ITS projects include:

8 Traffic signals on Northern Parkway will be equipped with the latest Adaptive Traffic Signal Technology to react to varying traffic conditions, whether due to incidents on I-83 or special events at Pimlico Race Course, by adjusting signal timing automatically.

25 Traffic Surveillance Cameras are being deployed over the next 2 years. Traffic camera views, which are available to the public for viewing on www.TrafficCamMD.com, help staff at the Transportation Management Center collect and transmit dynamic information on traffic conditions for travelers.

50 miles of communication cables running throughout the City connecting traffic devices are being upgraded. These cables are being replaced to improve the reliability of traffic signals, cameras and signs.

60 additional Variable Message Signs, part of a multi-year, phased project will be deployed along I-83 and approaching intersecting roadways, at additional CBD locations, and in two “rings” encircling the City. VMS signs on the Inner Ring encircle the downtown area, will be located on key arterials, and will be aimed at outbound traffic to provide for travel time information, travel safety, connectivity, coordination and traffic management. VMS signs on the Outer Ring will be aimed at inbound traffic only to provide travel time, traffic and incident management and special event information.

391 Traffic signals were retimed in 2012 north and west of downtown reducing delays by 24%, the average number of times a motorist stops by 17%, and fuel consumption and emissions by 13%.

11 Variable Message Signs were constructed in 2012 in the Central Business District to provide traffic information, and information regarding special events to travelers so that they are able to change their plans to minimize inconveniences.

160 Wireless detectors replaced outdated, broken wired, in-pavement detectors on side-street approaches to traffic signals reducing delays and emissions.

By Steve Kimble
Sensys Networks, Inc.

Sensys has partnered with the City of Baltimore to install its wireless vehicle detection system to replace the City’s antiquated and aging inductive loop technology. Baltimore chose Sensys to maintain its high standard for vehicle detection accuracy and reliability. The resulting expanded coverage provides the City with real-time traffic and infrastructure monitoring to optimize mobility, improved traffic signal operations, a basis for performance measures to guide policy and investment decisions, enhanced incident response, and overall improved operational analysis and decision making. The City is able to install the new wireless detection infrastructure at roughly half the cost of the older technology.

For the Nation’s Capital accurate and reliable traffic detection is critical not only for traditional traffic functions, but also real-time evacuation operations. The District of Columbia DOT (DDOT), after considering the options to replace its aging inductive loop count stations, decided to deploy wireless detection rather than deal with the challenges of re-cutting new loops. Now, over 140 real-time data collection stations serve as an integral part of the District’s CapTOP-TOC traffic management system. DDOT has now freed its maintenance budget from loop replacements and replaced it with a virtually maintenance-free 10+ year life-cycle technology. This scalable, efficient solution by Sensys Networks is something DDOT is working to deploy more of over the foreseeable future. DDOT, in partnership with Sensys Networks, has also automated the centralized retrieval of real-time traffic volume, occupancy, speed, and classification data. The data is collected at a central Sensys Networks SNAPs server, which provides traffic flow maps, traffic data reporting, alerts, and other performance measures allowing the District to better manage traffic. This same data is being integrated with the Regional Integrated Transportation Information System (RITIS), the regional repository for Metro D.C. transportation operations, allowing DDOT to better coordinate traffic operations with both Virginia and Maryland.

By Diederick VanDillen

You can’t measure what you can’t measure. That is especially true in transportation whether it is measuring demand to assist planners in prioritizing funding improvements, measuring real-time congestion and travel time information to assist the traveler with time, route and mode choices; or measuring real-time congestion and detecting possible incidents to assist transportation agencies with restoring service levels. Automated, real-time, accurate, and reliable data collection, processing, and information extraction is the key enabling manager of the transportation network. This year’s Maryland Transportation Technology Fair theme, “Technology Solutions for Cost-Effective Performance Management”, speaks directly to the importance that technology plays in this process. We are fortunate to live in one of the few regions in the country where this theme is fully embraced and its benefits are realized every day. The application of technology towards the improvement of operations and management of our transportation network continues to provide high benefit-cost advantages.

ITSMD welcomes you to this year’s Transportation Technology Fair. Be sure to visit the various exhibitors and learn how Intelligent Transportation Systems are making a difference.

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The Coordinated Highways Action Response Team (CHART) program is a joint effort between the Maryland Department of Transportation (MDOT) and Maryland State Police (MSP) and is the highway operations element of Maryland’s ITS program. The program helps reduce highway congestion by monitoring traffic flow, responding to traffic crashes and other incidents, and providing information to travelers. In 2011 CHART responded to and cleared more than 17,000 incidents and assisted more than 24,000 stranded motorists. This effort has yielded a reduction of 33.56 million vehicle-hours of incident delay, corresponding to an annual user cost savings of $1.097 billion, and has also been shown to reduce secondary incidents. The Maryland 511 Traffic Information System, deployed in August 2011, provides information via a menu-driven, automated telephone service, Internet website, mobile web platform, as well as social media services. The 511 service provides information on incidents, status of facilities, modal availability, travel
Transportation Authority (MDTA) AVL-equipped fleet (139 vehicles) was also included in this effort. The entire phase 1 deployment was completed within 8 months in time for the 2011/2012 winter season. Phase 2 of the AVL deployment will include additional functionalities over and above basic location tracking and reporting including: (1) additional portable (contractor) modems; (2) onboard vehicle diagnostics; (3) route optimization; (4) decision support functions; (5) may-day (emergency contact) function to CHART vehicles; (6) bucket status (up/down); and (7) salt usage/measurement and plow-route accomplishment tracking.

By Nikola Ivanov University of Maryland

State and local governments now have a new suite of tools at their disposal to quickly quantify the worst congested locations in their state, county, or city while simultaneously understanding the financial impacts of congestion and incidents. The web-based tool, developed by the Univ. of Maryland CATT Laboratory, uses new and innovative real-time and archived transportation data from both public and private-sector partners. Users have the freedom to develop effective, easy-to-understand graphics, charts, and performance measure data summaries with ease—saving substantial time, effort, and taxpayer dollars. Safety analysts are using the tools to perform after-action reviews of major incident response, and transportation planners are using features that help them prioritize construction projects and justify infrastructure investments.

The CATT Lab has also developed a cutting edge automated data sharing and dissemination system that helps agencies gain situational awareness and communicate information between agencies and to the public. The website provides users with a dynamic set of visualizations and tools that afford efficient situational awareness. Authorized users can interact with live events, incidents, weather, sensors, radio scanners, and other data sources and devices in maps, lists, and other graphics. Users can apply a rich set of filters, access emergency management contact information, and even set up personalized alerts. The system is in use by nearly 200 public safety officials, including military, law enforcement, first responders, and transportation officials in the national capital region.

For more information or demos of these and other existing systems, please visit www.cattlab.umd.edu or call 301.405.0722

By Michael Kinney Montgomery County

Montgomery County Maryland’s Traffic Signal System Modernization (TSSM) program is entering its 4th year of deployment and upgrades. June 2012 was a major milestone for the County completing a system wide conversion to a modern distributed control system. The upgrade provides the County with significantly enhanced system functionality built upon a greatly improved robust architecture. The upgrades establish the foundation upon which the County can now begin to deploy more advanced technologies to more accurately monitor traffic, make better informed decisions, respond to real-time events, and provide higher levels of service to the traveling public. The distributed control system currently supports over 800 traffic signals throughout the County; with about 550 of those belonging to the Maryland State Highway Administration (MSHA), but that are maintained and operated by the County. This past year the County has been focused on installing battery backup units at all County intersections and coordinating installations at some MSHA intersections. These units provide continuous power in the event of utility outages, report back status allowing County officials to track these events and direct limited resources, and improve overall inter- section safety and throughput during outages. Initial efforts are underway to provide additional forms of traffic detection allowing operators and engineers to more accurately measure roadway network performance and provide input to various decision support systems. The County is also preparing its data processing network to exchange information on a regional basis to provide more seamless management and operation of the roadway network within and beyond jurisdictional boundaries. The next phases of this project include incorporating many existing field devices that until now were unable to communicate and be managed centrally. The ability to centrally monitor, control, and change school flasher schedules is being investigated, as is the ability to monitor hazard identification beacons and other devices.

By Raj Sharma Baltimore City DOT

One of the tools used to enhance the performance of transportation management within Baltimore City is Intelligent Transportation Systems (ITS). On-going Electronics. These cameras help the TRIP center in an organized, planned, and coordinated effort to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. Cameras are one of the most cost-effective and efficient methods for incident verification.

The TRIP Center can quickly identify traffic conditions on Prince George’s County arterial streets and share live video with the Maryland State Highway System’s Coordinated Highway Action Response Team (CHART) and the general public through video delivery internet technology provided by Skyline Technology Solutions. This system also provides the capability to stream live video to multiple devices via smartphones and other mobile devices, enhancing traveler information for motorists en route.

By Gerry Amato COHU, Inc.

Prince George’s County Traffic Response Information and Partnership Center (TRIP) enhances Traffic Incident Management (TIM) through a network of Internet Protocol (IP) cameras manufactured by Poway, CA based COHU. These cameras help the TRIP center in an organized, planned, and coordinated effort to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. Cameras are one of the most cost-effective and efficient methods for incident verification.