



## Mobility Performance Measures

### Evaluation of Travel Time Reliability in Project Development

#### Purpose

Traffic analyses for Project Development and Environmental studies (PD&Es) invariably report Highway Capacity Manual level of service (HCM LOS) for key intersections, highway segments, and freeway segments. Facility-level results may be reported as well, often using a microsimulation model. These studies generally take into account recurring congestion by evaluating the peak-hour operations under fair weather, nonincident conditions. Nonrecurring congestion is not quantitatively addressed.

The project team evaluated the application of the recently adopted HCM travel-time reliability estimation methods (Chapter 36) to PD&E studies and made recommendations on how travel-time reliability should be analyzed for substantial freeway system capacity improvements.

#### Results

Based on test results, the MPM Program recommends reporting on travel-time reliability as a regular requirement of PD&Es performed in large urbanized areas. At little additional cost it will open up a broader range of solutions. Chapter 36 identifies vehicle or person-hours delay and a reliability rating as measures of effectiveness. It seems appropriate that FDOT adopt these measures in addition to travel-time reliability LOS.

#### Applicability to Mobility Performance Measures (MPM) Program and FDOT

The lack of information on nonrecurring congestion conditions is evident in the project alternatives considered in PD&E analyses. For example, PD&E project alternatives typically focus on relatively expensive solutions to recurring congestion, such as capacity improvement projects, and generally do not consider operational improvements designed to address nonrecurring congestion.

#### Next Steps

Operational improvements typically do not result in the large capacity gains typical of lane-addition projects, so it is unlikely that adding reliability analyses to PD&Es will result in FDOT replacing capacity improvements with operational improvements. However, operational improvements, when added as refinements to a capacity improvement project, have the potential to extend the number of productive years of the capacity improvement before additional capacity is needed.

More regular evaluation of nonrecurring congestion in project PD&Es thus has the potential of improving the service lives and the overall productivity of capacity improvement projects, by refining the design of the project to provide more stable operating conditions under nonrecurring events.

