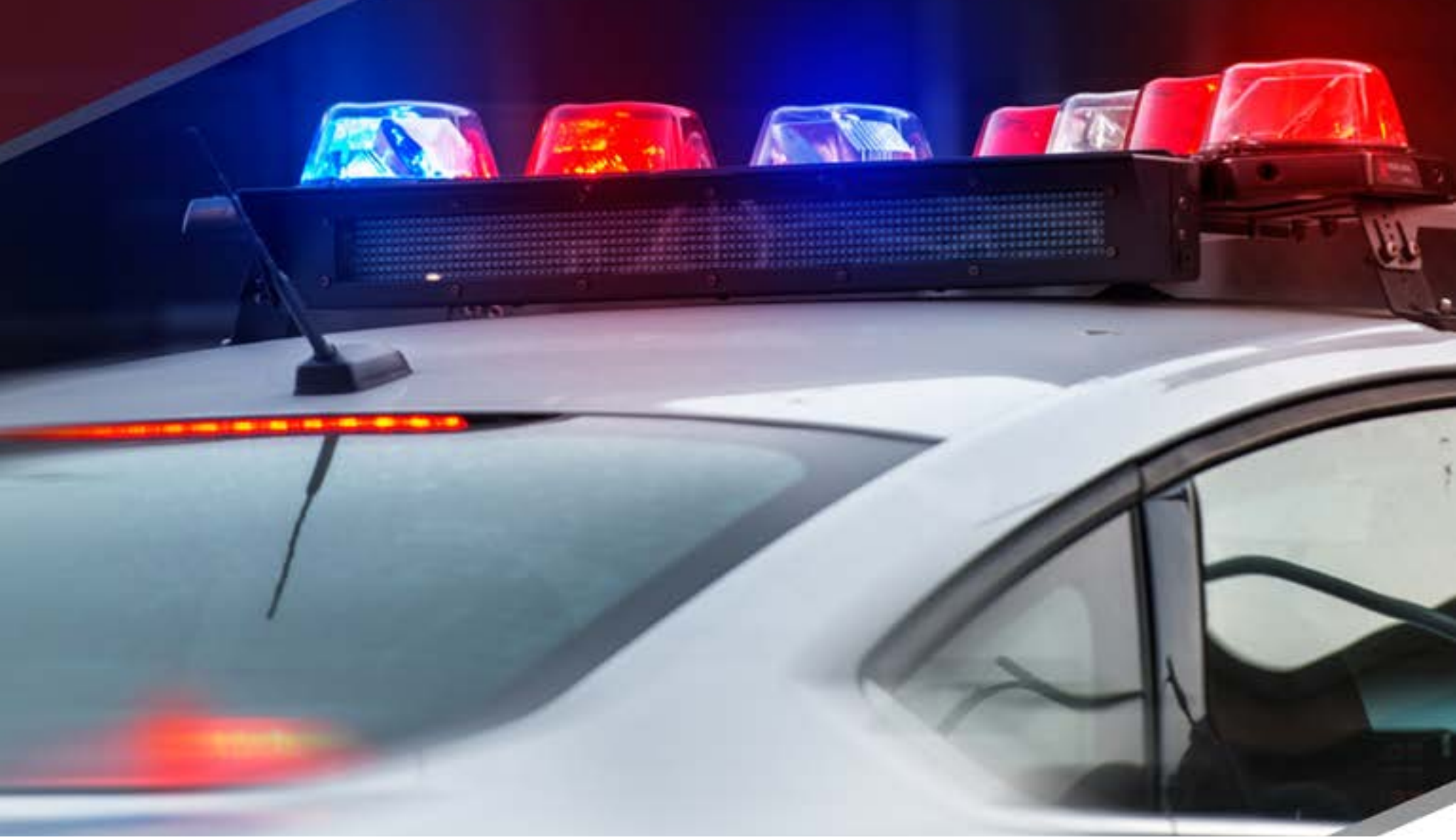
PROTECTING OUR LAW ENFORCEMENT AND COMMUNITIES WITH

GPS TRACKING SOLUTIONS



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Section I: Protecting Those Who Protect and Serve

Law enforcement officers serve a critical role in protecting ordinary citizens from crime. Every day, highway patrol officers work to keep dangerous drivers off the roads, police officers patrol neighborhoods to deter crime, and countless men and women in blue put their lives on the line for the sake of others.

Police officers protect their communities from crime, but who protects the officers?

Cops face innumerable safety risks daily for the sake of others. According to statistics cited by Police Chief Magazine's website, assaults (38%) and vehicle crashes (37%) are the leading causes of fatal officer injuries, and strains and sprains account for 64% of nonfatal injuries suffered by officers.

As noted in the article, "Nearly all (94 percent) fatal assaults are shootings, such that shootings account for 35 percent of all police fatalities." However, it is noted that "driving is the most dangerous activity police engage in, with the greatest fraction of both fatal and nonfatal injuries resulting from vehicle crashes."

After a vehicular crash, during a deadly shootout with armed suspects, or during a heated chase, police officers frequently need help as soon as possible to ensure their safety and prevent suspects from escaping.

But, how can law enforcement ensure that help arrives quickly when needed?

One way is to use GPS tracking systems on law enforcement vehicles to track the locations of officers in need of help, and the closest source of backup to each officer. With this information, it's possible to minimize the time it takes for help to arrive, increasing safety and efficiency for law enforcement operations.

In this way, GPS tracking can become an important safety tool for officers.

There are actually many ways that law enforcement agencies can use GPS systems, and many benefits for both officers and communities alike.

Section II: Using GPS for Law Enforcement

GPS tracking devices actually have a wide range of uses for law enforcement vehicles. Uses for GPS tracking systems in law enforcement vehicles include:

Location Tracking

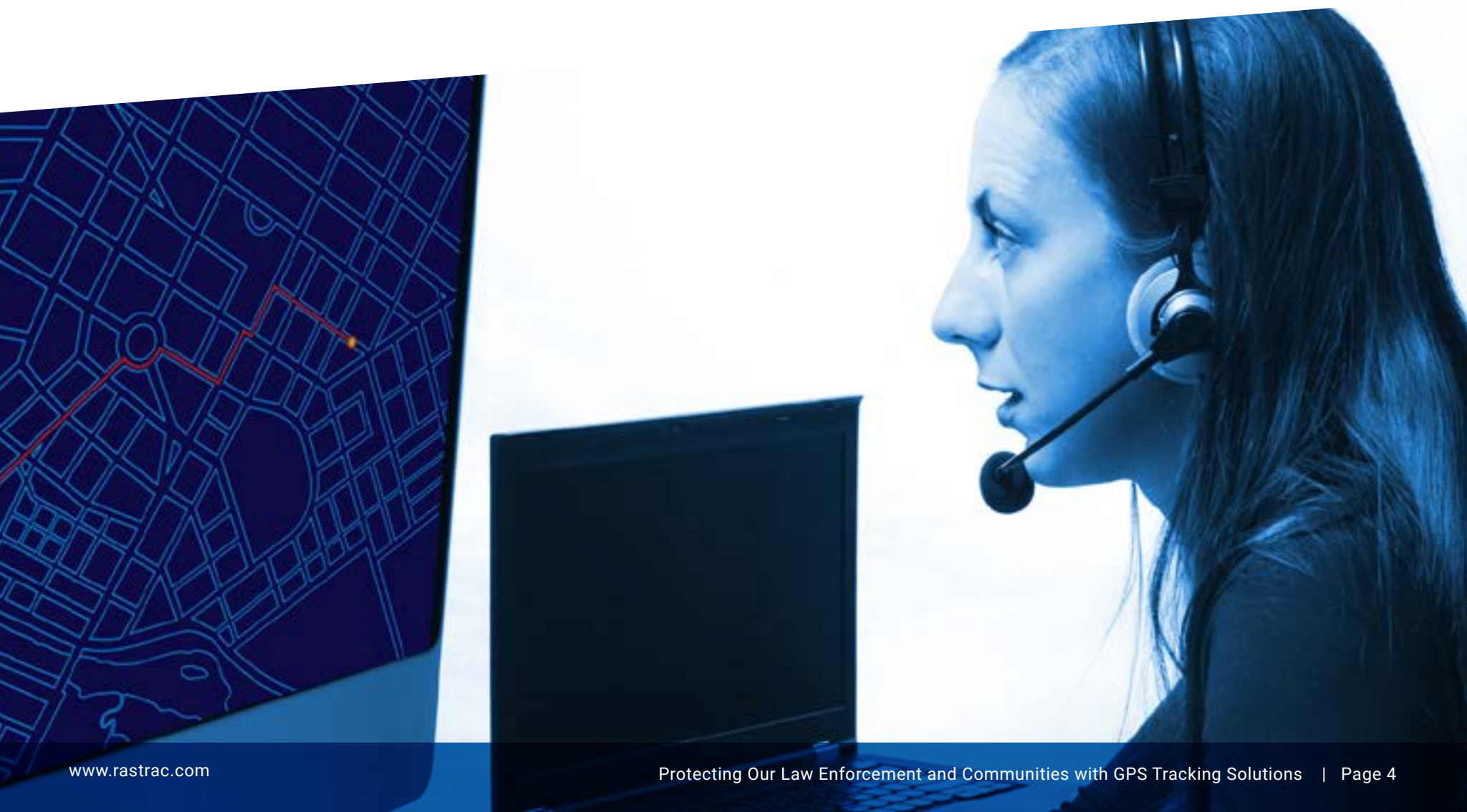
The most common use of GPS tracking is to provide up-to-date location information for law enforcement vehicles in the field. Knowing where each asset is at any given time is key for dispatch to optimize patrol routes, improve emergency response times, and even prevent the theft of law enforcement vehicles.

Route Planning

By combining GPS tracking data with specialized management software, law enforcement agencies can increase the efficiency of their route planning.

With a GPS map of a given law enforcement organization's jurisdiction, the current distribution of all GPS-tagged assets in the field, and the ability to monitor the time since a given street was last patrolled, law enforcement agencies can optimize patrol route planning to maximize coverage and perception of police presence with the units they have available.

Knowing where each asset is located in the field helps dispatch keep patrol vehicles from being clumped too closely together, ensuring a larger coverage area with fewer patrol cars. Having access to resources such as software that provides color-coded, aging maps of patrol routes makes it easy to see which streets and boroughs have been patrolled recently, and which ones are in need of attention at a glance.



Section II: Using GPS for Law Enforcement (cont.)

Keeping a fleet of garbage trucks and road maintenance vehicles fully fueled isn't cheap. For the majority of municipalities, keeping vehicles fueled is likely the single largest expense on the books.

Add to this the volatility of gas prices, which can fluctuate wildly depending on a number of different factors, and controlling fuel costs quickly becomes an enormous trial.

One solution that some municipalities are investigating is the use of alternative drive trains that use different fuel sources. The trouble with using alternative fuel sources is that most such alternatives are years away from being practical for daily road maintenance and heavy-duty garbage collection tasks.

For example, some municipalities might consider the use of battery-powered vehicles, but there aren't any commonly-available battery drivetrains that can power the dump trucks used for garbage collection. Even if such drivetrains were readily-available, the cost of replacing your entire fleet of vehicles all at once would be prohibitive, to say the least.

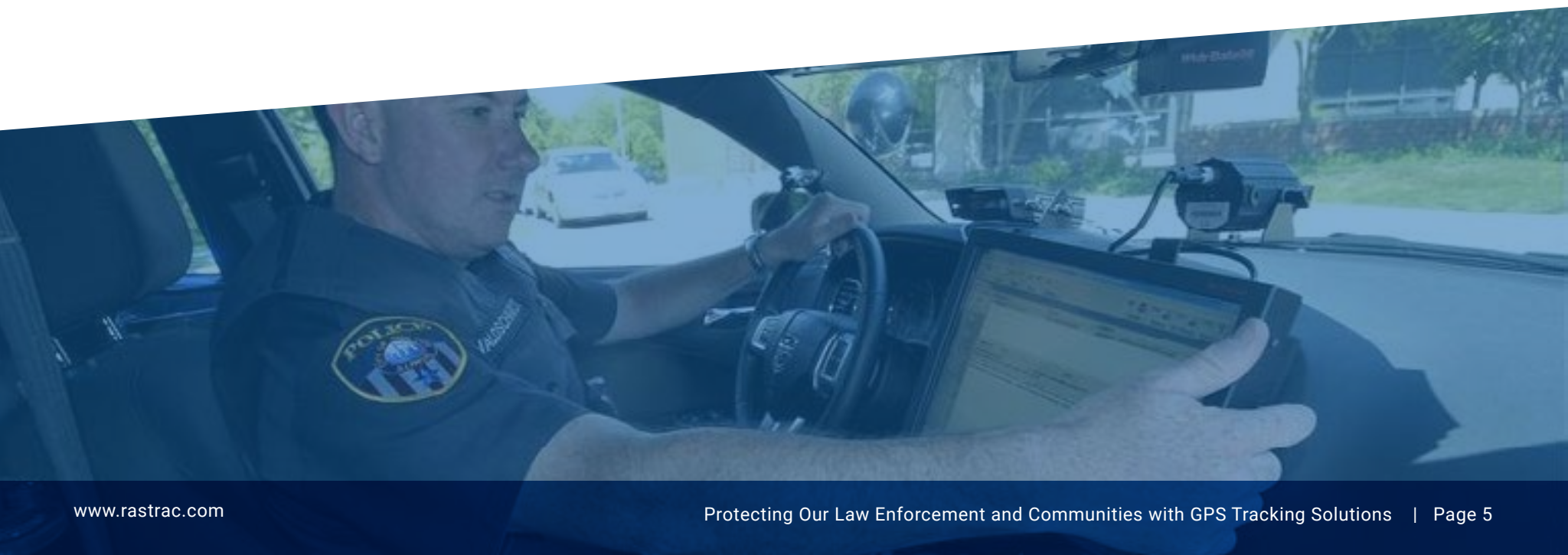
Another solution might be to stockpile on gasoline when prices are low, but that involves creating and maintaining a long-term gasoline storage solution, which requires space and labor, generating costs that may well outstrip the savings of paying less for fuel.

Rather than trying to use a new fuel source or paying for massive long-term fuel storage, it may be better to focus on ways to improve the fuel efficiency of your fleet vehicles.

Common methods for doing this include:

- ☐ Improving route planning efficiency
- ☐ Preventing wasteful driving behaviors
- ☐ Optimizing vehicle maintenance to maximize vehicle MPG

If you can reduce your fuel spending, you can free up monetary resources for your other municipal operations.



Section II: Using GPS for Law Enforcement (cont.)

Improving Emergency Response Assignments

In an emergency, every second counts. Whether it's a citizen making a 911 call, or an officer calling for backup in the field, delays can cost lives. To reduce response times and save lives, many law enforcement agencies use GPS tracking in their emergency response vehicles.

With the click of a mouse, dispatch can identify the closest asset to any given point on a digital map of their jurisdiction. This allows dispatch to send the nearest vehicle to an emergency call right away, instead of having to wait on individual patrol cars to call in their locations and sort out which is closest manually.

The seconds or minutes this shaves off of emergency response times can help police save lives—both civilian and fellow officers.

Optimizing Maintenance Scheduling for Police Vehicles

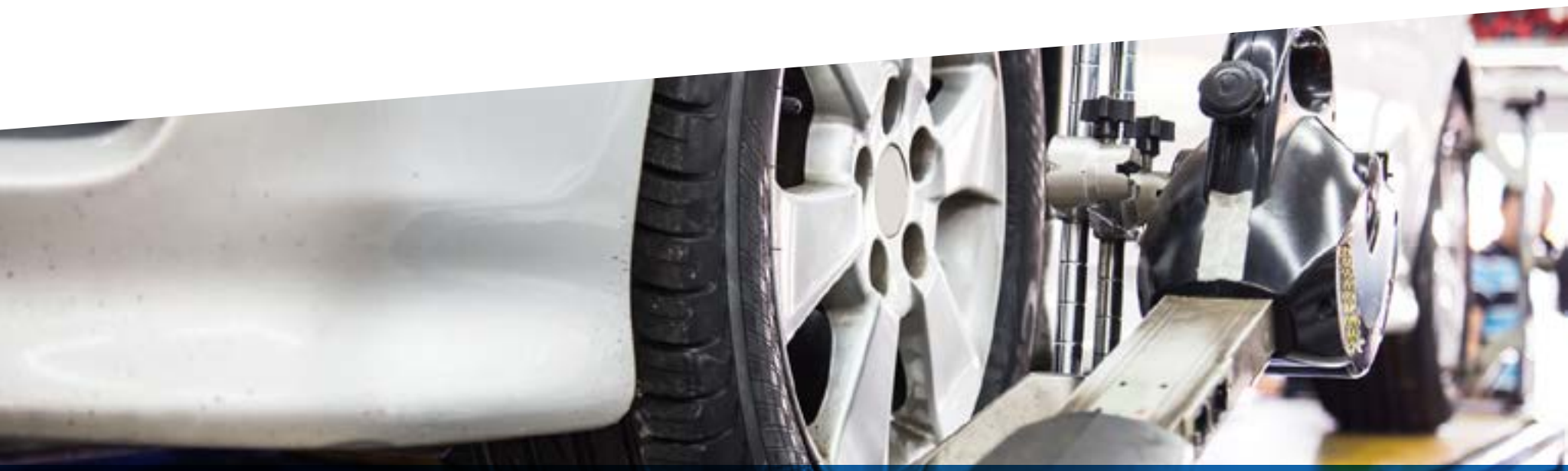
Patrol cars see a lot of miles compared to their civilian vehicle counterparts. Additionally, these cars need to be kept in top condition for when officers need to outmaneuver suspects or reach the site of an emergency call quickly.

Poor maintenance not only delays officers, it can put their lives and the lives of others at risk. Going at 110 mph on the highway while chasing a fleeing suspect is no place for a patrol car that has engine problems or worn-out brakes.

Some law enforcement agencies use GPS tracking devices that can integrate with a vehicle's on-board diagnostics system to provide remote monitoring of key vehicle performance characteristics. With this information dispatch can easily identify which vehicles are most in need of preventative maintenance.

By spotting the need for maintenance early on, law enforcement agencies can keep their vehicles in top condition while saving money. Preventative maintenance measures are frequently less costly than the extensive repairs that need to be performed after a part has failed, as well as reducing the likelihood of an accident caused by the failure of a critical system during high-stress activities.

Additionally, with GPS-logged data of how far a vehicle has traveled since it was last serviced, it's easier for the manager of a police department's carpool to track the need for routine maintenance such as oil changes, wheel alignments, and suspension/brake servicing based on mileage.



Section II: Using GPS for Law Enforcement (cont.)

Preventing Vehicle Thefts

Some law enforcement organizations use GPS tracking devices to protect their patrol vehicles from theft in the field. This helps to keep costs for replacing patrol vehicles (and the gear they often carry) down.

However, some municipalities are taking this vehicle theft prevention feature of GPS tracking and turning it into a weapon against crime.

Shows such as Bait Car highlight how law enforcement agencies have taken GPS tracking and used it to catch car thieves in the act of stealing an unattended vehicle. Using GPS tracking, law enforcement officers can track where the vehicle is in case the unmarked cruiser following the bait car loses sight of it.

The use of GPS-tagged bait cars helps to not only catch thieves, but to deter others from committing car thefts. As noted in an article by the Washington Post detailing the effects of using bait cars on Fairfax County's car theft rates, "in 2007, 1,459 vehicles were stolen in Fairfax. Last year, that number plunged to 1,288, an 11.7 percent drop. And with another decline in the first three months of this year, Fairfax is on pace to break its record for fewest auto thefts in a year, 1,193 in 1983."

Traditionally, bait cars would require teams of officers working around the clock to ensure the stolen car wouldn't be lost. With GPS, a single dispatch officer sitting at a computer screen can effectively monitor the vehicle, and even track if thieves are about to successfully elude pursuing officers so they can hit a separate "kill switch" that locks the car down and brings it to a stop.

Section II: Using GPS for Law Enforcement (cont.)

Benefits of GPS Tracking for Police Officers

Using GPS tracking can help officers in numerous ways, increasing safety and efficiency. Notable benefits of using GPS for officers include:

☐ **Faster Backup Response Times**

When an officer calls in for backup, every moment counts. GPS tracking systems help to ensure faster response times by tracking the exact location of each officer's vehicle in the field. This way, backup will be directed to the location of the calling officer's vehicle, and the closest units can be identified quickly. The seconds or minutes this saves can be invaluable.

☐ **Less Confusion in Assigning Patrol Vehicles for Response**

By reliably identifying which patrol vehicle is the closest to a call, dispatch can save officers time on debating who's closest. This means less time arguing on the radio, and more time helping the community.

☐ **Keeping Officers from Getting Lost**

Getting lost on an unfamiliar route can happen to rookies and veteran officers alike. With GPS tracking, an officer can get fast directions back to their assigned route. This minimizes disruptions from wrong turns and navigation detours.

☐ **Added Safety for Officers in the Field**

By improving response times and tracking their exact location, GPS tracking devices help to create an additional layer of safety for officers in the field

In short, the big benefits of GPS for police officers are increased safety, less time waiting on backup, and directions for when an officer loses track of where they are.

Section II: Using GPS for Law Enforcement (cont.)

Benefits of Police Using GPS for Communities

Police officers aren't the only ones who benefit from the use of GPS tracking devices in law enforcement vehicles. The communities that police protect and serve also see some benefits from officers using GPS systems, including:

☐ **Faster Emergency Response**

When citizens call in a robbery or other police emergency, response times can help save lives and catch criminals. GPS tracking helps dispatch quickly identify the officers who are closest to a 911 call, minimizing response times.

☐ **Improved Patrol Coverage of Municipalities**

Sometimes, the mere presence of an officer close by is enough to discourage criminals. By optimizing patrol coverage using GPS fleet management software, law enforcement can increase the perception of police presence without having to add more vehicles.

☐ **Reduced Risk of Municipal Vehicles Getting Stolen**

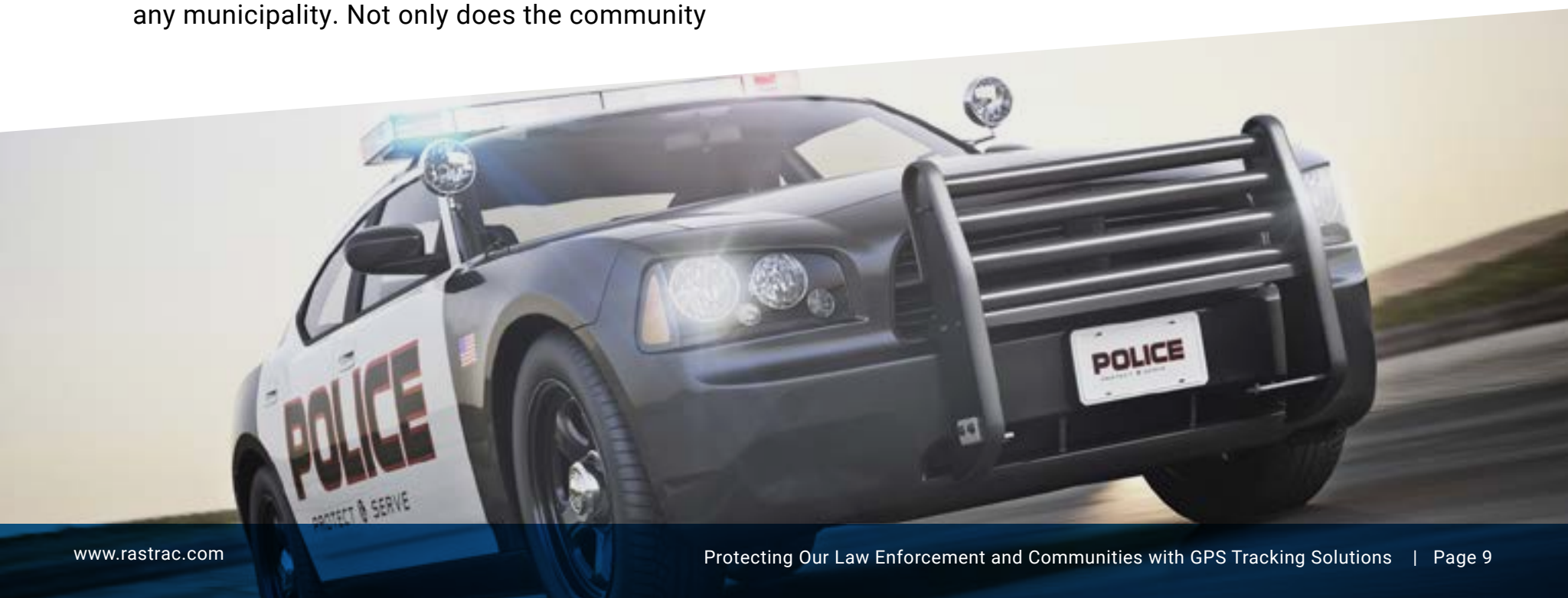
The theft of a police vehicle can be costly for any municipality. Not only does the community have to cover the cost of the vehicle itself, but of all the police equipment that is often kept in the vehicle—equipment criminals can use against the community. Using GPS helps prevent thieves from getting away with police assets; reducing overall costs.

☐ **Improving Police Vehicle Maintenance**

By identifying which vehicles most need preventative maintenance before their maintenance issues get worse, municipalities can help reduce overall maintenance costs for their law enforcement fleets.

☐ **Reducing Idle Time.**

When a police car sits idle, it's still burning fuel and putting wear and tear on the engine, adding to maintenance and fuel costs without adding to the protection provided by officers. Some idling is unavoidable, such as highway patrol cars waiting to catch speeders and dangerous drivers. However, by using GPS, dispatch can minimize unnecessary idle time and keep police vehicles on patrol, increasing municipal safety and preventing wasting taxpayer dollars on inefficient vehicle use.



Section II: Using GPS for Law Enforcement (cont.)

☐ **Possible Savings on Insurance Premiums.**

Police vehicles take a beating in their day-to-day use, a fact that's frequently reflected in high insurance premiums. Adding GPS tracking systems helps to mitigate these costs with some insurers. The amount of the discount will vary from one insurance carrier to the next, and by the risk factors present in a given municipality.

☐ **Real Time Notifications by Text or Email.**

Communication is a critical part of ensuring efficient operations for law enforcement agencies. Some GPS tracking systems and integrated apps for smartphones allow for instant event notifications when assets start, stop, or leave given operation area boundaries. These alerts allow for better control over field operations, improving efficiency & safety while reducing costs.

GPS tracking systems, when used for law enforcement operations, help to make municipalities safer and reduce costs.

Testimonials

Hidalgo County Constable Pct. 4 Office Installs Rastrac GPS tracking software in patrol vehicles.

"I, Constable A. 'JR' Gaitan have been reviewing the benefits of fleet tracking for the past several months. I am proud to announce that my office will have 19 patrol vehicles equipped with Rastrac, a GPS tracking software. This will deliver efficiency, safety, and provide more accountability. The software will be able to send a weekly report for actions of each driver, location, speed, idle time, and vehicle diagnostics. I believe this is a positive initiative for the Hidalgo County Pct. 4 Constable's Office, and Hidalgo County residents."

Tips for Implementing GPS for Law Enforcement

Tip #1: Introducing Officers to GPS Tracking

As powerful as GPS tracking is for law enforcement operations can be, to get the most out of it, there has to be buy-in from the officers who are going to be using the GPS system.

So, when implementing GPS tracking for law enforcement, it's important to introduce officers to the system first, starting with a clear, open, honest statement about how GPS trackers will be used.

Things you will probably want to establish with officers include:

- When law enforcement vehicles will be tracked (24/7, 9-5, etc.)
- How tracking data is stored
- Whether or not tracking data is used for assessments
- Benefits of using GPS tracking systems
- Penalties for tampering with GPS devices

Noting when a police vehicle will be tracked is especially important in municipalities where officers take their assigned patrol cars home or use them during off-duty hours.

Highlighting the benefits of using GPS to officers, such as enabling faster arrival of backup, can help with buy-in among officers, enabling smoother integration of GPS tracking into operations. Penalties for tampering might be assumed, but laying them out helps make things clear to everyone.

Tip #2: Familiarizing Dispatch with Tracking Software

To maximize operational efficiency, dispatch officers need to be familiar with the GPS tracking software that comes with the GPS devices used by the municipality.

The difficulty of this task can vary based on the complexity of the software and the amount of support provided by the GPS tracking company. Some companies offer convenient video tutorials for their tracking software to help get new users acclimated to their software systems quickly.

Other support features, such as FAQs for troubleshooting common issues and dedicated customer support phone numbers can also be useful for helping new users learn the software. Some GPS companies offer full training classes to help users maximize productivity with their GPS tracking systems.

Once a few dispatch officers are familiar with the software, having them guide new officers through using the software can be a useful way to save time and resources on training.

Tips for Implementing GPS for Law Enforcement

Tip #3: Improving Maintenance Scheduling for Police Vehicles

Most modern vehicles have dozens, if not hundreds, of onboard diagnostics sensors installed in key engine components to monitor engine performance, exhaust systems, tire pressure, and many other critical vehicle systems.

Mechanics plug into these systems all the time to diagnose complicated engine and performance problems, charging hundreds of dollars for each check. GPS tracking devices can tap into these same onboard diagnostics systems to provide continuous, remote diagnostics inspections for police vehicles.

Depending on the placement and type of sensors in a vehicle, onboard diagnostics systems can detect issues such as:

- Above-average engine temperatures;
- Excessive fuel consumption while idling;
- Increased stop distances;
- Rapid loss of tire pressure; and
- Changes in fuel injector performance.

It's possible to use this information to detect when a vehicle needs maintenance before a critical fault occurs. By applying the smaller, less expensive fix sooner, municipalities can cut costs for maintenance. Other fixes might increase fuel economy for a police vehicle, reducing long-term costs.

For example, reduced efficiency in fuel injector systems can indicate dirty injection nozzles. By cleaning these nozzles, fuel can be injected into the engine's cylinder chambers more efficiently, improving performance and actually reducing the total amount of fuel consumed by the vehicle (dirty injectors cause misfires, reducing overall power & torque generated per unit of fuel consumed).

Tip #4: Managing Patrol Scheduling

GPS systems can help to greatly improve patrol coverage for a municipality, provided they're used the right way.

The basic location tracking functionality of a GPS fleet management solution can help dispatch track where each asset in the field is located. With this information, it's relatively easy to adjust patrols on the fly to help cover a larger area of the municipality with fewer vehicles by preventing clumping of too many squad cars in areas that don't need the extra protection.

If the municipality has software that can provide color-coded, aging maps of patrol routes, this efficiency enhancement can be taken a step further. One example of such software is Rastrac's StreetComplete, which can be used to provide at-a-glance monitoring of how long it's been since a given route was last patrolled.

Using StreetComplete, you could set a range of color codes for streets that have been patrolled in the last 30 minutes, streets that were patrolled between 30 to 60 minutes ago, and streets that haven't been checked in the last hour. This can help you optimize patrols so that no street in a given area goes too long without a noticeable police presence.

This can increase the perception of police presence on community streets, deterring criminal activity and improving the sense of protection provided by law enforcement.

Additional Resources

GPS tracking can be a useful tool for law enforcement agencies looking to increase efficiency and reduce operational costs.

To learn more about how GPS devices work, and how you can maximize the effectiveness of GPS tracking for law enforcement, check out some of our other resources:

- ☑ StreetComplete Page
- ☑ GPS Fleet Tracking Solutions Guide
- ☑ Real Time Fleet Tracking for Public Safety

Blogs

- ☑ How Local Governments and Municipalities Use GPS Vehicle Tracking
- ☑ Introducing Fleet Tracking to Your Employees

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