

Intelligent Transportation Systems in Illinois

David Zattero

City of Chicago OEMC

Illinois Vice President

ITS Midwest

ITS Midwest Fall Meeting

November 2, 2007

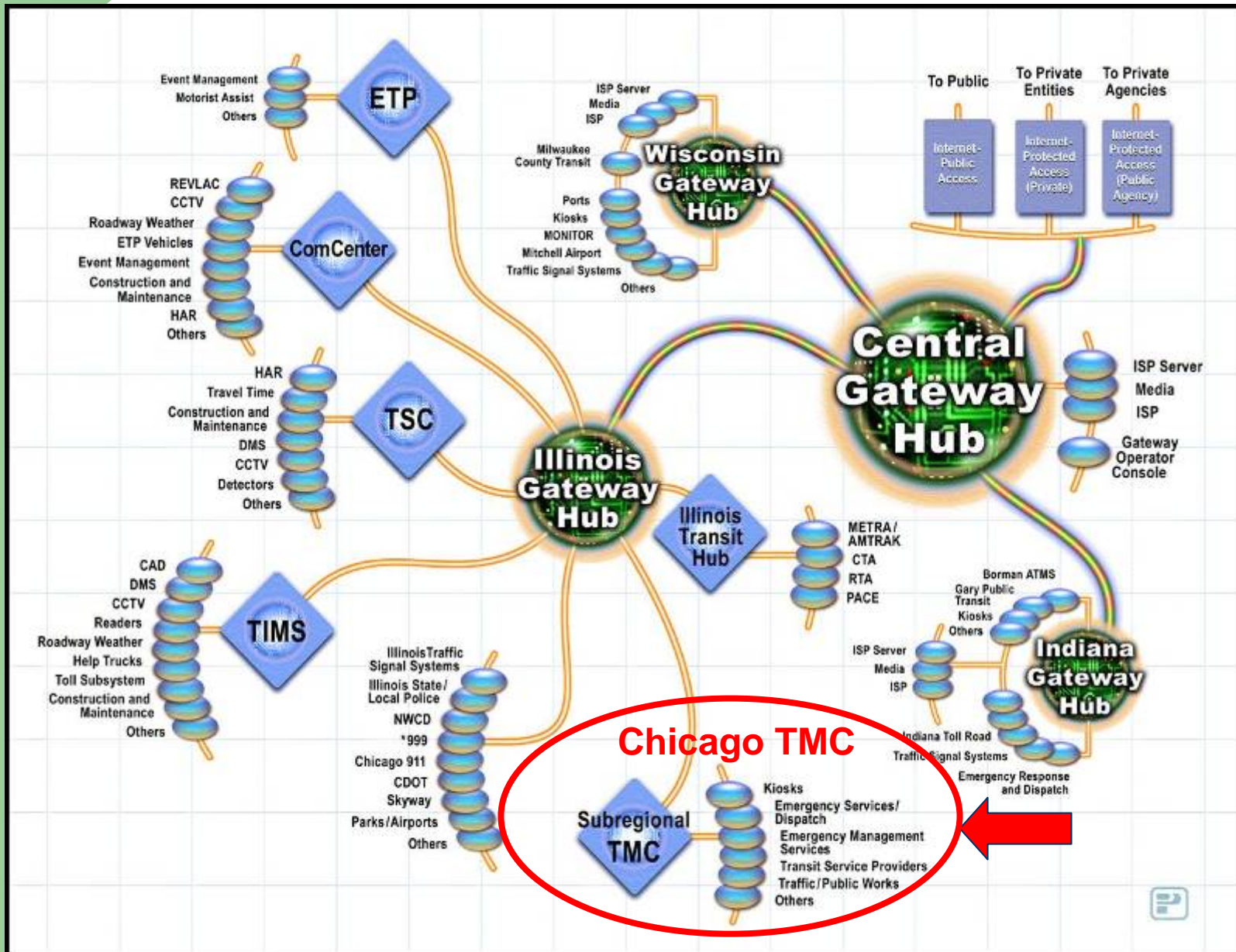
A Short History

- Traffic Control
- Traveler Information
- Operational Field Tests
- ITS and GCM
- Cooperation and Integration
- System Operation and Management

Everybody is Involved ... and needs to be!

- All levels of public sector
 - State, Regions, Counties, Locals
- Private sector
 - Consultants, Suppliers, Manufacturers, Developers
- All Stakeholders
 - Operators, Planners, Users

... use the Regional and State Architectures



MANY Success Stories - A Vital Few

- IDOT Traffic Systems Center
- Tollway I-Pass
- GCM Gateway and St. Louis Gateway Guide
- Transportation Management Centers
- Lake County Passage
- CTA BusTracker and PACE IBS
- Multi-Modal Trip Planning System

Challenges ... What Challenges?

- Creating the forums
- Building consensus
- Changing organizational “cultures”
- Finding the resources
- Setting the framework

Project of the Year

2006



Illinois ITS
 A Division of the Illinois State DOT Strategic Planning and Architecture Division
 November 2004

Illinois Statewide Strategic ITS Plan

The Illinois Department of Transportation (IDOT) recently began a project to develop and coordinate deployment of Intelligent Transportation Systems (ITS) around the state. The project will give the state a framework to efficiently use technology to solve transportation problems.

An important objective and end condition for this project is to ensure that the state's existing and planned transportation systems are able to take full advantage of the many opportunities that ITS offers to improve safety, efficiency, and system performance.

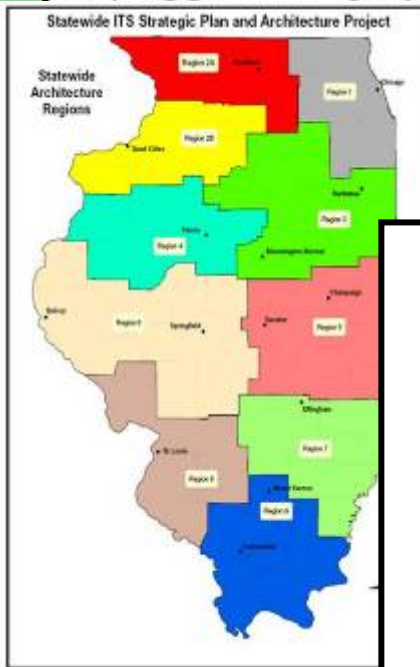
- Coordinate planning and implementation of ITS technology to improve existing and planned transportation systems.
- Provide a framework for regional planning, scheduling and implementation.
- Support the sharing and dissemination of information.
- Maximize the use of existing ITS technology throughout the state to improve transportation systems.
- Ensure the development of regional ITS architectures is made a priority.

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ITS is Sharing Real-Time Information

ITS, or Intelligent Transportation Systems, applies computer, electronic, and communications technologies to improve the safety, security, and efficiency of transportation systems. ITS systems are developed at the national, state, and regional levels. The Illinois Statewide Strategic ITS Plan provides a framework for the development of regional architectures.



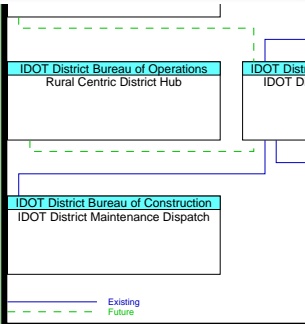
Illinois Statewide Intelligent Transportation System (ITS) Architecture and Strategic Plan

DRAFT STATEWIDE ITS STRATEGIC PLAN

January 2006

prepared by

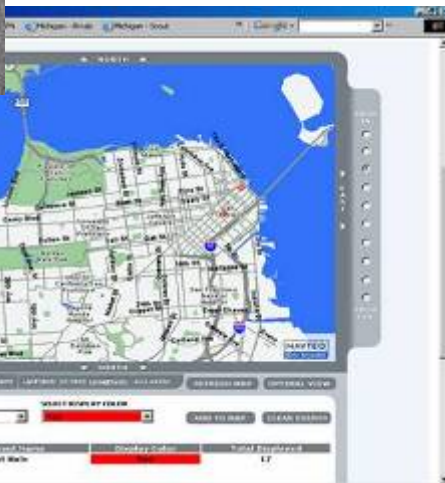
for



Project:
 Illinois Statewide
 ITS Strategic Plan
 and Architecture
www.ilits.com

Project Lead:
 Illinois DOT

Project Team:
 Metropolitan Planning
 Organizations and
 Regional Councils
 Edwards & Kelcey
 Trichord Inc., URS
 Wilson Consulting



Project:
Map Enhanced VII
for the ITS World
Congress
www.navteq.com

Project Lead:
NAVTEQ

Project Team:
DCX, BMW, VW
Motorola, Econolite
Infotek
San Francisco DPT
California PATH
MTC, Caltrans





Project:
My 511
www.navteq.com

Project Lead:
NAVTEQ

Project Team:
ATX
Parking Carma
MTC

The Federal Communications Commission (FCC) dedicated the 511 phone number for use by state departments of transportation to provide travel information. Currently, there are more than 20 such services in operation, and the 511 system in the San Francisco Bay area has been recognized as the nation's best.

"Level one" services currently offered for free to callers include traffic and weather reports, transit schedules, and "high level" directions. Requirements for "level two" premium services, such as door-to-door routing and other personalized content are now being developed.



NAVTEQ and ATX Communications will provide a demonstration of premium map-linked travel information delivered via level two "My 511" phone service. This project will demonstrate the value of using NAVTEQ map data in customized 511 services and other location-enabled solutions.

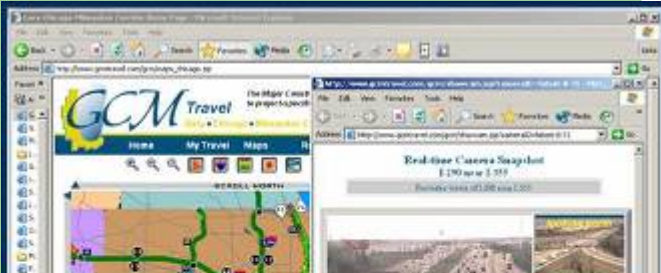
The demonstration will also incorporate real-time parking information from ParkingCarma, a service that enables users to reserve parking spots via cell phones, the Internet, and in-vehicle computers.



[Demonstration at ITS World Congress](#)

Dial the 511 option on the demonstration phones in the NAVTEQ booth and enjoy interactive voice-enabled door-to-door route information. Integrated with the existing Bay Area 511 system, this service makes door-to-door routing, the selection of a specific point of interest and access to real-time data possible. The solution is ready for nationwide deployment and could provide routing capabilities for the entire US.





GCM Travel

Home My Travel Maps Reports Cameras Maps Links Help

Welcome to the GCM Travel Site

The GCM website provides travelers in the corridor area with information to assist them in making efficient transportation choices. Site include:

- Real-time map of road conditions and construction data
- Accidents and closure alerts
- Construction and travel news
- Links to video streams available in the corridor
- Links to transportation services in the corridor

Beta Version: Wireless Travel Times

The Illinois Department of Transportation, in cooperation with the Gateway Chicago Wireless Corridor (GCWC), is pleased to announce the beta availability of a wireless-friendly version of Chicago Area Travel Times as part of the overall traveler information services from www.gcmtravel.com.

This new feature is an extension of our existing Chicago Quick Traffic Report, available at www.illinois.gov/transportation/ChicagoQuickTraffic.aspx, that displays travel time information of common regional routes.

The wireless-friendly page is www.gcmtravel.com/wireless.

Using a wireless device with web-enabled capability many cellular service providers will allow a majority of our customers to access this new page. The public can then navigate through a list of Expressways and Tollways to access a list of travel times for the chosen route.

We anticipate that most users will have no trouble with the new page, but that those experiencing difficulty with the new wireless site should e-mail us at web@idot.illinois.gov to receive your cellular service provider and device make and model to help us identify any issues.

The page was built around the following specification:

Your mobile device must support wireless markup language version 1.1 (WML 1.1) and wireless application protocol 2.0 (WAP 2.0); contact your mobile provider for more information.

This feature is not intended for use while operating motor vehicles. Please drive safely and responsibly.

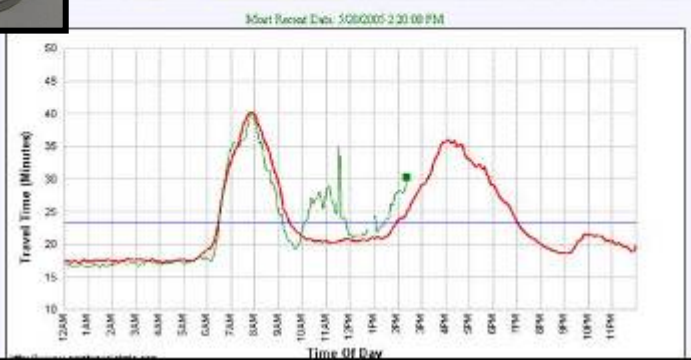


2:20PM

Average	Difference	Minimum	Maximum	Sample Days
25.14	+5.09	17.70	72.07	145

Travel Time (minutes)
Entire Day

Average	Difference	Min Average	Max Average	Avg Sample Days
23.42	+6.82	17.49 (5:20AM)	40.16 (7:45AM)	136.8



Project:
Gateway TIS: New Tools for Travelers
www.gcmtravel.com

Project Lead:
 Illinois DOT

Project Team:
 U. of Illinois at Chicago
 National Engineering Technology
 Parsons Transportation Group
 Otter Creek

Illinois Tollway

Open Roads for a Faster Future



Project:
**Illinois Tollway and
NBC5 Partnership**
www.nbc5.com/traffic/index.html

Project Lead:
**Illinois State Toll Highway
Authority**

Project Team:
**NBC5
Illinois State Police
Illinois DOT
NET Corporation
Wilbur Smith Associates
CTE Engineers**

(11:15 AM) , Notification

I-88 Reagan Tollwy from Aurora Toll Pla:
Exwy
* 28 minutes/49 mph/3 minutes delay

I-88 Reagan Tollwy from Aurora Toll Pla:
Exwy Incidents

*between Highland Av and Meyers Rd - ongoing construction -
Traffic has been shifted to the left for new plaza construction until
January 31, 2006.

*between Meyers Rd and 22nd St/Cermak Rd - ongoing
construction - traffic has been shifted to the left for plaza
reconstruction until May 15, 2006. Expect delays.

*slow at 22nd St/Cermak Rd

Report for: Wednesday January 18, 2006 11:15 AM CST



Traffic Events



Roadway Incidents



Lane Closures

Collect
Information

Process E-Mail Alerts at TIMS
Traffic Operations Center



Transmit
E-Mail Alerts

Recipients

Media
Truck Agencies
Other GCM Agencies

Project:
Critical Incident
Customer
Communication

Project Lead:
Illinois State Toll
Highway Authority



Illinois Department of Transportation
Division of Highway System Operations

**Interstate 74
Reconstruction Project
ITS Project System
Architecture**

FINAL REPORT

74

May 2001

Prepared by
**Edwards
& Kelcey**

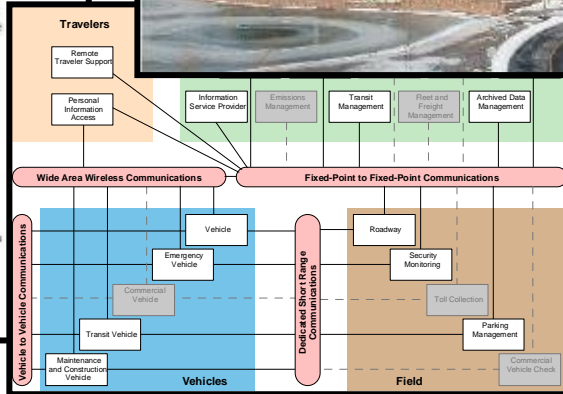
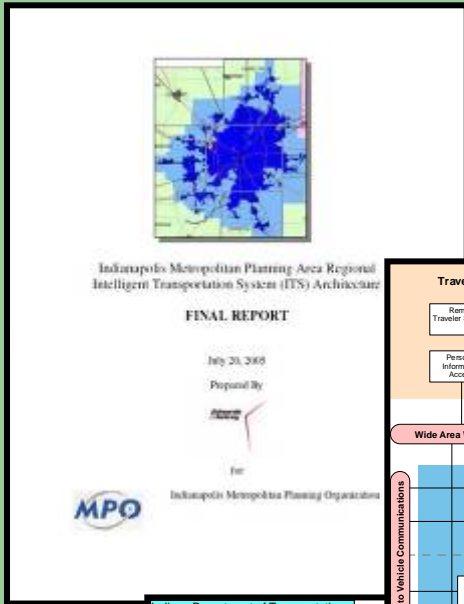
In association with
eb
Edward Benesch & Co.



Project:
**I-74 / Peoria
Intelligent
Transportation
System**

Project Lead:
Illinois DOT

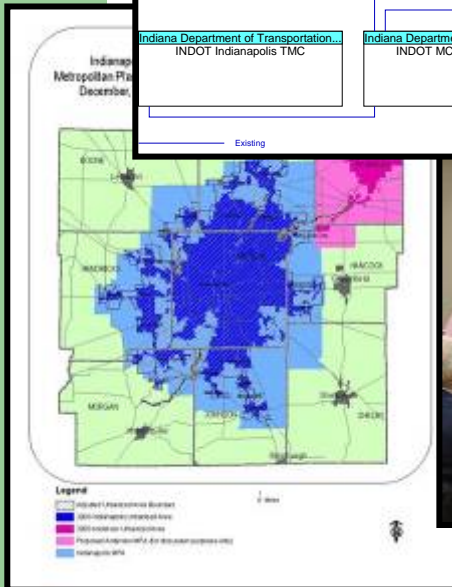
Project Team:
Edwards and Kelcey
Alfred Benesch & Co.

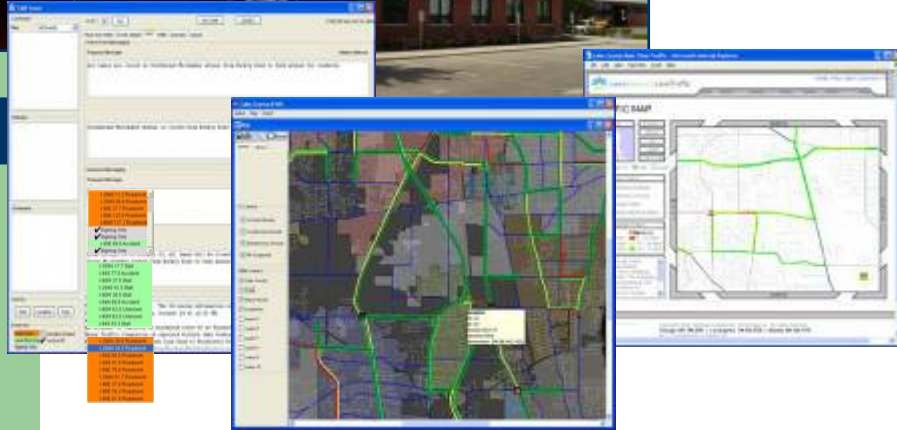


Project: Indianapolis Regional ITS Architecture

Project Lead:
Indianapolis Metropolitan
Planning Organization

Project Team:
Indiana DOT
Edwards and Kelcey
Blalock and Brown





FEATURES

Arterial & Freeway Management
Two-way Signal interface
Full two-way CAD Integration
GCM/Statewide interface
Web-based maintenance logging
Full Automated response
DMS Response Library
Integrated Portable DMS
Redundant Mesh GigE
Congestion Signing
Advanced web page
Virtual switching
CCTV Presets /180

Project: Lake County Passage Final Design and Integration

www.lakecountypassage.com

Project Lead:
Lake County DOT
Illinois DOT
Illinois Tollway

Project Team:
NET, Econolite
Bleck, HNTB

14 MINUTES TO
DOWNTOWN



The screenshot shows a web browser window with the URL http://www.gcmtravel.com/ga/trac_chiqa.jsp. The browser displays a traffic map of Chicago with various icons representing different traffic conditions. Below the map is a 'Map Legend' table:

Icon	Description
	Chicago icon
	Travel Time (min)
	Link Travel Time (min)
	Incident
	Heavy Congestion
	Medium Congestion
	Light Congestion
	Slow Traffic
	Message Congestion
	Police & Ambulance
	Missing Car/IDN
	Service Outage
	Accident
	Message Sign
	Camera

Below the map is a 'Dynamic Message Sign Report' table:

Message ID	Location	Message	DMS Status
145678	SAVING AVE	14 MIN TO DOWNTOWN 25 MIN TO DOWNTOWN CONGESTION AHEAD MONITORING TRAFFIC	<input checked="" type="checkbox"/> On <input type="checkbox"/> Off <input type="checkbox"/> Disabled <input type="checkbox"/> Expired <input type="checkbox"/> Not <input type="checkbox"/> Unusable
145679	ROSTER AVE	20 MINUTES TO DOWNTOWN CONGESTION AHEAD MONITORING TRAFFIC	<input checked="" type="checkbox"/> On <input type="checkbox"/> Off <input type="checkbox"/> Disabled <input type="checkbox"/> Expired <input type="checkbox"/> Not <input type="checkbox"/> Unusable
145680	PULASKI	18 MINUTES TO DOWNTOWN CONGESTION AHEAD MONITORING TRAFFIC	<input checked="" type="checkbox"/> On <input type="checkbox"/> Off <input type="checkbox"/> Disabled <input type="checkbox"/> Expired <input type="checkbox"/> Not <input type="checkbox"/> Unusable

Project:
Travel Times on
Regional Dynamic
Message Signs (DMS)
www.gcmtravel.com

Project Leads:
Illinois DOT
and Illinois Tollway

Project Team:
IDOT Traffic Systems Center
(TSC)
Tollway Traffic and Incident
Management System (TIMS)
Gateway TIS



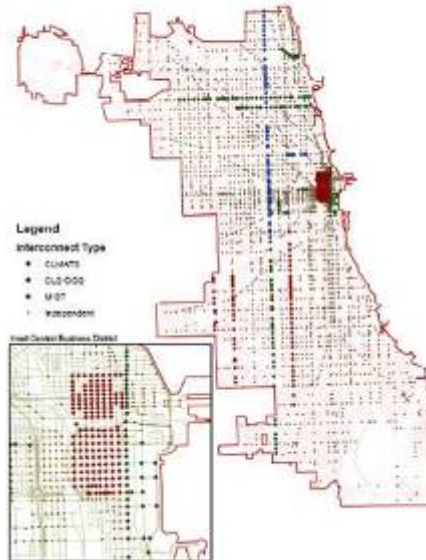
Project of the Year

2007



- 13.8 miles
- 39 intersections
- 26,000-44,000 ADT
- Arterial CCTV and DMS
- Signals operated under MIST from Chicago TMC
- Traffic Control Aides
- Coordinated towing and enforcement

City of Chicago Signal Interconnect



Project:
 Ashland Avenue
 Alternate
 for Dan Ryan
 Reconstruction

Project Lead:
 Chicago Office of
 Emergency Management
 and Communications
 (OEMC)

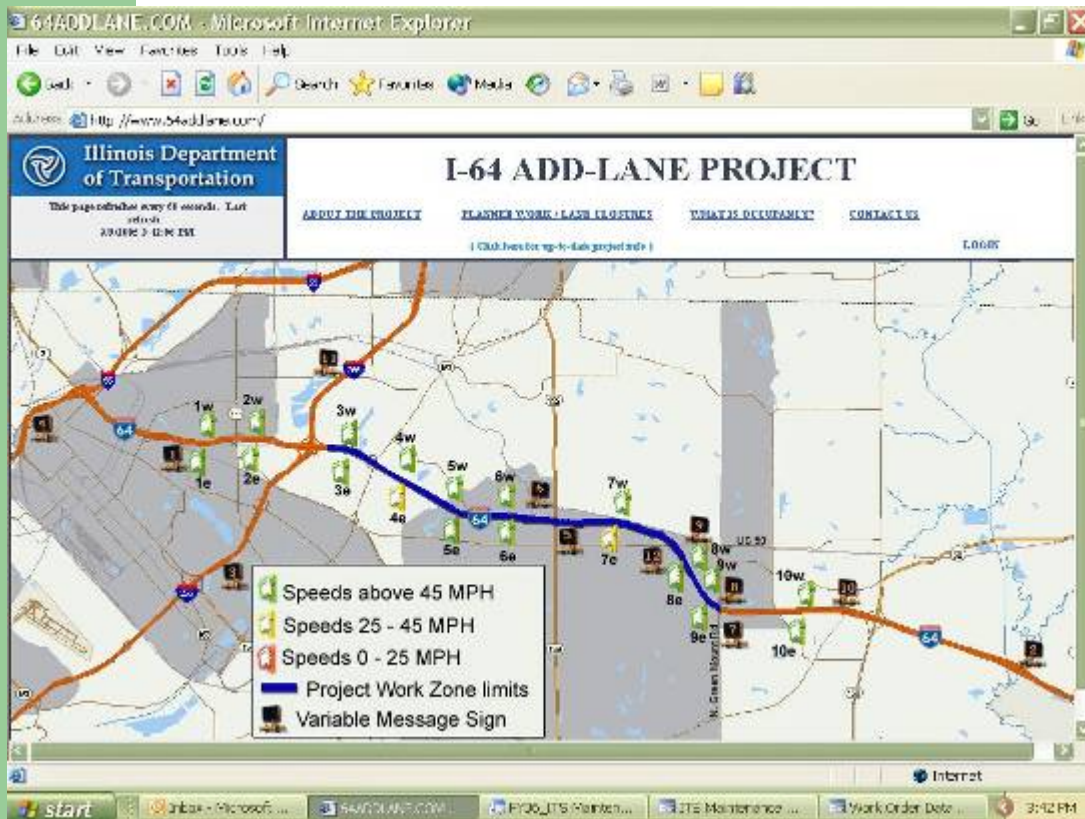
Project Team:
 Chicago Department of
 Transportation
 Chicago Skyway
 Illinois Department of
 Transportation



EB I-64
WORKZONE

IL 157
TO
GREEN MT

TRAVEL
TIME
8 MIN



Project:
Interstate 64
Smart Work Zone
ITS Deployment

Project Lead:
Illinois DOT, D8

Project Team:
Illinois DOT
ASTI Transportation System
Fred Weber, Inc.



Project:
Chicago Unified
Command Vehicle

Project Lead:
City of Chicago Office of
Emergency Management
and Communications

Project Team:
MorganFranklin Corp.
E-One Corp.



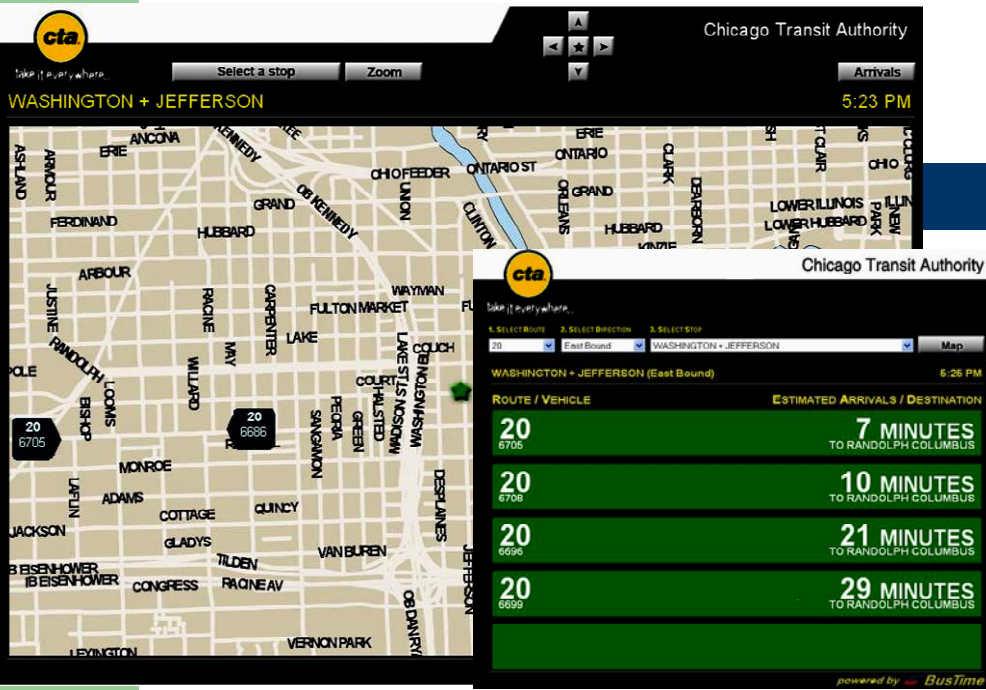


Project:
**Open Road Tolling
Signing Simulation**

Project Leads:
Illinois Tollway
and
University of Illinois at
Chicago



Project Team:
Tollway Traffic
UIC Electronic Visualization Lab
Wilbur Smith Associates



Project:
CTA Bus Tracker
www.ctabustracker.com

Project Lead:
Chicago Transit Authority

Project Team:
CTA Technology Management
CTA Transit Operations
Clever Devices





(11:15 AM) , Notification

I-88 Reagan Tollwy from Aurora Toll Pla:
 Exwy
 * 28 minutes/49 mph/3 minutes delay

I-88 Reagan Tollwy from Aurora Toll Pla:
 Exwy Incidents

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*slow at 22nd St/Cermak Rd

Report for: Wednesday January 18, 2006 11:15 AM CST



Project:
 Upgrades to the
 Traffic and Incident
 Management System
 (TIMS)

Project Lead:
 Illinois State Toll
 Highway Authority

Project Team:
 Delcan



Subject: Illinois Traffic Alert
From: alerts@iltrafficalert.com
Date: 1:10 PM
To: john@iltrib.org

 Illinois Department of Transportation Traffic Information for
 Mar 05, 2007 01:10PM

Travel Times

Route	Travel Time	Speed
Outbound Kennedy from I-290/Circle to Q-Fare	18 minutes	55 mph
SB I-355 from Army Trail/Plaza-73 to Boughton/Plaza-90	17 minutes	54 mph
Outbound I-57 from Dan Ryan/95th to I-80	14 minutes	55 mph
Outbound I-290 from I-80/94/Chile to Thorndale	28 minutes	55 mph
Outbound Bishop Ford from Dan Ryan/95th to I-80	20 minutes	43 mph

Congestion

Location	Congestion	Length
OB Kennedy	No heavy congestion	17.1 miles
SB I-355	No heavy congestion	16.1 miles
OB I-57 to I-80	No heavy congestion	13.7 miles
OB I-290 to Thorndale	No heavy congestion	25.2 miles

Project: Illinois Traffic Alert Email Notification System

www.iltrafficalert.com

Project Lead:
 Illinois DOT

Project Team:
 U. of Illinois at Chicago
 Delcan

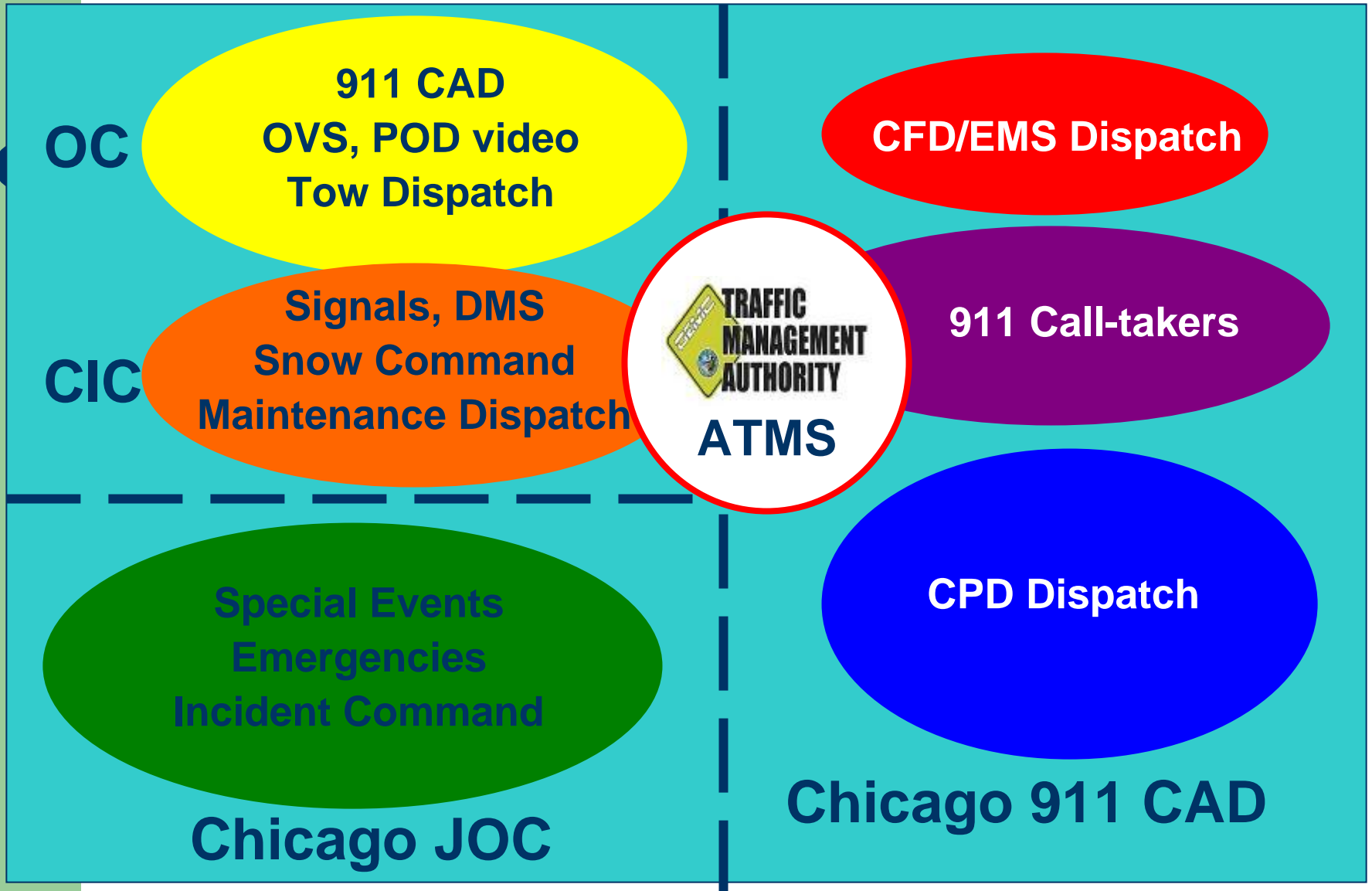
On the Horizon ... Opportunities!!!

- Regional and statewide integration
- Using technology as one tool
- Pro-active system management
- Extending the success stories
- Serving our customers

Chicago OEMC: Co-Location of Public Safety, Emergency, and Transportation Operations



Chicago TMC Integration

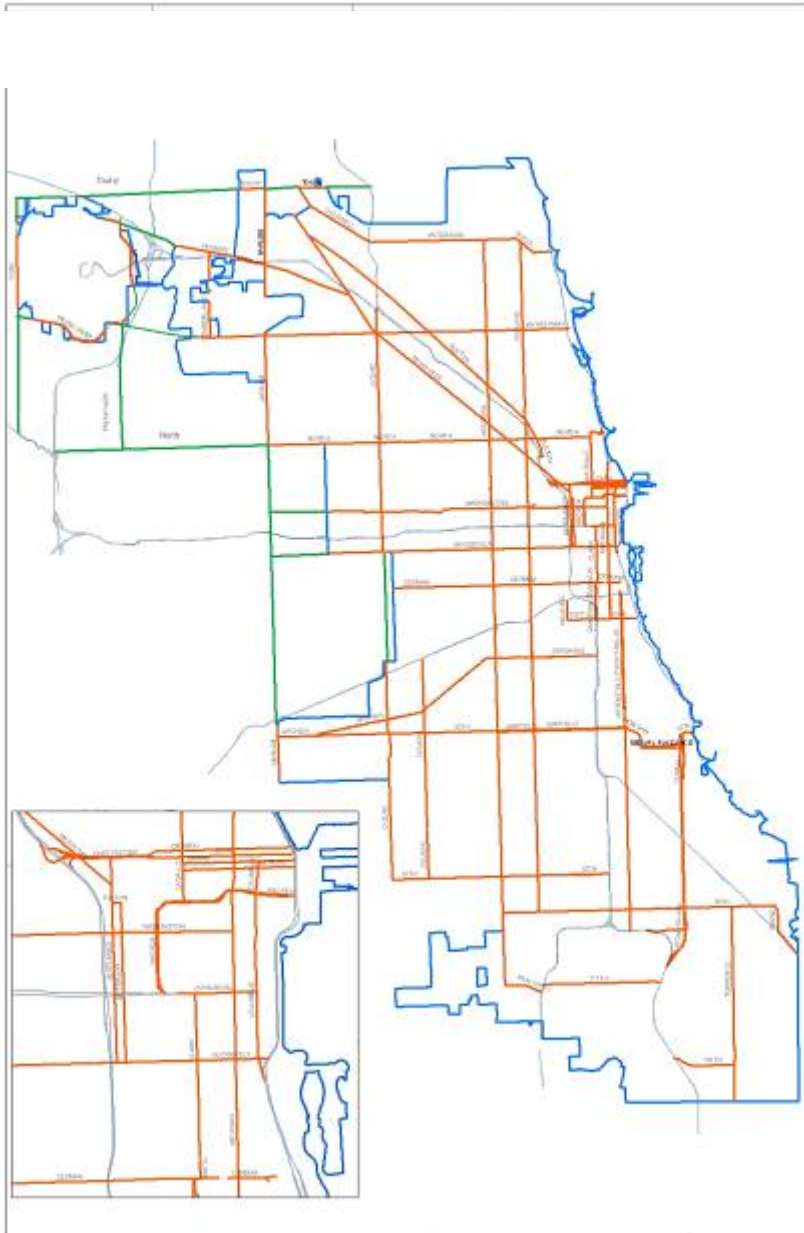


911 Operations Floor



911 – Police, Fire, Emergency Computer Aided Dispatch





Arterial Performance Monitoring System

- About 300 miles of major arterials
- Includes Strategic Regional Arterials
- A connected network of routes to supplement expressways
- Can support responsive traffic control strategies

Operations Center



Chicago Incident Center



Signal (MIST), DMS, CCTV Workstations



Thanks,

David Zavattero

Deputy Director

**Chicago Office of Emergency Management and
Communications (OEMC)**

Traffic Management Authority

dzavattero@cityofchicago.org