September 20, 2018

## SION NORTHEASTERN ILLINOIS **PRESSWAY SYSTEM**



JACOBS ch2m

FOR THE

Leveraging and optimizing existing transportation infrastructure, enhancing inter-agency coordination and deploying advanced technologies an Integrated Corridor Management (ICM) System improves mobility for all travelers

# ICM as a mobility solution recognizes and adapts to

- Challenges of a constantly changing, improving mature transportation network
  - High demand to move both within the corridor (local) and through the corridor (regional)
  - Fiscal and physical constraints on expanding network capacity
  - Multiple facilities managed by multiple stakeholders
- ICM is a strategy-based mobility solution to make travel *smarter* along a corridor

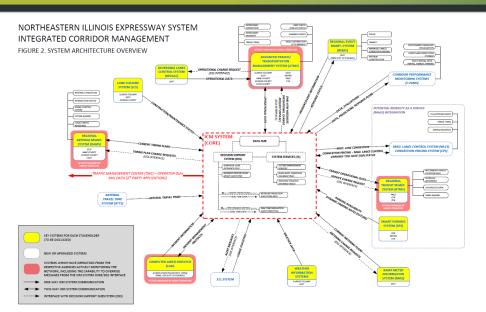
ICM optimizes the regional transportation network and addresses the Counties desire for an integrated network\*

- ICM improves a transportation corridor by integrating applicable operational systems (interstates, expressways, arterials, transit, parking facilities, others) and operating them as one integrated system
- Leverages and optimizes existing transportation infrastructure & management systems by facilitating interface and real-time data communication
- Promotes inter-jurisdictional coordination to actively manage regional transportation networks
- Continues the region's legacy as a leader in traffic management
- Enhances the region's livability, economic vitality, and resiliency

\* June 12, 2017, Letter from County Boards in the region to Secretary Blankenhorn

An integrated real-time management system allows coordinated operations, maximizes efficiency and enables travelers to make informed decisions

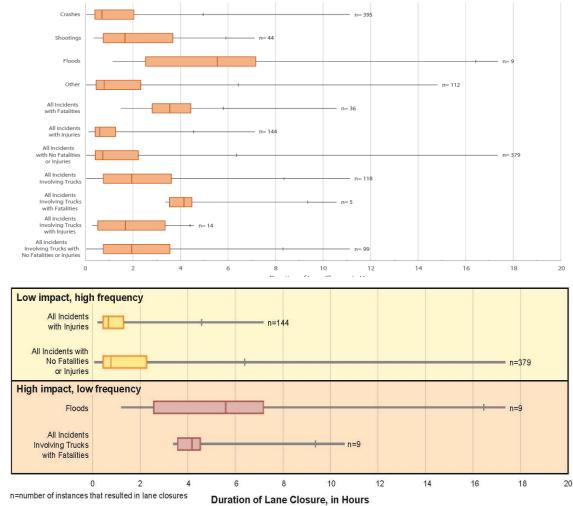
- Operators are able to proactively and collaboratively manage the corridor through systems that "talk" to each other
- Use historical data and monitor changing conditions using real-time information to manage congestion



- Operations are managed using decision support systems, which implement automated response plans, with optional manual overrides
- Travelers use pre-trip and route information to optimize travel decisions and can dynamically shift modes

## ICM deployment largely benefits non-recurrent congestion

- Lane closures from incidents significantly affect travel time reliability
- Low Impact High Frequency incidents can get maximum benefits
- Low Frequency High Impact incidents, such as flooding, chemical spills, multi-vehicle collisions can have reduced impact



### ICM optimizes existing transportation capacity better value over time than expansion of systems

#### Annual Benefits of ICM in San Diego and Dallas (modeled results)

Evaluation Measure	I-15 Corridor (San Diego)	US 75 (Dallas)
Travel Time Savings (Person-Hours)	246,000	740,000
Improvement in Travel Time Reliability	10.6%	3%
Gallons of Fuel Saved	323,000	981,000
Tons of Mobile Emissions Saved	3,100	9,400
10-Year Net Benefit (not including safety)	\$104 million	\$264 million
10-Year Cost/Annual Cost	\$12 million/\$1.42 million	\$13.6 million/\$1.62 million
Benefit-Cost Ratio	10:1	20:1
Source: FHWA 2017		

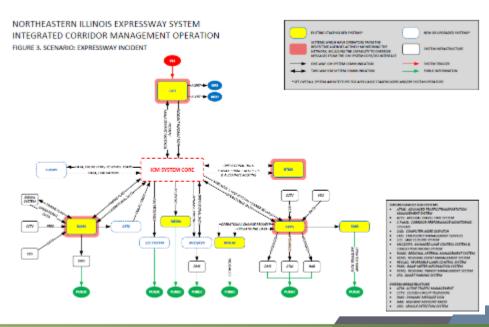
I-90 Jane Addams/Kennedy corridor has the foundation elements for an ICM pilot in region due to:

- I-90 Jane Addams Tollway Smart Corridor
- Pace Express Bus & Park and Ride Stations
- I-90 Kennedy Expressway
- City of Chicago, O'Hare Airport
- Chicago Transit Authority Blue Line
- IDOT Principal Arterials
- Regional Transportation Authority
- City of Chicago, Dept of Transportation
- Cook County
- Metra: NCS, MDNL

# Coordinated operations during an incident improves mobility and safety

System operators are able to provide real-time travel information to travelers, including multimodal options for avoiding an incident. Key functions are automated by the ICM System Intelligence, such as

- Update of signal timing for parallel streets to be used as alternate routes
- Update transit operators in preparation for additional volume from route/mode shifters, including schedule change requests
- Support emergency response with signal preemption
- Control demand by adjusting traffic inflow rates upstream of the incident



## Phased approach to ICM deployment manages jurisdictional and technical complexities

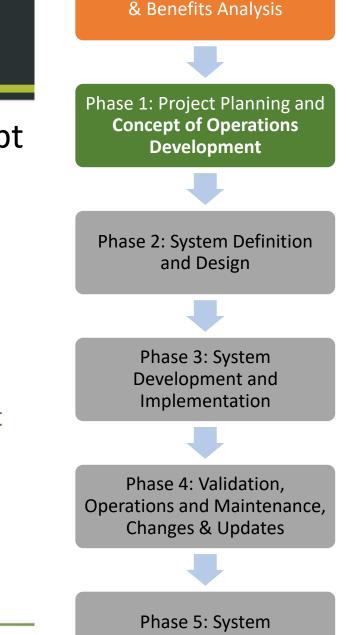
#### How do we get started?

- Identify stakeholders and project champion in the region
  Key topics ICM team will need to address:
- Coordination with the regional transportation planning and operation process (RTOC)
- System interfaces with the regional ITS architecture
- Project Charter approved by the stakeholders
- Initial and lifecycle funding challenges

## Discussion and next steps

**Recommendation:** Develop a concept of operations for an ICM system along identified pilot corridor leveraging existing ITS infrastructure investments

- Discussion with stakeholders
- Identify funding and initiate
  - Phase 1: Project Planning and Concept of Operations Development



**Retirement/Replacement** 

Phase 0: Concept Exploration

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