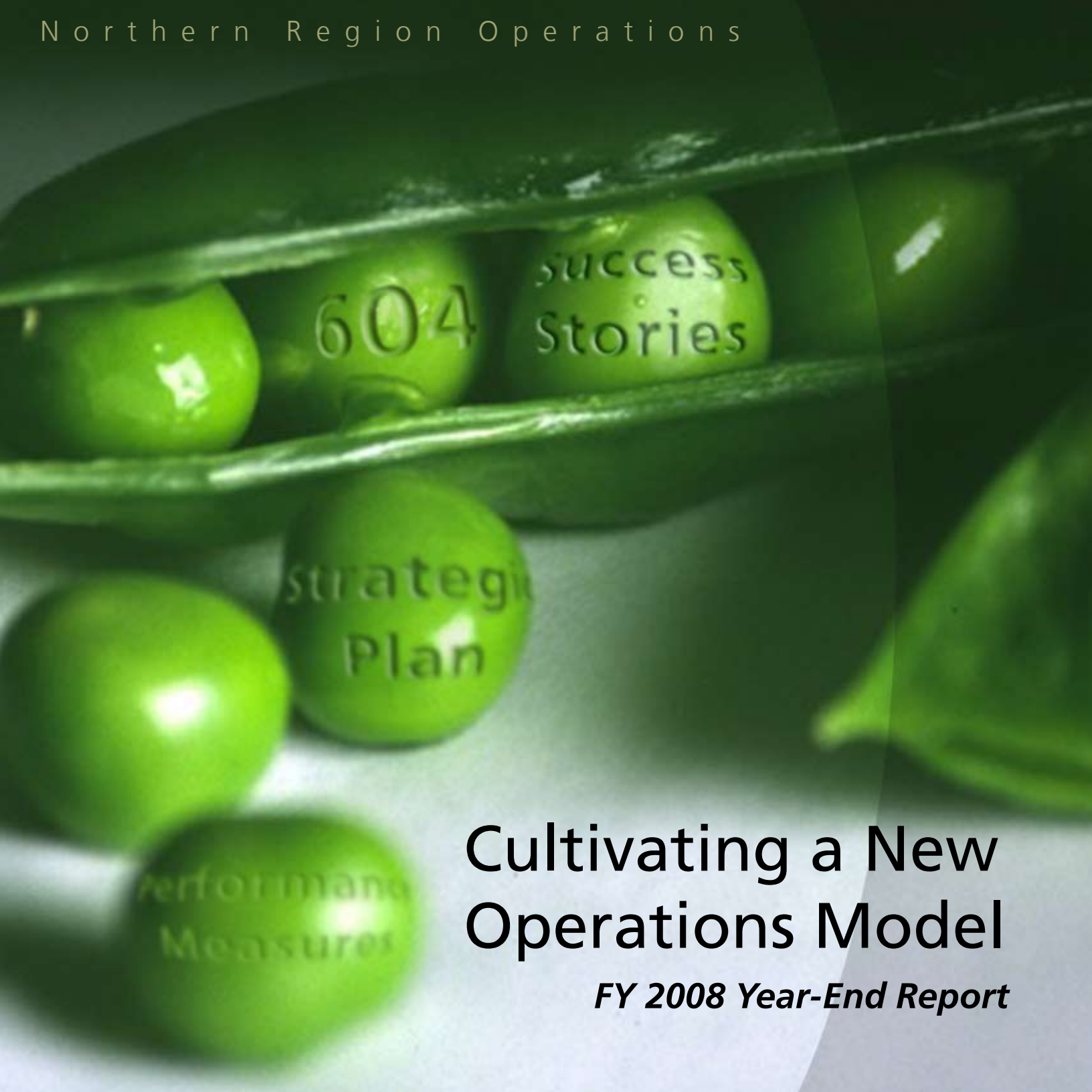
Northern Region Operations



Cultivating a New Operations Model

FY 2008 Year-End Report

Cultivating a New Operations Model

I am pleased to present the Virginia Department of Transportation (VDOT) Northern Region Operations (NRO) Year-End Report for the fiscal year ending June 30, 2008 (FY-08). This report summarizes the goals, objectives, successes, and challenges for FY-08 and outlines our strategies for FY-09 and beyond.

Since NRO was established in 2006, we have focused on developing and adhering to a strategic approach to operations – from project planning through implementation. This year we have taken that approach one step further by transitioning from traditional project-by-project planning to comprehensive systems planning that develops integrated solutions for the entire operations system.

In addition to our Strategic Plan – which will provide detailed guidance for decisions regarding NRO resources over the next four years – NRO has developed several system master plans. These plans will guide the successful deployment of NRO systems and ensure that the various components work seamlessly together to improve safety and mobility on the Region's roadway network.

Another major step for NRO this year was the Telecommunications Internet Protocol (IP) Migration from analog to digital video data transmission. The new system has the capacity to transmit larger amounts of information and expand to include multi-jurisdictional video and data sharing.

Perhaps the biggest challenge we faced this year was a severe weather event in February that left motorists stranded for up to nine hours at the Springfield Interchange. Commissioner David S. Ekern called it a perfect storm, referring to the lack of warning, rapid freezing, and time of day the storm hit.

When VDOT reviewed the incident, we discovered that the operations system did not have adequate sensors to alert traffic operators to the impending conditions and traveler information channels were not used effectively. Since then we have moved forward with a plan to ensure that working message signs are in place throughout the region. We have also developed a 24-7 on-call system to ensure that someone with decision-making authority is available in the event of any emergency.

Over the past year, NRO has grown from a newly formed directorate with an assortment of critical components into a cohesive organization with unity of purpose, unity of vision, and unity of goals. The Region simultaneously worked to fulfill the goals set forth in FY-08 and to build the foundation that will guide NRO for years to come. In FY-09 we will continue to leverage existing resources and incorporate new technologies to promote safety, reduce congestion, and provide information and choices to Commonwealth travelers.

This is the commitment of my staff and I to you.

Richard W. "Dick" Steeg, P.E.
Northern Region Operations Director

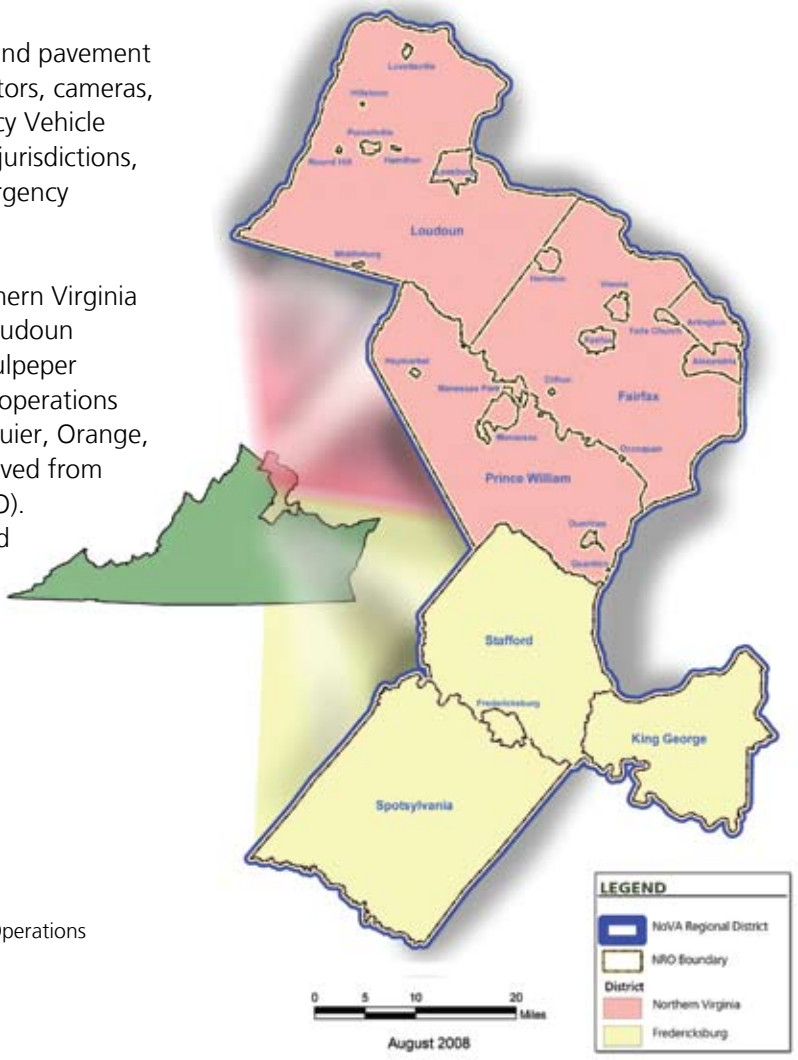
Introduction and Overview

About NRO :

The Virginia Department of Transportation's (VDOT) Northern Region Operations (NRO) Directorate leverages existing resources and incorporates new technologies to promote safety, reduce congestion, and provide information and choices to Commonwealth travelers.

Operations assets include traffic signals, signs, and pavement markings; ITS field devices such as vehicle detectors, cameras, and dynamic message signs; and High Occupancy Vehicle (HOV) facilities. NRO also coordinates with local jurisdictions, manages roadway incidents, and facilitates emergency evacuation planning.

For FY-08, NRO encompassed all of VDOT's Northern Virginia District (Arlington, Fairfax, Prince William, and Loudoun Counties) and parts of the Fredericksburg and Culpeper Districts. At the end of the fiscal year, statewide operations were strategically re-aligned and Culpeper, Fauquier, Orange, Madison, and Rappahannock Counties were moved from NRO to Northwestern Region Operations (NWRO). Interstate-95 within Caroline County was moved from Central Region Operations (CRO) to Northern Region Operations.



Northern Region Operations
Boundary Map

NRO's Vision

"Making NRO roadway travel safe, efficient, and reliable."

– Draft NRO Strategic Plan

NRO's Business Process

NRO's innovative Planning and Programming Process integrates planning, implementation, and performance management to help the Region achieve its vision in the most fiscally responsible manner possible. The process involves developing the annual strategic focus, identifying program and project needs, prioritizing needs based on established goals and objectives, and budgeting across multiple federal and state funds to provide resources for NRO initiatives. During the process, NRO managers come together at each milestone to develop ideas, discuss the implications of various options, and determine the best steps to move forward. The FY-08 process is outlined in the annual Strategic Investment Program Plan (SIPP) and culminates with this Year-End Report.

The Year End report falls under the Program Evaluation portion of the process.

Strategic Focus

NRO's FY-08 Strategic Focus established four key goals that mapped to VDOT's organization-wide emphasis on Reshaping the System, Reshaping the Business, and Reshaping the Workforce. The goals also supported the Department's new commitment to the vital mission of Supporting Emergency Response.

Goal 1: Enhance Public Safety

Goal 2: Enhance Mobility / Efficiency

Goal 3: Enhance Traveler Information

Goal 4: Enhance Operations Management and Support

Progress Towards Strategic Focus

Goal #1: Enhance Public Safety

As the various stages of construction with work zone safety measures are implemented, there are indirect or secondary effects on the traffic adjacent to work areas. The Transportation Management Plan (TMP) has been developed collaboratively with local first-response authorities to address shifting traffic volumes and patterns in these areas, providing greater safety as well as enhancing mobility and efficiency. Alongside the Metropolitan Area Transportation Coordination (MATOC) program, NRO actively coordinates with the public safety community through the Incident Management Group and utilizes the CapWIN tool to communicate and coordinate with other transportation agencies across the National Capital Region. Key highlights include:

- **Identified high-priority expansion routes for the Safety Service Patrol (SSP).** Due to limited resources SSP coverage was not expanded as planned, but the prioritized routes will enable NRO Safety Service to quickly and effectively allocate funding if and when it becomes available.

- **Identified evacuation routes for the Disaster / Emergency Management and Evacuation Strategic Plan.** The routes were approved by the Metropolitan Washington Council of Governments and the Virginia State Governor.

- **Continued development of proactive arterial corridor analysis and safety flow improvements.** NRO Traffic Engineering completed multiple capacity and safety studies and initiated projects at several key sites to improve safety and mobility in the region.

- **Acquired and deployed portable Dynamic Message Signs (DMS) at Interstate High Hazard Locations**. Although the project was successful overall, some of the signs did not meet system communications requirements. The DMS Master ConOps provides guidelines on the system requirements, so NRO should not face similar problems in the future.

- **Developed and implemented a remote deployment strategy for NRO personnel at existing VDOT facilities.** The project enables staff to be staged in strategic locations rather than having to report to the Transportation Operations Center (TOC).

The Intelligent Transportation System (ITS) device master plans and Decision Support Tool developed in FY-08 will also provide the foundation for better corridor management and improved operations in the future.

Goal #2: Enhance Mobility / Efficiency

With the first or second most congested transportation network in the country (depending on the study) and limited space and resources to expand infrastructure, transportation operations in the Northern Region are critical to enhance mobility and efficiency on the roadway network. In FY-08, NRO moved forward with several strategies to increase mobility in the Region, including the development and implementation of Advanced Transportation Management System (ATMS) software, Intelligent Transportation System (ITS) planning, signal optimization, and engineering analysis. Key highlights include:

- **Initial deployment of ATMS functions**. Operators are currently being trained to begin operating the system in the second quarter of FY-09.
- **Integration of critical traffic operations software** including ATMS and RITIS, which will reduce the need for TOC operators to manually enter data for regional data sharing. Integration with VaTraffic in FY-09 will significantly reduce multiple data entry and enhance data sharing with the Virginia 511 traveler information system.
- **Planning for Intelligent Transportation System (ITS) technologies** including prioritized ITS expansion corridors, DMS, CCTVs and Detectors.
- **Reduced the length of the signal system optimization cycle** from 4 to 2 years, which will better reflect current traffic patterns.
- **Developed a real time freeway monitoring system** to turn traffic data into information that can be analyzed to better understand traffic patterns and develop strategies for improvement.
- **Conducted Analysis and performed public outreach** with the Fairfax County Government, FHWA, VDOT leaders and AAA concerning the extension of usage hours for the I-66 shoulder lanes, implemented in FY-09.

The Region moved forward with its investigation of adaptive signal control in FY-08, but a separate project will address signal controllers and software in FY-09. The Intelligent Transportation System (ITS) device master plans and Decision Support Tool developed in FY-08 will also provide the foundation for better corridor management and improved operations in the future. Additionally, the tool will help NRO Planners reduce the time needed to narrow down potential ITS solution options and facilitate ITS-TE integrated solutions.

Goal #3: Enhance Traveler Information

Each time a motorist enters area roadways, he or she is faced with a series of choices that could result in more or less time spent getting to a destination. By providing timely and accurate information, NRO can help individual travelers make the best possible decisions and therefore increase the efficiency and reliability of the Region's roadway network. In FY-08, NRO continued to collect and disseminate traffic information through the Transportation Operations Center (TOC) while developing strategies to collect accurate and useful data and to display information through Dynamic Message Signs. Key highlights include:

- **Maintaining and Upgrading DMS assets**. The NRO Maintenance Section aggressively maintained about 200 signs in the Region despite the lack of contractors, but many of the signs are sorely outdated. Phase I of the DMS Upgrade Master Plan was competed and transitioned to Systems Engineering for detailed requirements. Subsequently, a design task was established to move the upgrade one step forward

- **Initial planning for the DMS Travel Time project**, which will collect and fuse real-time traffic condition data and post the information on message signs. The Planning and Programming team completed the preliminary investigation study, scoped the travel time program, and drafted the concept of operations for initial deployment, but the project was set back because of rescinded earmarks. As a next step for FY-09, NRO staff will utilize existing public and private data to develop a pilot program for disseminating information for travelers, such as travel times.

- **Tyson's Corner traveler information display**. The Planning and Programming team coordinated with Mega Project managers, the Central Office traveler information program manager, and mall representatives to include plasma televisions with traveler information at key locations in the mall.

Goal #4: Enhance Operations Management and Support

To continue advancing our goals of improving safety, mobility, and reliability on our roadways, we must maintain a solid foundation within our organization and effectively collaborate with outside groups to promote the best interests of the Region. In FY-08, NRO continued to build upon a culture of integrated transportation operations within our organization and among our area partners. A few highlights:

- **Integrated District needs** when identifying funding requirements through outreach sessions with VDOT Residencies.

- **Planned, designed, and implemented new telecommunications architecture.** The Systems Engineering section successfully procured and implemented a digital data network and Ethernet fiber backbone. The network improves data flow, efficiency, and reliability while connecting major centers such as the Public Safety Transportation Operations Center (PSTOC) and Traffic Field Operations (TFO). The system is also capable of expanding to encompass the entire NRO footprint – hopefully in FY-09.

- **Expanded and enhanced the regional ITS Architecture.** The Planning and Programming team initiated the project and coordinated with the statewide architecture development to build consistency.

- **Interfaced regional operations activities with major construction projects.** The Planning and Programming team coordinated with stakeholders leading major construction projects to ensure that ITS strategies were integrated into the projects and that planned devices would meet NRO needs. The effort allowed NRO to identify locations for ITS devices and overlay them with our own system master plans. At the same time, NRO is working with VDOT Mega Project Staff to develop and implement ITS / incident management strategies that will help improve safety, provide a high level of mobility, and offer reliable information to travelers to better plan their trips throughout the construction period.

- **Continued to coordinate with internal and external partners.** NRO actively worked with area metropolitan planning organizations (MPO); traditional VDOT teams such as Transportation Planning, Location and Design, and Preliminary Engineering; and localities in the Northern Region to increase awareness of ITS Project Development and integrate ITS strategies into area transportation plans.

Success Stories

Traffic Operations Develops Real Time Freeway Monitoring System

The growing use of freeway performance measures – ranging from site-specific operations analysis to area-wide planning and public information studies – has recently been elevated even further to account for public demands and state and federal initiatives. The availability of vast amounts of information including traffic data, operations activities, equipment usage, and other agency databases enables comprehensive system analysis and decision-making support.

Real-time freeway performance monitoring and analysis is now a critical component of NRO's efforts to promote safety, reduce congestion, and provide real-time information and choices to Commonwealth travelers. Unfortunately, the Region's traffic management system once had limited data views and no data export function. Existing tools offered the ability to measure high level goals and objectives, but the Region did not have a way to measure the effectiveness of local strategies and tactics and lacked the capability to support real-time active traffic management.

Over the past 18 months, the Region worked with a team of graduate students from Virginia Tech to develop a real-time freeway traffic monitoring application for NRO's Traffic Operations Section. The tool was designed to fuse different traffic related data sets, aggregate data temporally and spatially, display real-time freeway monitors, provide performance measurement calculations, and process algorithms to support active traffic management strategies.

By linking the performance data back to NRO's goals and objectives, real-time information (i.e. travel time, bottle-neck identifiers, shoulder running, traveler information, etc.) – in conjunction with rich archived historical data – will indicate whether operational and policy goals are being reached and if management decisions are having the desired effects. This in turn leads to more informed decision-making. Strategies that improve system performance can be defended and continued while those that have little or negative impact can be revised or abandoned.

Types of Performance Measures:

- Output / Efficiency Measures: relate to quantifiable data, levels of effort expended, scale or scope of activities, and the efficiency in converting resources into some kind of product.

- Outcome / Quality of Service Measures: relate to how well the Regency is meeting its mission and stated goals or the nature and extent of the services provided to transportation users.

Traffic Engineering Removes Bottlenecks on NRO Corridors

NRO Traffic Engineering continued its successful Bottleneck Relief Program in FY-08, initiating work at 10 key sites in the region. The program improves the safety and increases capacity by extending lanes, providing additional access points, low cost signs and pavement marking modifications, and sidewalk improvements. The projects enhance safety and mobility at a relatively low cost to Commonwealth taxpayers.

Access Points

Traffic Engineering opened a ramp that was left closed by the Springfield Interchange Improvement project to provide an additional access point from Route 644 to the Capital Beltway. The staff coordinated the efforts of Maintenance, Sign, and Marking crews to successfully complete the task along with outreach assistance from Public Affairs.

Lane Extensions

Low-cost lane extensions were implemented at three key intersections to provide additional space for turning vehicles, protect driver maneuvers, and reduce traffic merges. The projects minimize backups, improve traffic flow, and lower risks and hazards, and all three efforts were conducted quickly with minimal lane closures. The projects included:

- 250 feet of left turn lane on southbound Route 244 at Columbia Pike and Braddock Road,
- 300 feet of pavement allowing a full three-lane section on eastbound Route 50 at Stonecroft Boulevard, and
- An eastbound left-turn extension and westbound left-turn lane on Route 606 / Old Ox Road at Pacific Blvd.

Pedestrian Walkways

Accessible ramps, crosswalks, and pedestrian warning signs were added at:

- Route 120 / Glebe Road between the Interstate-395 ramp and 26th Road South, and
- Route 29 / Lee Highway at the Interstate-66 ramp.

The walkways increase access and connectivity by delineating crossings for pedestrians and motorists to share the road in a safely and orderly manner.

Pavement Markings, Signs, and Signals

The Traffic Engineering team used pavement markings, signs, and traffic signal improvements to enhance safety for pedestrian and vehicular traffic on Burke Commons Road. The team also used markings and signs to create lane assignments at the Dulles Toll Road-Route 28 Plaza resulting in smoother flow and decreased backup.

Success Stories *continued...*

Planning and Programming Team Develops System Master Plans

The NRO Planning and Programming Team developed the Concepts of Operations (ConOps) and system master plans for Dynamic Message Signs (DMS), Closed Circuit Television (CCTV) Cameras, and Detectors. These documents are based on the needs of stakeholders across the Commonwealth and serve as blueprints for upgrading and expanding NRO's Intelligent Transportation System (ITS) infrastructure in a systematic approach for meeting identified transportation needs. The plans were developed based on priority corridor bundles which promote the integrated corridor management philosophy.

Dynamic Message Signs (DMS) are a direct information link between VDOT and the traveling public. They convey information about prevailing traffic conditions and can influence driver behavior, route choice decisions, and improve overall transportation network efficiency. The DMS Master ConOPS calls for about 200 signs including 82 sign upgrades, 13 sign replacements, and 67 new signs.

The Closed Circuit Television (CCTV) Camera system gives the Transportation Operations Center (TOC) the ability to detect incidents, verify incident information, and monitor traffic conditions on the roadways. CCTV images can be shared with regional and state stakeholders to improve interagency coordination. Additionally, video images depicting real-time roadway conditions will be available to the traveling public. The plan calls for the VDOT NRO CCTV System to contain 557 cameras after a 20-year build-out.

Detectors enable transportation system performance measurement, allow roadway condition monitoring, and support real-time traveler information and near-term traffic forecasting. Detection data will be shared with appropriate regional, statewide, and private sector stakeholders to improve interagency coordination and deliver real-time traveler information such as travel times.

If these plans were part of the human anatomy, Detectors would make up the nervous system, CCTV Cameras would work as the eyes, and DMS would be the voice of VDOT. Ideally, in the event of another ice storm, traffic operators would display warnings on working, well-placed DMS signs, continue to monitor cameras for incidents, and monitor traffic conditions and conduct post-incident performance reviews using detector data.

Systems Engineering Migrates Telecommunications System

During FY-08, NRO Systems Engineering planned and implemented the transition from analog to digital data on the Region's telecommunications network. The goal of this effort was to create a system to support NRO's overall ITS infrastructure for the next 1-3 years in a way that would be adaptable to future expansion. Additionally, the IP Migration project would increase the network reliability by taking advantage of fiber resource sharing along Route 234 to eliminate single points of failure along I-66 and I-95.

The plan was separated into two phases. Phase I transitioned current communications from analog to digital data, and Phase II identified of a future growth network for the region. The goals of the Telecom IP Migration include:

- Increased redundancy and reliability and enable proactive maintenance
- Unified command/control from the Transportation Operations Center (TOC)
- Migration to a network architecture that unifies disparate network systems (data, video, voice)
- Capacity to add and grow easily (volume and capabilities)
- Enable multi-jurisdictional video and data sharing
- Integration of alarms and other subsystems with video

The transition to digital data also makes information sharing much easier, providing the opportunity for NRO to disseminate data to the public more efficiently.Currently, all signals are transmitted to an external vendor who converts the analog data into a digital feed. The ability for anyone to view the cameras and other devices on NRO's operations system creates more options for the Region and reduces the dependency on the private sector to provide this service.

Performance Measures

Performance measurement is the use of data to evaluate progress toward strategic goals. NRO uses performance data to prioritize projects (investments), analyze programs and processes, and drive improvements to organizational activities for the Region. Currently, NRO depends on the VDOT Dashboard for safety, project delivery, and highway performance measures. However, the dashboard separates data by construction district and lacks measures to evaluate critical operations activities such as traveler information and the availability of field assets.

Aligning NRO's performance management program with strategic planning activities is a top priority for the Region, but so far the project is delayed pending a statewide effort. Performance measurement continues to be a priority, and projects such as the Regional Integrated Transportation Information System (RITIS) and ATMS will enable the data collection efforts necessary to make the program a success. Currently, transportation operators manually enter data into a temporary incident management tool that is transferred to RITIS. ATMS will provide a data link to RITIS and reduce the manual entry.

Safety

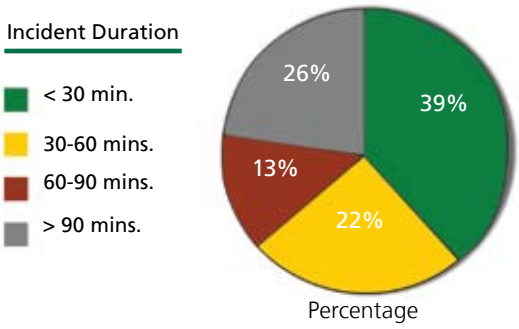
(The number of crashes and incidents in Northern Virginia measure the safety of NRO roadways.)

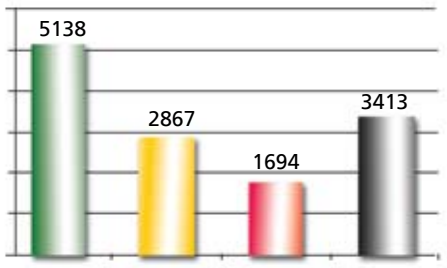
	3/07 - 3/08	3 Year Average
Crashes	32,288	35,792
Injuries	15,293	16,787

Source: VDOT Dashboard (March 2007 – March 2008)

Reliability

(The duration of incidents demonstrates the reliability of the roadway system.)



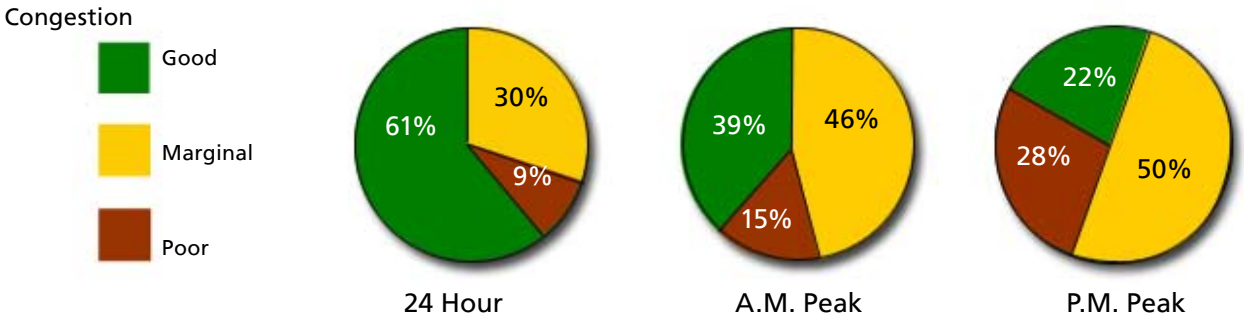


Total 13,112 Average Duration 87 mins.

Source: RITIS (July 2007 - June 2008)

Mobility

(The amount of congestion on interstates and primaries indicates the level of mobility in the region.)



Source: VDOT Dashboard (July 2007 - June 2008)

NRO's top goals for FY-08 were to improve safety and mobility on the roadway network. Although Region-wide performance measures have not been developed, NRO leveraged existing information to evaluate its FY-08 activities. The number of crashes and injuries indicate the level of safety on the network, and the level of congestion can be used to assess mobility. Incident duration indicates the reliability of the roadways, which is another top priority for the Region.

The 10 percent decrease in crashes and injuries from the 3-year average suggests that VDOT's efforts to improve safety have been successful in the NoVA District. The deployment of DMS at interstate high hazard locations should help maintain the trend toward improvement in the future.

Unfortunately, there is no adequate historical data to compare incident duration and congestion. The incident duration data suggests that additional investments will be necessary to meet NRO's goal of clearing 90 percent of incidents within 90 minutes. In FY-08, about 26 percent of incidents lasted longer than 90 minutes, leaving a 16 percent gap between the desired and actual performance. Use of DMS and ATMS software and active coordination through NRO's Incident Management Group will provide enhanced traveler information which may enable improvements to roadway reliability in upcoming years.

The congestion data suggests that roadways in Northern Virginia are adequate overall, but performance during the PM peak period continues to be a challenge. The initiation of mega projects such as the HOT lanes and I-66 widening will more than likely result in increased congestion over the next few years, but will improve corridor capacity in the long run. In the meantime, traffic management planning and the expansion of shoulder travel lane usage will hopefully minimize the impact of the construction.

As NRO's performance management program continues to develop, funded projects will be mapped to performance measures to provide better information for investment decisions. The information in this report will also serve as a baseline for upcoming fiscal years.

Strategic Investment Program Plan

Each year, NRO develops a Strategic Investment Program Plan (SIPP) to provide a framework for the effective management and operation of the Region's roadway systems. The plan is a product of NRO's annual Planning and Programming Process and lays the foundation for program delivery, evaluation, and future updates. To develop the SIPP, NRO managers work together to establish the annual strategic focus, identify and prioritize funding needs, and consolidate the information to develop a balanced budget.

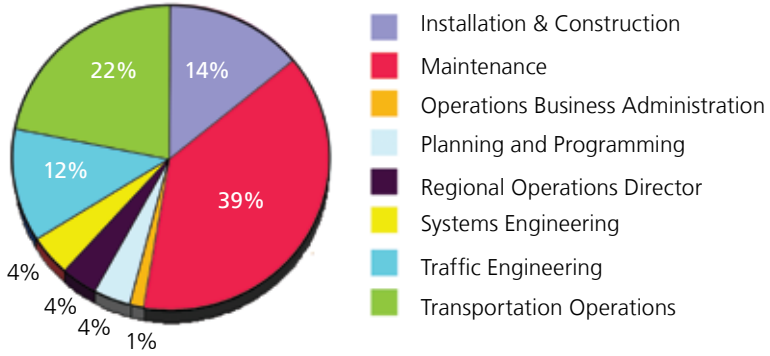
In FY-08, NRO received about $52.5 million from 604 state and federal funds. The Region spent $49 million of the 604 funds for a balance of about $3.5 million. NRO's expenditures were about 6.8 percent less than the amount allocated, which is outside of the -3 to 0 percent target. However, all of the unclaimed resources were federal funds that were allocated for specific purposes and can be carried over into FY-09. Those initiatives – including the ATMS Replacement, Signal Installation, and TOC and SSP operations - occur on a multi-year basis and receive funding spread over several years.

NRO's resources were divided among eight responsibility areas to fund day-to-day operational expenses (salary and benefits, materials, equipment, overhead, etc.) as well as operations programs and projects.

Section	Amount Allocated	Amount Spent	Difference
Installation & Construction	$ 7,231,046	$ 4,763,248	$ 2,467,768
Maintenance	$ 20,419,177	$ 20,507,677	($ 88,500)
Operations Administration	$ 741,496	$ 610,686	$ 130,810
Planning & Programming	$ 2,062,448	$ 2,028,194	$ 34,254
Regional Operations Director	$ 2,091,019	$ 1,804,680	$ 286,339
Systems Engineering	$ 2,340,423	$ 2,130,317	$ 210,106
Traffic Engineering	$ 6,193,136	$ 5,567,609	$ 625,527
Transportation Operations	$ 11,416,369	$ 11,534,045	($ 117,676)
TOTAL	**$ 52,495,114**	**$ 48,946,456**	**$ 3,548,658**

During the year, NRO re-allocated about $3.1 million in districtwide (603) funds to maximize the use of available resources. The funds went to more than 15 projects including the DMS Upgrade, IP Migration, I-66 STL Upgrade (which was moved to FY-08 during the FY-09 prioritization process), and many Traffic Engineering safety improvement projects.

Budget allocation by percentage



The funds were reallocated during monthly meetings with NRO managers. The managers' willingness to relinquish funds for the greater goals of the organization demonstrates the selflessness for which NRO leaders approach the overall investment program. The action also ensured that the Region's spending was on target for FY-08.

As the chart above indicates, almost 40 percent of the 604 budget was allocated to maintaining operations field assets – many of which are beyond their life cycle. On the other hand, only 14 percent of NRO resources were allocated to installation and construction. Many of NRO's ITS assets are beyond their lifecycle; if NRO continues experiencing the lack of dedicated capital improvement funding programs, future resources will need to shift from maintaining existing devices to installing new ones. This will require striking the core balances of every section, especially maintenance, in order to upgrade un-maintainable ITS devices.

On December 26, 2007, the Omnibus Spending Bill rescinded the ITS Deployment Program established by the Transportation Equity Act for the 21st Century. The bill revoked more than $9.9 million in funds earmarked for ITS projects in the Northern Region including the DMS Travel Time Program, the Tyson's traveler information program, and several local ITS projects. The funds had not been obligated, but some were in the planning process for requesting funding authorization. The affected agencies will have to locate new funding sources to advance the projects – often cascading the impact down to other planned activities.

One of NRO's biggest programming challenges is that most state and federal allocation, authorization, and contract administration processes were established for traditional construction projects. A typical operations project development and implementation may have a lifecycle up to 10 times less than that of a traditional construction project, and the lengthy processes often impede the advancement of operations initiatives. At the same time, funding is allocated through nine construction Districts and does not reflect the regional alignment of operations directorates. The Planning and Programming Process works to minimize this impact by providing a formal process to request funds, but the challenges will continue as fiscal programs adapt to the new operating environment.

In Summary

Fiscal Year 2008 was a year of growth for Northern Region Operations

It was a year of organizational growth as NRO leaders joined together for the first-ever Planning Workshop. Participants built consensus and understanding of the Region's strategic focus and identified initiatives to improve safety, mobility, and reliability on the roadway network. The combination of planning exercises and team building activities further institutionalized our innovative Planning and Programming Process and fostered unity of vision and purpose within the organization.

It was a year of functional growth as we transitioned from project-by-project planning to comprehensive systems planning. Developing integrated solutions for the entire operations system helped ensure the success of ITS systems and illustrated NRO's leadership in the operations industry.

It was a year of technological growth as NRO migrated its telecommunications system to the Ethernet IP network and developed a Real-Time Freeway Monitoring System. The advancements will enable NRO to collect timely and accurate data, translate the data into meaningful information for decision makers, and provide critical information to the traveling public.

FY-09 will be a challenging year for NRO as our Traffic Operations section moves into the new Public Safety Transportation Operations Center (PSTOC), our Advanced Transportation Management System (ATMS) Replacement comes online, and our organization provides operations support to $6 billion in new construction projects including the High Occupancy Toll (HOT) Lanes.

Although funding will be extremely limited, NRO will continue to advance successful programs such as Traffic Signal Optimization and Corridor Capacity Improvement while implementing major projects like the DMS Upgrade.

In FY-08, NRO demonstrated our ability to manage both our work and our resources. In FY-09 we will continue to follow the strategic Planning and Programming Process to ensure that the Region is getting the best possible use out of available resources to increase safety, reduce congestion, and provide information and choices to Commonwealth travelers.

VDOT Virginia Department of Transportation

Northern
Region Operations

To request additional copies of this publication, please contact:

Virginia Department of Transportation
Northern Region Operations Planning and Programming
14685 Avion Parkway
Chantilly, Virginia. 20151

(703) 383-8368
(TTY users only call 711)

email: NROPP_doc@VDOT.Virginia.gov


VDOT