

OPTICOM™ | CASE STUDY

Liberty Township positions itself as the regional leader for emergency response



Liberty Township, Ohio – just outside of Columbus – needed to improve response times because the area was growing rapidly, and the department was facing an increase in calls for service.

Traffic signal preemption was the answer, but officials needed to be sure it would work with neighboring agencies. In addition, line-of-sight issues would limit the effectiveness of legacy infrared preemption. As a result, officials looked to Opticom™ Radio priority control technology. The department secured funding, installed the new system and has been able to respond more quickly and safely to emergencies.

MOVING QUICKLY TO IMPROVE EMERGENCY RESPONSE

Liberty Township is located in Delaware County, one of the fastest growing counties in Ohio. It is also home to the nation's largest zoo, the Columbus Zoo and Aquarium. With more than 9,000 animal species, the zoo attracts more than 2.3 million visitors annually. The influx of citizens and visitors has created new opportunities for the area. It has also created new challenges and demands for the Liberty Township Fire Department (LTFD).

The LTFD includes two fire stations and serves citizens in a 34-square-mile area. It is fully integrated with its own Emergency Medical Services (EMS) Division. As a result, its 50-plus firefighters are specially cross-trained as paramedics. Most of them are certified in advanced rescue techniques and can respond to a wide range of emergencies.

Because they are responsible for first response and for the highest level of pre-hospital care, it is critical that crews reach the emergency scene as quickly as possible. Even though the LTFD took great pride in the level of service it provided, growing traffic volume slowed response times. Crews reached the scene within guidelines established by the National Fire Protection Agency (NFPA) only 23 percent of the time. As a result, care was compromised.

One of Fire Chief Tim Jensen's goals is accreditation. The LTFD needs to meet acceptable response times at least 90 percent of the time to gain international accreditation from the Commission on Fire Accreditation International (CFAI). It would provide continuous improvement and comprehensive self-assessment that would enable the department to enhance progressive, high-quality emergency and preventative services.

After studying various methods to improve response times, the LTFD decided to install traffic signal preemption. But first, they needed to find funding.

FINDING FUNDING SOURCES

Veteran firefighter, Mickey Smith, took the lead in the grant writing process. "We're battling fires that can double in size in only 30 seconds," said Smith. "We must reach the scene as quickly as possible. By saving time, we can save lives."

Solution overview

MUNICIPALITIES

Liberty Township, Powell, Ohio

CHALLENGE

Department leaders want to achieve international accreditation for the fire department and to improve emergency services for citizens. The community can achieve both with faster emergency response times.

SOLUTION

Liberty Township installed Opticom™ Radio priority control technology at every intersection in Liberty Township and the City of Powell as well as on 18 authorized response vehicles.

PERFORMANCE

Emergency response times improved significantly. Initial tests indicated that both the fire department and EMS reduced response times by at least 40 percent.



*Compiled by Liberty Township Fire Department

LIBERTY TOWNSHIP RESPONSE TIME STUDY

Studies conducted by the LTFD support firefighter Mickey Smith's observations. The LTFD compared response times for six months prior to Opticom Radio installation with response times for six months after implementation.

	Before Opticom	After Opticom	Reduction
Fire	7 min., 3 sec.	4 min., 4 sec.	42%
EMS	6 min., 9 sec.	3 min., 41 sec.	40%

Smith had never written a federal grant. He learned quickly, however, how to navigate the process simply by visiting the Assistance to Firefighters Grant (AFG) website. The site provides guidelines as well as the application. He also sought input from several sources within the department, as well as with representatives from a GTT-authorized dealer in Columbus.

CHOOSING THE PRECISE TECHNOLOGY

Key members of the LTFD spoke with GTT representatives to learn more about Opticom™ traffic signal priority control. The LTFD considered infrared emergency vehicle preemption technology. It is reliable, durable and efficient — but it wasn't the best option for the unique landscape of the area. It was soon realized that a radio-based system incorporating geolocation data could help the LTFD improve response times significantly.

"This area's arterial roads have multiple hills, blind corners and other line-of-sight issues that could minimize the effectiveness of infrared systems," said Smith. With Opticom™ Radio, preemption can be activated at greater distances and is based on estimated time of arrival at the intersection. Plus, it uses highly secure radio communications, so it can accommodate even the most adverse environments in Liberty Township.

Department leaders, including Chief Jensen, wanted the LTFD to be a visionary and key

contributor in mutual aid strategies in Delaware County and throughout Ohio. The LTFD can reach destinations much quicker — even in other communities with radio-based priority signal control. After deciding to seek funding specifically for radio-based preemption, Smith worked closely with the authorized GTT dealer in Columbus to ensure the grant application was accurate and efficiently demonstrated the urgency for the innovative technology.

PROTECTING THE ENTIRE COMMUNITY

Liberty Township earned an operations and safety grant from AFG in excess of \$700,000, with more than \$520,000 designated specifically for radio-based preemption technology. Several manufacturers bid on the project. With its responsive support during the grant writing process along with its prominence in the industry as the leading provider of traffic signal priority control technology, Opticom quickly emerged as the clear choice for the LTFD team. Deployment began almost immediately.

Liberty Township features 35 intersections. Every one of them — along with 18 emergency vehicles — was equipped with Opticom™ traffic signal priority control equipment. Because it created a dedicated path to each of the three medical/trauma centers within about 25 miles, the impact of radio-based priority control was immediate.

"The results have been remarkable," said

"The results have been remarkable. I believe we've saved several lives since implementation because we can reach the scene and the hospitals so much faster."

Mickey Smith
Veteran Firefighter for LTFD
Liberty Township

implementation because we can reach the scene and the hospitals so much faster."

AIDING OTHER AGENCIES

"The goal of every fire department and agency is to serve citizens," said Smith. "Mutual aid allows faster emergency response to more people in more locations. With Opticom™ [Radio], we're assured that we're on the cutting edge of technology that allows emergency vehicles to pass through intersections quickly and more safely."

The success in Liberty Township is drawing attention. There are plans to implement emergency preemption in all jurisdictions in Delaware County. As part of the original implementation, there are several intersections in nearby communities — including the City of Delaware and Orange Township — also equipped with Opticom™ equipment to ensure faster transport to the hospitals.

Delaware aims to emulate Liberty Township's success and expand its existing emergency preemption system. If successful, Mickey Smith will have a lot to do with it. He is leveraging his experience with Liberty Township to help write a grant for Delaware and Orange. In addition, the LTFD is positioned to move forward with international accreditation efforts.

"Emergency response is too important not to try to improve it," said Smith. "The payoff is second-to-none for everybody in the community, from emergency personnel to the citizens."



GLOBAL TRAFFIC TECHNOLOGIES