UNRANKED TOPICS/REQUIREMENTS OF TSSC RESEARCH NEEDS

AS DEVELOPED THROUGH 90s

Note: Requirements first defined by Committee in early 90s. 9 added at the 2000 Seattle meeting. Explanation/discussion of content & definition did **NOT** take place - idea was to get a sense of the committee on priorities.

- Jim Powell 1/9/04
Previous Topics

1. Provide on-line (real-time) creation or modification of traffic plans. (B5)

2. Provide for integration of available data from multiple sources (B1)
   (e.g., travel time, queue lengths) into required traffic plans (phasing, timing, related functions); use expert systems?

3. Provide processing of data from other data collection devices/techniques. (A2)
   (e.g., above ground detectors/video detectors, environ. detectors, “probe” vehicles)

4. Provide arterial incident detection. (A4)
   (i.e., additional detection hardware & software)
5. Provide techniques for short term traffic flow prediction. (B4)

6. Provide travel time estimation and verification. (A5) (i.e., for better timing plans and routing strategies; use probe vehicles?)

7. Provide plan selection by notification of congestion or near saturation conditions. (C5)

9. Provide several control objectives. (C8) (e.g., min. delay, queue/congestion dissipation, demand “gating”, improved air quality)
11. Provide measures of long term traffic trends. (A6) (i.e., post processing and analysis capabilities for performance evaluation and system planning)

12. Provide an on-line presentation of traffic demand, short term estimates and available system responses. (F12) (i.e., so operators can make final decision on control changes).

13. Provide on-line, expert system calculation of actual values for intersection/system measures of effectiveness specific to the various control objectives. (G2)

17. Provide processing of preempt/priority vehicle requests. (A3) (e.g., emergency vehicle, transit veh., other ITS subsystems)
20. Provide for implementation of adaptive control algorithms at the controller. (D7)


26. Commercial vehicle issues. (e.g., special timing, relation to ITS systems/routing, etc.)

27. Driver expectations.

28. Closely spaced intersections.
Previous Topics

29. Traffic models/simulation.

30. Traffic safety related to signal system operation.

31. Ramp metering interaction with traffic signals.

32. Driver expectancy at grade crossings.

33. Detection/classification of train movements (relative to grade crossings).