



Global Traffic  
Technologies

# Beyond the Green Light



## **Preemption safety and security meets management information and convenience.**

Communities with emergency vehicle preemption are looking beyond the immediate benefits of safer, more efficient response for additional ways to use system tools to maintain, administer and maximize capabilities.

Today, communities are engineering emergency vehicle preemption beyond the green light. System security, vehicle management, data capture and remote maintenance are significant aspects of preemption administration. Meet a community at the forefront.

*“We code authorized emergency vehicles and regularly check logs to make sure every signalized intersection is operating and each preemption call is documented. Proving right-of-way in just one incident and lawsuit could save what the entire system cost.”*

Brian Lenz, Assistant Director,  
Division of Traffic Safety  
Brookhaven, N.Y.



## Doing it right

The Town of Brookhaven is a checkerboard of 38 independent volunteer fire districts, 37 volunteer and one paid, with approximately 400 vehicles networked into a seamless preemption system complete with security and logging capabilities. "We know from history that the system improves response times by 25 to 40 percent," said Chief Fire Marshal Salvatore Garafalo. "I care most about having the green light for safety, but coding identifies each apparatus so you have the logs to prove we did everything we were supposed to do going through that intersection."



Time-stamped records identify the specific vehicle, its direction of travel and green-light right-of-way to eliminate disputes.

From the start, Brookhaven relied on the Opticom™ System as the way to link all emergency responder agencies. Soon after the system was operating and

logs were checked, the traffic safety staff began noticing preemption by unknown users. "We made a policy decision to block non-authorized, lost or illegal emitters to make sure there was integrity in the system," said Assistant Director Brian Lenz. "This eliminated potential abuse or confusion caused by competing or errant signal requests." A best practice was born: *Use Opticom system features to recognize and authorize each vehicle to ensure a secure system.*

## Advancing security

Before Brookhaven established a security level to manage preemption, the Opticom system was able to document unrecognized preemption requests. "We were seeing two to three percent of the calls coming from unknown vehicles," said Lenz. "We also saw unusual use by a few of our own authorized vehicles." By activating Opticom system security and vehicle coding, the Division of Traffic Safety was able to block unauthorized vehicles and detect misuse by specific vehicles.

Lenz, continued: "Using the Opticom system, we could even block a specific unit from receiving preemption. But we found that by simply alerting a fire district, they could handle any misuse internally. Drivers got the message because, so far, it's controlled the problem." Each of Brookhaven's 38 fire districts believe so strongly

in the benefits provided to their firefighters by the Opticom system that each has entered into a written agreement with the Town of Brookhaven promising to uphold the integrity of Brookhaven's preemption system in terms of proper installation and use, driver training and vehicle coding.

To identify each vehicle, Brookhaven uses a four-digit vehicle code that represents each agency (such as a fire district or university emergency department) and each vehicle within that agency. "This made system use transparent. With more than 480 traffic signals and about 4,000 fire and EMS calls each month, it's important to have a safer and more secured preemption system across all jurisdictions that also supports interagency cooperation for mutual aid."

## Enhancing safety and protection

Town officials wanted assurance that preemption mitigated risk and maximized response, across the signal grid. For this reason, Brookhaven installed the Opticom system at every traffic signal. "How can you do it for one and not for another?" asked Assistant Director Lenz. "Installing the system in all signalized intersections assures the best possible response to every call and citizen. Emergency equipment has the green-light advantage to the center of their neighborhood." This established a second best practice: *Install the preemption technology at every signal to support consistency of experience and service.*

Vehicles are also wired so that the Opticom system operates only when primary lights are active. Preemption can only occur on emergency runs. Civilian drivers and pedestrians respond naturally to their red or green lights and emergency vehicles have proof of right-of-way. "Green time, phasing and signals still run their timing course. The signal operates normally, giving priority to the first requesting vehicle.

Natural-appearing green lights, better driving conditions during code 1 emergency runs, lower response times and a green signal on their approach are all benefits we see," said the Assistant Director. "But we also wanted to take advantage of the system's security and data management features."



### Maximizing system technology

Maintenance personnel visit each Opticom-equipped intersection to download logs and check use. "The task is time-consuming, but it's important to know what's happening in the grid...not just to track calls, but to check operation, leverage warranties and manage maintenance." This brought Brookhaven engineering to a third best practice: ***Get the most out of the system to improve administrative and maintenance efficiency.***

The Town of Brookhaven is currently considering central monitoring of their preemption system. Communication technology and Opticom™ Central Management Software would allow engineering to conveniently and routinely acquire data from all the intersections without requiring a site visit.

"Maintenance costs are a concern for any city," said the Assistant Director Lenz. "We will use the software to monitor how the system is performing, which ones need maintenance, and which ones are under warranty—as well as to download logs, adjust timing, even red-flag every preemption call if we want." By recognizing problems, managing routine maintenance and responding proactively, Brookhaven officials believe they will save maintenance costs and operate more efficiently.

"Automation like this helps us keep track of every signalized intersection from one desk, so when maintenance personnel are up in the bucket, everything gets done." The management system can also assemble reports to show the number of calls, report activity on specific intersections and look at the data in many

different ways. This centralized solution allows us to check thousands of logs without physically visiting each intersection to retrieve files.

Safe and rapid emergency response is a matter of public safety," said Lenz, "but leveraging desktop convenience to help us manage, maintain and efficiently administer the system is a beneficial, bottom-line tool."

### The technology behind central management

Opticom™ System preemption and priority control technology with Central Management Software efficiently controls, monitors, manages, maintains and secures the preemption system right from a desktop.

Retrieve logs remotely to:

- Configure individual phase selectors, manage device inventory and perform detailed analysis of log data
- Manage and control use by detecting unusual patterns and by generating oversight reports detailed to specific vehicles, intersections and functionality
- Reduce maintenance costs by diagnosing problems and complaints, reducing field calls for system checks and responding efficiently to alerts



## The largest "Town" in New York

Encompassing 531 square miles (more than half of it water), the Town of Brookhaven is a region in Suffolk County, the heart of Long Island, about an hour east of New York City. Settled in 1655 and officially designated a town, Brookhaven includes eight incorporated villages and 52 unincorporated hamlets (one of which is also named Brookhaven), with a combined population of about 500,000.

With 2,800 miles of town, county and state roads within Brookhaven borders, transportation-related issues have major impact on quality of life. Approximately 91% of Brookhaven residents drive to

work, while only 4.5% use public transportation.

Nearly 60% of Brookhaven residents work outside of Brookhaven and the average resident commute time is about 30 minutes. Brookhaven's population is also aging. By 2012 the Town anticipates residents over the age of 65 will increase by up to 20 percent.

For more information, visit [www.brookhaven.org](http://www.brookhaven.org)





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