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.