

Update on the Congestion Management Process (CMP)

**Travel Management Subcommittee
February 23, 2010**

Wenjing Pu and Andrew Meese
National Capital Region Transportation Planning Board (TPB)
Metropolitan Washington Council of Governments (COG)

Three major CMP activities

1. CMP component of the CLRP
2. Congestion Management Documentation Forms for the CLRP and TIP
3. **CMP Technical Report**
 - Supporting technical background document to the CMP

Status of the 2010 CMP Technical Report

- February: Preliminary draft finished, under internal review
- March: Draft release for comments
- April or May: Final report release

Highlights of the 2010 update of the CMP Technical Report

- New data source for highway performance monitoring
- Congestion analysis
- Reliability analysis
- Regional map of signalized intersections
- Periodic updates

New data source (1/4)

- INRIX, Inc. data, through the I-95 Corridor Coalition
- GPS probe data
- Temporal coverage
 - 24/7/365
 - 5-minute aggregated for archived data
- Spatial coverage
 - 165 centerline miles of freeways and 140 centerline miles of arterials in the TPB member jurisdictions
 - Speed and travel time reports for every small road segment, called Traffic Message Channel (TMC)

New data source (2/4)

- Provisional data
 - Availability is dependent on contracts between the I-95 CC and INRIX
- Proprietary data
 - Some technical details remain unrevealed
- But there are ongoing third-party data quality validations
 - Virginia: July 2008 & May 2009
 - Maryland: August 2008 & March 2009

New data source (3/4)

2008 validation results

State	Average Absolute Speed Error (less than 10mph)		Speed Error Bias (less than 5mph)		Hours of data collection
	Comparison with SEM Band	Comparison with Mean	Comparison with SEM Band	Comparison with Mean	
Virginia					
0-30 MPH	4.10	5.30	2.20	2.60	16.7
30-45 MPH	5.70	7.40	1.40	1.70	24.3
45-60 MPH	2.90	5.20	0.20	0.90	87.2
> 60 MPH	2.20	4.30	-1.60	-2.80	101.7
All Speeds	2.97	5.04	-0.32	-0.53	229.8
Maryland					
0-30 MPH	7.80	11.70	7.20	10.60	2.4
30-45 MPH	6.70	10.70	4.00	6.10	5.8
45-60 MPH	3.30	6.20	-0.70	-0.20	30.8
> 60 MPH	1.80	4.00	-1.30	-2.20	108.2
All Speeds	2.40	4.85	-0.83	-1.25	147.2

Source: I-95 Corridor Coalition, *I-95 Corridor Coalition Vehicle Probe Project: Validation of INRIX Data July-September 2008*, Final Report. January 2009.

New data source (4/4)

2009 validation results

Northern VA Evaluation Summary						
State	Absolute Speed Error (<10mph)		Speed Error Bias (<5mph)		Number of 5 Minute Samples	Hours of Data Collection
	Comparison with SEM Band	Comparison with Mean	Comparison with SEM Band	Comparison with Mean		
0-30 MPH	4.20	5.20	1.90	2.00	942	78.5
30-45 MPH	7.00	8.50	2.00	2.40	936	78.0
45-60 MPH	2.40	4.10	-0.10	0.50	5399	449.9
> 60 MPH	2.00	3.80	-1.80	-3.00	9698	808.2
All Speeds	2.53	4.23	-0.84	-1.31	16975	1414.6

Based upon data collected in May 2009

Source: I-95 Corridor Coalition, *I-95 Corridor Coalition Vehicle Probe Project: Validation of INRIX Data, Monthly Report, Virginia, June 2009.*

Maryland Evaluation Summary						
State	Absolute Speed Error (<10mph)		Speed Error Bias (<5mph)		Number of 5 Minute Samples	Hours of Data Collection
	Comparison with SEM Band	Comparison with Mean	Comparison with SEM Band	Comparison with Mean		
0-30 MPH	4.20	5.10	1.80	2.10	356	29.7
30-45 MPH	4.20	6.20	1.30	2.20	529	44.1
45-60 MPH	1.60	3.50	0.20	0.60	3371	280.9
> 60 MPH	1.60	3.90	-1.40	-2.90	7935	661.3
All Speeds	1.79	3.92	-0.75	-1.56	12191	1015.9

Based upon data collected in March 2009

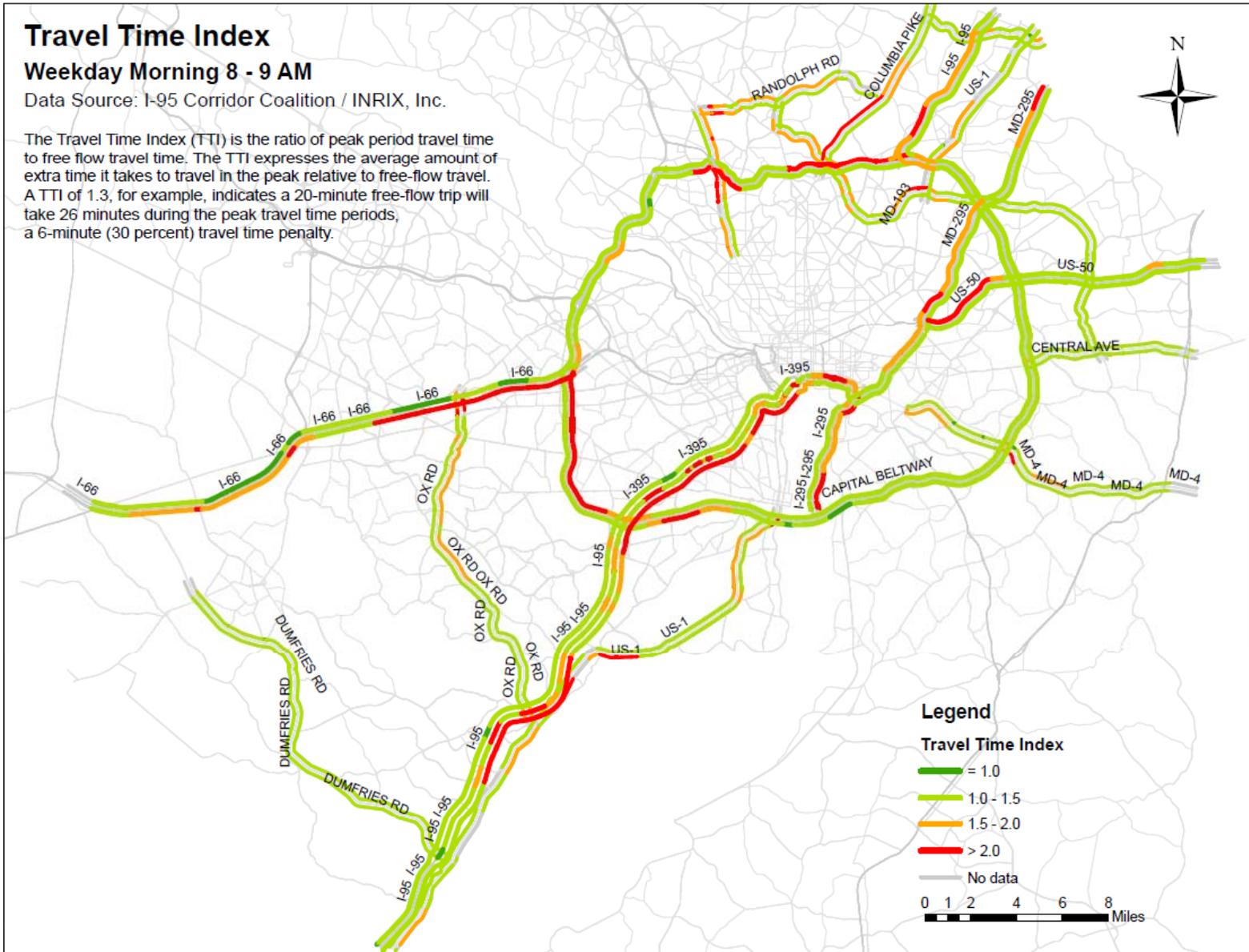
Source: I-95 Corridor Coalition, *I-95 Corridor Coalition Vehicle Probe Project: Validation of INRIX Data, Monthly Report, Maryland, May 2009.*

Congestion Analysis (1/4)

- Congestion intensity: **Travel Time Index**.
- *Travel time index = peak period travel time / free-flow travel time.*
- The travel time index expresses the average amount of **extra time** it takes to travel in the peak relative to free-flow travel.
- Example: a travel time index of 1.3 indicates a 20-minute free-flow trip will take 26 minutes (1.3 times of free flow travel time) during the peak travel time periods, a 6-minute (30 percent) travel time penalty.

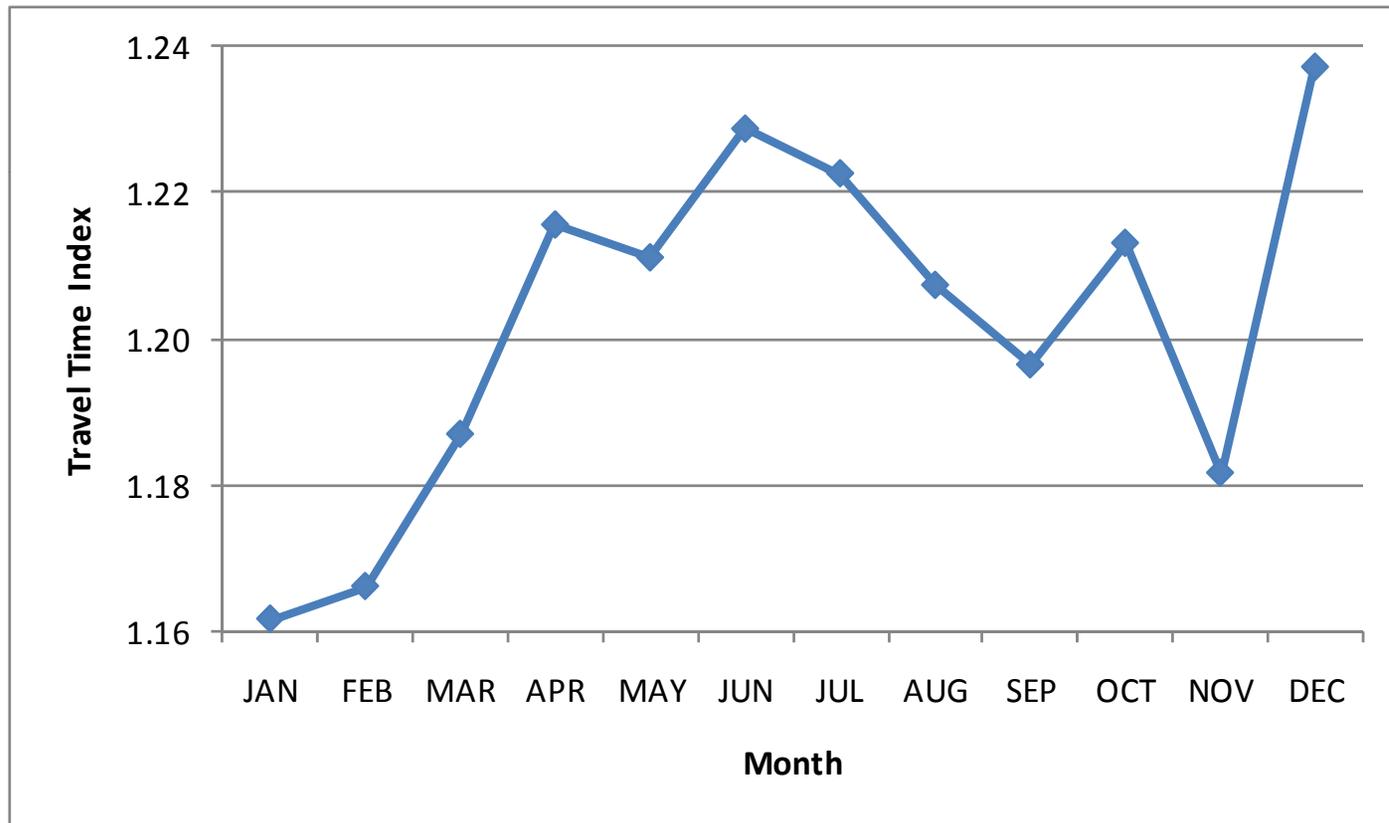
Congestion Analysis (2/4)

Travel time index for non-holiday weekday 8:00 AM – 9:00 AM in 2009
for the I-95 Corridor Coalition covered highways



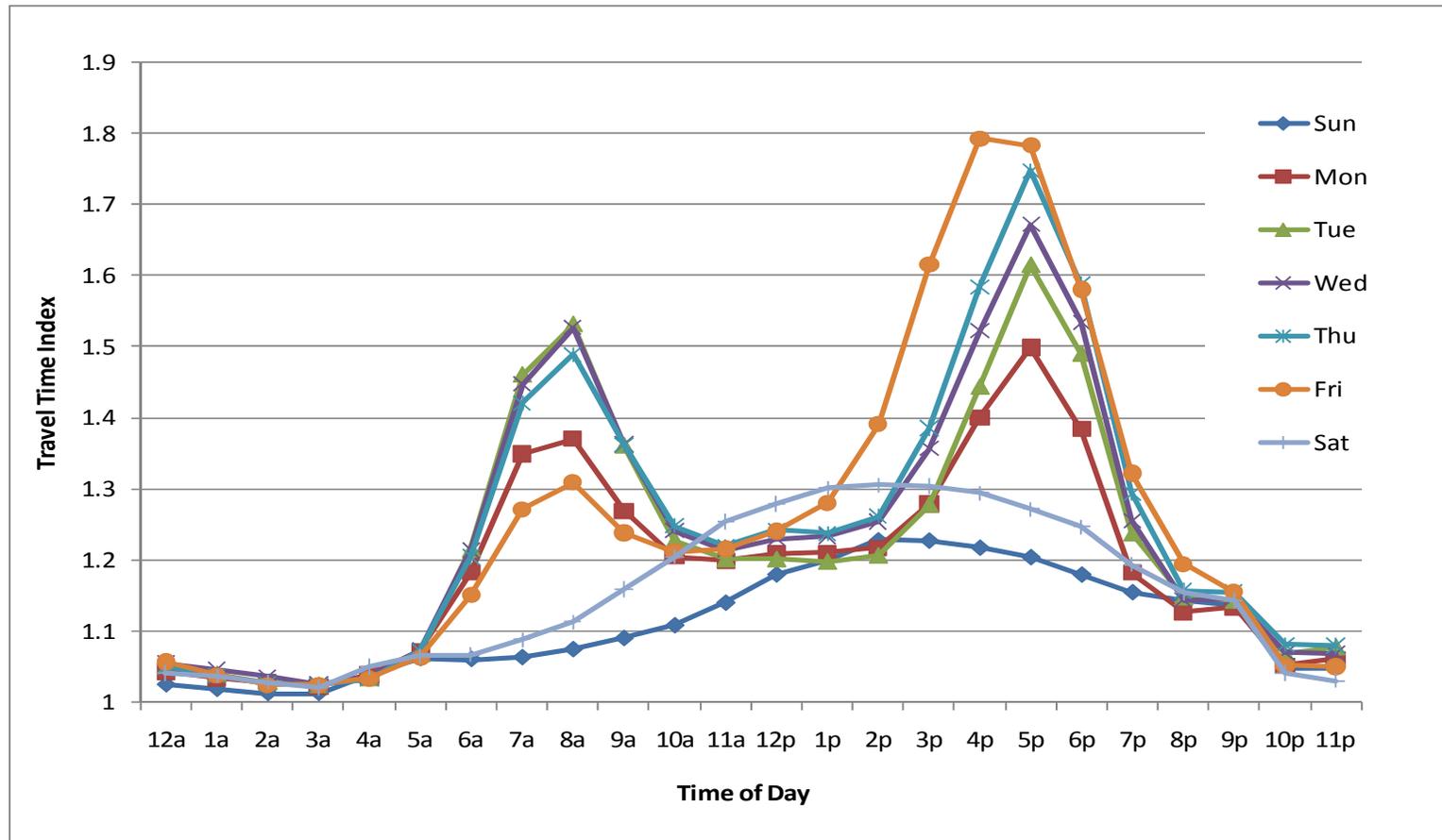
Congestion Analysis (3/4)

Travel time index by month in 2009
for the I-95 Corridor Coalition covered highways



Congestion Analysis (4/4)

Travel time index by time of day and day of week in 2009
for the I-95 Corridor Coalition covered highways

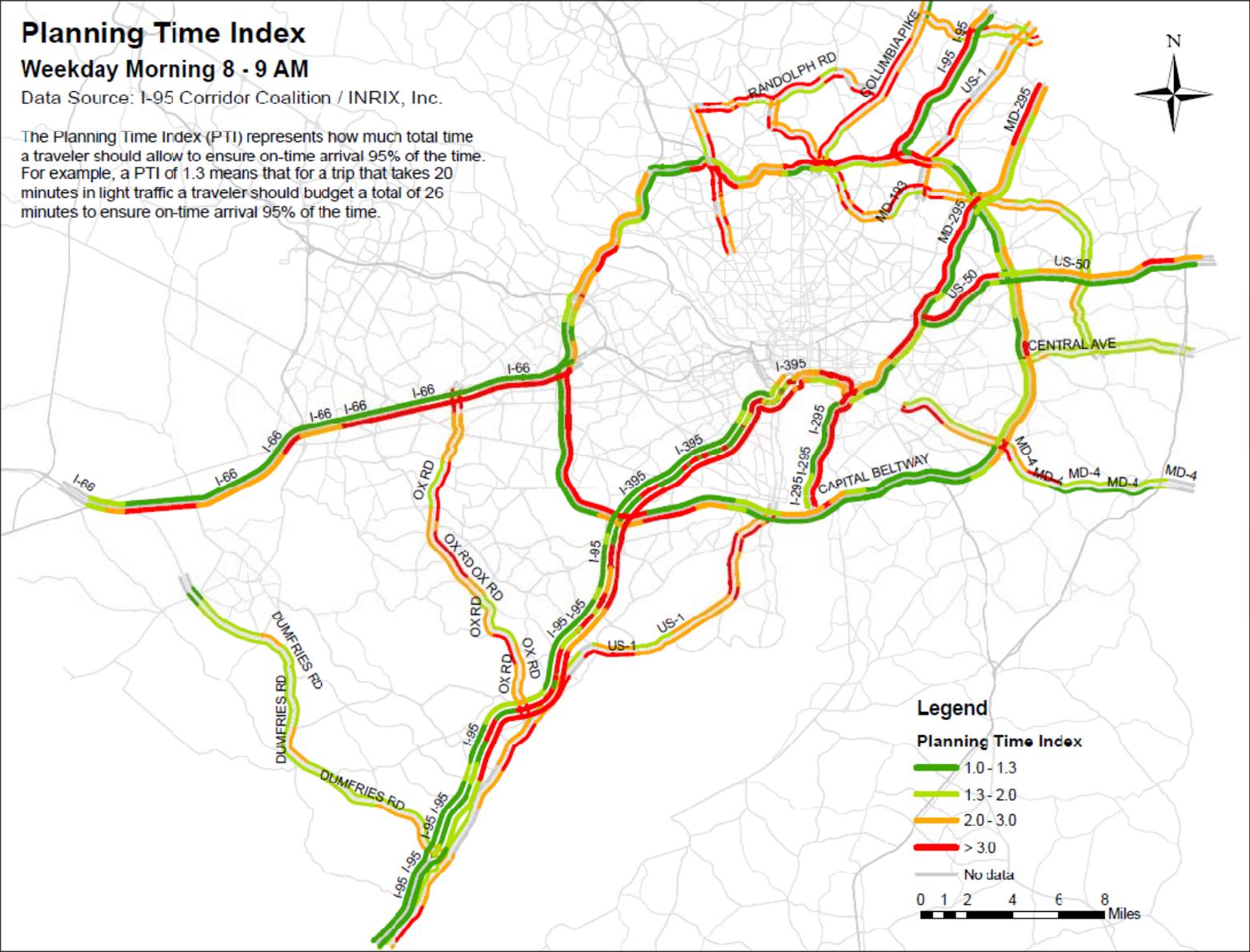


Reliability Analysis (1/4)

- Travel time reliability: **Planning Time Index**.
- *Planning time index = 95th percentile travel time / free-flow travel time.*
- It is the ratio of the total time needed to ensure **on-time arrival** 95% of the time as compared to a free-flow travel time.
- Example: a value of 1.3 means that a traveler should budget an additional 6 minute buffer (*total* 26 minute) for a 20-minute free flow trip time to ensure on-time arrival for 95% of the time.

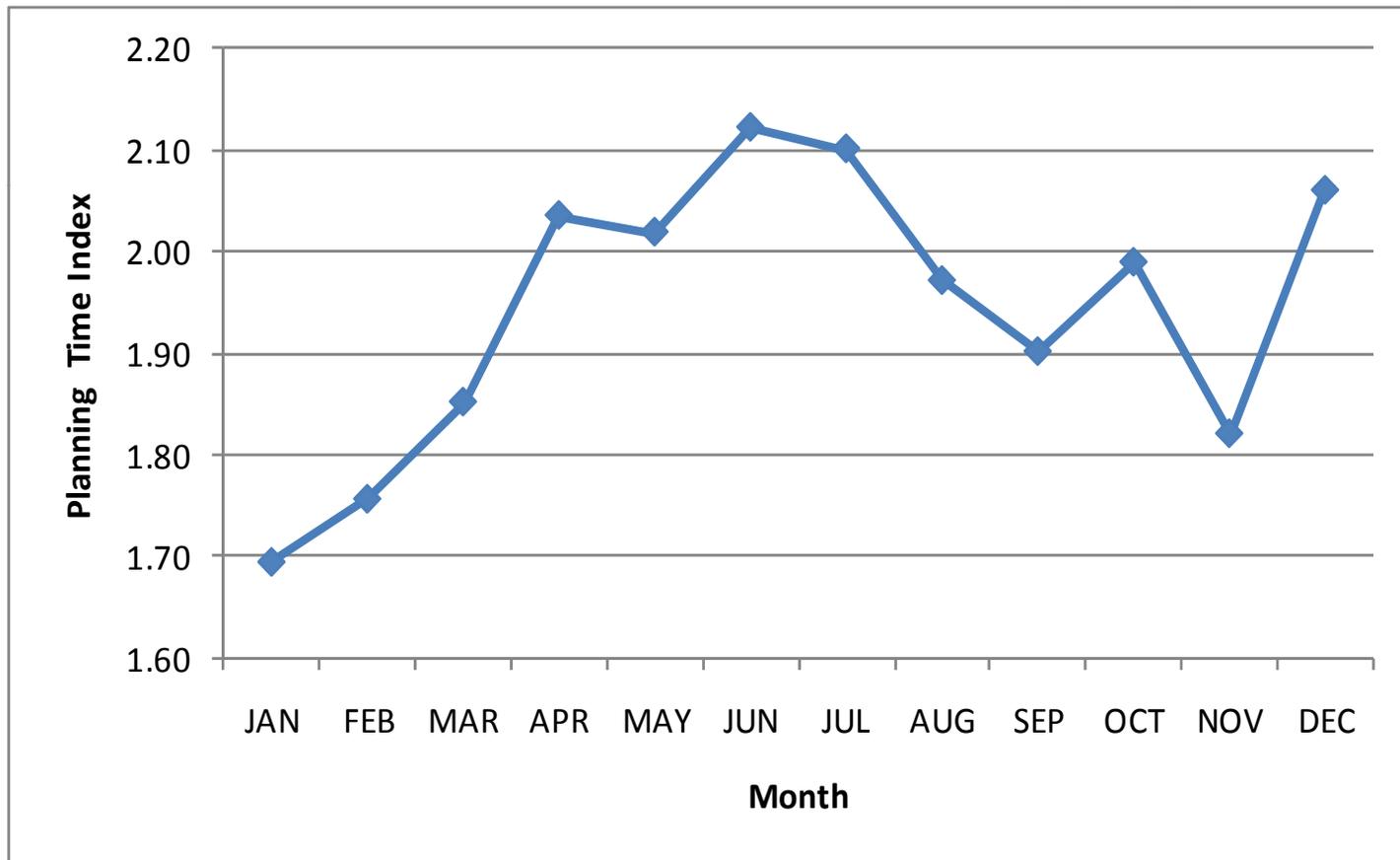
Reliability Analysis (2/4)

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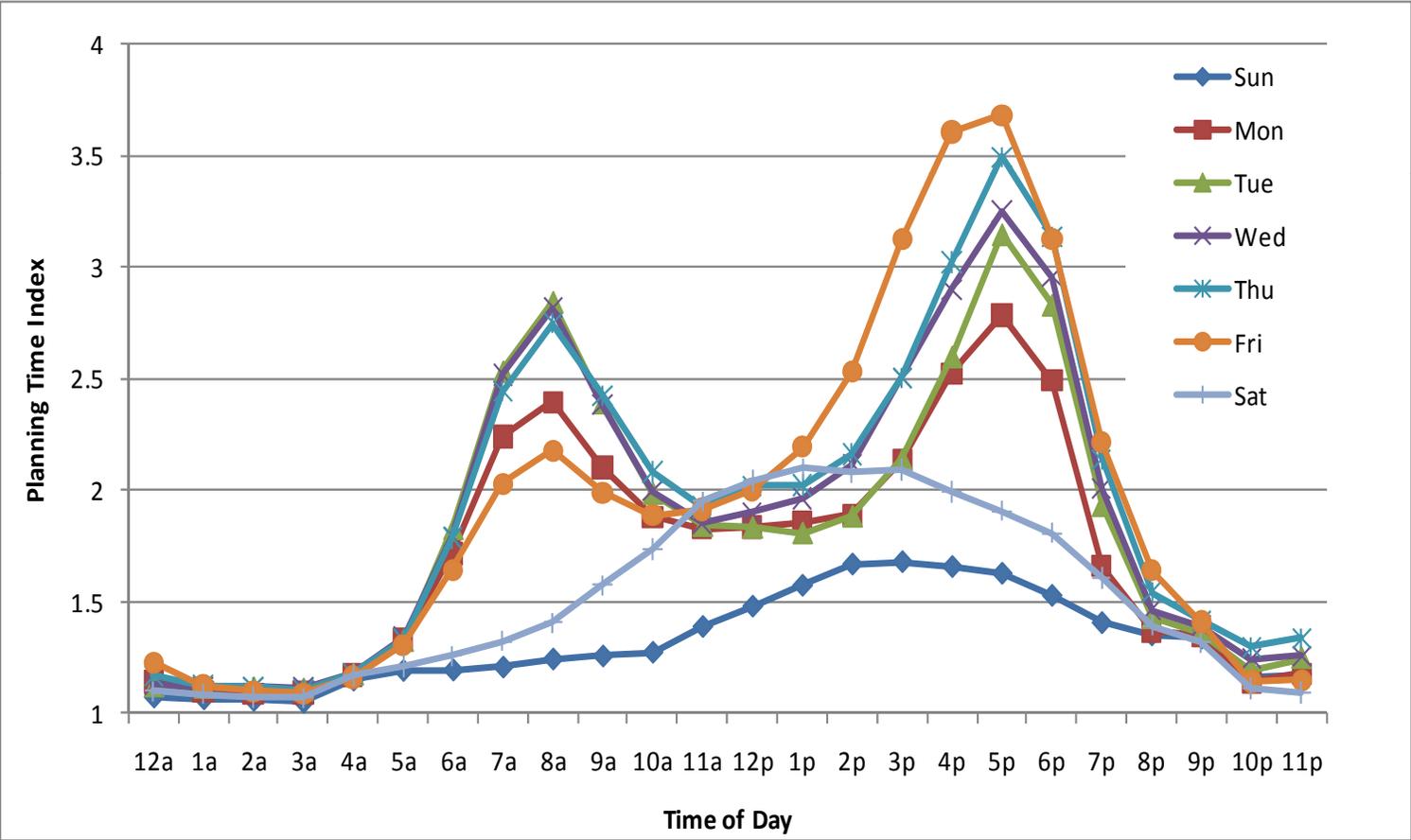
Reliability Analysis (3/4)

Planning time index by month in 2009
for the I-95 Corridor Coalition covered highways



Reliability Analysis (4/4)

Planning time index by time of day and day of week in 2009 for the I-95 Corridor Coalition covered highways



Regional map of signalized intersections

- An effort advised by the Traffic Signal Subcommittee
- The map will show the location and performance of signalized intersections in the region

Periodic updates included in the 2010 CMP Report

- 2009 CLRP and FY 2010-2015 TIP,
- Freeway spring 2008 aerial survey results
- Arterial FY 2008 and 2009 floating car surveys results
- Round 7.2 Cooperative Forecasts of the region's demographics
- 2007/08 Household Travel Survey
- 2008 Regional Bus Survey
- WMATA 2008 Metrorail Station Access & Capacity Study
- Texas Transportation Institute 2009 Urban Mobility Report
- 2007 Washington-Baltimore Regional Air Passenger Survey
- Transportation Emission Reduction Measure (TERM) Analysis Report FY 2006-2008
- TPB Freight Subcommittee Integrated Freight Report
- etc.

Outlook

- Continuing work on CMP Technical Report
 - Will return as needed to the Travel Management Subcommittee for further discussions, review of draft report
- Continuing discussions of how CMP and Travel Management Subcommittee programs interact
 - Air quality analysis
 - Local jurisdictional Travel Demand Management (TDM) strategies
 - Non-recurring congestion
 - Coordination, mutual benefits