GETTING QUALITY INFORMATION FROM OUR HIGHWAY INFORMATION PROGRAMS

NATMEC (North American Travel Monitoring Exhibition & Conference)
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My staff has been telling me from almost my first day on the job that this is THE CONFERENCE that I must attend as Director of the OHPI if I want to learn what's happening in travel monitoring. This is my first NATMEC Conference, hopefully not my last. From what I've seen so far, the exhibits, the agenda, and Larry English's keynote presentation, this certainly has the makings of an outstanding conference.

Before I go any further, I would like to recognize the hard work that goes into putting on a conference of this magnitude and especially thank Terry Mulcahy and his staff for hosting the conference and all their hard work in putting this together. Also a word of thanks to TRB and the steering committee in putting together a great agenda.

For many years, before moving into my current position, I've been on the fringes of the highway information game, and have occasionally even crossed over the line from metropolitan planning to the data collection world. Back in my early days with FHWA, I worked for Jim McDonnell when his staff was promoting the concept of VMT as a way of measuring activity on the highways within our metropolitan areas, when they were beginning to promote the use of Census data for transportation planning purposes, and when they were trying to establish a database of metropolitan data. I

was also involved when EPA was looking to establish a new program to measure VMT in our nonattainment areas and FHWA took the position that we already had a program that with some work could be used for that purpose and that a separate program should not be initiated. I was also involved in the early discussions on performance measurement within FHWA when we were searching for data to support performance measurement. While I have been involved in these activities, it's always been as a data user, never as a data gatherer and provider; this past year and a half has taught me that there is a lot that I need to learn with regard to providing the information that so many data users take for granted, that they expect to be there at their beck and call whenever a data need arises.

This morning, I'd like to do basically two things. The first is to bring you up to date about some of the things that we in the Office of Highway Policy Information are doing to improve the quality of the information in our highway information programs; second, I'd like to invite you to participate in that effort. The time has arrived for us to cooperatively examine the quality of our highway information processes and to work jointly to improve our knowledge of what is happening to and on our nation's highways. You all know that FHWA collects very little data on its own; that we rely heavily on the States to feed our data and information programs. So if we're going to take the big picture look that Larry King told us is necessary to provide quality information, we in FHWA cannot do it in a vacuum. We in FHWA can only incrementally improve the quality of the information since so much of it is provided to us by others; despite this, the Federal databases are looked to and recognized as being the only consistent databases available

on a national basis. This is especially true of the HPMS, which is widely recognized as the national database for information about the extent, condition, performance, use, and operating characteristics of our nation's highways.

Earlier this morning Larry English told us that quality information requires us to have " …quality in all characteristics of (the) information such as completeness, accuracy, timeliness, (and) clarity of presentation…"; that (quality information) must consistently meet knowledge worker and end-customer expectations...
He also said that " The process of information quality improvement is one of continuous improvement of any and all processes to eliminate the causes of defective data. The purpose is to reduce the costs of information scrap and rework and process failure, to increase customer and employee satisfaction, and to increase business opportunity and profits."

I read these same ideas in a column that Larry wrote titled "Plain English on Data Quality: Seven Deadly Misconceptions" several months ago and have had some time to reflect on what this might mean to the data collection activities in my shop. And what this means to me is that if we are going to have quality information, we must make sure that we have quality in each step of the process - from design of the data to be collected, through collection, reporting and processing, through data assessment and analysis, and through presentation and dissemination.

That pretty well defines for me a conceptual plan for dealing with data quality, a plan that we will try to implement in the Office of Highway Policy Information (OHPI). That plan will look at all the steps in the production of information, from the definition of the data requirements, through collection, reporting, processing, assessment and analysis, and dissemination of the that data. We, in OHPI, intend to pursue such a plan both internally and with our partners and customers as we strive to provide information that meets the expectations of our data users.

I need to say that this is not a totally new initiative. A couple of years ago, we undertook a review of our major highway information system to identify which elements of the various components no longer had utility and to determine what actions we should take to advance more efficient data collection practices. At the 1999 TRB Annual Meeting, we rolled out the results of the Highway Performance Monitoring System (HPMS) Reassessment, a reassessment carried out in collaboration with our customers and partners. The results of that review surprised many since the major conclusion was that the HPMS should be retained. The partners who provide the data and the customers that use the information which HPMS generates concluded that while fixes were needed, an enhanced HPMS should be retained, minus the unused or under-used data items Our reassessment identified 3 new objectives that included some new directions and a commitment to improve the quality of the HPMS by making it a more accessible, user-friendly database and analytical process. Accomplishment of these objectives will:

- Make the HPMS database available on our website and ultimately enable our customers to easily retrieve specific information from the database
- Enable State and local officials to perform analyses at the State or local level for their own purposes using the HPMS data for their State or area with FHWA providing technical support if it's needed; and
- will result in a national HPMS database that:
    - Is built from the data systems of local, regional & State governments,
    - Is connected with a common geo-referencing system and,
    - Avoids, whenever possible, collecting data which is not used by the data provider

As a result of the reassessment, we made the following major changes to the HPMS. We

- Eliminated 14 data items and 90 detail lines
- Identified ways to reduce sample size by as much as 35 %
- Identified ways to reduce the number of data records by 2/3
- Eliminated crash data reporting as part of HPMS, and
- Integrated apportionment factors into the HPMS sample framework.
- In addition, we are improving support for the HPMS–based performance measures (IRI, Delay, VMT)

The bottom line on the whole effort is that it has resulted in a better understanding of the HPMS on the part of our data providers, our customers, and our staff and it has improved the quality of whole process.

I hope you don’t mind but I’m going to digress for a moment to tell you about

our next major step with HPMS. In the very near future, we hope to be giving our field offices (and then all our customers) the capability to display HPMS attributes for the NHS at their own workstation. We've done some preliminary work on this and Russ Robertson from my staff is here and can show you some of the pretty crude things we can today. But the real good stuff will be available this fall when Dr. Sen's people plan to have the Intermodal Transportation Database (ITDB) up and running. We're very enthused with what BTS is developing and can't wait to try some of our HPMS applications with this new tool that BTS plans to have available this October.

Now let me get back on track.

We were so pleased with our HPMS reassessment that we have decided to use the same approach to reassess all our data systems and have two major activities currently underway. The first of these is our Motor Fuel Reassessment being carried out in cooperation with State DOTs and State tax administrators. We just published a Federal Register Notice on August 17 which sets forth our proposed changes to the motor fuel attribution process. This is the process that produces the motor fuel apportionment factors that are then used in apportioning Federal-aid funds to the States. These changes will provide better consistency across the States in how we deal with spillage & losses, nonhighway uses of motor fuel, and alternative and special fuels. We've announced an October 5th public meeting at which we will discuss and take comment on these proposed changes as well as other proposed administrative changes to improve the quality of the attribution process. Other changes in the works are: 1) documentation of

the process so that everyone that wants to can understand the process, and 2) improved data processing including electronic submittal of data from the States and improved processing within FHWA to reduce the possibility of data entry error. Our goal in this area, as in the other data series, is to the maximum extent possible use only State provided data and where changes are necessary, just as in HPMS, have the State data providers submit corrected data.

We have also initiated a reassessment of the financial data that we collect. Of all our data systems, this is our most labor intensive, requiring more than 20 months of staff time to process this data when it comes in from the States before we consider it good enough to publish. In Larry English's terminology, there's a lot of "scrap and rework" there that we're going to try to reduce. Specific changes proposed in this area are still to be developed but one of the key things we're doing is documenting the process used to go from State developed data to what we eventually publish. Another item receiving a lot of consideration is the development of "smart" data input forms that will require data only to be entered once, and that are much more user-friendly than the forms we use today. This is still aways off but the process has been initiated. A meeting has been scheduled for November to begin the dialogue between the data providers and users to determine what information should be collected.

There are several other interesting things that we are doing that I'd like to talk to you about but I'm not going to steal any of my staff's thunder since they're making presentations at this conference. Ed Kashuba and Ralph

Gillman will be making presentations related to areas we're working in. Elaine Murakami and Tony Esteve are chairing sessions in areas they're working in. David Jones is here and he'd be glad to visit with you about our WIM activities. Jeff Patten, a recent addition to our staff from NDDOT can tell you about our new VTRIS software.

With that, I'm about ready to close. I hope you've gotten a taste of the things we're doing at our end to try to improve the quality of the information that we provide to our customers. But we cannot do this alone. As I mentioned earlier, we recognize that we are largely the gatherers of the information that you collect. You are the data providers and if we are to make continuous improvement, if we are to eliminate all defects, we must work together.

And speaking of working together, there is one area where we can make very little improvement without your help. How many of you here are familiar with FHWA's monthly Traffic Volume Trends Report or TVT? This is a monthly estimate of travel that we prepare based on hourly traffic count data. By the time all the data is in for a month, we usually have 4000 ATRs and over 30 States participating. We use this information to make monthly travel estimates from one year to the next as well as year to date travel estimates. Up to a year ago, this was a handy tool for keeping up with travel in the country and in multi-state regions. Then last year, things changed. As I hope you all know, HPMS provides our official nationwide VMT estimate. Last fall, we were faced with the alternative of asking all of you to turn in your HPMS data six months earlier (obviously impractical if we want end of

the year data) so that preliminary performance measures could be reported to OMB. So we offered up another solution – TVT. We ask participating states to submit their data within roughly 7 weeks after the month closes. Over the last few months, we've seen the number of States reporting within this timeframe slipping. We really need to get more timely submittals if we're going to provide a good estimate for the Secretary at the end of the year. If you need more information about this program, please talk to one of our OHPI staff or me about this during the conference.

In closing, I welcome all of you to join us in our efforts to improve the quality of the information we provide about our nation's highways. In all our activities, we will be seeking your input on how we can improve our information products. Please take that opportunity to tell us what you think. We want your input so that we can be your first choice for information about our nations highways. Thank you.