



Mobility

(Congestion Relief)

As of 03/23/09
Revised 01/07/10 to update annual VMT for 2008

Foreword

As part of the NJDOT's Annual Performance Review ("Milepost"), the Bureau of Systems Planning has developed this document to identify the performance measures and goals related to Mobility (Congestion Relief) as well as specific data summaries, analyses and a Plan of Action to evaluate progress and direct project development in order to meet those goals.

Measures

% Change in Annual VMT – a reduction in VMT growth indicates a positive trend (moving towards target); an increase a negative trend (moving away from target)

(NOTE: The Department's Asset Management Steering Committee (**AMSC**) excluded **% Change in Annual VMT** in the final measures package, however; it is discussed here for illustrative purposes and may be indeed measured, through not for the Milepost document)

Peak Hour Travel Time (in minutes) – a reduction in peak hour travel time indicates a positive trend (moving towards target); an increase a negative trend (moving away from target)

Duration of Congestion (in minutes) – a reduction in the duration of congestion indicates a positive trend (moving towards target); an increase a negative trend

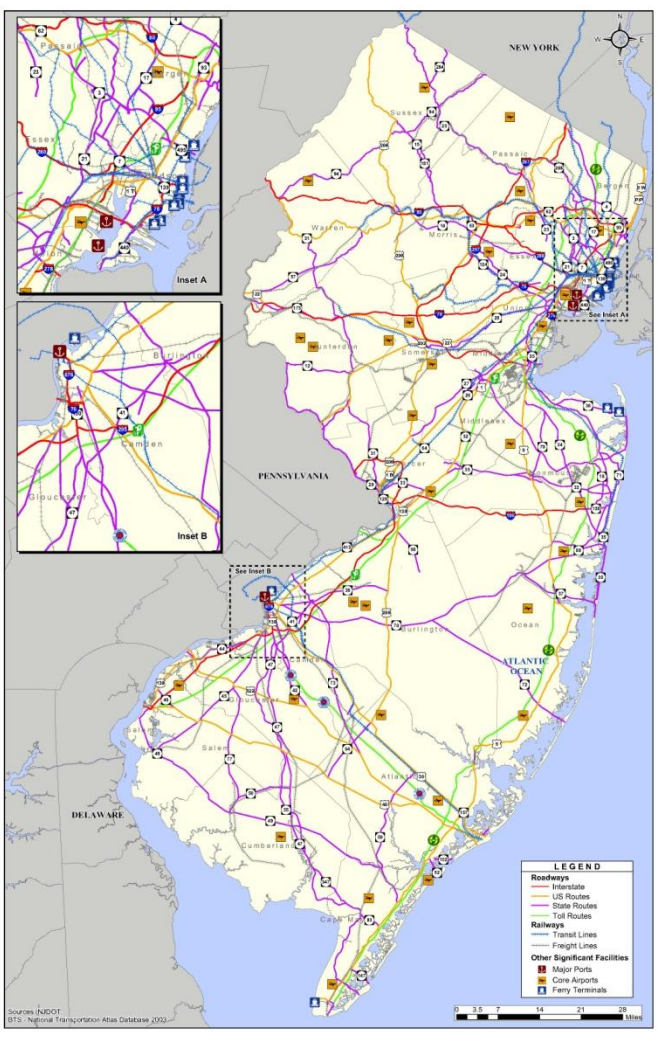
Goals

% Change in Annual VMT – 50% reduction in the average 10 year growth (i.e.; reduce the 1997-2006 average growth of 2%/yr to 1%/yr for 2007 to 2017)

Peak Hour Travel Time - hold to year 2008 levels for the ten year period, 2008 – 2018

Duration of Congestion - hold to year 2008 levels for the ten year period, 2008 – 2018

How Much Travel Occurs on NJ's Roads?



Although the State and Authority roads (NJ Turnpike, GSP, ACE) constitute about 7% of the total road miles in New Jersey, they carry about two-thirds of the traffic. And given New Jersey's geographic location (within the Northeast Corridor and close proximity to Philadelphia and New York City), rich diversity (shore, mountains, villages, cities) and key economic generators and industries (ports, airports, warehousing, pharmaceuticals) these roads carry significant commuter, recreational and freight traffic.

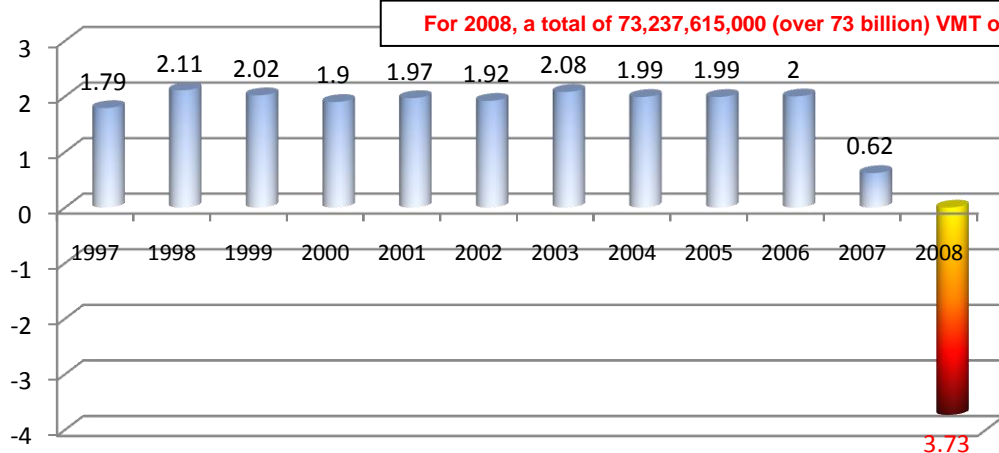
And as population and employment has grown, so has congestion. Some 14% of the state's roads are considered congested (at or over capacity), and another 28% are almost at capacity, leaving only 58% able to accommodate more traffic, a 9% decrease between 1998 and 2004.

Not only are more roadways more crowded, they are congested for longer periods of time.

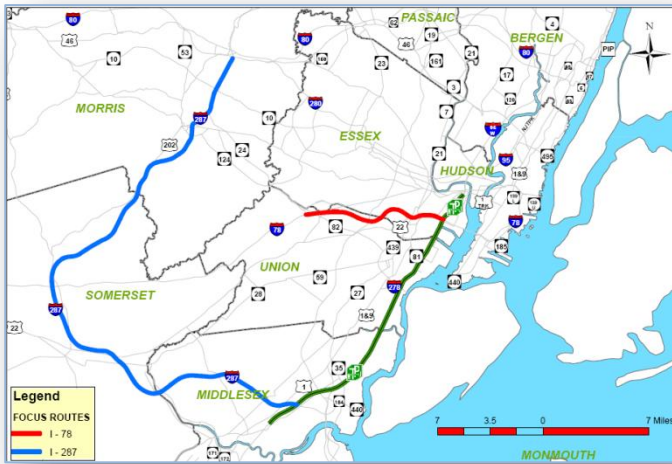
The concept of a single rush hour when highway traffic is greatest is fast disappearing. The percentage of roadways that experience daily congestion for more than one hour has increased from 15% to 27%.

From 1997 to 2006, there has been a relatively steady increase in the annual VMT – around 2%/year. In 2007 however, there appeared a significant reduction in growth that dramatically accelerated in 2008, due to steady increases in gas prices followed by a severe economic downturn.

% Change (from previous year) in Annual Vehicle Miles Traveled (VMT) in NJ



Is the road I'm traveling on reliable?



TRANSMIT current roadway coverage: I-78 & I-287

Simply stated, **System Reliability** is about “taking a trip you can count on”. So, for a commuter who travels to work every weekday, or a shopper who goes to the store on the weekend, can they expect the trip will take the same amount of time every time – is the road that they are traveling on reliable?

There are two factors that affect reliability – recurring congestion and non-recurring congestion.

Recurring congestion is most easily recognized during *rush hour*, when a substantial amount of travel – typically commuters – occurs in a short amount of time. This type of congestion affects reliability when the amount of traffic grows over time (eventually exceeding roadway capacity), and is exacerbated by the lack of necessary roadway improvements to keep pace with growth.

Non-recurring congestion – congestion that results from incidents, construction zones, special events, weather, etc. – further degrades system efficiency and reliability.

Below are performance summaries of travel time data for the I-78 and I-287 corridors – two of the most heavily utilized highways for commuters and trucks – using **TRANSMIT** *real-time* data (**TRANSMIT** is **TRANSCOM**'s SM system for managing incidents & traffic using vehicles equipped with electronic toll-collection tags (**E-ZPass**) as anonymous probes for transportation management and traveler information). On the next page is an assessment of those summaries, followed by performance measure graphics (with trend indicators) and finally a **Plan of Action** for keeping positive trends “on track”.



TRANSMIT Travel Time Analysis

Segment	Length (miles)	Peak Hour	Baseline Travel Time (minutes)	Peak Period Travel Time (minutes)			Duration of Congestion (minutes) ¹		
				June 2008	Dec. 2008	% Δ	June 2008	Dec. 2008	% Δ
On I-78 Eastbound									
Berkeley Heights to Bayonne	9.66	4-5 PM	12.0	25.9	23.8	-8%	93.2	56.1	-40%
On I-78 Westbound									
Bayonne to Berkeley Heights	9.66	8-9 AM	12.0	16.2	15.9	-2%	78.2	58.4	-25%
On I-287 Southbound									
I-80 to NJ 28	28.4	5-6 PM	26.2	29.0	31.3	8%	0	24.5	***2
NJ 28 to GSP	16.48	5-6 PM	15.2	30.7	24.6	-20%	102.0	77.4	-24%
On I-287 Northbound									
GSP to NJ 28	16.48	8-9 AM	15.2	29.1	23.1	-21%	101.0	80.5	-20%
NJ 28 to I-80	28.4	8-9 AM	26.2	29.9	30.0	0%	10.0	29.2	192% ²

1- Hours and minutes that the average peak hour speed falls below 70% of the posted speed

2- Data anomaly

For the six month period from June, 2008 to December, 2008, TRANSMIT data indicates a **decrease** in both peak hour travel time and duration of congestion for the I-78 and I-287 Travel corridor sample sections.

Assessment

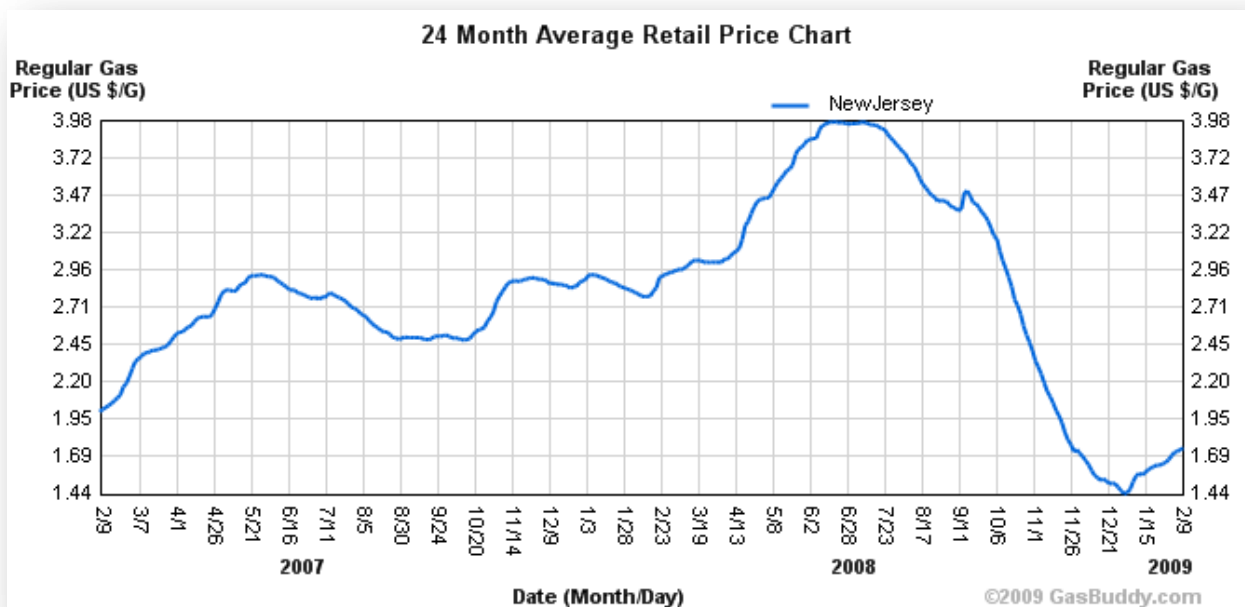
During the latter part of 2007 and through most of 2008, there had been a steady climb in gas prices, peaking around June 28th, 2008 (see chart below). During that same period, a severe, global economic downturn ensued. The combination of these two events significantly impacted travel, not only in New Jersey but the rest of the nation. People chose to drive less, take transit more or form carpools.

From data analyses of VMT data and the two TRANSMIT corridors, the resulting impacts were telling:

- There was a substantial **decrease in VMT growth** in the year 2007 as compared to the average annual growth seen over the previous ten years – a reduction of almost 70%, followed by **dramatic** decrease in 2008 that actually showed a substantial reduction in overall VMT, not just a decrease in growth;
- Between June and December of 2008, **peak period travel times** on both I-78 and I-287 showed a general downward trend, ranging from 0% to -20% (the lone increase was on I-287 southbound that showed an 8% increase);
- During that same period, **duration of congestion** also showed reductions, although to a greater degree (-20% to -40%; the 192% increase can be attributed to data issues).

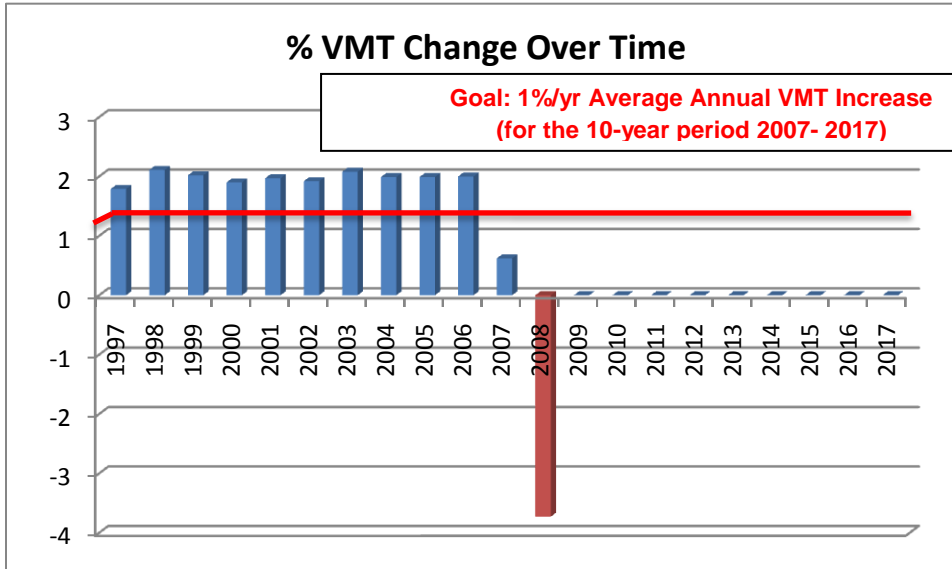
“Americans drove 53.2 billion fewer miles this year – from November through June – than last year.”

Source: FHWA (2008)



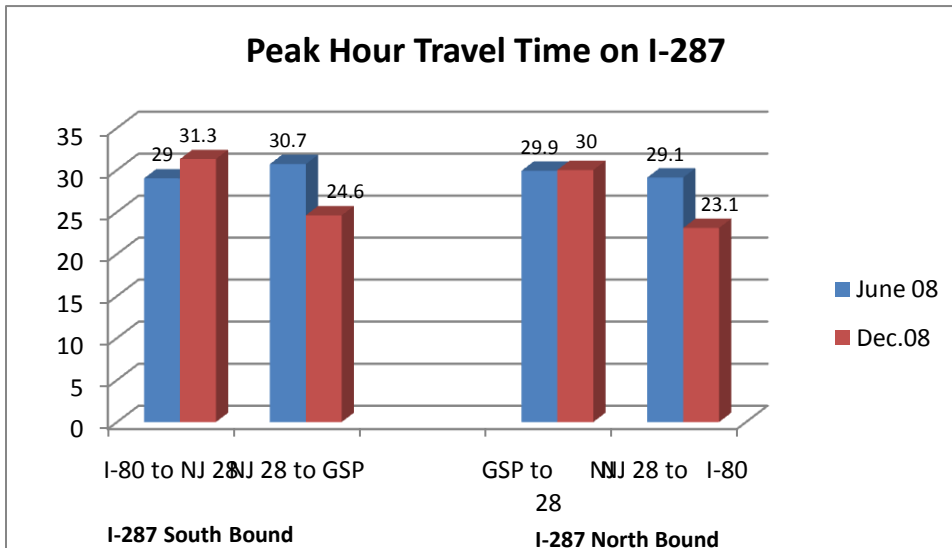
Performance

% Change in Annual VMT

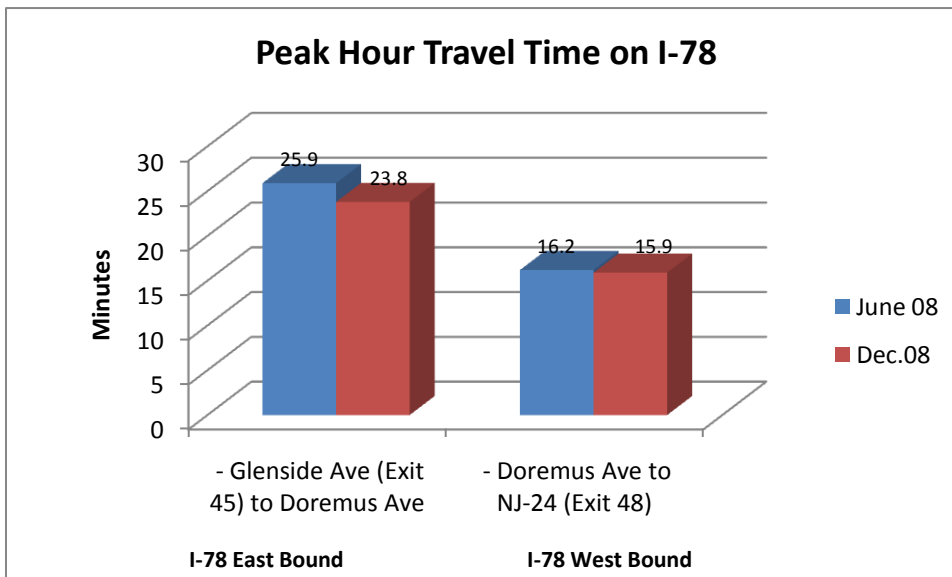


For the period 2007 to 2008, the % VMT increase (0.62% & -3.73%) was below the goal line, indicating a positive trend

Peak Hour Travel Time (in minutes)

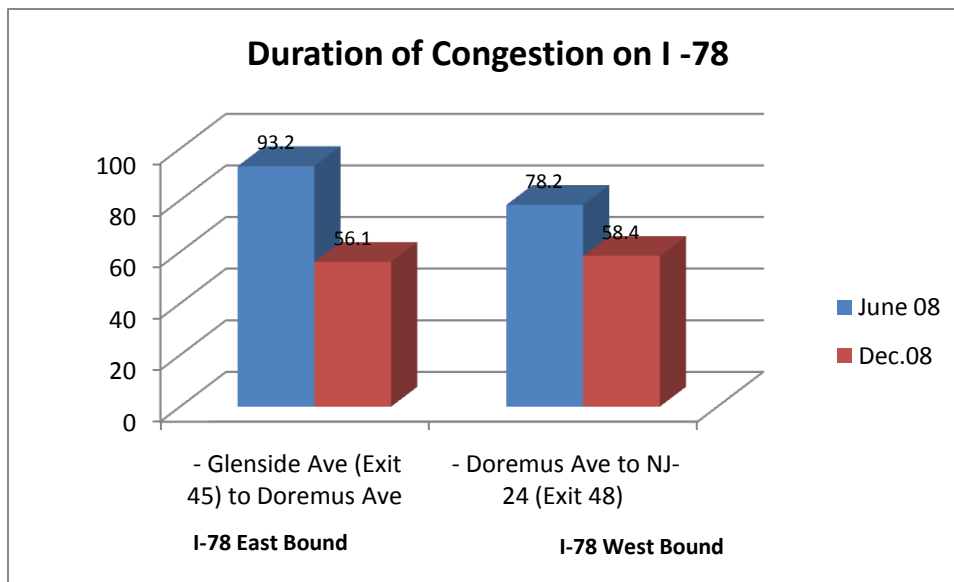
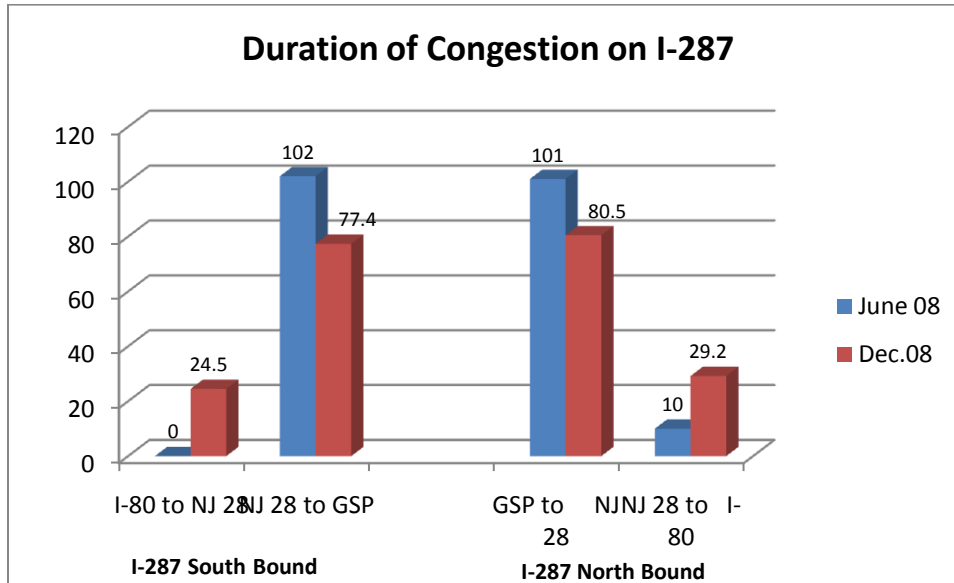


For the period June 2008 to Dec. 2008, data indicates an overall reduction in peak hour travel time, indicating a positive trend



Performance (cont'd.)

Duration of Congestion (in minutes)



For the period June 2008 to Dec. 2008, data indicates an overall reduction in the duration of congestion, indicating a positive trend

Plan of Action

To stay on track in terms of meeting the three aforementioned goals, the following actions are recommended (for greater detail, see the FY2010-2019 SCIS – Congestion Relief Report Update):

% Increase in Annual VMT – to reduce the amount of VMT growth:

- Expand and invest in public transit (including bike/ped)
- Aggressively pursue Travel Demand Management (TDM)
- Better integrate land use and transportation (via NJDOT's NJFIT program)

Peak Hour Travel Time and Duration of Congestion - to reduce the amount of peak hour travel time, or delays caused by congestion:

- Selectively widen strategic roadways
- Eliminate bottlenecks (regional/local)
- Operate the system efficiently
- Optimize freight

(Note: strategies to reduce VMT growth are also applicable here)