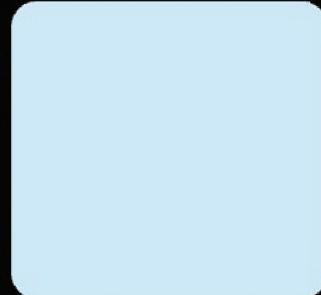
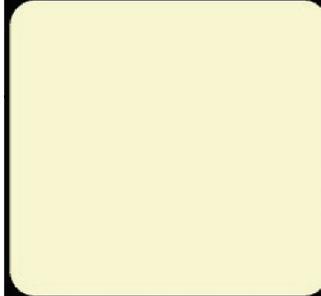
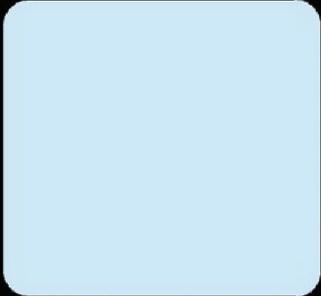
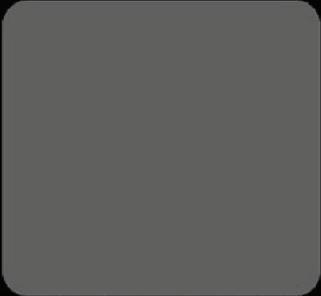


VDOT Virginia Department of Transportation

Hampton Roads

2007 annual report



VDOT
URS

VDOT, Hampton Roads TMC
970 Reon Drive
Virginia Beach, VA 23464
757.424.9903
www.vdot.virginia.gov



URS



2007 annual report

TABLE OF CONTENTS

1	letter from the Facility Manager
2	regional service coverage
4	2007 HRTMC facts
5	FAQs
6	traveler information
10	incident response
16	maintenance support
22	training and safety
26	citizen service

*our mission:
traveler service, 100% accurate,
anywhere, anytime.*

On behalf of our dedicated team, I am pleased to present the 2007 Annual Report of the VDOT Hampton Roads Traffic Management Center (HRTMC). The last 12 months were challenging, yet rewarding. We made great strides in increasing staff training, developing new facilities, upgrading infrastructure, and improving processes and procedures, all for our primary purpose: improving the service delivered to the traveling public.



A key objective in 2007 was the continued investment in our staff, as it is the more than 170 teammates of the HRTMC that make our operation successful. Investments included the completion of operations and training manuals for most departments, such as the Safety Service Patrol (SSP), Control Room, and Field Maintenance departments. Inhouse personnel developed the manuals based on their detailed knowledge and experience, providing expert guidance for new staff to ensure we maintain our strong performance record while enlarging our team.

A major operational change in 2007 will further enhance the HRTMC's service: a new SSP satellite facility located on the Hampton Roads Peninsula, which will support 24/7/365 SSP and equipment maintenance operations. The satellite is located in an existing, under-used VDOT facility, which required only minor funding for reconditioning performed by HRTMC staff. This minimal investment will result in a large payoff in significantly reduced SSP response times on the Peninsula, as well as a strategic new location to facilitate future expansion of the HRTMC.

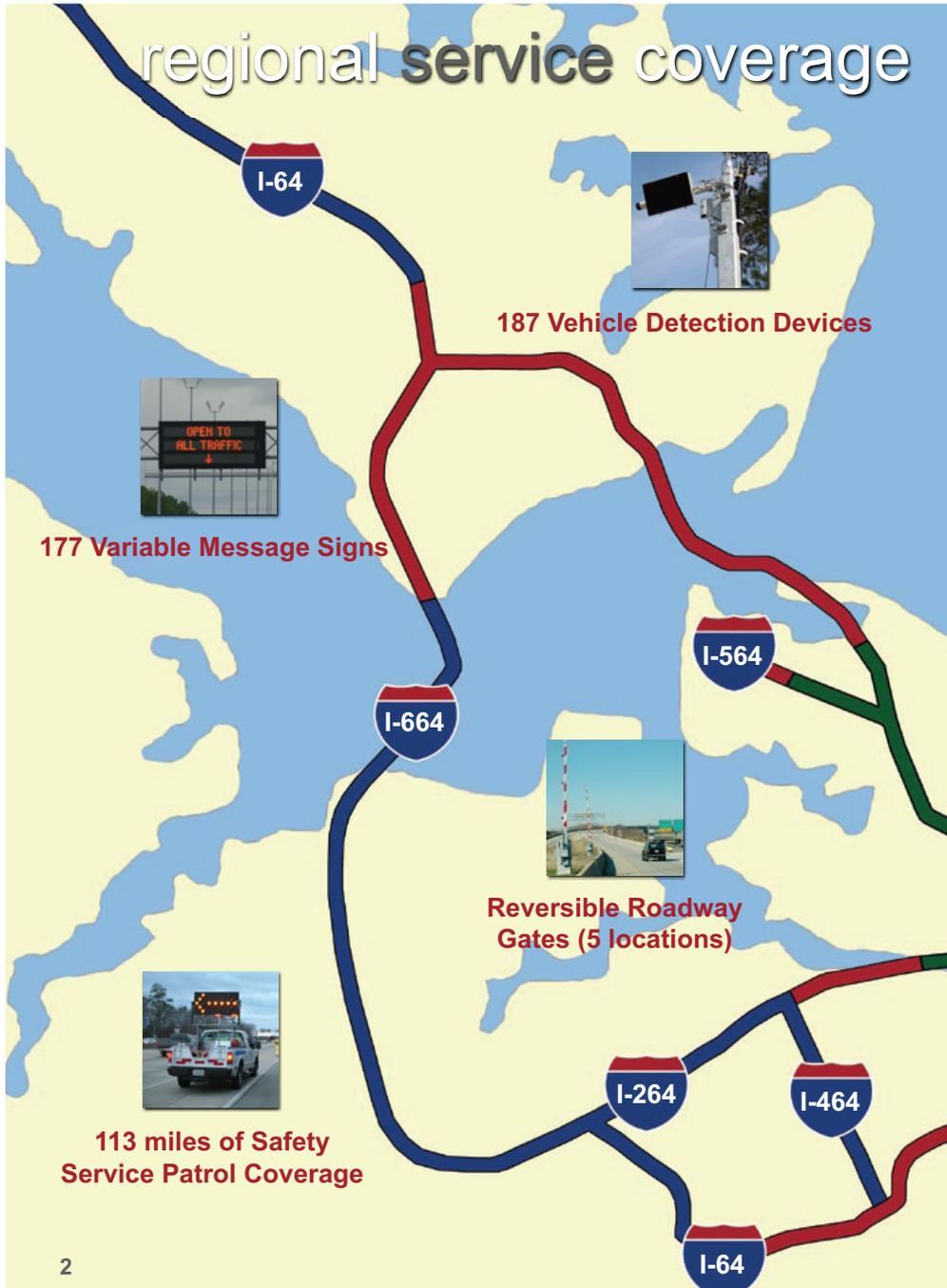
Lastly, we totally overhauled HRTMC's Advanced Traffic Management System (ATMS) in 2007. The new DYNAC ATMS™ software provides our Control Room staff with significantly improved capabilities to monitor and respond to traffic situations and communicate with the public. These system improvements have enabled us to continue supporting our mission statement: traveler service, 100% accurate, anywhere, anytime.

While there are too many other projects to review here, I can guarantee that the dedicated professionals of the HRTMC are working literally day and night to improve traffic conditions and safety in Hampton Roads. 2008 will bring new challenges and successes, all of which provide us the opportunity to do our part to deliver the best transportation system in the Commonwealth of Virginia.

Regards,

Stephany Hanshaw
Facility Manager
VDOT Hampton Roads Traffic Management Center

regional service coverage



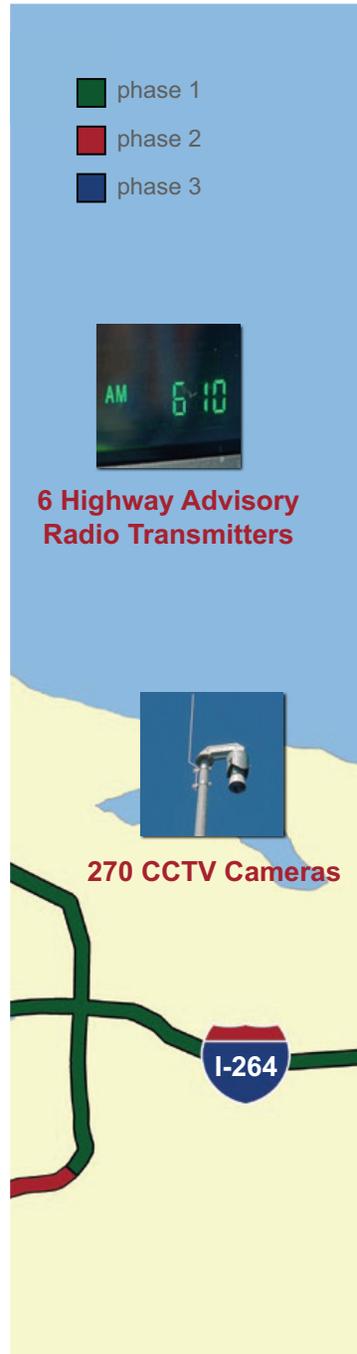
- phase 1
- phase 2
- phase 3



6 Highway Advisory Radio Transmitters



270 CCTV Cameras



regional expansion

Hampton Roads encompasses more than 1.5 million people in ten Southeastern Virginia municipalities, and is one of the busiest seaports on the East Coast. The area contains many military installations, including Naval Station Norfolk, the largest naval base in the world. In 1992, to address growing congestion challenges caused by traffic demand exceeding roadway capacity, VDOT established the Hampton Roads Traffic Management Center (HRTMC). Today, the HRTMC is recognized as one of the largest and most complex Traffic Management Systems (TMS) in the country.



VDOT is developing the service area in multiple phases (phase coverage pictured left). The final section of the Peninsula will be finished by summer 2008, extending the system's geographical service area. Upon completion, the service area will cover 113 miles of Hampton Roads freeway, depicted on the map at left. With the completion of Phase III, the HRTMC looks forward to expanding our regional service coverage to better serve motorists in 2008.

2007 HRTMC facts

74.1% of known incidents were detected by SSPs.

The average SSP response time to a vehicle crash was about 8 minutes.

The average duration of a vehicle crash was 39 minutes.

The Control Room detected 11.1% of all known incidents through CCTV.

The Control Room responded to an average of 122.5 disabled vehicles each day.

The SSPs and the Control Room both responded to over 5% more events in 2007 than in 2006; SSPs assisted 54,841 motorists and the control room responded to 58,295 events.

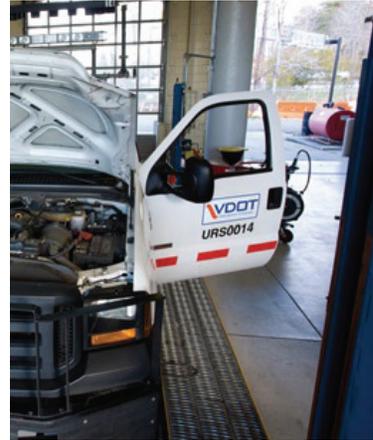
On average, the Field Maintenance Department required about 4.67 hours to respond to and complete corrective maintenance tasks.

The Maintenance Department completed 4,000 tasks in 2007. 2,970 of these taskings were major building or field device service orders.

The Training Department dedicated over 181 training hours (e.g., number of hours per student) for each new employee.

In August 2007, the HRTMC began Bridge and Tunnel Operations and has 30 employees working at the various bridges and tunnels in Hampton Roads.

There are eight divisions at the HRTMC: Administration, Maintenance, Information Technology, Safety Service Patrol, Control Room, Fleet and Asset Management, Training, and Engineering Support. Each group works diligently to provide a critical service to the Hampton Roads community. For the public, this service translates to fewer crashes and secondary crashes, decreased incident duration, enhanced traveler information, and timely motorist assistance.



FAQs

Q: If a Safety Service Patrol stops to assist me, how much does it cost?

A: Nothing. The Safety Service Patrol program is a service provided to the public free of charge.

Q: Are there other TMCs in the state?

A: Yes, VDOT operates TMCs in the Hampton Roads, Northern Virginia, Richmond, Staunton, and Salem areas.

Q: Does the HRTMC record events through its cameras?

A: No, we do not record or archive camera footage and do not provide recordings of traffic incidents.

Q: How do I arrange a tour of the HRTMC?

A: We're always eager to offer tours of the HRTMC to qualified groups. For information please call 757-424-9903 or e-mail hamptonroadsinfo@VDOT.Virginia.gov.

Q: What role does the HRTMC play in the community?

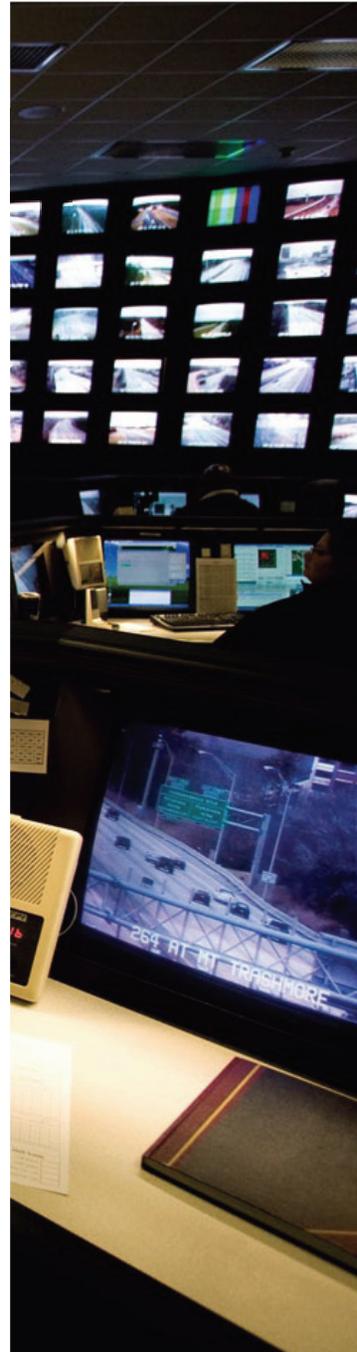
A: Beyond traffic management, the HRTMC supports events aimed at reducing traffic congestion and improving traveler safety, informing drivers, and more. In 2007, the HRTMC led the Regional Concept of Transportation Operations Workshop on incident management in partnership with the Hampton Roads Planning District Commission (HRPDC). We participated in the state's "Are You Virginia's Next Traffic Fatality?" safety campaign, which featured radio ads, a website (www.safevahighways.org), and Variable Message Sign messages to motorists. The HRTMC also recently took the lead on planning the regional emergency evacuation plan for the Hampton Roads area, in the event of an anticipated catastrophic hurricane. The plan's primary goal is to foster a safe environment for evacuation while ensuring maximum traffic flow is maintained at all times.

traveler information



Key Accomplishments in 2007:

- *Launch of upgraded HRTMC Control Room software (DYNAC ATMS™) for improved operational efficiency and accuracy*
- *Improved Highway Advisory Radio message format to public*
- *Standardized VMS congestion message format for tunnels*



communicating with the public

Providing timely, accurate, and useful information to travelers is a core function of the HRTMC. We relay information to the public through many systems and processes, including the Highway Advisory Radio (610 AM), 511 Virginia traveler information program, Hampton Roads TrafficLine (361-3016), and Virginia Operational Information System (VOIS).



These systems are available by telephone, radio, or online at VDOT's website (www.vdot.virginia.gov). Additionally, local television news agencies broadcast HRTMC camera feeds to show real-time traffic conditions. The HRTMC also broadcasts important messages directly to motorists through the many Variable Message Signs that populate local roadways, providing immediate, localized, up-to-the-minute traveler information.

public access to traveler information

Highway Advisory Radio (HAR)

The Highway Advisory Radio transmits advisory and emergency messages to motorists over the radio on 610 AM. Prior to November 2007, HRTMC staff used a library of pre-recorded messages which were manually added to the HAR playlist. With the new DYNAC ATMS™, instead of manually updating the playlist, the incident response management application dynamically constructs messages and automatically updates the playlist in real time.

VOIS

The VDOT Virginia Operational Information System (VOIS) is a web-based application used to share traffic information throughout the organization and with a variety of state agencies including Virginia State Police, Emergency Management Services, Rail and Public Transportation, and the National Weather Service. Through VOIS, the VDOT Transportation Emergency Operations Center in Richmond maintains a critical statewide perspective of the state's transportation network. The public can obtain traveler information through the VDOT website, which receives a direct feed from VOIS, and through the 511 Virginia traveler information system, which is a production of the VOIS data obtained and converted by Virginia Tech Transportation Institute. VDOT has assessed the information sharing needs and is in the process of developing an upgraded version of VOIS called VA Traffic. VA Traffic will provide access to a wider range of agencies and more clear and concise information for motorists.

511 Virginia

511 Virginia is an automated telephone system travelers can call to find out the latest information about road conditions, construction delays, and other incidents affecting travel statewide. VDOT launched 511 Virginia statewide in February 2005 following a successful pilot program. The system was enhanced in August 2007 to include information on bridges, tunnels, and Hampton Roads cities, as well as to improve voice recognition and menu navigation. 511 Virginia is also available online at www.511virginia.org.

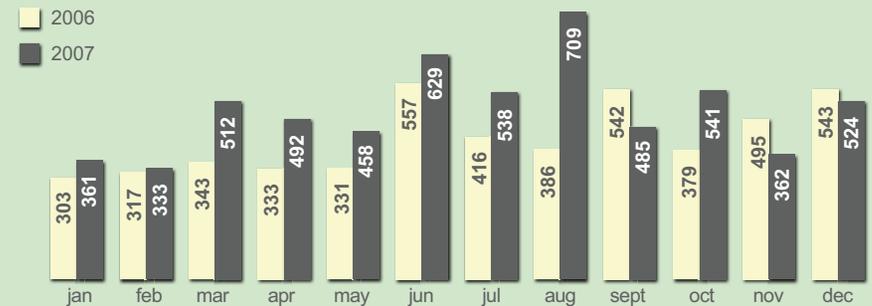
Media Access

Local major network television stations and news outlets have direct access to HRTMC camera feeds. The major news stations use live feeds during news broadcasts as well as incident and vehicle detector data served to the internet in near real-time.

Total Traffic Events Broadcast over HAR by Month



2006 and 2007 VOIS Reports by Month



HRTMC Control Room Updates to 511 (starting September 2007)

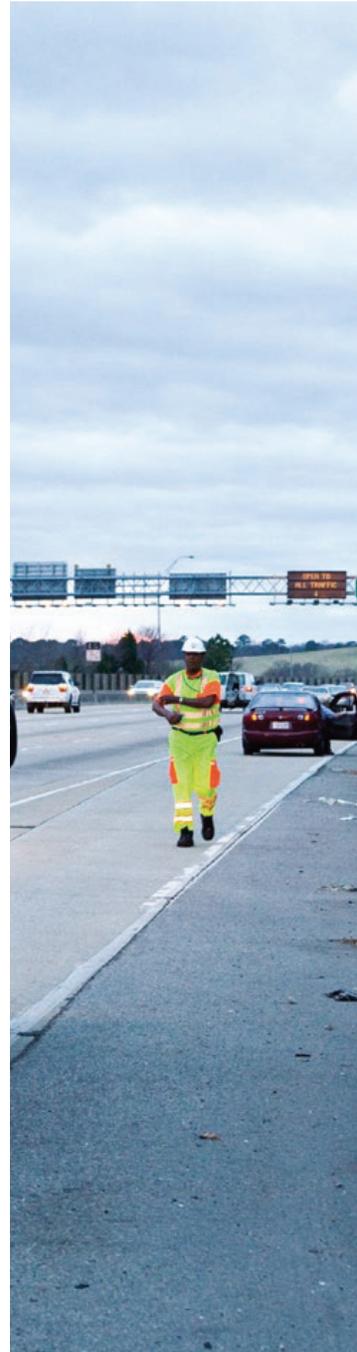


incident response



Key Accomplishments in 2007:

- Educated responders in National Incident Management Systems, First Aid, and CPR, and began holding DMV-certified Driver Improvement Clinics
- 11.11% increase in SSP staffing, resulting in an 18% increase in SSP responses over 2006
- Increase of SSP coverage on I-64 past Ft. Eustis to Lee Hall Road
- Began installation of GPS tracking of all SSP and Field Maintenance vehicles



traffic events

Effective transportation system management and operations depends on the aggressive management of temporary disruptions (caused by traffic incidents, work zones, weather, special events, etc.) to minimize the effects on travelers. The HRTMC is one of VDOT's primary tools for responding to traffic events. Beyond reducing traffic delays, expedited responses to emergency situations are critical to saving lives.



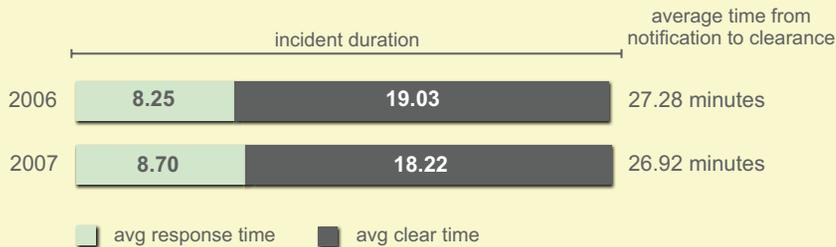
Reducing traffic congestion and improving roadway safety are the highest priorities for the HRTMC. Traffic events are a major source of both highway congestion and safety problems. Traffic events are estimated to cause about half of all traffic delay*. Collisions that result from other traffic events account for approximately 16% of all crashes and cause 18% of freeway deaths*.

*www.ops.fhwa.dot.gov

emergency response

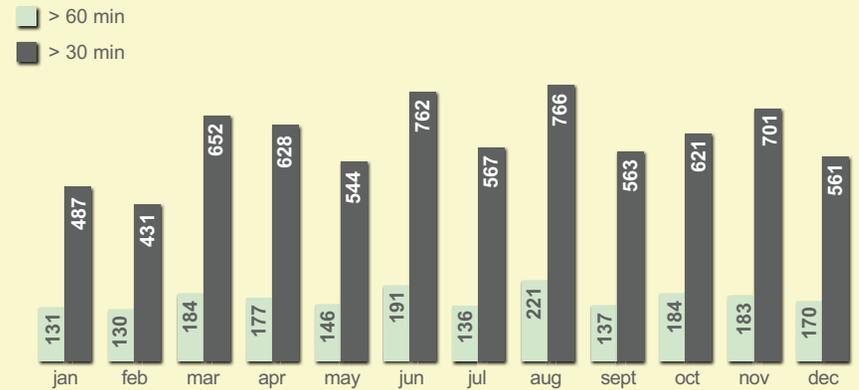
The HRTMC Control Room attempts to manage all detected disruptive events 24/7/365. Methods of detecting events include highway CCTV cameras, SSPs, telephone calls from the public, notification from emergency response agencies, Virginia State Police Computer Aided Dispatch (CAD) and Radio systems, and VOIS. The ability to gather information, initiate responses, and coordinate the activities of multiple agencies is critical to our work. The HRTMC Safety Service Patrol and the Control Room work together with the Virginia State Police, local fire departments and Emergency Medical Technicians, and other agencies to respond to traffic events and emergencies. When an incident occurs on the interstate, the following transpires: 1) HRTMC is notified of an incident, 2) A SSP is dispatched to the scene to provide assistance, 3) After providing assistance, the SSP clears the scene. Incident duration is defined as the time that passes from the beginning to the end of all three of these steps. There were 52,772 incidents counted toward this statistic. This means that the 22 second reduction in incident duration amounts to Hampton Roads' interstates being available for 19,350 more minutes in 2007 than in 2006.

Average Traffic Incident Duration (in minutes)*



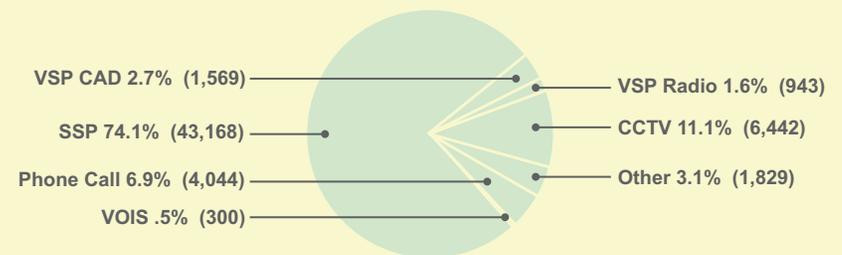
*Incidents are defined as unplanned situations adversely impacting traffic flow such as crashes, debris, disabled vehicles, and abandoned vehicles. Events are defined as "special events" not affecting traffic, as well as the above defined "Incidents". This chart reflects incidents dispatched by the Control Room.

2007 Events Lasting Longer than 30 and 60 Minutes*

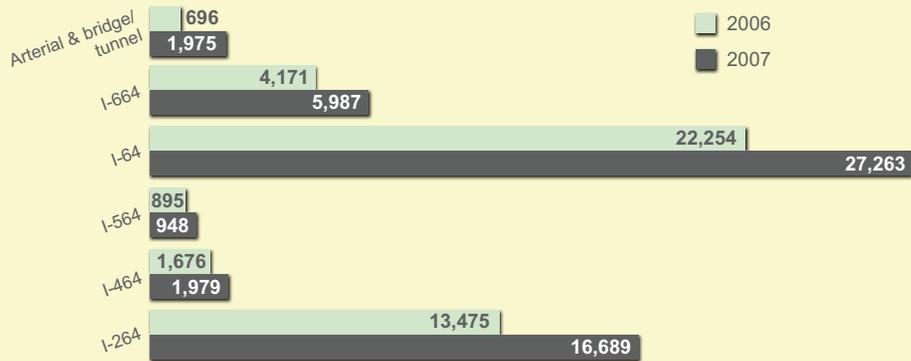


*This chart reflects events that are managed by the Control Room. Incidents and Events are defined on the previous page.

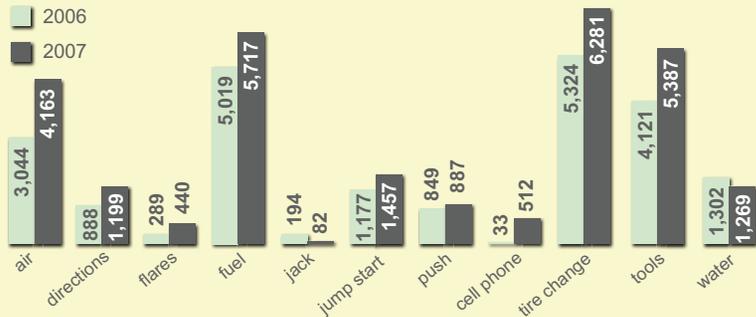
2007 Events by Detection Source



2007 SSP Assists by Roadway



2007 Types of Assistance



During an incident, the HRTMC gathers and processes information, then dispatches a SSP to the scene. Safety is the number one concern of a SSP. When SSPs stop to assist at an incident, they use above-the-cab arrow boards and truck-mounted strobe lights to alert passing motorists of the incident, and their presence on the scene; traffic control devices (orange safety cones and flares) are used to channel traffic away from incident scene. SSPs routinely change flat tires, provide fuel and water, jump start vehicles, and provide directions, among other services. SSP trucks are also equipped with bumpers to push vehicles off the highway to restore traffic flow. The most important tools SSPs bring to the scene, however, are the attitude, knowledge, and skills required to respond quickly and professionally to keep travelers safe and traffic moving.

2007 Most Active Hampton Roads Hot Spots



The map above identifies locations with the highest occurrence of incidents in Hampton Roads in 2007, along with a corresponding incident count for each location. Four incident categories are tracked: crashes, highway debris, disabled vehicles, and abandoned vehicles. The "overall" count at Independence Boulevard and Rosemont Road represents the highest occurrence of all four categories in one location.



maintenance support

Key Accomplishments in 2007:

- *Realignment of all preventative maintenance schedules to improve equipment up-time*
- *Development of a replacement plan for obsolete field equipment based on cost and design lifespan limitations*
- *Streamlining of a prioritized program of corrective and preventative maintenance for all field equipment*
- *Launch of an employee Training and Information Program (eTIP)*



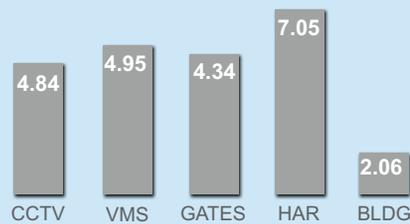
systems engineering

Large and complex Traffic Management Systems are only effective when properly maintained. Our Maintenance Department troubleshoots, repairs, and fine tunes thousands of items among HRTMC's inventory of traffic equipment, facilities, and vehicles each year to maintain maximum operability.

2007 Average Maintenance Times by Priority (in hours)



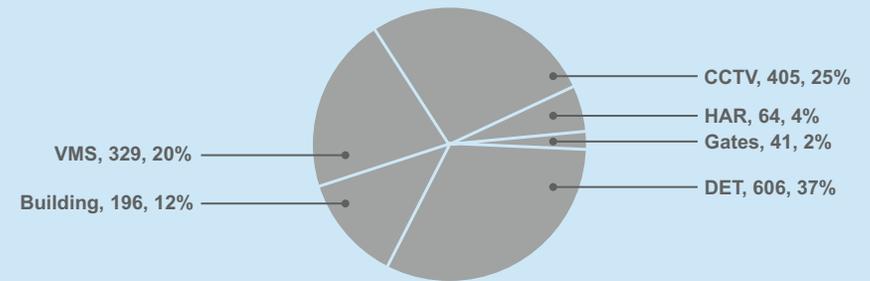
2007 Average Maintenance Times by Device Type (in hours)



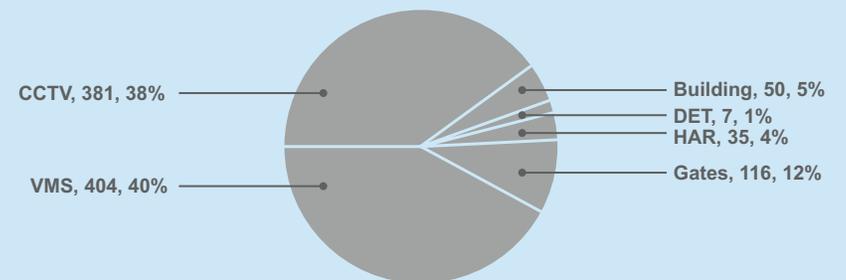
maintenance team

The HRTMC Maintenance Department oversees six major types of equipment that comprise the HRTMC: Closed Circuit Television (CCTV), Variable Message Signs (VMS), Highway Advisory Radio Transmitters and signs (HAR), Vehicle Detection Devices (DET), HOV (High Occupancy Vehicle) - Reversible Roadway Access Gates (Gates), and three buildings. Maintenance tasks are prioritized by the number of hours allowed to perform the work (i.e., a priority one task must be completed within four hours). The graphs above show the average number of hours technicians worked to perform corrective maintenance on all device types by priority level, as well as hours spent for each device type.

2007 Preventative Maintenance by Type



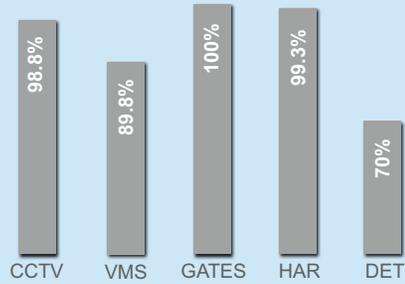
2007 Corrective Maintenance by Type



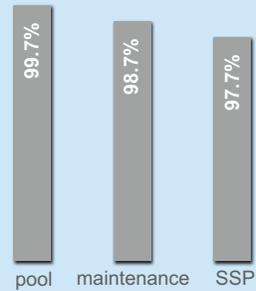
preventative and corrective maintenance

The HRTMC maintenance staff primarily performs two types of maintenance: preventative and corrective. Preventative maintenance is performed by field maintenance technicians twice a year on all devices (excluding overhead VMS and Cameras, which are maintained yearly) to avoid potential problems. Corrective maintenance tasks are performed only when field equipment fails. This overall maintenance support requires both careful planning and scheduling to provide regular attention to virtually every asset we manage, as well as 24/7/365 availability to respond quickly to equipment failures.

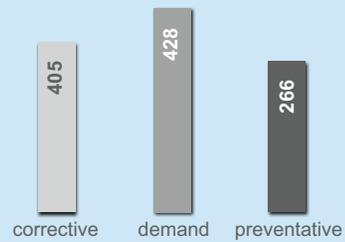
2007 Device Availability



2007 Vehicle Availability

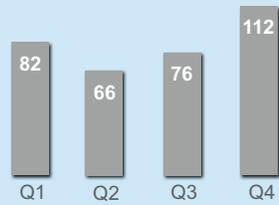


2007 IT Tasks Completed



- *corrective*: when equipment needs repair
- *demand*: a new piece of equipment is required
- *preventative*: regularly scheduled maintenance

2007 Depot Level Repairs* (by quarter)



* Depot Level Repairs: Repairs to electronic equipment at the component level, i.e. chips, resistors, capacitors, etc.

Constructed over 15 years ago, yet routinely undergoing updates and expansions, the HRTMC uses some of the oldest and newest technology. Maintaining this infrastructure requires a diverse group of technicians and specialists from five departments: Field Maintenance, Information Technology, Depot Maintenance, Systems Maintenance, and Fleet and Asset Management. Throughout 2007, the HRTMC maintenance team ensured a high level of availability for both devices and vehicles.



training and safety



Key Accomplishments in 2007:

- Completion and distribution of SSP and Control Room operations manuals, student reference materials, and pocket guides
- Completion of all research and writing for a new Field and Systems Maintenance Operations Manual
- Implementation of an Emergency Action Plan detailing what HRTMC staff should do in case of a fire, medical emergency, natural disaster, or other emergency
- Development of Safety and OSHA Standards Manual detailing new health and safety programs

employee development

Training is the quintessential building block for any process-driven operation, and that certainly holds true for the HRT-MC. Our Training Department has produced significant enhancements to the development and delivery of training.



With over half of HRTMC's employees calling the interstate their place of business, safety is of paramount importance to our operation. The primary goal of our training is to ensure staff members conduct work in a safe manner. Beyond specialized workplace safety training, the Training Department is qualified to conduct training on First Aid and CPR. The department is also certified by the Virginia Department of Motor Vehicles to conduct Driver Improvement Clinics, which are administered to all staff members who may drive on the job.

In 2007, HRTMC employees were offered about 1,300 hours worth of training, including computer-based, and instructor-led, programs.



Total Man Hours of Training Executed (by quarter)



training

As the HRTMC is a 24/7/365 operation, the Training Department must also operate around the clock. Whether in a group setting or one-on-one, the HRTMC makes sure every employee obtains the skill set necessary to work from a knowledgeable and safe perspective. HRTMC trainers are responsible for the delivery of initial and recurrent training curriculums, employee knowledge certification testing, manual development, class delivery, and training record upkeep. National Incident Management Systems (NIMS) training provides an organizational strategy for large emergencies involving responders from multiple jurisdictions. NIMS training is required for personnel by the Department of Homeland Security and all HRTMC employees completed the training in 2007. The graph above provides the total hours of training completed by our staff by quarter in 2007.



In 2007, HRTMC employees completed training for NIMS, CPR, First Aid, and behavior-based safety, as well as a DMV-certified Driver Improvement Clinic.

Ratio of Accidents per 100,000 Miles Driven (by quarter)

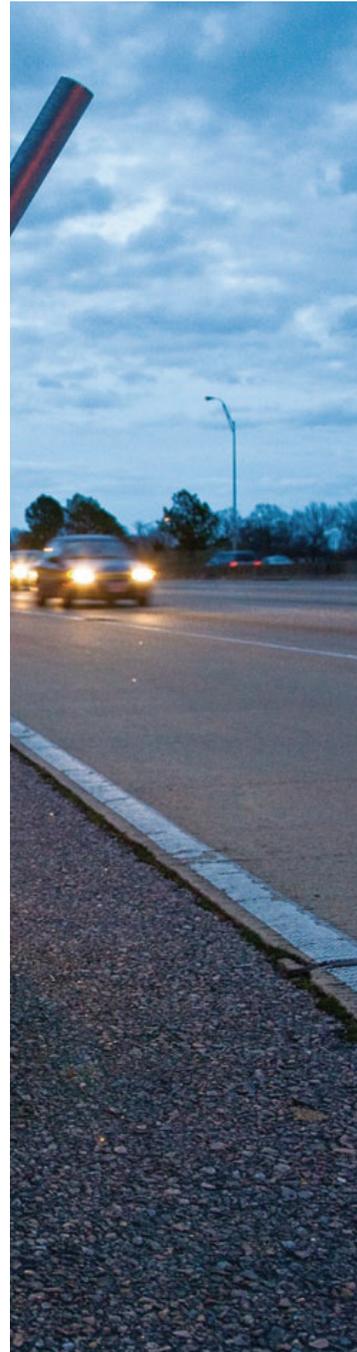


safety management

To maintain a safe working environment, as well as constantly reaffirm our commitment to safety, the HRTMC employs a Safety Officer. The Safety Officer's sole responsibility is to ensure proper safety procedures are documented and executed based on VDOT, OSHA, and HRTMC safety guidelines. The graph above details the average number of accidents (negligent and non-negligent) sustained by SSPs per 100,000 miles driven in 2007. The HRTMC Safety Officer implemented health and safety programs such as fire prevention, exposure control, Hepatitis B vaccination, hazard communication, equipment maintenance isolation, and a new drug and alcohol testing procedure in 2007.



citizen service



serving the public

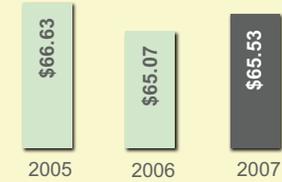
The HRTMC serves an increasing number of travelers each year. In 2007, the SSP assisted nearly 55,000 motorists—over 25% more than just two years ago. Serving the public, however, is about more than just the number of motorists assisted; it is also about the safety of all parties involved, the responsiveness of our employees, and the overall value of service provided to the public. We actively seek public feedback, as the traveler's perspective is invaluable as we seek to identify ways to continually improve our successful operations and high level of service.



Amount of Motorists Assisted Yearly



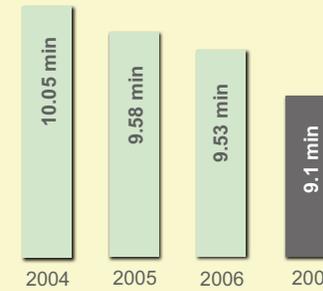
Perceived Value of Services Received from the SSP Program



How Would You Rate the SSP Service?



Perceived Time Spent Waiting for SSP Driver



One of our most immediate means of garnering feedback is through the distribution and collection of mail-in comment cards, which are provided to the motorists assisted by SSPs. Comment cards provide an opportunity for the public to communicate their first-hand experience to HRTMC management. As illustrated in the bottom table, the majority of all motorists surveyed continue to rate the SSP service as "excellent." Unsolicited feedback is also closely monitored, which travelers routinely provide in the form of phone calls, e-mail, and letters to our Public Relations Department.

Comment cards provide motorists the option to estimate the monetary value they place on the SSP service within several provided ranges of value (i.e. \$50 - \$100). The average perceived values motorists placed on the SSP service is provided in the top table above. Motorists can also tell us how long they waited for SSP assistance on HRTMC's comment cards. In 2007, as portrayed in the bottom table, a SSP driver responded in an average of 9 minutes and 6 seconds, based on motorist estimates.

citizen comments

"I was on Rt. 64 traveling to Maryland when another driver told me I had a flat. Jacob happened to be on lunch break at the service station I pulled into. He put on my donut and checked the air in the other tires. Thanks!"

"The service I received was life saving"

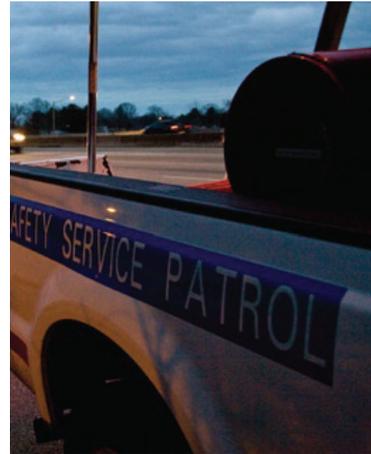
"This was amazing. I ran over something in the road and in less than a couple minutes help was there to change it. Five minutes later I was safely back on the road. He was very courteous and nice. I know nothing about cars. Thank him very much."

"Great Service! Great guy and worker. Thank you very much. Enough gas was provided to reach station, which helped me avoid any accidents on the freeway. Thank you."

"Outstanding service! Just moved from Florida and couldn't call anyone for help. Thanks so much!"

"I had my flashers on for about 3 minutes when Suzanne came behind me - it was so cold and she told me to stay in the car and she checked all the pressures, she was extremely polite and very professional."

"A world of THANKS to the great directions and road maps."



know before you go

Check traffic conditions before you begin your journey. There are a variety of tools in place to help you learn of roadway conditions in Hampton Roads so you can avoid congestion. Know Before You Go – use one of the methods below to check road conditions before venturing out on the interstate:

www.vdot.virginia.gov

Visit the Virginia Department of Transportation's web site, and view the traffic cameras online.

VMS

Read the Variable Message Signs; they are there to keep you informed. VMSs will tell you if an HOV Lane is open to all traffic, if there is a disabled vehicle ahead, and other traveler information.

HAR Radio, 610 AM

Tune in to the Highway Advisory Radio (HAR) service. Every incident that impacts traffic will be described in detail. If you cannot pick up HAR transmission on 610 AM, call TrafficLine at (757) 361-3016, which broadcasts HAR Reports.

Dial 511 Virginia

Call 511 for statewide travel conditions. You can navigate through the system and select the Hampton Roads Region or area bridges and tunnels.