

Introduction

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Slide 5: Integrated Corridor Management focuses on solutions for different modes of transportation. The goal is to help all modes of transportation work more seamlessly together throughout the region. This solution also saves money compared to projects that simply expand the road and bridge system.

Slide 6: Instead of just expanding freeways, it uses all available options to maximize benefits. The integrated corridor management (ICM) concept provides a framework for coordination among all areas of transportation- making sure we utilize and improve multiple modes and not just freeways. It is a **collaboration** of multiple agencies working together to improve transportation in our community as a network and not as separate segments.

Slide 7: Coordination and collaboration between agencies is an essential part of ICM strategies. For Des Moines, this partnership includes DART, Des Moines Area MPO, the US Department of Transportation Federal Highway Administration, Iowa DOT and local jurisdictions.

Slide 8: The Iowa DOT is studying strategies to manage traffic and improvements to the transportation system to most cost-effectively and proactively improve traffic flow and safety in the Des Moines metropolitan area. We are looking at technology and other ways to manage the transportation system to best meet current and future transportation needs.

Slide 9: Many agencies are working together to balance traffic across a variety of roads and transportation modes. The overall goal is to make trips seamless and convenient for commuters across the metro area.

Slide 10: What is the ICM project in Des Moines? The first phase of this project focused on a long-range plan for improvements that we aren't used to seeing in this area - ramp metering, dynamic shoulder use, and encouraging commuters to change their behavior, such as increasing the use of public transportation, cycling, ride share, and telecommuting. An online meeting was conducted in late 2020 to receive feedback from the public. We are working on a plan to educate the public on these strategies and communicate progress with stakeholders.

Slide 11: ICM strategies have been implemented in several states, including Missouri, Kansas, Minnesota and Colorado.

Slide 12: But why ICM for Des Moines? The Des Moines metro area experiences more congestion due to bad weather and traffic incidents compared to the National Averages. This calls for non-traditional solutions instead of only expanding the freeway systems.

Slide 13: Here are the issues identified for the Des Moines metro area during the ICM Visioning Workshop. *Read as many items in each category as relevant to the group; recommend at least one per category.*

Slide 14: There are several benefits to ICM strategies:

- Fewer traffic incidents, particularly ones that occur as a result of another incident
- Safety and mobility improvements due to faster incident response and management
- Increased use of other routes or travel options to meet the demand of traffic
- Reduced vehicle emissions and fuel consumption resulting from congestion.
- Increased or more complete information about other routes or travel options if an incident or traffic congestion does occur.
- More predictable travel times.

- Ability to more quickly make incident information available on traveler information sources.

Slide 15: By working together, we can identify safe, reliable, and cost-effective solutions for the Des Moines metropolitan area.

Results of the online meeting indicate that residents are mostly interested in transportation improvements that don't involve increasing freeway traffic lanes, but enhancements to **public transportation, commuter alternatives, and freeway safety improvements such as ramp metering.**

Slide 16: Des Moines commuters travel predominately by single passenger vehicle. Bike commuting is the second most popular option, followed by public transportation and carpooling.

Slide 17: The Des Moines ICM Commuter Survey also asked participants what kind of improvements that want to have made in Des Moines. 33% want methods to improve safety across all systems. 25% want to see improvements that improve congestion on roadways. Other suggested strategies by participants were expanding freeway lanes, improving pedestrian and bicyclist commutes, parking solutions and more accessibility of public transit options. It should be noted that the participants of the Des Moines ICM Commuter Survey are most likely more engaged with issues related to transportation over the general population.

Slide 19: The elements of the Des Moines ICM strategy are:

Public Transportation Management: Improvements to public transit and public education of available options.

Travel Demand Management: Spread out commuting so there aren't as large of peak demands.

Infrastructure Enhancement: Installation of tools and systems on the freeway to improve traffic flow and safety, such as ramp meter.

Traveler Information: Make it easy for commuters to be informed of traffic incidents and make adjustments to their commute.

Arterial Traffic Management: Improve other roadways to enhance traffic flow onto the freeways.

Freeway Traffic Management: Adjusting traffic flow on the freeway system.

Event Management: Accommodating increased traffic due to an event, such as a game or concert.

Slide 20: ICM strategy and planning is underway. A peer exchange workshop took place

Slide 21: By learning early on about these changes coming to your transportation, you'll be better prepared to acclimate to new road rules and infrastructure.

You can also be empowered to enhance your commute after discovering all of the transportation options available to you.

Slide 22: Iowa DOT is currently in the process of programming study recommendations. This map shares the recommended improvements for the first 5 years of improvements.

Ramp Metering along Interstate 235 – Eastbound between the Southwest MixMaster and 63rd Street – also Westbound from 2nd Avenue to 63rd Street

Dynamic Shoulder Use in both directions on Interstate 35/80 between 86th Street and the Northeast MixMaster

Queue Warning (overhead message signs and new detection capabilities) on Interstate 35/80 between the Southwest MixMaster and IA 141 – also on Interstate 235 northbound continuing north on Interstate 35 up to E 1st Street

Slide 23: In the next 5 years, new deployments of advanced freeway strategies will be prioritized

Dynamic Shoulder Use on Interstate 235 between the Southwest MixMaster and 63rd Street

Ramp Metering southbound on Interstate 35 / 80 from IA 141 to the Southwest MixMaster

Dynamic Speed Advisories between Merle Hay Road and US 65 on Interstate 35 / 80

Slide 24: A way to reduce traffic congestion and increase freeway safety is to install ramp meters.

Slide 25: Ramp meters are easy-to-use traffic signals added to freeway on-ramps to help you safely merge during peak hours. They are installed on freeway on-ramps to control the frequency at which vehicles enter the flow of traffic on the freeway. By limiting the number of vehicles that can enter the freeway at the same time, safety improves – crashes are reduced by up to 40%. Traffic back-ups often start when too much traffic hits at once. Ramp meters the mainline freeway operations have fewer hard stops, also improving travel times.

Slide 26: Why were ramp meters selected for the Des Moines ICM project? Traffic growth in the Des Moines metro area has led to stop and go conditions on I-235 in peak travel periods. Traditional freeway widening would not be as effective at reducing crashes or improving travel reliability and traffic flow. Ramp metering has proven to address project goals and be cost effective to support expedited project delivery.

Slide 27: Research in Miami, Florida found freeway crashes decreased by 41 % when ramp meters were operational. By only allowing one vehicle to enter the freeway at a time, ramp meters harmonize traffic flow and level out differential speeds, which reduces hard-braking and sudden lane-changing events. This reduces the chances of rear-end and sideswipe crashes, which account for over 90 % of crashes on I-235 during the evening peak hours.

Slide 28: Drivers will treat ramp meters the same as any other traffic signal they encounter on the road.

- **Merging with an active ramp meter**
- When the meter is active, stop at the red light. Wait your turn. Proceed when green.
- Only one vehicle can proceed through the green light when metering is in use
- **Merging when ramp meter is inactive**
- When the meter is inactive, proceed through the green light. Do not stop. Safely merge.
- **Always check the light**
- Ramp meters adjust to traffic. Always check the light before merging!

Slide 29: Planning for ramp meters are underway. The pilot project is not currently funded in the Iowa Statewide Transportation Improvement Program but is targeted for funding in Fiscal Year 2023. Once funded, construction and installation will take approximately 12 months. Current plans have ramp meter operational in 2024 or 2025.

Slide 30: As we mentioned, traffic growth in the Des Moines metro area has led to stop and go conditions on I-235 in peak travel periods. Therefore, ramp meters are planned to be installed mostly along I-235 in these ramp locations:

Interstate 235 – Eastbound Direction of Travel Only

- 50th Street
- Valley West Drive (on-loop)
- Valley West Drive (on-ramp)
- 22nd Street

- 73rd Street
- 63rd Street

Interstate 235 – Westbound Direction of Travel Only

- 2nd Avenue
- 7th Street
- Keosauqua Way
- 19th Street (also known as MLK Parkway Northbound)
- MLK Parkway Southbound
- 31st Street
- 42nd Street
- 63rd Street

Ramp meters are also planned on Interstate 35/80 at:

- Merle Hay Rd on-ramp to eastbound travel
- NW 2nd Avenue on-ramp to westbound travel

Slide 31: Ramp meters will provide many benefits to the Des Moines metro area, including:

1. Controls traffic entering the freeway
2. Creates larger gaps in traffic to allow for safer merging
3. Flexible to traffic flow

Slide 32: Another ICM Tactic planned for Des Moines is Dynamic Shoulder Use, or part-time shoulder use.

Slide 33: Dynamic part-time shoulder use allows for general purpose traffic to use the shoulder as a travel lane as needed based on real-time traffic conditions. Signage will be placed overhead to alert traffic of upcoming lane changes to allow for seamless merging. In the event of a crash, heavy congestion or other special event, the signal above the shoulder lane will switch from a red x to a green arrow, indicating that passenger vehicles may use that lane. Dynamic shoulder is planned for I-35/80 between 86th Street and the Northeast Mixmaster.

Slide 34: Dynamic Shouldering addresses the need for enhanced mobility, improved reliability, and better flexibility. Adding a new temporary lane when traffic backs up, it will increase flow and reduce travel times. It's also less costly and less impactful to the environment than traditional expanding of freeway lanes.

Slide 35: Dynamic part-time shoulder use allows for general purpose traffic to temporarily use the shoulder as a travel lane as needed based on real-time traffic conditions. When heavy congestion, special events or crashes impact traffic flow, the shoulder can be opened up to passenger vehicles. A green arrow will illuminate when passenger vehicles are allowed to use the part-time lane.

Slide 36: Planning for dynamic shoulder use are already underway. The project is not currently in the Iowa Statewide Transportation Improvement Program but is targeted for funding around 2025. Once granted, construction will take approximately 15 months and scheduled to begin in 2025 or 2026.

Slide 37: Dynamic Shoulder Use is recommended for I-35 / I-80 between 86th Street and the Northeast MixMaster in Tier 1 within the next 5 to 6 years. The next dynamic shoulder use would be Tier 2 on Interstate 235 between the Southwest MixMaster and 63rd Street within the next 6-10 years.

Slide 38: Dynamic Shoulders reduce the congestion on the freeway. It will also help prevent secondary crashes from occurring as a result of backups and distractions caused by an incident on the freeway. Maintaining the shoulder as a lane will also make it easier for emergency crews to respond to incidents.

Slide 40: ICM is more than just freeway improvements. Improving public transportation systems and raising public awareness of the options available to them is a key element in ICM. Enhancing our public transportation systems reduces costs, congestion, and the impact our travel has on the environment.

Slide 41: There are a variety of ICM tools that could be considered to help improve public transit options. Partners such as DART, HIRTA, DOT are considering what improvements are appropriate for capital investments.

Slide 42: The Des Moines ICM project team produced an online meeting at the end of 2020. One of the questions in the Commuter Survey asked participants what would to take public transportation. The good news is that many of these items mentioned in the survey results are already in-use and available to the public, including a mobile app to purchase bus tickets and free WiFi on all routes.

Slide 44: The Des Moines Area Regional Transit Authority (DART) is the largest public transit agency in Iowa. DART provides resources for those who vanpool, walk, or bike. These services connect thousands of people every day to jobs, school, medical appointments, entertainment and more. DART serves Altoona, Ankeny, Bondurant, Clive, Des Moines, Grimes, Johnston, Pleasant Hill, Polk County, Urbandale, West Des Moines and Windsor Heights.

Slide 45: Benefits of DART: Reduced carbon emissions, reduced traffic congestion and low-cost for commuters. **Additional Benefits:** More personal time to check emails, watch videos, etc. Eliminate parking and traffic stressors

Slide 46:

- Unlimited Access Program
 - Employer partnership that grants rider free usage by showing work ID
- MYDart App
 - Convenient way to check routes, track busses, and access important information
 - Purchase passes directly on your phone
- MYDart Trip planner
 - Receive route guidance based on where you are and where you need to go
- Email/Text alerts
 - Receive updates on delays and route changes in real-time

Slide 47: Current tools and programs available through DART include:

- School Tripper
 - Easy guide for students and parents to plan bus routes to schools
- Ride Match
 - Service to connect commuters with similar routes for carpooling
- Veterans Ride Free
 - Veterans ride free with valid ID

Slide 48:

Additional features:

- Free Wi-Fi on all routes
- Flex Connect
 - An on-demand service that connects riders in the Flex Connect zone to DART buses. Free Uber ride to connect between stops through September 26, 2021.

Slide 49: More than 15,000 people use DART on a workday. 43% of DART users are commuting to work but DART is a great option for entertainment and nightlife.

Slide 50: DART has annual ridership of 4.4 million. There is no single profile for a DART user. All of us in Des Moines can take advantage of this public transportation option.

Slide 51: Commuters outside of the Des Moines city limits still have options for public transportation. HIRTA services are available in Boone, Dallas, Jasper, Madison, Marion, Story and Warren.

Slide 52: Reduced carbon emissions, reduced traffic congestion and low-cost for commuters. Taking public transportation means you can avoid traffic headaches and focus on other things instead.

Slide 53: Biking or walking is another great way to mix up your commute.

Slide 54: Des Moines cyclists and walkers have access to 63 miles of paved and 18 miles of soft trails. On average, one million trips on the Des Moines trails system are made annually. For longer trips, the system is connected to over 550 miles of trails in Central Iowa.

Slide 55: BCycle is ideal for short distances

Slide 56: BCycle Bike share is an environmentally-friendly transportation option with additional health benefits. It is also a cost-effective way for people to bicycle when they need to without the need to invest in their own bike.

Slide 57: Current resources for BCycle users include a mobile app to locate and purchase time on a bike. Memberships can be purchased to reduce the cost of service, which can also be used on bike share systems in several other cities.

Slide 58: Adjusted work schedules outside of the traditional "9-5".

- Employees start earlier and leave earlier
- Employees start later and leave later

If area employees are reporting to work on the same schedule, the demand on infrastructure can exceed limits.

Earlier and later times are significantly underused.

Do you know your options?

Slide 60: Transportation demand management focuses on changing the behaviors of commuters instead of just expanding the system they use.

This is more than just road construction - it's also about providing area commuters with information on their options to shift demand toward more underutilized modes.

ICM is about collaboration and coordination - that includes between commuters.

Slide 61: For this section, we'll be talking about commuter behavior changes that can positively impact commutes in Des Moines. The two elements of travel demand management for the Des Moines ICM project are telecommuting and flexible work hours.

Slide 62: Telecommuting is when an employee performs nearly all aspects of their job function from home, utilizing the internet, virtual meeting tools, email, and more. Working from home eliminates the need to commute using a car, public transportation, or other method.

Slide 63: The COVID-19 pandemic accelerated the potential of working from home for many employees across the Des Moines Metro area. With fewer workers commuting, it alleviated the demand on the current transportation infrastructure system. Even just telecommuting a few days a week can lighten freeway congestion. Do you know your options?

Slide 64: Another travel demand management strategy is flexible work hours. When a large percentage of the population is traveling to work at the same time, it creates congestion during that time while having the system underutilized immediately after.

Slide 65: Travel Demand Strategies benefit transportation systems as well as employee's overall wellbeing. Some statistics on telecommuting benefits include:
According to Global WorkplaceAnalytics:

- Nearly six out of ten employers identify cost savings as a significant benefit to telecommuting.
- 95% of employers say telework has a high impact on employee retention

A Stanford study found that remote workers are 13% more productive when compared to their in-office counterparts. According to researchers, remote employees spent two hours and 44 minutes on physical exercise each week, marking a 25-minute increase over office workers

Slide 66: Stay up-to-date and connected with the Des Moines ICM project.

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