



Volume VI
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BY DESIGN

Emergency Vehicle Preemption Speeds and Improves Delivery of Emergency Services



Regardless of intervening traffic conditions, it is essential that fire, police, ambulance and paramedic services reach emergencies quickly.

This has become increasingly difficult as traffic levels and rush hour congestion increase. A safe, effective answer has been developed through the use of optical technology, allowing the regulation of traffic right-of-way and the safety of a green light for emergency vehicles.

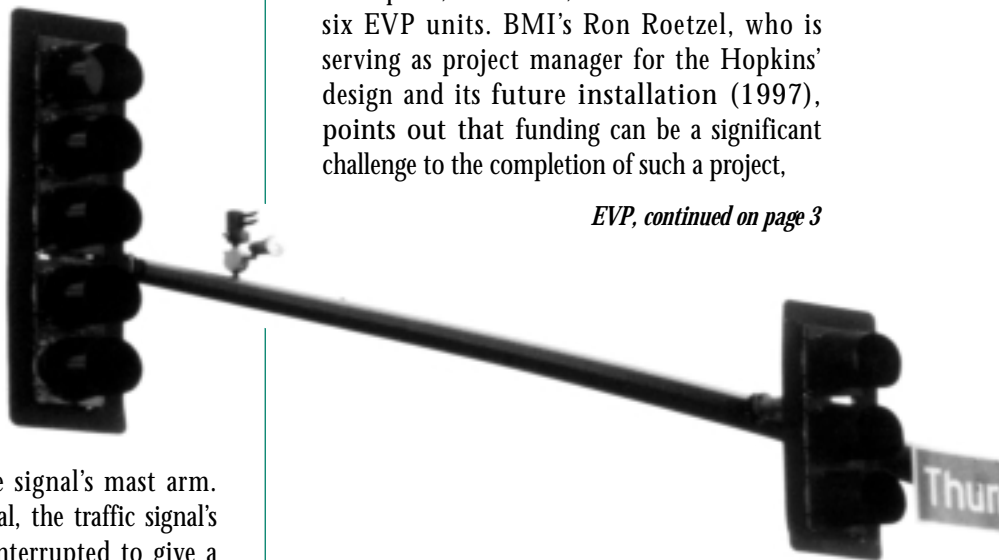
Intelligent Vehicle Highway System technologies have rapidly developed in response to this need for greater control over traffic. The systems' sophisticated optical technology provides precise, consistent communication between emergency vehicles and traffic signals at selected intersections, allowing response to emergencies under safer conditions. The system works like this: an emergency vehicle approaching a signalized intersection activates its emitter (a strobe light oscillating at a specified frequency.) The oscillations are detected by an emergency vehicle preemption (EVP) detector mounted on the signal's mast arm. Receiving the strobe's signal, the traffic signal's programmed phases are interrupted to give a

green light to the emergency vehicle and allow it to pass through the intersection. The traffic signal then returns to its normal programmed phasing.

During 1996, the Minnesota Department of Transportation acted to bring consistency to the state's EVP signal installations and to ensure that such systems can be used across jurisdictional boundaries. While state law allows individual cities to determine which vehicles will be designated as emergency vehicles, consistent frequency standards have been specified, and all newly-constructed signals must be wired for EVP.

Bolton and Menk is currently assisting the City of Hopkins, Minnesota, with the installation of six EVP units. BMI's Ron Roetzel, who is serving as project manager for the Hopkins' design and its future installation (1997), points out that funding can be a significant challenge to the completion of such a project,

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*New at
Bolton & Menk...*

Major Interceptor Sewer Allows City to Grow

The City of North Mankato recently completed the construction of a major interceptor sewer which now serves a future growth area. Growth in the City of North Mankato has steadily increased over the past 20 years. In 1993, the City of North Mankato prepared a Comprehensive Utility Study. In this study, it was determined that the existing sanitary sewer collection system was inadequate to accommodate future growth to the north and west of the city, specifically, a 1,350 acre service region. A new interceptor sewer was the best solution for providing sanitary sewer service to this undeveloped area within and adjacent to the city limits of North Mankato.

In 1995, final design was completed for the interceptor sewer. Construction was undertaken in 1996 on approximately 2 miles of

27-inch diameter gravity sewer, ranging in depth from 6-feet to 35-feet. The installation of the interceptor sewer had several unique obstacles. First, the interceptor sewer had to be installed under two 4-lane highways. This installation was done by the jack and auguring method. Second, the interceptor had to negotiate a steep hillside with approximately 175-feet of vertical drop. Third, very deep excavation was required on the upper region in order to provide adequate service to the area. Due to the size of the new service area, the Minnesota Pollution Control Agency required the City to prepare an Environmental Assessment Worksheet (EAW) for this project. With the assistance of Bolton & Menk, Inc., the EAW was prepared and received

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MPCA approval before the project was allowed to proceed.

The completion of the Interceptor Sewer Project has had an immediate impact. Phase I of Eagle Ridge Subdivision, a 90-acre residential development consisting of approximately 100 lots, was allowed to proceed. In addition, significant flows from the existing sanitary sewer system were diverted, thereby increasing the capacity of the existing trunk sewers. According to Wendell Sande, North Mankato's City Administrator, "We were able to eliminate the Haughton Avenue Lift Station and improve sanitary sewer service to other residential areas of the existing City as well."

The Comprehensive Utility Study helped us identify the needs of the City.

The Interceptor Sewer Project, which grew out of the Comprehensive Utility Study, was a major component to development of new residential and industrial areas to the north.

Wendell Sande,
City Administrator
North Mankato



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Preliminary Proposals Due for Safe Drinking Water Revolving Fund

By now, you've probably heard the good news that President Clinton signed into law the Safe Drinking Water Act. Although no money is available right now, the U.S. Congress has allocated approximately \$41 million to the State of Minnesota to start a Drinking Water Revolving Fund (DWRF) in Minnesota during 1997. This money will be available to eligible public drinking water supplies for the planning, design and construction or improvement of facilities to ensure safe and adequate drinking water. This includes wells, treatment and storage facilities and water distribution systems.

Your community water system may be eligible to receive a low interest loan of up to 20 years. Economically disadvantaged communities may be eligible for additional subsidies.

The Minnesota Public Facilities Authority and the Minnesota Department of Health are requesting preliminary proposals,

tentatively scheduled to begin before the end of 1997, to assist initial fund planning. Proposals will also be used to help determine the level of interest in



the program and to assist the decision-making process for the use of the funds. These preliminary proposals are expressions of interest only. They do not commit the water system or the state to any further action, nor do they constitute an application for financial assistance. The expressions of interest will be used for general planning purposes only.

Preliminary proposals should be submitted as soon as possible

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Optical Technology Controls Traffic Movement & Promotes Safety

EVP, continued from page 1

"Off System State-Aid funds can be used for EVP signal improvements located on state roadways and municipal and county state-aided roadways on a prorated basis. Such funding has enabled cities to move ahead, but leaves them with the challenge of extending EVP effectiveness to signals located on strictly city-controlled roadways."



Emergency vehicles move smoothly through traffic when aided by the emergency vehicle preemption traffic light system.

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(by the end of the year). They should be in writing and include two copies of the following:

1. Type of project: planning, design or construction.
2. A brief description of the project.
3. A cost estimate and, if different, an estimate of the amount of loan that would be requested.
4. A preliminary project schedule.
5. An estimate of quarterly cash flow needs.

If your community is interested in submitting a preliminary proposal and would like further assistance, please contact Robert Brown, of our Mankato Office or your local BMI office.

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