OPTICOM™ | CASE STUDY

Technology Upgrade Enables Fast, Safe and Affordable Emergency Response on Long Island

First responders in a densely populated part of Long Island, NY had enjoyed faster and safer responses to emergencies for more than 10 years, thanks to their Opticom™ Infrared (IR) preemption system. But growing traffic congestion and unique geography necessitated the move to a more precise, radio-based solution.

Local officials migrated from their legacy infrared system to a more advanced radio-based preemption solution that including a remote management software suite.

The result: more control over the system with less of an impact to cross traffic all while still providing a safe, swift response for emergency vehicles.

HEAVY CONGESTION AND UNIQUE GEOGRAPHY

Brookhaven, NY comprises eight incorporated villages and 52 hamlets in Long Island and is just a short drive from New York City. With nearly 500,000 residents the region is densely populated, but public transportation is limited. Less than five percent of residents use public transportation, so gridlocked roadways and thoroughfares are common.

To help alleviate the gridlock and to help first responders reach emergencies safely and quickly — city officials implemented an Opticom™ Infrared (IR) priority control system for nearly 500 intersections and nearly 3,000 miles of town, county and state roads.

For more than 10 years the IR system operated exceptionally well, said Chief Fire Marshall Salvatore Garafaolo.

“The system improved emergency response times by 25 to 40 percent,” Garafaolo said.

More than 500 fire department vehicles and ambulances were equipped with IR emitters. Every intersection had its own equipment, including detectors, phase selectors and more. The deployment covered a lot of roadways and helped to improve response times, said Daniel P. Losquadro, Town of Brookhaven Superintendent of Highways.

“Brookhaven has more roads than any other municipality on Long Island,” Losquadro said. “It is imperative for our emergency services to navigate these roads as safely and quickly as possible. When it comes to emergency response, every second counts and Opticom™ has certainly contributed to improving response time.”

In addition to being able to perform well in the densely populated area, town officials also wanted a system that could accommodate the unique terrain of the region.

“Due to Brookhaven’s unique geography we needed a system that could deliver signals from a greater distance and allow emergency crews to respond as efficiently as possible,” said Losquadro.

Solution overview

MUNICIPALITIES

Brookhaven, NY: 42 independent volunteer fire districts and 13 ambulance districts.

CHALLENGE

A large metropolitan town wanted to capitalize on new technology to address unique terrain issues and reduce maintenance costs for intersections and vehicles deployed with traffic signal priority control equipment.

SOLUTION

The town upgraded to Opticom™ Radio priority control technology with Opticom™ Central Management Software (CMS). Nearly 500 intersections and more than 500 fire trucks and ambulances are equipped with this easy-to-maintain traffic preemption system.

PERFORMANCE

The majority of maintenance and monitoring tasks can be completed remotely using Opticom™ CMS. Plus, it helps first responders reach emergency scenes more quickly and safely.

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FINDING SUPPORT ON EVERY CORNER

Brookhaven chose to install Opticom™ Radio priority control technology. Town officials were impressed with the legacy Opticom™ IR system and with the responsiveness and support from GTT representatives, but they also marveled at the newer Opticom™ Radio system. In fact, a few Brookhaven officials met with GTT representatives in Broward County, FL to see it in action.

The technology offers reliable, radio-based communications combined with satellite geolocation data, so the town can minimize maintenance costs and gain more control of intersections for faster, safer emergency response.

Deploying a system of this size was not without challenges. Fortunately, many town officials had extensive experience acquiring grant funding for traffic signal priority control systems from the previous IR deployment.

Losquadro noted that each of the 42 fire departments in the greater Brookhaven area provided a letter, with universal support from its volunteer force, endorsing an upgrade to Opticom™ Radio technology. The letters represented fire department volunteers who wanted to protect the welfare of Brookhaven residents more effectively.

"Emergency preparedness has been my top priority," said Losquadro. "To minimize risks and liabilities, we use Opticom™ [Radio] at every intersection. This gives residents and responders confidence that our emergency services have the resources to operate as safely as possible throughout Brookhaven."

PUTTING FIRST RESPONDERS IN POSITION TO SUCCEED

First responders face risks before they reach the scene of an emergency, often before they arrive at the first intersection. Because of the unique terrain of Long Island, the IR system limited preemption to 300 feet or less at about 40 percent of the intersections.

Tight turns and obstructions compromised traffic signal preemption, too. First responders had to reduce speeds significantly to navigate around cars and pass through the intersections. Response times lagged.

The Opticom™ Radio system uses a global network of satellites that can calculate vehicle speed, direction and precise location to ensure traffic is cleared and first responders can drive safely through upcoming intersections.

It uses radio technology to send updated information — including turn signal status — to the equipment at the intersection once every second. An Opticom™ Phase Selector in the intersection controller cabinet recognizes this information, analyzes it and requests the appropriate timing modification from the traffic controller. Cross-traffic has time to pass through the intersection and other traffic can prepare for the approaching emergency response team.

"The last thing anyone wants happening is an accident occurring during the response to an emergency," said Losquadro. "The Opticom™ [Radio] system provides a clear path for emergency vehicles, resulting in faster and safer response."

REDUCING MORE THAN RESPONSE TIMES

Brookhaven receives nearly 5,000 fire and EMS calls every month. One particularly busy corridor has more than 100 ambulances driving through every day. Town officials do not expect fewer emergency calls, but they do expect improved performance and less of an impact on the budget.

Losquadro noted that the Opticom™ Radio system and Opticom™ Central Management Software (CMS) are inexpensive to maintain, making them excellent investments.

"Maintenance tasks can be performed in-house without sending employees out to a location," said Losquadro. "This allows our resources to be used more efficiently, thus saving taxpayers money.

"We can be proactive with this new system," he added. "More importantly, first responders aren't racing either. We can control traffic signals to get them to the scene quickly without compromising safety for anyone. As Superintendent of Highways, I'm always researching how technology can improve Department operations. By using the Opticom™ [Radio] system, it not only helps protect residents by improving response time, it also contributes to keeping emergency responders safe."

> ***"The men and women who provide vital emergency services to our communities are local heroes. The Opticom™ [Radio] system helps them fulfill their mission of saving lives."***
>
> Daniel P. Losquadro,
> Superintendent of Highways
> Town of Brookhaven

GTT™ GLOBAL TRAFFIC TECHNOLOGIES