



Chicago Area Transportation Study



Chicago Metropolitan Agency for Planning

Advanced Technology Task Force

Meeting Notes - November 9, 2006

The meeting was called to order at 10:00 AM at the CMAP Offices, 233 South Wacker Drive, Suite 800, Chicago, Illinois. Those present at the meeting were:

Attendees

David Zavattero, Co-Chair

Duana Love, Co-Chair

Members:

Marty Anderson	<i>IDOT Elec. Op.</i>	John Dillenburg	<i>UIC</i>
Ken Glassman	<i>ISTHA</i>	Joe Heinrich	<i>SSMMA</i>
Patti Killinger	<i>Will County</i>	Jim LaMantia	<i>Chicago OEMC TMA</i>
Dean Mentjes	<i>FHWA</i>	Ruth Myers	<i>DuPage Co.</i>
Chuck Sikaras	<i>IDOT, ITS</i>	Tom Szabo	<i>Kane County</i>
David Tomzik	<i>Pace</i>		

Interested Parties:

Joseph Brahm	<i>Delcan</i>	Michael Brody	<i>DCEO</i>
Abraham Emmanuel	<i>Chicago OEMC</i>	Stephany Filimon	<i>West Monroe Ptnrs.</i>
Chad Hammerl	<i>EK / CDOT Traffic</i>	Jeff Hochmuth	<i>Wilbur Smith</i>
Rob Hranac	<i>Berkeley Tran. Systems</i>	Scott Lee	<i>Delcan</i>
Matt Letourneau	<i>Edwards & Kelcey</i>	Ellen Partridge	<i>CTA</i>
Steve Peters	<i>IDOT Elec. Op.</i>	Justin Potts	<i>IDOT IT</i>
Brian Saville	<i>eSpeedient Systems</i>	Dan Shamo	<i>URS</i>
Govind Vadakpat	<i>Parsons</i>	Lei Wang	<i>IDOT</i>
Ping Yu	<i>Motorola</i>		

CMAP Staff:

Parry Frank	Craig Heither	Don Kopec
Tom Murtha	Dan Rice	

SUMMARY OF COMMENTS:

Note: all presentations from the meeting are available at www.catsmpo.com/min-attf.htm below the meeting agenda.

1. **Approval of meeting notes from August 10, 2006 Task Force meeting**

The notes were approved as submitted.

2. **Homeland Security Market Development**

Michael Brody stated that the goal of this bureau of the Illinois Department of Commerce and Economic Opportunity is to grow and attract the homeland security business in the State of Illinois. Homeland security market spending totals \$23.5 billion annually in the US, with \$6.5 billion coming from the private sector. Over time, government spending is expected to increase 5% per year whereas the private sector is forecast to increase 10% per year. Specific security needs related to transportation include surveillance/detection, smart tracking, securing cargo and freight, and evacuation and flow modeling.

A number of programs have been established to foster the homeland security market in Illinois. One is the Innovative Product Grant (IPG) Program which was created to accelerate the commercialization and production of products with dual uses in homeland security and other areas that can be delivered from Illinois. The program is intended to generate job growth while leveraging investments in technology and services and creating solutions to specific security needs. The IPG program provides up to \$150,000 in capital funding that must be matched dollar-for-dollar, for products with a “proof of concept” and that can demonstrate new job creation in Illinois.

The agency has established relationships with a number of colleges and universities in the state to foster relationships, to develop college course work and to develop program expertise in the area of homeland security. Partners include Northwestern University, Northern Illinois University, the College of DuPage and the College of Lake County. More information on all of the Homeland Security Market Development programs is available at www.hsmd.illinois.gov.

David Zavattero asked if there is a program to identify specific needs and issue Requests for Proposals (RFP) to meet those needs. Michael Brody responded that Homeland Security Market Development is an economic development group and that they support people but do not issue RFPs. David Zavattero followed up by asking if the program could be approached for a development grant if a specific need and a group of vendors was identified. Michael Brody responded yes. David Zavattero asked if Illinois companies were involved in the evacuation modeling work and Michael Brody stated that some are involved.

3. Discussion of Performance Measures

A. The Caltrans Experience with PeMS

Rob Hranac gave an overview of the freeway Performance Monitoring System (PeMS) used by Caltrans. He noted that performance monitoring has undergone a technical evolution from installing ITS components and making the data useful to traffic managers to saving the data and making it useful to others such as planners and engineers. The operational model consists of three parts: formulate performance measures, develop reporting measures and structure business process to make decisions based on the measures.

Transportation agencies should leverage their ITS data to measure performance and monitor their system. The PeMS traffic monitoring system has been developed to collect traffic data for use by traffic managers, archive the data, and to generate performance measures that will be useful to planners, engineers, and managers. The data archiving system detects data problems and fixes them using spatial and temporal imputation, and fuses data types (detectors, toll tag, incidents) to create a system snapshot. This automated system produces system wide reports that can be tailored to individual clients and allows the managers to identify bottlenecks and incidences. Detailed analyses can determine the causes of delay in the system.

Caltrans operates over 22,000 detectors and has instituted a detector fitness program to increase the share of detectors that are functioning at any given time. This program has increased the operational rate from 57% up to 75%. Rob Hranac noted that while traffic managers are interested in how many detectors are working and the trend, the maintenance groups are interested in which detectors are failing and why. Operations

engineers are interested in identifying bottlenecks, determining how bad they are and identifying the root causes.

David Zavattero noted that one of the charts only showed 5% of congestion due to demand. Rob Hranac stated that the operational strategies category on the chart also included demand (under idealized ramp metering). Ellen Partridge asked if the sensors can distinguish between vehicles. Rob Hranac stated that they can and noted that San Diego was looking at fitting FHWA vehicle profiles to detectors but that the program is not yet statewide. Dave Tomzik asked what was included in the "Other Causes" category of congestion and Rob Hranac responded that he wasn't certain but that the next target for the program is to include weather information.

Brian Saville asked if data gaps are weighted and Rob Hranac stated there is no complex scheme that does it but there is an indication that the data are imputed. Parry Frank asked how traffic jams and detector shut downs are handled. Mr. Hranac stated the data are imputed. Responding to David Zavattero's question, Rob Hranac noted that the imputation is performed at the data archive, not the operations center. David Zavattero asked if the regional measures were more useful than corridor measures. Rob Hranac stated some regional managers review the measures but was not sure how widely they were used. David Zavattero encouraged those interested in seeing what PeMS can do to get user accounts at <http://pems.eecs.berkeley.edu/Public/>.

B. Planned Enhancements to GCM Travel Stats

Brian Saville gave an overview of the planned enhancements to the GCM Travel Stats website. Although Travel Stats is maintained as a separate site from GCM Travel, it depends upon the traffic information provided by the GCM Priority Corridor to generate its historical data. The information is shared through the use of simple tables and also charts that depict current travel time, average travel time, and the normal travel time range.

Brian Saville discussed the results of a user survey about the GCM Travel Stats website. The survey began on August 25, 2006 and received 195 responses in 75 days. The purpose of the survey was to get user feedback on satisfaction with the site and to develop a list of possible enhancements to the site. Half of the respondents lived in Chicago and 83% were male. Most of the survey respondents were under 40 years of age and most visit the site at least once per day. Overall 84% of respondents were satisfied with the site.

Responses for proposed new feature were highest for personalization such as saving a list of favorite road segments. The most desired alternative means of accessing the information was RSS, which allows one to obtain updated information from a website without visiting the site. Some requested enhancements are already available on the site so there may be opportunities to redesign the site to make things easier to find.

Brian Saville stated that over the next 3-6 months they hope to implement some of the personalization options on the site including some implementation of custom travel segments. They also plan to incorporate weighted averages into the charts. Future enhancements they are interested in making include developing a predictive travel

time model and making the site a “one-stop shop” which would include travel times, weather conditions, a trip planner, mapping capabilities, etc.

Duana Love invited Brian Saville to join the workgroup of the RTA’s multimodal trip planning system that is in development. David Tomzik noted that customization of the website would be helpful to Pace in terms of route planning. Brian Saville stated that there is an Operations Report tool at www.gcmtravelstats.com/opsreport.aspx that provides more data and allows users more flexibility in data analysis.

C. GCM Corridor Performance Measure Efforts

Dan Shamo stated that the GCM performance measurement efforts are currently on hold while the GCM Priority Corridor Partners redirect their efforts to focus on freight traffic. However they had begun work on a performance measurement program that was regional in scope, delivered the measures over the internet in HTML format and that offered some new concepts in measures. These measures can be used to help select and prioritize investments; to justify expenditures; to evaluate new technologies and processes; to demonstrate progress or need to the public; and to trigger changes. The performance measures fall into four categories:

- Mission – how well an agency is meeting its goals
- Infrastructure – measure of how much is deployed
- Demand – how fully loaded the systems are
- Operations – what is going on and device performance

As there are a wide variety of users, decisions will have to be made concerning how to present data and how much data to include. The goal is for individuals to be able to select the performance measure they are interested in and generate a customized report from the website. There will also be standard reports individuals can choose and member agencies will have a password-protected page where they can enter data.

Some unique performance measures are proposed including Real Travel Time Reliability, User Cost Index, Crash Propensity, Air Pollution levels, Fuel Consumption Index and Driver Stress (or Driving Condition) Index. Examples of the kinds of information that could be included are “37 dynamic message signs fully deployed of 100 planned”, or air pollution and fuel consumption levels. Freight haulers may use the information to choose paths that might take more time on average but are more reliable. It is important that the data are presented in a way that provides upper management with a clear understanding of what the analysis is trying to communicate.

Jeff Hochmuth asked if agencies have the operations staff to analyze the performance measures and wondered if agencies were planning on using the information to make adjustments. Duana Love noted that the data collection systems are out there and that agencies are looking at archiving data, but that using the data to make adjustments is still under development. David Tomzik agreed that having the staff to analyze and use the data is still an issue for agencies. David Zattero felt that in a perfect world agencies will move toward that vision. Ken Glassman and Jeff Hochmuth both noted that small changes in performance measures can lead policymakers to over focus on correcting what is wrong.

4. Real-Time System Management Information Program

Dean Mentjes gave an overview of this program, created by Section 1201 of SAFETEA-LU, to establish a real-time system management information program for monitoring traffic and travel conditions. It is intended to be able to share real-time information in order to address congestion and facilitate highway traveler information. It is hoped that data exchange formats will be established within two years to foster the sharing of data between all levels of government.

The intention is to provide travelers with better information for making travel decisions, to improve the information available for real-time system management, to support the USDOT Congestion Relief Initiative and to facilitate private sector involvement. The goals of the proposed program to have in place by September 30, 2009 include providing a basic real-time information system in each state, identifying longer term real-time needs and providing the capability to share data. Outcomes of the program include public access to the information through the internet and 511 traveler information.

The Request for Information and comments on the program were published in the May 4, 2006 Federal Register. There was support for the program and its intentions but state DOTs felt they could not meet all of the goals by the deadline, and there were requests for flexibility in determining which roads are to be covered by the program. Issues in implementing the program that will need to be addressed include involving agencies beyond the state DOTs in the program, involving the public sector and expanding the program.

The next steps include continuing to work with the stakeholders and the Notice of Proposed Rule Making is expected in spring 2007. David Zavattero stated it is important that everyone is aware that this program is out there. Duana Love asked if the FTA is included in the discussions and Dean Mentjes stated that the agency is represented.

5. Traffic Signal Inventories

A. *City of Chicago Traffic Signal Inventory*

Abraham Emmanuel provided an overview of the City of Chicago traffic signal database. It includes approximately 26,000 intersections with over 2,800 signals. There are three separate City agencies involved with the traffic signals (Transportation, Bureau of Electricity and OEMC's Traffic Management Authority) as well as IDOT. The City has had some form of electronic repository of this information since 1996 but it was last updated in 2003.

An application was developed that uses a Microsoft Access front-end interface, Oracle Express for the back end and uses ArcGIS for mapping. The application separates signals from the intersection geography to account for a signal covering multiple intersections. In addition to data about the signal itself, the user can link to signal timing plans, video or still images of the intersections, and cable and foundation plans. The inventory can also be used to track work orders. Future plans call for migrating the inventory to an Oracle 10g database and developing an HTML/Java front-end interface for sharing data across departments. Other future plans are to link the signal inventory with traffic crash data, counts and surveillance cameras, and to make the information available over the internet.

Patti Killinger asked if the signal database was custom-made. Abraham Emmanuel replied that it was. Ellen Partridge wondered if transit vehicle signal priority

information would be added to the database. Abraham Emmanuel responded that it would be added. John Dillenburg asked if the database will be available for researchers to use and David Zavattero replied that it will be.

B. Overview of Regional Traffic Signal Inventory

Dan Rice provided an overview of the regional traffic signal inventory being conducted by CMAP. In 2005 CATS staff conducted a comprehensive update of the signal interconnect systems in the region and found that IDOT was involved with 70% of the systems. This project is looking for regional planning level information on the signals in the region.

Specifically, the information to be collected includes the signal locations and controller type, the location and type of emergency vehicle preemption equipment, the owners and operators of the signals, and updated signal interconnect information. Next steps include developing the GIS and database components.

Matt Letourneau asked if there will be an on-line GIS interface where signal owners/operators can enter data. Dan Rice stated that is the goal but there is no progress on that currently. Duana Love gave a brief demonstration of the RTAMS system and the on-line tools it has that allow stakeholders to enter data. The RTA is working with CMAP on this regional inventory. A signup sheet was passed around for those interested in participating in a signal inventory working group that will be meeting in the near term.

7. Regional Data Archiving Initiative

Ken Glassman stated that John Benda has initiated a regional data archiving project through the Technical Advisory Group. The University of Illinois has received a grant to conduct a study over the next year. They will define the systems in existence, examine data sharing and look at where a regional archive should be housed. Data could be collected from sensors on the expressways, tollways and some arterials. The issue of what will be done with the data still needs to be addressed. Ken Glassman noted that predictive travel times are important to ISTHA and stated that PeMS may serve as a model for the regional archive. The ATTF will continue to be updated on this project as it moves forward.

8. Upcoming Meetings and Conferences

<u>Meeting Title</u>	<u>Location</u>	<u>Dates</u>
TRB 86 th Annual Meeting	Washington, D.C.	Jan. 21-25, 2007
GCM Meetings	Consult calendar at www.gcmcommunicator.com	
ITS Midwest meetings	Consult calendar at www.itsmidwest.org	

9. Next meeting

The next ATTF meeting is scheduled for Thursday, February 15, 2007 at 10:00AM.