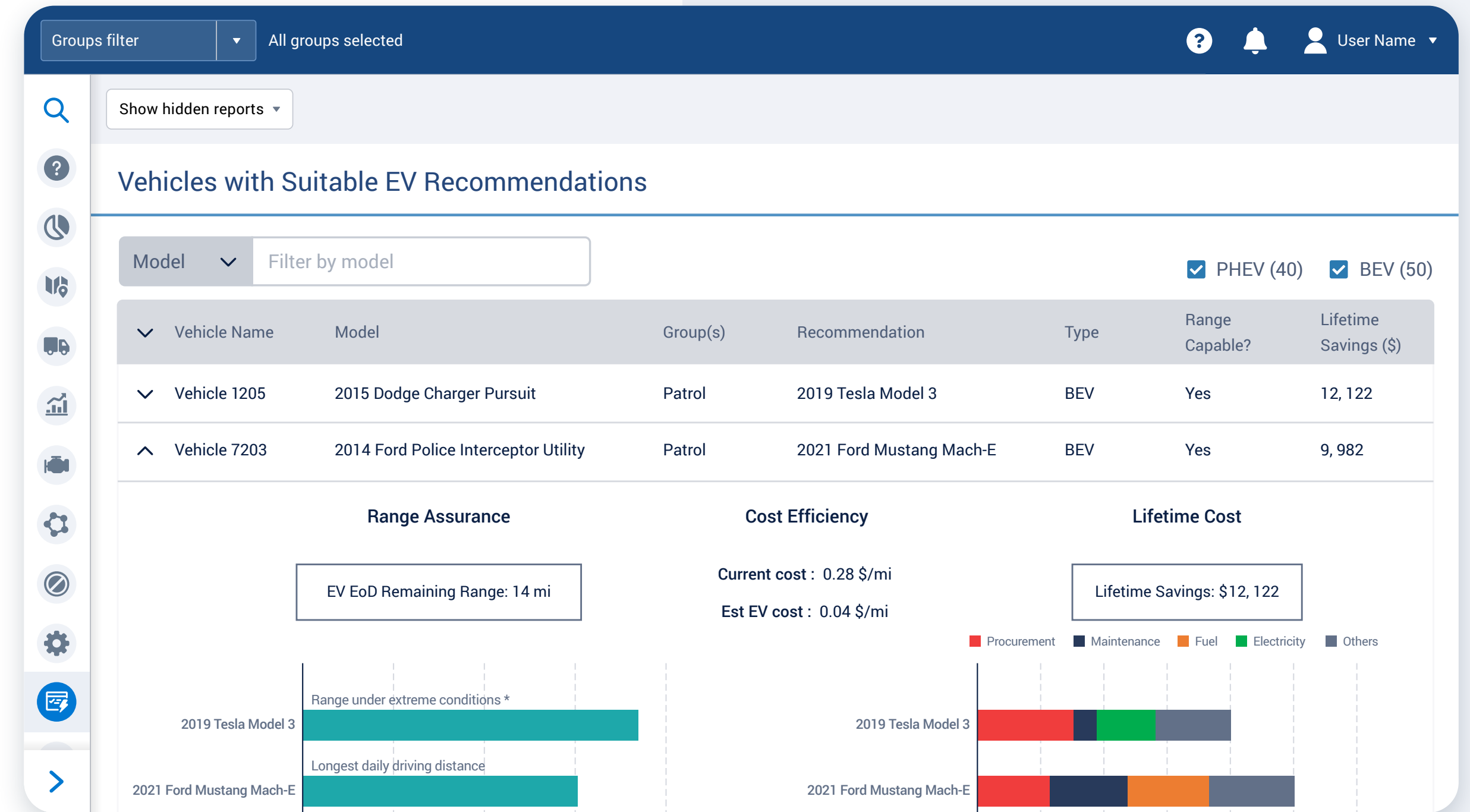
# Simplifying sustainability strategies



Public service fleets are looking to lead the way in sustainable practices, with many new green fleet government mandates being rolled out. Police fleets are keen to move towards more sustainable fleet practices, and a data-driven approach is the best way to reap the benefits of a greener fleet.

Telematics helps fleets drive their sustainability efforts forward with unparalleled insights into how a green fleet operates. Through comprehensive reporting, telematics data can help a police fleet:

- Reduce fuel usage and improve a fleet's fuel efficiency
- Set and achieve CO<sub>2</sub> emission reduction targets
- Identify candidates in the fleet for electrification



### TIP

**Geotab's Electric Vehicle Suitability Assessment** is an excellent tool for fleets that are first exploring options to replace fuel cars with EVs. The assessment analyzes a fleet's unique driving profiles and patterns to identify suitable vehicles to switch to electric. Each fleet receives an electrification blueprint, which explores the total cost of ownership and reveals the potential cost-savings of switching to EVs.

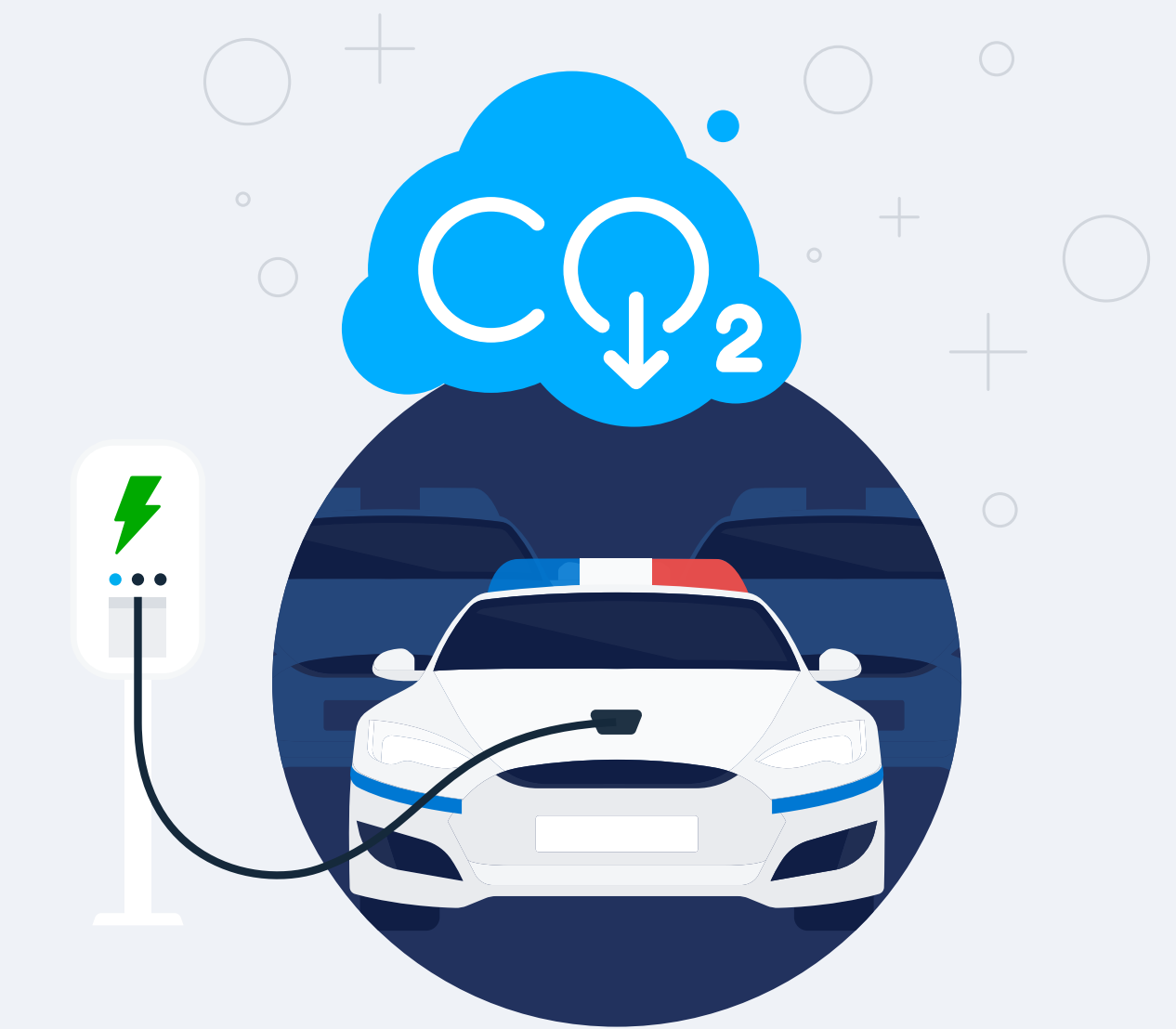
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## Charging police fleets forward

Many police fleets recognize the benefits of adding electric vehicles to their lineup. Despite the higher upfront costs of acquiring an electric vehicle, they offer a lower total cost of ownership in the long run, especially for heavily utilized vehicles like police vehicles.

In addition to fuel savings, electric vehicles in a police fleet also have the potential to reduce maintenance costs. Compared to their internal combustion engine counterparts, electric vehicles don't require oil changes, and with regenerative braking, brake servicing also becomes less frequent. Overall, EVs require less maintenance and represent a cost-effective option for police fleets on their green journey.

### DID YOU KNOW?

Here are some of the **latest police fleets adding zero-emission vehicles** to their fleets:

- **Cambridge, Massachusetts**, rolled out its first electric vehicle in 2023. With it, the fleet expects to reduce fuel usage by 2,800 gallons per year.
- **Somerset, Wisconsin**, took delivery of a new Tesla Model Y, stating it was because repair costs on internal combustion engine vehicles were getting out of hand.
- **The Minnesota Police Department** added its first EV to its patrol fleet running a two-year test cycle to monitor its performance during Minnesota winters.

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# Prioritizing officer safety

Police officers face many dangerous and stressful situations every shift. Telematics helps to enhance officer safety significantly while keeping the police fleet reliable and safe.

Telematics provides the necessary location-based data for increased patrol efficiency. It also helps to improve lines of communication with dispatchers who are giving directions on the best routes to take. Real-time visibility allows officers to monitor each vehicle's location, offering teams an extra layer of security.

Telematics technology works hand in hand with dispatchers to streamline an emergency response. Pinpointing vehicle locations helps dispatchers to send backup quickly for emergency response calls or to a collision scene. Every second counts, and telematics technology can help provide that much-needed situational awareness of where all the nearby vehicles are located to coordinate a faster response.

Tracking police vehicles helps maximize productivity and efficiency while boosting officer safety. Live GPS tracking with telematics coupled with geofencing also helps to improve safety by monitoring when and where patrol cars enter high-risk areas. Telematics is a powerful tool for improving officer safety amid the unpredictability of policing, representing a significant step forward in building a safer future for law enforcement personnel.



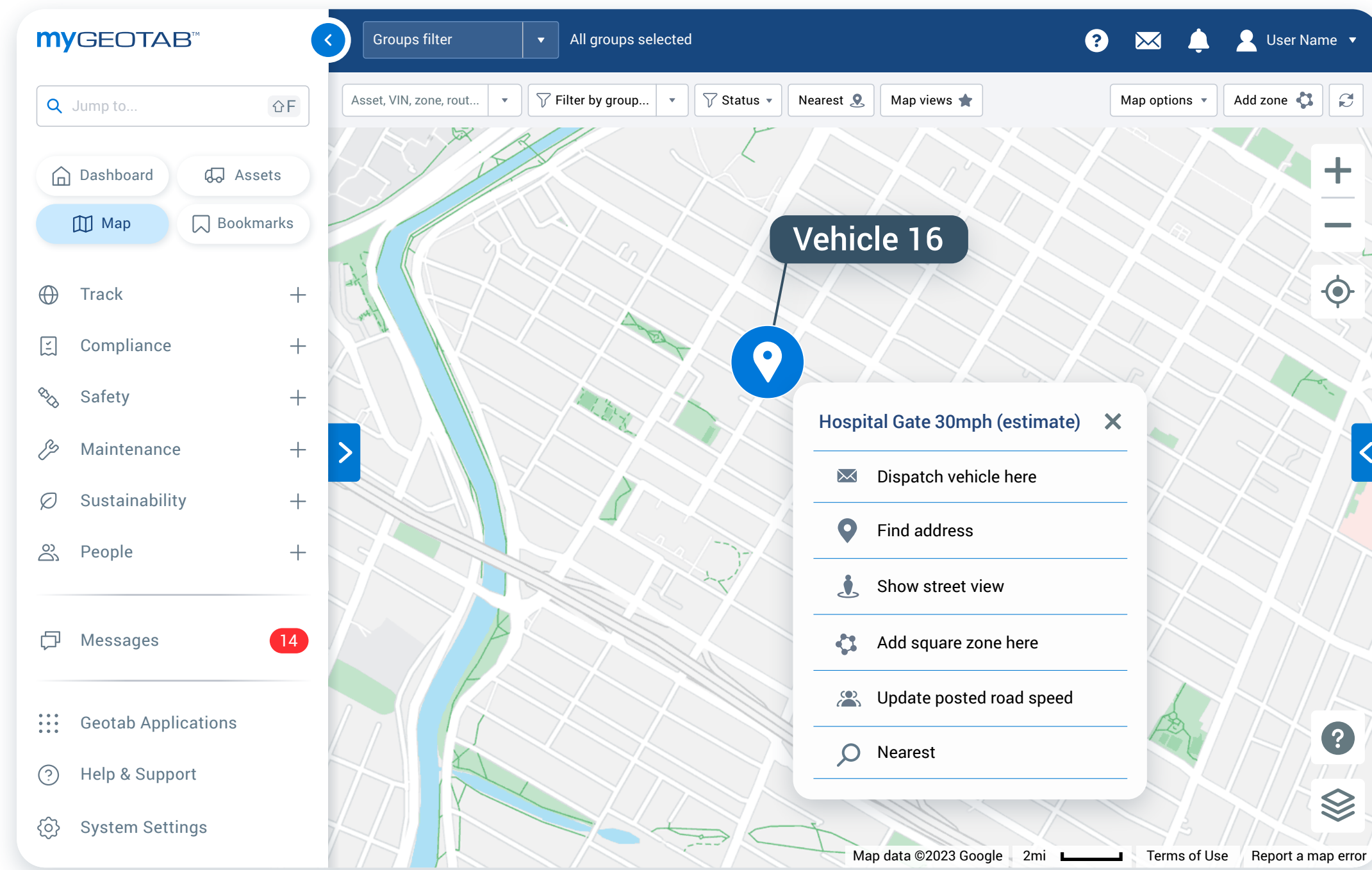
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As more routine calls from members of the public turn into heightened threat scenarios, having clear information about the whereabouts of an officer and their vehicle ensures a rapid and accurate support response from dispatch or other officers nearby. It can also aid in identifying the quickest escape route and help in coordinating the response from other emergency teams who may need to attend the scene.



**TIP**

**Active tracking exclusively from Geotab** allows dispatchers to follow the live movements of a police vehicle, knowing it quickly and safely arrived on the scene.

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## Promoting safer driving

Keeping officers safe behind the wheel is critically important. Motor vehicle-related incidents were the **leading cause of line-of-duty deaths for law enforcement officers from 2011 to 2020**.

While the general public might think most collisions occur during high-speed pursuits, those in the field know that several behavior-related hazards increase the risk of collisions and associated injuries – from not wearing a seatbelt to speeding through intersections or being distracted by using in-car electronics.

Telematics data provides a window into driver behavior, providing police fleet managers with information about seat belt usage, speeding or harsh cornering and braking by officers. Using this driving behavior data, supervisors and fleet managers can identify opportunities to coach drivers on safer driving practices. Data-driven safety programs can help protect your officers on the road. Leveraging the actionable insights from telematics data, police chiefs can reinforce the need for safer driving habits among officers and help adjust safety-related behavior to reduce the risk of collisions or lawsuits.

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## Limiting liability

Police officers have roughly double the rate of motor vehicle crashes per million vehicles driven than the general public. To protect officers from facing liability claims when a collision occurs, it is essential to be able to rebuild as much information as possible for insurance purposes. Collision reconstruction with telematics can significantly help limit an officer's liability.

The screenshot displays a web application interface for collision reconstruction. At the top, there is a navigation bar with a 'Groups filter' dropdown set to 'All groups selected', a help icon, a notification bell, and a user profile icon labeled 'User Name'. The main content area is divided into three sections: 'Collision Reconstruction' (marked as BETA), 'Device Information', and 'Point of Impact'. The 'Device Information' section lists: Vehicle Name: Vehicle 38, Driver: John Smith, VIN: 5NPEB4AC2CH481461, Vehicle: 2021 Mercedes-Benz Cargo Sprinter Van, and Time of Collision: Friday, March 10, 2023 08:40:30 PM. The 'Point of Impact' section features a 3D wireframe model of a van with a red and yellow impact zone on its roof. To the right, a 'Vehicle' section includes a text input for '2021 Mercedes-Benz Cargo Sprinter Van', a 'Show Historic Devices' button, a 'Select Vehicle Type' dropdown menu set to 'Let Geotab Decide', and date pickers for 'Start date' (01/01/2023 00:00) and 'End date' (31/12/2023 23:59). Below these are 'Find Latest Collision' and 'Export to PDF' buttons. A 'Map View' section at the bottom left shows a 'Trip History' link.

Telematics also makes it possible to gain a broader perspective by looking at the historical driving patterns for a specific officer or vehicle. All this information can help explain why a collision occurred while protecting the officer from unnecessary litigation.



Telematics data can depict the events before, during and after a collision. Go beyond hearsay testimonies from bystanders and instead get the facts with collision reconstruction data like:

- GPS location with map coordinates and satellite view
- Speed and acceleration data
- Engine speed before the collision and at the time of impact
- Vehicle systems in use, e.g., lights and sirens

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## CHAPTER 05

# Building the digital future of policing

Police today need all the available technology and tools to keep their communities safe. The road to digital transformation in policing is complex to navigate, and teams are carefully weighing up their options in the process. A path that includes telematics unlocks many operational efficiencies:



### Automated inspection reporting

Performing digital driver vehicle inspection reports or DVIRs gives fleet managers real-time post-trip and pre-trip inspections quickly. Immediate alerts on unsafe vehicles or equipment can be sent to speed up repairs. Digital DVIRs also save time and resources, eliminate unnecessary paperwork and streamline maintenance efforts.



### Expedited expense reimbursements

After emergency efforts on the ground have wrapped up, police services start the manual process of compiling expenses to submit to the Federal Emergency Management Agency (FEMA). Emergency crews seek quicker reimbursement for their time spent aiding in disaster relief. With automated reporting of fuel usage, vehicle hours and records of personnel on site, FEMA rebilling becomes much easier and standardized.



### Objective investigations

Incident reporting becomes more fact-based and evidential, with telematics accurately building a picture of events. By gaining access to vehicle speeds, braking, cornering and acceleration data, more transparent and data-driven reporting is possible. This helps build public trust and shows that teams are acting impartially. Guesswork and opinions are replaced with facts that show the public that the police service can be held accountable.



### Faster, more coordinated responses

Advancements in coordination with other emergency response teams are achievable with telematics technology boosting interoperability. The situational awareness provided with telematics helps emergency responders provide a better and faster service. Control rooms and dispatchers get access to real-time information to monitor locations, personnel and equipment properly for deploying an optimal response across teams.

A true game-changer for more efficient policing, telematics is more than GPS or real-time tracking. Today's telematics data helps fleet managers optimize vehicle performance while keeping the community and officers safer. Telematics is a key part of every police fleet's technological journey toward increased transparency and data-driven policing.

# About Geotab

Geotab is advancing security, connecting commercial vehicles to the internet and providing web-based analytics to help customers better manage their fleets. Geotab's open platform and Marketplace, offering hundreds of third-party solution options, allows small and large businesses to automate operations by integrating vehicle data with their other data.

The in-vehicle device provides additional functionality through IOX Add-ons as an IoT hub. Processing billions of data points a day, Geotab leverages data analytics and machine learning to help customers improve productivity, focus on sustainability, optimize fleets by reducing fuel consumption, enhance driver safety and achieve strong compliance to regulatory changes. Geotab's products are represented and sold worldwide through Authorized Geotab Resellers.

To learn more, please visit [www.geotab.com](http://www.geotab.com) and follow us [@GEOTAB](https://twitter.com/GEOTAB) and on [LinkedIn](https://www.linkedin.com/company/geotab).

This ebook is intended to provide information and encourage discussion on topics of interest to the telematics community. Geotab is not providing technical, professional or legal advice through this white paper. While every effort has been made to ensure that the information in this white paper is timely and accurate, errors and omissions may occur, and the information presented here may become outdated with time.

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