National Operations Performance Measurement Efforts

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TRB Signal Systems Committee Summer Meeting
Las Vegas, Nevada
July 11, 2005
Agenda

- Overview of FHWA Efforts
- Focus on National Transportation Operations Coalition (NTOC) Performance Measures Project
  - Relationship to Signal Systems
- Questions/Discussion
Operations Performance Measurement Program

- FHWA’s Office of Operations has focused on
  - Mobility Monitoring Program
  - Urban Congestion Reporting Program
  - Support of NTOC Performance Measures Task Force
  - Other Performance Measures research efforts (NCHRP, TTI Pooled Fund, etc.)
NTOC Performance Measures Efforts

- National Transportation Operations Coalition (NTOC)
  - ITE, AASHTO, TRB, ITS America, ICMA, AMPO, plus other associations and the FHWA

- One of several NTOC task forces is focusing on operations performance measurement
  - Led by International City/County Managers Association (ICMA) with assistance from University of Maryland Center for Advanced Transportation
NTOC Performance Measures Project Review

- Literature Review
- Initial List of 14 Candidate Measures
- Development of Survey
  - Sent to association members
  - 333 responses (261 from State and local agencies)
- Candidate measures and survey results reviewed by oversight committee at the ITE Technical Conference in March
- “Final” list of 11 performance measures has been developed
Candidate List of 14 High-Level Measures

- Customer Satisfaction
- Extent of Congestion
- Recurring Delay
- Incident Delay
- Emissions
- Incident Characteristics
- Intersection Level of Service
- Reliability
- Safety
- Speed
- Throughput per Person
- Throughput per Vehicle
- Travel Time – Link
- Travel Time – Origin/Destination

*Red measures were not included in the final 11*
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<th>Roadway Type</th>
<th>Performance Measures</th>
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<th>Non-Recurring</th>
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**Table authored by Phil Tarnoff, University of Maryland**
NTOC PM Definitions

- **Recurring Delay**
  - Vehicle delays that are repeatable for the current time-of-day, day-of-week, and day-type.

- **Non-Recurring Delay**
  - Vehicle delays in excess of recurring delay for the current time-of-day, day-of-week, and day-type.
NTOC PM Definitions

- **Throughput – Vehicle**
  - Number of vehicles traversing a roadway section in one direction per unit time. May also be the number of vehicles traversing a screen line in one direction per unit time.

- **Throughput – Person**
  - Number of persons including vehicle occupants, pedestrians, and bicyclists traversing a roadway section in one direction per unit time. May also be the number of persons traversing a screen line in one direction per unit time.
NTOC PM Definitions

- Travel Time – Link
  - The average time required to traverse a section of roadway in a single direction.

- Travel Time – Trip
  - The average time required to travel from an origin to a destination on a trip that might include multiple modes of travel.
NTOC PM Definitions

- **Travel Time Reliability (Buffer Time)**
  - The Buffer Time is the additional time that must be added to a trip (measured as defined by Travel Time – Trip), to ensure that travelers making the trip will arrive at their destination at, or before, the intended time 95% of the time.
NTOC PM Definitions

- Incident Duration
  - The time elapsed from the notification of an incident until all evidence of the incident has been removed from the incident scene.

- Focus state work being done by FHWA this summer
NTOC PM Next Steps

- A report documenting these initial measures will be distributed to the operations community later this summer to encourage their use.

- Next steps
  - May include having states/locals actually “test drive” the performance measures to determine their usefulness and whether or not the data is available to reliably compute the measures.
Contact

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Questions?