Hard Shoulder Running

Hard shoulder running is a strategy in which motorists are allowed to travel on roadway shoulders during periods of peak travel demand.

TSMO
MARYLAND TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS

PICTURED: INTERSTATE 405 NORTHBOUND SHOULDER BYPASS NEAR BOTHELL, WA
BRUCE ENGLEHARDT, WIKIMEDIA COMMONS

HOW WILL THIS HELP?

- ✓ Increases capacity on freeways, expressways and arterial roadways to address congestion caused by recurring bottlenecks

- ✓ Improves mobility by adding roadway capacity to reduce delays and improve travel time reliability

HOW DOES IT WORK?

- ✓ Can be implemented by time of day OR by monitoring congestion and using dynamic message signs to communicate to drivers that the shoulder is open

- ✓ Requires transportation operators to monitor traffic and control use of the shoulder

- ✓ Uses traffic sensors to collect data, dynamic message signs to display the open and closed status of the shoulder lane, and telecommunications between these field devices and the operations center

- ✓ Can use colored pavement to highlight HSR operations

CONSIDERATIONS

- + PROVIDE EMERGENCY PULL-OFF AREAS WHERE RIGHT-OF-WAY ALLOWS.
- + CONSIDER DRAINAGE STRUCTURES AND STORM WATER/SNOW STORAGE.
- + DESIGN EXCEPTIONS FOR GEOMETRIC STANDARDS, INCLUDING LANE WIDTH, VERTICAL AND LATERAL CLEARANCE, AND STOPPING SIGHT DISTANCE, MAY BE REQUIRED.
- + CONSIDER SITE-SPECIFIC CRITERIA WHEN DESIGNING FOR SAFE CROSSING OF RAMPS AT INTERCHANGES.
- + ACCOUNT FOR SPEED DIFFERENTIALS BETWEEN DYNAMIC SHOULDER LANE AND GENERAL-PURPOSE LANE.
- + CONSIDER CCTV COVERAGE TO MAKE SURE LANES ARE CLEAR OF VEHICLES AND DEBRIS.
- + IDENTIFY IF SHOULDER IS TRAFFIC BEARING.
- + ADDRESS THE NEED FOR SOFTWARE ENHANCEMENTS.
- + COORDINATE WITH LAW ENFORCEMENT.

TRANSPORTATION NEEDS ADDRESSED

- Capacity and Demand
- Travel Time
- Reliability
- Mobility
- Environmental Impact

COST MAGNITUDE

Capital Cost

Operation and Maintenance Cost

WHEN TO CONSIDER THIS STRATEGY

- ✓ Freeway or expressway corridors with shoulders and recurring congestion

- ✓ Freeway or expressway corridors with restrictions to widening

COMPLIMENTARY STRATEGIES

- ✓ Dynamic Lane Use Control
- ✓ Managed Lanes
- ✓ Bus Shoulder
- ✓ Integrated Corridor Management
- ✓ Traffic Surveillance
- ✓ Traveler Information

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION