Congestion Mitigation and Air Quality Improvement (CMAQ) Program

U.S. Department of Transportation
Federal Highway Administration

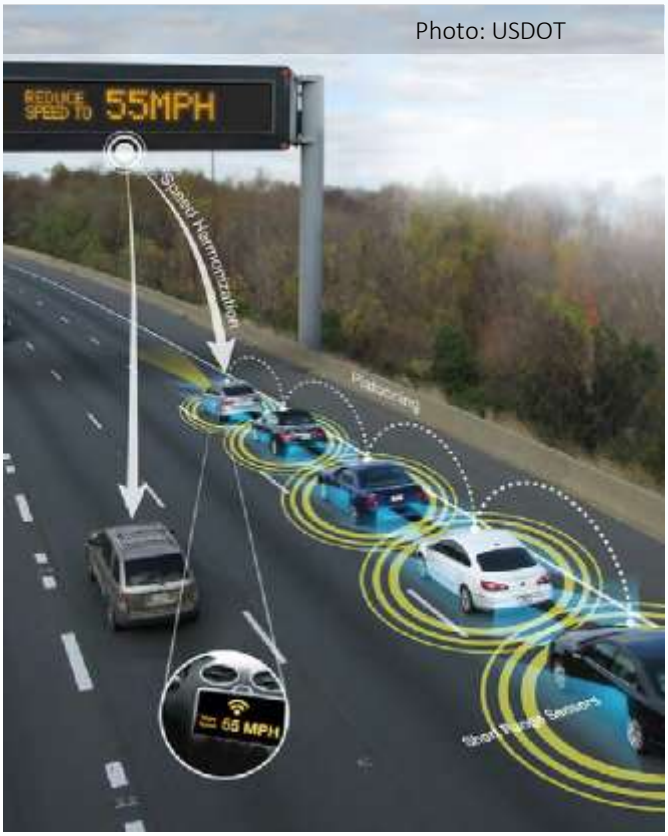
Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS)/transportation systems management and operations (TSMO) have been defined as: "the application of advanced sensor, computer, electronics, and communication technologies and management strategies—in an integrated manner—to improve the safety and efficiency of the surface transportation system". This definition encompasses a broad array of systems and information processing and communications technologies.

ITS/TSMO, including vehicle-to-infrastructure (V2I) communication equipment, are a combination of computer software technologies and hardware, as well as institutional partnerships. ITS/TSMO applications can be effective in relieving traffic congestion, enhancing transit operations and improving air quality. ITS/TSMO projects improve traffic flow characteristics, such as speed and congestion while optimized traffic flow can reduce emissions rates in many situations.

Eligible ITS/TSMO and V2I Communication Projects

- Traffic monitoring through vehicle detectors and closed-circuit video equipment
- Traffic management through synchronized signals and activated traffic control systems
- Variable message and speed limit signs
- Regional traffic control centers
- Provision of real-time roadway information to vehicles and travelers
- 511 telephone services and websites
- Road weather information systems
- Traffic incident and work zone management programs
- Installation of V2I communication equipment such as electronic open road tolling



Examples of Successful ITS/TSMO and V2I Projects

Cincinnati, OH: The Advanced Regional Traffic Interactive Management and Information System (ARTIMIS) is a transportation system management project designed to improve traffic flow. It was put in place by the Ohio-Kentucky-Indiana (OKI) Council of Governments to monitor and control traffic on 88 miles of regional freeways at a total cost of $57 million, of which $41 million were CMAQ funds.

- *Estimated emission reductions: 186 kg/day of volatile organic compound (VOC)*

Philadelphia, PA: The Arterial Street Signal Interconnect is an interconnection of traffic signals along arterials with high transit use implemented to improve traffic flow and to enhance transit quality. The total annual project cost was $214,033, of which $171,227 were CMAQ funds.

- *Estimated emission reductions: 52 kg/day VOC and 5.7 kg/day nitrogen oxides (NO_x)*

Atlanta, GA: The Georgia NAVIGATOR is an Advanced Transportation Management System that monitors and manages traffic conditions on 90 miles of interstate highway in the Atlanta metropolitan area. The system was developed at a total cost of $140 million, of which $54 million were CMAQ funds.

- *Estimated emission reductions: 614 kg/day VOC and 578 kg/day NO_x*

Photo: USDOT

For more information, please contact:
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