

Advanced Freeway Management is the combination of freeway-based operational strategies that improve capacity, safety, and reliability through real-time traffic detection and control. These strategies can be implemented individually or in combination to support a wider, regional Integrated Corridor Management (ICM) program within the Des Moines Metropolitan Area.

Available Strategies

- Ramp Metering
- Dynamic Speed Advisories
- Queue Warning
- Lane Use Control
- Dynamic Shoulder Use
- Supporting Geometric Improvements/Enhancements

Queue Warning

The use of electronic signs to warn travelers of slowing and/or stopped vehicles ahead. The signs can be portable/temporary or fixed/permanent depending on the need (temporary construction versus recurring congestion). Dependent on the roadway configuration, signs can be roadside or overhead.

Primary Applications:

- Bottlenecks
- Work Zones

Options:

- Combined with dynamic speed advisory or lane use control.



Dynamic Shoulder Use

The use of electronic signs to dynamically utilize the roadway shoulder as a travel lane during certain periods of time. These periods may be fixed or variable based on congestion, incidents, or other conditions.

Primary Applications:

- Congestion
- Transit Reliability

Options:

- Utilize shoulder for all vehicle classes or transit only.



Ramp Metering

The use of traffic signals installed on freeway on-ramps to balance demand and capacity, maintain optimal operations, and improve safety. On-ramp traffic is metered based on mainline speeds, volumes, and density. Ramp signals can be roadside or overhead.

Primary Applications:

- Congestion
- Safety

Options:

- Individual ramp focus or corridor focus.
- Pre-timed or responsive/adaptive metering rates.



Dynamic Speed Advisories

The use of electronic signs to display recommended speeds based on prevailing conditions to improve safety. Speeds can be lowered due to a range of conditions, including inclement weather, incidents, congestion, special events, or construction. Speeds can be advisory or regulatory.

Primary Applications:

- Safety
- Incident Management

Options:

- Combined with queue warning or lane use control.
- Supplement with full dynamic message signs for additional information.



Lane Use Control

The use of electronic signs to dynamically close or open individual traffic lanes due to issues such as temporary blockages and/or planned closures. The signs can also provide advanced warning of the closure(s) through the use of merging symbols.

Primary Applications:

- Incident Management
- Work zones

Options:

- Combined with dynamic speed advisory, queue warning, or dynamic shoulder use.

