

Des Moines Metropolitan Area Integrated Corridor Management ATM – Concept of Operations

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Outline

- ATM strategy background
- How will the ATM operate?

ATM Strategy Identification

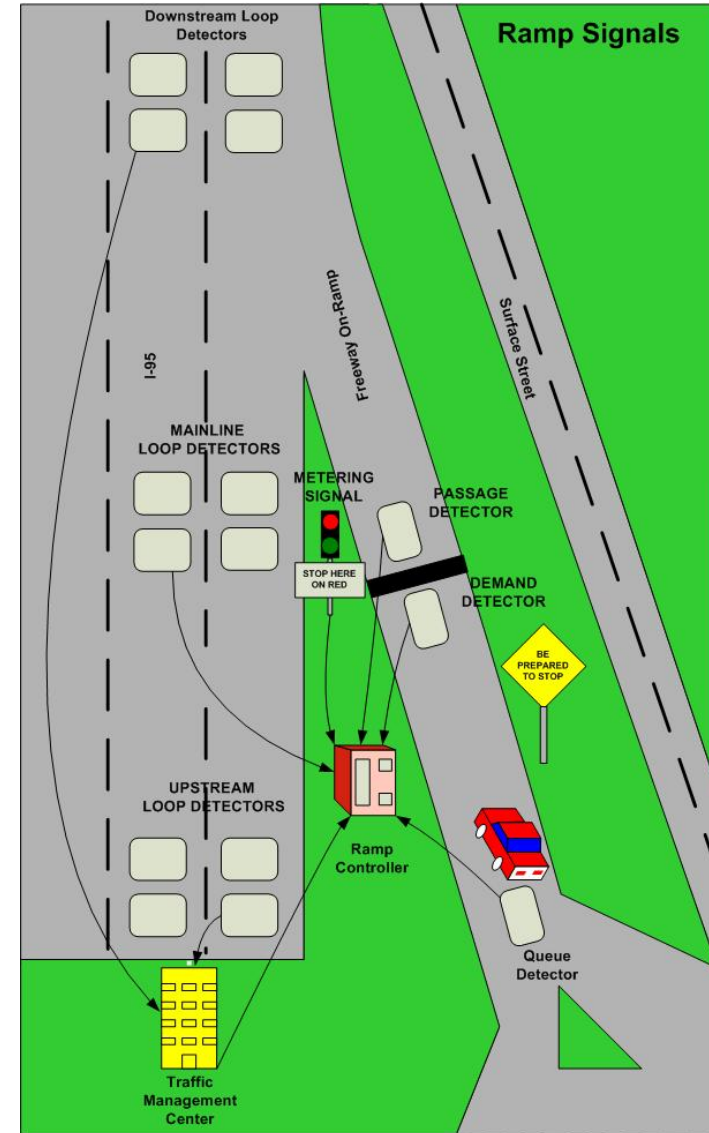
ATM Strategy	Corridor			
	I-235 E-W	I-235 N-S	I-35/80 E-W	I-35/80 N-S
Ramp Metering	●		●	●
Queue Warning		●		●
Dynamic Shoulder Use	●		●	
Dynamic Speed Advisory			●	

- Tier 1 Strategy
- Tier 2 Strategy

ATM Functional & Operational Descriptions

Ramp Metering Operation

- Advance warning signs
- Releases vehicles one at a time
- Detectors provide input to the program that calculates metering rates
 - Ramp detectors detect queues
- Rate decreases as congestion on freeway increase
- Rate increases as queues build
 - Rates at neighboring ramps decrease if short queues there
- Rate increases as freeway congestion reduces



Monitor and Mitigate Ramp Queues

- Monitoring ramp queues
 - Queue detectors
 - Multiple locations
 - System can provide alarms
 - Cameras
 - Placed to see the length of the ramp
- Managing ramp queues
 - Automatic adjustments
 - At the ramp with long queues
 - At neighboring ramps
 - Manual adjustments

Ramp Metering Operations



Conditions to Use Ramp Metering

- Normal congestion
- Traffic incidents
- Work zones
- Special events

Dynamic Shoulder Use

- Normally, set operational times
 - Some flexibility
- Visually sweep dynamic shoulder lane
- Request highway helper assistance
- Enforcement/emergency response can request closing shoulder
- Signing options
 - Across all lanes
 - Over the shoulder lane only

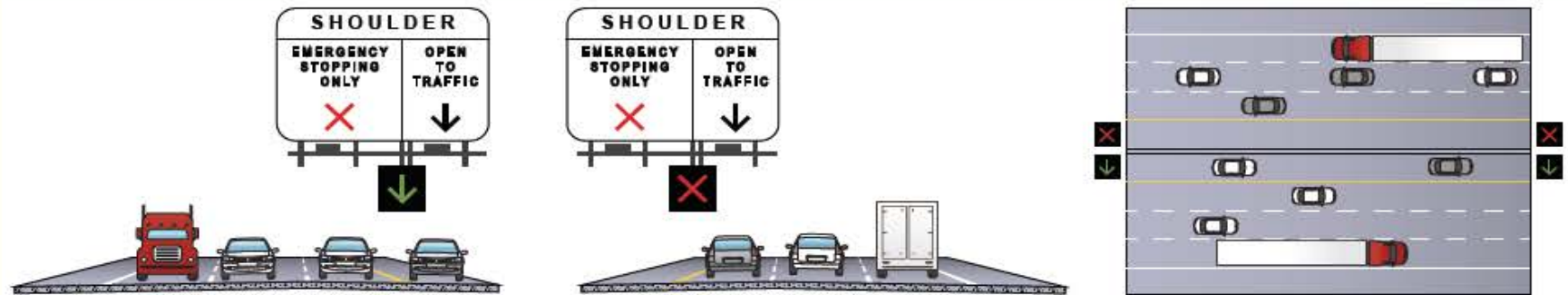


Dynamic Shoulder Use



LEGEND

- Western Limit
- Eastern Limit
- Project Area



Conditions to Use Dynamic Shoulders

- Normal congestion
- Traffic incidents
 - Depends on location and conditions
- Work zones
 - Depends on location and conditions
- Special events
 - Depends on location and conditions

Queue Warning Operation

- Warn drivers of unexpected congestion
- Automated with operator override
 - Warning message is based on conditions
- Can be used anytime unexpected congestion occurs



Speed Advisory Operation

- Provide recommended speed ahead of congestion
 - Based on downstream speeds
- Automated with operator override
- Signing options
 - Shoulder Mount
 - Cantilever
 - Overhead
 - Over every lane
 - Integrate other strategies



Next Steps

- Develop Concept of Operations Document – End of June
- Stakeholder Feedback – Early July
- Online Engagement planned for Fall 2020
- Share you comments: <https://iowadot.gov/desmoinesicm/>

