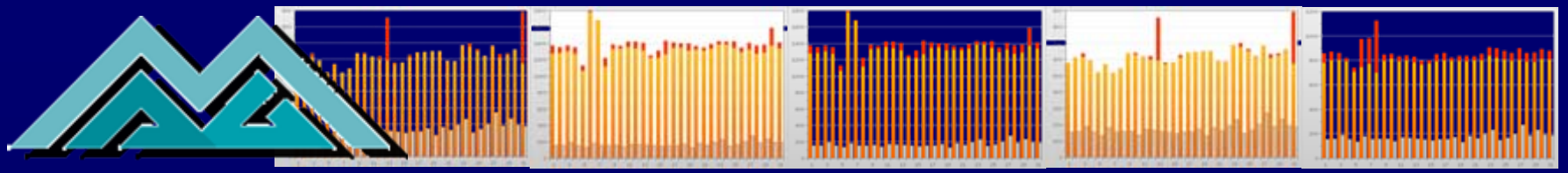


MAG Management Committee

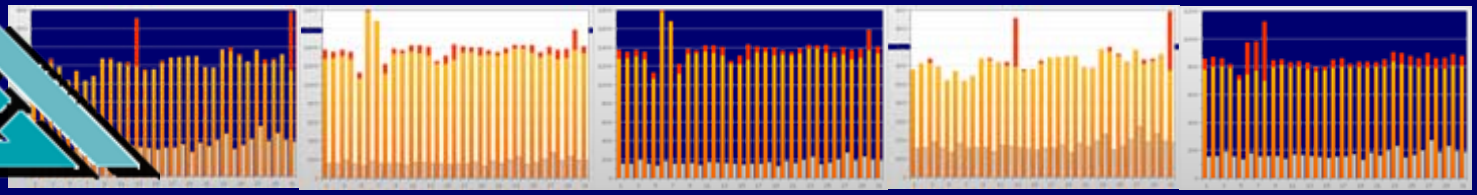
Item #7

January 14, 2009

"Performance measurement has been widely used in the private sector as a way to improve delivery of goods and services to customers and ultimately, the success of the enterprise

Fundamentally, this is no different from providing improved transportation services to the public…"

FHWA Office of Operations



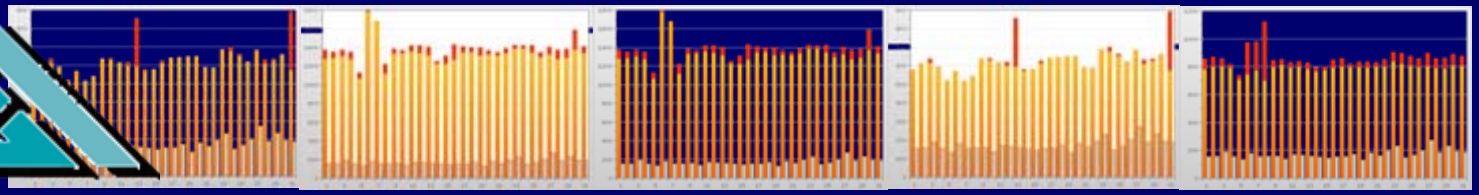
CURRENT CONDITIONS

- Growing congestion
- Ageing infrastructure
- Reduced resources

Under these conditions:

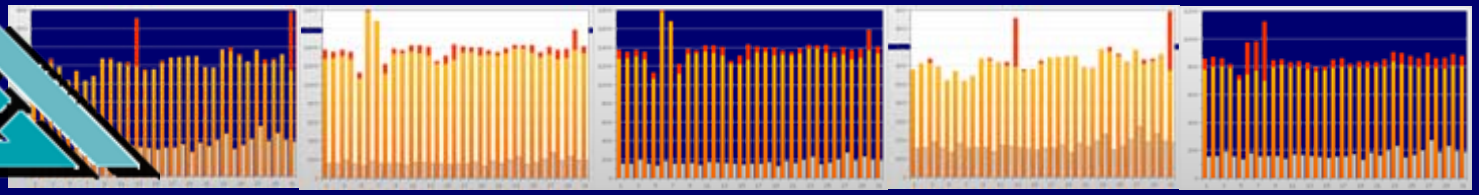
There is a continued need for making increasingly complex transportation improvement decisions

It is important to have systematic fact-based tools and processes to produce the information need to effectively allocate resources



WHAT IS MAG DOING?

- Initiated a Performance Measurement Program in 2006
- Reporting on preliminary measures in RTP and Annual Report Updates
- Kicked-off a Performance Measurement Framework and Congestion Management Update Study in 2008



PHASE I

- **DEVELOPMENT OF BEST PRACTICES**
- **INITIATION OF THE TECHNICAL ADVISORY GROUP**

PHASE COMPLETE
* MAG WEBSITE

PHASE II

- **DEVELOPMENT OF PERFORMANCE FRAMEWORK**
- **ASSESMENT OF DATA SOURCES**
- **DEV. OF REPORTING METHODOLOGIES AND VISUALIZATION TOOLS**

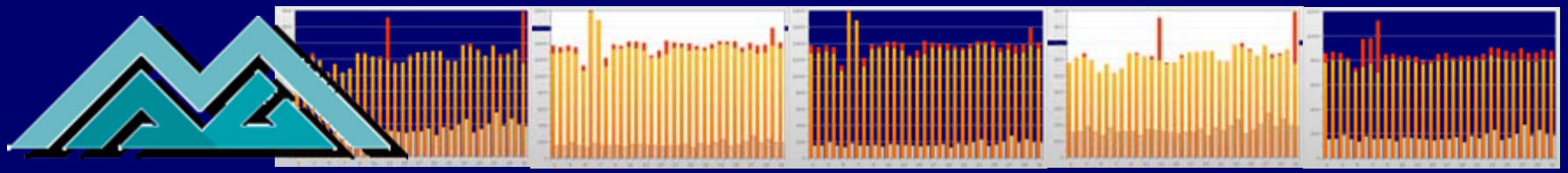
PHASE UNDERWAY

PHASE III

- **UPDATE OF CONGESTION MANAGEMENT PROCESS**
- **IDENTIFICATION OF STRATEGIES**
- **EVALUATION TOOLS**
- **REPORTING METHODOLOGIES**

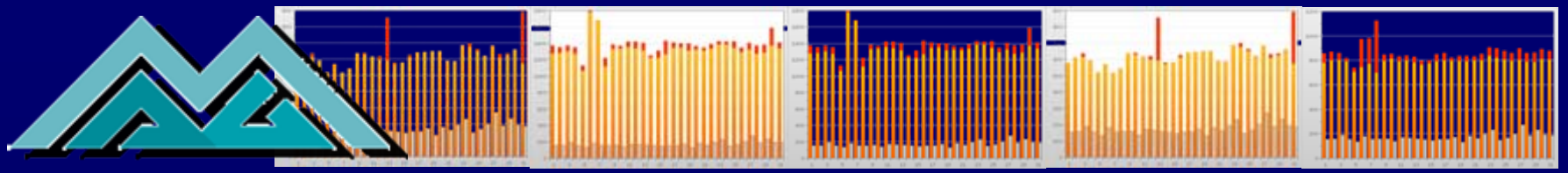
NEXT STEPS

The most important characteristic of the Study is that the measures in the framework will be based on our specific Regional goals and objectives



WHY IS MAG DOING IT?

- Develop a framework and prototype performance monitoring and visualization reporting tool
- Update MAG Regional congestion management strategies
- Comply with SAFETEA-LU and Proposition 400 audit requirements



WHY IS IT IMPORTANT?

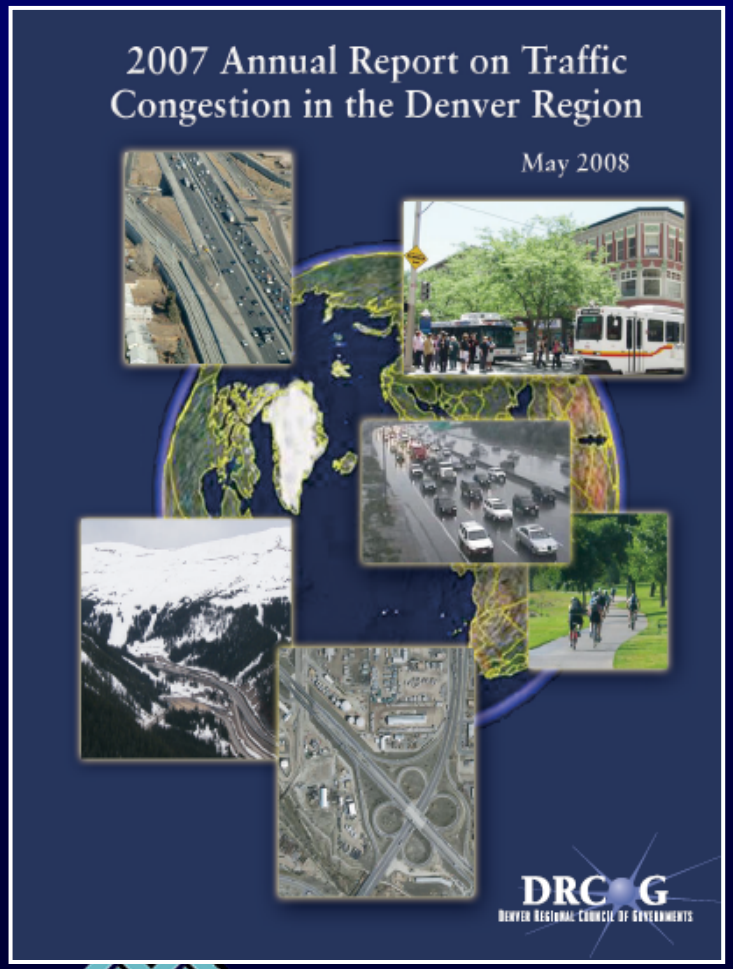
- Provides a link between a strategy and execution
- Delivers results and establishes accountability
- Measurable results allow you to track your progress
- Provides communicable feedback relative to goals
- Improve transportation service to the public

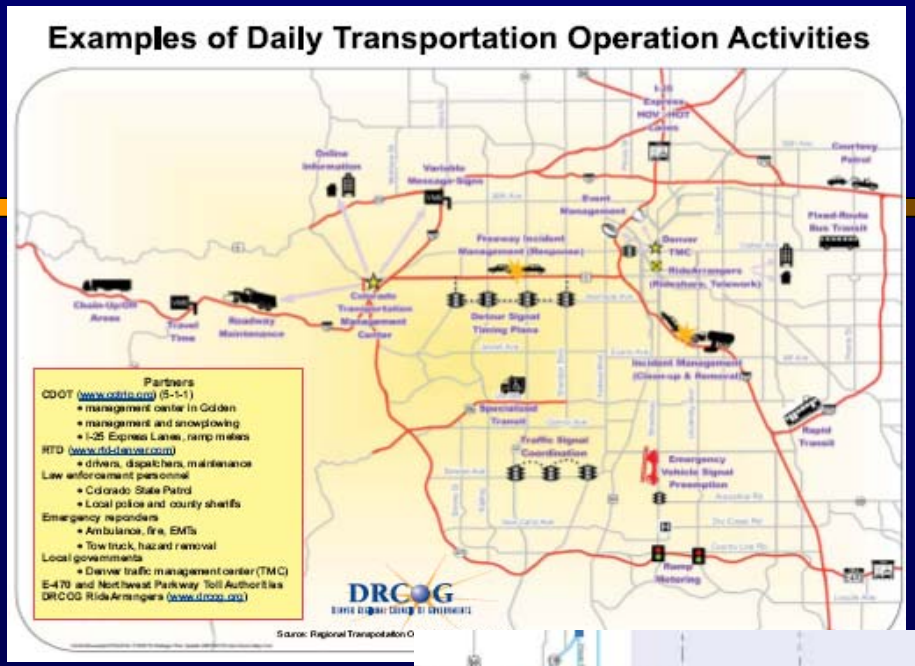
Peer Regions

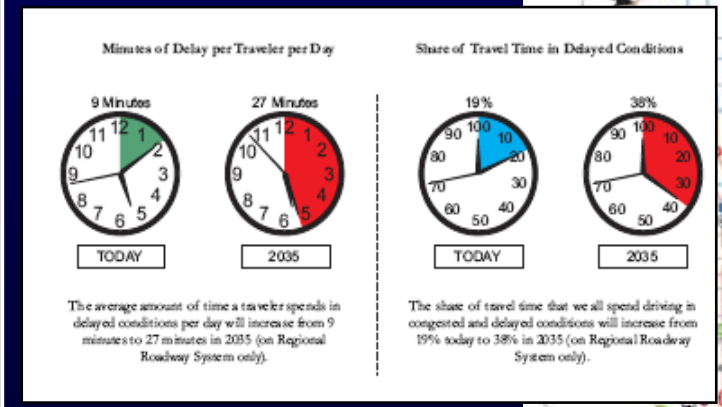
Lessons Learned

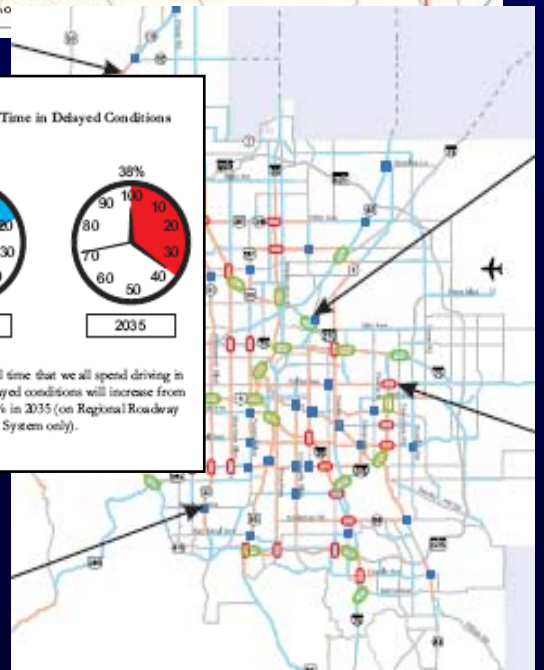
Denver - DRCOG

PERFORMANCE MEASUREMENT FRAMEWORK AND CONGESTION MANAGEMENT UPDATE









Washington

PERFORMANCE MEASUREMENT FRAMEWORK AND CONGESTION MANAGEMENT UPDATE

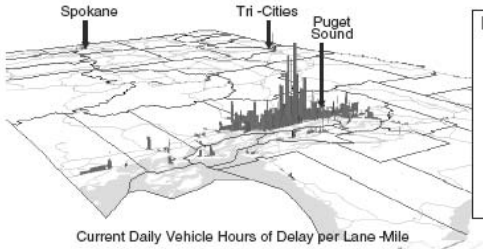
Washington State Department of Transportation

Measures, Markers and Mileposts

The Gray Notebook for the quarter ending March 31, 2007

WSDOT's quarterly report to the Governor and the Washington State Transportation Commission on transportation programs and department management

Douglas B. MacDonald
Secretary of Transportation



Current Daily Vehicle Hours of Delay per Lane -Mile

Measuring Congestion

24 hour vehicle delay, in WSDOT's view, is the most basic and accessible measure for describing congestion. It indicates which roadways are congested, and gives an indication of the severity of congestion and how long it lasts.

Congestion is primarily concentrated in the urban areas, especially Puget Sound, Vancouver and Spokane.

The highest spike depicted on the map is located at the interchange for I-5 and I-90 in Seattle, where the average tally is about 825 vehicle hours of delay per lane mile per day.

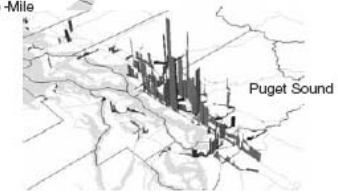
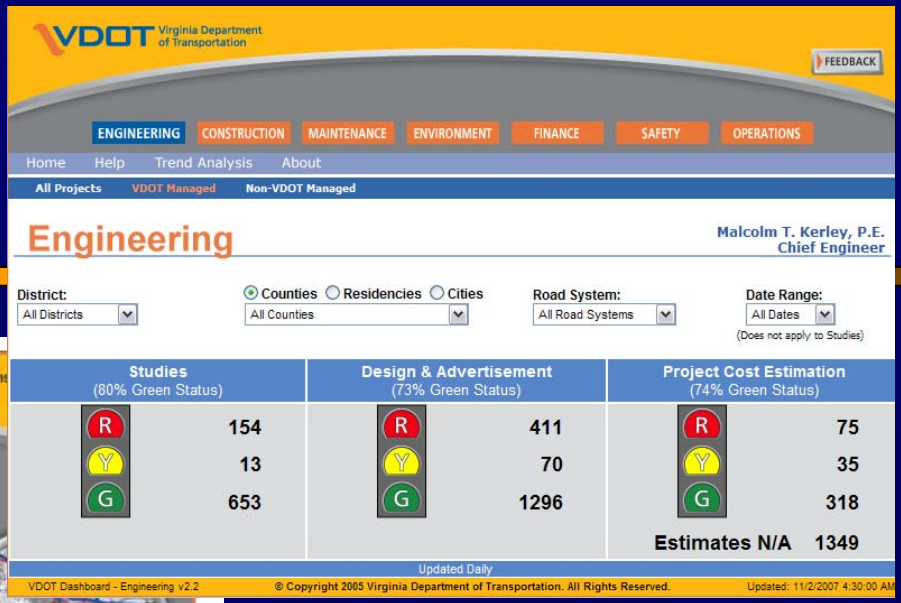
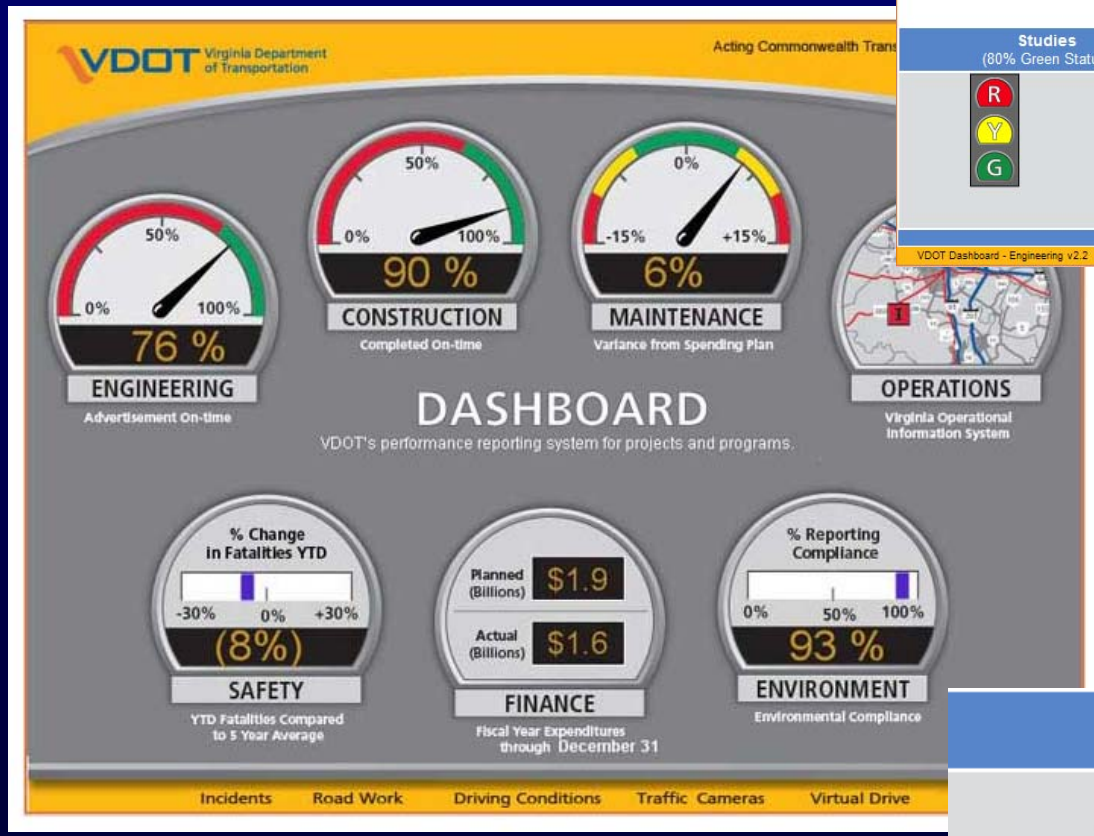


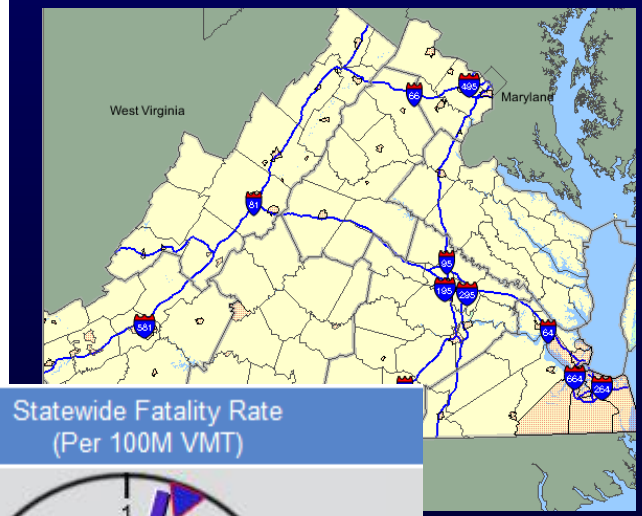
FIGURE 2 Current daily vehicle hours of delay in Puget Sound region. With demand growing and supply stagnant, congestion as measured by traveler delay has increased. WSDOT = Washington State Department of Transportation.

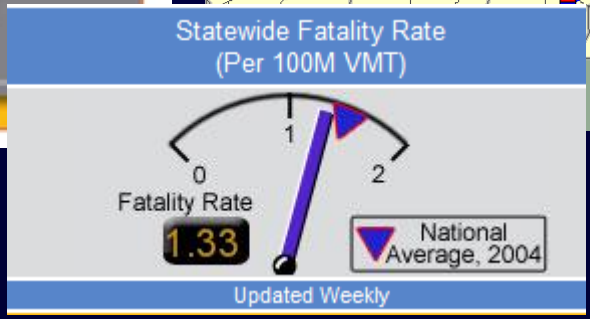
Virginia

PERFORMANCE MEASUREMENT FRAMEWORK AND CONGESTION MANAGEMENT UPDATE



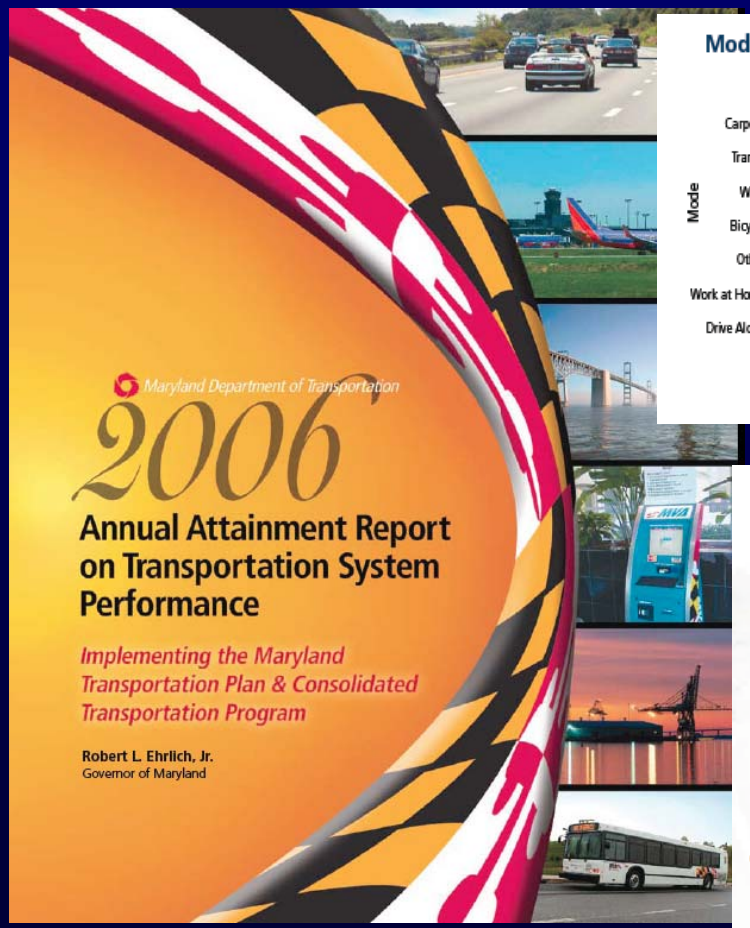


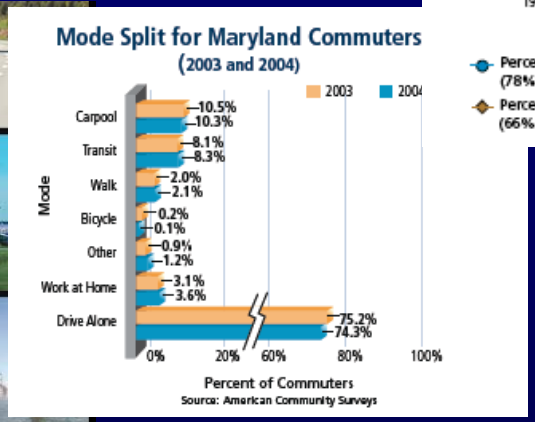


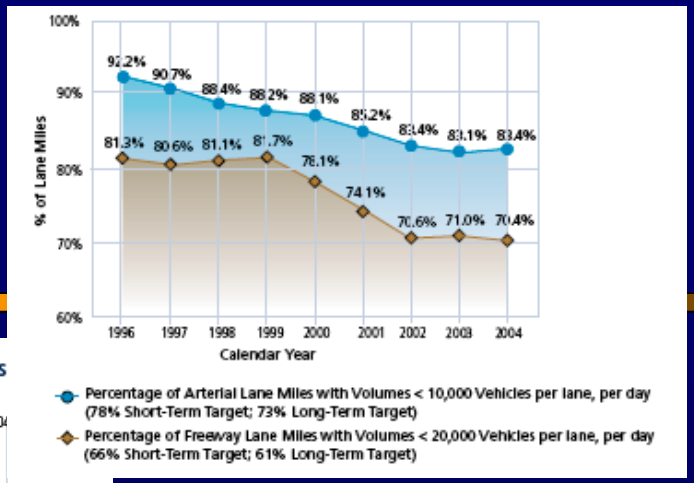


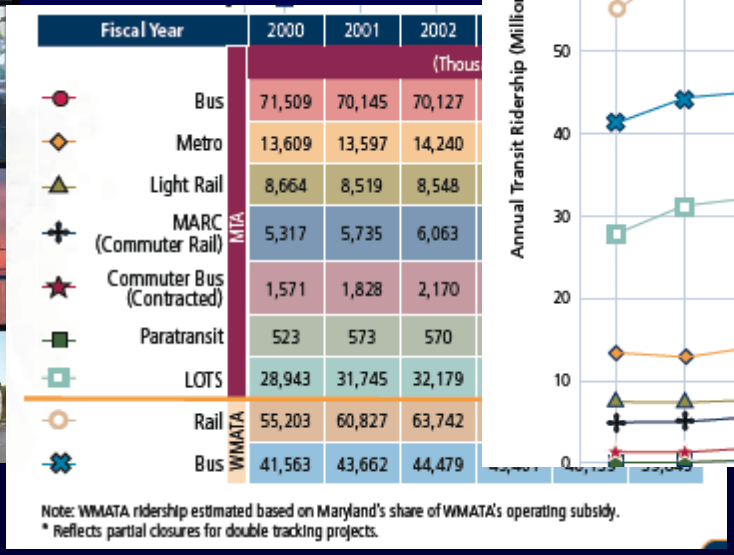
Maryland

PERFORMANCE MEASUREMENT FRAMEWORK AND CONGESTION MANAGEMENT UPDATE



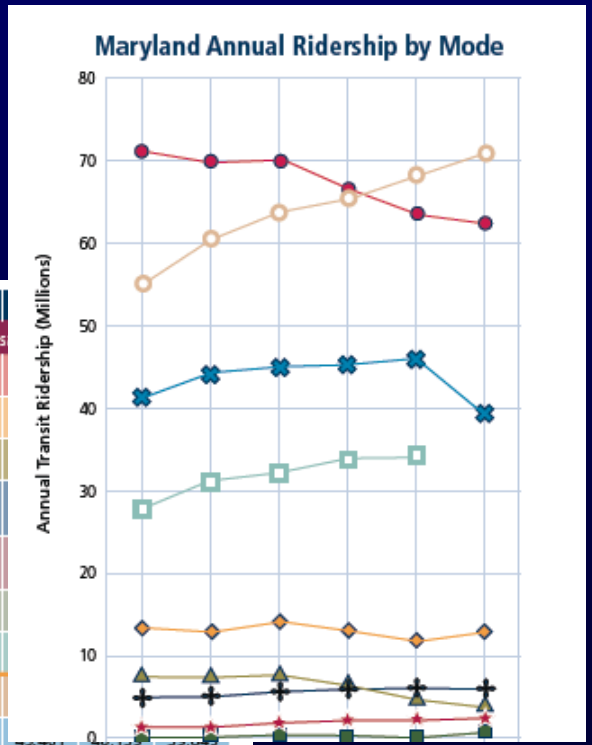


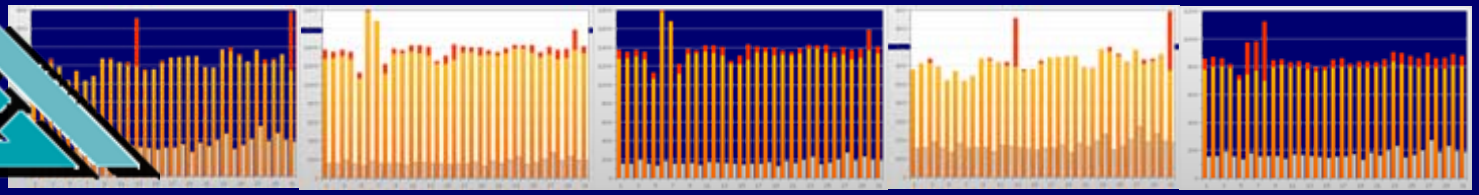




Fiscal Year		2000	2001	2002
				(Thous
Bus	MTA	71,509	70,145	70,127
Metro	MTA	13,609	13,597	14,240
Light Rail	MTA	8,664	8,519	8,548
MARC (Commuter Rail)	MTA	5,317	5,735	6,063
Commuter Bus (Contracted)	MTA	1,571	1,828	2,170
Paratransit	MTA	523	573	570
LOTS	MTA	28,943	31,745	32,179
Rail	WMATA	55,203	60,827	63,742
Bus	WMATA	41,563	43,662	44,479

Note: WMATA ridership estimated based on Maryland's share of WMATA's operating subsidy.
* Reflects partial closures for double tracking projects.

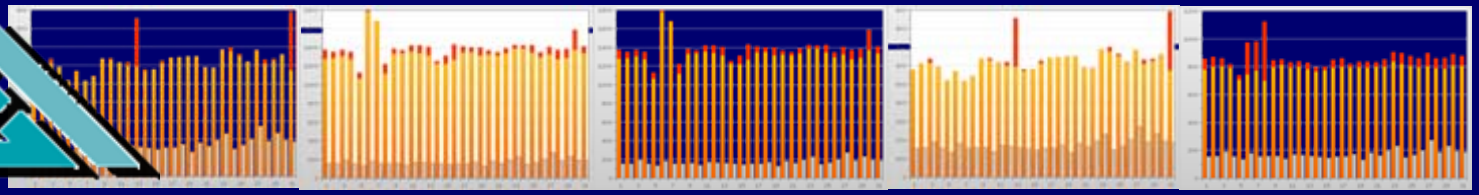




DATA ASSESMENT

- MAG collects a significant amount of transportation data on a continuous basis. A massive amount of information is periodically collected, uploaded, analyzed and archived.

- Operations data is archived on app. 50% of the Freeway System (FMS). Most of the data is used for purposes of updating and calibrating the Travel Demand Model.



DATA ASSESMENT

Types of data:

- VOLUME
- TRAVEL TIME AND SPEED
- BOTLENECKS
- LEVEL OF SERVICE
- FREEWAY CONDITIONS
- EXTERNAL TRAVEL, FREIGHT MOVEMENT

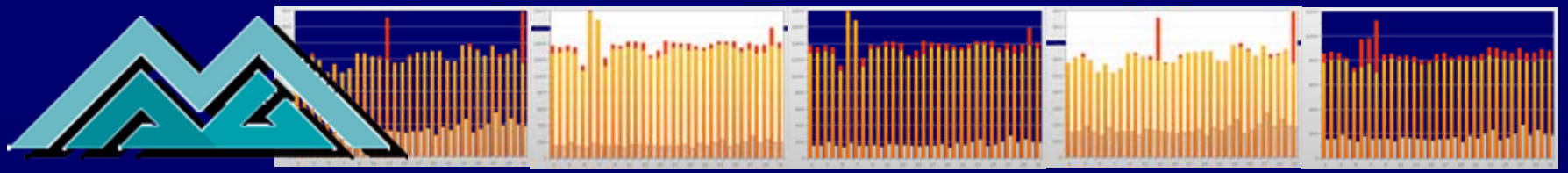
As part of this effort, MAG will capitalize on the multi-modal data sets and start integrating it into the performance measurement, planning and programming activities.

Draft Performance Measures Framework

Focus Area/Mode	Limited Access Highways (GP)	Arterials	Transit	Freight	Bicycle/Pedestrian (Non-Motorized)
Travel Time, Delay, & Reliability	Mean and 80th-95th Percentile & Point-to-Point Travel Times	Mean and 80th-95th Percentile & Point-to-Point Travel Times	Point-to-Point Travel Times	Point-to-Point Travel Times	
	Congestion Delay – Spatial & Temporal	Congestion Delay – Spatial & Temporal	Congestion Delay – Spatial & Temporal		
	Travel Time Reliability Index [Buffer Index]	Travel Time Reliability Index [Buffer Index]	On-time Performance		
Incident Management	Incident Clearance Time	Incident Clearance Time			
Mobility – Throughput (People/ Freight)	Volume (Person and/or Vehicle)	Volume (Person and/or Vehicle)	Ridership – by mode (Peak Period and Total)	Freight Volume	Bicycle/Pedestrian LOS
	On-Ramp Queue Size	Intersection LOS – based on V/C	Peak Hour Load Factor (Average Load Factor on Express bus/freeway BRT)	Commodity flows from, to, within, and through the region, by mode	Per capita miles traveled
	Lost Capacity	Signal Cycle Failures / Intersection Queue Size	Per capita VMT		
	Per Capita VMT	Per Capita VMT	Boardings per revenue mile		
Safety & Security	Crash/Injury/Fatality Rate	Crash/Injury/Fatality Rate for intersections	Crash Rate	Crash/Injury/Fatality rates for large truck involved crashes on the freeway system	Crash/Injury/Fatality Rate per 100,000 population
		Crash/ Injury/Fatality rates for segments	Transit Crime Rate (Safety Incidents per 100k vehicle miles)	Crash/Injury/Fatality rates for large truck involved crashes on the arterial system	Percent of Schools participating in Safe Routes to Schools program

Draft Performance Measures Framework (cont.)

Focus Area/Mode	Limited Access Highways (GP)	Arterials	Transit	Freight	Bicycle/Pedestrian (Non-Motorized)
System Accessibility & Modal Options			Percent of Park and Ride Capacity Used	Percent of freight terminals / intermodal facilities (air, rail, and truck cargo) located within 5 miles of a freeway	Sidewalk and/or Bicycle Network Completeness
			Vehicle Revenue Miles of Service per Resident of MAG Urbanized Area		Availability of Safe Street Crossing Facilities for Access to Transit Stops
			Percent of population residing within ¼ mile of local bus and ½ mile of LRT/Express Bus		Bicycle Storage Facilities
			Transit share of travel (by mode) – miles traveled or trips taken		Bicycle/Pedestrian share of travel
System Preservation	Bridge/Pavement Condition Rating	Bridge/Pavement Condition Rating			
Environmental Preservation	Air Quality Index	Air Quality Index	Air Quality Index	Air Quality Index	Vehicle Emissions Reduced by Pedestrians and Bicycle Users
Quality of Life	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction	Customer Satisfaction
			Percent of Employers with a Trip Reduction Program		
Cost Effectiveness	Trips served/Time Savings per dollar invested	Trips served/Time Savings per dollar invested	Trips served/Time Savings per dollar invested	Trips served/Time Savings per dollar invested	



Questions?

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CM – Eileen O. Yazzie – eyazzie@mag.maricopa.gov