What is Integrated Corridor Management?
What is ICM?

WHAT IS IT?
INTEGRATED CORRIDOR MANAGEMENT
Integrated Corridor Management

Framework for multiple modes of transportation

Based on a proactive, integrated management and operation of a regional transportation system

Delivered in a cost-effective manner compared to traditional infrastructure capacity expansion projects
Project Goals

- Expedite project delivery
- Improve safety
- Improve mobility
- Improve public visibility/build momentum
- Improve accessibility
- Improve travel reliability

DES MOINES ICM
Collaboration is key.
Why ICM?
Des Moines Area Congestion

“From 1990 to 2017, the city of Des Moines grew 12%, to 217,106 people, according to the Iowa State Data Center...But the growth of other cities in the metro area was far greater.

Waukee grew nearly eightfold to 20,680 people in 2017. Ankeny more than tripled to 65,284. West Des Moines more than doubled to 65,562.”

- Des Moines Register, October 24, 2019
Identified Issues

Northwest
- Weaving issues
- Poor/outdated signal timing
- Traffic impacts on arterials adjacent to interstate

Northeast
- No access/limited access across median
- Short merge segments
- Bottlenecks
- Queueing onto interstate
- Heavy traffic
- Lack of turn lanes

Southwest
- Weather
- Bottlenecks (drop lanes)
- Arterial signal coordination
- High speeds into congestion
- High demand/limited capacity on Mix Master
- Transit service/park-and-ride access

Southeast
- Infrastructure connectivity
- Pedestrian mobility improvements
- Upgrade Highway 5
Why ICM for Des Moines Metropolitan Area?

**FIGURE 1. IOWA SOURCES OF CONGESTION, 2013-2015**

- Non-Recurring Congestion: 28%
- Recurring Congestion: 32%
- Special Events: 5%
- Bottlenecks: 23%
- Weather: 26%
- Traffic Incidents: 27%

**FIGURE 2. NATIONAL SOURCES OF TRAFFIC CONGESTION, 2005**

- Non-Recurring Congestion: 40%
- Recurring Congestion: 57%
- Special Events: 5%
- Bottlenecks: 40%
Deploying ICM for Des Moines
Project Boundaries

- Primary Freeway
  - I-80
  - I-35
  - I-235
  - Portions of US 65
- Secondary
  - Selected parallel and connecting arterials to the roadways above.
OCTOBER 2018
DES MOINES ICM KICK-OFF

NOVEMBER 2019
PHASE 1 STRATEGIES READY FOR APPROVAL

WINTER 2019/2020
IOWA DOT PROGRAMMING EARLY WINS

WINTER/SPRING 2021
STAKEHOLDER AND ONLINE PUBLIC MEETING

FALL 2020
KICK-OFF ICM PROGRAM COMMITTEES

JULY 2021
IMPLEMENTATION
Des Moines ICM Vision

The Des Moines metropolitan area will benefit from a safe, efficient, reliable and sustainable transportation system that supports economic growth and promotes an equitable and healthy community. ICM strategies will assist the state and area communities to proactively manage multi-modal transportation systems in a safe and efficient manner using proven technologies and operational strategies while maximizing the use of existing infrastructure and services. ICM will offer travelers more opportunities to make seamless and convenient trips to meet social and economic needs.
ICM Strategies

STRATEGIES FOR INTEGRATED CORRIDOR MANAGEMENT
Representative ICM Benefits

- Improved Safety and Emergency Response
- Improved Accessibility and Mobility
- Reduced or Shifted Demand
- Enhanced Traveler Choice and Decision Making
- Increased Return on and Use of Existing Investment
- Improved Transportation Efficiency and Productivity
- Improved Customer Experience and Perception
- Reduced Environmental Impact
- Institutional Cooperation
Initial ICM Deployments
Near Term Strategies

• Address identified issues
• Quickly, cost effectively implementable

- No access/limited access across median
  - Median Barrier Gates

- Unclear Ramp Info for Dispatch
  - Improved System Ramp Signage

- Queueing onto Interstate
  - Exit Ramp Improvements

- Poor/Outdated Signal Timing
  - Arterial Signal Coordination
# Mid-to-Long Term Strategies

<table>
<thead>
<tr>
<th>LEGEND</th>
<th>INVESTMENT LEVEL</th>
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<tbody>
<tr>
<td>1</td>
<td>ROADWAY CAPACITY</td>
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<tr>
<td>2</td>
<td>TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TMOS)</td>
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<td>3</td>
<td>TRANSIT CAPACITY</td>
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<td>4</td>
<td>Balanced</td>
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## Fully Incorporated

<table>
<thead>
<tr>
<th>Bundle 1: Aggressive Freeway Build</th>
<th>Bundle 2: Intensive Transportation Management</th>
<th>Bundle 3: Transit &amp; Travel Demand Management</th>
<th>Bundle 4: Balanced</th>
<th>Bundle 5: Targeted Transportation Management</th>
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<tbody>
<tr>
<td>Traffic Data &amp; Communication</td>
<td>Basic/Enhanced Traffic Data &amp; Communication</td>
<td>Traffic Signal Coordination and Control</td>
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<td>TIM, Work Zone, Special Events</td>
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<td>Parking Management</td>
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<td>Active Traffic Management</td>
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<td>Traffic Information</td>
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<td>Enhanced Traveler Information</td>
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<td>Location Specific Infrastructure Enhancement</td>
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<td>Public/Private Travel Management</td>
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<td>Transit Preferential Treatment</td>
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## ICM Approach

### BUNDLE 1: Aggressive Freeway Build
- $112 M – ICM
- $2.65 B – DOT
- $2.76 B - Total

### BUNDLE 2: Intensive Transportation Management
- $457 M – ICM
- $387 M – DOT
- $844 M - Total

### BUNDLE 3: Transit & Travel Demand Management
- $229 M – ICM
- $72 M – DOT
- $301 M - Total

### BUNDLE 4: Balanced
- $258 M – ICM
- $2.04 B+ – DOT
- $301 M - Total

### BUNDLE 5: Targeted Transportation Management
- $406 M – ICM
- $72 M – DOT
- $478 M - Total

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**ICOM**

**DOT**

**Getting You There**

**INTEGRATED CORRIDOR MANAGEMENT - DES MOINES METRO AREA**
Advanced Freeway Management

Peak Period Shoulder Use

Queue Warning

Ramp Metering
I-235 Corridor Improvements

Tier 1
Ramp Metering

Tier 1
Queue Warning
[North on I-35]
I-35 / I-80 Corridor Improvements

**Tier 1**
- Ramp Metering
- Queue Warning
- Peak Period Shoulder Use [East through NEMM]

**DOT Planned Improvement**
Traffic Signal Control

- Funding Optimization Regularly
- Plan Adaptive Deployments
- Implement targeted Transit Signal Priority
- Expand Regional Optimization Process
Infrastructure Enhancement - Arterials

- Alternative Intersections
  - Primary Intersections
- Access Management
  - Minor Intersections
- Develop new bottleneck removal prioritization process
Transportation Demand Management

- Reinvest in the past demand management campaigns
- Advertised / On-Demand to Employers
- Support Vanpool, Transit, Non-Motorized, and Telecommute Options
Engagement Schedule

**Goals**
- Win BUILD, ATCMTD, or INFRA in 2021
- One or more early non-freeway project programmed by DOT + locals
- Positive public perception of ICM – particularly ramp metering
Build ICM Support – Traveler App

**CONCEPT SCENARIO**

**Congestion is detected or predicted based on:**
- Current traffic volumes on I-235
- Historic traffic volumes on the segment
- Anticipated travel by users of the Des Moines ICM app

**The decision support system recommends a response:**
- Enable ramp metering to alleviate bottlenecks
- Recommend multimodal options and offer free transit fares
- Communicate recommendations to corridor partners

**New travel recommendations are made to commuters:**
- Des Moines ICM app alerts users about congestion and upcoming bus departure times
- Dynamic message signage indicates slow-down ahead and park-and-ride locations
- Ramp meters go into effect
Summary

• ICM proactively manages the existing transportation system
  • More cost-effective than traditional improvements

• Near-term ICM strategies address existing needs & are being piloted in the first 2 to 3 years of the program.

• Mid-to-Long term ICM implementation will support projects that strategically balance system optimization and added capacity.

Coming Fall 2020 – ICM Program Launch
More Information

- Visit: https://iowadot.gov/desmoinesicm
- Sign up for notifications
- Watch and share the ICM video with your colleagues/employees
- Stay tuned! Watch for big announcements
Questions?

Iowa DOT Project Manager: Neal Fobian
neal.fobian@iowadot.us