



MERGING TRAFFIC & SMART WORK ZONES

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OUTLINE

Managing Merging Traffic

- Challenges
- Myths
- Solutions

Smart Work Zones

- Overview
- Illinois Use of Smart Work Zones
- Future Technologies.

MERGING TRAFFIC - CHALLENGES

Traffic Volumes

Speeds

Driver distractions

Need for consistency



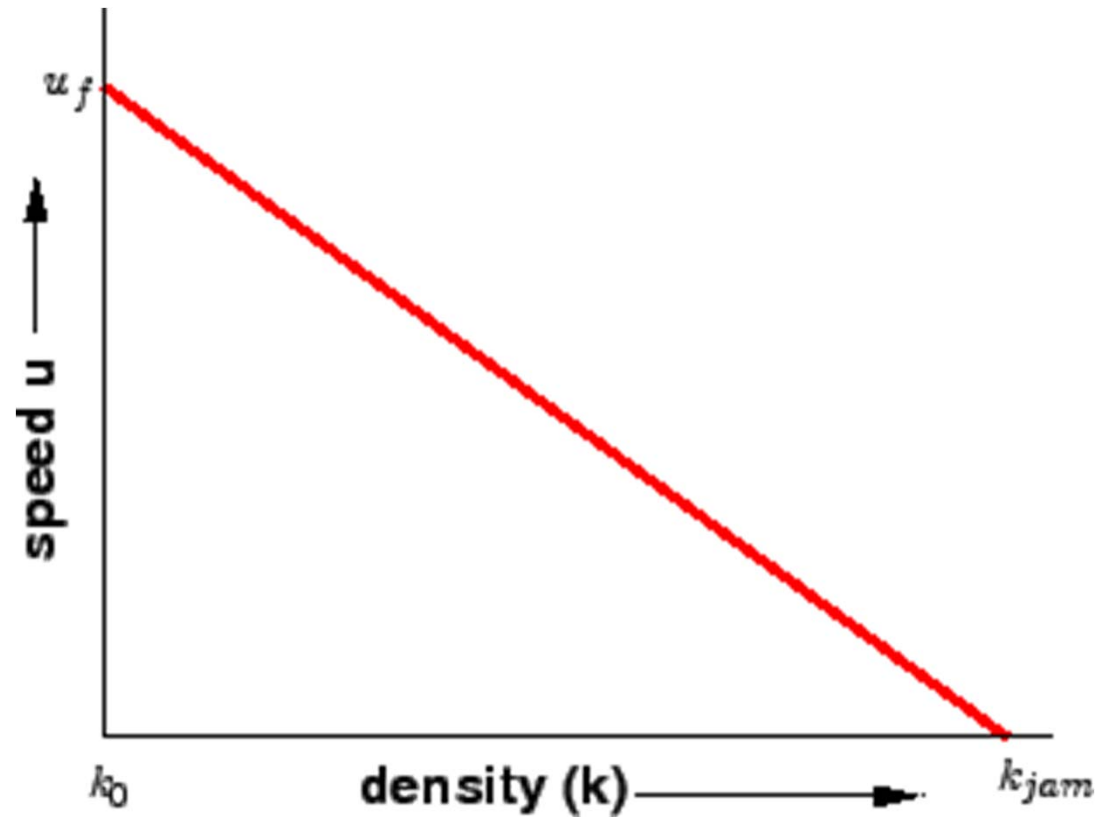
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MERGING TRAFFIC - MYTHS

Zipper is better

Earlier is safer

Drivers will understand

Drivers will cooperate



I went up closer to the police roadblock, then found an opening to merge, lady behind me just lays on the horn as bored officers look on.

MERGING TRAFFIC - MYTHS

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Every time I see a post about someone going to the front of a lane closure and cutting in.

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MERGING TRAFFIC - SOLUTIONS

Once size does NOT fit all

Need to educate the public

Need to communicate in real time

- Direct drivers
- Warn drivers
- Give drivers alternatives



MERGING TRAFFIC - SOLUTIONS

Not a once size fits all

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ZIPPER MERGE
(alternate when merging)

DO THE ZIPPER Merge
.org

- Use both lanes until the merge point
- Resist the urge to merge early
- Take turns at the merge point

REGULAR MERGE:

← UNUSED ROAD →

RIGHT LANE CLOSED AHEAD

RIGHT LANE CLOSED

LANE CLOSED

ZIPPER MERGE:

LANE CLOSED

MERGING TRAFFIC - SOLUTIONS

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SMART WORK ZONES OVERVIEW

Smart Work Zones use technology to improve the safety and mobility of work zones by providing real time information to road users

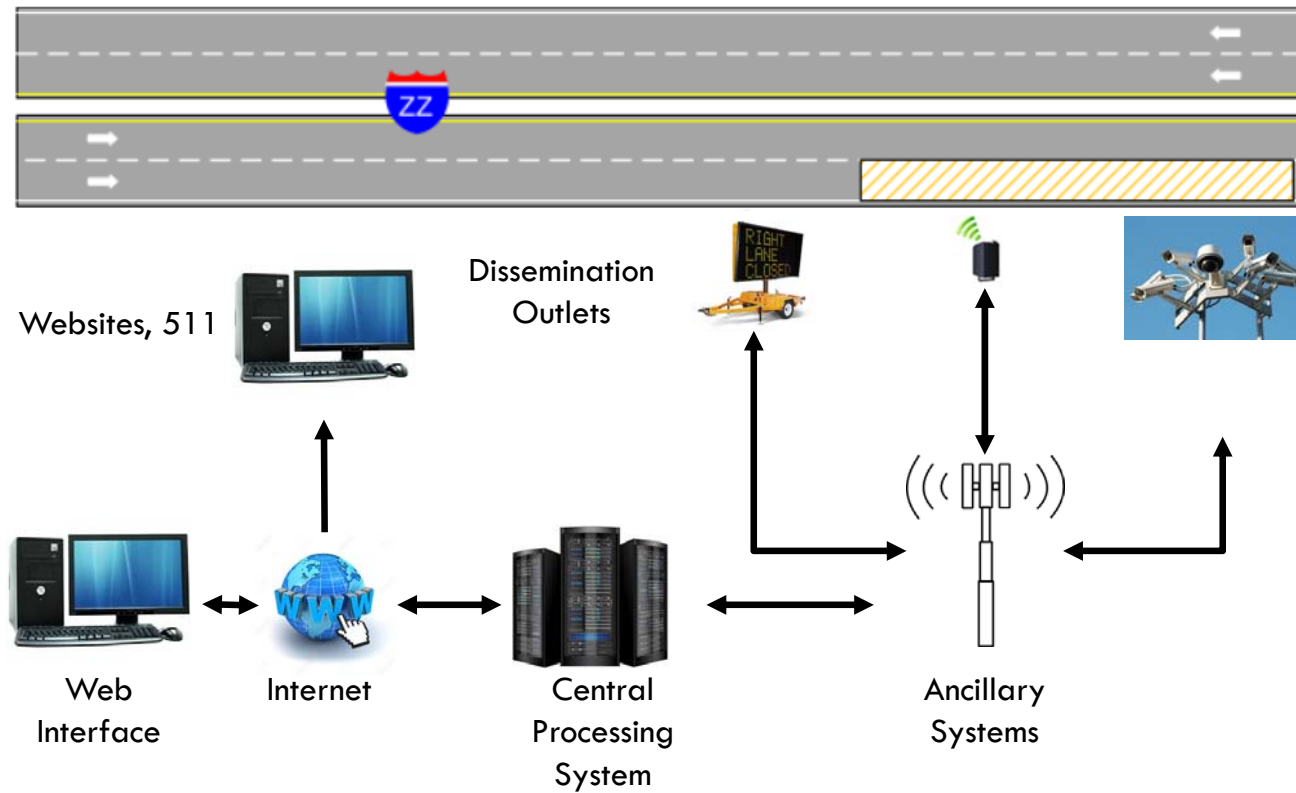
Components

- Detection equipment
- Processing systems
- Communication systems
- Feedback equipment

Characteristics

- Real-Time
- Portable
- Automated
- Reliable

SMART WORK ZONES OVERVIEW



SMART WORK ZONES OVERVIEW

Benefits

- Inform motorists and reduce their frustrations
- Encourage motorists to take alternate routes
- Reduce congestion
- Clear incidents more quickly
- Make work zones safer

SMART WORK ZONES IN ILLINOIS

Past

Present

Future



SMART WORK ZONES IN ILLINOIS – PAST

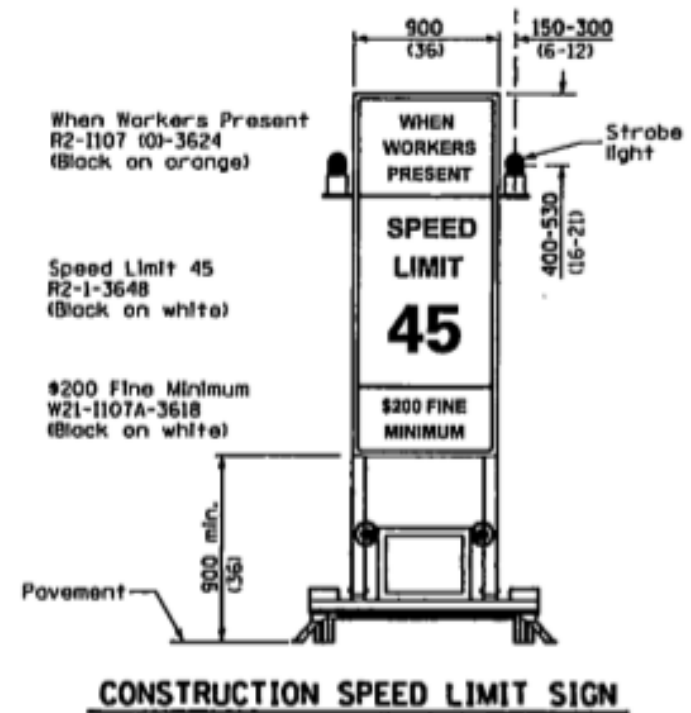
Older than most people realize

- When flashing signs
- Manual actuation

Increased used as a reactive measure to crashes

- I-57 catastrophic crash
- I-55 pilot deployment (2010 – 2011)

Almost exclusively project specific, back of queue warning systems



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Home / News

Carnage on I-57

AT LEAST TWO DIE IN FIERY, SEVEN-VEHICLE CRASH



July 16, 2010 1:00 am • BY STEPHEN RICKERL THE SOUTHERN

(0) Comment:



ALAN ROGERS / THE SOUTHERN An accident involving three semi trucks and

A seven-vehicle fiery crash on Interstate 57 on Thursday afternoon claimed the lives of two people, caused a third victim to be airlifted to a hospital and closed the highway for about five hours.

Two other crash victims were taken to Franklin Hospital in Benton after the crash just after 2 p.m. in Franklin County just north of West Frankfort.

Hazmat teams were called out, as four of the vehicles involved were semitrailers, two carrying loads of asphalt and another carrying a load of vehicle batteries. Fuel and vehicle batteries were exploding in the fire, challenging firefighters to keep the fire in check.

Trooper David Sneed of Illinois State Police District 13 said

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	2010	2011	Difference	% Change
Total Miles I-55 Construction	19.5	20.2	+0.7	+3.6%
Total Lane Closure Days	355	540	+185	+52%
*Total Vehicle Exposure (ADT x Lane Closure Days)	13,031,750	16,346,800	+3,315,050	+25.4%
Property Damage Accidents	75	64	-11	-14.6%
Injury Accidents	18	16	-2	-11%
Fatalities	1	1	0	0%
Total Queuing Accidents	94	81	-13	-13.8%

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SMART WORK ZONES IN ILLINOIS - PRESENT

Continue to use mostly Back of Queue Warning Systems

Expanded use of other smart work zone systems

Created on-call contracts for short duration operations



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SMART WORK ZONES IN ILLINOIS - FUTURE

Continue deploying proven systems

Increase use of low cost systems

Experiment with new technologies

Expand the use of other smart systems

- Dynamic merge
- Trucks entering / leaving
- And beyond...



FUTURE TECHNOLOGIES

Trucks Entering Systems

Bluetooth Travel Times

Connected Devices

- Smart Arrow Boards
- Connected channelizing devices
- Connected work vehicles

Virtual Work Zones

Realtime work zone mapping



GPS Enabled
Sign Location History

Hardware Monitoring
Real-Time Operation Status

TIS Integration
Real-Time Updates to Traveler
Info Systems





THANK YOU!

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