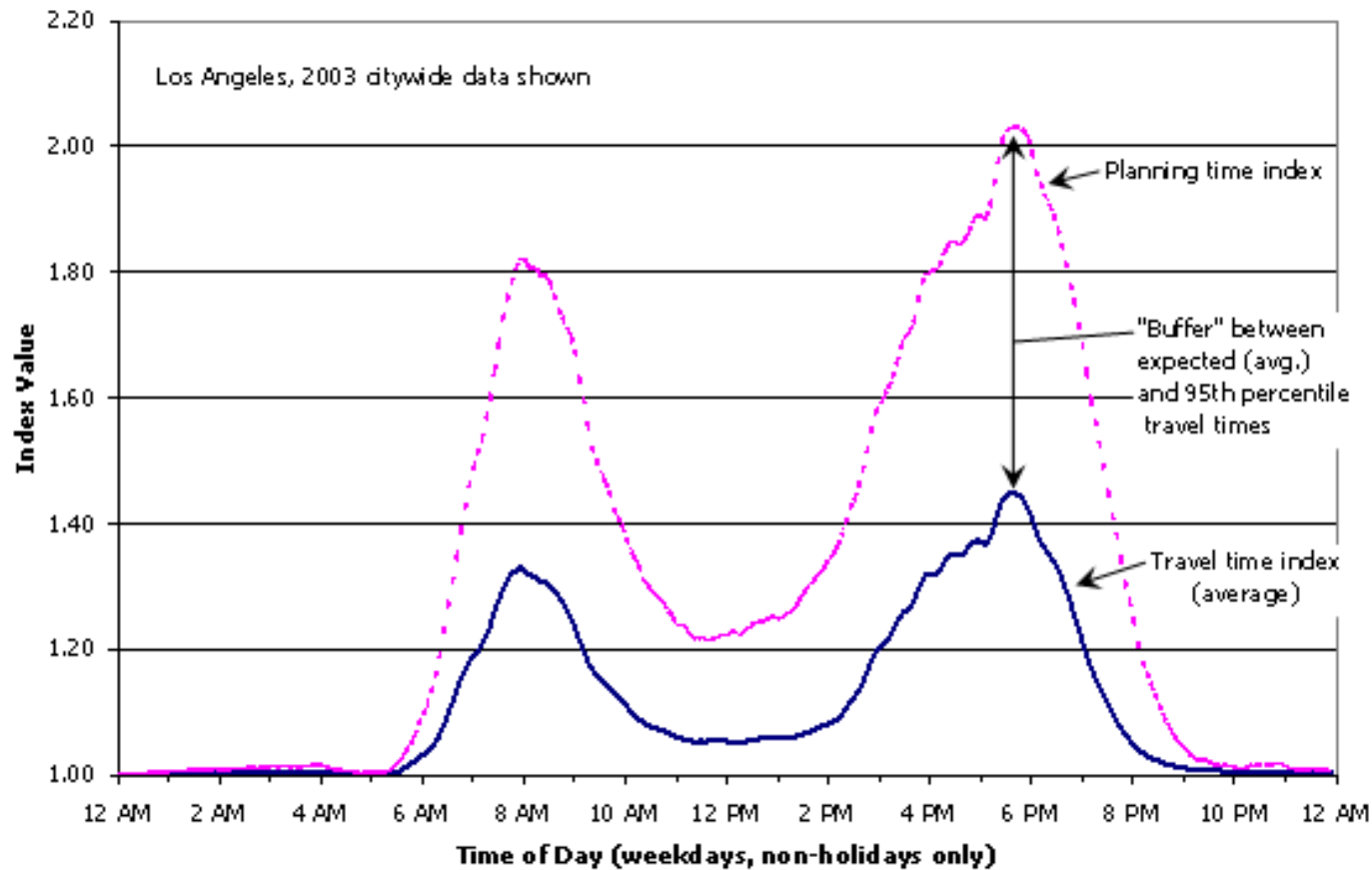


The growing demand for using **travel time reliability** as a primary performance measure

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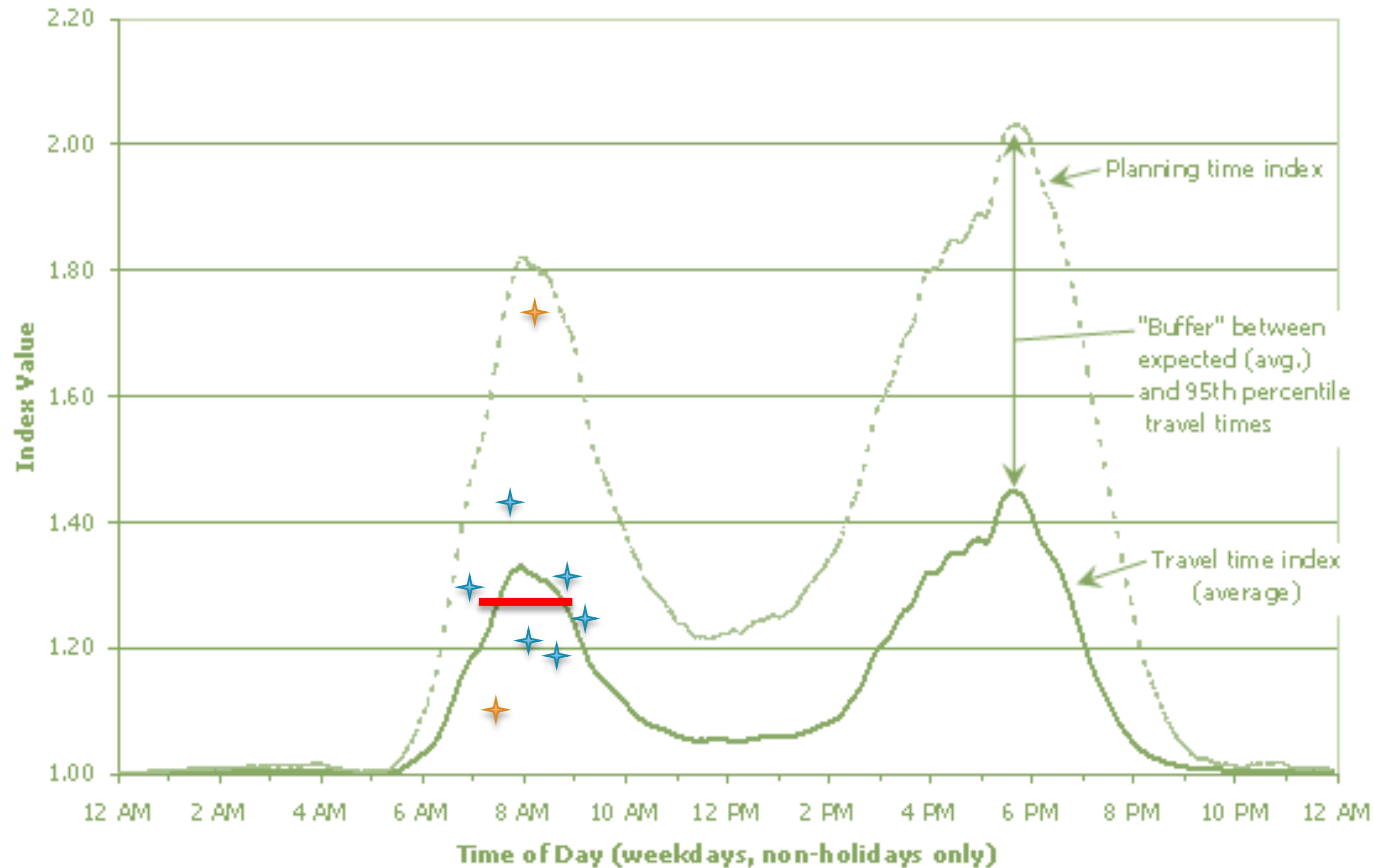


Travel Time Reliability

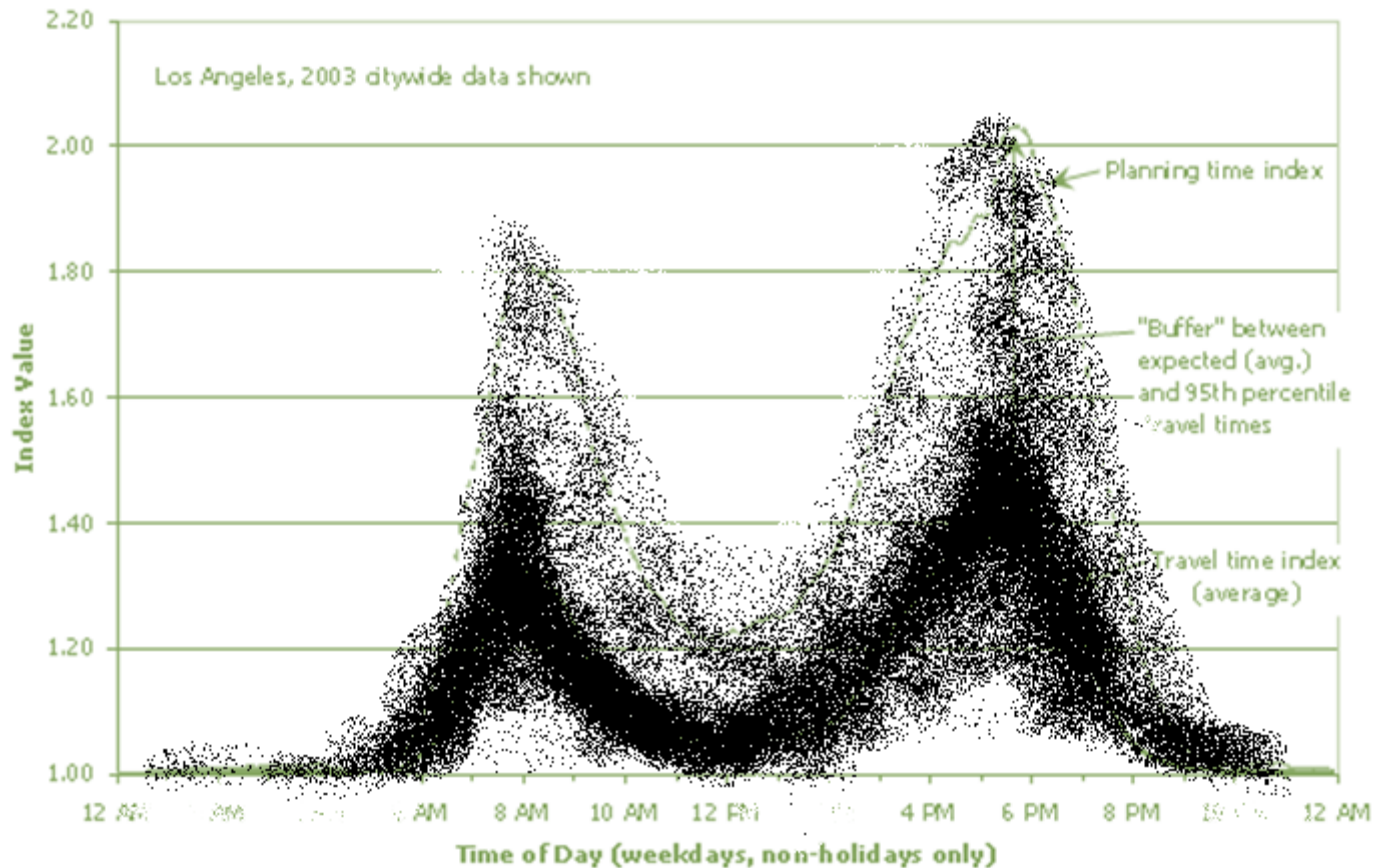


http://ops.fhwa.dot.gov/publications/tt_reliability/TTR_Report.htm#WhatisTTR

Traditional probe-based travel time performance measurement



Now 24/7 at five minute averages



National Performance Management Measures

Subpart E: Measures for Assessing Performance of the National Highway System (NHS)

	1 Interstate System	2 Non-Interstate NHS
Travel Time Reliability	Percent of the Interstate System providing for reliable travel times	Percent of the non-Interstate NHS providing for reliable travel times
Peak Hour Travel Time	Percent of the Interstate System in urbanized areas over 1M in population where peak hour travel times meet expectations	Percent of the non-Interstate NHS in urbanized areas over 1M in population where peak hour travel times meet expectations

Proposed Data Reporting Requirements

- By June 15, 2018, and annually thereafter, State DOTs would be required to report the performance of the NHS metrics for the previous calendar year's data in HPMS.
- Geographic range: entire state
- 5-minute interval travel times for the entire year
 - Use “all vehicles” value
 - Fill in missing and “0” values with travel time at posted speed limit
- Time period bins:
 - Weekday 6:00 AM – 10:00 AM
 - Weekday 10:00 AM – 4:00 PM
 - Weekday 4:00 PM – 8:00 PM
 - Weekend 6:00 AM – 8:00 PM

LOTTR and PHTTR

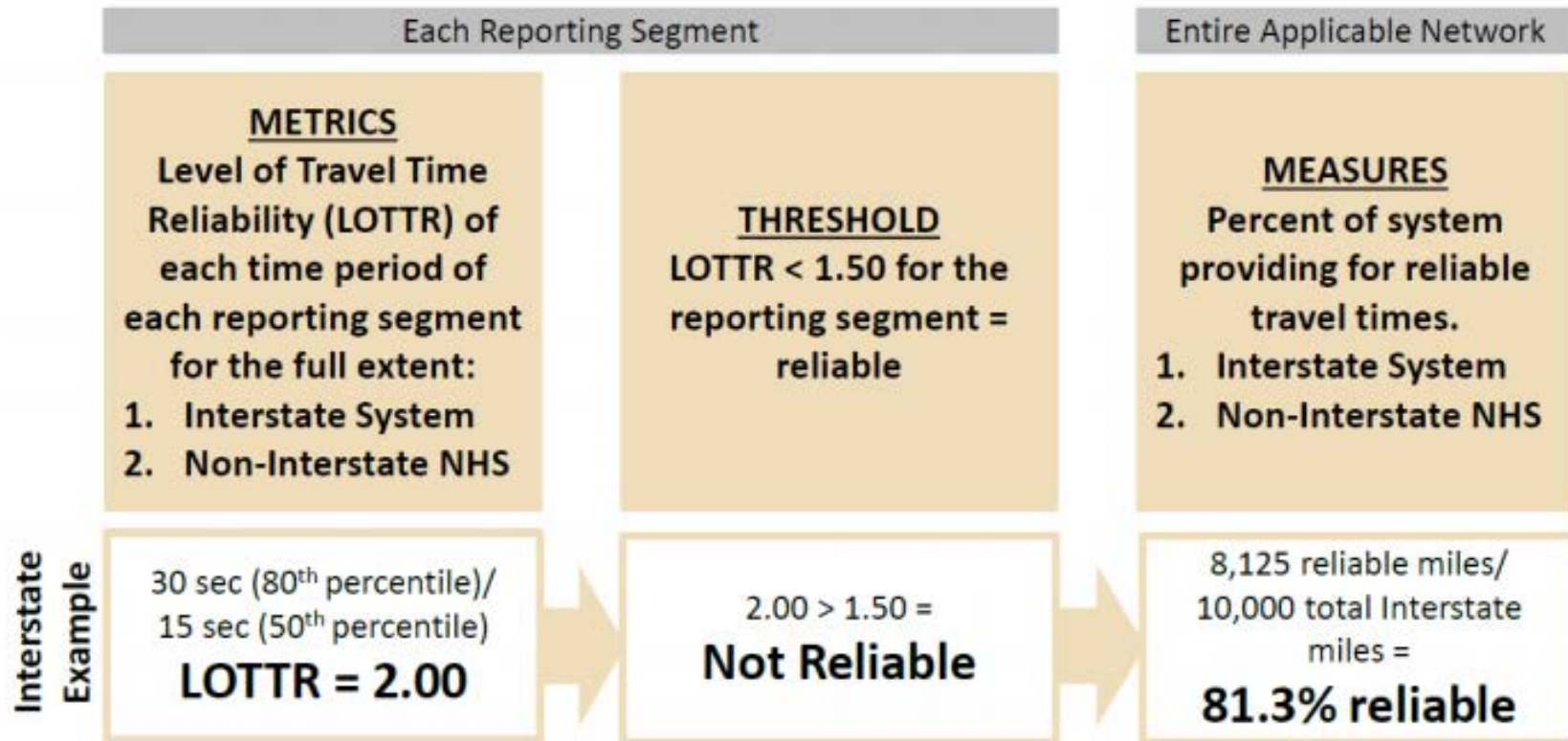
- Level of Travel Time Reliability (LOTTR) =
80th percentile travel time / 50th percentile travel time
- Peak Hour Travel Time Ratio (PHTTR) =
Peak hour travel time / *desired* peak period travel time

$$100 \times \frac{\sum_{i=1}^R SL_i}{\sum_{i=1}^T SL_i}$$

Where:

- i = reporting segment
- R = total number of reporting segments operating at a specified performance level, as defined through a threshold proposed for each metric
- T = total number of reporting segments in the system and area applicable to the measure
- SL_i = length of the reporting segment, to the nearest thousandth of a mile

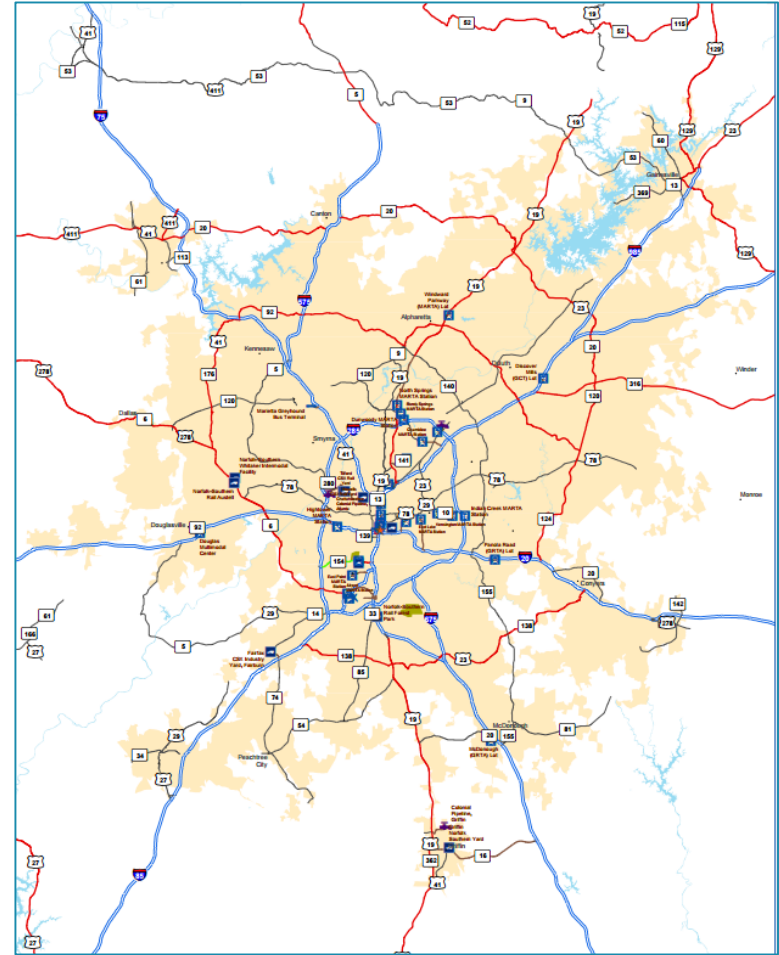
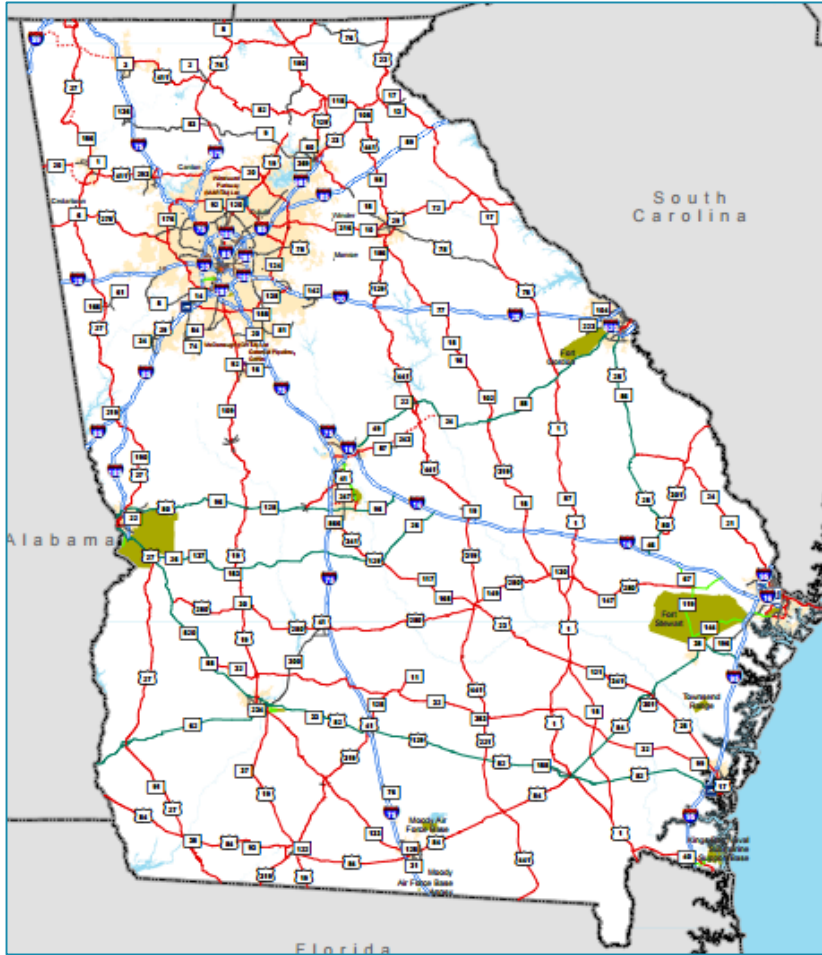
LOTTR Example



National Performance Management Research Data Set (NPMRDS)

- Monthly data set provided by the FHWA to state DOTs and MPOs for NHS Rds
- Travel times derived from all traffic using the highway system in 5-minute bins
- Includes freight specific travel times
- ½ mile reporting segments in urban areas, 10 mile reporting segments in rural areas
- Based on vehicle probes (mobile phones, vehicle transponders, and portable navigation devices). You and I share this personal data when you use these devices and agree

National Highway System



Quick test: ~180 travel time segments, 15 min averages for 24/7 over three diff months

