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PRESIDENT'S COLUMN

FROM THE DESK OF

Michael Labadie



ENSURING THE CHARACTER OF OUR PROFESSION

In my last column I discussed/presented some negative issues involving the credibility of our profession. Additionally, some areas were identified that would suggest an improvement in this area; these included:

- Licensing
- Certification
- Experience
- Membership Requirements

Obviously there are more facets to this issue; however, these items appear to me to have the greatest opportunity to achieve the "biggest bang for the buck," in an initial effort toward resolving this problem.

In this issue and future issues, I would like to discuss these items in some detail with the hope that interest (pro and con) would be generated and actions in this regard by the Section would begin.

Licensing

As many of you know there are many activities in the engineering profession that require a licensed engineer to review and approve. At this time in Michigan and most other states there are many (if not most) transportation engineering activities that do not require review/approval of a licensed engineer. (Please note that a few states do have a traffic engineering license).

This situation could be fairly easily remedied by making sure certain activities are reviewed/approved by a licensed engineer. These could include as a start:

- Traffic impact studies
- Parking studies
- Traffic/pedestrian safety studies
- Accident studies

Since these activities are submissions to public agencies or are developed by public agencies for appropriation of public monies, it would seem that this should be a requirement. If the proper form of accountability exists as in most design situations, it is likely that a licensed engineer without the appropriate experience would not seal studies, etc.

There are other questions that should be sorted out by the Institute of Transportation Engineers, that might include:

- Why should only engineers perform these activities?
- What if a person/firm has a great amount of experience but no licensed engineer?
- What is and is not a transportation engineering function?

Feedback on these issues is very much welcome and will likely make the next column more entertaining if not enlightening.



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MICHIGANITE
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TREASURER'S REPORT

1. INCOME *(since March 13, 1992 Report)*

Dues	\$ 325.00
Interest	104.75
March Meeting	640.00
Benefit Golf Outing	9,319.00
Misc.	20.00
Total Income	\$10,408.75

2. EXPENSES *(since March 13, 1992 Report)*

Postage	262.54
Michiganite	700.00
March Meeting	646.10
Golf Outing	8,247.42
Total Expenses	\$ 9,856.06

Balance as of March 13, 1992	\$ 4,597.22
Net income for period	552.69
Less golf fund surplus (to be transferred to education fund)	- 1,071.58
Balance of July 9, 1992	\$ 4,194.07

EDUCATION FUND

Balance as of March 13, 1992	\$ 3,817.00
Contributions	26.00
Balance of July 9, 1992	\$ 3,843.00
Incident Management Fund Balance (from Nov. Conf)	\$ 2,182.65

Respectfully Submitted,
 Joseph Meszaros, Treasurer, Michigan Section ITE

MICHIGANITE is published quarterly by the Michigan Section of the Institute of Transportation Engineers. It is distributed to more than 300 ITE members and over 100 cities and counties in Michigan. Address communications regarding the Michiganite to the Editor, Michael F. Kobran, 1312 Kings Coach Circle, Grand Blanc, Michigan 48439; 313/695-8942. Send change of address to: Barton-Aschman Associates, 26261 Evergreen, Suite 480, Southfield, Michigan 48076-4480, Attn: Joe Marson.

Michigan Section - Institute of Transportation Engineers 1992 Meeting Schedule

DATE	LOCATION	HOST	COMMENTS
Sept. 10	Saskatoon, Alto	Gere Meredith	Golf/Dinner
Oct. 22-23	Indianapolis, IN	Indiana Section	District III Annual Meeting
Nov. 5	Battle Creek	Max Phares/John Start	Lunch/Technical Session
Dec. 10	Metro Detroit	Open	Lunch/Technical Session and Section Annual Meeting

Michigan Section - International Municipal Signal Association

DATE	LOCATION	HOST	COMMENTS
Oct. 6-9	Cadillac	Fall Conference	Vendor Demonstration and Signal Certification
Dec. 3	Ann Arbor	Art Cuendet Gary Fitzgerald Herb Henry	Annual Meeting

BENEFIT GOLF OUTING A GREAT SUCCESS!

By Michael F. Kobran

Those who attended the First Annual Michigan Section Benefit Golf Outing on May 21, 1992 at Bogie Lake Golf Club (pictured below) were aware that the committee put together a truly quality event. The weather was ideal, the scramble format equalized everyone's chances, the door prizes, golf prizes, and giveaways were well-received, and the food and drinks were plentiful and tasty.

The participation was well beyond expectations; 122 golfers paid and there were 22 sponsors as well. The event raised in excess of \$1,000 for our educational fund and the section owes a great deal of thanks to Roger Walther, Dan Carrier, Herb Henry, Lyle Nustad, Rick Hodges, Vicki Holland, Jerry Carrier, Joe Marson, Tim DeWitt, Bill Savage, Don Wiertella, and any others whose name I didn't mention.



↑
JOE

ANN ARBOR TECHNICAL SESSION FEBRUARY, 1992

The February, 1992 technical session of the Michigan Section of ITE was held at the Holiday Inn in Ann Arbor, where, true to form, arriving participants were greeted with swirling snow flurries. The meeting was hosted by Nancy Gibson of the City of Ann Arbor.

ISTEA Update

George Ostensen, Federal Highway Administrator for Michigan, gave a presentation on the recently enacted Intermodal Surface Transportation Efficiency Act of 1991. Since this very complex legislation has been the subject of many recent articles in the professional journals and the media in general, the *Michiganite* will not attempt to explain it briefly, a matter which Mr. Ostensen handled quite capably with the assistance of a very professional slide program. What we will do is reproduce the appropriation Michigan will get in various categories from FY 1992 and the total six years. These are as follows:

Category	FY 92	FY 1992-1997
Interstate construction	\$19,800,000	\$ 74,100,000
Interstate maintenance	75,000,000	562,400,000
Critical bridge	57,200,000	354,800,000
Surface trans. program	82,800,000	676,200,000
National hqway system	78,600,000	594,100,000
Minimum 90%	62,600,000	282,000,000
Federal lands	2,000,000	13,200,000
Donor state bonus	33,400,000	153,800,000
Congestion mitigation/ air quality	24,000,000	156,000,000
Planning funds	4,000,000	25,000,000
Interstate reimbursement*	0	165,600,000
SUBTOTAL	\$439,400,000	\$ 3,057,200,000
Congressional projects	20,000,000	122,200,000
TOTAL	\$459,400,000	\$3,179,400,000

*Reimbursement for interstate segments constructed without federal funds.

The new legislation will bring about major changes in the federal/state/local relationships in federal surface transportation programs. It remains to be seen how these relationships will be rearranged to satisfy the requirements of the new law and still carry out the program objectives in a timely and efficient manner.

UMTRI Activities Update

Dr. Patricia Waller, Director of the University of Michigan Transportation Research Institute, gave a presentation on "What's Going on in Highway Transportation-Some New Ideas." Dr. Waller talked about the changing phases of emphasis in highway transportation where first we had the revolutionary new environment, the Interstate Freeway System, then much later moved to focus on the more efficient use of infrastructure through things like IVHS. Now we are moving to focus on major issues surrounding the human interface of the system, specifically older drivers and the drivers of the heavy trucks that are so common on our highways today.

In Michigan, where there was a total licensed drive increase of 1% between 1982 and 1989, the number of licensed drivers older than 65 increased 32% and those older than 75 years of age increased 75%. In contrast, the number of drivers under the age of 30 years decreased 16%. The question that confronts the profession, given these numbers, is how to enable the safe functioning of older drivers. Such vehicle design features as seating, dash, and occupant restraint systems need to be carefully configured for the older driver. Such highway design features as timing of pedestrian cross-walks (4fps is thought to be too fast for the older pedestrian) and traffic control signs and signals need to be rethought. There has to be sufficient time for the older driver to see the sign or signal and react to it.

Insofar as the drivers of heavy trucks, the average age is 50 years for the largest trucking companies. At age 55 years the risk of collision starts increasing and the applicant pool is shrinking. There is also an obvious change in the composition of the work force where women, Hispanics, Asians, and African-Americans are increasing in percent of the work force. This change has implications for work rules, standards, etc. Consider, for example, what a change in the height of the average truck driver of the future will mean for sight distance calculations.

What is important is to gather information and data on these considerations. This activity is the backbone of any highway safety program. Dr. Waller stressed the importance of questionnaire design as the questions asked in gathering data can influence the outcomes. In particular, she questioned the role of driver error as an explanation of vehicle crashes. This explanation often begs the question.

Also questioned by Dr. Waller is the disciplinary-focused approach to traffic safety problems when the problems obviously transcend more than any one discipline. We also commented on the ISTEA of 1991 especially the IVHS components where she felt too much money was placed in demonstration projects and not enough in the basic research that she felt is needed before we proceed much further.

Dr. Waller feels that, in transportation, the technology is outrunning social science in that we are not considering the long-term people costs; a broader picture needs to be considered than the transportation profession usually focuses on. As an example, the Interstate program brought us a multitude of unforeseen consequences. The question we have to ask is how we can use technology to improve the human condition.

Growth Management Legislation Initiative

Jerry Fisher, an attorney for Kuhl, Secrest Associates of Farmington Hills, described a consortium of five Oakland County communities formed in 1989, expanded in 1990 by the addition of two outstate communities. It is called the Intergovernmental Growth Management Consortium. The consortium was formed in response to court decisions, citizens' movements, and state taxing policy. The difference between the consortium's focus on growth management and traditional tools such as zoning and master planning and growth management is that the former is passive and static while the latter is dynamic and proactive.

In the traditional focus, there is a judgement to make about the right time to make the transition from the zoning requirement (the existing state) to the master plan (the future state). The process of this analysis is growth management and is a systematic attempt to affect the type, rate, location, character and timing of land development to achieve community objectives.

The bills being proposed by the consortium have two elements, zoning and regulatory. The zoning element includes the formation of urban and general services districts, the transfer and purchase of development rights, and the concurrency of facilities and services. The regulatory aspects include development agreements, official maps, special assessment districts, and regional impact boards. The proposal for development agreements does not change existing ordinances applying to development contributions for infrastructure or service inputs. The special assessment district proposal is actually a reform which returns to the status quo prior to the 1986 decision which did not allow such districts without reflecting increase in values.

Michigan-Canada Rail Crossings

James Roach, with MDOT's Planning Section Manager for Freight Transportation, talked about Michigan's being a gateway for US-Canada, Canada-Asia, and US-Europe trade. This trade is focused on the Montreal-Toronto-Detroit-Chicago corridor, which is 800 miles long. The Detroit and Port Huron crossings handle over one-third of the total US-Canada trade each year with a total volume of \$80 billion. These two crossings together rank first among all US-Canada crossings in rail and truck and second in auto movements. The problem is, however, the delays inherent

in these two crossings, which are incurred by two factors, the size of the rail tunnels and the lack of sufficient Customs and Immigration and Naturalization staffing (which causes 80% of the border crossing delay).

The solutions include increased staffing levels, traffic information signing, new technology (automatic vehicle identification), plaza improvements at the crossing portals, and rail tunnel improvements.

The Detroit-Windsor rail tunnel handles 290,000 rail cars a year with another 85,000 cars that are floated across because they are too tall to use the tunnel, which has a 15'-1" vertical clearance while the newer rail cars require up to 21'. The Port Huron-Sarnia rail tunnel has 180,000 rail cars that use the tunnel and another 110,000 that are floated across the border. The Ambassador Bridge handles 1,561,000 trucks per year, the Detroit-Windsor vehicle tunnel 189,000, and the Bluewater Bridge 546,000.

The available options include a new rail bridge or rail/highway bridge, a new rail tunnel, or enlarging the existing rail tunnel. At Port Huron-Sarnia, the Canadian National Railway is planning to build a new, larger, double-stack railroad tunnel at an estimated cost of US \$134 million. This is expected to be bid in December, 1992 and in operation 2 years later. At Detroit plans are being made to get 24' of vertical clearance by scraping away some of the existing structure to get enough clearance for tri-level auto carriers but not enough for double stacks. Also in the planning process at the Ambassador Bridge is a three-lane truck ramp to separate the trucks from the autos into a new truck inspection facility.

Commercial Vehicle Geometric Capability

Paul Fancher has been a research scientist at the University of Michigan Transportation Research Institute (UMTRI) since 1957. He described the work they have done researching various truck combinations, their performance modes, and the identification of highway features which influence the performance of long-carriage vehicles.

The study had four components:

1. Review and assess the literature
2. Analyze selected standards
3. Determine actual vehicle size
4. Determine optimum size for current highway interchanges and identify (highway) changes necessary

Mr. Fancher talked briefly about the various truck configurations including the tractor-semi, the turnpike double, the Rocky Mountain double, the western double and a triple combination. Specific highway locations in Michigan were analyzed with the twin double combination. The study, which will provide computer models for safety studies, is expected to be completed by the end of October, 1992.

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NEW MEMBERS:
Michigan Section I.T.E.

by *Michael F. Kobran*

One new technical affiliate and one new student member were approved at the July board meeting. Some information about the new members is listed below as an introduction to the rest of the membership:

Stephen G. Skinker is a graduate of Augustana College and is doing his Masters thesis in Urban Planning at Ball State University. He is an Associate Transportation Planner for the Tri-County Planning Commission and lives in Lansing.

The new student member is **Christian J. Knutson** from Michigan State University.

Welcome to I.T.E. and may your profession and your careers benefit!

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**MICHIGANITE AND SECTION WIN
ITE AWARDS**

The Michigan Section has been advised by the International ITE that we will be the recipients of two awards to be presented at the Annual Meeting of ITE scheduled for August 9-12, 1992 in Washington, D.C. We were chosen to be the recipient of the 1992 District and Section Newsletter Award for circulation between 250 and 500. Michael Kobran, editor of the Michiganite will accept on behalf of the Michigan Section membership and board at the elected leadership breakfast at 7:00 am. on Tuesday, August 11, 1992.

The Michigan Section was also chosen as the first recipient of the Section Activities Award and Sam Lawson will represent the membership and the Board at the opening session at 9:00 a.m. on Monday, August 10, 1992. The primary reason for our winning this award was the co-sponsorship of the Incident Management Forum held in November, 1991.

YOUR SPEED IS...

by Robert V. DeCorte, P.E.
Traffic Improvement Association of Oakland County

The Farmington Department of Public Safety and the Traffic Improvement Association of Oakland County are testing a device to help educate drivers about speed limits and the speed that they are traveling.

The device is a variable message sign, mounted on a police car, and connected to a radar gun. The sign changes as a driver approaches it and displays their speed. Above this speed display is another sign that states "Your Speed is...."

Farmington's Gill Road is the site for this two-month study. People traveling along Gill will see a marked police car with the device on top. Gill Road is a wide, one-mile long, collector/residential street with an ADT of about 1100 vehicles. Speed studies show average speeds are 27 mph and 85th% at 33 mph. Frank Lauhoff, Director of Public Safety, said "It is an area where people should be especially aware of their speed, because children can run out into the street suddenly."

Hopfully, if the test results are positive, this will be another tool to educate drivers and reduce speeds.



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LANSING TECHNICAL SESSION

The Lansing Technical Session of the Michigan Section of ITE was held March 13, 1992 in the Midway Motor Lodge. Ken Johnson of MDOT's Local Services Division was the host.

Federal Aid for Local Jurisdictions

Dale Vandenberg, Engineer of Local Services for the Michigan Department of Transportation, gave a presentation on the Federal-aid available for local agencies under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. He first reviewed the traditional federal aid programs and then discussed the major impacts of ISTEA.

The first major change is the creation of a National Highway System (NHS) which is to include, in Michigan, about 4,200 miles of trunkline and interstate plus about 400 miles of roads under local jurisdiction. There are about 850 local miles on the current interim system. The NHS is to consist of principal arterials with congressional approval of the designated system by 9/30/95.

The second major category is the Surface Transportation Program (STP) under which funds may be used on any public road except local or minor rural collector. The hallmark of this program is its flexibility. Ten percent of the apportionment is for highway safety construction, 10% for transportation enhancement, 50% for urbanized areas over 200,000 in population and to other urban areas based on their share of the States FY 1991 secondary apportionment.

More dollars will come to Michigan through the 90% minimum allocation and the donor State bonus program. Fifty percent of these increased funds must be distributed as indicated for the STP above. The bridge rehabilitation and replacement program is essentially the same except there is twice as much money available.

Mr. Vandenberg pointed out that there will be large increases to urbanized areas, especially those over 200,000. There will also be an increase in Michigan's Economic Development Highway Program in categories C and D. There will also be increased responsibilities for the metropolitan planning organizations in each of the urbanized areas.

Local Requirements for the 1990 Clear Air Act

Marsha Small, Supervisor in the Transportation Planning Unit of MDOT, talked about the requirements for local agencies brought about by the provisions of the 1990 Air Act. The major concern is that all transportation projects will have to conform with the act's requirements. The three moderate non-attainment areas in Michigan for ozone will have to reduce ozone emissions by 15% of net growth by 1996. This means, first, neutralize the emissions that are going to occur between 1990 and 1996, then, second, reduce that number by 15% below 1990 levels.

The mechanism for this reduction is the State Implementation Plan which is presently being developed to come up with the most cost-effective measures that would receive the most air pollution benefit from a combination of stationary and mobile sources. Programs to decrease mobile source emissions will involve (1) cleaner cars, (2) cleaner fuels, (3) inspection/maintenance, and (4) VMT reductions. The first is the manufacturers' responsibility. The others affect the State's transportation program.

Michigan is not required to institute a clean fuel program but the state is considering it because it may solve the entire non-attainment problem by requiring reformulated gasoline to be sold in the three areas. Reformulated gasoline, which is expected to cost 7 to 15 cents more per gallon, is a different mix of standard motor fuel gasoline that reduces tailpipe emissions. Refineries must make expensive capital investments to produce this type of fuel. A concern is with EPA mandating exemption of this type of fuel from the federal gasoline tax.

An inspection/maintenance (I/M) program requires that all cars in a non-attainment areas have their emission system tested annually or biennially to ensure that the vehicle is not emitting more pollutants than permitted. Michigan currently has an I/M program in Wayne, Oakland, and Macomb counties, which, unfortunately, has been cited by the EPA as the worst in the nation, mostly because of budget cuts which lead to reduced quality control and enforcement. The new law requires that this program be fixed, extended to Livingston, Monroe, St. Clair, and Washtenaw counties, and the counties in the other two non-attainment areas (Kent, Ottawa, and Muskegon).

EPA believes that Michigan will not reach attainment until it reduces vehicle miles of travel (VMT). Currently, VMT is projected to grow at such a rate that any reduction in emissions will be more than exceeded by the growth in vehicle usage. MDOT believes the answer lies in growth management procedures, incident management strategies, and IVHS technology. The most promising transportation control measure appears to be congestion or road pricing. This is the direct pricing of vehicles for road use which is accomplished by pricing a network of congested highways and arterials or area wide pricing of a designated congested area.

Successful implementation requires either purchase of a special windshield sticker or license or electronic or optical licenses for periodic billing of use of the congested system or area. This type of measure would be politically difficult to implement.

EPA has exempted certain type of projects that have no effect on emissions. These include safety projects, mass transit projects, and landscaping, etc. Other types have to go through a four-step process: (1) define the Transportation Improvement Program (TIP) including all federal projects and non-federal projects required to be included, (2) define a no-build alternative, (3) run an emissions impact analysis on both of the above to get a representation of the hydrocarbon emissions resulting, and (4) compare the two numbers. If the results show the no-build has the same or higher emissions that the TOP, the TIP is in conformity.

EPA can place sanctions against Michigan's transportation dollars if we fail to follow the requirements of the Act, primarily for failure to develop and implement an acceptable State Implementation Plan. The sanctions can be applied statewide.

Lake Michigan Shoreline Air Quality Study

Sandra M. Cornell-Howe is a Transportation Planner for MDOT in the Bureau of Transportation Planning. She reported to the audience on the comprehensive investigation of the formation and transport of smog in the Lake Michigan airshed. This study is a joint effort involving the

states of Illinois, Indiana, Michigan, and Wisconsin along with the U.S. Environmental Protection Agency. The purpose of the study is to develop improved ozone control strategies for each of the four participating states. The cost of the modeling and the collection, compilation and testing of the input data for the model is estimated at \$12 million with the funding coming from the five participating agencies.

The persistent, regional nature of the ozone nonattainment problem in the lower Lake Michigan area prompted the study. The states involved began a scoping study in 1988 to improve understanding of the existing ozone problem, to identify an effective photochemical modeling tool, and to data collection efforts needed to support the application of a photochemical model. In June, 1991, an intensive field effort began involving personnel from the air quality offices of each of the states as well as fifteen independent contractors. The field study had four major components: surface monitoring, aircraft measurements, upper air measurements, and special studies.

The surface network monitoring consisted of the monitoring networks regularly maintained by the four states as well as twenty new sites in areas of low coverage. Three fully equipped research vessels were positioned on Lake Michigan as well. The information collected included meteorological data and air quality readings for ozone, oxides of nitrogen, carbon monoxide, volatile organic compound (VOCs) and peroxyacetyl nitrate, depending on the location.

Five aircraft flew coordinated patterns at altitudes ranging from 500 to 6,000 feet throughout the study area. Each plane was equipped to measure meteorological data and ozone; nitrogen oxide, VOCs and carbonyls.

Upper air measurements were obtained through radiosondes, special instruments carried aloft by balloons. The radiosondes were launched periodically and transmitted readings back to collection sites. Radar profilers also provided wind measurements on a continuing basis and special upper-air soundings were taken by the National Weather Service.

Several special studies were also undertaken. The AIRTRAK system measured the levels of several compounds as well as sunlight intensity. Based upon these readings, AIRTRAK estimates the chemical history of the air parcel and predicts downwind smog production. A sixth aircraft was equipped with an ultraviolet differential absorption lidar system to use lasers to measure the distribution of ozone in the atmosphere. Flying at 6-8,000 feet, the equipment provided continuous estimates of the ozone concentrations of the column of air under the plane. A tracer study was also conducted to monitor detailed movements of the lake breeze by releasing sulfur hexafluoride gas into the atmosphere, then tracked by ground and air units.

During the summer of 1991, ozone exceedances occurred throughout the four-state area. Although some areas experienced more frequent occurrences than other, the results clearly indicated a regional problem. In Michigan this was particularly true since exceedances were observed from Benton Harbor to Frankfort. Evidence was also found for the "lake breeze" effect, caused by temperature differences over Lake Michigan and the adjoining western shore. This produces a helical flow along the western shore, from south to north, carrying ozone and precursors. Over the fall and winter of 1991-1992, the data from the field study will be

validated and analyzed while the modeling team completes work on the photochemical model. The data gathered will be used to validate the model which will be delivered to the states by March, 1993. An ozone control strategy must be approved by the US EPA and in place by November of 1994.

Model Hazardous Materials Routing Analysis

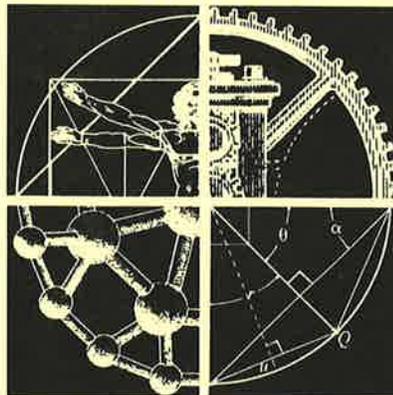
Paul Hamilton, Chief Planner for the Tri-County Regional Planning Commission in Lansing, presented his paper on the case study for a Michigan township on a model hazardous material routing analysis. The background of the study was that, nationally, over four billion tons of hazardous materials are transported annually, involving from 5 to 15 percent of all trucks. The number of trucks carrying hazardous materials is estimated to grow from 126.5 million miles in 1985 to 371.2 million miles in 2020. Of the over 6200 average annual releases of hazardous materials, over 80 percent are highway related.

While industry and government safety records concerning hazardous materials and transportation are exceptional, those involved in the actual transportation and its regulation agree that safety measures are warranted to protect the public health and safety and to reduce risk associated with accidental release of these materials in transit. A recent survey of state transportation policy makers ranks this issue fourth nationally and second in the Midwest among high priority transportation issues.

Federal legislation also mandates the development of state and local governments' emergency response and preparedness capabilities for hazardous materials releases and the development of a plan and evaluation of resources for responding to a potential chemical accident. Local Emergency Planning Committees (LEPCs) were required to be designated to fulfill the mandates. No funds were appropriated, however, to accomplish the mandates. As a result, very few LEPCs have addressed the mandates because of a lack of transportation planning expertise required to conduct a thorough risk analysis.

Continued on P.10

ENGINEERS



TURNING IDEAS INTO REALITY

Lansing..... Cont. from P. 9

The case study described grew out of the need to provide models, training materials, and simplified procedures to provide guidance on planning and preparing for transportation related releases and routing analysis. Local efforts were initiated in 1989 by the Ingham County Health Department, five LEPCs in the region, and the Tri-County Regional Planning Commission (TCRPC). They formed a Regional Hazardous Materials Transportation Study Committee which was subsequently designated the American Chemical Manufacturers Association as one of three national pilot communities to demonstrate how cooperative public/private hazardous materials transportation planning can protect the public health and provide a national model. A detailed scope of work for a multi-year national demonstration project was developed with an estimated cost of \$150-200,000 but funding was not found for this level of effort.

Accordingly, the TCRPC, using limited funds available under the Federal Aid Highway Act, initiated a small area case study for one township in the region to demonstrate the approach outlined in the larger proposal. The total cost of the effort was reduced to about \$20,000 and including the preparation and offering of a one day short course on transportation planning procedures for conducting a hazardous materials routing analysis.

The Regional Study Committee chose a study area composed of one township with boundaries extended north and south to include portions of two interstate highways. The study area is described as a rapidly growing suburban fringe area of the Lansing urbanized area and includes a regional shopping mall and associated spin-off of commercial development in its central core comprising of over 3800 employees, a total population in excess of 47,500, total employment in excess of 16,700 and two school districts with over 5,800 students. Data was collected for all highway links within the area and approximately one mile beyond. In addition to the two interstate freeways, a state trunkline serves as the primary east-west arterial traversing the study area and is characterized by strip commercial development. To the west of the study area and slightly south of the east-west trunkline, is a major chemical producer which serves as a shipper and receiver of large quantities of hazardous materials, primarily chlorine. The case study involves the evaluation of alternative truck routes for chlorine shipments traversing through the study area to and from this facility.

The methodology of the study followed an FHWA package of guidelines with the following five steps:

1. Define issues and responsibilities
2. Analyze mandatory factors
3. Determine risk
4. Analyze subjective factors (optional)
5. Compare alternatives
6. Select routes

The case study team decided to use three sets of subjective variables in the analysis. These included emergency response factors for each line, exposure to wetlands, and location of special populations (semi-ambulatory or preschool, as examples). A dispersion model for a chlorine release was used to determine downwind dispersion of slightly under a mile and crosswind dispersion of about one-quarter mile using a given threshold limit on one ppm for continuous release of chlorine from a 2500 square foot puddle, such as might be released from a six-inch hole in the bottom of a rail car or puncture in the bottom of a one ton cylinder carried by a truck in highway transport. This resulted in an elliptically shaped dispersion area with a one-mile radii.

The procedure also involved obtaining a three year truck accident data history and computation of an expected truck accident rate for a three year period to compare to national default truck accident rates. It was decided that local data was not statistically reliable and default values were used. Route evaluation involved expert panels used to identify the appropriate weights to be used in the consequences analysis. Routes were then compared on the basis of relative risks, travel times, and distances. It was also noted by Mr. Hamilton that route selection should never be completed solely on the basis of risk analysis and that professional transportation planners and traffic engineers should be consulted and extensively involved in this decision. This ensures that traffic engineering and operating issues not addressed directly in the risk analysis are included in the recommendations.

Risk analysis information may also be useful to assist local communities in targeting or setting priorities to mitigate risk in their areas using traditional traffic operational and safety treatments. Some of these traditional treatments, where warranted for all vehicles, may serve to channel hazardous materials vehicles to safer routes without actually designating a hazardous materials route. By way of example in the case study, a subsequent prohibition of left turns at a key intersection to improve capacity and safety created a de facto hazardous materials route by removing this alternative.

Twelve separate conclusions were made as a result of this case study. Some of the more interesting ones are the need for research to refine default truck accident rates and probability of release given an accident involving hazardous materials; the need for guidelines on methods for automating the risk analysis process using standardized travel demand modeling procedures and/or geographic information systems; and the need for funding for implementation and additional research and training in appropriate methodology.



KAREN TARRANT SHIFTS TO NEW ROLE

The Office of Highway Safety Planning (OHSP) announces that Karen Tarrant has left OHSP to take another position within the Department of State Police (MSP). Karen is now the Director of MSP's Business Administration.

Some of the accomplishments which OHSP saw under Ms. Tarrant's leadership are:

- * implementation of a revised, self-coding, partially scannable UD-10 traffic crash report form bringing it more in line with current technology (the old form had been in use nearly 20 years without major change)
- * establishment of a Truck Safety Program under the guidance of a Truck Safety Commission
- * the transfer of responsibility for the Secondary Road Patrol Program from the Department of Management and Budget
- * receipt of an Addy award for an alcohol-impaired driving spot (this award is made by the *Advertising Age* group for the best public service announcement in the nation each year)
- * a safety belt/speed enforcement project called US-31 SAVE being recognized as one of eleven noteworthy projects by United States Department of Transportation last year
- * establishment of a Magnificent Mile award for the outstanding OHSP staff member, as selected by their PHSP peers
- * development of a new three-year strategic highway safety plan that is already starting to receive national recognition
- * 70 x 92 award from the National Highway Traffic Safety Administration for high achievement in statewide safety belt usage.

Ms. Tarrant was the executive director of the OHSP for the past eight years. Prior to that she worked at the Fire Marshal Division within the Department of State police. She started her public service career in 1975 as a staff assistant to the Speaker of the House of Representatives.

Tom Krycinski, Chief Deputy Director of OHSP, will serve as acting executive director until a permanent appointment can be made.

OHSP wishes Karen well in her new, prestigious position. OHSP is sure that the progress which we have experienced under her leadership will continue to benefit the department in her new role. Good luck Karen!

BETTER BUY AMERICAN

*excerpted from Michigan Contractor & Builder,
June 13, 1992*

Thanks to the Intermodal Surface Efficiency and Transportation Act of 1991, federal contractors are now explicitly required to buy U.S. made iron products for transportation projects. Included are manhole covers, rings, frames, grates, soil pipe, and pipe fittings. Iron construction castings are now to receive the same consideration that structural steel has enjoyed for the last ten years when it was covered by the "Buy American" provisions of the previous surface transportation act. The Federal Highway Administration's interpretation of the old law lead it to believe only structural steel had been covered by the "Buy America" provision. In addition to clarifying the FHWA's interpretation, the new "Buy America" program under ISTEA also contain language to penalize contractors and subcontractors that intentionally misrepresent the country of origin of the products they are using. If they try to mislabel products covered by the "Buy American" provisions, claiming they were produced in the U.S. when they actually were not, they'll be subjected to federal debarment, suspension, and ineligibility procedures, and may not be allowed to bid on new contracts.

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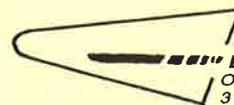
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