Chicago Metropolitan Agency for Planning

# Advanced Technology Task Force

## Meeting Notes – September 18, 2008

The meeting was called to order at 9:30 AM at the CMAP Offices, 233 South Wacker Drive, Suite 800, Chicago, Illinois. Those present at the meeting were:

**Attendees** **Co-Chairs David Zavattero (Chicago OEMC) & Gerry Tumbali (RTA)**

Members:

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| | Chuck Sikaras | *IDOT, ITS* | Steve Peters | *IDOT* |
| | John Dillenburg | *UIC* | Andy Hynes | *City of Naperville* |
| | Chris DiPalma | *FHWA* | | |
| | Tom Szabo | *Kane County DOT* | Taqhi Mohammed | *Pace* |
| | Martin Anderson | *IDOT* | | |

Interested Parties:

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| Steve Kimble | *Telvent* | Syd Bowcott | *URS* |
| Steve Travia | *IDOT* | Jeff Hochmuth | *Wilbur Smith* |
| Matt Letourneau | *Jacobs Engr.* | Mitch Bright | *Traffic Control Corp.* |
| Jerry Hron | *IDOT* | Andre Santos | *Traffic Control Corp.* |
| Ken Glassman | *Jacobs Engr.* | Brian Plum | *Traffic Control Corp.* |
| Naveen Lamda | *IBM* | | |

CMAP Staff:

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| Claire Bozic | Dan Rice | Tom Murtha | Drew Williams Clark |
| Bob Dean | Todd Schmidt | Patricia Berry | |

SUMMARY OF COMMENTS:

1. **Introductions**
2. **Approval of meeting notes from June 26th, 2008 Task Force meeting.** The notes were approved.
3. **GO TO 2040** *(Bob Dean,CMAP Staff)*

   Mr. Dean gave a presentation on GO TO 2040, the development of the region's long range comprehensive plan. CMAP was created from NIPC and CATS in 2005 to coordinate planning for land use and transportation. As the process moved along, it became apparent that additional areas of inquiry should be added to the comprehensive plan. The development of the comprehensive plan is mandated in the legislation creating CMAP. This process is proceeding in steps. Step one is the development of a "regional vision," a process which took over a year and included input from citizens, elected

officials and various experts. The CMAP Board and the MPO Policy Committee endorsed the vision in June (see http://www.goto2040.org/ideazone/default.aspx?id=9208 ). Several themes arose from this process that seem especially relevant to the Advanced Technology Task Force, including transportation, environment, and energy use. Innovation was also added to the regional vision as an overarching theme, which seems especially supportive of intelligent transportation systems concepts. The next step will be the indicators project, already underway, which will identify ways to measure progress towards the regional vision, supported by data. CMAP has already begun developing snapshot reports, which are intended to give us an idea of where the region stands in certain areas, such as infill development. Drew Williams Clark will discuss that in more detail under the next agenda item. CMAP has also begun producing strategy papers, which identify various actions that can be taken to make progress towards the regional vision. The strategy papers will present the expected impacts of various strategies along with their costs and benefits but focus less on implementation.

Also currently underway is a scenario development process which should provide more information on the impacts of the strategies. The CMAP working committees are assisting in this process. There will ultimately be four scenarios: 1) trends 2) low capital investment which includes bicycle and pedestrian improvements, for example 3) heavy capital investment which includes major transportation investments and 4) innovation, with congestion pricing, ITS investment, concept sensitive solutions and transit oriented development. The intent is not to choose one scenario as the winner, but to look at the impacts of the things included in each of the scenarios and include them in a final scenario.

The last step before finishing the plan is to select major capital projects. This step is recognizable to most from previous long range transportation plan development cycles. The regional comprehensive plan will take the place of the region's previous transportation plans, and so will meet all the federal requirements in place for the mandated transportation planning process. Capital project selection is last because the philosophy is that we should focus on regional systematic project investment, not just capital projects.

The GO TO 2040 process is on schedule. The plan should be complete by the fall of 2010, but we should have a very good of idea of what it will look like by spring of 2010.

RTA (Mr. Tumbali) inquired about how the major capital project selection was going to occur, because RTA is also currently in the middle of a transportation planning process and will also be identifying projects. Mr. Dean responded that we are coordinating with RTA and the two processes should be consistent.

OEMC (Mr. Zavattero) added that the shift in focus from major capital elements to systematic management and operations projects should be a good sign for technology. He also asked whether the Advanced Technology Task Force would have any input in what kinds of projects are included in the scenarios.

Mr. Murtha (CMAP) responded that as far as ITS as concerned, the scenarios were more based on a level of investment in technology, not on specific projects. Mr. Zavattero cautioned against the notion that ITS projects are low or no-cost solutions. The fact is that most ITS projects require a significant capital investment in signals, sensors,

communications networks, data processing tools and locations, as well as investment in the appropriate level and skills of staff.

*4.* **Regional Indicators Project** (*Drew Williams Clark, CMAP Staff)*

Mr. Williams-Clark gave a presentation describing the background of the indicators movement and CMAP's collaboration with the Chicago Community Trust on the regional indicators project. The project has three main components: developing a centralized data warehouse website, tracking progress toward the achievement of the regional vision and supporting scenario development. The process of selecting indicators began by working with CMAP committees and stakeholders to identify a broad range of datasets for the warehouse, but has recently focused on the selection of tracking indicators. These must have broad stakeholder agreement around a positive trend line moving forward and have available datasets that are reliably updated and can be aggregated to represent the region as a whole. The project deliverables will include web tools for data distribution, visualization and analysis. Mr. Murtha stated that the region was "swimming in data" but needed to find a way to distribute it and make it useful to policy makers. The data warehouse and web tools should help CMAP do this.

**5. Transportation Indicators (Tom Murtha, CMAP Staff)**

Mr. Murtha discussed the proposed transportation related indicators with the committee. This is not the first time the region has used indicators. The Congestion Management Process (CMP) has relied on indicators for some time, and the first step in developing the transportation indicators was to take the measures as a first cut at indicators. These include, for example, travel time index, planning time index and congested hours. Todd Schmidt (CMAP) has been using the Gary-Chicago-Milwaukee (GCM) data to produce some indicator exhibits of congestion. The GCM data results largely from expressway detectors. Consequently, arterials are not represented nor is transit. However, CMAP is working with the transit agencies to identify transit measures. The RTA has also been developing indicators for their own purposes.

To measure the region's progress, we need a broad array of multimodal measures. The philosophy underlying indicators was that there should be data available to measure them without undertaking additional data collection efforts. However, the region must find a way to collect data on arterials, which will require implementation of some sort of technology to collect the data.

One might notice that there seems to be an "overbalance" of freight indicators, since freight is so important to our regional and national economy. Some of this information can be used to seek federal funding for freight infrastructure investment. At this time, goals for indicator measures have not been set. They will be measured and reviewed for direction, for example the planning time index should decrease over time if our programs, policies and projects are effective. If the indicator is measured over time, and we see it continuing to move in the wrong direction, the region will have to figure out why and to see if the strategies can be adjusted to make the change we want to see.

CMAP is hoping to have the final list of indicators approved by the Transportation Committee next week. Mr. Murtha encouraged members to please contact him if they believe any important indicators have been left off the list.

Mr. Zavattero asked about historical data in this process. At this time, there exists historical data for some of the indicators. Should this be used to help set targets based on what is actually happening?

Mr. Hochmuth pointed out that care must be taken with the indicators. Some indicators can only move so far because there is a maximum or minimum limit. Mr. Murtha agreed and stated that we're not setting goals, just observing and measuring direction. However, if we're making investments we ought to be able to measure their impacts. In addition, the Congestion Management Process includes a variety of measures that look both at outputs (like the indicators do) and at inputs, which the indicators aren't looking at.

Mr. Hynes asked whether there should be any enforcement-type indicators, for example from red light cameras. Mr. Murtha responded that we were intent on measuring only outcomes, and the outcome of this would be reduced crashes. Mr. Zavattero offered that the intended result of red light cameras was increased compliance with traffic lights and that the number of tickets issued was really an appropriate outcome. Mr. Murtha said that in this case, the input vs. outcome categorization had some overlap.

Mr. DiPalma asked what the one, two, and three categories indicated. Mr. Murtha responded that it indicated a level of granularity, and not any indication of priority. Mr. Williams Clark explained that these categories were initially developed for the other indicators and were mostly geographically based. Three meant that it could be calculated for the region as a whole, two meant you could calculate it for a county, and one meant you could calculate it on a much more disaggregate level, for example by census geography.

Mr. Mohammed saw that on-time performance was listed as a three, regionwide, and offered that on-time performance could be calculated at finer levels of geography if desired. Mr. Murtha responded that the transit service boards were not comfortable with a more disaggregate geography and preferred to have this indicator presented on a systemwide basis.

Mr. Zavattero concluded that the list looks good for a planning dataset and repeated that if anyone wanted to send comments, they should send them to Mr. Murtha soon so they could be considered before the Transportation Committee Meeting.

**6. Managed Lanes Strategy Paper (Tom Murtha, CMAP)**

Mr. Murtha said that one of the ways the Advanced Technology Task Force could participate in the development of the strategy papers was to visit the www.GOTO2040.com website, under the idea zone, and read the interactive strategy papers. There are numerous opportunities for submitting comments and CMAP will be collecting all of these as official public comments.

The managed lanes strategy is to dedicate lanes, either through physical or operational means to manage them to achieve set objectives. Whatever managed lane strategy is applied- be it tolling or other methods- it will be applied to the extent necessary to meet the identified traffic goal. We already have some examples of managed lanes in the

region, such as the express lanes on the Dan Ryan, or the reversible lanes on the Kennedy. These two facilities have minimal access and egress locations. To retrofit facilities with managed lanes, the question of how to implement barriers must be addressed.

Congestion pricing is another management tool allowing us to manage a facility. Rather than the traditional system of estimating how much traffic will use a facility, building it to that capacity and opening it up while hoping that demand does not exceed capacity, we will actually be able to enforce the traffic volume to maintain level of service. With this method, you can set your vehicle and toll policies as you need them. ITS capabilities will be a key component of congestion pricing for lane management.

An audience member pointed out that the Governor's office was opposed to congestion pricing on non-tollway facilities when the region submitted the last Urban Partnership Application to USDOT, and asked whether this strategy paper indicated some change in that attitude. Mr. Murtha said that he was unaware of a change in policy, but that he expected congestion pricing to be floated again in the regional comprehensive plan.

HOT lanes is a mix of concepts, combining HOV and tolling into one facility to reduce recurring and non-recurring congestion. This will also improve throughput and safety.

Mr. Murtha concluded that by dedicating managed lanes and establishing performance measures, we can attain our congestion goal on a regular and consistent basis. An interesting sidebar was that managed lanes are unique in travel demand modeling. In this case, the performance measure is the input and the model is applied to see what we have to do to achieve the desired facility performance. We have to look at our planning processes differently.

Mr. Mohammed asked whether bus shoulder riding was a part of the managed lanes concept. Mr. Murtha responded that they could be, but that there were associated engineering challenges for this. However, studies are underway.

Mr. Zavattero asked about the slide in the presentation that showed a variable speed limit sign and asked if this was being considered. Mr. Murtha said it could be if it were needed. CMAP would recommend using all strategies necessary to meet the performance goal. Mr. Travia informed the group that IDOT District 1 is discussing a local test of variable speed limits with FHWA.

Mr. DiPalma pointed out that managed lanes also improve transit accessibility, and allow for the provision of high quality transit service to areas that don't currently have transit service. Mr. Mohammed wondered about setting objectives. For example, you might have traffic flowing as desired so it would seem the facility didn't need the application of a strategy, but providing conditions more amenable to buses would improve person throughput. Since your measure wasn't person throughput, you might decide not to do anything.

Mr. Tumbali asked whether the strategy papers addressed implementation – especially the need for institutional integration and operational integration among various implementing agencies. Mr. Murtha said it wasn't highlighted and agreed that it was important enough to add some extra information on that point.

Mr. Zavattero asked how the strategies for strategy papers were identified. For example, there was an entire paper devoted to bicycle facilities and another devoted to car-sharing, and not one devoted to ITS management and operations strategies. Mr. Dean responded the strategies that had appeared in the adopted regional land use and transportation plans were listed, and others came from staff. Mr. Zavattero thought that one focusing on the idea of integration of traffic operations centers would be a good topic. This integration is a part of the region's ITS plans and might be very beneficial. Mr. Murtha said that the original idea was to have longer papers with many ideas instead of many papers about single strategies. Mr. Mohammed said that short single-strategy papers give a better opportunity to highlight the strategy. Mr. Dean said that staff wasn't prepared to answer these questions now, but would discuss them internally to come to a conclusion on these ideas.

The discussion turned to the implementation of the regional ITS architecture and how to push for implementation and funding. Mr. Zavattero thought that getting a discussion of this started in the long range transportation plan would be a beneficial first step.

**7. Highway and Arterial Management Strategies (Tom Murtha, CMAP)**

Mr. Murtha had intended to complete a strategy paper on this topic before the task force meeting, but the topic turned out to be very large. He has decided to break the topic up into shorter sections about some of the strategies. These shorter sections will likely not be posted on the GO TO 2040 website immediately, but remain on the Congestion Management Process page for review and comment.

**8. Traffic Information Collection and Prediction (Naveen Lamda, IBM)**

Mr. Lamda made a presentation to the ATTF on behalf of the Washington DC office of IBM responsible for the ITS work. They are focusing on next generation solutions. As everyone is aware, there are shortfalls in funding and shortfalls in roadway capacity. These shortfalls hurt the environment, are bad for air quality, and for service quality. We must find ways to make better use of the facilities we have. Two areas of study have emerged from this need. First there is innovative transportation pricing and the technology needed to implement it. Second, there is transportation information management. This was the focus of the presentation. There is a challenge in using streaming data from sensors and fixed data from other sources. One must pull these together and implement smart analytics to produce something useful from the information. It has become clear to IBM in their research that "real time" information is actually not good enough for many purposes. They have developed a "short range" forecasting process which uses real time streaming information and historical information to forecast traffic 60 minutes out. This provides the opportunity to foresee what is happening with traffic and you can base your management techniques not on what just happened, but on what is just about to happen.

They developed and tested this tool in Singapore. It uses real time sensor data combined with historic data and a number of algorithms which turn out to produce very accurate forecasts within the next 60 minutes, by 15 minute intervals. They observed errors of

+-10%. When an incident happens, the model very quickly picks it up and corrects the projection. The tool can be used anywhere, and only needs real time traffic data and

historical data. Even if there's not much historical data, that information will be built up over time and the model will recalibrate over time automatically.

Another tool they've developed is a sensor "smart expansion" capability. This is a method by which an intelligent interpolation can be made between sensors with the effect of having virtual sensors where there actually aren't any. The tool can also be used to identify the best places to install new sensors for the largest combined physical and virtual sensor coverage.

Some of the potential uses for this short term forecast information are: to provide more accurate travel times on variable message signs, estimate volumes to calculate variable tolling rates before traffic increases, uses in third party routing software to calculate travel times. IBM is currently seeking other applications for this capability. They prefer partnering with a user instead of developing the whole thing in a research lab. In this way, they are assured of developing a product that is useful and will have a market.

**9. ITS Status Reports**

Mr. Zavattero said that the regional operations group has had one discussion but has not met for a long time. They will schedule a meeting again soon. Also, the ITS World Congress is holding a meeting in New York in November and there will be an opportunity for ITS Midwest members to present information on interesting projects in the state pavilion. Mr. Zavattero will email out further information on this opportunity.

Mr. Zavattero announced that the Western Avenue Transit Signal Priority is underway. Also, some new "hockey puck" sensors were installed for the Cicero Avenue Smart Corridor, as well as a Highway Advisory Radio (HAR) system upgrade. OEMC has finished writing the specifications on an advanced traffic controller and hopes to install some sensors soon. This was funded through the region's CMAQ program. OEMC has also begun receiving data from the CTA Automatic Vehicle Location (AVL) system and is attempting to develop a way to use this for arterial performance management.

Mr. Mohammed announced that Pace is heading a study with IDOT and UIC about bus shoulder riding. The intended result is to implement a demonstration project within the region.

Mr. Tumbali announced that USDOT is hosting a webinar on advanced parking management systems. http://www.pcb.its.dot.gov/t3/s081021_parking.asp
RTA will be a presenter on this program and will be discussing the RTA advanced parking management program experience.

**10. Next meeting**

The next meeting will be in December, but a meeting date was not set.