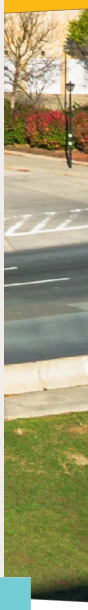
Traffic Signal Coordination

Traffic signal coordination is implemented on arterial roadways to improve the progression of vehicles traveling through a series of closely spaced signalized intersections.

TSMO
MARYLAND TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS



HOW WILL THIS HELP?

- Improves mobility by reducing signal control delay.
- Improves safety by managing traffic flow and speeds along the coordinated arterial.
- By cutting the number of stops and starts, this strategy also reduces fuel consumption and gas emissions.

HOW DOES IT WORK?

- Traffic engineers create coordinated signal timing plans to facilitate platooning and movement through the corridor.
- Once the coordinated timings are implemented, system monitoring and calibration are essential.
- Tools to aid the evaluation of signal coordination include traffic sensors and CCTV cameras to monitor traffic flow.

CONSIDERATIONS

+ USE THE FHWA SYSTEMS ENGINEERING PROCESS TO EVALUATE THE APPROPRIATE SIGNAL SYSTEM FOR PROGRESSION (E.G., ACTUATION, CLOSED LOOP, OR ADAPTIVE SIGNAL CONTROL).
+ PROVIDE TRAFFIC MONITORING DEVICES TO ALLOW FOR OPTIMAL OPERATIONS AND SIGNAL TIMING AND PROGRESSION.
+ FOR REGIONAL TRAFFIC SIGNAL SYSTEMS, DESIGNERS MUST CONSIDER HOW COMMUNICATIONS AND MAINTENANCE WILL BE MANAGED, SINCE MULTIPLE AGENCIES MAY BE RESPONSIBLE FOR A SINGLE SYSTEM. AGREEMENTS BETWEEN AGENCIES SHOULD BE DEVELOPED DURING THE DESIGN STAGE TO ADDRESS THESE ISSUES.

TRANSPORTATION NEEDS ADDRESSED

- Capacity & Demand
- Travel Time
- Environmental Impact
- Safety
- Mobility
- Reliability

COST MAGNITUDE

CAPITAL COST	$
OPERATION AND MAINTENANCE COST	$

WHEN TO CONSIDER THIS STRATEGY

- AS A LOW-COST, HIGH-BENEFIT STRATEGY TO IMPROVE SAFETY AND MOBILITY
- SIGNALIZED CORRIDORS WITH HIGHER THAN AVERAGE REAR-END COLLISIONS
- EVALUATE AT REGULAR INTERVALS (I.E. 3-YEAR INCREMENTS) TO MAINTAIN PROGRESSION
- TO HARMONIZE TRAFFIC SPEEDS THROUGH A SIGNALIZED CORRIDOR

COMPLIMENTARY STRATEGIES

- INTEGRATED CORRIDOR MANAGEMENT
- SMART SIGNALS
- ALTERNATIVE INTERSECTIONS

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION