MISSOURI/KANSAS

KANSAS CITY SCOUT

A major urban ITS project underway is Kansas City SCOUT - an extensive freeway management system for the Kansas City metropolitan area.

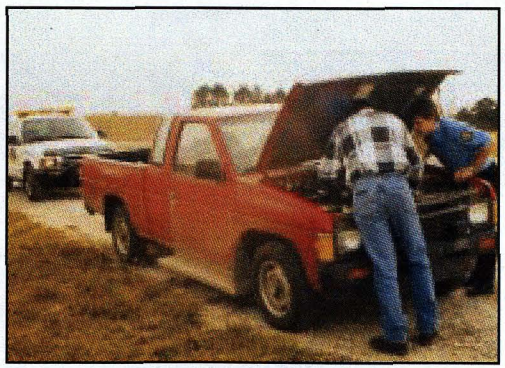
The Kansas and Missouri Departments of Transportation are sharing the costs of the system's design, construction, operation and maintenance, as well as the Traffic Operations Center.

The project's foundation can be traced to the Intermodal Surface Transportation Efficiency Act of 1991, which called for the development of transportation management systems. Under the leadership of the Mid-America Regional Council (MARC), the Congestion Management Focus Group was founded in 1992 to define what congestion means to our customers.

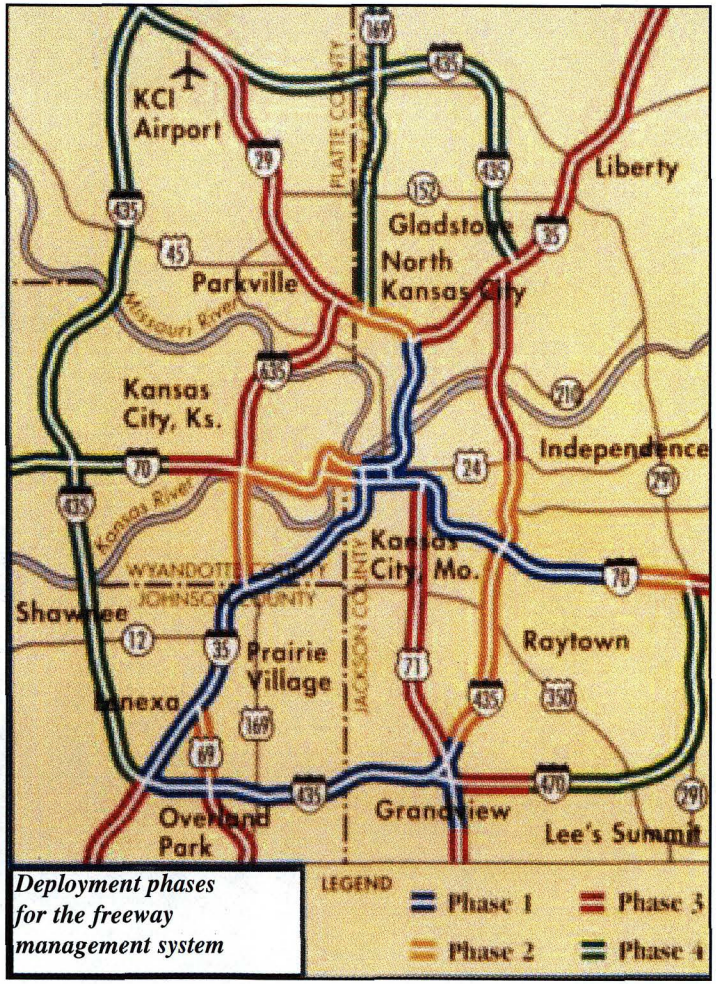
In 1995, KDOT and MoDOT joined with the HNTB consulting firm to produce the ITS Early Deployment Study for the Kansas City Bi-State Area. This study lays out a four-phase ITS implementation plan for the metropolitan area over the next 20 to 25 years. The state agencies and MARC agreed to move forward with the study's first phase, which involves management for the most congested 80 kilometers (50 miles) of freeway in the Kansas City area.

All of these components will be integrated with a fiber-optic communications system that feeds information to trained transportation managers housed at the Traffic Operations Center. The managers will use this data to help keep metropolitan freeways flowing smoothly through better incident and congestion management.

The technologies to be used include closed-circuit television (CCTV), variable message signs (VMS), highway advisory radio (HAR) and vehicle detection equipment. In addition, ramp metering is being considered along Phase I corridors.

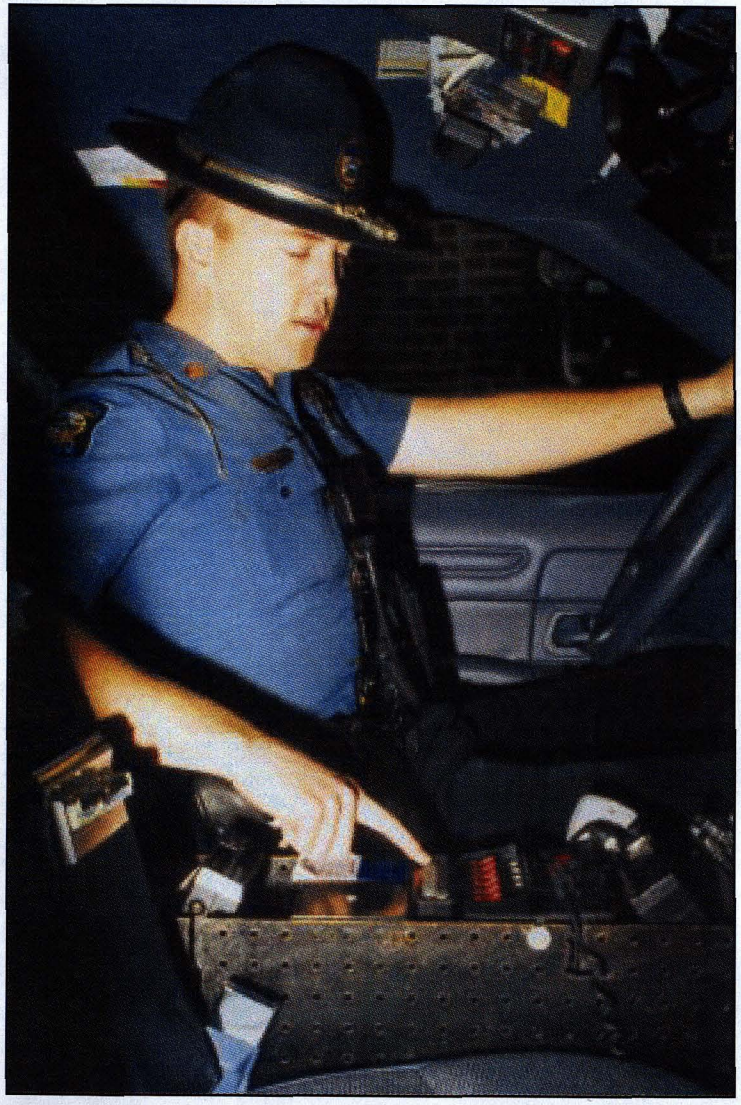


Motorist Assist vehicles patrol the Kansas City metropolitan area to keep the roadway clear of stalled vehicles.



Deployment phases for the freeway management system

KANSAS



Kansas highway patrol Automatic Vehicle Location (AVL) System equipment.

Kansas Highway Patrol AVL System

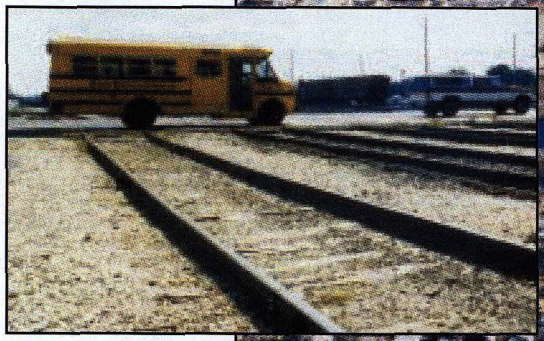
The Kansas Highway Patrol has introduced an Automatic Vehicle Location (AVL) system for 60 of their patrol cars in northeast Kansas. The AVL system makes the deployment of personnel more efficient, streamlines dispatch operations, enhances officer safety, and increases the accuracy of crash location identification.

The global positioning system (GPS) is utilized to identify the latitude and longitude of the patrol car. This information is transmitted to the communications center via the existing 800 Mhz radio system. A patrol car's location is updated automatically and sent to the dispatcher every two minutes. Troopers can also update their position and call-status at any time by pressing one of the eight available status buttons located near the radio console in the patrol car. Additionally there is a "pursuit" status mode available that the trooper can activate in a pursuit situation. This important officer-safety feature accelerates the automatic position update rate to once every seven seconds, allowing the dispatcher to more closely monitor the pursuit's location, direction of travel, and easily send assistance to intercept locations.

Position locations are accurate to within 100 meters in the normal operation mode. However, using a process known as "selective differential," accuracy is increased to within 10 meters. Utilizing latitude and longitude coordinates, this increased accuracy is important in the identification and future analysis of crash locations.

The Kansas Highway Patrol plans to equip all of its patrol cars, approximately 500 vehicles, with the AVL system, making it the first state patrol in the country to do so.

When in pursuit, the location of this cruiser is updated every seven seconds with a positional accuracy of ten meters.



At-grade railroad crossings present a host of safety and routing concerns.

Like all cities, Wichita must balance maintenance activities with traveler needs.

The completion of the Kellogg (US 54) Flyover will provide much-needed capacity for this vital route through Wichita.

Wichita - Department of Public Works

Currently, the city of Wichita is developing a strategic plan for the development of Intelligent Transportation Systems technologies within the Wichita-Sedgwick County Metropolitan Area. The Early Deployment Plan will serve as a reference for the incorporation of ITS applications in future regional transportation improvement programs and projects. Overall, the Early Deployment Plan will identify the ITS user services that are the most beneficial for the city, and define the technologies that are appropriate for providing these services.

Within the Wichita Metropolitan Area, the major roadway system consists of Interstates, expressways and turnpikes, state and U.S. highways, as well as numerous arterial streets. As traffic volumes continue to rise along these corridors, traffic congestion and delays are also increasing. With the current system, the city of Wichita experiences traffic problems resulting from limited east-west corridors, limited access across floodways and rivers, and numerous at-grade railroad crossings along the arterial streets. Based on the preliminary studies, the major areas of focus within the Early Deployment Plan include updating the computerized traffic control system, enhancing traffic progression with improved communications and traffic monitoring, developing a county-wide incident and emergency vehicle management plan, and diminishing the traffic congestion associated with roadway-rail intersections.

Dedicated K-TAG lane on the Kansas turnpike

K-TAG Electronic Toll Collection Transponder

Teamed together with other Capital Improvement Projects, like the Kellogg (US-54) Flyover, ITS technologies can help the city of Wichita reach the goal of providing a cost-effective and efficient transportation network which promotes safety, convenience, and aesthics for the total community.

Kansas Turnpike Authority Electronic Toll Collection System

The Kansas Turnpike Authority (KTA), which operates 378 kilometers (236 miles) of roadway from Kansas City to the state line south of Wichita, uses an Electronic Toll Collection (ETC) system called K-TAG. The K-TAG system consists of an electronic tag that mounts on the inside of the vehicle windshield, and overhead readers at toll plazas. When you enter the turnpike through a specially marked K-TAG lane, a radio signal is emitted from the overhead antenna that records the entry information into the tag. When you exit through another K-TAG lane, a radio signal is emitted from the overhead reader to read the tag and charge your K-TAG account the appropriate fare. This is all done without having to stop.

This system reduces vehicle delay and increases the KTA's operating efficiency by reducing the personnel needed for toll collection. A lane at both the exit and entrance of most turnpike interchanges is dedicated for K-TAG use only, with multi-use lanes (K-TAG and cash) present at all interchanges. Vehicles are allowed to go through the K-TAG lane at 32 km/h (20 mph). Each K-TAG lane is equipped with vehicle classification and axle-counting equipment, which allows the same K-TAG to be used on different vehicles. If you are driving a passenger car, you are considered a Class 2 vehicle. If that same car were pulling a boat, it would be considered a Class 3 vehicle. The number of axles on each vehicle determines the class.

Billing is administered through one of two programs. The K-TAG II program charges $1 per month for the use of each tag, but gives users a 10% discount on tolls. The K-TAG II program allows users to pay a $5 per year fee for the use of one or two tags with no discounts on tolls.

The Kansas Turnpike Authority has issued 90,000 K-TAGs since the inception of the program in October of 1995. In 1997, the number of users on the turnpike was 27,577,000. Of the vehicles travelling the turnpike, 33% were using the K-TAG electronic toll collection system.