Smart Signals

Smart signals use real-time user demand data to modify signal timings for actuated traffic control and may be integrated into a system for remote management of signal operations.

HOW WILL THIS HELP?

- Smart signals reduce delay and travel times by considering the current traveler demand on signal operations. In this way,
- Smart signals cut fuel consumption and gas emissions.
- It can also help with nonrecurring congestion caused by incidents, weather, work zones, and special events.

HOW DOES IT WORK?

- Traffic engineers design signals to interface with sensors that detect the presence or absence of vehicles, transit, bicycles, or pedestrians.
- Smart signals require traffic sensors to communicate user demand to the corresponding traffic signal controller.

CONSIDERATIONS

+ MANAGEMENT OF SIGNAL OPERATIONS SHOULD CORRESPOND TO DEFINED OBJECTIVES AND BE DRIVEN BY SIGNAL PERFORMANCE MEASURES (E.G. STOPS OR DELAY DURING UNDER-SATURATION CONDITIONS, QUEUE LENGTHS, CYCLE FAILURES, OR DURATION OF CONGESTION DURING OVER-SATURATED CONDITIONS).

TSMO
MARYLAND TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS

TRANSPORTATION NEEDS ADDRESSED

- CAPACITY & DEMAND
- TRAVEL TIME
- ENVIRONMENTAL IMPACT
- SPECIAL EVENTS
- SAFETY
- MOBILITY
- RELIABILITY
- INCIDENT RESPONSE
- WORK ZONES
- UNPLANNED EVENTS
- MULTIMODALITY
- ECONOMIC DEVELOPMENT

COST MAGNITUDE

CAPITAL COST	$
OPERATION AND MAINTENANCE COST	$

WHEN TO CONSIDER THIS STRATEGY

- HIGH-PRIORITY SIGNALIZED CORRIDORS REQUIRING HIGH MOBILITY
- ARTERIALS WITH HIGH VARIATION IN TRAFFIC DEMANDS
- ARTERIALS FREQUENTLY SERVING SPECIAL EVENTS

COMPLIMENTARY STRATEGIES

- CONNECTED AND AUTOMATED VEHICLE TECHNOLOGY
- TRANSIT PRIORITY
- TRAFFIC SIGNAL COORDINATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION