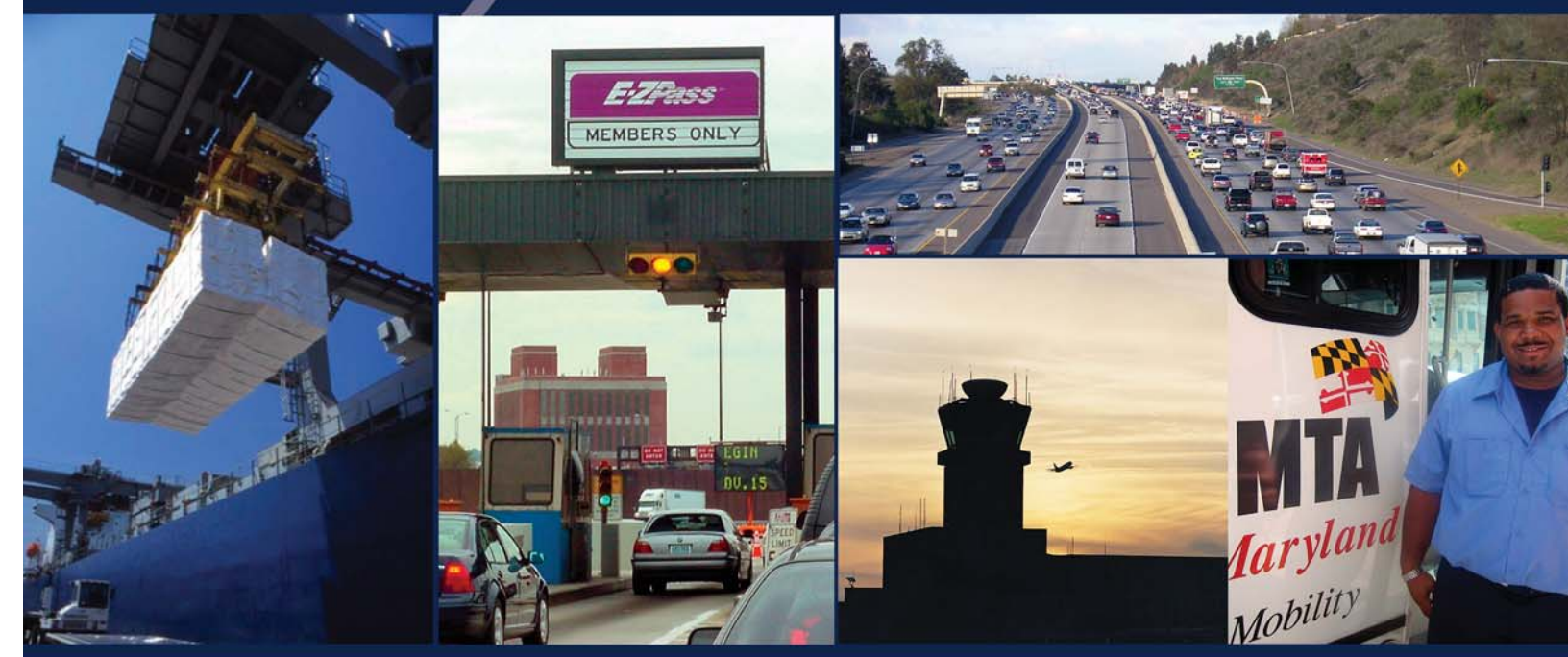




**PERFORMANCE PROGRESS —  
IMPLEMENTING THE MTP & CTP**

# 2005 Annual Attainment Report on Transportation System

# Performance



Maryland Department  
of Transportation

**Robert L. Ehrlich, Jr.**  
Governor

**Robert L. Flanagan**  
Secretary of Transportation



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TRANSPORTATION SYSTEM PERFORMANCE

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# Summary

PERFORMANCE PROGRESS—IMPLEMENTING THE MTP & CTP

This 2005 Report is the fourth Annual Attainment Report on Transportation System Performance for the Maryland Department of Transportation (MDOT). The purpose of this report is to evaluate the progress of MDOT, its five modal administrations, and MDOT's sister agency the Maryland Transportation Authority (MdTA), in implementing the Maryland Transportation Plan (MTP) and the Consolidated Transportation Program (CTP). This report highlights MDOT's performance and provides elected officials and the general public with information on the effectiveness of policies, programs, and investments in improving the State's transportation services and facilities.

Governor Ehrlich recognized the importance of transportation to Maryland's economy and quality of life by proposing a \$320 million a year funding increase to improve the State's transportation network. The Legislature revised the plan, and the result was an approved bill that allows \$238 million a year in additional transportation funding. The 2005–2010 CTP is the first that includes this additional funding and represents a major step toward improving the safety of Maryland highways, reducing congestion, and building a transit system that works for people.

MDOT's performance is summarized below by the four goals set in the current MTP – Efficiency, Mobility, Safety & Security, and Productivity & Quality.

## Goal 1 EFFICIENCY

MDOT has continued to successfully manage and extend the useful life of its existing assets and to ensure that optimal improvements are made first. MDOT also uses technology and innovation to enhance performance on the existing transportation network. Notable efficiency performance outcomes and strategies include:

- 96.6 percent of the National Highway System bridges currently meet federal structural standards and pavement conditions have improved across the entire State highway system since 1997 due to effective preservation and maintenance activities.
- Successful shift of Motor Vehicle Administration (MVA) transactions away from walk-in centers to alternative services (mail, internet and telephone) saving customers time and travel costs.
- Shipping channels to Maryland's port terminals remain open and free from delay.
- Decline in transit on-time service due to maintenance requirements, an aging railcar fleet, traffic congestion, and transit system reconstruction. The Maryland Transit Administration (MTA) will address these challenges through short and long-term improvements.

## Goal 2 MOBILITY

MDOT strives to enhance the mobility of citizens through all modes of transportation. Similar to many states across the country, congestion in Maryland continues to increase, particularly in major urban centers. Maryland state transportation agencies are aggressively pursuing options to enhance the State's system through new projects such as the Intercounty Connector (ICC), while still providing funding for non-highway modes of transportation. Through these actions, MDOT seeks to control or reverse the growth of congestion. Notable mobility performance trends are summarized below:

- The proportion of toll transactions being collected electronically has risen to more than 40 percent – resulting in significant reductions in congestion at toll facilities.







- The annual vehicle revenue miles of MTA commuter bus, light rail, and paratransit service have increased while service levels have remained relatively stable for MTA's bus, Maryland Area Rail Commuter (MARC), and Metro services.
- Congestion has expanded in coverage on the State's freeways and arterials. This trend is expected to continue because of population and employment growth. MDOT seeks to minimize the coverage, duration, and severity of congestion on heavily traveled highways.

### Goal 3 SAFETY & SECURITY

Providing safe and secure travel for Maryland residents and visitors is of vital importance to MDOT. As such,

the Department targets numerous programs to improve the safety of its transportation system including infrastructure enhancements, enforcement efforts, and education programs. Threats to the personal security of travelers and to the security of transportation assets have received heightened attention and MDOT is actively addressing greater security requirements. Notable performance trends include:



- The State's 2003 fatality rate (1.19 fatalities per 100 million VMT) remains well below the national average (1.48 fatalities per 100 million VMT).
- Baltimore/Washington International (BWI) Airport and the Port of

- Baltimore continue to fulfill their respective Federal security requirements.
- Customer perceptions of safety on the MTA system have decreased over the past two years despite reductions in incidents on the system.

### Goal 4 PRODUCTIVITY & QUALITY

MDOT is using cost-effectiveness measures to evaluate its success in making efficient use of limited

resources while still maintaining high levels of customer satisfaction. Recent fiscal constraints, continued increases in demand for transportation services and facilities, and some uncontrollable events such as severe weather have resulted in mixed success this year. The additional funding in the 2005-2010 CTP will begin to address some of the decreased performance. MDOT is actively seeking to identify opportunities to enhance customer satisfaction. Some recent notable performance changes include:

- SHA maintenance expenditures per lane mile have declined since 1998. The increase that occurred in 2004 can be attributed to Hurricane Isabel.
- Total operating expenses at BWI Airport fell in FY2004 due to lower debt service payments while operating revenue reached an all time high of \$170.1 million.
- Maryland Port Administration (MPA) revenues and expenditures continue to increase.
- MVA transaction costs have been declining since FY2000. The increase in FY2004 is partially due to the implementation of a new more secure driver license.
- Customer satisfaction ratings for MVA, SHA, and MTA have fallen.
- Reductions in passenger loads and increasing service delivery costs have resulted in higher costs per passenger and per passenger mile for several MTA services.

# Introduction

This fourth Annual Attainment Report on Transportation System Performance presents measures that Maryland's transportation agencies are using to evaluate the status of the State's transportation system and to assess the State's implementation of the Maryland Transportation Plan (MTP) and the Consolidated Transportation Plan (CTP). MDOT has responsibilities for capital investments, operations, and planning that reach across all modes of transportation. The MDOT Secretary's Office establishes transportation policy and oversees five modal administrations: the Maryland Aviation Administration (MAA), the Maryland Port Administration (MPA), the Maryland Transit Administration (MTA), the Motor Vehicle Administration (MVA), and the State Highway Administration (SHA). The Secretary of the Department also serves as Chairman of the Maryland Transportation Authority (MdTA), ensuring closely coordinated activity with MDOT on State transportation policy.

## MDOT's Funding Framework

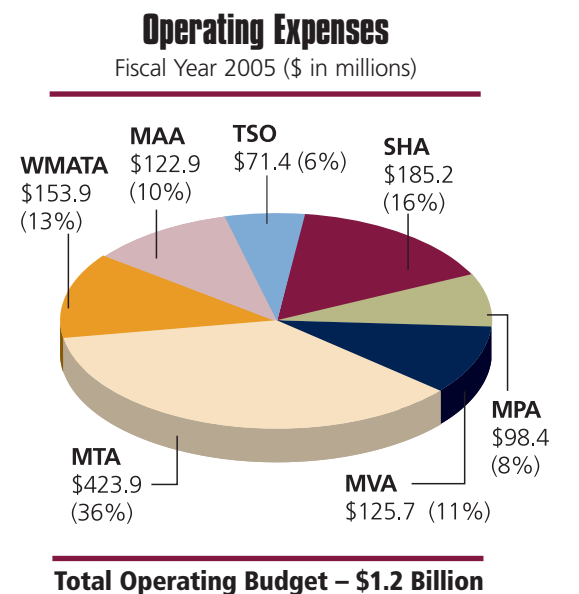
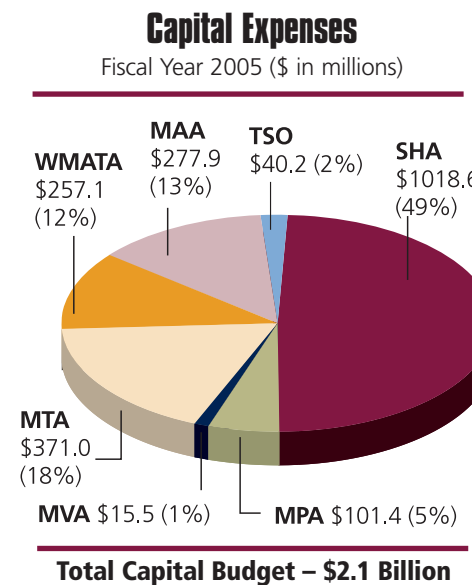
MDOT is funded by an integrated Transportation Trust Fund – a dedicated source of funding that supports MDOT's activities, including debt service, maintenance, operations, administration, and capital investment. The capital and operating budget charts detail funding for the modal administrations, as well as for the Transportation Secretary's Office (TSO) and for the Washington Metropolitan Area Transit Authority (WMATA). In the current fiscal year (FY 2005), SHA accounts for the largest share of the capital budget and transit (MTA and WMATA) account for the largest share of the operations budget. Maryland is one of only two states that fully supports the non-Federal operating subsidy of its major urban transit systems (WMATA and MTA). Maryland ranks 47<sup>th</sup> in highway spending per capita, however MDOT is seeking to focus additional funds on highway infrastructure.

## ANNUAL ATTAINMENT REPORT ON TRANSPORTATION SYSTEM PERFORMANCE

Although traditional Transportation Trust Fund and Federal-aid sources are used to finance the majority of MDOT's capital programs and operations, "innovative funding" mechanisms also provide revenue sources. MDOT and MdTA have partnered on innovative financing arrangements (e.g., bond financing, facility leases, and investments) in order to deliver significant transportation projects. Since 1985, MdTA has provided funding assistance and/or access to the revenue bond market for joint development and delivery of approximately \$1.14 billion in capital construction projects including



the expansion of the Baltimore/Washington International Airport (BWI) facilities, improvements to port facilities, and light-rail projects. The current CTP highlights plans to combine toll financing, GARVEE bonds (which are paid back through future federal highway funds), and "special federal funds" to augment Maryland transportation trust fund sources for top priority projects, including the ICC. MDOT and MdTA are also considering implementing Express Toll Lanes to manage traffic flows, provide more reliable travel times and generate revenue from users to help pay for construction, maintenance, and operation of the lanes.





## Usage Trends for MDOT's Facilities and Services

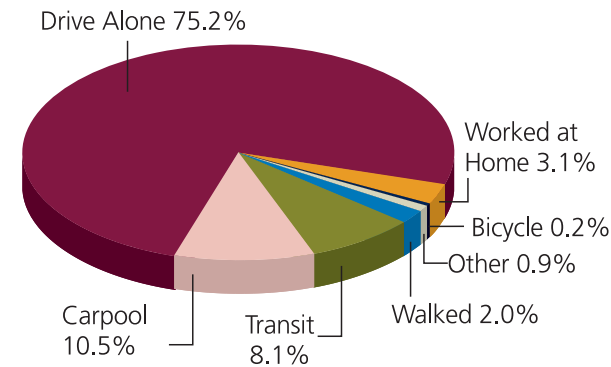
MDOT's jurisdiction includes more than 14,000 lane-miles of roadways, 20 major port terminals, the State's motor vehicle service centers, an international airport and funding for two large urban transit systems and a commuter rail system. Managing the State's large multimodal transportation system is especially challenging given the trends of steadily increasing user demands.

## Travel in Maryland – On the Ground

A significant portion of personal travel in Maryland occurs by automobile, light truck, or sport utility vehicle. According to the 2003 American Community Survey conducted by the U.S. Census, the vast majority of work trips are made by personal vehicles. The mode split for work trips has remained

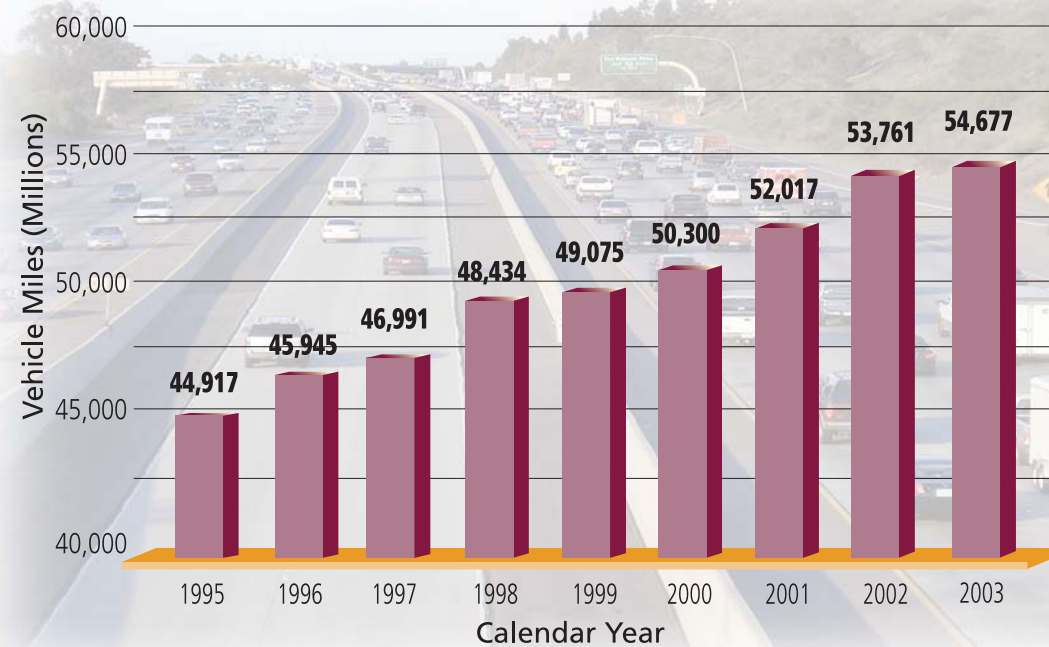
relatively constant since 2002, with a slight increase in the share of those driving alone and a decrease in the share of those taking transit to work or working at home. MDOT's target is to maintain the share of public transportation and other non-single occupant vehicle modes over the six-year period and to increase this share over the next 20 years.

### Mode Split for Maryland Commuters 2003



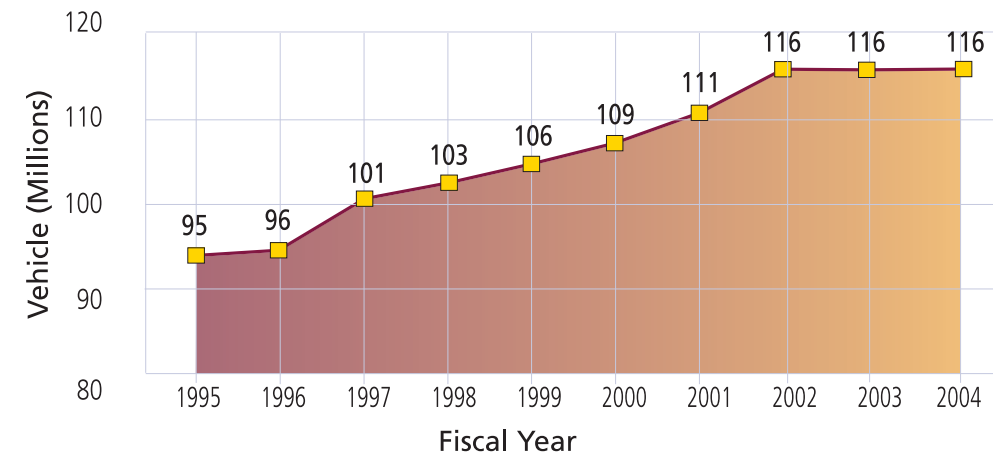
Overall vehicle travel has increased by more than 20 percent since 1995 and now totals almost 55 billion vehicle miles annually, while vehicle lane-miles have increased by less than four percent during the same period.

### Annual Vehicle Miles of Travel in Maryland (all roads)



Similarly, the number of toll-paying vehicles has increased by more than 20 percent since 1995 on facilities operated by MdTA, with minimal capacity expansion.

### Number of Toll Paying Vehicles Per Year



MDOT also is responsible for the registration of vehicles and the licensing of drivers. As the State's population increases, so does the demand for MVA services. In FY2004, MVA processed more than 14 million transactions. Between 2000 and 2020, Maryland's driving age population is expected to increase by about 19 percent, the number of licensed drivers by 25 percent, and the number of registered vehicles by 29 percent. As these numbers increase, so will the number of transactions to be processed by MVA.

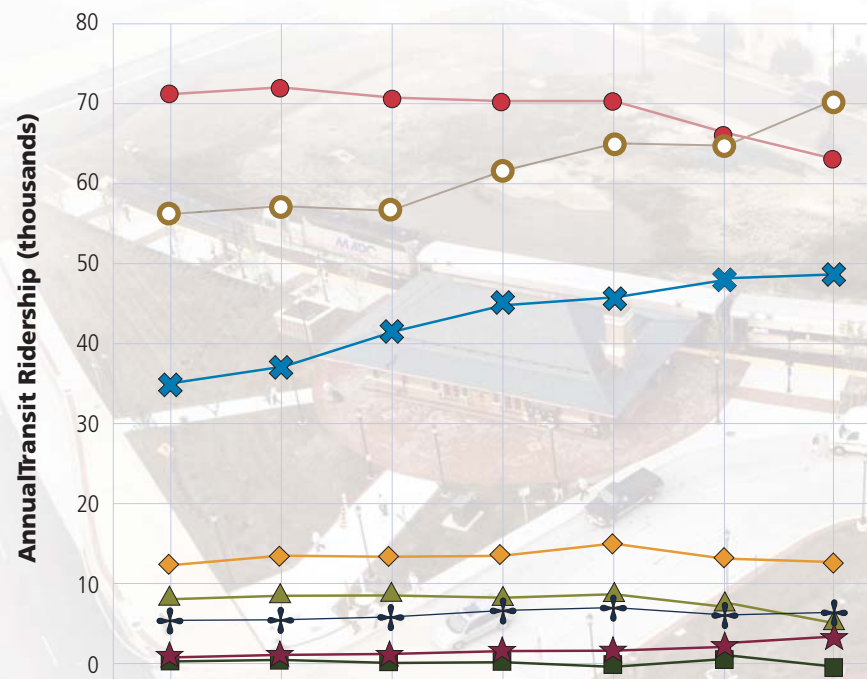




Changes in transit ridership have varied across the State depending on the travel market served. Between 1998 and 2004, ridership declined slightly on all of MTA's core systems: Bus, Light-Rail, and Metro. By contrast, ridership on WMATA's Metrobus and Metrorail, MTA commuter buses, MARC, and MTA paratransit all increased, with more than a doubling of ridership on commuter bus in just six years. The challenge is to maintain quality service where there is a declining market while meeting demand for new services in areas where transit need is growing, such as in major congested corridors.

MDOT also provides funding to 22 Locally Operated Transit Systems (LOTS) and other locally based transportation providers throughout the State. In FY2003, LOTS carried an additional 33.8 million transit trips. MDOT supports these transit services with state and federal grants, which totaled \$65.8 million in FY2004 (\$53.9 million in operating grants plus \$11.9 million in capital grants). Initiatives are underway to establish standards for LOTS service efficiency and cost effectiveness. Currently, transit systems operated by Montgomery and Prince George's Counties provide annual performance reports of service efficiency and effectiveness to the legislature.

### Maryland Annual Transit Ridership by Mode



Fiscal Year	1998	1999	2000	2001	2002	2003	2004
Bus	71,721	72,638	71,509	70,145	70,127	66,736	63,793
Metro	12,834	13,219	13,609	13,597	14,240	13,196	12,426
Light Rail	7,577	8,610	8,664	8,519	8,548	7,387	5,818
Commuter Bus (Contracted)	1,332	1,411	1,571	1,828	2,170	2,562	2,703
MARC (Commuter Rail)	4,738	5,025	5,317	5,735	6,063	6,336	6,727
Paratransit	476	502	523	573	452	564	542
Bus	31,921	33,002	41,541	45,483	46,286	47,597	49,869
Rail	56,429	57,853	56,746	62,292	65,550	66,212	70,093

Note: WMATA ridership estimated based on Maryland's share of WMATA's operating subsidy. Ridership data does not include Locally Operated Transit Systems (LOTS).

### Travel in Maryland – In the Air

MAA owns and operates BWI and Martin State Airport and provides technical assistance and financial grants to Maryland's 33 public-use general aviation airports. State funding assistance (excluding federal funds and local airport funds) to the general aviation airports totaled approximately \$22.5 million between 1995 and 2004. This support fosters safety improvements and helps ensure continued access to aviation facilities across the State.

BWI has experienced tremendous growth. In 2003, BWI served 19.7 million passengers, a 50 percent increase over 1995. Although passenger volumes declined in 2002, in the wake of the terrorist attacks on 9/11/01, passenger levels began to increase again in 2003. BWI's potential for growth remains strong because of its location, services, accessibility, and reasonable fares.

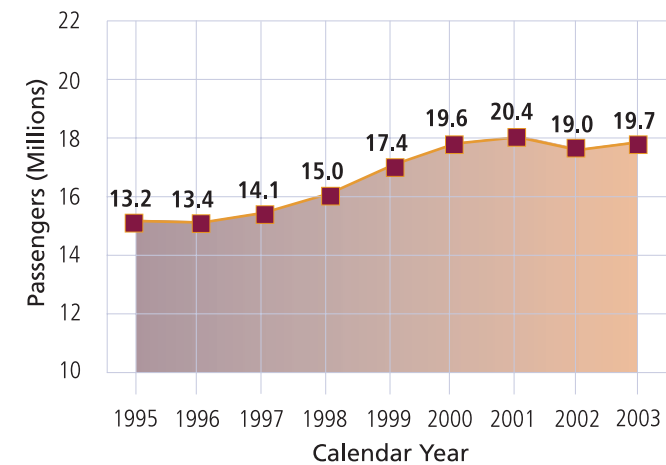


### Travel in Maryland – Waterborne Commerce

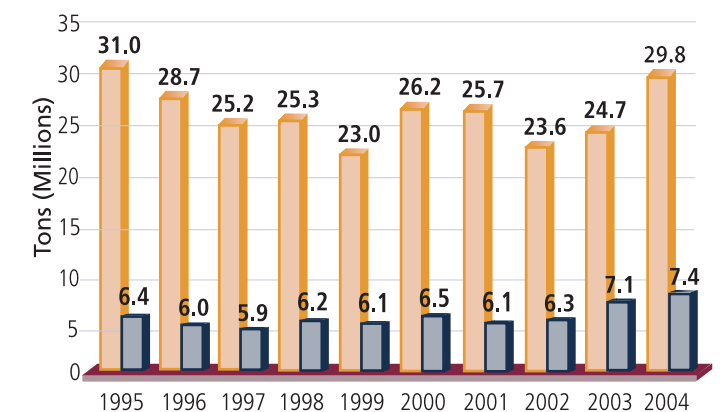
MDOT also plays a key role in the development, marketing, maintenance, and stewardship of the State's port facilities. MPA manages the public terminals (roughly half of the terminals by area) in the Port of Baltimore, improves channel access, promotes international and domestic trade, and coordinates the delivery of services to the maritime community. MPA also operates and maintains the Port's Cruise facility at Dundak Marine Terminal and is evaluating other dedicated passenger sites.

In these various roles, MPA provides economic benefits to the State. The general cargo MPA handles reached a record level, 7.4 million tons, in FY2004. The Port of Baltimore (PoB) foreign cargo tonnage (bulk and general cargo) has fluctuated over the years with the most recent data showing growth.

### Total Annual Passengers at BWI



### Tons of Port of Baltimore Foreign Cargo & MPA General Cargo



Port of Baltimore - Foreign Cargo MPA General Cargo



## Travel in Maryland – Bicycle and Pedestrian Access

The Maryland General Assembly enacted the Bicycle and Pedestrian Access Act during the 2000 legislative session. The Act mandated a 20-Year Bicycle and Pedestrian Access Master Plan, which was first published in 2002. The Plan called for incorporating bicycle and pedestrian measures into the Annual Attainment Reports. Currently, Maryland's bicycle and pedestrian program fulfills Federal Highway Administration (FHWA) guidelines on establishing and tracking performance through quantitative performance measures and targets.

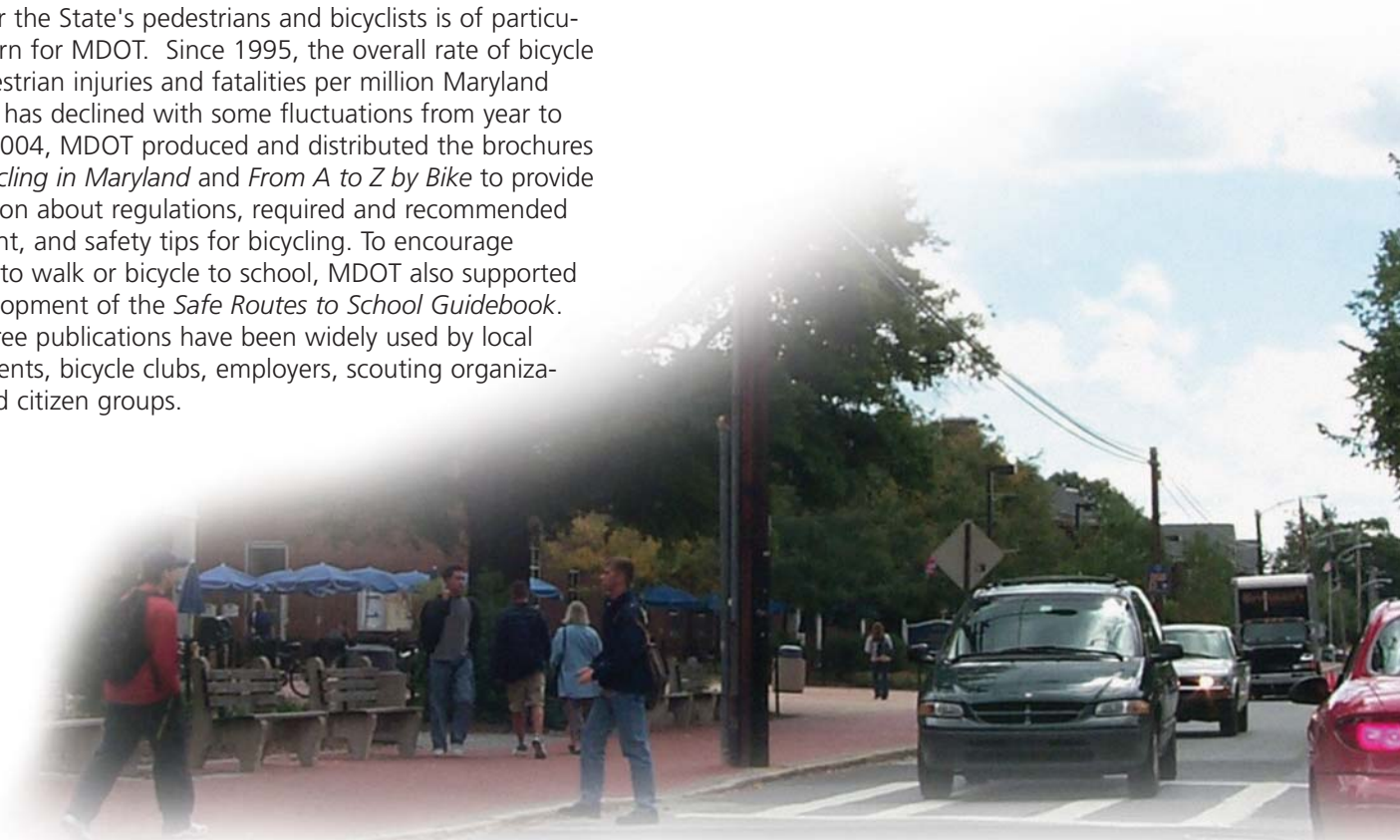
A series of performance measures were developed to track MDOT's success in attaining the goals and objectives of the Bicycle and Pedestrian Access Master Plan. The table below lists key performance measures tracked by MDOT. Of particular note is the increase of State-owned highway miles with designated bike lanes – up from 8.0 miles in 2002 to 40.6 miles in 2003. SHA has pledged to provide 200 miles of designated bike lanes throughout the State by 2006. Maryland also is one of the first states to evaluate its roadway system according to a nationally recognized methodology for bicycle level of comfort (BLOC).



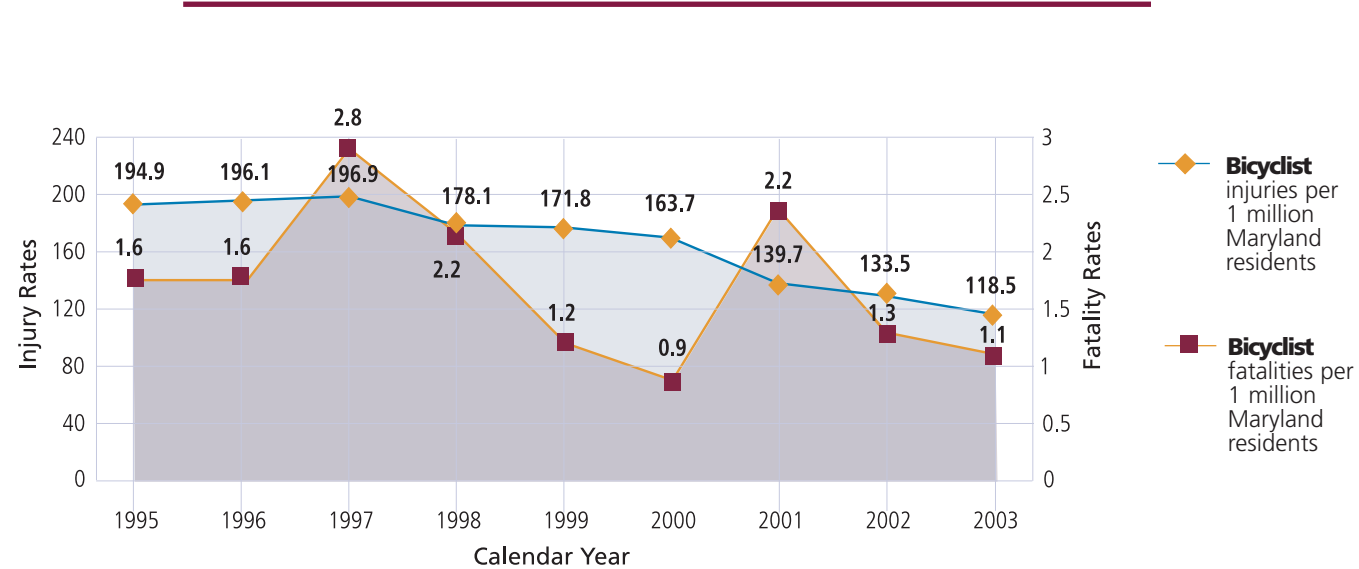
Bicycle / Pedestrian Measure	2002	2003	Target	Target Date
Percentage of state-owned roadway center-line miles with a BLOC grade of "D" or better (scale of "A" to "F")	77%	78%	80%	12/31/06
Center-line mileage of state-owned highways with designated bike lanes	8 miles	40.6 miles	200 miles	12/31/06
Percentage of state-owned roadway center-line miles within urban areas that have sidewalks	18%	20%	20%	6/30/07
Number of bicycle fatalities and injuries on all Maryland roads	7 fatalities 722 injuries	6 fatalities 641 injuries	< 5 fatalities < 409 injuries	2009
Number of pedestrian fatalities and injuries on all Maryland roads	101 fatalities 2,560 injuries	118 fatalities 2,724 injuries	< 90 fatalities < 2,400 injuries	12/31/06

MDOT also tracks the number of local jurisdictions implementing ordinances that support bicycling and walking, which currently stands at 18, and the percentage of appropriate MTA transit vehicles that can accommodate bicycles, which stands at 29 percent.

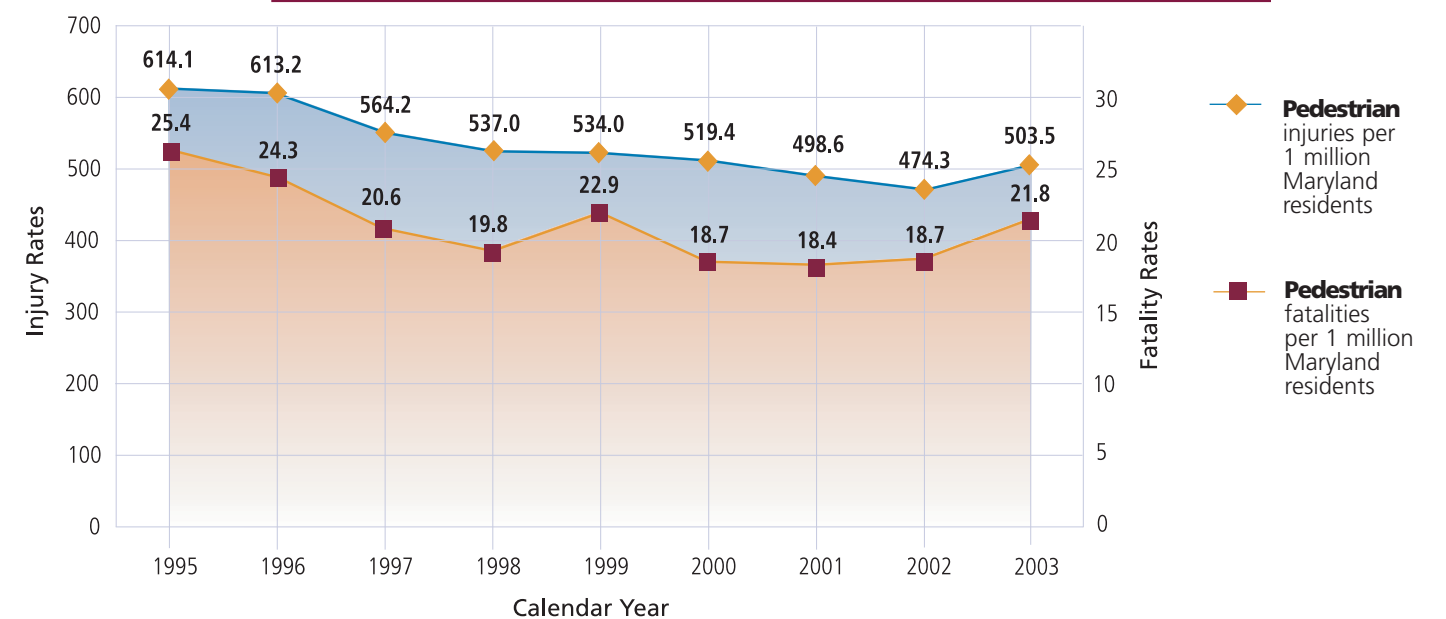
Safety for the State's pedestrians and bicyclists is of particular concern for MDOT. Since 1995, the overall rate of bicycle and pedestrian injuries and fatalities per million Maryland residents has declined with some fluctuations from year to year. In 2004, MDOT produced and distributed the brochures *Safe Bicycling in Maryland* and *From A to Z by Bike* to provide information about regulations, required and recommended equipment, and safety tips for bicycling. To encourage students to walk or bicycle to school, MDOT also supported the development of the *Safe Routes to School Guidebook*. These three publications have been widely used by local governments, bicycle clubs, employers, scouting organizations, and citizen groups.



**Bicyclist Injuries and Fatalities** Per 1 Million Maryland Residents (All Maryland Roads)



**Pedestrian Injuries and Fatalities** Per 1 Million Maryland Residents (All Maryland Roads)





# Goal 1 EFFICIENCY

## POLICY OBJECTIVES:

- > Extend the useful life of existing facilities and equipment
- > Maximize the operational performance and capacity of existing systems

Maryland's multi-billion dollar transportation networks not only provide the means for personal travel throughout the State, but also serve businesses and fuel the economy by providing mobility. MDOT has continued to successfully manage and extend the useful life of its existing assets and to ensure optimal improvements are made first. However, as travel demand increases, the system ages, equipment costs rise, and the nature of the transportation funding stream changes, successfully maintaining the condition of the existing system has become more difficult. To address these challenges, MDOT uses technology and innovation to extract as much performance as possible from the existing transportation network. Several notable efficiency performance trends are summarized below:

- Pavement conditions have improved on the state roadway system since 1997.
- Effective preservation and maintenance has resulted in 96.6 percent of the National Highway System (NHS) bridges meeting federal structural standards.



- Shipping channels to Maryland's port terminals are consistently open and free from delay.
- The percentage of MVA transactions completed by alternative services (mail, internet and telephone) has increased since 1999, saving customers time and travel costs.
- The CHART Incident Management Program saved Maryland drivers approximately 27 million vehicle hours in 2003.
- Transit on-time service has declined due to maintenance requirements, an aging railcar fleet, traffic congestion, and construction on existing lines.

## PERFORMANCE MEASURES: EFFICIENCY

Performance Measure	Agency
Percentage of SHA-maintained roads with acceptable ride quality	SHA
Percentage of SHA and MdTA NHS bridges meeting Federal structural standards	SHA & MdTA
Percentage of MTA service provided on time	MTA
Average MVA branch customer visit time	MVA
Percentage of MVA transactions completed by alternative services	MVA
Reduction in incident congestion delay	SHA

Several efficiency accomplishments not highlighted by selected performance measures:

**Port of Baltimore** – MPA maintains a world-class deep-draft navigational system through the Maryland Dredged Material Management Program. As one of only two ports on the U.S. East Coast that has a 50-foot deep channel, it is vital that the Port of Baltimore remain navigable for cargo ships. Feasibility studies are currently underway to select future dredge material sites to keep the Port of Baltimore open to cargo ships.

**Maryland Transit Pass** – MTA is launching a new rechargeable fare-card to provide a seamless, connected trip across different transit systems.

**Courtesy Patrol Program** – SHA & MdTA provide assistance to disabled vehicles and quickly returns them to the roadway, reducing delays and the potential for secondary collisions.

**SmartPark Technology** – MAA has installed SmartPark Technology at the Baltimore/Washington International



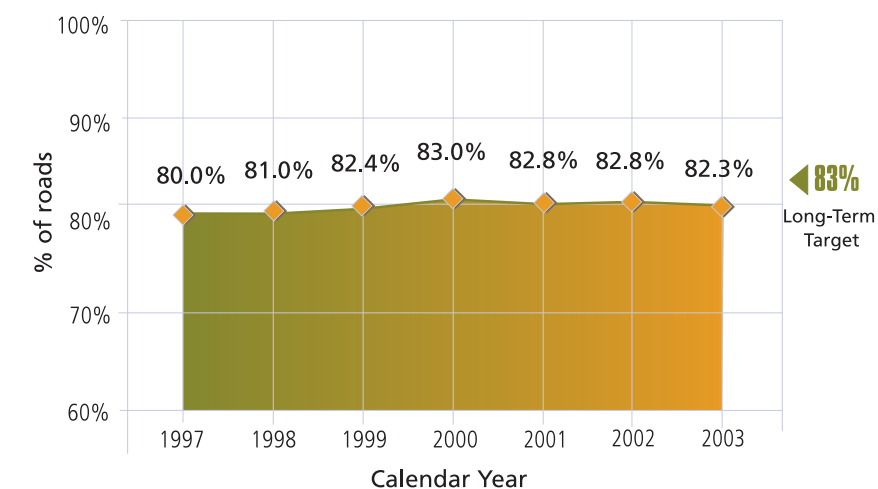
Airport (BWI) to provide travelers with real-time information on parking space availability maximizing use of each facility's capacity.

**CUTE** – MAA is implementing Common Use Terminal Equipment (CUTE) technology at its international terminal to maximize the use of ticket counters and gates at BWI. CUTE allows gates and ticket counters to be assigned to an airline on an as needed basis, thereby maximizing available capacity.

## Why Did Performance Change?

- ▶ SHA has used its Pavement Resurface/Rehabilitation Program to identify the most beneficial allocation across the State of available pavement preservation funds.
- ▶ Increased traffic volumes, in particular tractor-trailer volumes, caused decreased roadway efficiency despite relatively consistent levels of highway improvements between 1999 and 2003.

## Percentage of SHA-Maintained Roads with Acceptable Ride Quality

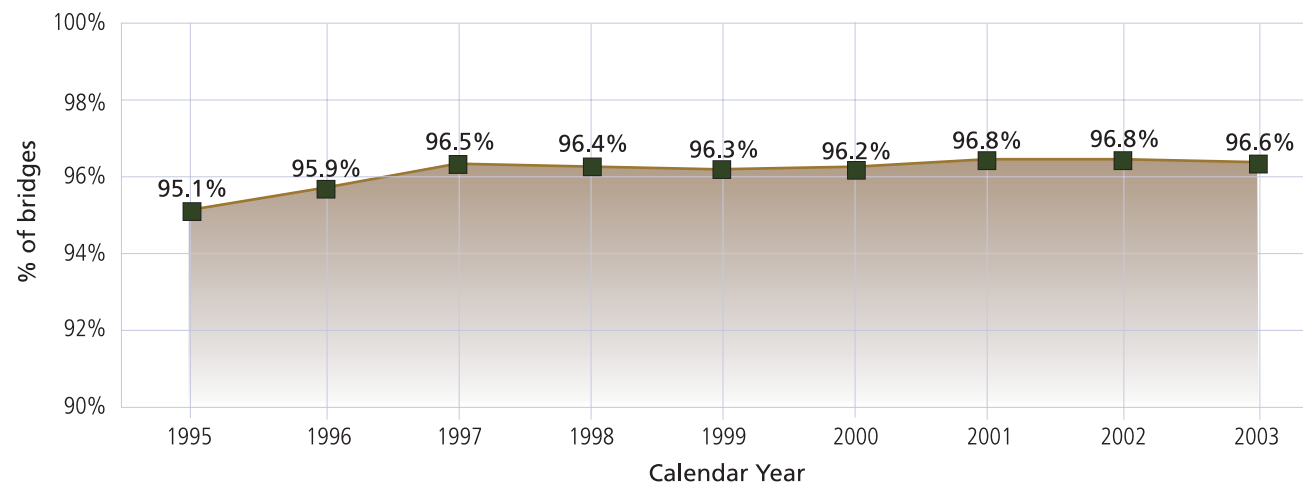


## Future Performance Strategies

- ◆ Ensure additional program funding is available to meet growing needs resulting from increased usage.
- ◆ Adopt new business strategies (e.g., inclusion of ride quality specifications in new contracts).
- ◆ Identify additional strategies to address the increasing share of SHA pavement reaching an age that requires rehabilitation or reconstruction.



### Percentage of SHA and MdTA NHS Bridges Meeting Federal Structural Standards



Note: Federal bridge structural standards refer to "structurally deficient" bridges only.

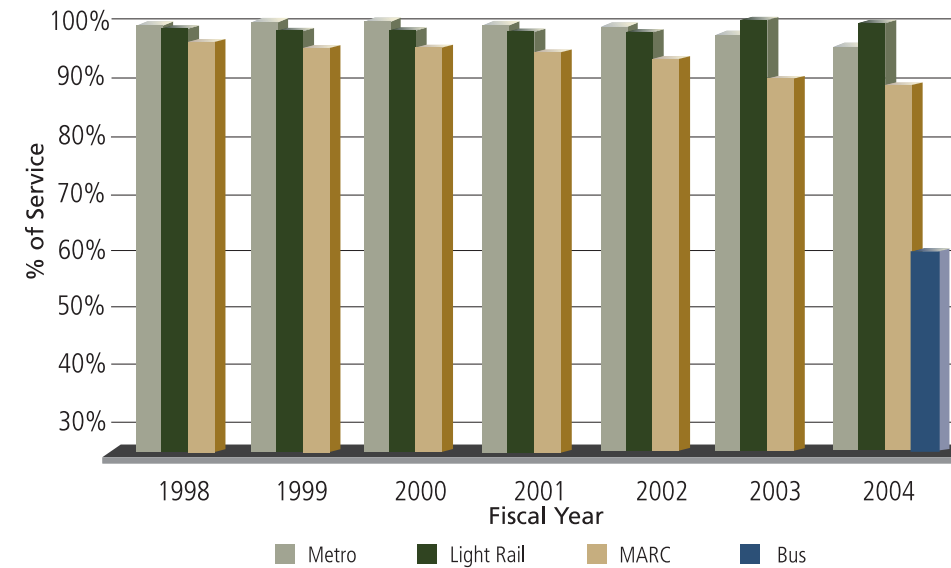
#### Why Did Performance Change?

- ▶ SHA Bridge Replacement/Rehabilitation Programs have extended the useful life of existing infrastructure and ensured that optimal improvements are addressed first.
- ▶ MdTA continues to maintain 100% of its bridges according to federal structural standards.
- ▶ Agency reprioritization resulted in a bridge program funding decline in FY2003 and FY2004.
- ▶ Although performance fell slightly between 2002 and 2003, available funding was focused on the NHS system to ensure 100 percent of bridges remained open without weight restrictions.

#### Future Performance Strategies

- ◆ Continue SHA's on-time, in-depth inspection programs and adopt new technologies.
- ◆ Due to recent revenue increases, FY 2005 and FY 2006 funds will be directed towards NHS bridges with a focus on overlay versus replacement to extend the useful life of bridges in a cost-effective manner.
- ◆ Continue the Bay Bridge deck rehabilitation and roadway enhancements on I-95 in Baltimore City/County.

### Percentage of MTA Service Provided On Time



Targets (Short-Term, Long-Term)

Metro	(97%, 97%)	Light Rail	(99%, 99%)
MARC	(88%, 94%)	Bus	(75%, 90%)

Note: On-time performance calculated differently for each mode.

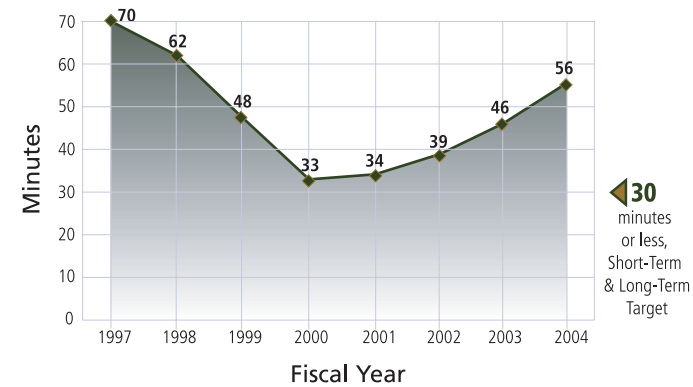
#### Why Did Performance Change?

- ▶ MTA Metro: Capacity decreased due to new safety installation activity and aging railcar fleet that resulted in increased mechanical delays.
- ▶ MTA Light Rail: Performance has remained stable.
- ▶ MARC: Lower prioritization of MARC service due to increases in CSX freight train traffic and less investment in track and signaling.
- ▶ MTA Bus: New on time methodology adopted in FY2004 to better track performance.

#### Future Performance Strategies

- ◆ MTA Metro: Safety installation will be completed, new maintenance facility will open, and mid-life overhaul of 100 railcars will be performed.
- ◆ MTA Light Rail: Completion of double-track project in FY2006 will create more reliable operations.
- ◆ MARC: Provide \$58 million of State and federal funds for track, signal, and capacity improvements.
- ◆ MTA Bus: Systemwide calibration of schedules and run times to be completed CY2006.

### Average MVA Branch Customer Visit Time

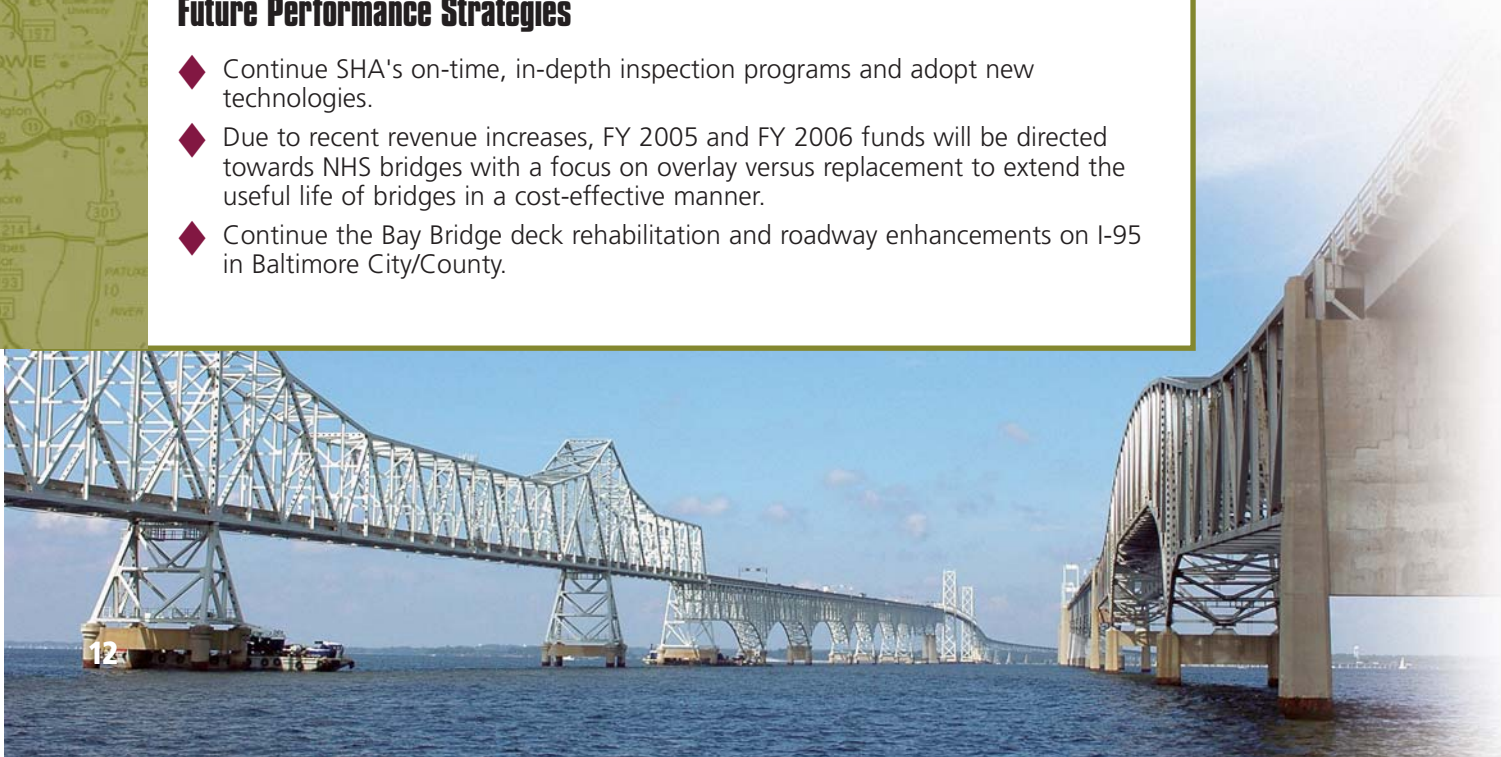


#### Why Did Performance Change?

- ▶ Implementation of operational improvements offset additional wait time increase.
- ▶ Hiring freeze resulting from tight state budgets continued to slow operations.
- ▶ Deployment of the new driver license system temporarily increased branch visit time.

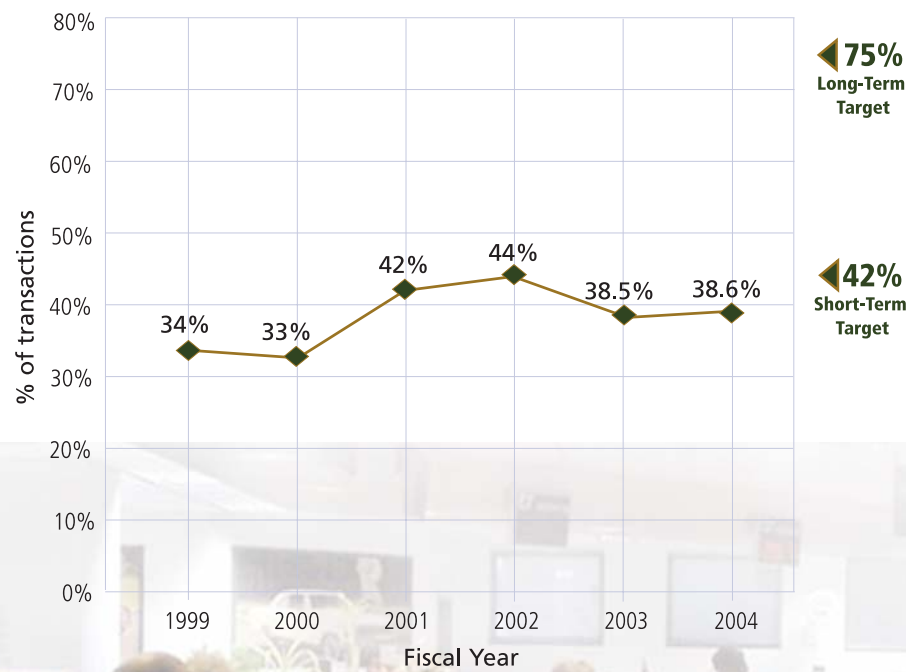
#### Future Performance Strategies

- ◆ Continue an aggressive service improvement plan by requesting hiring freeze exemptions for front-line employees and seeking system and business process improvements.
- ◆ Address the potential increase in average branch visit time as less complex transactions shift to alternative services (mail, internet and telephone).





### Percentage of MVA Transactions Completed by Alternative Services



#### Why Did Performance Change?

► Growth of alternative service delivery transactions has been constrained by new security-related requirements.

#### Future Performance Strategies

- ◆ Encourage consumers to shift to alternative services through marketing, communication, and technology.
- ◆ Promote changes in regulations to allow more alternative service delivery.
- ◆ Explore new information technology systems and additional transaction completion method options.

### Reduction in Incident Congestion Delay

#### Why Did Performance Change?

- CHART incident management program improved accident response/clearance time.
- Serious highway accident in 2003 offset additional time savings.
- Disbandment of Maryland State Police Crash Team for several months lowered additional time savings.

#### Future Performance Strategies

- ◆ Reinstatement of Maryland State Police Crash Team.
- ◆ Improve traffic and roadway monitoring capabilities.
- ◆ Expand number of service patrols.

Measure	2003	Short-Term Target
Reduction in incident congestion delay	26.8 million vehicle hours saved	Save 30.0 million vehicle hours per year

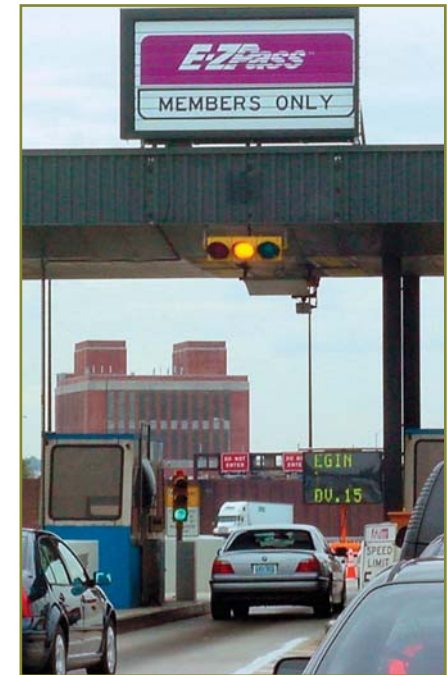


# Goal 2 MOBILITY

#### POLICY OBJECTIVES:

- Relieve congestion by adding key system links
- Support varied modal needs with cost-effective options

MDOT continues to enhance the mobility of citizens through all modes of transportation. Similar to many states across the country with growing economies and increasing travel, congestion continues to increase across Maryland's transportation network, particularly in major urban centers. Maryland's State transportation agencies are aggressively pursuing options to enhance the State's system through projects such as the Intercountry Connector (ICC), while still providing non-highway modes of transportation. Through these actions, MDOT seeks to control or reverse the growth in congestion on the State's highway system. Notable mobility performance trends are summarized below:

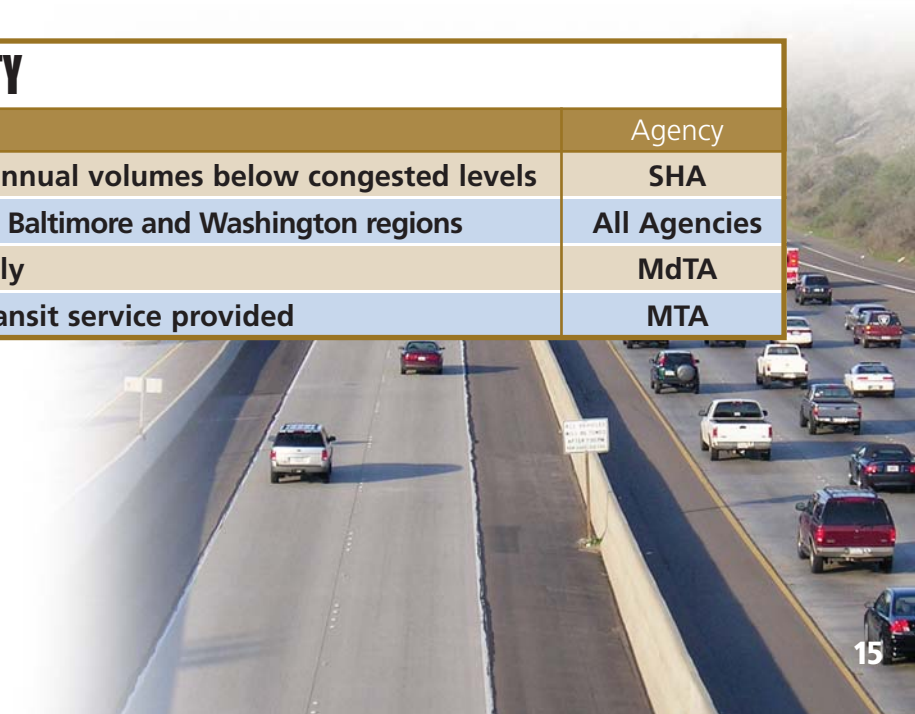


- The proportion of toll transactions being collected electronically has risen to more than 40 percent – resulting in significant reductions in congestion at toll facilities.
- The annual vehicle revenue miles of MTA commuter bus, Light Rail, and paratransit service have increased while service levels have remained relatively stable for MTA's bus, Maryland Area Rail Commuter (MARC), and Metro services.

- The share of SHA freeways and arterials that are congested continued to increase.

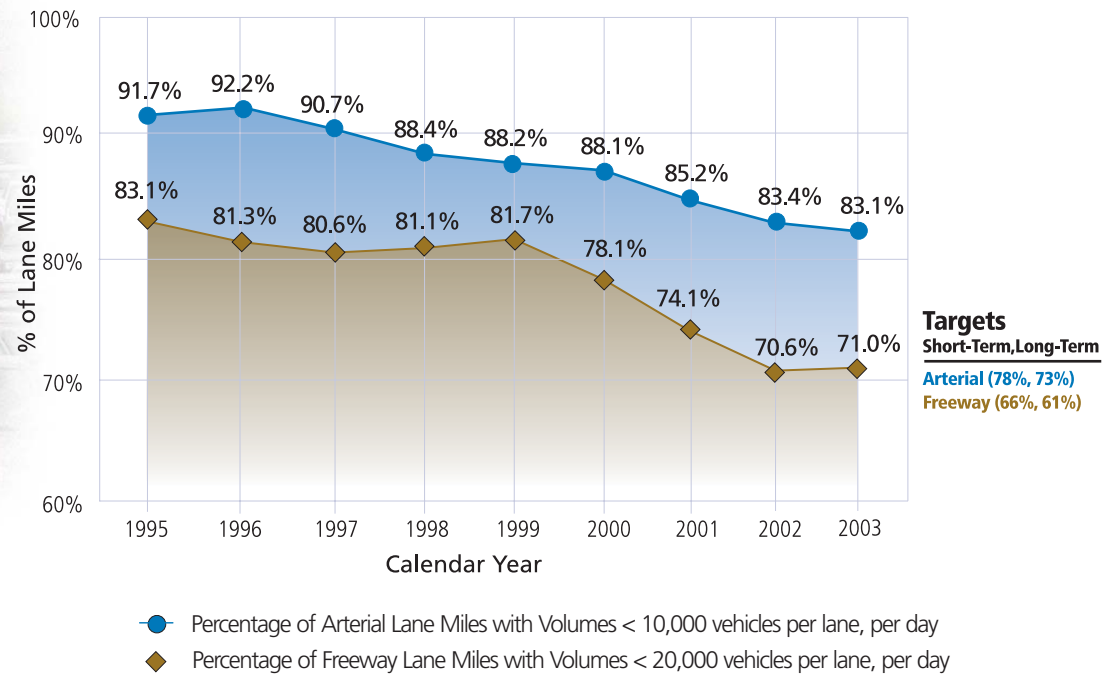
### PERFORMANCE MEASURES: MOBILITY

Performance Measure	Agency
Percentage of lane miles with average annual volumes below congested levels	SHA
Peak-period congestion of freeways in the Baltimore and Washington regions	All Agencies
Percentage of tolls collected electronically	MdTA
Annual vehicle revenue miles of MTA transit service provided	MTA





### Percentage of Lane Miles with Average Annual Volumes Below Congested Levels



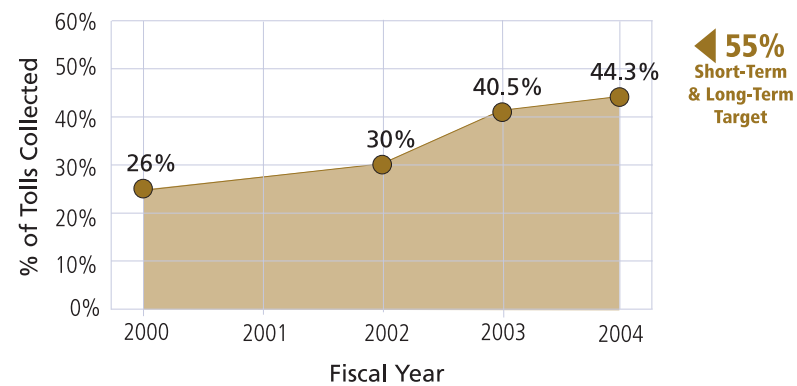
#### Why Did Performance Change?

- ▶ Vehicle miles of travel (VMT) has steadily increased on Maryland freeways and arterials due to population and economic growth.
- ▶ Since 1995, vehicle lane miles have increased by four percent while VMT has increased by 20 percent.

#### Future Performance Strategies

- ◆ Recent revenue increases support the completion of key capacity expansion projects.
- ◆ Increase the capacity of the existing system through technology.
- ◆ Implement Express Toll Lanes in congested corridors.

### Percentage of Tolls Collected Electronically



#### Why Did Performance Change?

- ▶ E-ZPass<sup>SM</sup> implemented at all toll facilities in 2001.
- ▶ Marketing initiatives were executed (e.g., billboards, radio, magazine).
- ▶ Customers realized the time savings from electronic passes.

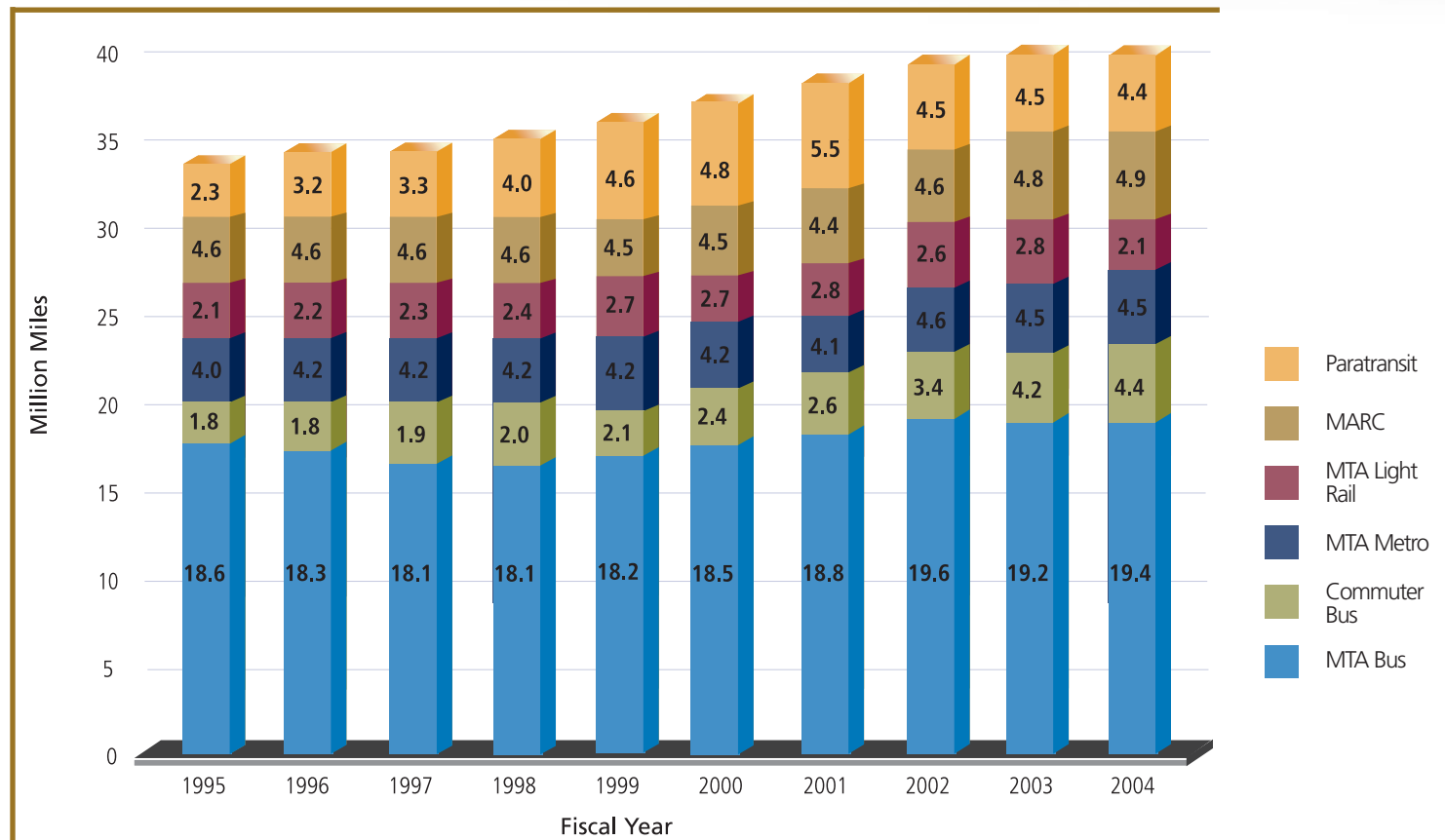
#### Future Performance Strategies

- ◆ Expand marketing efforts to increase customer awareness and usage.
- ◆ Continue E-ZPass<sup>SM</sup> lane improvements.

Note: Electronic tolls collection was fully implemented at all MdTA facilities starting in November 2001 (toll collections include E-ZPass<sup>SM</sup> and Automatic Vehicle Identification)

### MTA Annual Vehicle - Revenue Miles of Transit Service Provided

(Excluding Locally Operated Transit Systems)



#### Why Did Performance Change?

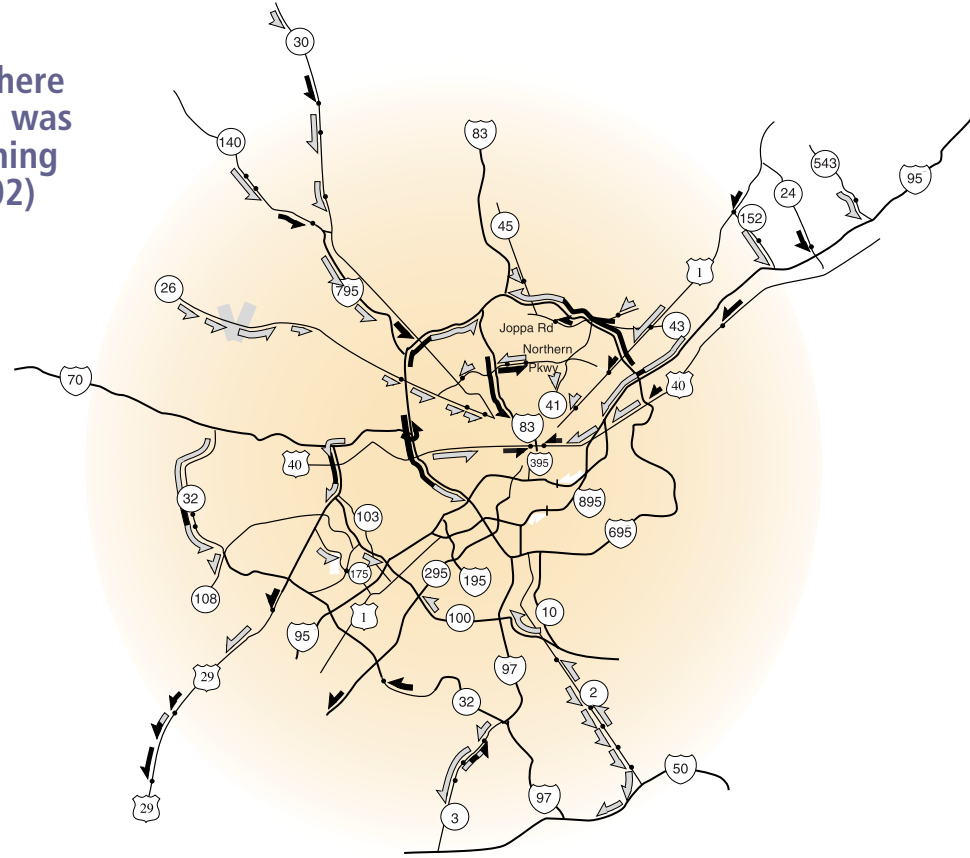
- ▶ MTA bus service was expanded due to additional funding from the Maryland Transit Initiative between 2000 and 2002.
- ▶ Sunday MTA Metro service was reintroduced in 2001.
- ▶ Commuter bus services were increased to meet the growing demand of Washington area commuters.
- ▶ MTA Light-Rail extensions increased service in 1998 and 1999, but construction related shutdowns for double-tracking reduced service in 2004.

#### Future Performance Strategies

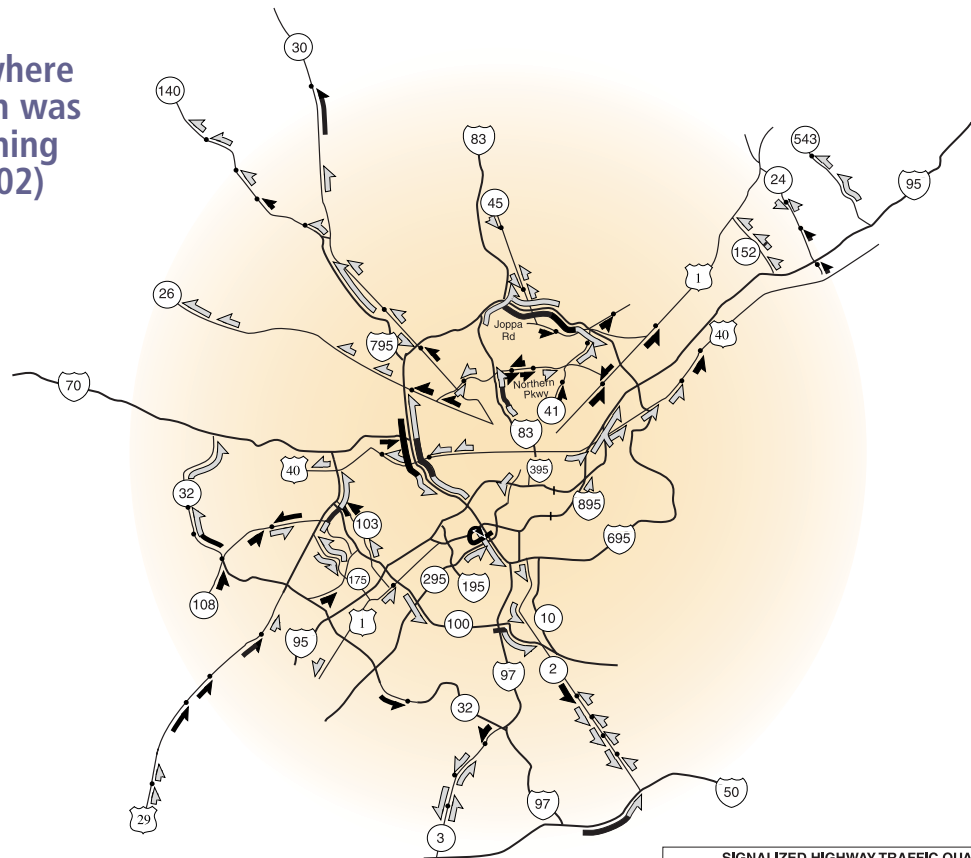
- ◆ Restructure MTA core bus system to reduce non-revenue (deadhead) mileage.
- ◆ Identify opportunities for cost-effective service expansion.
- ◆ Complete the Red and Green line studies to plan for future ridership.
- ◆ Complete the MTA Light-Rail double-track project in FY2006.



Location where Congestion was found Morning (Spring 2002)



Location where Congestion was found Evening (Spring 2002)



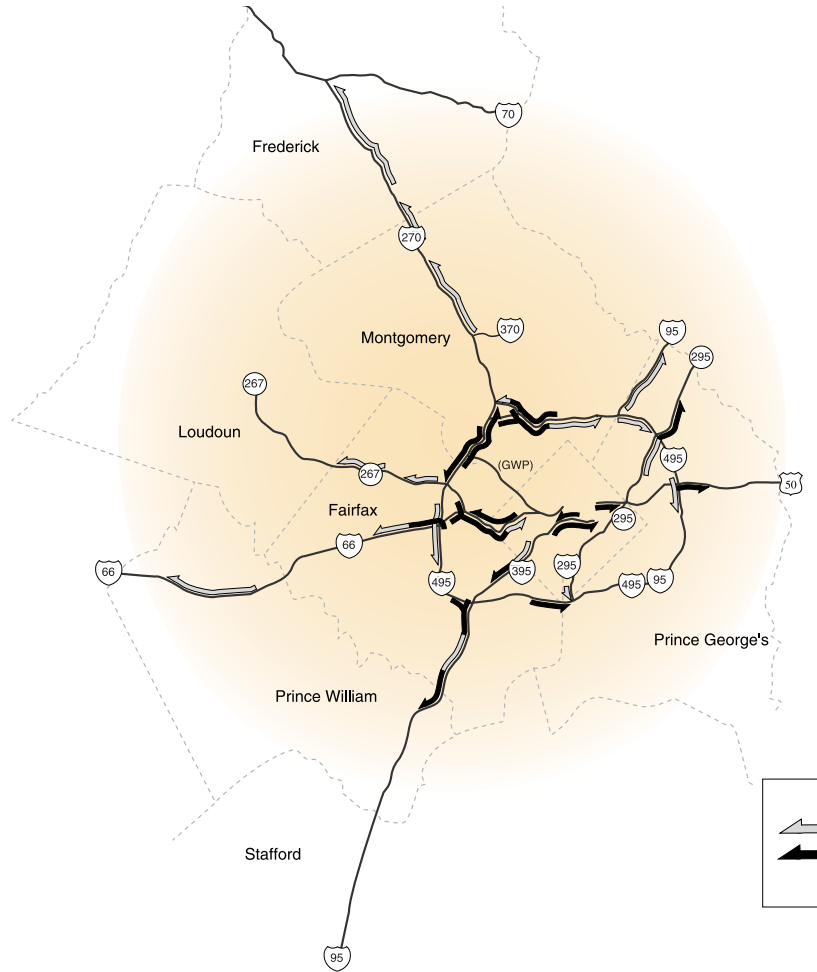
**FREEWAY TRAFFIC QUALITY**  
 Congested flow (Estimated average speed 30-50 mph)  
 Congested flow (Estimated average speed < 30 mph)

**SIGNALIZED HIGHWAY TRAFFIC QUALITY**  
 Intermittent congestion or slow moving platoons along a highway segment  
 Congested Signalized Intersection (intermittent)  
 Congested Signalized Intersection (continuous)

Location where Congestion was found Morning (Spring 2002)



Location where Congestion was found Evening (Spring 2002)



**FREEWAY TRAFFIC QUALITY**  
 Congested flow at average speeds of 30-50 mph  
 Congested flow involving varying degrees of stop-and-go (average speeds < 30 mph)



# Goal 3

## SAFETY & SECURITY

### POLICY OBJECTIVES:

- > Reduce injuries, fatalities, and risks
- > Improve security of the public

Providing safe and secure travel for Maryland residents and visitors is of vital importance and remains one of the State's transportation agencies' top priorities. Safety on the State's highway system is influenced by numerous factors, including vehicle design and safety features, traffic volumes, roadway design, driver behavior, and weather. MDOT's strongest influence on safety is through the design of the roadway system, vehicle licensing, education, and to a lesser degree, enforcement of vehicular laws. MDOT has embraced its responsibility to improve safety on the State's transportation system through numerous programs ranging from roadway improvements to innovative vehicle licensing programs to support for outreach and education.

Maryland's transportation agencies are also charged with the responsibility to provide a secure transportation system. Since the events of 9/11, threats to the personal security of travelers and to transportation assets have received heightened attention. The State's transportation agencies are actively addressing the increasing security requirements, particularly at its airports and port facilities, and continue to coordinate and seek grants from the federal government to provide the



most secure environment possible for the State's travelers.

These strategies have resulted in the following performance trends:

- Between 2002 and 2003, both the number of fatalities and injuries decreased on Maryland roadways.
- The State's 2003 fatality rate (1.19 fatalities per 100 million VMT) remains well below the national average (1.48 fatalities per 100 million VMT).
- BWI Airport and the Port of Baltimore continue to fulfill their respective federal security requirements.
- Customer perception of safety on the MTA system has decreased over the past two years even though the number of reported crimes has decreased.

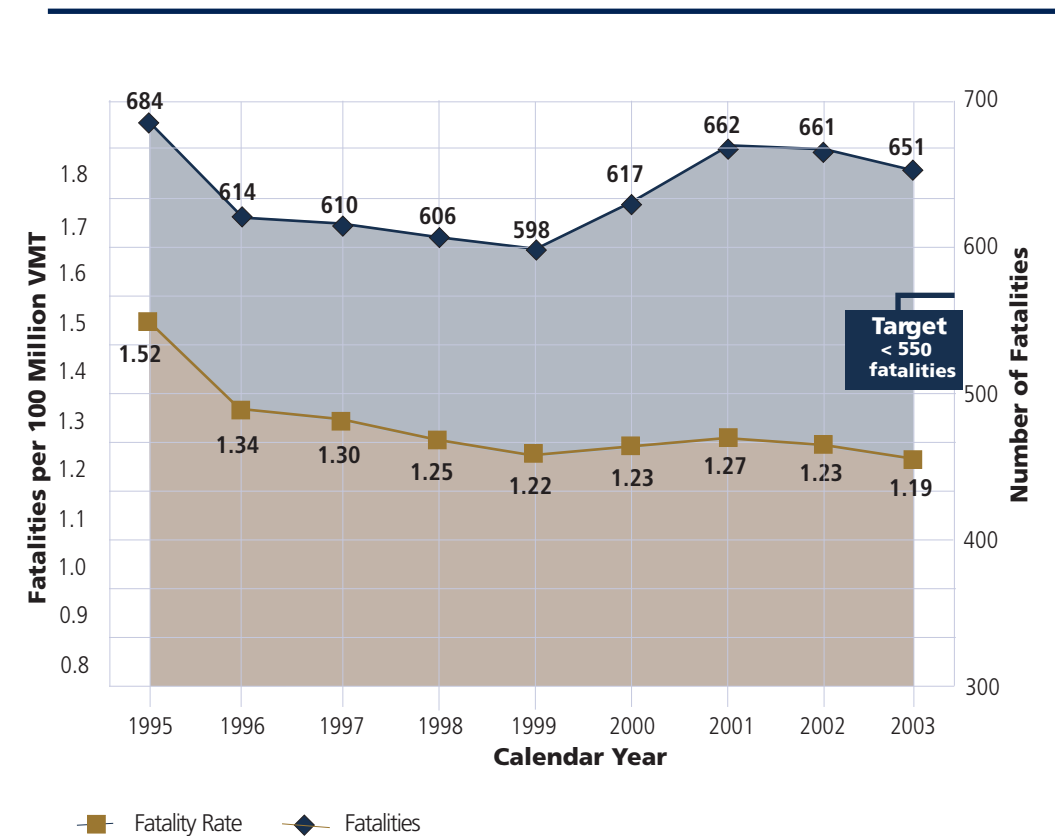
### PERFORMANCE MEASURES: SAFETY & SECURITY

Performance Measure	Agency
Number and rate of injuries on all Maryland roads	SHA, MdTA, MVA
Number and rate of fatalities on all Maryland roads	SHA, MdTA, MVA
Customer perception of the safety of the MTA system	MTA
BWI compliance with Federal Aviation Administration (FAA) safety inspection	MAA
Port compliance with the Maritime Transportation Security Act 2002	MPA

**Injuries** (All Maryland Roads)



**Fatalities** (All Maryland Roads)



### Why Did Performance Change?

- ▶ Infrastructure enhancements.
- ▶ Public education programs (e.g., "12 Months of Safety" program).
- ▶ MVA's Graduated License Program targets inexperienced drivers.
- ▶ Enforcement of safe driving laws.

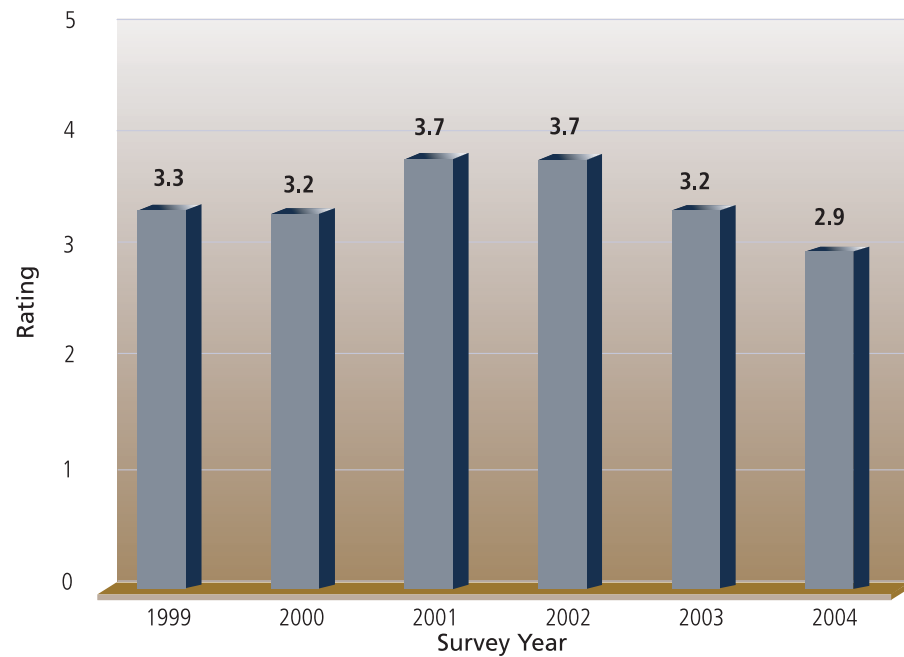
### Future Performance Strategies

- ◆ Improve seat belt usage.
- ◆ Enforce aggressive driving laws and use sobriety checkpoints to reduce fatalities from impaired driving.
- ◆ Implement training programs for state and local agencies for using "pedestrian safety toolbox."
- ◆ Implement Intelligent Transportation Systems (ITS) technologies to improve highway work-zone safety.



### Customer Perception of the Safety of the MTA System

(1= Poor and 5 = Excellent)



Note: Survey covers MTA Bus, Metro, Light Rail and MARC services only

#### Why Did Performance Change?

- ▶ Limited purchases and overhauls of MTA's aging equipment.
- ▶ Decrease in customer perception may be linked to the after-effect of the terrorist attacks on 9/11/01.

(Note: from FY2003 to FY2004, the number of crimes reported on MTA transit services dropped from 1,726 to 1,023)

#### Future Performance Strategies

- ◆ Maintain police visibility at Light Rail, Metro subway, and parking lots.
- ◆ Add uniformed fare inspectors on Light Rail.
- ◆ Continue defensive driving training for bus operators.
- ◆ Purchase new transit buses and complete the mid-life overhaul of railcars.

MDOT and MdTA play a role in providing security at Maryland's airports and port facilities, a role that has become critically important since the terrorist attacks on 9/11/01. Security performance measures include BWI's fulfillment of FAA safety certification requirements and MPA's compliance with Maritime Transportation Security Act 2002 mandates. In 2004, both BWI and MPA met their respective federal requirements. To further improve airport and port security, MAA and MPA have identified additional performance strategies:

### Future Performance Strategies

#### MAA

- ◆ Develop and implement an Airport Risk Management Program Manual.
- ◆ Develop and implement a safety awareness program for employees.
- ◆ Enhance security through technological improvements (e.g., closed-circuit television).

#### MPA

- ◆ Work closely with the U.S. Coast Guard and U.S. Customs to facilitate a safe and secure port.
- ◆ Apply for Federal Port Security grants (received grants in each of the four solicitations to date).
- ◆ Implement Facility Security Plan.

# Goal 4

## PRODUCTIVITY & QUALITY

#### POLICY OBJECTIVES:

- Reduce project implementation time through process improvements
- Incorporate environmental stewardship into all projects and activities
- Contain costs and leverage resources with business-like organization and innovative approaches to funding and service delivery

Due to fiscal constraints and continued increases in demand for transportation services and facilities, MDOT has had mixed success this year in meeting the productivity goal and supporting objectives. However, the Governor's recent funding plan will provide MDOT with the resources necessary to begin addressing needed improvements. The 2005-2010 CTP represents a major step forward and will enable the modal administrations to strive for improved efficiency, reduced costs, and customer service enhancements. MVA, SHA, MAA, and MTA actively collect feedback from their customers to understand better how to provide top quality services. MAA recently completed a new customer survey whose data will be addressed in next year's report.



Some recent notable performance changes include:

- SHA maintenance expenditures per lane mile have declined since 1998. The increase that occurred in 2004 can be attributed to Hurricane Isabel.

- Total operating expenses at BWI Airport fell in FY2004 due to lower debt service payments while operating revenue reached an all time high of \$170.1 million.
- MPA revenues and expenditures continue to increase.
- MVA transaction costs declined from FY2000-FY2003. A slight increase occurred in FY2004 partially due to the implementation of a new more secure driver license.
- Customer satisfaction ratings for MVA, SHA, and MTA have fallen.
- Reductions in passenger loads and increasing service delivery costs have resulted in higher costs per passenger and per passenger mile for several MTA services.

### PERFORMANCE MEASURES: PRODUCTIVITY & QUALITY

Performance Measure	Agency
Transportation-related emissions by region	MDOT
Percentage of Maryland drivers rating SHA overall performance as "very good" or "outstanding"	SHA
Customer satisfaction with MTA	MTA
MVA customer service rating "good" or "very good"	MVA
SHA Maintenance expenditures per lane mile	SHA
MVA cost per transaction	MVA
MTA operating cost per passenger and per passenger mile	MTA
BWI operating expense per enplaned passenger	MAA
BWI revenue versus operating expense	MAA
MPA revenue versus operating expense	MPA



### Transportation-Related Emissions by Region

Performance Measure	Region	1990	1999	2002*
VOC (Tons per day)	Baltimore	165.1	91.8	72.8
	Washington	299.2	212.4	125.5
NOx (Tons per day)	Baltimore	228.2	148.2	176.2
	Washington	380.8	273.2	290.8

\*2002 data estimated by a different model than in 1990 and 1999.



#### Why Did Performance Change?

- ▶ Technological vehicle emissions improvements on a national level.
- ▶ Investments in alternative modes of transportation.
- ▶ Implementation of additional emissions reduction strategies in non-attainment areas.

#### Future Performance Strategies

- ◆ MDOT contributions to non-mobile emissions reduction efforts.
- ◆ Continued investments in alternative transportation.
- ◆ New federal regulations reducing truck/auto emissions/low sulfur fuel.
- ◆ Federal requirements for non-mobile emissions reduction, including off-road engines.

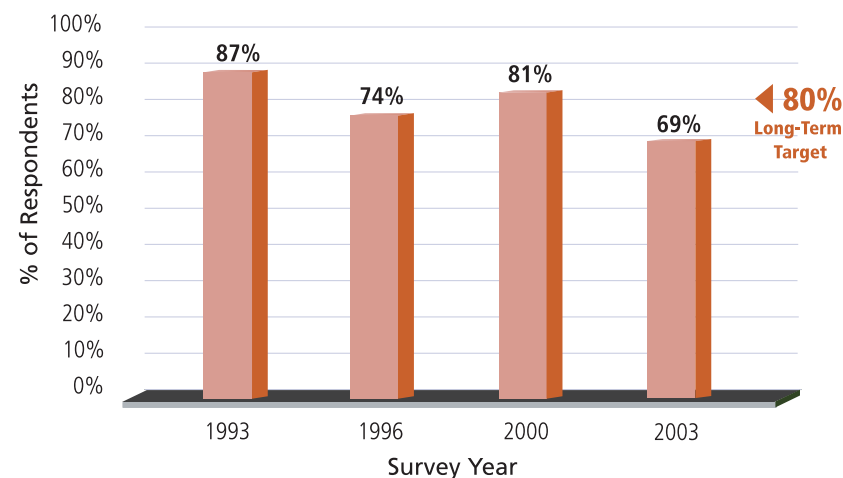
#### Why Did Performance Change?

- ▶ Fiscal constraints in FY2004 reduced SHA's ability to respond to customer needs.
- ▶ Harsh weather in FY2004 led to unsatisfactory road conditions.
- ▶ Congestion levels continue to increase due to growing demand for travel.

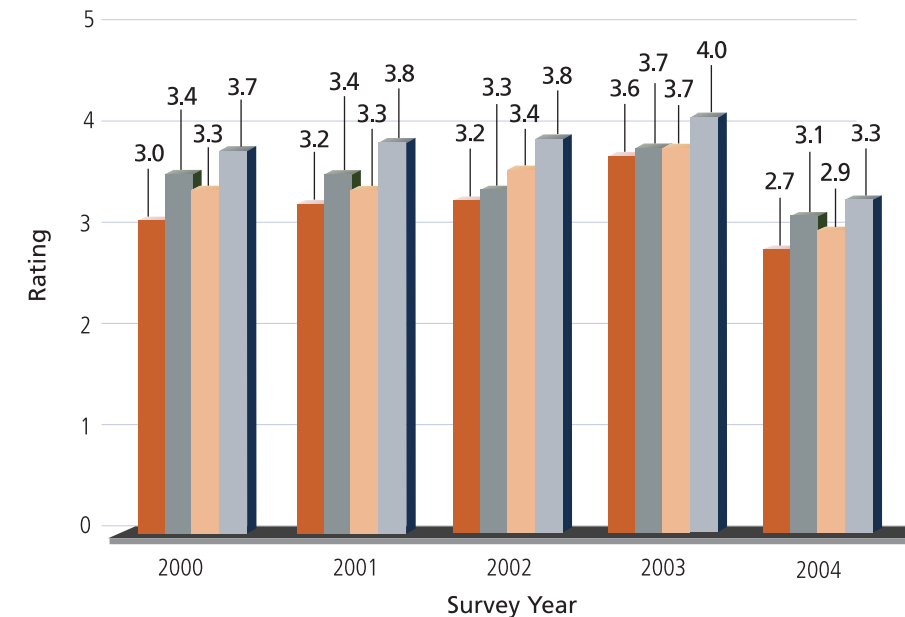
#### Future Performance Strategies

- ◆ Conduct statewide focus groups to better understand low customer ratings.
- ◆ Emphasize the provision of high-quality roads (e.g., timely snow removal, proper lighting and signage).
- ◆ Respond to customer inquiries in a courteous and timely manner.
- ◆ Revenue increases will give SHA the resources to address Maryland driver concerns.

### Percentage of Maryland Drivers Rating SHA's Performance as "Very Good" or "Outstanding"



### Customer Satisfaction with MTA (1=Poor and 5=Excellent)



Targets (Short-Term, Long-Term)

Bus	(3.3, 4.0)	Light Rail	(3.5, 4.0)
Metro	(3.5, 4.0)	MARC	(3.9, 4.5)

#### Why Did Performance Change?

- ▶ Limited purchases and overhauls of MTA's aging equipment.

#### Future Performance Strategies

- ◆ Purchase new transit buses and complete the mid-life overhauls of rail cars.
- ◆ Increase the percentage of MTA service provided on-time.

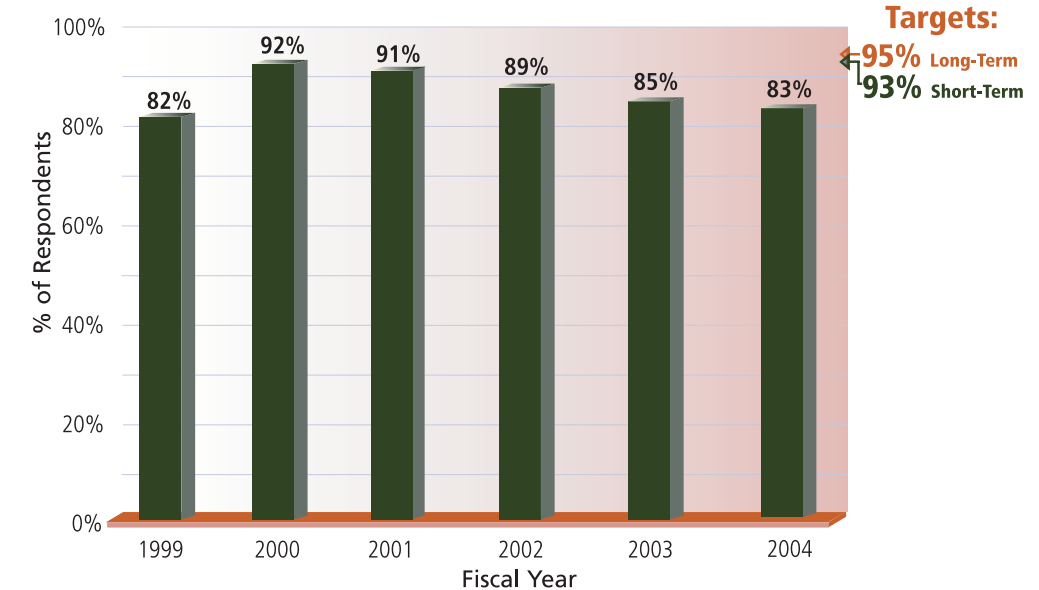
### MVA Customer Service Rating "Good" or "Very Good"

#### Why Did Performance Change?

- ▶ Visit time increased due to a new driver's license system and a hiring freeze that negatively impacted the satisfaction ratings.

#### Future Performance Strategies

- ◆ Train all customer service representatives to provide timely, consistent, and effective service.
- ◆ Implement procedures to decrease transaction processing time at branch offices.





### SHA Maintenance Expenditures per Lane Mile



#### Why Did Performance Change?

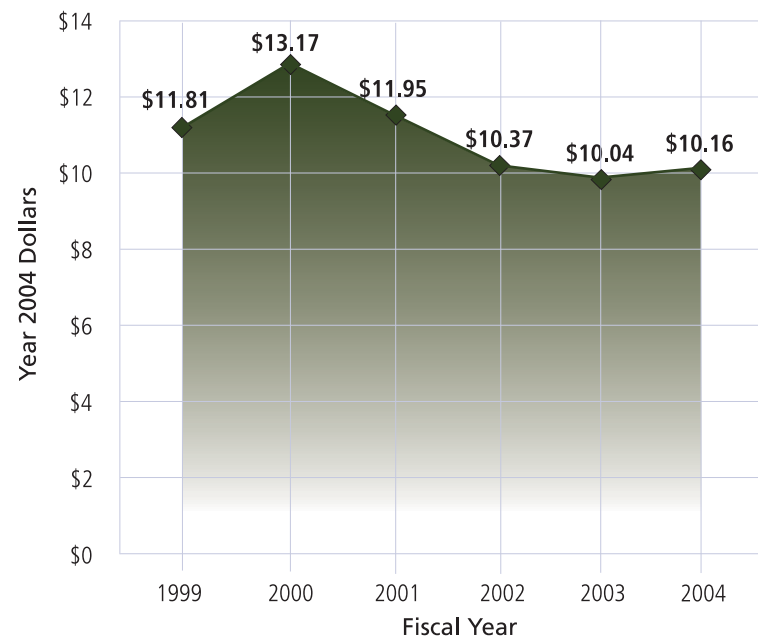
- Maintenance work shifted to outside contractors when cost effective.
- Previous cost reductions due to conversion to natural landscaping along highways.
- Hurricane Isabel resulted in higher maintenance costs in FY2004.

#### Future Performance Strategies

- Implement an integrated Asset Inventory program to support future development of a Maintenance Management System.
- Evaluate corporate sponsorship of park-and-ride lots and rest areas.



### MVA Cost per Transaction



#### Why Did Performance Change?

- The MVA budget has remained stable due to a hiring freeze while the number of transactions has increased.

#### Future Performance Strategies

- Address the balance between a reduction in transaction costs that is likely to increase customer visit time and decrease service ratings.

### MTA Operating Cost per Passenger



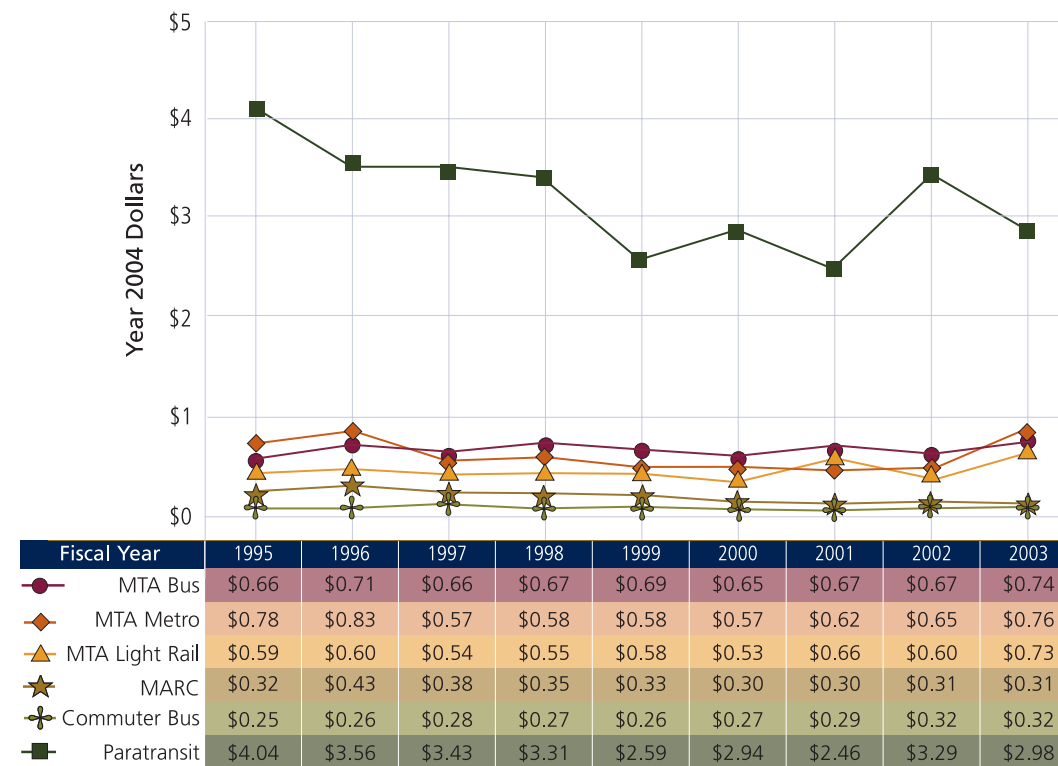
#### Why Did Performance Change?

- Costs for commuter rail and commuter bus have increased along with passenger loads, resulting in a moderate increase in the cost per passenger and passenger mile.
- Labor, insurance, maintenance, and fuel costs for Light Rail, bus, and Metro services have increased, while ridership has remained flat or declined. As a result, costs per passenger and per passenger mile have increased.

#### Future Performance Strategies

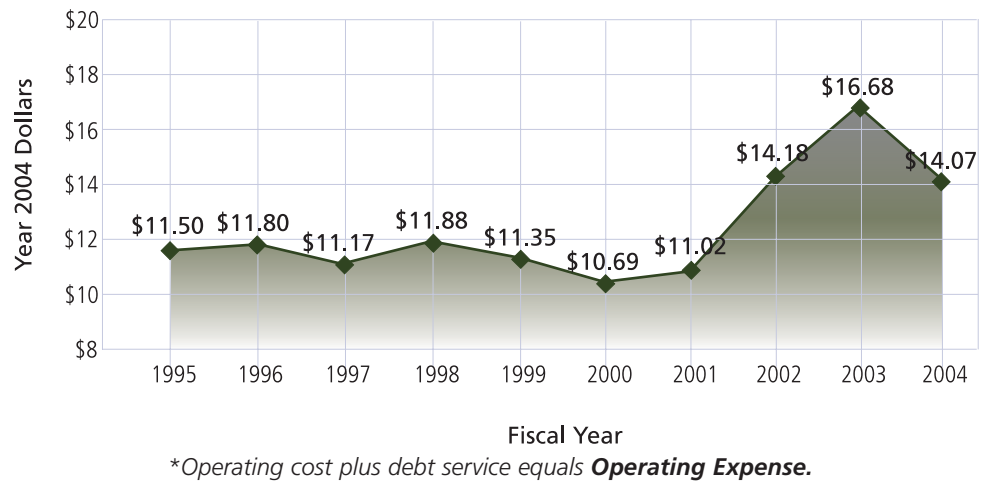
- Apply Intelligent Transportation Systems to improve bus operations.
- Restructure bus lines to increase ridership and reduce costs.
- Complete study of improvements to existing bus facilities or construction of new facilities.
- Enhance service convenience with new fare equipment and the Maryland Transit Pass.
- Finish Light Rail double track construction to increase operating reliability and safety.
- Utilize Red-Line and Green-Line studies to plan for future ridership.

### MTA Operating Cost per Passenger Mile





### BWI Operating Expense\* per Enplaned Passenger



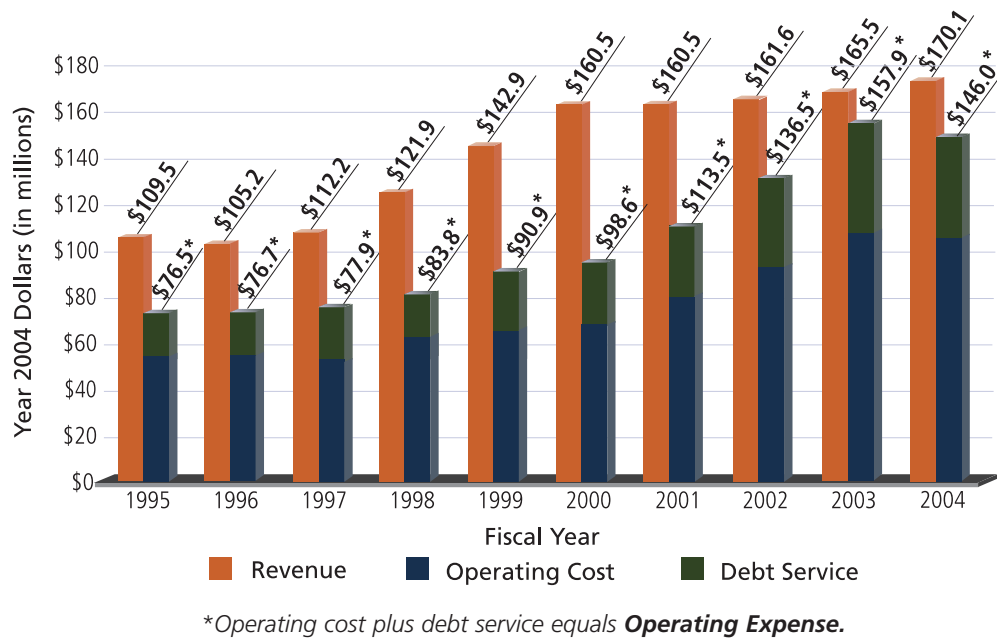
#### Why Did Performance Change?

- ▶ Debt service payment decreased between FY2003 and FY2004 resulting in a decrease in total operating expenses.
- ▶ Annual revenue increases indicate a continuing rebound from the 9/11 impact on passenger numbers.
- ▶ Operating expenses have increased due to heightened security requirements and severe winter weather in FY2003.

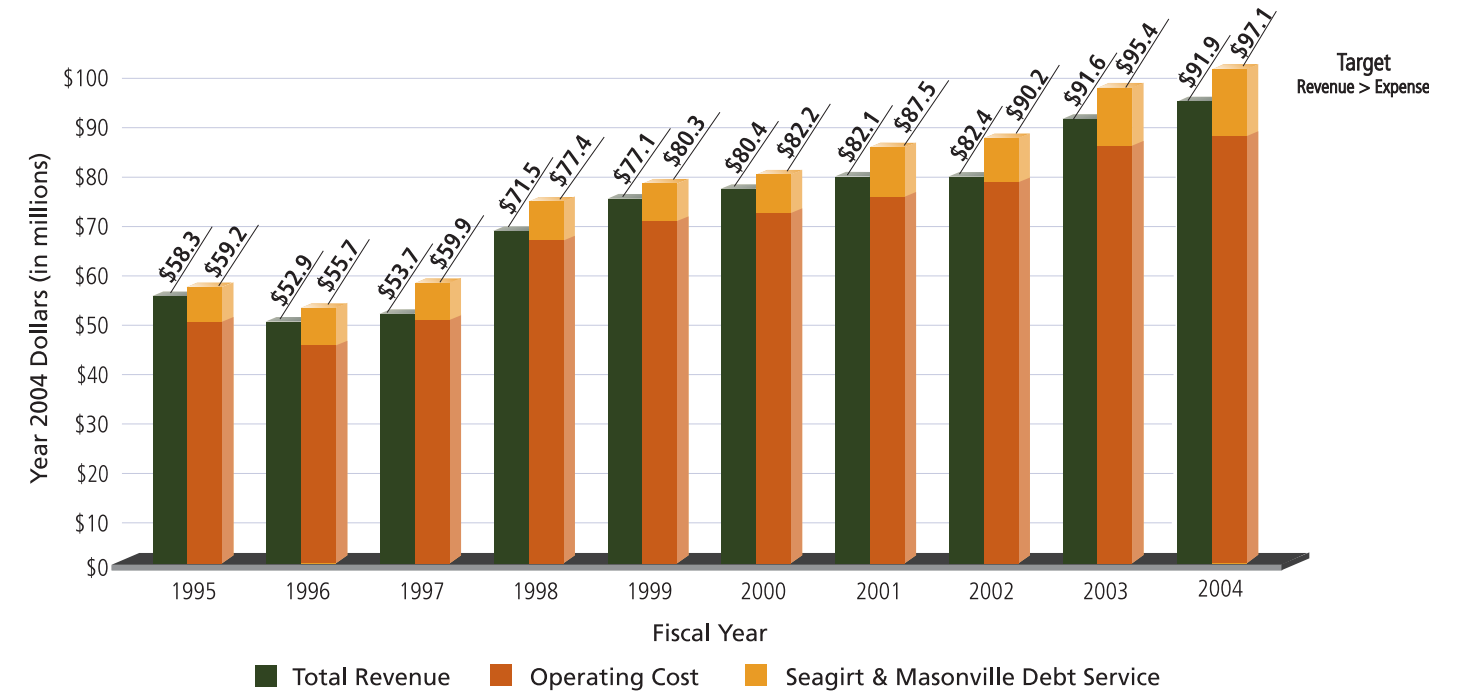
#### Future Performance Strategies

- ◆ Fully implement the Basic Use and Lease Agreement (BULA) with airlines to generate additional revenue and improve operating efficiencies.
- ◆ Increase revenues and improve efficiency through new concessions contract, an automated parking system, and charging tenant employees a parking rate that better reflects the cost of providing the service.
- ◆ Offset the increase in debt service payments (FY2005 - FY2006) with additional revenue generating or operating cost reduction strategies.

### BWI Revenue versus Operating Expense\*



### MPA Revenue versus Operating Expense



#### Why Did Performance Change?

- ▶ Success of the MPA Strategic Plan's focus on niche cargoes has increased tonnage.
- ▶ MSC and Evergreen shipping lines had record cargo levels in FY2003 and FY2004 resulting in additional MPA revenue.
- ▶ Success of Maryland International Terminals (MIT) increased revenues.
- ▶ Increase in debt service payments for Seagirt and Masonville terminals.
- ▶ Operating costs have risen due to increased security and insurance costs resulting from the terrorist attacks on 9/11/01.

#### Future Performance Strategies

- ◆ Grow revenue stream by continuing to increase cargo tonnage levels and the occupancy or sale of the World Trade Center (WTC).
- ◆ Apply Governor's Strategic Budget process to improve efficiencies.
- ◆ Identify strategies to offset the impact of higher energy prices, weak dollar and changing world economies that could lower international cargo levels through MPA terminals.





# Induced Travel

As a part of the State Transportation Article, MDOT is required under the Annual Attainment Report provision "to the extent practicable, account for the effect of planned transportation investments on inducing automobile travel." This section describes recent research on induced travel and possible approaches for reflecting findings into the Department's planning efforts.

The consensus definition for induced travel in current use is any increase in daily travel (measured as passenger or VMT) resulting from a change in the transportation system. Estimating induced travel has been a formal part of highway planning dating back to the 1930s when planners recommended a factor for "induced traffic" to account for the growth in population and employment, increases in vehicle ownership, or other changes that might cause traffic to increase greater than trends would suggest. This approach continued until the 1950s when sophisticated travel forecasting methodologies were developed to better account for population and employment growth, development density, and car ownership. As a result, interest in induced travel waned until the 1990s when new research efforts were undertaken.

Research on induced travel is still evolving. Although strides have been made to define approaches to measure the effect of investments and capacity increases on total travel, it is still extremely difficult to determine conclusively the magnitude of induced travel, particularly at a system level. Few reliable studies have been completed and the limited availability of carefully collected "before and after" data makes its evaluation difficult. Much recent research concludes that there is a strong need to improve the capabilities and reliability of travel demand models, including land use data inputs. What is referred to as "induced travel" may in fact be the result of inadequate existing travel demand forecasting

model structures, erroneous information regarding future land use changes, or simply shifts in travel from adjacent roadways.

From the review of the literature, several key observations relate to the practical requirement for MDOT's planning efforts to reflect induced travel.

- There is wide agreement that there is a component of travel that is induced, but that it is one element among many that influence the growth in travel.
- Different definitions of induced travel and measurement methods lead to a wide range of estimated induced travel relationships, both in the short term and the long term.
- Although several estimation approaches exist, there is no widely accepted single method for measuring induced travel prospectively at the project level.

The existing travel demand forecasting approach continues to be improved and may, in the long term, offer the opportunity for MDOT and other transportation planning organizations to isolate the effect of transportation improvements on changes in travel demand. In the interim, MDOT will benefit from continued investments in staff resources to support travel demand forecasting enhancements to address weaknesses in the forecasting approach that are, in some cases, attributed incorrectly to induced travel. MDOT will continue to use state-of-the-art forecasting techniques in project planning while, at the same time, monitor research on approaches to evaluate the effects of induced travel prospectively. MDOT will also remain involved in efforts aimed at reducing the number of trips and shortening trip lengths, such as Transit Oriented Development (TOD) and improvements in the job / housing balance in parts of the State.



# Travel Demand Management

Maryland's transportation system includes a variety of state and local Transportation Demand Management (TDM) strategies. Many of these strategies to reduce Maryland's growth of vehicle trips and VMT have been incorporated into air quality plans. In addition to improving air quality, TDM strategies also can play an important role in addressing congestion, environmental, safety, and quality of life issues associated with ever-increasing demand for automobile travel.

The following table shows the reduction in annual vehicle trips and VMT due to Transportation Emission Reduction Measures (TERMS) for the Baltimore and Washington regions.



## Transportation Emission Reduction Measures (TERMS) During 2003

Program	Daily Reduction in Vehicle Trips	Daily Reduction in Vehicle Miles of Travel
Telecommunication Resource Center	23,300	762,700
Employer Outreach for Bicycles	284	1,225
Employer Outreach	71,267	1,107,698
Guaranteed Ride Home	7,127	235,363
Commuter Operation Program	1,970	66,056
MTA College Pass	3,072	36,864
Commuter Choice	10,500	105,000
DASH Shuttle	1,961	5,564
<b>Total</b>	<b>119,481</b>	<b>2,320,470</b>

In addition to the TERMS that are listed to the left, programs such as roadway and parking price initiatives, commute trip reduction activities, high-occupancy vehicle lanes, transit improvements, rideshare programs, and land use and urban design such as Transit Oriented Development (TOD) also are part of the TDM strategies. MDOT is currently conducting project planning studies for four major new transit lines in the State: Red-Line and Green-Line in Baltimore, Corridor Cities Transitway and Bi-County Transitway.

The following table indicates the number of and average weekday utilization of SHA and MTA owned park-and-ride facilities in the State, an indicator of TDM programs. Utilization of park-and-ride facilities varies across the system with heaviest usage in the Washington region.

## Statewide Park-and-Ride Facilities

Operator	Total Spaces	Average Weekday Utilization
SHA	10,542	5,642
MTA Transit Only	30,294	20,284
MTA multi purpose	9,528	N/A

Note – Utilization data is from a one day survey in June 2003 and does not include multi-purpose parking lots. WMATA park-and-ride facilities are not included.



# APPENDIX: List of Measures

BALTIMORE  
For More Detail See  
Map on Reverse Side

Agency	MTP Goal	Performance Measure	Definition
MAA	Safety	BWI compliance with FAA safety inspection*	Pass / Fail Rating.
MAA	Productivity	BWI operating expense per enplaned passenger	Operating expense includes State and Federal Operating Expenses, and restricted revenue for debt service.
MAA	Productivity	BWI revenue versus operating expense	Operating revenue includes collected fees, PFCs, CFCs, and Federal Operating Revenue. Operating expense includes State and Federal Operating Expenses, and restricted revenue for debt service.
MDOT	Productivity	Transportation-related emissions by region	Tons of Volatile Organic Compound (VOCs) and Nitrogen Oxide (NOx), precursors of Ozone, emitted per day for an average weekday from transportation sources in the Baltimore and Washington regions.
MdTA	Mobility	Percentage of tolls collected electronically*	Toll collections by E-ZPass <sup>SM</sup> and Automatic Vehicle Identification / total number of toll collections.
MPA	Safety	Port compliance with Maritime Transportation Security Act 2002	Pass / Fail Rating.
MPA	Productivity	MPA revenue versus operating expense*	Total operating expense of MPA (includes Seagirt and Masonville expenses); revenues collected through Port fees.
MTA	Efficiency	Percentage of MTA service provided on time*	Proportion of MTA services that meet scheduled service times (performance calculated differently for each mode).
MTA	Mobility	Annual vehicle revenue miles of MTA service provided	Vehicle revenue miles are defined as each mile for which a transit vehicle is in service and accepting customers.
MTA	Safety	Customer perceptions of the safety of the MTA system*	Average annual customer survey rating of the safety (while riding, at stops and stations, and at parking lots) of MTA services (bus, Metro, light rail, and MARC) on a 1 to 5 scale (1=poor to 5=excellent).
MTA	Productivity	Customer satisfaction with MTA	Average annual customer survey rating of their overall satisfaction of each MTA service (bus, Metro, light rail, and MARC) on a 1 to 5 scale (1=poor to 5=excellent).
MTA	Productivity	MTA operating cost per passenger	(Operating cost for mode of transit service / total passengers.) Values calculated separately for MTA bus, Metro, light rail, MARC, contracted bus, and paratransit.
MTA	Productivity	MTA operating cost per passenger mile	(Operating cost for each mode of transit service / total miles traveled by passengers.) Values calculated separately for MTA bus, Metro, light rail, MARC, contracted bus, and paratransit.
MVA	Efficiency	Average MVA branch customer visit time*	Average visit time based on quarterly survey of customers.
MVA	Efficiency	Percentage of MVA transactions completed by alternative services*	[Transactions by alternative services (using a means other than a visit to an MVA branch) / tracked transactions.]

Agency	MTP Goal	Performance Measure	Definition
MVA	Productivity	MVA customer service rating "good" or "very good"*	Percentage of surveyed customers rating their MVA experience as "good" or "very good." Surveys conducted on a quarterly basis.
MVA	Productivity	MVA cost per transaction	(Operating costs plus capitalized costs / tracked transactions.)
SHA	Efficiency	Percentage of SHA-maintained roads with acceptable ride quality*	Percentage of interstate miles with International Roughness Index (IRI) value less than 120 inches per mile and non-interstate roadways with IRI values less than 170 inches per mile. IRI is a standardized procedure that measures the pavement roughness as the cumulative deviation from a smooth surface in inches per mile.
SHA	Efficiency	Reduction in incident congestion delay*	Number of driving hours saved due to the Coordinated Highway Action Response Team (CHART) incident management system.
SHA	Mobility	Percentage of lane miles with average annual volumes below congested levels	Percentage of freeway lane miles with an average annual density less than 20,000 vehicles per lane per day (vplpd) and percentage of arterials with an average annual density less than 10,000 vehicles per lane per day. Facilities with densities greater than these vplpd levels will result in congested conditions.
SHA	Productivity	Percentage of Maryland drivers rating SHA overall performance as "very good" or "outstanding"*	Percentage of Maryland driver survey respondents rating their "overall satisfaction" with SHA as a "B" or better on an A to D scale. Survey conducted every three to four years.
SHA	Productivity	Maintenance expenditures per lane mile*	(Maintenance expenditures / lane mile.) Maintenance expenditures include routine landscaping, traffic signing, lighting, and signal upkeep, but exclude resurfacing (e.g., asphalt overlays or patching concrete pavement).
SHA/ MdTA	Efficiency	Percentage of SHA and MdTA NHS bridges meeting Federal structural standards	Percentage of National Highway System bridges that are not structurally deficient (i.e., meet Federal structural standards). "Structurally deficient" refers to a bridge that is restricted to light vehicular traffic, is closed, or requires immediate rehabilitation to remain open.
SHA, MdTA, MVA	Safety	Number and rate of injuries on all Maryland roads*	The annual number of persons injured on all Maryland roads. Injury rate is calculated as injuries per 100 million vehicle miles of travel.
SHA, MdTA, MVA	Safety	Number and rate of fatalities on all Maryland roads*	The annual number of fatalities on all Maryland roads that occur within 30 days of a crash. Fatality rate is calculated as fatalities per 100 million vehicle miles of travel.
All Agencies	Mobility	Peak period congestion on freeways in Baltimore/Washington regions	Location of congested conditions based a series of aerial photos.

\* Performance measures also included in the other modal performance documents.



This document is prepared pursuant to Transportation Article Section 2-103.1 of the Annotated Code of Maryland. Additional copies are available by calling (410) 865-1277; Toll Free (888) 713-1414 or from the internet at [www.marylandtransportation.com](http://www.marylandtransportation.com). This document is available in alternative formats upon request.



**7201 CORPORATE CENTER DR.  
HANOVER, MARYLAND, 21076**

