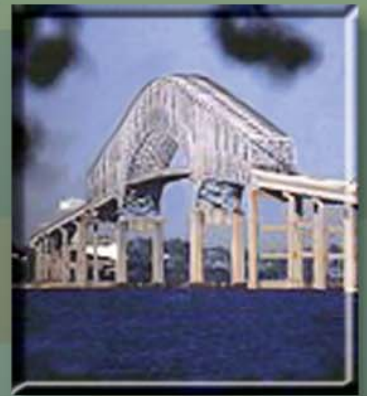
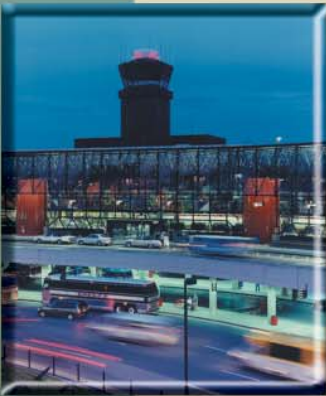




Maryland Department of Transportation

2003 Annual Attainment Report on Transportation System *Performance*



January 2003

JOHN D. PORCARI
Secretary of Transportation

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Maryland Department of Transportation, Office of Planning and Capital Programming

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Executive Summary

This 2003 Report is the second *Annual Attainment Report on Transportation System Performance* for the Maryland Department of Transportation (MDOT). MDOT holds a unique position among State transportation departments. It was created in 1971 when 13 different State agencies were consolidated into a single department under the Secretary of Transportation. The Secretary's Office develops and sets the State's overall transportation policy and oversees the 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). In addition, the Maryland Transportation Authority (MdTA) is affiliated with the Department, with the Secretary serving as its Chairman.



MDOT was also one of the first State transportation departments in the country to be funded by an integrated Transportation Trust Fund. This is a dedicated source of funds that supports all of MDOT's activities including debt service, maintenance, operations, administration and capital projects. The most important benefit of the departmental structure and the Trust Fund is that they allow the Governor and State government to respond quickly and flexibly to current priorities.

As MDOT moves into the future, the goals that are included in the *Maryland Transportation Plan* (MTP) serve as the guide to our long term vision. It is reasonable then to step back and see how the Department is performing in attaining those goals.

This Report covers the period through the end of Fiscal Year 2002 and contains more than 50 performance measures, six-year and twenty-year performance targets for approximately half of the measures, and a more limited number of cost-effectiveness measures. This Report also incorporates performance measures from MDOT's *Bicycle and Pedestrian Access Master Plan*. Developing performance measures is an ongoing process that will result in continued improvements to the Attainment Report over time, with more relevance of data collection, greater refinement of the performance targets, and additional cost-effectiveness measures.

This Attainment Report indicates that MDOT has made progress toward achieving the goals outlined in the *Maryland Transportation Plan*. MDOT has had some notable successes, including a reduction in visit times at Motor Vehicle Administration facilities compared to five years ago, the provision of more information and services over the Web, and the modernization of the vehicle fleet of the Maryland Transit Administration. MDOT has also made significant strides in encouraging alternatives to the automobile. Some less encouraging results are worth noting, such as a looming shortfall in capital funding, an increase in the operating cost per passenger at Baltimore/Washington International Airport (BWI), due to increased security costs, and a slight decline in the overall performance of MTA bus routes. Highlights under each of the MTP's ten goals areas are noted here.

Smart Growth, Smart Transportation – MDOT has increased funding for two key programs related to Smart Growth — the Smart Growth Transit Program and the Neighborhood Conservation Program (NCP). Under the NCP, a total of 177 projects are now in concepts, design, construction, or have been completed across 111 communities.

System Preservation – All system preservation performance measures indicate that MDOT is maintaining or improving the condition of its existing infrastructure. In particular, the MTA has reduced the age of its bus fleet, and the State Highway Administration (SHA) has slightly improved pavement quality.

Transportation Facilities and System Performance – MDOT is challenged to meet the increasing demands for the use of its facilities. This year, the passenger demand for BWI slightly exceeded the industry recommended gate capacity; an issue currently being addressed through an expansion in the number of gates. State highways continue to experience high levels of congestion during peak periods, particularly in the Washington and Baltimore regions. SHA continues to identify and implement projects that can effectively mitigate growing congestion levels. MVA has successfully lowered visit times since 1997, although visit times increased slightly over the last two years. Recent hiring freezes may reverse this trend.

Safety and Security – MDOT continues to invest in projects and programs to improve the safety of the State's highway system. The fatality and injury rates on the State's highway system declined slightly over the past year. Other modal administrations are tracking safety statistics to identify areas of concern. Security has become a focus for all modal administrations.

Protecting Maryland's Environment – MDOT continues to meet its environmental responsibilities which include its efforts to reduce transportation-related emissions, its obligations to mitigate environmental impacts, and its financial commitments to the multi-state Chesapeake 2000 Agreement.

Providing Mobility and Accessibility with Transportation Choice – Consistent with national trends, Maryland faces a continued increase in Vehicle Miles Traveled (VMT) and an increasing share of commuters driving alone to work. The State is addressing this trend by supporting alternative modes of travel. Statewide transit ridership continues to increase. For the first time, this year's Report provides performance measures that monitor the quality and comprehensiveness of the State's bicycle and pedestrian networks.

Supporting the State's Economy – MDOT's investments in transportation facilities have made direct, positive impacts on the State's economy. Moreover, facility investments by the Maryland Port Administration (MPA) and the Maryland Aviation Administration (MAA) contribute to growth in freight shipments and passengers that generate positive economic impacts.

Moving Goods – MDOT continues to invest in facility improvements to support efficient freight movements in the State, such as provision of adequate port infrastructure and supporting roadway infrastructure for truck movements. General cargo activity at the MPA port facilities remains relatively stable.

Funding Our Transportation Future – This year's Report indicates that over the next six years, capital funding will fall short of the recommendations made by the Commission on Transportation Investment (CTI), the yardstick by which MDOT gauges its progress in meeting future capital needs. MDOT continues to identify and use alternative funding sources.

Serving Our Customers – Customer satisfaction surveys by the MPA, SHA, MVA, and MTA indicate a high rate of customer satisfaction. Each of the modal administrations is making progress in implementing the e-Government Initiative. The majority of the modal administrations have nearly reached the 80 percent web-accessibility target of this program.

Introduction

The purpose of this second Annual Attainment Report on Transportation System Performance is to present, describe, and discuss a set of performance measures that the Maryland Department of Transportation (MDOT) and Maryland Transportation Authority (MdTA) are using to gauge their progress towards meeting the goals and objectives defined by the Maryland Transportation Plan (MTP). The Attainment Report aims to provide MDOT management and the public with straightforward, condensed insights into the performance of the transportation system and the Department's effectiveness in achieving performance-based goals. Performance measures help identify policies or programs that need additional emphasis, highlight areas not being adequately addressed within existing programs, and draw attention to Department and Authority successes.

Report Organization

The Attainment Report is organized by the ten Maryland Transportation Plan goals. The goal name, supporting statement, and policy objective are directly excerpted from the MTP. A "strategy" section then discusses the general approach of MDOT in achieving a particular goal. Tables and graphs showcase the results of performance measures selected as representative of each goal area. Finally, the Report addresses Travel Demand Management (TDM) and induced travel to the extent practicable to meet the requirements of the authorizing legislation. The Appendix at the end of the Report provides a complete list of all performance measures with a detailed explanation of each measure. The performance measures are presented in three formats depending on data availability. These formats are described as follows:

- **Performance Indicators** – Indicators are general measures for which information is primarily presented for a single period only, most often the most recent fiscal year or calendar year. Although these measures provide valuable insight into agency performance, data availability often precludes reporting historical trends or setting long-term targets for these measures.
- **Performance Targets** – Targets are established for those measures central to the mission of MDOT, and for which data has been collected for some period of time. Targets provide guidance to policy-makers and set reasonable objectives for performance. In most cases, targets are established for both a six-year and 20-year period, corresponding to the timeframes of the Consolidated Transportation Plan (CTP) and MTP. Targets are established based on policy decisions and strategic goals as well as historical data that provided a reasonable basis for predicting future outcomes. Performance targets are emphasized for those measures for which MDOT has the strongest ability to influence the outcome.
- **Cost-Effectiveness Measures** – These measures track performance outcomes relative to expenditures. Currently, cost-effectiveness is evaluated for a small subset of measures. In many cases, funding programs are not directly aligned with specific performance measures. Therefore, in this year's Report, the focus is on those measures for which costs can be readily identified and attributed to related investments. In future reports, as more cost information becomes available, it is likely that the number of cost-effectiveness measures will be expanded.

MDOT has identified measures that give the most accurate and comprehensive assessment of the performance of the transportation system in meeting MTP goals and objectives. Because modal administrations use different performance measurement and tracking systems, data definitions for similar measures are not necessarily consistent. In addition, "current" data will vary by year, with some measures following the calendar year, others the fiscal year, and, in some instances, some data sources will lag the Report by several years.

Changes from the 2002 Report

Measures included in last year's Report were reviewed to identify potential areas of improvement. Although most measures included in the 2002 Report have been updated and presented in this year's Report, a limited number have been removed, added or, in a few cases, presented differently to improve public understanding of the information reported and now include performance measures from the Bicycle and Pedestrian Master Plan. For approximately half of these performance measures, six-year and 20-year performance targets have been established. In addition, for a more limited number of measures, cost-effectiveness data has now been included.

Future Reports

It is important to note that the selection of appropriate, accurate, and data-driven performance measures is an ongoing process that will likely result in continued improvements to the Attainment Report over time. This Report reflects only the second reporting period and, therefore, does not represent a full-fledged achievement of outcome-based measures, wherein the "ideal" relationship between the measure and outcome is always direct and straightforward. Moreover, the previously mentioned timeframe and data reporting inconsistencies will likely not disappear entirely, but will be mitigated over time through more in-depth and careful data monitoring. It is anticipated that improvements will be made to the Attainment Report in each successive year.

Legal Context and the Relationship of the Attainment Report to Other Planning Documents

The precedent for monitoring and reporting of performance measures was set in the Maryland General Assembly's 2000 Joint Chairman's Report and the Transportation Performance Act (Senate Bill 731), which was signed into law in May 2000. These require annual submittals of the Attainment Report each January as part of the State Report on Transportation. While Senate Bill 731 provides the legal mandate for performance measure reporting, the Attainment Report should also be viewed in the context of its relationship to other planning documents; namely, the Consolidated Transportation Program (CTP), the Maryland Transportation Plan (MTP), and the Managing for Results (MFR) initiative.

The Consolidated Transportation Program covers a span of six years, although it is updated annually to reflect changes in project priorities and financial commitments. The purpose of the CTP is to present budgetary resources and schedules for transportation projects covering all modal administrations, the Authority and all Maryland counties.

The Maryland Transportation Plan, in turn, serves as a guiding document for general MDOT policy. It is updated every three years and contains a set of goals and policy objectives that highlight the Department's emphasis on improving personal mobility and accessibility, strengthening the State's economy, and supporting efficient freight transportation, among other goals. The MTP goals and objectives provide the vision, policy framework, and context for State investments.

The Managing for Results initiative is shorter-term in focus than either the Attainment Report or the MTP and reports on two years of actuals, the current year and the budget year. Budget authorities and the General Assembly use this information in allocating resources based on successful achievement of performance targets. Internally, agencies use these same measures, as well as other internal measures, to track current performance towards achieving objectives. Those agencies with have most successfully implemented MFR throughout their organizations have taken the next step and are making operating and resources allocation decisions to focus people and resources on achieving annual targets.

Smart Growth, Smart Transportation **Goal 1**

Lead the development of transportation investments and facilities that support Smart Growth.



Policy Objectives

- Direct transportation funding to Priority Funding Areas and support the Smart Growth Executive Order.
- Design and coordinate transportation projects, facilities, programs, and services to reinforce local land use plans and economic development initiatives that support Smart Growth principles.
- Work with local communities to increase their understanding of Smart Growth principles and opportunities and incorporate Smart Growth into local plans and visions.

STRATEGY

In 1997, the Maryland General Assembly adopted a legislative package to initiate the Smart Growth program within the State. This program seeks to preserve the State's most valuable resources, support existing communities and neighborhoods, and save taxpayers the unnecessary cost of building infrastructure to support sprawl. The Maryland Department of Transportation's (MDOT's) commitment to this initiative is shown through its assistance to communities to help identify innovative approaches to address transportation issues.

MDOT has also implemented the Smart Growth initiative through specific programs that are targeted to support existing communities. As examples, MDOT's Neighborhood Conservation Program (NCP) and Maryland Transit Administration's (MTA's) Smart Growth Transit Program are cornerstones of Maryland's Smart Growth initiative. In many cases, the effect and reach of these programs will be determined over the course of decades rather than years. Given the more long-term influence these projects have on development, revitalization, and investment, outcomes are not necessarily related to current year spending. However, MDOT is exploring potential ways to more directly measure the effectiveness of programs with outcome based measures.

The NCP helps rebuild communities across Maryland, from older urban areas to small rural towns, by paying for transportation and related infrastructure improvements in neighborhoods that are designated for revitalization. MDOT is continuing to support this program by providing technical assistance to local communities to develop NCP projects.

The MTA Smart Growth Transit Program consists of several infrastructure development programs, including Neighborhood Conservation and Transit Station Development Incentive Program funding, that are designed to encourage community revitalization activities around transit stations. The program has multiple objectives including encouraging revitalization, increasing ridership, and improving transit facilities and access.



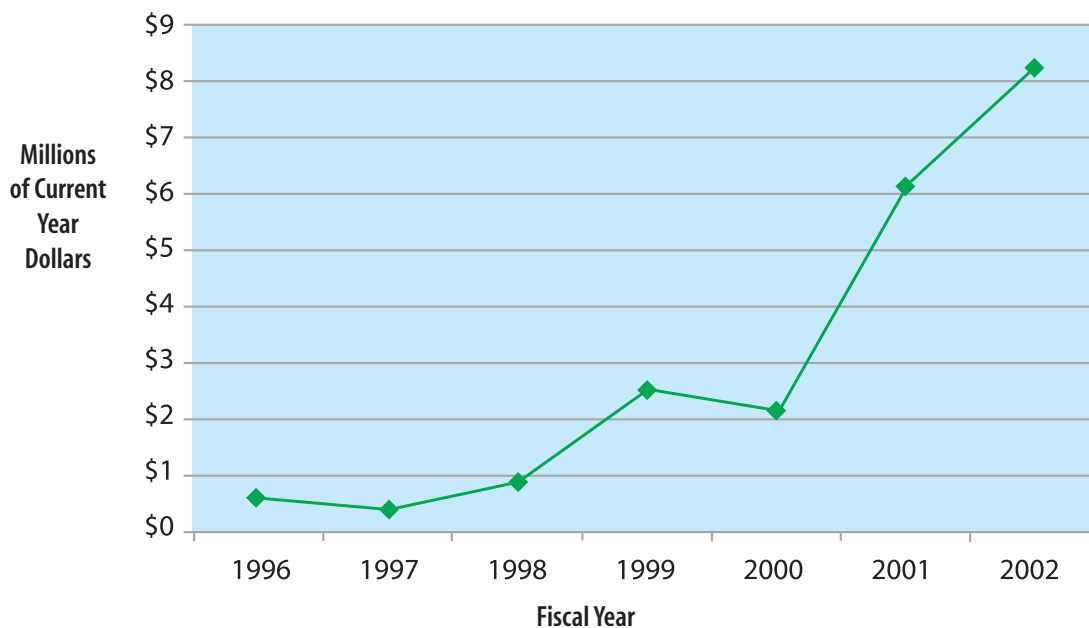
PERFORMANCE MEASURES: SMART GROWTH, SMART TRANSPORTATION

Performance measures identified for this goal area focus on MDOT's contributions to two of its key programs related to Smart Growth: the Smart Growth Transit Program and the Neighborhood Conservation Program.

Performance Indicators

MDOT's contribution to the Smart Growth Transit Program has continued to increase since the program's inception in 1996. Although MDOT has not established a target funding level for this program, it continues to provide for program support.

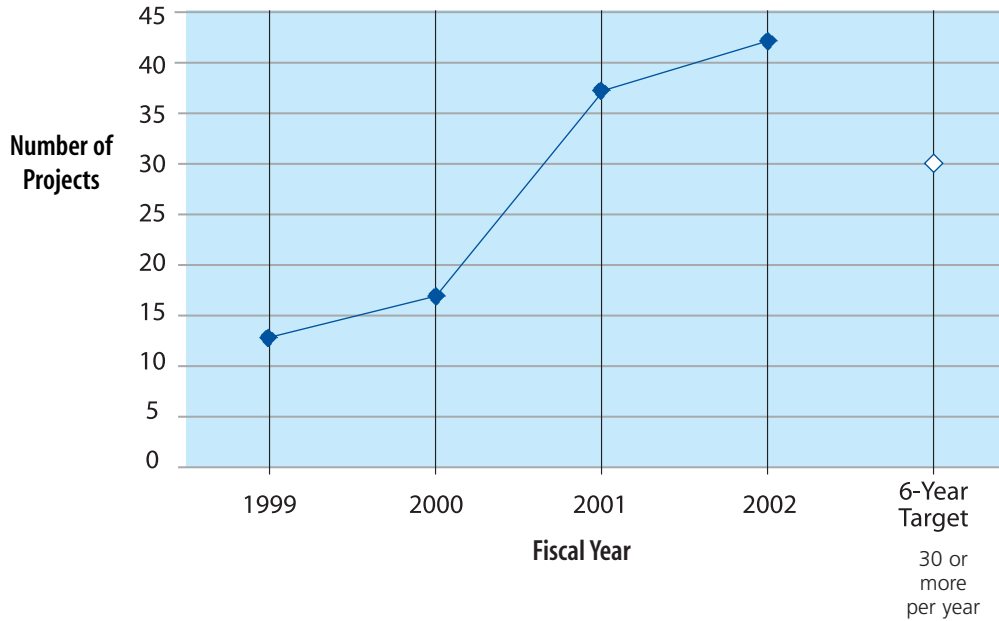
Dollars Spent on the Smart Growth Transit Program



Performance Targets

As the Neighborhood Conservation Program (NCP) continues to mature, many projects are being completed. Within the next six years, MDOT's objective is to advertise for construction at least 30 projects per fiscal year.

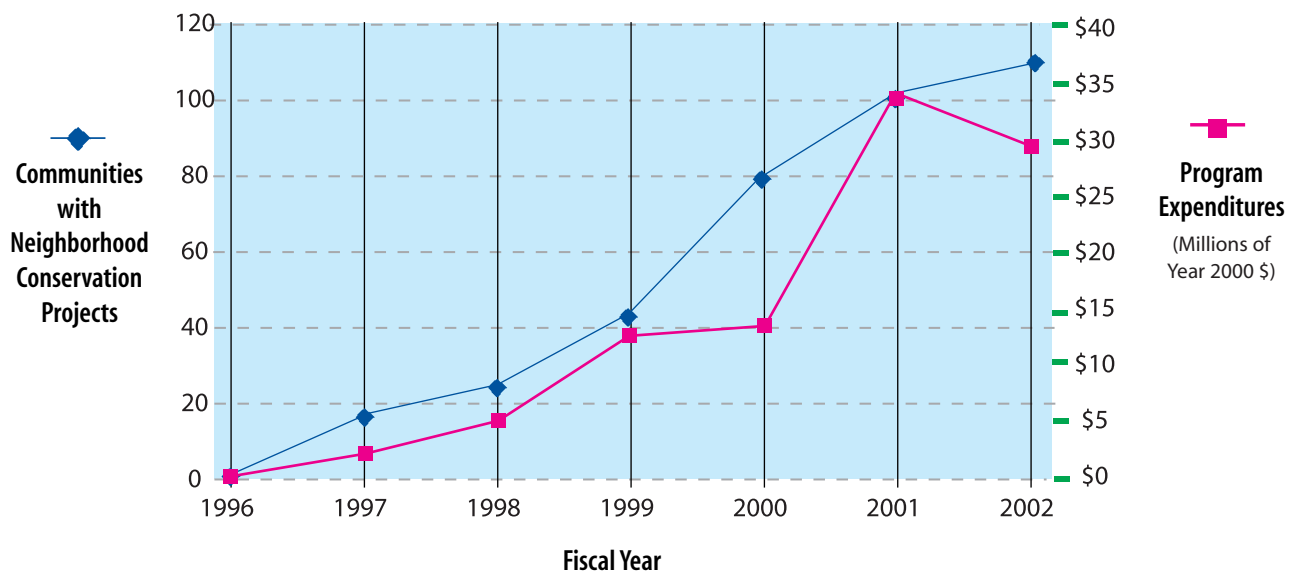
Number of Projects Advertised for Construction Under the Neighborhood Conservation Program



Cost-Effectiveness Measures

Since 1997, the State has invested more than \$100 million in the NCP program. Fifty-three projects are now complete, and 124 are in either the concepts, design, or construction stage across 111 communities.

Number of Communities with Neighborhood Conservation Projects in Concepts, Design, Construction, or Completed



Goal 2 System Preservation



Protect the current investment in the State's transportation system before investing in system expansion.

Policy Objective

- Preserve and maintain existing transportation infrastructure and services as needed to realize their useful life.

STRATEGY

System preservation stands as one of the central responsibilities of the Maryland Department of Transportation (MDOT). A large portion of MDOT's capital program is focused on maintaining the existing transportation system. State system preservation responsibilities range from maintaining track on the Maryland Transit Administration (MTA) light rail and heavy rail systems in the Baltimore region, to ensuring the quality of pavement condition on State roadways, to providing adequate shipping facilities at the State's ports. Each modal administration uses its own measures to evaluate the condition of the various facilities it operates and has established programs to address the maintenance, rehabilitation, and replacement needs of the existing assets.

The State Highway Administration (SHA) and the Maryland Transportation Authority (MdTA) focus a significant level of resources on the maintenance and rehabilitation of the existing highway network. Meanwhile, the State's two major transit operators, MTA and the Washington Metropolitan Area Transit Authority (WMATA), are in the process of modernizing the current transit fleet. The currently approved Consolidated Transportation Program (CTP) includes a ramped-up bus replacement program that will bring the average age of the MTA bus fleet to the Federal Transit Administration (FTA) recommended level of 6.5 years within a five-year time period.

The Maryland Aviation Administration (MAA) is seeking to maintain a statewide general aviation system of the existing public-use airports across the State, now numbering 35. Given the increasing security and financial challenges that face privately held general aviation airports, MAA is continuing to provide technical support and facilitate financial assistance where and when necessary. Although, with the exception of the Martin State (MTN) and Baltimore/Washington International (BWI) airports, MAA is not directly responsible for airport operations, this technical assistance allows many airports to continue to operate.

Finally, the Maryland Port Administration (MPA) is in the process of upgrading its facilities to ensure they meet or exceed current industry standards. This will allow MPA to remain competitive within the national market and will allow port operations to continue to strengthen and boost the State's economy.

PERFORMANCE MEASURES: SYSTEM PRESERVATION

Performance measures identified for this goal area are representative of the condition of the State's transportation assets. Performance targets have been established for all measures included in this goal area. Three cost-effectiveness measures have also been identified, representing transit and highway investments.

Performance Targets

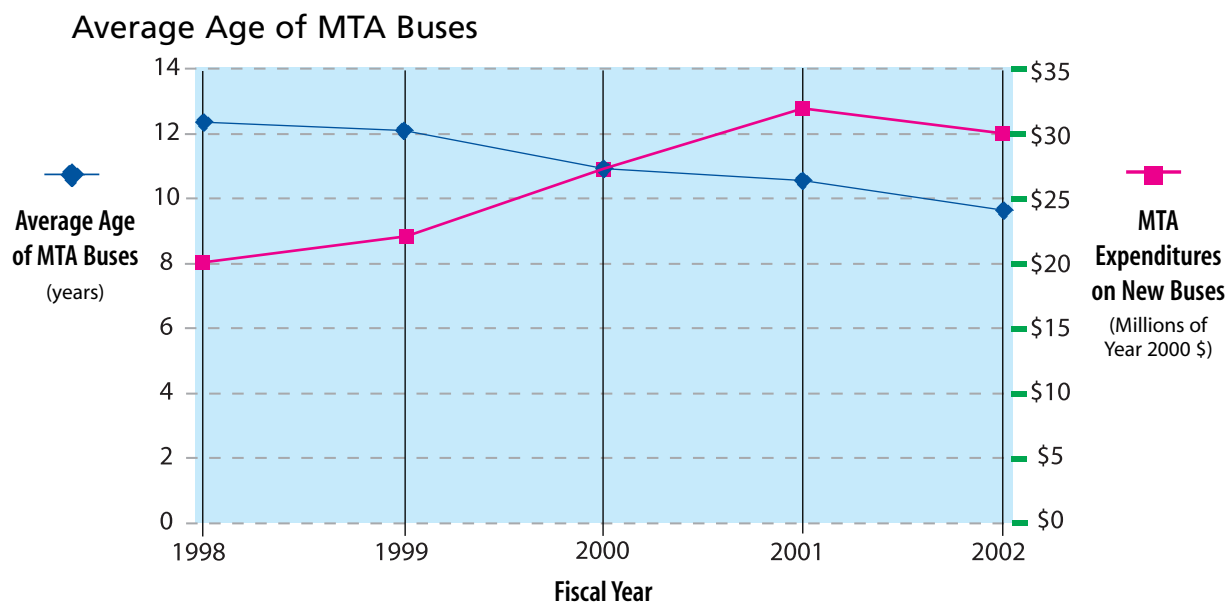
Performance targets have been established for a number of major transportation assets including airports, port facilities, and bridges. Although historic data is not available for these measures, the various modal administrations have established long-term targets.

State-Maintained Facilities and Infrastructure

Modal Administration	Performance Measure	Results	Performance Target
Maryland Aviation Administration	Number of Public-Use Airports in Operation	FY 2002: 35	Six-Year Target: 34 20-Year Target: 34
Maryland Port Administration	Percentage of Breakbulk Vessel Berths that Meet the Industry Standard	FY 2001: 18% FY 2002: 18%	Six-Year Target: 41% 20-Year Target: 64%
	Percentage of Covered Storage Facilities that Meet the Industry Standard	FY 2001: 23% FY 2002: 29%	Six-Year Target: 50% 20-Year Target: 70%
State Highway Administration	Number and Percentage of Bridges Structurally Deficient According to Federal Standards	CY 2001: 148 (6% of total)	Six-Year Target: 134 20-Year Target: 140
Maryland Transportation Authority	Number and Percentage of Bridges Structurally Deficient According to Federal Standards	CY 2001: 0% CY 2002: 0%	Six-Year Target: 0%

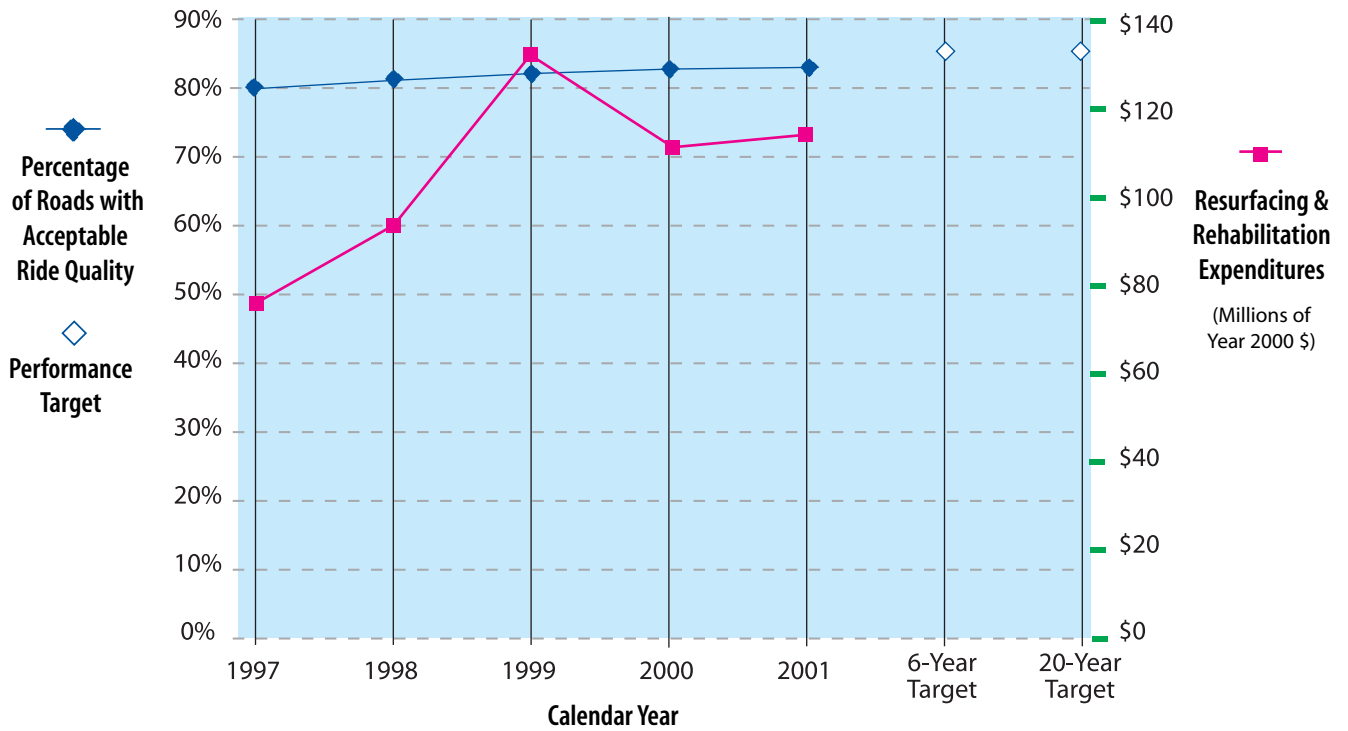
Cost-Effectiveness Measures

MTA is also tracking asset conditions. As shown below, increased capital investment in the bus fleet has effectively reduced the age of its bus fleet over the last four years. The objective is to bring this average age to 6.5 years, reflecting FTA-recommended replacement cycles.



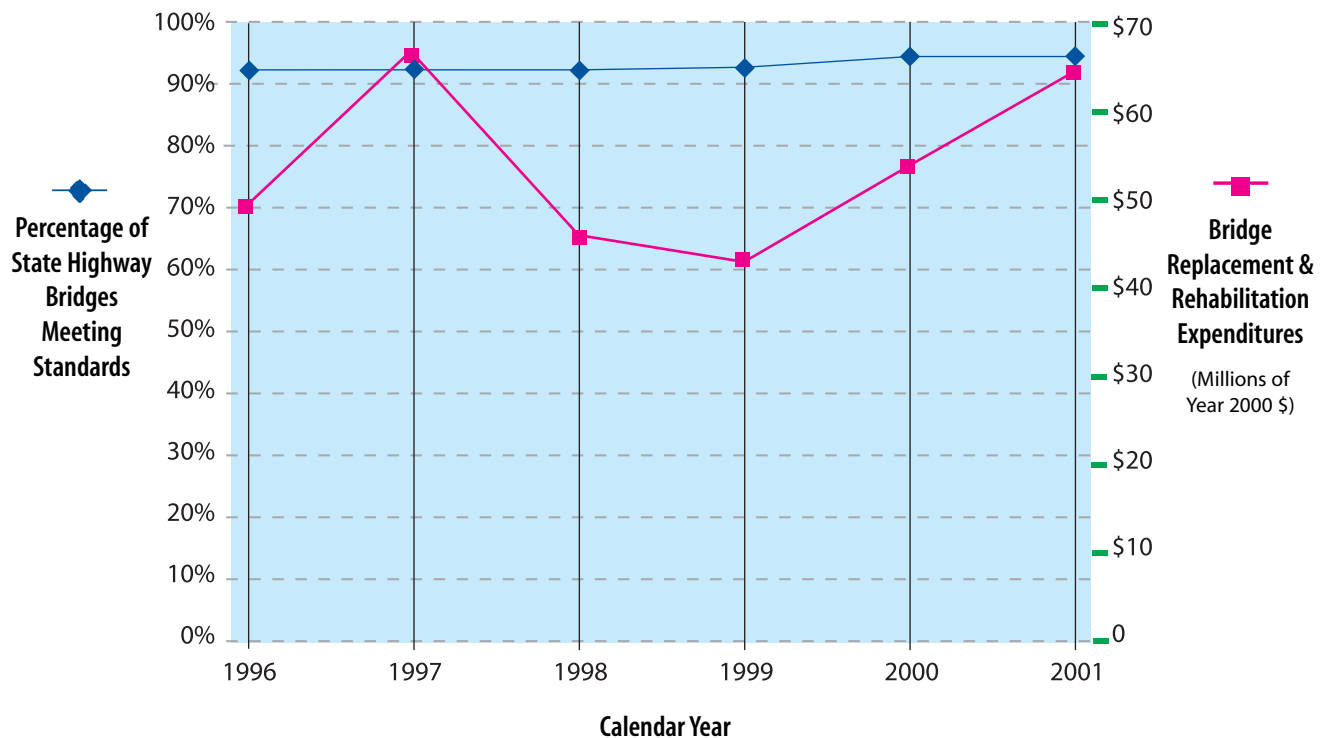
SHA continues to focus its attention on maintaining the existing roadway network and has improved the condition of SHA-maintained roadways over the last four years. Its objective is to increase the percentage of roadways in fair to very good condition to 86 percent within six years and maintain this level over the next 20 years.

Percentage of SHA-Maintained Roads with Acceptable Ride Quality (Pavement Condition "Fair" to "Very Good")



A relatively small proportion of SHA-maintained bridges are structurally deficient according to federal standards. SHA has increased expenditures over the last 10 years to address bridge deficiencies.

Percentage of SHA-Maintained Bridges that Meet Federal Structural Standards

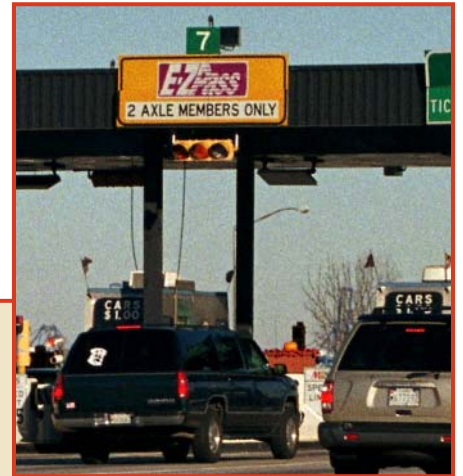


Transportation Facilities and System Performance **Goal 3**

Optimize the value of the State's transportation system by seeking the highest possible performance from existing and future transportation facilities and services.

Policy Objective

- Maximize the carrying capacity and operating performance of existing transportation facilities and services.



STRATEGY

System performance is fundamental to the State's transportation facilities and services. Reductions in performance limit the transportation network's efficiency and result in increased costs to users of the system. The challenge is to maintain and improve performance in the wake of a growing State population and economy. Maintaining or improving performance may require increases in capacity; improving operations through better management, the introduction of new technologies; or promoting a shift from one mode to another.

The public identifies congestion relief as a key performance measure for the Department. MDOT seeks to manage and target investments by continuously evaluating system performance across the State. Given the expected increase in travel that comes with a successful and growing economy, it is anticipated that congestion will increase even with the implementation of planned investments. However, MDOT seeks to minimize this increase wherever possible.

Technology is changing how we manage increased use of our transportation system and address system integration and coordination needs. Maryland uses Intelligent Transportation Systems to increase performance of the existing transportation network and services.

The State Highway Administration's Coordinated Highways Advisory Response Team (CHART) program manages congestion on the State's busiest stretches of highways through traffic and roadway monitoring, incident management, traveler information, traffic management, and systems integration and communication. The benefits of CHART to highway users, enumerated in a 2000 evaluation of CHART operations include:

- Incident duration reduction of 44 minutes on average
- Provision of roadway assistance to 20,000 highway users and response to 6,200 lane blockage incidents
- Total delay time reduction of 24 million vehicle-hours

- Total fuel consumption reduction of 4.1 million gallons
- Total direct cost reduction of \$380 million

The MdTA is also proactively addressing congestion, particularly at toll plazas. Maryland's E-ZPass electronic toll collection system was established in part to address toll plaza bottlenecks and to increase "throughput" at toll plazas. MdTA is tracking vehicle throughput at the Baltimore Harbor Tunnel, the Fort McHenry Tunnel, and the Francis Scott Key Bridge as an indicator of the success of this program.

The Maryland Transit Administration (MTA) is seeking to maintain system performance both by improving the effectiveness of service delivery and identifying additional needs. The MTA operating budget includes funding for new routes and for enhancements to extend service, reduce headways, and alleviate overcrowding. Additional investment in transit operations, enabled by the Transit Initiative, should result in improved service levels. The MTA also analyzes existing bus route performance based on: 1) boardings per mile 2) boardings per trip 3) subsidy per boarding, and 4) farebox recovery. Based on a comparison of individual routes to the system average, MTA rates routes as "successful," "acceptable," or "unacceptable" and targets operations and capital improvements based on the results.

The Maryland Aviation Administration (MAA) is facing the welcome challenge of meeting increasing passenger demand at Baltimore/Washington International Airport (BWI), one of the fastest growing passenger airports in the country. The MAA is undertaking major improvements to the airport, including the addition of new gates and the implementation of Smart Park Technology, providing travelers real time information on parking space availability.

Finally, the Motor Vehicle Administration (MVA) continues to implement electronic delivery of services through the internet, kiosks and interactive phone systems. MVA is seeking to maintain its recent improvements in service delivery and is tracking customer visit time as an indicator of success.

PERFORMANCE MEASURES: FACILITIES AND SYSTEM PERFORMANCE

Several performance measures have been identified for this goal area to track the success of the Maryland Department of Transportation (MDOT) in continuing to maintain and enhance the performance of the State's transportation system.

Performance Indicators

To continue to accommodate passenger growth, MAA intends to expand facilities to remain at or below 100 percent of terminal gate capacity, as defined by the industry standard of 250,000 passengers per gate per year. A measure above 100 percent indicates that BWI is operating above capacity. MdTA is tracking vehicle throughput on three of its major facilities where toll plaza congestion reduces roadway capacity.

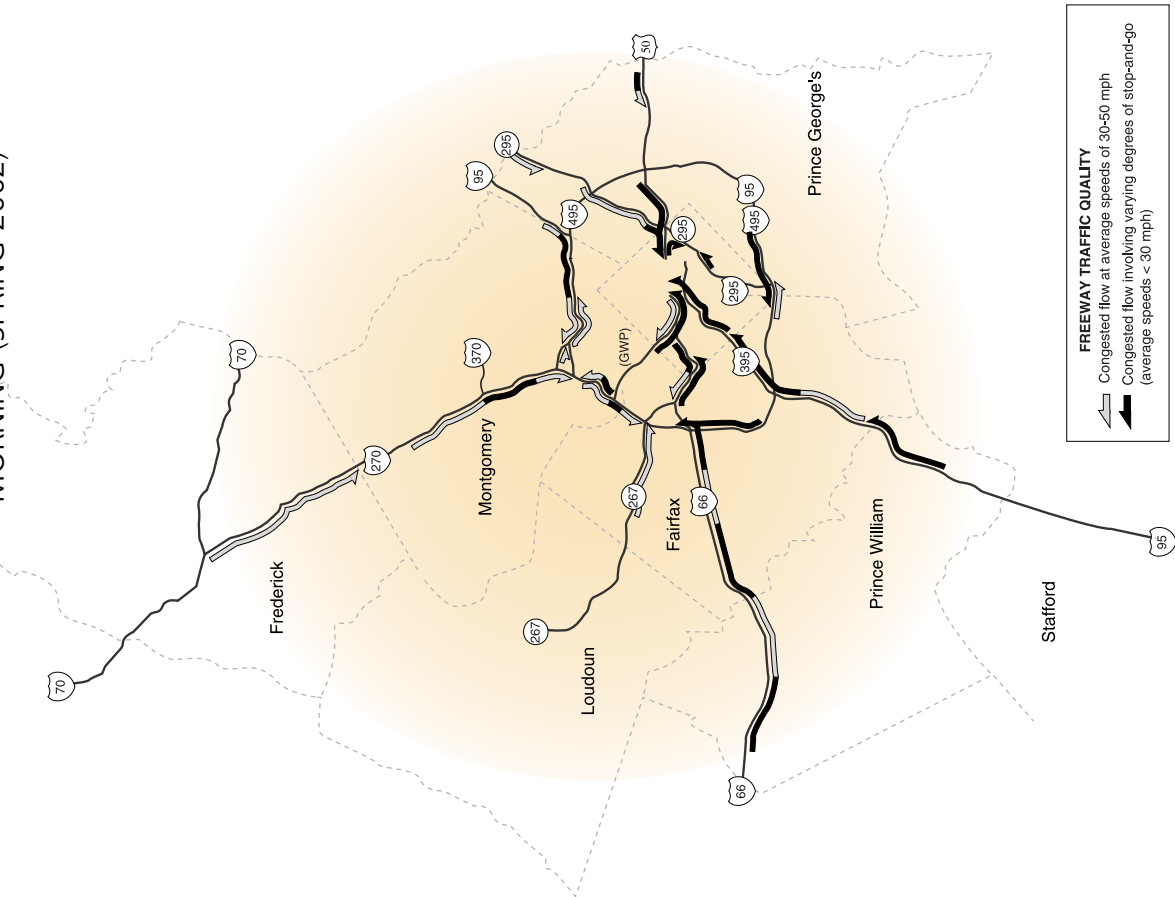
Performance Indicators

Modal Administration	Performance Measure	Results
Maryland Aviation Administration	BWI Terminal Gate Capacity	CY 2001: 104%
Maryland Transportation Authority	Average Annual Peak-Hour Throughput at Ft. McHenry Tunnel, Baltimore Harbor Tunnel, and Francis Scott Key Bridge	FY 2002: 17,036

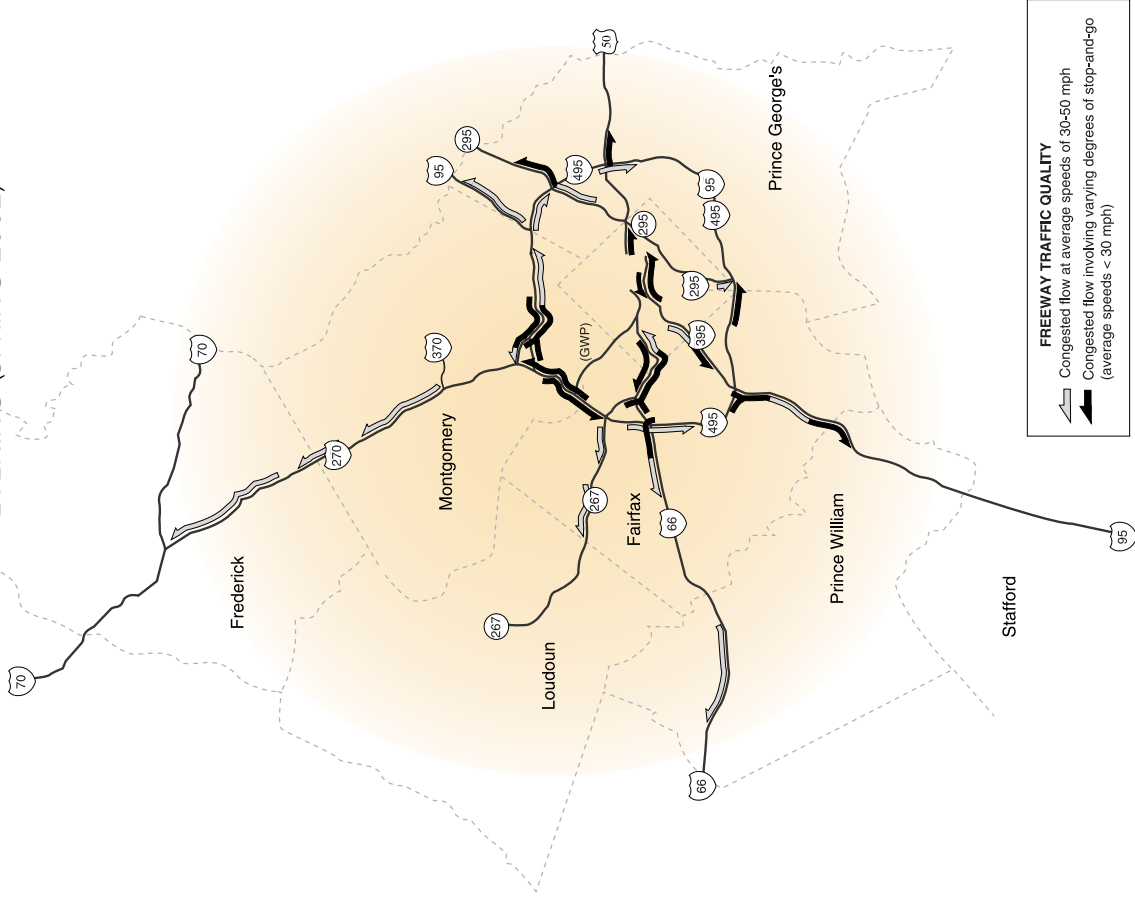
Every three years, SHA measures the Level of Service (LOS) on the State's primary road system within the Baltimore and Washington, DC metropolitan areas to identify areas of congestion. The following maps depict the most recent analysis.

Washington Region

LOCATIONS WHERE CONGESTION WAS FOUND
MORNING (SPRING 2002)



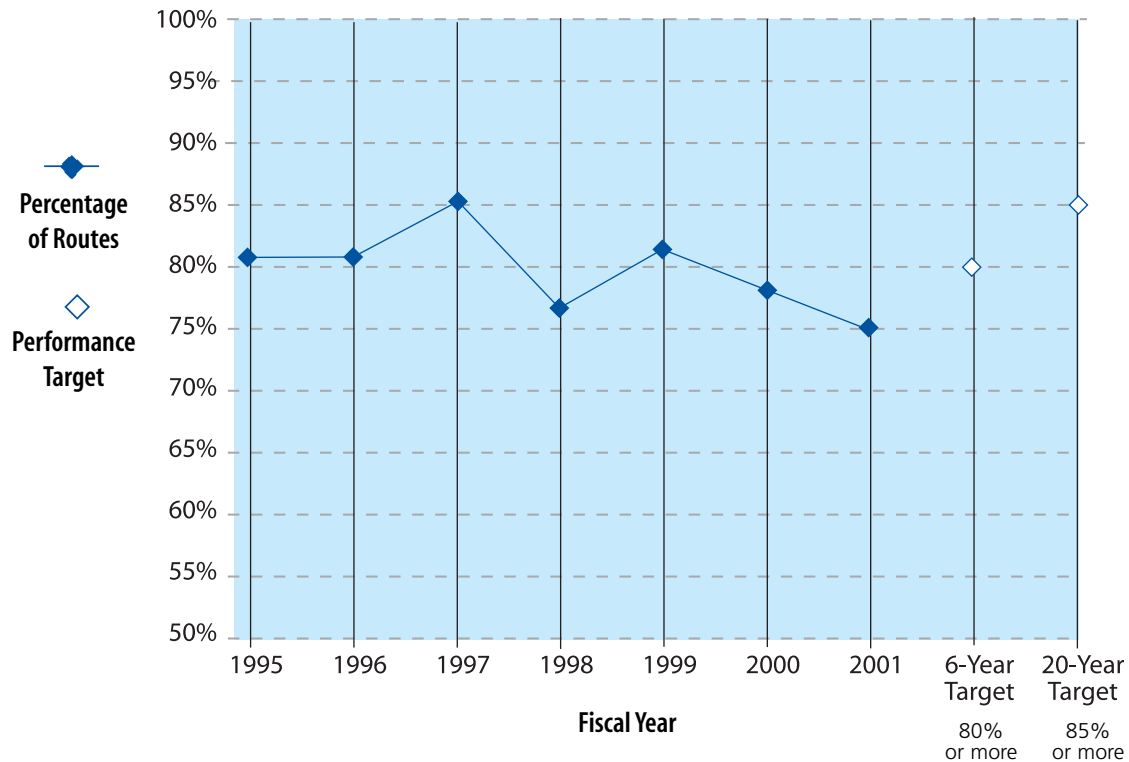
LOCATIONS WHERE CONGESTION WAS FOUND
EVENING (SPRING 2002)



Performance Targets

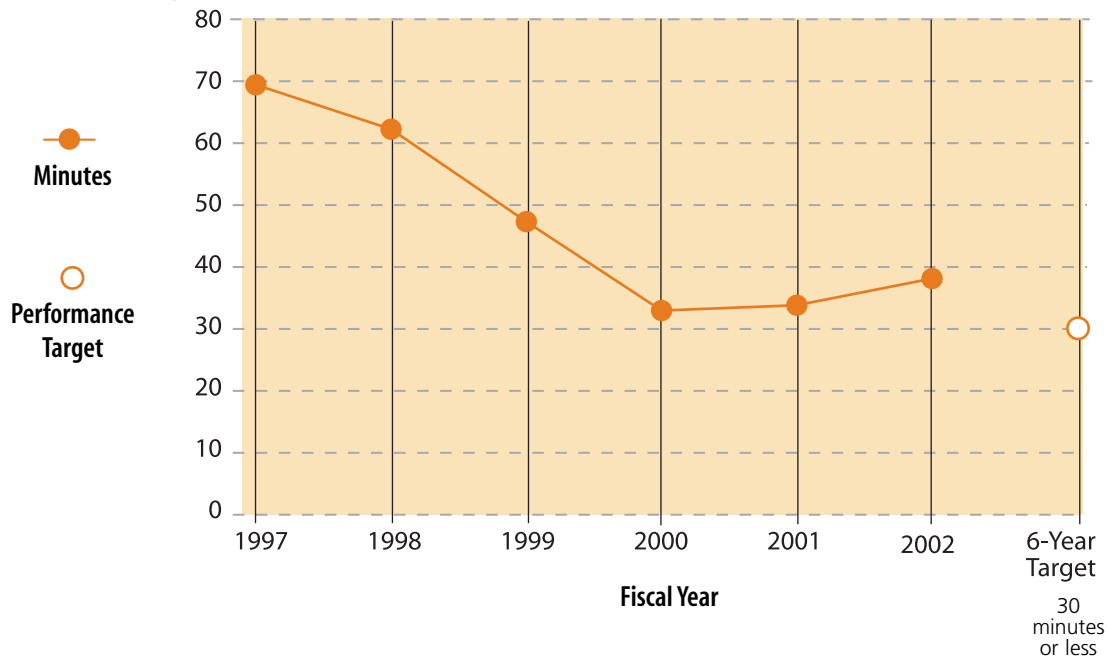
In recent years, the percentage of MTA bus routes with "successful" or "acceptable" performance has declined slightly. However, MTA's objective is to increase the performance of its bus operations over the next six years and to make more dramatic strides within 20 years.

Percentage of MTA Routes with "Successful" or "Acceptable" Performance



Customer visit times have decreased dramatically over the past five years at Motor Vehicle Administration (MVA) facilities although there was a small increase over the last two years. MVA seeks to reduce visit times to less than 30 minutes within the next six years and maintain this level over the next 20 years.

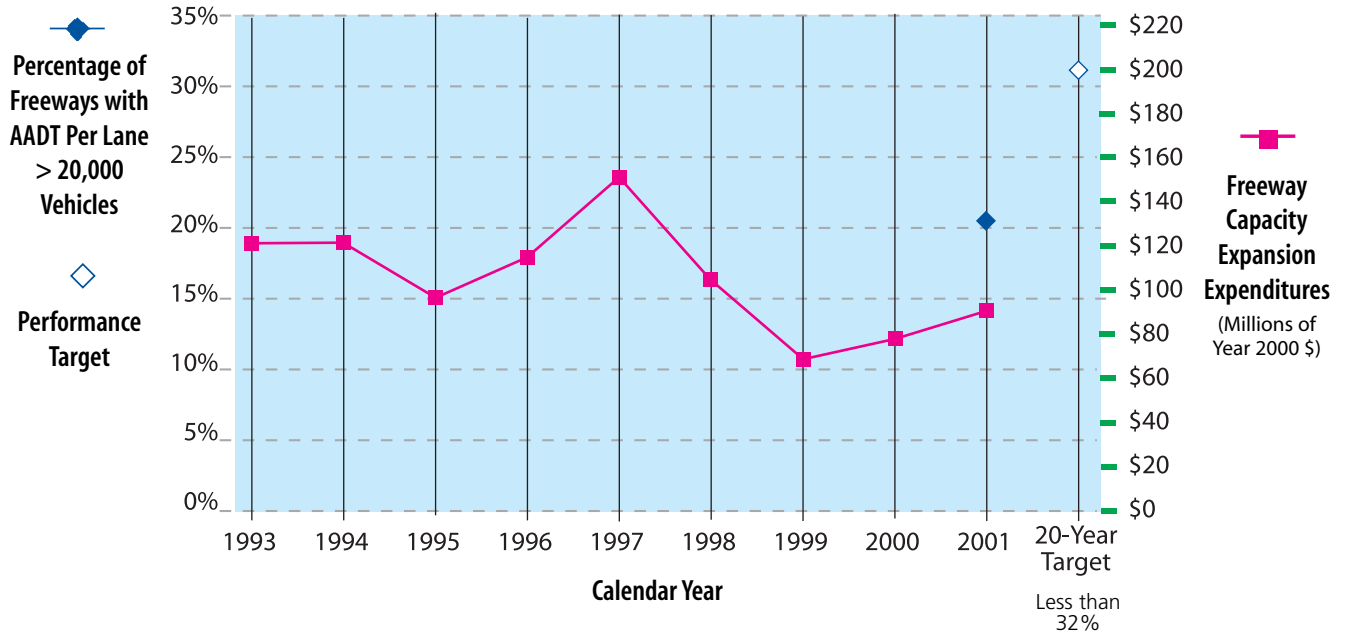
Average MVA Branch Office Customer Visit Time



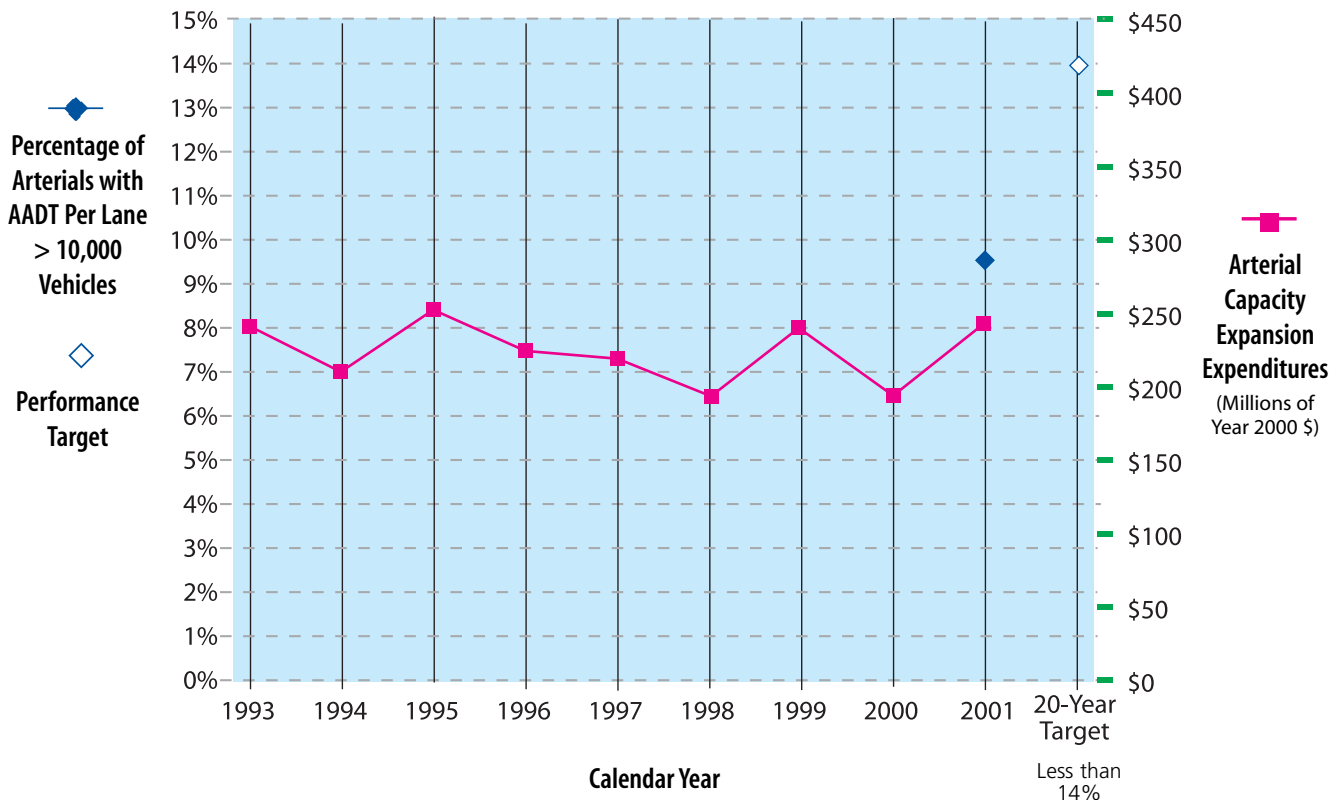
Cost-Effectiveness Measures

SHA is tracking traffic volumes on freeways and arterials to assess the general level of congestion on the State system. Although this is a new method of tracking performance, over time it will be evaluated relative to expenditures on capacity expansion. Traffic volumes are expected to increase, but SHA strives to keep the percentage of freeways with more than 20,000 vehicles per lane per day below 32 percent and the percentage of arterials with more than 10,000 vehicles per lane per day below 14 percent over the next 20 years.

Percent of Freeways with Daily Traffic Volumes per Lane Greater Than 20,000



Percentage of Arterials with Daily Traffic Volumes per Lane Greater Than 10,000

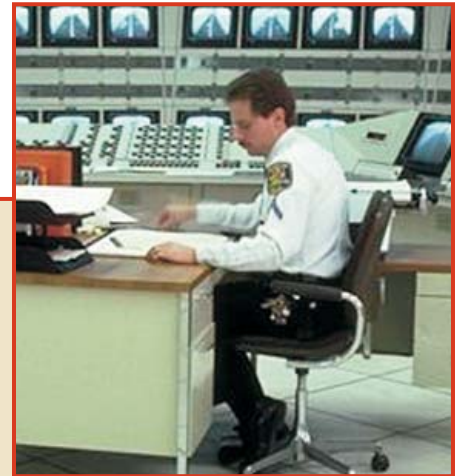


Safety and Security **Goal 4**

Provide safe and secure transportation across all modes and for every type of trip.

Policy Objectives

- Design, build, and operate facilities, services, and programs that reduce the rate of injury and deaths to our customers.
- Reduce crimes against persons and property using Maryland's transportation facilities, services, and operations.



STRATEGY

Maryland modal administrations are concerned with the safety and security of persons who either work at or use any of MDOT's facilities, including highways, airports, ports, light rail, urban rail, commuter rail, and buses. The responsibility of safety and security require different strategies for each of the modal administrations. In the case of the State Highway Administration (SHA) and the Maryland Transportation Authority (MdTA), improvements in roadway design and facility condition can contribute to reductions in accidents, injuries, and fatalities.

Safety concerns are reflected in all capital improvement and system preservation projects that the SHA undertakes. SHA evaluates projects and plans safety enhancements that can be programmed annually into a statewide comprehensive program. Planned investments are targeted accordingly to reduce overall fatal and injury accident rates, as well as pedestrian and bicyclist injuries and fatalities. A future challenge will be to continue to make necessary investments in infrastructure to keep the driving, walking, and bicycling public safe in spite of continued growth in highway travel.

For the Maryland Transit Administration (MTA), safe operations prevent injuries and adequate security protects customers from criminal activity. The MTA monitors customer perceptions of safety and responds accordingly by making safety-related investments, such as better lighting or visibility around bus stops. The Maryland Port Administration (MPA) and the Maryland Aviation Administration (MAA) seek to secure cargo from theft and damage as it travels through their facilities. Under federal guidance, the MAA is also charged with the critical responsibility of providing security for air passengers.

PERFORMANCE MEASURES: SAFETY AND SECURITY

Measures are established that track the safety of transportation system users, employees at MDOT facilities, and goods shipped through transportation facilities. Although all modal administrations seek to reduce injuries and fatalities, specific performance targets or cost-effectiveness measures are not established, given the numerous factors influencing the results of these measures that are well beyond the control of MDOT policy.

Performance Indicators

The SHA, the MdTA, the MTA, the MAA and the MPA all track injuries and fatalities of users of the system and workers at transportation facilities. For SHA and MdTA, rates of injuries and fatalities for highways are presented relative to the amount of annual travel. For pedestrians and bicyclists, rates are presented relative to Maryland's population.

State Highway Administration – Fatalities and Injuries on State System (Motor Vehicle, Pedestrian, and Bicycle)

Performance Measure	Results (FY 2001)
Motor Vehicle	
Overall fatalities	442
Fatality rate per 100 million vehicle miles	1.15
Overall injuries	32,524
Injury rate per 100 million vehicle miles	84.7
Pedestrians	
Pedestrian fatalities	61
Pedestrian fatalities per 1,000,000 Maryland residents	11.3
Pedestrian injuries	612
Pedestrian injuries per 1,000,000 Maryland residents	113.3
Bicyclists	
Bicyclist fatalities	6
Bicyclist fatalities per 1,000,000 Maryland residents	1.11
Bicyclist injuries	162
Bicyclist injuries per 1,000,000 Maryland residents	30

Maryland Transportation Authority – Fatalities and Injuries

Performance Measure	Results (CY 2001)
Number of vehicle collisions involving fatalities at Authority facilities	16
Number of vehicle collisions involving injuries at Authority facilities	570
Annual fatal and injury vehicle collision rate (per 100 million vehicle miles) at Authority facilities	17.5

**Maryland Port Administration –
Number of Injuries and Fatalities
per Year on MPA Property**

Performance Measure	Results (CY 2001)
Motor Vehicle Accidents	56
Industrial Accidents	3
Personal Injuries	23
Fatalities	0

**Maryland Aviation Administration –
Incidents**

Performance Measure	Results (FY 2002)
Incidents at BWI (State vehicle damage, State property damage, personal injury, employee injuries, personal property damage, other documented airport events)	405 incidents

The following measures also indicate the relative security of Maryland's transportation system. According to MPA, only a nominal proportion of goods shipped was subject to theft or damage. MTA reports a relatively high perception of customer safety. Finally, MAA successfully passed its most recent Federal Aviation Administration (FAA) inspection.

Security of Persons and Property Using the Transportation System

Modal Administration	Performance Measure	Results
Maryland Port Administration	Dollar value of cargo thefts and damage (MPA responsible claims)	CY 2001: Thefts: \$46,000 Damage: \$6,000 (.0003% of total value of goods shipped through MPA facilities)
Maryland Transit Administration	Customer perceptions of safety of the system (1=Poor and 5=Excellent)	CY 2001: 3.95
Maryland Aviation Administration	BWI Compliance with FAA security inspection (Pass or Fail)	FY 2002: Passing grade



Goal 5 Protecting Maryland's Environment



Provide responsible stewardship of natural, community, and cultural resources.

Policy Objective

- Minimize impacts and strive to enhance Maryland's resources.

STRATEGY

Maryland State law directs State agencies to "conduct their affairs with an awareness that they are stewards of the air, land, water, living and historic resources and that they have an obligation to protect the environment for the use and enjoyment of this and all future generations." Much of the Maryland Department of Transportation's (MDOT's) environmental responsibility resides with its ability to indirectly influence air quality, as well as the more direct potential impacts of projects on specific environmental resources. In addition to Department-sponsored efforts to minimize and mitigate the direct impacts, MDOT also supports other environmental programs, such as the Chesapeake Bay restoration efforts, through funding contributions and staff support.

Air Quality

Air quality is a significant environmental factor tracked by MDOT and is an important transportation-related environmental issue affecting urban areas in particular. Within the Baltimore/Washington area, automobiles account for 30 to 40 percent of the pollutants that cause ground-level ozone. Since under federal guidelines the Washington, DC and Baltimore metropolitan areas are in non-attainment for ozone, the focus has been on reducing the pre-cursors to ozone formation, Nitrogen Oxide (NOx) and Volatile Organic Compounds (VOCs). Over the last 10 years, transportation-related emissions have decreased as a proportion of all emissions. Air quality improvement in Maryland can be attributed to Maryland's adoption of all mandated federal control measures, implementation of numerous local control programs, and help from local communities in limiting pollution-forming activities on forecasted "Code Red" days. Planned investments to address air quality focus on expanding proven strategies, such as teleworking, regional commuter assistance, and clean vehicle technology within Maryland's air quality non-attainment areas.

Environmental Mitigation

Protecting the environment means protecting the streams, rivers, wetlands, forests, and other cultural and environmental resources from the effects of transportation projects and system operations. Although the Department strives to avoid impacts to the State's

resources, for some projects, these impacts are inescapable. MDOT addresses these impacts through both mitigation and investments in programs to enhance environmental resources. Specific programs include wildflower plantings along State highways, environmentally friendly dredge material disposal, and wetlands creation.

Program Support – Chesapeake Bay Restoration

The Chesapeake Bay is one of Maryland's most precious natural resources. MDOT is an active participant in Chesapeake 2000, a multi-agency State program organized to protect the Chesapeake Bay. Under this program, MDOT and other State agencies have a series of specific commitments for which they are responsible. In addition, most modal administrations contribute to mitigation, conservation, restoration, and pollution prevention activities related to projects and operations. To quantify this, MDOT tracks the dollars spent toward elements of the restoration program. Dollars spent, however, is an indirect measure and does not fully reflect the number of projects, extent of impact, and the complexity and quality of replacement work conducted by the Department.

PERFORMANCE MEASURES: PROTECTING MARYLAND'S ENVIRONMENT

Performance measures identified for this goal area focus on MDOT's contributions to the Chesapeake 2000 Agreement, environmental mitigation, and transportation-related air quality emissions. Given the indirectness, complexity, and long-term nature of environmental goals and measures, cost-effectiveness measures are not represented within this goal area.

Performance Indicators

MDOT is continuing to provide financial support to programs that support the restoration of the Chesapeake Bay to meet its obligations under the Chesapeake 2000 Agreement.

MDOT Funding for Programs and Projects under the Chesapeake 2000 Agreement

Chesapeake 2000 Agreement - Programs	FY 2002 Funding
Living Resources Protection & Restoration	\$1,891,000
Vital Habitat Protection & Restoration	\$8,077,000
Water Quality Protection & Restoration	\$443,000
Sound Land Use	\$63,001,000
Stewardship and Community Engagement	\$223,000



Each of the modal administrations is continuing to complete environmental mitigation as required to offset the environmental impacts of specific projects.

Status of Environmental Mitigation Efforts

Modal Administration	Number and percentage of required mitigation completed
State Highway Administration	CY 2001: Reforestation: 100 out of 22 acres (454%) Wetlands: 633 out of 599 acres (106%)
Maryland Transit Administration	CY 2002: No Impacts
Maryland Aviation Administration	CY 2002: No impacts
Maryland Transportation Authority	CY 2002: Reforestation: 0 out of 39.6 acres (0%) Wetlands: 100% Stream Stabilization: 0%

Performance Targets

Transportation's share of total emissions has decreased over the last decade. As other emissions contributors reduce emission levels in future years, it is anticipated that the share of transportation emissions may increase. MDOT's objective is to keep this share below 1990 levels.

State of Maryland – Transportation-Related Emissions as Percentage of Total

CY 1990	CY 1999	Performance Target
VOC: 40.2%	VOC: 34.30%	Remain at or below 1990 Share
NO _x : 33.9%	NO _x : 31.68%	Remain at or below 1990 Share

Baltimore Region – Transportation-Related Emissions as Percentage of Total

CY 1990	CY 1999	Performance Target
VOC: 39.09%	VOC: 35.88%	Remain at or below 1990 Share
NO _x : 34.09%	NO _x : 31.11%	Remain at or below 1990 Share

Washington Region – Transportation-Related Emissions as Percentage of Total

CY 1990	CY 1999	Performance Target
VOC: 45.63%	VOC: 38.08%	Remain at or below 1990 Share
NO _x : 31.68%	NO _x : 27.96%	Remain at or below 1990 Share

Provide Mobility and Accessibility with Transportation Choice **Goal 6**

Provide people with transportation choices for convenient, accessible, and effective mobility to key destinations.

Policy Objectives

- Increase transportation choices available to access and circulate within activity centers.
- Increase access to jobs, goods, and services.



STRATEGY

The Maryland Department of Transportation (MDOT) is faced with the challenge of offering citizens in the State alternatives to the automobile in the midst of development patterns that often discourage alternative means of travel. MDOT is addressing this issue through program and staff support and technical assistance to other government organizations. MDOT also invests in specific projects to encourage alternative means of travel, such as double-tracking the Baltimore Light Rail system and extending the Washington area's Metrorail to Largo.

Shifting individual travel choice toward alternative modes will continue to be difficult. According to the U.S. Census, between 1990 and 2000, the percentage of Maryland residents commuting to work in a single-occupant vehicle increased from less than 70 percent to more than 73 percent. Much of this shift is the result of factors beyond the control of MDOT, such as increases in income, changing land use patterns, and demographics. Nevertheless, MDOT is taking aggressive actions to support alternative modes and to provide citizens with a choice.

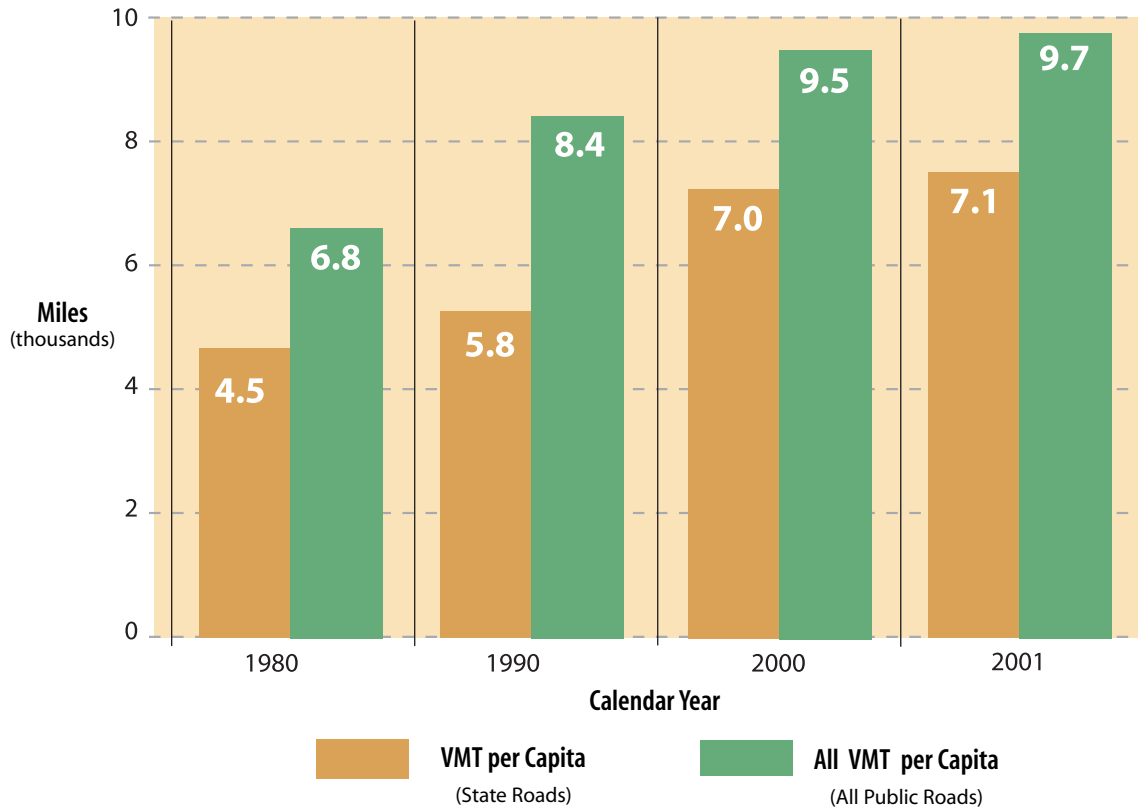
PERFORMANCE MEASURES: MOBILITY AND ACCESSIBILITY

Several measures have been selected as indicators for mode choice and accessibility to alternative modes of travel. Measures include estimates of Vehicle Miles of Travel (VMT), transit ridership, and the comprehensiveness of bicycle and pedestrian facilities. The most direct measure available of modal choice is the Census journey-to-work data. In the past, this data has been compiled only every 10 years. However, the Census is in the process of implementing the Supplemental Survey that will update this information every year. Beginning in 2003, this annual update will be published every year and the results will be incorporated into future year Annual Attainment Reports.

Performance Indicators

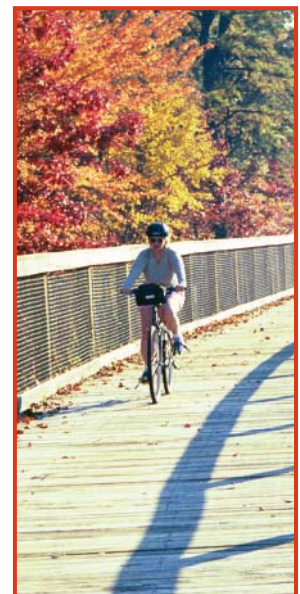
Over the past two decades, trends in Maryland have followed those nationally with a continued increase in VMT per capita. The Department intends to curb this increase through its aggressive promotion of alternative means of travel. Reduced growth in VMT per capita over time is an indicator that people are achieving mobility with either fewer automobile miles of travel or through greater use of other modes.

Annual Vehicle Miles Traveled per Capita on State Roads and All Public Roads



Bicycle and Pedestrian Measures

Performance Measure	Results
Dollars committed to bicycle and pedestrian projects in the Consolidated Transportation Program	\$84 Million
Center-line mileage of State-owned highways with marked bike lanes	CY 2001: 6 Miles
Percentage of appropriate transit vehicles that can accommodate bicycles	28%
Number of local jurisdictions implementing local ordinance that support bicycling and walking	Under Development



Performance Targets

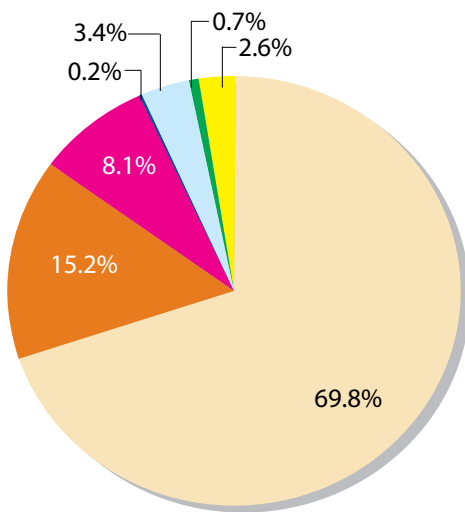
The distribution of work trips by mode shows more commuters are choosing to drive alone to work in Maryland. Between 1990 and 2000, the share of commuters driving alone increased, transit remained about the same, and walking and carpooling declined. MDOT's target for this measure is not to increase the current share of single-occupant commuter trips over the six-year period and to decrease this share over the next 20 years.

Distribution of Trips to Work by Mode for Maryland

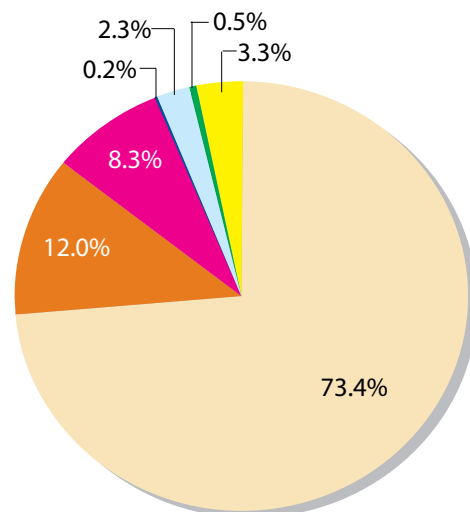
Transportation Mode	1990		2000	
	Number	Percent	Number	Percent
Drove Alone (single-occupancy vehicle)	1,732,837	69.8%	1,895,582	73.4%
Carpool (high-occupancy vehicle)	376,449	15.2%	311,511	12.0%
Public Transportation	202,169	8.1%	214,314	8.3%
Bicycle	4,715	0.2%	4,579	0.2%
Walked	83,417	3.4%	60,600	2.3%
Other	18,040	0.7%	14,041	0.5%
Worked at Home	64,835	2.6%	85,646	3.3%

Source: 2000 U.S. Census

Mode Choice for Maryland Commuters – 1990

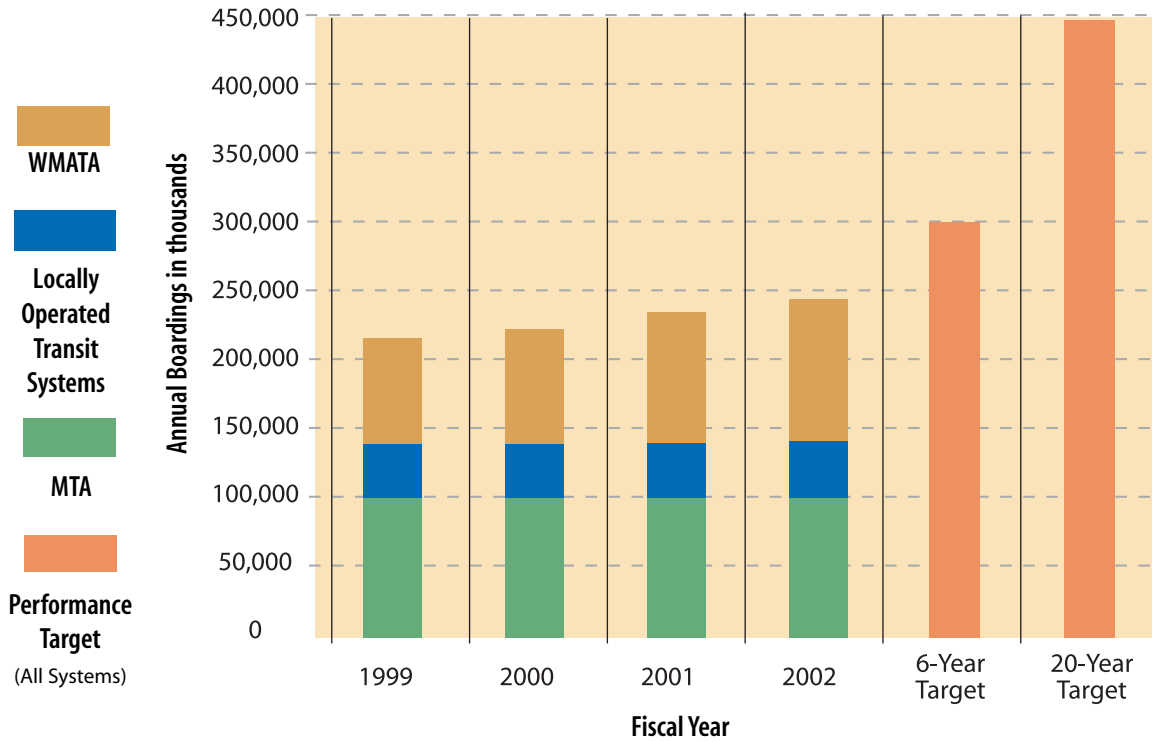


Mode Choice for Maryland Commuters – 2000



Transit ridership has grown over the past few years, particularly for locally operated transit systems (LOTS) and Maryland's share of the Washington Metropolitan Transit Authority (WMATA). MDOT's objective is to continue this growth at a pace that will double transit ridership from 2000 levels by 2020.

Maryland Transit Boardings



MDOT is now measuring pedestrian and bicycle accessibility by tracking the coverage of sidewalks and the "bicycle level of comfort" on SHA-maintained roadways. MDOT's objective is to maintain bicycle comfort levels, in spite of increasing vehicular traffic, and increase the coverage of sidewalks on state-owned roadways.

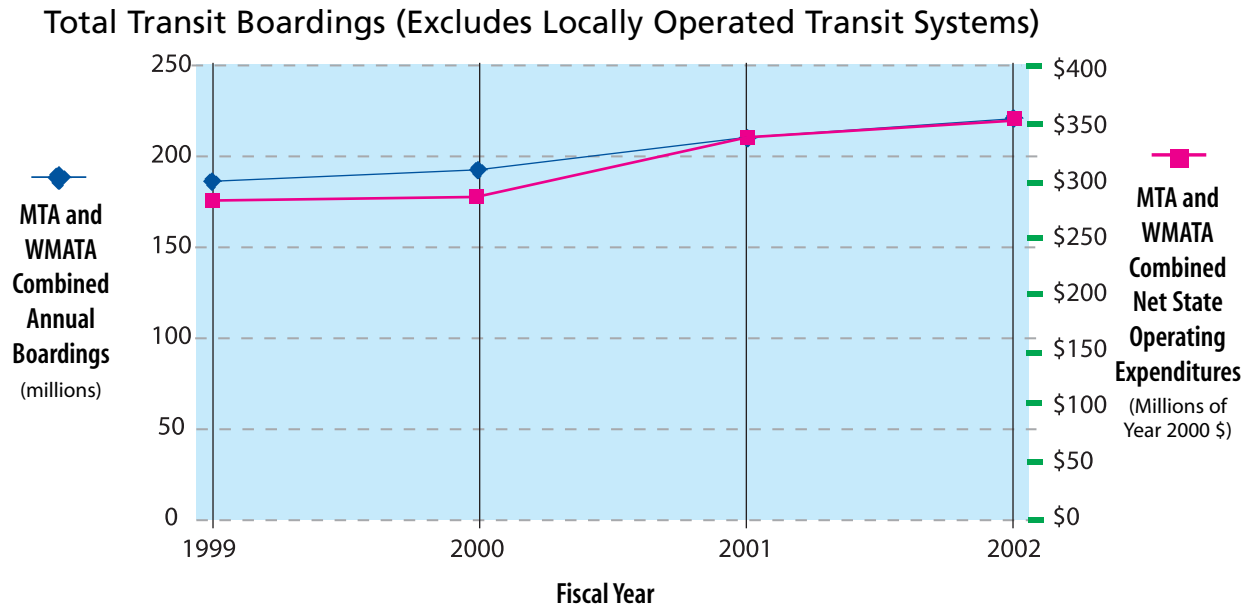
Bicycle and Pedestrian Measures

Performance Measure	Results	Performance Target
Percentage of State-owned roadway center-line miles with a bicycle level of comfort (BLOC) grade of "D" or better (Scale "A" to "F")	CY 2001: 80%	Six-Year Target: 80% 20-Year Target: 80%
Percentage of State-owned roadway center-line miles within Priority Funding Areas that have sidewalks	CY 2001: 18%	Six-Year Target: 20% 20-Year Target: 30%



Cost-Effectiveness Measures

MDOT's continued investment in transit operations has contributed to an increase in transit ridership on a statewide level. Locally operated transit services are not included in the cost-effectiveness measure due to limited cost information. Net State operating expenditures depicted below represent operating expenses less operating revenue and federal subsidies.



Goal 7 Supporting the State's Economy



Provide a transportation system that expands economic opportunities and increases the economic vitality of the State.

Policy Objectives

- Target transportation investments to serve existing and growing business, housing, and commercial activities that support development and redevelopment opportunities consistent with Smart Growth.
- Enhance transportation services and facilities used by business travelers, recreational travelers, and tourists.

STRATEGY

Although transportation has a potentially significant effect on economic development, it is difficult to quantify the precise relationship between transportation investments and overall economic growth or the well being of individuals. Job growth is a commonly used measure of economic performance and, every few years, the Maryland Port Administration (MPA) and State Highway Administration (SHA) estimate the jobs generated by their activities as an indication of economic impact. However, some of the less direct influences on economic growth are more difficult to quantify.

The most direct and notable influences of the Maryland Department of Transportation (MDOT) on economic development are through facility investments. For example, the ability of businesses to receive and ship goods will play a role in the total cost of doing business in the State. The Port of Baltimore activity is estimated to generate \$1.8 billion in personal income (salary and wages) and \$286 million in local and state tax revenue each year. The Port must have adequate and state-of-the-art facilities, as well as safe and efficient channels, roadways, and rail networks to support growth in freight movement.

Baltimore/Washington International Airport (BWI) plays an important role in providing access to and from markets inside and outside the State and also contributes to the State's freight industry. Growth in passenger and cargo movements at BWI has the potential to enhance economic vitality for transportation companies, retail establishments, factories, and service businesses. Growth at BWI will contribute to additional profits, tax revenues, business revenues, and jobs for the State.

The percentage of household income spent on transportation expenditures provides an indicator of the affordability and efficiency of transportation. Every two years, the federal government releases results from a Consumer Expenditure Survey that provides information

on the buying habits of American consumers, including data on their income and expenditure patterns. The impact of transportation expenditures affects income groups differently, with higher income groups spending a smaller percentage of their household income on transportation. Although transportation expenditures are influenced by factors outside of MDOT's control, this measure provides an indicator of the affordability of mobility.

PERFORMANCE MEASURES: SUPPORTING THE STATE'S ECONOMY

Performance measures identified for this goal area focus on direct and indirect jobs generated by MDOT investments in the transportation system, the cost of transportation to households, and the activity of key facilities, such as BWI and the State's ports.

Performance Indicators

Recent MPA and SHA studies indicate that investments made in the State's transportation facilities have a direct effect on the State's economy by generating a significant number of jobs.

Employment Impacts of MDOT Investments

Modal Administration	Performance Measure	Results
Maryland Port Administration- Port of Baltimore	Number of direct, indirect, and induced jobs, and jobs related to activities at the Port	Direct Jobs: 17,700 Indirect Jobs: 14,600 Induced Jobs: 11,300 Related Jobs: 83,100
State Highway Administration	Number of jobs resulting from highway construction	CY 2001: 13,377 jobs

The relative cost of transportation to households is significant, at more than \$7,000 annually, emphasizing the critical role it plays for Maryland households.

Cost of Mobility: Expenditures on Transportation

Item	1999-2000 Average Annual Consumer Expenditures per Household			
	Washington MSA		Baltimore MSA	
	Dollars	Percent	Dollars	Percent
Food	\$5,705	12%	\$5,531	13%
Housing	\$16,978	35%	\$13,779	33%
Apparel and Services	\$2,059	4%	\$1,894	5%
Transportation	\$7,813	16%	\$7,185	17%
Health Care	\$2,222	5%	\$1,843	4%
Entertainment	\$2,535	5%	\$2,013	5%
Personal Insurance and Pensions	\$5,614	12%	\$4,173	10%
Other	\$4,968	10%	\$5,307	13%
Total	\$47,894	100%	\$41,725	100%

Performance Targets

Baltimore/Washington International Airport continues to thrive despite some recent slowdowns in air travel. The MAA hopes to continue to support airport expansion with a target to increase passengers by nearly 50 percent over the next 20 years. The MPA hopes to continue to expand its role within the regional freight market over the next 20 years and also provide continued contributions to the State's economy.

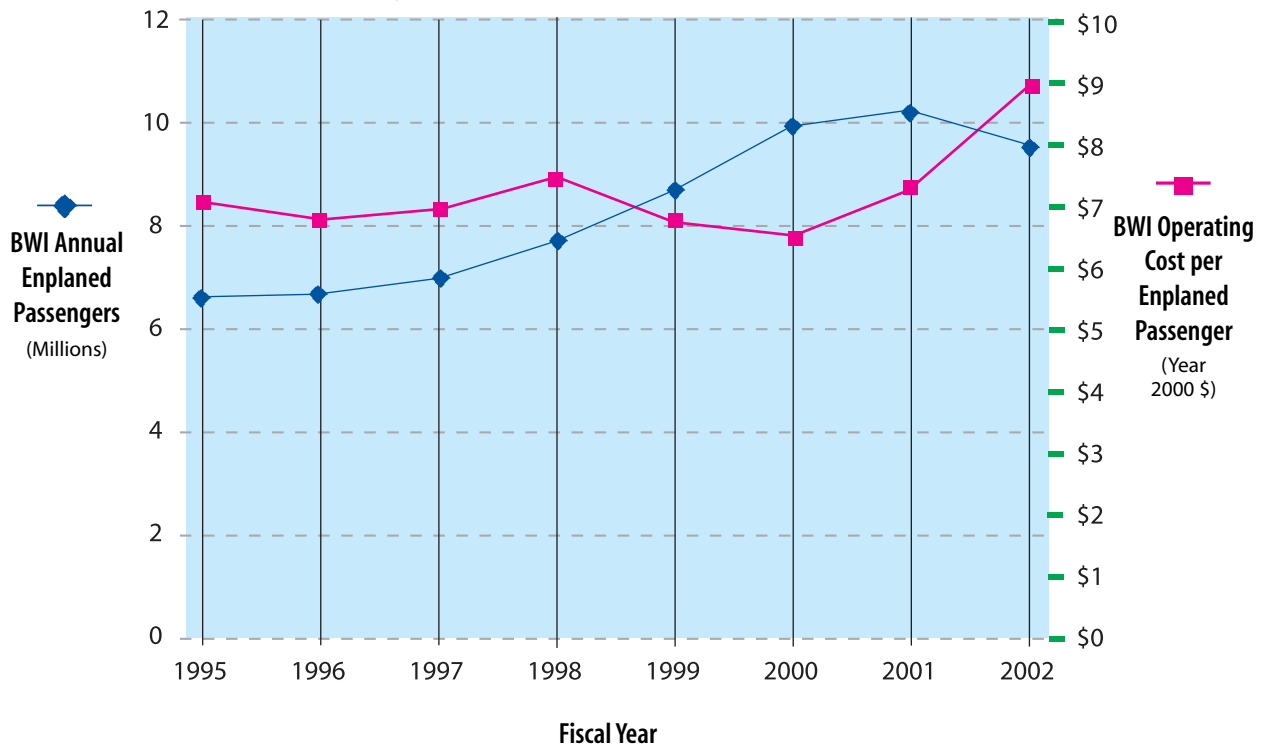
Business Impacts

Modal Administration	Performance Measure	Results	Performance Target
Maryland Aviation Administration	Total passengers through BWI	CY 2000: 19.6 million CY 2001: 20.4 million	2004: 21.7 million 2010: 30 million
Maryland Port Administration	Tons of MPA general cargo	FY 2002: 6.27 million tons	Six-Year Target: 6.46 million tons 20-Year Target: 10% of North Atlantic foreign cargo market

Cost-Effectiveness Measures

The cost of BWI operations per passenger has remained relatively constant, as the total number of passengers has continued to increase. The recent surge in costs per passenger is attributed to increased security costs resulting from the events of September 11.

Annual Enplaned Passengers at BWI



Moving Goods **Goal 8**

Provide for the efficient and reliable movement of goods.

Policy Objectives

- Promote a diverse and interconnected system of freight transportation that leads to the efficient and reliable dispersal and transfer of cargo.
- Increase the competitiveness of the Port of Baltimore and BWI cargo facilities and services.



STRATEGY

Freight shipment volumes are determined by a variety of factors, including key external factors such as economic activity and internal factors such as the level of public and private investment in the freight system. Freight movement is supported through the State's ports, airports, rail network, and highway system.

The Maryland Port Administration (MPA) serves primarily as a landlord in the State's freight business. As such, it continuously seeks to modernize existing facilities through necessary improvements to continue to attract and maintain business within the State's ports. MPA cargo is projected to increase at 0.5 percent annually in the near term due to the weak world economy. The Port must have adequate vessel berths, cranes, and cargo storage space (open and covered), as well as safe and efficient channels, roadways, and rail networks to enable future increases in freight movement. Support by other modal administrations for ground access, either by truck or rail, will be a critical component in MPA's ability to compete with other ports across the nation.

Baltimore/Washington International Airport (BWI) plays a lesser, but potentially significant, role in the State's freight industry. BWI is currently evaluating its role within the air cargo market to develop a strategic approach to serve and accommodate air cargo. Again, the supporting role of other modes, such as SHA, will be critical to any future path BWI may take.

PERFORMANCE MEASURES: MOVING GOODS

Performance measures identified for this goal area focus on the total volume of goods shipped through the State's ports and airports. The Maryland Aviation Administration (MAA) and Maryland Port Administration (MPA) track the weight of cargo that moves through their facilities. The volume of cargo movements is shaped by the quality of infrastructure provided by State-supported facilities.

Performance Indicators

As indicated below, the Maryland Port Administration and Maryland Aviation Administration both support freight movements in the State.

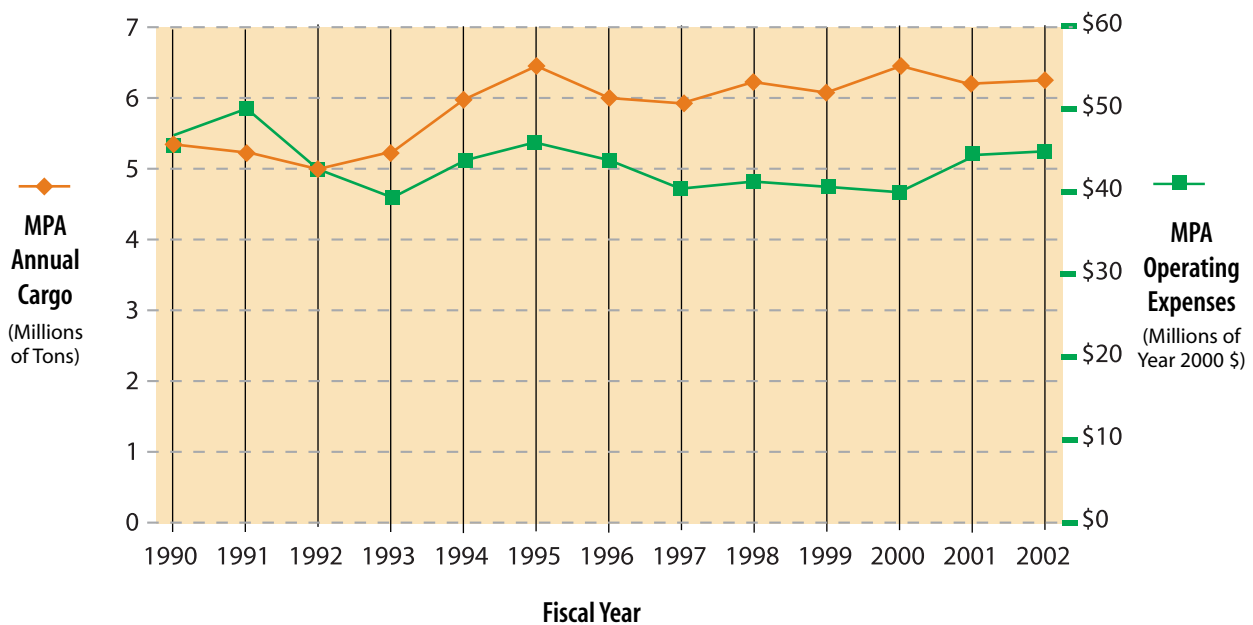
Freight Movement

Modal Administration	Performance Measure	Results
Maryland Aviation Administration	Total pounds of (domestic) cargo moved at BWI	CY 2001: 496,307,000
Maryland Port Administration	Annual tons of foreign cargo (bulk and general) moved through the Port of Baltimore	CY 2001: 19.9 million tons bulk, 5.8 million tons general
	Tons of MPA general cargo	FY 2002: 6.27 million tons

Cost-Effectiveness Measures

The rate of increase in tons of general cargo shipped through MPA facilities has exceeded the rate of increase in operating expenses. MPA operating expenses depicted below do not include those from the Maryland International Terminal which are covered directly by operating revenue.

Tons of MPA General Cargo

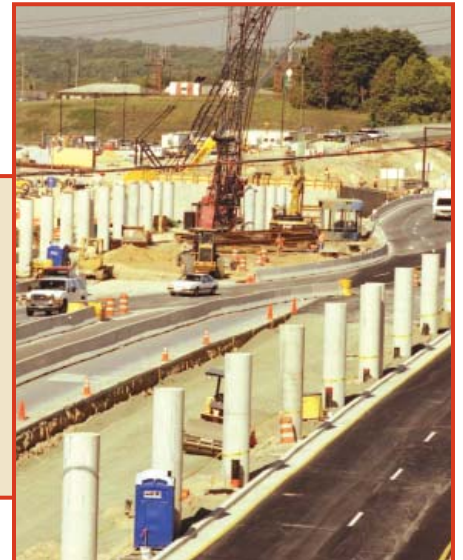


Funding Our Transportation Future **Goal 9**

Secure adequate resources to build, operate, and maintain a high-quality transportation system.

Policy Objective

- For every program period, the Department will strive to meet or exceed the capital investment recommendation of the Commission on Transportation Investment.



STRATEGY

The Maryland Department of Transportation (MDOT) relies on the Transportation Trust Fund and federal aid sources to finance most of its programs and operations. The Trust Fund is a strong and viable resource that serves the transportation system well. However, growth in the cost of system needs for preservation, maintenance, and capacity expansion exceeds projected Transportation Trust Fund revenue growth.

Innovative Funding

Expanding the sources of revenue available for financing transportation beyond the existing gas tax and titling fees will be necessary to meet growing needs in the State. Revenues from innovative funding mechanisms are a source of additional funding. Examples of innovative funding sources include: Passenger Facilities Charges applied to passenger tickets at Baltimore/Washington International Airport (BWI), Customer Facilities Charges applied to rental cars at BWI, and joint development projects, including some transit-oriented development projects and parking garages. In addition, MDOT has developed innovative financing arrangements with MdTA and the Maryland Economic Development Corporation (MEDCO). These arrangements include grants, loans, bonding conduits, leases, and investments. Planned investments, such as the BWI expansion, will use innovative funding sources to avoid using revenue from other Trust Fund sources.

Funding Adequacy

In 1999, the Committee on Transportation Investment (CTI) was appointed to review Maryland's transportation system and to make recommendations on the long-term revenue options and spending levels necessary to support a viable transportation system. The Commission recommended increasing the level of capital investment by \$100 million annually to reach a \$1.5 billion level of capital investment by fiscal year 2004. Beyond this period, the CTI recommended an increase of four percent each fiscal year to account for inflation and to further reduce unmet capital needs.

PERFORMANCE MEASURES: FUNDING

Performance measures identified in this goal area focus on MDOT's ability to meet identified funding needs, as well as its success in generating revenue from innovative funding mechanisms, identified as sources beyond traditional gas tax, titling, and licensing fees.

Performance Indicators

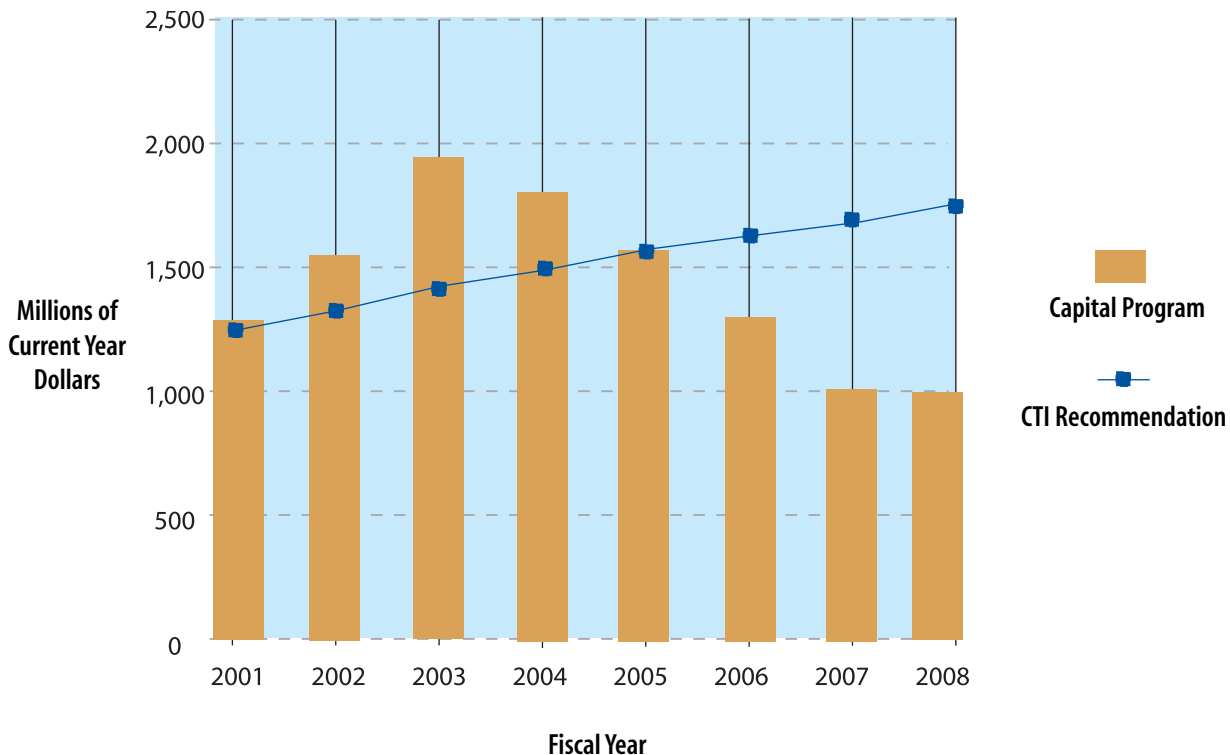
MDOT Funding-Related Measures

Performance Measure	Results
Difference between proposed CTI funding level and actual program	FY 2002 - Capital Program = \$1.572 billion Commission on Transportation Investment = \$1.3 billion Difference: The capital program exceeded the CTI recommended funding level by \$272 million
Innovative Revenues	FY 2002: \$91 million
Cumulative financing of cooperative capital investment with MDOT using MdTA funding (1985 to 2002)	FY 2002: \$962 million programmed

Performance Targets

Over the next six years, MDOT's planned investments in the capital program are expected to fall below the CTI recommendation. This 1999 report also indicated a shortfall of funding relative to needs of \$27 billion over the following 20-year period. In the long term, the Department will need to look at expanded revenue sources to meet capital needs and to achieve the recommended CTI levels of support for the transportation system.

Maryland Department of Transportation
Capital Program vs. Commission Recommendations

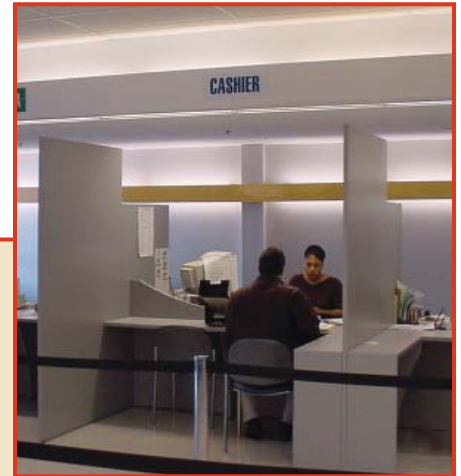


Serving Our Customers **Goal 10**

Ensure involvement and quality service in the development and delivery of transportation plans, programs, products, and services.

Policy Objectives

- Involve customers in transportation decision-making from the onset of systems planning through project development and design.
- Improve internal accountability of all modes performance through the Managing for Results Initiative.
- Improve customer access to transportation products, information, and services.



STRATEGY

Customer Satisfaction

The Maryland Department of Transportation (MDOT) takes a proactive approach to citizen participation in transportation decision-making, as well as in measuring customer satisfaction with services provided. Each modal administration has a slightly different survey methodology and overall approach to measuring the satisfaction of customers. The State Highway Administration (SHA), the Maryland Port Administration (MPA), the Maryland Transit Administration (MTA), and the Maryland Vehicle Administration (MVA) consistently measure customer satisfaction and have established six-year and 20-year targets to encourage improvements in service delivery. The percentage of agencies successfully meeting their targets is an important indication of the quality of service provided to MDOT customers.

As shown in the reported performance measures, MDOT modal customer satisfaction ratings are very high, and customer satisfaction is anticipated to remain strong as MDOT continues its commitment to meeting the needs of its customers. Investments in new technology, training, and customer service, along with the involvement of customers in projects and planning, support this commitment. MDOT's Electronic Government Initiative (e-Government) is specifically aimed at improving the customer experience by increasing the accessibility and ease of conducting business with State agencies.

e-Government

The Electronic Government Initiative, which aggressively promotes universal citizen access to the government through electronic means, was signed into law in 2000. A timeline for agencies to make services available to the public over the Internet was legislated as part of the initiative (50 percent of services by 2002, 65 percent by 2003, and 80 percent by 2004). The ultimate goal is for every agency to make services available electronically so citizens can conduct and complete business transactions 24 hours a day, seven days a week from the home, office, or a public access point.

MDOT conducted a comprehensive inventory of the information and services it provides and identified approximately 800 items. The information and services inventory identified the current state of web-enablement and assessed the potential level of web-enablement for each item. MDOT now tracks progress of its information and services that could be web-enabled and calculates the percentage currently available on the Internet, with the target of improving customer access to MDOT services through e-commerce and e-information. MDOT's ultimate objective is to achieve the maximum potential level of web-enablement for each inventory item.

PERFORMANCE MEASURES: SERVING OUR CUSTOMERS

Although MDOT has not yet developed an agency-wide approach to measuring customer satisfaction, several performance measures have been identified based on existing customer satisfaction surveys administered by the modal administrations.

Performance Indicators

Customer satisfaction surveys administered by the Maryland Port Administration and the State Highway Administration indicate a relatively high rate of customer satisfaction.

Customer Satisfaction – MPA and SHA

Modal Administration	Performance Measure	Results
Maryland Port Administration	Percent of shipping lines and stevedores rating vessel port call at MPA terminals as average or above	CY 2001: 93%
State Highway Administration	Percentage of external customer survey responses rating SHA performance as "average", "very good", or "outstanding"	CY 2000: 98%

Performance Targets

Customer satisfaction ratings for the Maryland Vehicle Administration and Maryland Transit Administration are both relatively high. Both modal administrations seek to increase customer satisfaction levels in future years.

Customer Satisfaction - MVA and MTA

Modal Administration	Performance Measure	Results	Six-Year Performance Target	20-Year Performance Target
Motor Vehicle Administration	Percentage of branch office customers rating service as "good" or "very good"	FY 2001: 91% FY 2002: 89%	93%	Maintain at 93%
Maryland Transit Administration	Average customer satisfaction with MTA (1=Poor to 5=Excellent)	CY 2001: 3.6	3.6	4

The Maryland Transportation Authority (MdTA) and each of the modal administrations has begun to implement the e-Government Initiative. The Maryland Aviation Administration (MAA), The MdTA and the Motor Vehicle Administration (MVA) have nearly reached the targets of this program.

e-Government Initiative

Mode	Web-Enabled Status Nov. 2001	Web-Enabled Status Sept. 2002	Six-Year Target	20-Year Target
Maryland Aviation Administration	31%	72%	80%	80%
Maryland Transportation Authority	71%	79%	80%	80%
Maryland Port Administration	50%	63%	80%	80%
Maryland Transit Administration	44%	44%	80%	80%
Motor Vehicle Administration	66%	75%	80%	80%
State Highway Administration	44%	52%	80%	80%
Total	46%	61%	80%	80%



Travel Demand Management

The Role of Travel Demand Management in Reducing Auto Travel

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 vehicle miles of travel have been incorporated into air quality plans. In addition to improving air quality, TDM strategies can also 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 vehicles miles of travel of each Emission Reduction Program for the Baltimore and Washington Regions.

Transportation Emission Reduction Measures (TERMS) During 2001

Program	Daily Reduction in Vehicle Trips 2001	Daily Reduction in Vehicle Miles of Travel 2001
Telecommunication Resource Center	12,590	279,692
Employer Outreach for Bicycles	297	1,277
Employer Outreach	65,873	1,027,566
Guaranteed Ride Home	6,803	229,276
Commuter Operation Program	3,418	117,940
College 33 Program Bus	2,706	29,760
Telework Partnership	4,875	273,000
Transit Store in Baltimore	780	5,460
Commuter Choice	10,000	100,000
Total	107,342	2,063,971

In addition to the Transportation Emission Reduction Measures that are listed above, programs such as roadway and parking pricing initiatives, commute trip reduction activities, high-occupancy vehicle lanes, transit improvements, rideshare programs, and land use and urban design are also part of the TDM strategies. These programs are not included because MDOT is not currently able to quantify the ability of these programs to reduce the demand for automobile trips. MDOT also operates park and ride facilities throughout the state, as shown on the table below.

Statewide Park and Ride Facilities

Operator	Total Spaces	Average Weekday Utilization
SHA	10,187	5,605
MTA	36,472	23,791

Induced Travel

In recent years, interest in the issue of "induced travel" has grown rapidly as a result of increased public attention to the need for more coordinated land use and transportation planning and recent representations that the expansion of roadways will not address congestion. In response, the legislature required MDOT "to the extent practicable, account for the effect of planned transportation investments on inducing automobile travel." This section describes some of the research on induced travel, identifies possible approaches for reflecting findings into the Department's planning efforts, and recommends an approach to move forward in this area.

Background

The consensus definition for induced travel in current use is "any increase in daily travel (measured as passenger or vehicle-miles of travel) 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 indicate. This approach continued until the 1950s when more sophisticated travel forecasting methodologies were developed that were able to better account for population and employment growth, the density of development, and the impacts of growth on income and car ownership. As a result, interest in induced travel waned until the 1990s at which time 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 the reliability of land use data. What is referred to as "induced travel" may in fact be the result of either inadequate existing model structures, or of systematically erroneous information provided to travel demand modelers about future land use change and its relationship to transportation system improvements.

There is, however, a general consensus that induced travel does exist to some extent. Data availability and the challenge of isolating the effects of changes in the transportation system from all other determinants of travel make estimates of induced travel difficult. A considerable number of studies in recent years have resulted in a wide range of estimates. As of the late 1990s, the U.S. DOT began to include the effects of congestion and system improvements on travel forecasts within its reviews of investment needs for the nation's highway system. However, even at the Federal level, uncertainty regarding the magnitude of induced travel has resulted in continued adjustments to the estimates of its effect.

From the review of the literature, we can make several key observations related 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 and that it is one element among many that influence the growth in travel.
- Outside of the transportation research community there is no single, widely-accepted definition of induced 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.
- There is no widely accepted method for measuring induced travel prospectively at the project level.

Options for Moving Forward

During the past year, MDOT has identified a number of candidate options for moving forward consistent with the legislature's direction. Based on a review of potential options, MDOT proposes an approach that addresses this issue early, and in coordination with local jurisdictions as they are defining transportation needs.

In recent years, a number of the Department's facility planning efforts have become sidetracked by a range of issues related to disconnects between the local land use planning process and the State's transportation planning process. To ensure that future projects brought forward to the State for planning are consistent with the State's system priorities, are fiscally supportable, and enjoy broad local support, the State has begun a limited, experimental effort to provide technical assistance to local jurisdictions and, upon request, to advise them on transportation system implications of local land use policies.

A specific approach cannot be outlined at this point because the methods will need to be tailored to the particulars of each situation. In some cases, proposed travel demand model tool enhancements may be assessed. In other cases, revising land use inputs to better reflect expected development impacts may be the recommended approach. In every case, it is expected that developing methods to explore and address induced travel will be analytically and technically challenging.

MDOT believes that this approach will effectively address induced travel at the time that local jurisdictions are planning and setting local land use plans and local transportation priorities. It will also provide local jurisdictions with the opportunity to take actions to mitigate potential induced travel effects and will address induced travel at a system level, rather than a project level. Exploring the issue as opportunities arise to investigate methods allows MDOT to experiment in favorable conditions, rather than across the board irrespective of relevance.

Glossary

Glossary Term	Definition
Baltimore MSA	Baltimore Metropolitan Statistical Area (MSA) includes Anne Arundel, Baltimore, Carroll, Harford, and Howard counties and the City of Baltimore.
Calendar year (CY)	Covers the timeframe between January 1 and December 31 of each reporting year.
Consolidated Transportation Program (CTP)	A six-year program of capital projects, which is updated annually to add new projects and reflect changes in financial commitments.
Cost effectiveness measure	Measure that incorporates the cost incurred to produce a given level of achievement.
Fiscal year (FY)	Covers the timeframe between July 1 and June 30 of each reporting year (FY 2003 = July 1, 2002 to June 30, 2003).
Goal	A formally worded, broad statement about what an agency desires to accomplish in the long run as part of its stated mission.
Maryland Transportation Plan (MTP)	Guiding document for the State's Consolidated Transportation Program. It is updated every three years and contains a set of goals that highlight the Department's emphasis.
Managing for Results (MFR)	As part of a broad performance-based initiative, MFR measures are supported by goals and objectives, some of which overlap with those covered in the Attainment Report. MFR measures largely describe operational facets of each of the modal administrations.
Performance measure	A qualitative or quantitative indicator that enables an agency to gauge the degree of change and progress toward goal attainment (e.g., "fatalities and injuries per 100 million vehicle miles traveled")
Performance target	Specification of a desirable level(s) of a given performance measure for one or more distinct time horizons in the future (e.g., a 6-year or 20-year target).
Policy objective	A statement that provides additional detail on how an agency will use its programs to achieve its goals. Policy objectives also reflect specific performance measures that an agency will use to assess its success.
Senate Bill 731 ("Transportation Performance Act")	Signed into law in May 2000, it heightened the importance of the MTP by integrating a performance measurement and monitoring reporting process for the attainment of MTP goals and objectives; set precedent for annual submittals of the Attainment Report as part of the State Report on Transportation each January, beginning January 2002.
Strategy	The direction or approach an agency has undertaken to fulfill its mission-driven goals.
Transportation Demand Management (TDM)	Strategies, such as carpooling programs, designed to reduce the growth of vehicle trips and vehicle miles traveled. The aim of TDM is to address congestion and affect environmental, safety, and quality of life issues.
Washington MSA	Washington Metropolitan Statistical Area (MSA) includes the District of Columbia (DC) and sections of Maryland (MD), Virginia (VA), and West Virginia (WV).

Appendix - List of Performance Measures

Performance Measure	Responsible Mode	Description and Purpose	Data Source
Annual enplaned passengers at BWI	MAA	Measures tracks the number of passengers boarding flights at BWI.	Airline Activity Reports
Annual fatal and injury vehicle collision rate (per 100 million VMT) at Authority facilities	MDTA	Measure provides an average number of vehicle collisions that involve a fatality and/or injury per 100 million miles of vehicle miles traveled.	MdTA Police
Annual tons of total foreign cargo (bulk and general) moved by the Port of Baltimore	MPA	Measure provides annual tonnage of foreign bulk and general cargo moved through the Port of Baltimore's public and private terminals.	MPA
Average age of MTA buses	MTA	Measure indicates the average age of buses in the MTA active fleet, a proxy for condition. FTA recommends replacing vehicles every twelve years, which corresponds to an average age of roughly 6 years for an entire fleet.	MTA
Average annual peak hour throughput at Ft. McHenry and Baltimore Harbor tunnels and Francis Scott Key Bridge	MdTA	Measure provides an indication of MdTA success in increasing through capacity at major toll facilities. Throughput is currently limited by wait time for toll transactions.	MdTA
Average MVA branch office customer visit time	MVA	Measure represents the average visit time of customers visiting MVA facilities based on quarterly customer surveys. Average visit time may increase as less complicated transactions are shifted to alternative means, such as the Internet.	MVA Operations
BWI compliance with FAA security inspection	MAA	Measure indicates whether BWI has passed the annual security inspection conducted by FAA. If BWI fails to address issues identified during inspections, the airport cannot operate. Measure is reported as pass or fail.	MAA
BWI terminal gate capacity	MAA	Measure provides a ratio of passengers to gates based on the industry standard for gate capacity, which is 250,000 passengers per gate annually. If measure exceeds 100%, the airport is operating above recommended capacity.	MAA
Center-mile mileage of State-owned highways with marked bike lanes	SHA	Measure captures the number of miles of roadway operated by SHA that are marked with bike lanes in either direction.	SHA
Congestion using LOS on freeways and arterials in Baltimore and Washington Region	SHA	Map shows estimated travel speeds across the Washington and Baltimore regions based on the most recent traffic counts and capacity of area roadways. Areas of congestion during morning and evening peak periods are depicted. This information is updated every three years.	Skycomp Reports: "Traffic Quality in the Metropolitan Baltimore Planning Region" and "Traffic Quality on the Metropolitan Washington Area Freeway System" (Spring 2002)
Cost of mobility (percentage of household expenditures used for transportation)	MDOT	Measure provides an indication of the affordability and efficiency of transportation.	US Bureau of Labor Statistics Consumer Expenditure Survey Southern MSA- Average annual expenditures and characteristics tables
Cumulative financing of cooperative capital construction with MDOT	MdTA	Measure tracks MdTA's contribution to the MDOT capital program from the period 1998 to 2001 using its unique financing capacity.	MdTA

Performance Measure	Responsible Mode	Description and Purpose	Data Source
Customer perceptions of safety of the MTA transit system (1=Poor to 5= Excellent)	MTA	Measure tracks the comfort of transit customers with regard to safety and security through an annual customer survey.	MTA Customer Survey
Customer satisfaction with MTA (1=Poor to 5=Excellent)	MTA	Measure tracks overall customer satisfaction through an annual survey.	MTA Customer Survey
Difference between proposed CTI funding level and actual program	MDOT	Measure tracks capital program funding levels relative to recommendations made in 1999 by the Commission on Transportation Investment (CTI) on necessary spending levels to support a viable transportation system.	MDOT
Distribution of Trips to Work by Mode for Maryland (mode split)	MDOT	Measure reports mode choice for work trips based on the decennial Census. The Census is in the process of developing a new survey that will result in annual updates to mode split and will be included in future reports.	U.S. Bureau of the Census
Dollar value of MPA responsible claims of cargo theft and damage (and as percentage of total value of cargo moved through MPA terminals)	MPA	Measure tracks total claims of theft and damage of goods shipped through MPA terminals as an indicator of quality of security measures implemented at its ports. Reported figure is based on theft and damage claims to MPA.	MPA
Dollars committed to bicycle and pedestrian projects in the Consolidated Transportation Program	MDOT	Measure tracks expenditures toward alternative modes of transportation and serves as an indicator of MDOT's support for alternatives to the automobile.	MDOT
Dollars spent in Smart Growth Transit Program	MTA	Measure tracks expenditures on the Smart Growth Transit Program, which consists of several infrastructure development programs designed to encourage community revitalization around transit stations.	MTA
e-Government Initiative - Percent of services available over the internet (web-enabled status)	MDOT	Measure related to the e-Government Initiative, which spells out targets for levels of public access to State information using electronic means.	MDOT
Incidents at BWI	MAA	Measure tracks the number of incidents at BWI based on documented passenger, airline employee and MAA employee incidents with State vehicle damage, State property damage, personal injury, employee injuries, personal property damage, and any other documented airport events.	MAA
Innovative revenues	MDOT	Measure tracks revenues generated by innovative funding mechanisms and consists of Passenger Facility Charges at BWI, financing arrangements with the Maryland Economic Development Corporation (grants, loans, bonding conduits, leases and investments), COPS and Customer Facility Charges applied to rental cars at BWI, and revenue from joint-development projects. MdTA funds are not included in this estimate.	MDOT
MDOT funding for programs and projects that contribute to the commitments of Chesapeake 2000 Bay Agreement	MDOT	Measure tracks the dollars spent by MDOT to support its commitment to the Chesapeake 2000 Bay Agreement, which is a multi-State financial commitment.	MDOT
Number and percentage of alternative service transactions	MVA	Measure tracks transactions conducted by alternatives to visiting MVA facilities, including mail, kiosks, phone and the internet.	MVA Operations
Number and percentage of bridges categorized as "structurally deficient" according to Federal standards	SHA MdTA	Measure ensures that standards of structural integrity in bridges are successfully met. A classification of structurally deficient does not mean that a bridge is unsafe.	SHA, MdTA

Performance Measure	Responsible Mode	Description and Purpose	Data Source
Number and percentage of required mitigation of acres of farmland, forests, wetlands, cultural resources, etc. completed this year	MdTA SHA, MAA, MTA	Measure gauges annual progress in implementing environmental mitigation efforts for projects with environmental impacts.	MdTA, SHA, MAA, MTA
Number and rate per 1 million population of bicyclist fatalities and injuries on State highways	SHA	Measure gauges the level of safety for the bicycling public by tracking injuries and fatalities statewide.	SHA
Number and rate per 1 million population of pedestrian fatalities and injuries on State highways	SHA	Measure gauges the level of safety for pedestrians by tracking injuries and fatalities statewide.	SHA
Number of communities with Neighborhood Conservation Projects	MDOT	Measure captures the breadth of efforts to support community revitalization and development activities under the Smart Growth Initiative.	MDOT
Number of direct, indirect, induced jobs and jobs related to activities at the Port	MPA	Measure captures the number of jobs generated by port activities based on an economic development study that is updated every five years.	MPA
Number of fatal vehicle collisions at Authority facilities	MdTA	Measure tracks the number of collisions on Authority facilities which involve one or more fatalities.	MdTA Police
Number of injuries and fatalities per year on MPA facilities	MPA	Measure gauges the safety of MPA facilities.	MPA
Number of local jurisdictions implementing local ordinances which support bicycling and walking	MDOT	Measure gauges the accessibility of alternative modes of transportation. Data is not yet available. Will be reported in future years.	MDOT (future)
Number of new jobs resulting from highway construction	SHA	Measure gauges the primary economic impact of highway construction activity based on a study conducted by SHA.	SHA
Number of projects completed under the Neighborhood Conservation Program	MDOT	Measure captures the breadth of efforts to support community revitalization and development activities under the Smart Growth Initiative.	MDOT
Number of public-use airports in operation	MAA	Measure indicates the number of airports in operation within the State of Maryland. MAA operates BWI and Martin State airports, but provides technical support and facilities for financial assistance to other airports.	MAA
Number of vehicle collisions involving injuries at Authority facilities	MdTA	Measure tracks number of collisions on Authority facilities which involve one or more injuries.	MdTA Police
Overall injury and fatalities - number and rate per 100 million VMT	SHA	Measure tracks number of injuries and fatalities on state-maintained roadways and reports a rate per 100 million miles of travel.	SHA
Percentage of appropriate transit vehicles that can accommodate bicycles	MTA	Measure tracks percentage of all transit vehicles that can accommodate bicycles among those where this is possible.	MTA
Percentage of arterials with daily traffic volumes per lane greater than 10,000	SHA	Measure provides a general indication of areas of congestion. Arterials with daily traffic volumes above 10,000 per lane will typically experience significant congestion.	SHA
Percentage of breakbulk vessel berths that meet the industry standard	MPA	Measure tracks the proportion of port facilities that meet standards for modern facilities as defined by the industry. Breakbulk vessel berths and covered storage facilities sheds are two of the more critical components of port operations.	MPA
Percentage of MTA routes with "successful" or "acceptable" performance	MTA	Measure is a key indicator of system performance for the MTA. It targets capital and operating improvements to individual routes and modes based on analysis of: boardings per mile, boardings per trip, subsidy per boarding, and farebox recovery.	MTA Customer Survey

Performance Measure	Responsible Mode	Description and Purpose	Data Source
Percentage of branch office customers rating service as "good" or "very good"	MVA	Measure tracks overall customer satisfaction through quarterly survey of customers.	MVA Operations
Percentage of covered storage facilities that meet the industry standard	MPA	Measure tracks the proportion of port facilities that meet standards for modern facilities as defined by the industry. Breakbulk vessel berths and covered storage facilities sheds are two of the more critical components of port operations.	
Percentage of external customer survey responses rating SHA performance as "average", "very good", or "outstanding"	SHA	Measure tracks overall customer satisfaction based on an annual survey of customers.	SHA Annual Survey
Percentage of freeways with daily traffic volumes per lane above 20,000	SHA	Measure provides a general indication of areas of congestion. Freeways with daily traffic volumes above 20,000 per lane will typically experience significant congestion.	SHA
Percentage of SHA-maintained roads with acceptable ride quality (pavement condition "fair" to "very good")	SHA	Measure tracks pavement quality based on continued inspections of roadways within the State highway system.	SHA
Percentage of satisfied customers	MPA	Percent of shipping lines and stevedores rating vessel port call at MPA terminals as average or above.	MPA
Percentage of State-owned roadway centerline miles with a bicycle level of comfort (BLOC) grade of "D" or better (on a scale of 'A' to 'F')	SHA	Measure gauges the accessibility and mobility potential of bicycling.	SHA
Percentage of State-owned roadway centerline miles within Priority Funding Areas that have sidewalks	SHA	Measure gauges the accessibility of alternative modes of transportation by tracking SHA's sidewalk coverage within areas designated for priority funding.	SHA
Tons of MPA general cargo	MPA	Measure tracks tons of general cargo shipped through MPA facilities.	MPA
Total passengers through BWI	MAA	Measure tracks the number of passengers served by the Baltimore/Washington Airport (boardings and alightings).	Airline Activity Reports
Total pounds of (domestic) cargo moved at BWI	MAA	Measure captures domestic cargo activity at BWI in pounds.	MAA
Total transit boardings	MTA	Measure includes ridership for MTA, WMATA, and Locally Operated Transit Systems. Growth in transit ridership is a means of tracking Marylanders' use of non-auto alternatives.	MTA
Transportation-related emissions as a percentage of total for the State of Maryland, Baltimore Region, and Washington Region	MDOT	Measure gauges the impact of transportation system usage on the environment by tracking percentage of total Nitrogen Oxide and Volatile Organic Compound emissions related to transportation. Both are pre-cursors to ozone.	MDOT - OPCP
Vehicle Miles Traveled per capita (State roads)	SHA	Measure is an estimate of vehicle miles traveled per capita on state-maintained roads only and on all public roads. It provides an indication of changes in total vehicle travel.	SHA



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