

## What is Active Traffic Management?

Active Traffic Management (ATM) refers to an integrated set of operating strategies and technologies for managing traffic. An ATM system continuously monitors traffic and roadway conditions and supports rapid response to incidents and other on-the-road changes. The system collects information on conditions using monitoring equipment, such as vehicle detection sensors, closed-circuit television cameras, etc. It then employs a host of automated tools to manage traffic conditions safely and optimize traffic flow. These tools include advanced lane control signal systems, queue warning and dynamic merge systems, adaptive ramp metering, speed harmonization strategies (which allow for dynamic reductions in speed limits as vehicles approach areas of congestion, work zones, special events, etc.), and automated signage for motorists. The use of electronic signs is a key element of ATM – the signs are typically lane-specific and closely spaced so that travelers can be almost constantly informed about traffic conditions and be provided guidance on how best to proceed.

ATM has been deployed on several American highways, but is still a relatively new concept in the United States. It has also been employed on multiple roadways in Europe.

The Virginia Department of Transportation (VDOT) and the U.S. Federal Highway Administration (FHWA) have determined that conditions on the Interstate-66 corridor in Northern Virginia are ripe for the deployment of ATM.

## Benefits

The goals of the I-66 ATM project are to (1) increase safety, (2) reduce congestion, and (3) lessen fuel consumption.

Specific ATM strategies and technologies that fit the needs of the I-66 corridor have been identified and are being readied for roadway deployment. ATM will be applied on 34 miles of roadway along I-66, from the District of Columbia to Haymarket (US-15) in Prince William County. As part of the project, this section of roadway will be divided into five segments, with each segment outfitted with specific combinations of ATM strategies and technologies.

- When travelers are well-informed, they will be able to make intelligent choices about their travel options.
- I-66 users will see the shoulder lanes routinely opened to traffic when congestion builds, regardless of time-of-day or day-of-week; currently the shoulder lanes are used only during weekday peak periods.
- Improved monitoring of the highway will enable transportation, safety, and law enforcement personnel to respond more quickly and appropriately to incidents.
- Dynamic message signs and lane control systems will allow motorists to receive advisories on incidents and delays, lanes that are usable or blocked, guidance on merging traffic, etc.

Construction is expected to begin in Summer 2012, and be completed by Summer 2014.



## VDOT's I-66 Active Traffic Management (ATM) Project

*Creating a corridor with improved safety, reduced congestion, and support for environmental sustainability.*

- The I-66 corridor is one of the most congested interstate highway corridors in the Commonwealth of Virginia and the nation.
- Its constrained right-of-way and limited funding for construction improvements make I-66 an outstanding candidate for Active Traffic Management (ATM)—a set of strategies and technologies for managing traffic, reducing congestion, and supporting environmental sustainability.
- Specific ATM strategies and technologies that fit the needs of the I-66 corridor have been identified and are being readied for roadway deployment. These include lane control signal systems, shoulder lane management systems, adaptive ramp metering, enhanced detection and camera systems, queue warning systems, and others.
- The I-66 ATM system will emphasize rapidly identifying and responding to incidents, using the shoulder lanes whenever conditions merit, and providing detailed traffic information to travelers.
- The section of roadway to be outfitted with ATM is 34 miles in length, extending from the District of Columbia to Haymarket in Prince William County. The 34 miles of roadway is divided into five segments, with different combinations of ATM treatments planned for each segment (see the attached diagram).
- Operation of the system will be managed by the VDOT Public Safety Transportation Operations Center (PSTOC).
- Implementation of the ATM project will involve modest construction activity. No right-of-way acquisitions or environmental impact studies will be necessary.
- Total capital cost of the project is estimated at \$32M, with 90% of the funding coming from federal sources.
- Major project milestones include the following:
  - Planning and Design — Summer-Fall 2011
  - Contractor Selection and Award — Spring-Summer 2012
  - ATM Design & Construction — Fall 2012-Winter 2013
  - ATM Full Start-Up — Summer 2014

