



MICHIGANITE



WINTER 1983

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OFFICIAL PUBLICATION OF THE MICHIGAN SECTION OF THE INSTITUTE OF TRANSPORTATION ENGINEERS

PAST PRESIDENTS' AWARD GOES TO SAVAGE



PRESIDENT'S COLUMN

1983

A foundation for future success

by Dick Beaubien

Before we launch into the adventure of the Michigan Section's 1984 ITE season, we should review the highlights of 1983. These highlights included receiving the ITE Section Technical Award at the Annual Meeting in London, England, and hosting the District 3 Annual Meeting in Dearborn. Special thanks for putting together the written description of our award winning technical project go to Bill Lebel. His description of the efforts of twenty to thirty of our Section members on this project convinced the Technical Committee that the Michigan Section deserved the award. Special thanks for a very successful District 3 Meeting in Dearborn go to Joe Marson, Mike Labadie, and Bob DeCorte. Once again, we showed Indiana and Ohio how a really successful District Meeting should be run.

Other highlights of 1983 included an increase of membership from 291 to 301 and a record number of Section meetings. Our 1983 schedule included ten Section meetings, the Annual Meeting in London, England, and the District Meeting in Dearborn. This is the first time our members have had the opportunity to go to a meeting every month. Thanks to Rich Cunard, our By-Laws have been updated for the first time since the early 1970's.

The quality of our Section newsletter, the MICHIGANITE, continues to improve. In 1984 we should again be a prime contender for the Newsletter Award. Strong technical programs were presented in March, October, and December. Continuing education units were offered to our members for their participation in these technical meetings.

Looking to the future, we should continue to stress high quality technical programs. Technical programs are the means by which our Institute improves the quality of our profession. In addition to increasing the number of technical presentations, we should be looking for ways to add training in management and communications to develop our members as complete professionals. We need to develop among our members a recognition that communications and management are essential elements of the job, if the Traffic Engineer is to be truly effective. Finally, we should reach out to involve our student members in our activities. We should plan to have a student paper for the 1984 national competition.

In summary, the Michigan Section has proved to be one of the most active and innovative sections in the country. We anticipate that this tradition will continue under the leadership selected for 1984.

By Richard F. Beaubien, P.E.

New board elected

The Michigan Section Annual Meeting and Technical Session was held this year on December 1 at the Engineering Society of Detroit. Arrangements for the meeting facilities were made by Stan Cool with Technical Chairman Mike Labadie making the arrangements for the program.



The Section Annual Meeting was conducted after lunch by President Dick Beaubien. The secretary and treasurer reports were given along with the election results for next years board. The first Past Presidents Award was presented to Bill Savage for continued dedicated service to the Michigan Section and to transportation engineering. Bill has been a credit to his profession, a valuable member of the Michigan Section and a worthy recipient of this first award. Next years President Tom Krcynski presented Dick Beaubien with a plaque commemorating his years of service to the Board.

Mike Labadie introduced our first speaker, Judy Nyberg, Coordinator for the Occupant Protection Program in the Office of Highway Safety Planning, who reported on the success of Michigan's Child Passenger Safety Law. After only one year there has been a 40 percent reduction in casualties to children under one and 24 percent drop in casualties to children between the ages of one and four.

Judy also discussed an unique project underway in Kalamazoo. "We Love You, Buckle Up", is the theme being used to encourage Kalamazoo county residents to wear safety belts. The Kalamazoo Chapter of the American Red Cross is coordinating a community task force whose goal is to increase the voluntary use of occupant restraints throughout the county.

A major kickoff for the two year long project is being planned for Valentine's Day. That week will be the start of a five week community incentive campaign. In conjunction with several local radio stations, the task force will be giving away gifts, donated by the local businesses, to individuals observed wearing their safety belts.

Cont. on Page 3

STUDIES SHOW WIDESPREAD MISUSE OF CHILD SEATS

Despite the first-year success of Michigan's child restraint law, only about one of every five children is restrained properly, reports the Automobile Club of Michigan.

White State Police statistics show a 27 percent decline in casualties for children under 4 during the law's first year, two independent studies show only about 20 percent of the devices are being used correctly.

"The compliance rate increased from 16 to 42 percent during the first year of the Michigan law," said Robert Cullen, Auto Club's Safety and Traffic Engineering manager. "however, there is evidence that many parents are not following the manufacturer's recommendations on proper use of the restraints."

Misuse involves failure to secure the child properly within the restraint or failure to anchor the child restraint correctly to the seat. In addition, infant restraints (for children under 20 pounds) may be facing forward instead of rearward.

Michigan's child restraint law, which went into effect April 1, 1982, requires infants under 1 year to be in an approved child restraint regardless of seating position. Children ages 1 through 3 must ride in an approved restraint while in the front seat and either a safety seat or a seat belt in the back seat.

A study conducted by Physicians for Automotive Safety, which was based on more than 2,300 observations at 23 sites, including Ann Arbor, showed a misuse rate of 75 percent in the way devices were anchored to the vehicle with a lap belt or where a top tether was required.

"A seat with a top tether strap affords extra protection against head injury only if it's installed properly," said Cullen. "Otherwise the restraint is more likely to pitch forward during a sudden stop or collision, and tests have shown that it leads to more serious head injuries than if the child had been restrained with a lap belt."

An observational study conducted by Borgess Hospital in Kalamazoo showed a compliance rate of nearly 46 percent following the new law, but only 20 percent of the children were restrained properly.

"Tests have shown that child restraints will not perform satisfactorily and can even fail entirely if they aren't used according to the manufacturer's instructions," said Cullen. "Parents must be reminded that these seats were not designed to provide confinement, elevation and prevent interference with the driver, but to give optimal crash protection."

The four steps to ensure safety for children riding in cars are: 1) Only use restraints that meet strict federal safety standards. 2) Fasten the harness and make sure all straps fit snugly. 3) Fasten the vehicle's seat belt around the restraint in the position recommended by the manufacturer (a locking clip is required when the seat is secured by a combined lap and shoulder belt). 4) Place the device in the back seat for the best protection, ideally in the middle.

In addition, a restraint with a top tether strap must be anchored properly and adjusted frequently.
by: G. Cheske & J. Karshner, AAA



It clicks: McDonald's Corp. was given the National Safety Council's Honorary Distinguished Benefactor Award for its "Make it click" auto safety program. A network tv spot and in-store materials used before the Memorial Day and Independence Day holidays encouraged children to use auto safety belts and seats. Children who returned a signed promise card to use the devices were given a free order of french fries. The fast-food chain, based in Oak Brook, Ill., distributed 10 million of the cards. Leo Burnett USA, Chicago, created the advertising support for the campaign.
Advertising Age, November 28, 1983

MICHIGANITE

Official Publication of the
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MICHIGAN SECTION ITE, TREASURER'S REPORT

Balance: September 1, 1983	\$4,107.14
Receipts:	
Dues, Bank Interest, and Postal Refund	233.99
Michiganite Ads	860.00
September and November Meetings	25.80
District III Annual Meeting	266.20
	\$1,385.99
Expenditures:	
Postage, Printing and Supplies	\$ 630.61
Michiganite Printing	529.20
Ladies Night and Vendors Day	1,203.12
Golf Outing and District III Meeting	606.39
Michigan Section Annual Meeting	45.30
	\$3,014.62
Balance: November 30, 1983	\$2,478.51
Treasurer, Bob Lariviere, P.E.	

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, Robert V. DeCorte, 7441 Emerson Drive, Canton, MI 48187

PAST PRESIDENTS' AWARD *Cont. from Page 1*

The next speaker Dave Perkins of Goodell Grivas discussed an FHWA study on countermeasures for traffic sign vandalism. The study involved the identification of current legal and physical countermeasures that are used to prevent and/or reduce sign vandalism. Information for the one year study, which was completed in July, was gathered from Michigan, Virginia, Wisconsin, Iowa, and Maryland. Some of the most common types of vandalism identified in the study involved bullet holes, theft, defacing, bending, and changing the signs orientation. It is estimated that to replace the signs damaged from these types of vandalism costs the states, counties, and cities in our country 50 million dollars annually. An additional 50 million dollars is also spent in this country for the cost of injuries and tort litigation claims resulting from sign vandalism. Some of the countermeasures identified by the study to prevent or reduce sign vandalism include vandal proof bolts, special sign coatings, flexible sign mounts, enforcement, and posted notices. A brochure was prepared as part of the study summarizing the results for distribution to the various states, counties, and cities by the FHWA.



Judy Nyberg, OHSP



Dave Perkins, G & G

The new truck size and weight limit law was discussed by Gerald Holmberg, Director of the Traffic Safety Department of Oakland County. Assisting in the discussion were Richard Cranmer, Weighmaster for the DCRC, Lt. James Johnson and Inspector Ronald Gowin of the Michigan State Police, and Milton R. McQuady of the Trucking Association. Dick Cranmer reviewed the various types of trucks with emphasis on the number of axles and the weight allowed per axle. Lt. Johnson reviewed the requirements of the Surface Transportation Act related to truck weight and length. Truck accidents in 1982 involving tractor and trailer combinations were reviewed by Inspector Gowin. It was interesting to note that speed was a factor in a majority of the 4,913 accidents involving tractor-trailer combinations in 1982. Seventy-five people were killed in these accidents and 1,877 injured. It was pointed out that pickups and tractor-trailer combinations are involved in a majority of the fatalities that occur in truck related accidents. Milton McQuadie of the Trucking Association discussed their efforts to comply with the laws regulating trucking operations in the state. He stressed the fact that most truckers are excellent drivers and are very safety conscious.



(Left to right) Dick Cranmer, Weighmaster; Lt. Johnson, MSP; Milton McQuady, Michigan Trucking Assoc.; Ron Gowin, MSP; Gerry Holmberg, OCRC.

Our next speaker was Robert Briere, Assistant District Traffic Engineer for the MDOT's Kalamazoo district. Bob discussed the traffic control and construction methods for the concrete recycling project completed this past summer on I-94 between Battle Creek and Kalamazoo. This project, which was the first of its kind in Michigan, involved picking up the existing pavement, crushing the pavement into appropriate sized aggregate, and then using this aggregate to produce new concrete. The construction methods employed required complete closure of one-half of the freeway at a time. Median crossovers were used to operate two-way two-lane traffic. Traffic was separated using a combination of flexible posts, raised markers, and pavement markings. The crossovers had overhead lighting and were outlined with lighted barrels and temporary concrete barrier. The traffic controls provided a safe operation during construction as there were only a couple of minor traffic accidents during the four month project. In addition to discussing the traffic control, Bob used slides to show the construction operation which was very informative since concrete recycling is a new process in Michigan.

Our last speaker was John Woodford, Assistant Chief Deputy Director of MDOT, who spoke on future funding measures or as he says "The Bottom Line". He discussed the changes in transportation equipment and needs over the years as well as the concept of "user" supports. Changes



Bob Briere



John Woodford

in transportation needs requires large expenditures by the transportation agencies who make changes in the system to meet the new demands. He discussed some of the changes which effect transportation such as the movement of people from the farms and cities to the suburbs and the movement of industry to areas where the transportation system must be improved in order for the industry to survive. Urban travel has increased and rural travel has decreased since the oil embargo. In the past decade the personal auto fleet in the United States has grown from 89 million to 120 million vehicles.

Transportation will continue to be funded through user taxes and fare box revenues. The present method of providing transportation funds through the gas and weight tax will continue to be used since a review of other methods to provide these tax dollars has not resulted in a better alternative.

Funding shortages will occur again by 1986. Additional dollars will be necessary to provide for improvements to our transportation system. Meanwhile belt tightening will continue with reductions in transportation staffing and new construction activities. Our first priority will be to operate and maintain our system.

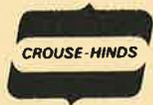
Special thanks should be given to Stan Cool for the excellent meeting facilities, Mike Labadie for putting together an interesting technical session and to all the speakers who contributed their time and expertise. Without these individuals the Annual Meeting could not have been the success that it was. Article prepared through the combined efforts of Bob Lariviere, Judy Nyberg, Bob Briere, Gary Holben. Photos by Don Wiertella

STRAIGHT TALK

There has been some concern expressed by legislators that HB4203 would increase "abrasive" contacts between police and motorists. These figures show the Ontario (Canada) Provincial Police experience:

	1982 (Jan-Dec)	1983 (Jan-June)
Tickets issued	341,840	191,088
Non-belt use	29,034 (8.5%)	18,231 (9.5%)

In 1982, the Mich State Police issued 310,000 tickets to motorists. By Don Wiertella



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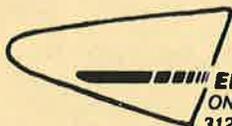
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SUBURBAN POLICE TEAM UP TO COLLAR DRUNK DRIVERS

Teams of suburban police officers and sheriff's deputies are targeting the roads favored by drinking drivers in an effort to boost the arrest rate 25 percent.

"It's the first time I can recall all of the police agencies have gathered in a common cause," said Charles Wilmoth, Garden City police chief and director of the 43-department project.

Two-officer teams in marked cars, armed with PBT portable breathalyzers, last Thursday started patrolling targeted roads under terms of a \$400,000 federal grant.

Altogether, 25 such teams will be on Wayne County roads from 6 p.m. to 3 a.m. Friday and Saturday and the "happy hours" of 3-6 p.m. on weekdays.

Enforcement will be strict, Wilmoth promised, even if bar owners complain, as they did when business fell off along Dixie Highway in a similar Oakland County project.

"I'm not in the bar business. I intend to enforce the law," said Wilmoth.

The project was launched at a news conference last week with representatives of district, circuit and recorders courts present.

"The judges were invited to show their support," explained Michael Manoog, Redford Township police chief and president of the Wayne County police chiefs association. "It's not going to do us a damn bit of good to arrest someone and have a judge give 'em a light fine."

Wayne County Sheriff Robert A. Ficano will distribute the money to four districts. The 18 northwestern communities are in district I, whose project director is Belleville Child William Dockter.

"We'll have a dual role," said the sheriff. "We will participate in the western district. And I will deputize officers in the law enforcement teams so they can cross boundaries to make arrests."

An unusual feature of the program is that officers from different communities will ride in the same car, patrolling streets in one another's towns. For example, Redford Township and Dearborn heights, connected by Telegraph Roads, will provide an officer each in a single law enforcement team car.

The federal grant, made to the chiefs by the Michigan Office of Highway Safety Planning, will provide \$17,544 worth of portable breathalyzers, \$708 worth of magnetic signs for patrol cars and \$381,676 to pay officers.

"None of it will be used for overhead," said Wilmoth. Besides increasing arrests, the program's goals are to:

- * Reduce alcohol related crashes by 25 percent.

- * Increase drunk driving enforcement by 200 hours a month.

- * Establish a public awareness program.

- * Enforce the law not only against the "flagrantly drunk driver" but the "even more dangerous driver with blood alcohol content from 0.10 to 0.15 percent."

THANKS DON!

I would like to thank Don Wiertella for the assistance he has given me this past year on gathering articles for the Michiganite. Several of you know how persistent he can be when he knows you have something important to write about.

I would also like to thank Wayne Wentworth and Martin Parker for their assistance.

Don has been instrumental in getting articles typed and has tracked down several new advertisers. Since the newsletter is the Michigan Section's main line of communication the expenses involved are the Section's highest single budget item. He has worked hard so that the ads now pay for slightly over half the total cost.

Dave Bacon, of Carrier and Gable, is our newly elected Director. His prime responsibility will be to gather articles for the Michiganite. I congratulate Dave and Don on their new Board positions, thank Don for his invaluable assistance during 1983 and ask your support for Dave in 1984. If you have any articles for the newsletter, please forward them to Dave Bacon. Thanks again Don.

by: Bob DeCorte

PASS THE SALT!

Now that winter is approaching, a young engineer's heart turns to salt...roadway de-icing that is. There probably are thousands of alternatives. Anything that dissolves in water is, potentially, a de-icer. The factors determining which is best to use are cost, effectiveness and harmful effects. Hydrochloric acid, for example, would make a terrific de-icer, but it isn't difficult to understand why its use never caught on.

The good news about salt is that it gets high marks in two of those categories. It's effective at melting snow, and, in this region at least, inexpensive (about \$20 a ton delivered). The bad news is that salt is destructive to property and the environment; our heavy dependence on salt to get us through each winter costs us far more than the millions spent annually to obtain, store and spread the stuff. Most of us are aware of salt's power to corrode metal...that's why it's advisable, even during the coldest winter, to wash your car periodically to remove salt deposits. But salt weakens concrete as well, increasing the area's already burgeoning pothole population. Salt does a double number on concrete bridges, damaging both the concrete surface and the steel reinforcing rods inside. Environmental damage is another problem. Salt doesn't stay on the road long; it's scattered to nearby parkways, where it can damage and even destroy grass. Of more concern is that salt also makes its way into our water supply, contaminating wells and increasing sodium levels in Lake Michigan.

Unfortunately, the most common alternatives to salt have their own drawbacks. Cinders are in short supply

and can clog sewer systems. Calcium chloride won't harm concrete, but will corrode metal and is very expensive. There are two relatively new products with some potential. The first, True Grip, is made by Old Dutch Materials in Northbrook. Made of pulverized volcanic rock, True Grip is a traction booster. It's cheaper than salt, doesn't corrode and won't harm the environment. It won't, however, melt snow, except in the sense of its dark color absorbing enough heat to assist melting. The other product may be the best yet, but isn't quite ready. It's calcium and magnesium acetate (CMA), developed by Bjorksten Research Laboratories in Madison, Wisconsin. According to Bjorksten president Stan Dunn, CMA is as effective as salt at melting snow, works at lower temperatures, doesn't corrode metals or concrete (it's actually a corrosion inhibitor), breaks down rapidly in the soil and can be spread by normal salt spreading machinery. Yes, there's a catch, the price right now is around \$300 a ton.

There's strong evidence that the costs of salt extend far beyond its purchase price. A 1976 EPA study estimated the cost of using salt with the subsequent damage to vehicles, roads, bridges and the environment, at \$3 billion a year. A Canadian study estimated that salt did \$200 damage, on the average, to every car in that country. If you accept those figures as accurate, the cost of alternate products looks better and better. Despite this, interest in CMA and other salt substitutes has been lukewarm at best.

Reprinted from the Illinois Section Newsletter

SIGNS FOR LARGE TRUCK HIGHWAYS

As required by the Surface Transportation Assistance Act of 1982, the Federal Highway Administration has designated a national network of highways to accommodate large-size commercial vehicles, including semi-trailers up to 48 feet long and double trailers up to 28 feet long. The network, adding up to more than 162,000 miles of highway, covers virtually all of the interstate system and about 120,000 miles of federal-aid primary (FAP) system routes-about 47% of total FAP mileage.

It is reasonable to suppose that the designated network will always be subject to change. That raises the question: How will truck drivers know which roads they can legally drive on?

This will probably not be a problem for employees of the major haulers, who make it their business to keep up-to-date on all truck-restrictions in the states in which they operate. However, other drivers who are not so well-informed may have difficulties.

One solution now being considered by FHWA is for the designated highways to be posted with appropriate signs. This solution seems simple but it turns out to be complicated. For one thing, the new national 102-in. width limit must be taken into account. Conceivably, a highway might be considered safe for extra-long vehicles but unsafe for the wide bodies, or (more likely) vice versa. On a significant number of routes, state or local authorities have imposed time-of-day restrictions so that what is legal at 6 a.m. is illegal an hour later. Where adequate urban bypass routes exist, officials may restrict routes leading into a city to exclude commercial through traffic.

The old reliable "No Trucks" sign won't do the job in cases where some trucks are allowed and others are not. Presumably, states will have to make up-to-date information available at weigh stations and truck stops. But even with that, new types of signs will probably be needed.

The STAA of 1982 requires that the larger vehicles eligible to use the national truck network also be provided with reasonable access to terminals and to facilities for food, fuel, repairs and rest. Identification of such reasonable access turn-offs is another matter needing priority attention. Reprinted from Better Roads

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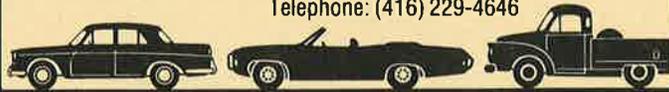
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MERGER OF THE CITY OF BATTLE CREEK AND BATTLE CREEK TOWNSHIP/PART 2

This is the second of a series of articles discussing the recent merger of the City of Battle Creek and Battle Creek Township. The purpose of this article is the explanation of the activities that occurred in order for the merger to be approved by the residents of the City and Township.

IV. PROVIDING INFORMATION TO THE VOTERS

From the very outset, an objective of the Kellogg Company was the informing of the voters of the city and the township of the impact of the merger. For this reason, they wanted the University of Michigan study of the unification completed before the November 2nd Referendum Election. (It should be noted that a significant portion of the cost of this study was funded by the Kellogg Company.) Information was compiled by, and/or presented by the Kellogg Company, several ad hoc committees, and the news media. It is the author's opinion that there was more than sufficient information available to the voters of the affected units of government through the news media and the many public presentations.

As earlier stated, the Kellogg Company, through its "Merger of Equals" proposal, became the instigator of change. During the five (5) months between the initial public statement and the November election, its representatives continually presented information on how the Kellogg Company arrived at its decision to make the proposal, and what the impact would be on the metropolitan area of relocating the corporate headquarters. In addition, these representatives obtained and presented answers to those questions that only the corporate decision-makers could answer.

In order for all the questions of the voters to be answered, a significant amount of research and analysis had to be conducted. Prior to the November 2nd vote, several studies and surveys were completed, and the information disseminated to the general public. As part of this effort, the staff of the City of Battle Creek analyzed and prepared a substantial amount of information regarding several critical issues, such as the placement of Battle Creek Township personnel; the level of services provided by the City staff, the preliminary 1983-84 General Fund Budget and projected tax mileage if the merger were approved. At special meetings attended by both City Commissioners and Township Trustees, this material was discussed and concurrence was sought. A significant research effort was conducted by the University of Michigan for the League of Women Voters of the Battle Creek Area. The purpose of this study was to objectively present the costs and benefits of area unification. Phase I of this study concentrated on the unification of the City of Battle Creek and Battle Creek Township. Major areas studied by the researchers included government organization, legal issues, financial issues, and physical assets. The Battle Creek Board of Realtors also conducted a study at the request of the pro-merger ad hoc committee. The

purpose of this study was the estimation of the impact on the housing market of the Kellogg Company relocating its corporate headquarters outside the metropolitan area. Utilizing available information on the current market and the 1962 General Foods corporate headquarters relocation, it was their conservative estimate that the local housing values would drop by 25 percent. As a public service, the Battle Creek office of Price Waterhouse prepared and published in the Sunday edition of the local newspaper a group of tables providing information that residents of Battle Creek Township could use to estimate their net property and income tax increases if the merger were approved. In addition, they offered to calculate these increases for individual township residents based on their particular circumstances. At the request of the local newspaper publisher, several public opinion surveys were conducted by the Burgoon Company. These surveys were financed by a Gannett Foundation grant to the Greater Battle Creek Sesquicentennial Committee. The purpose of these surveys were twofold:

1. To determine the attitudes of the public about the major issues; and
2. To determine if, and what, additional information would be required by the voters to make intelligent decisions on the merger.

City Ventures, Inc. a firm specializing in economic revitalization of cities, was commissioned by Kellogg Company to forecast the economic consequences of three (3) situations:

1. The merger fails and the Kellogg corporate headquarters remains in Battle Creek;
 2. The merger fails and the Kellogg Company corporate headquarters is relocated to another city; and
 3. The merger succeeds.
- Within several weeks of the announcement by the Kellogg Company, two (2) ad hoc committees, one in support of and one against, were formed. The pro-merger committee, the Committee For Annexation, had four (4) goals:
1. To obtain a commitment from the Kellogg Company that the corporate headquarters would remain in Battle Creek if the merger was approved;
 2. To present information from the University of Michigan study to the public;
 3. To monitor public statements regarding the merger for accuracy; and
 4. To monitor promises and agreements made by the city and township officials, and to assure conformity.

The opposing viewpoint was presented by Citizens to Continue Battle Creek Township Government. The reasons for the formation of this committee were:

1. To maintain the existing form of government as a matter of principle, regardless of the dictates of the Kellogg Company;

BATTLE CREEK *Cont.*

2. To show that the costs (increased property and income taxes) far outweighed the predicted benefits; and
3. To develop their own predictions about the future of the metropolitan area if the Kellogg Company relocated its corporate headquarters.

Both groups were quite visible and outspoken. These committees held meetings and gave presentations to various groups.

Due to the very short time period involved and the number of decision deadlines, the issue was almost constantly in the news (Figure 2). All forms of mass media were involved in presenting information to the general public. The extensive coverage of the issue proved to be invaluable to the voters.

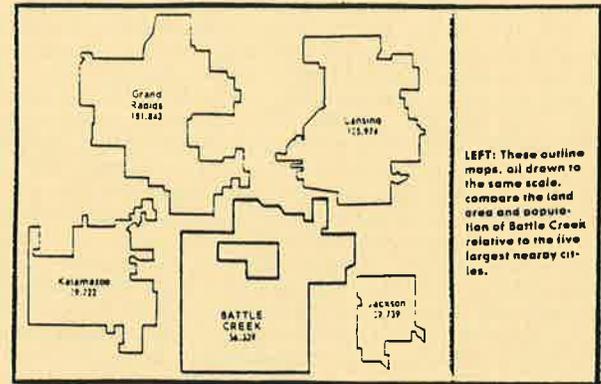
V. ELECTION RESULTS

On August 10, 1982, the Charter Amendment Election was held for the City of Battle Creek. Of the 21,000 registered voters, 18.7% voted on the issue and it was approved by a 9 to 1 margin. On November 2, 1982, the Referendum Election was held. In the city, 10,070 votes were cast and 92% of those voting on the issue approved it. In the township, 10,661 votes were cast and 64% of those voting on the issue approved it.

The new City of Battle Creek which would come into being on January 1, 1983, would have a population of 56,339, making it the 20th largest populated city in Michigan. The residents of the new city would be served by 580 city employees. The new city would be spread over 45.6 square miles, making it the second largest Michigan city in land area (Figure 3). Traversing this land area would be 291 miles of roadways.

By Kenneth A. Shackman

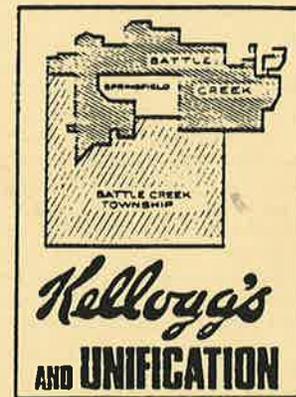
FIGURE 3



LEFT: These outline maps, all drawn to the same scale, compare the land area and population of Battle Creek relative to the five largest nearby cities.

RELATIVE SIZE TO OTHER CITIES
Courtesy of the
Battle Creek Enquirer

FIGURE 2



NEWSPAPER LOGO USED
Courtesy of the
Battle Creek Enquirer

Meeting of the State Advisory Committee on Manual of Uniform Traffic Control Devices

The State Advisory Committee on Manual of Uniform Traffic Control Devices held a meeting on October 26, 1983. Many issues regarding traffic control devices were discussed and decisions were made. This group of officials is a standing committee that meets when necessary as a consulting body to the Michigan Department of Transportation. The committee is made up of traffic, safety, and enforcement experts from the said department, the Department of State Police, counties, and cities. At the present time it has 13 members. Highlights of some of the subjects dealt with at this latest meeting follow.

Speed Humps. These devices have been used on residential streets in several states to prevent speeding. An experimental installation in the city of East Lansing had been considered earlier. But based on information obtained from the state of California, and considering that studies on a national level were being pursued on this subject, it was decided to postpone the installation in that city. An important question in the use of speed humps is the delay of emergency vehicles and the resulting liability.

Use of the Large Arrow. MDOT had requested from the Federal Highway Administration (FHWA) an interpretation of the use of the large arrow. The MUTCD implies that the use of the Large Arrow sign is limited to alignment changes allowing a maximum safe speed of 30 mph or less. FHWA replied that our deduction was appropriate but they did not want to restrict the use of these signs to low speed.

Definition of the Term Roadway. The MUTCD does not include the definition of roadway which is necessary in order to understand and apply Section 3C-2 concerning the marking of objects in the roadway. A verbal contact by MDOT engineers with Washington, through the FHWA division office, resulted in the information that the term "roadway" excludes road shoulders.

Placement of Warning Signs. A discussion was held concerning the new national guide for placement of advance warning signs. (A text of this guide appeared on page 4 of our Fall, 1983, issue.) MDOT will delay implementing the guide until more is known about which signs belong to which of the three "condition" groups designated in the table. Written suggestions from the committee membership on this whole subject were invited.

Left Turns on Red Signal. A district traffic and safety engineer had requested a standard sign to encourage legal left turns onto a one-way street, based upon his field observations that a very low percentage of drivers were taking advantage of this provision. Although this is a matter of driver education and information, it was agreed that a sign with the message LEFT TURN PERMITTED ON RED AFTER STOP may be used sparingly at intersections where it might alleviate a critical traffic capacity condition. By Nejad Enustun

GRAND RAPIDS METROPOLITAN AREA TRAFFIC SIGNAL CONTROL SYSTEM

The idea of a Computerized Traffic Signal System encompassing the entire metropolitan area was conceived in 1975. GRETS, the local planning agency, authorized the expenditure of funds for a feasibility study and the consulting firm of JHK and Associates was chosen to carry out the work. The results of the study showed that a Computerized Traffic Signal System would provide the greatest benefits to the motoring public for the dollars expended. The majority of the local agencies involved in the study agreed with the consultants' conclusions, although two decided to withdraw from further involvement. JHK was commissioned to produce plans and specifications for a centrally located master capable of controlling all of the traffic signals in the metropolitan area.

The initial design concept called for the use of telephone lines. However, negotiations with Michigan Bell fell through and an alternative communications medium was sought. Two choices were available; a City installed and owned hardware network or General Electric Cablevision's coaxial cable. The latter was chosen when negotiations with local utilities for pole attachment ran into difficulties.

The 1978 the use of coaxial cable communications for traffic control was relatively new. Only two cities, Columbus, Ohio and Overland Park, Kansas, had operating systems. However, coaxial cable had been used in other fields for many years for the transmission of digital signals.

After several delays, the project was let on August 27, 1980. Two bids were received and both were significantly above the engineers estimate. To remain within budget, several changes were proposed including the combining of the modem, which was to have been provided by General Electric, with the controller interface. In addition some equipment was deleted and the number of intersections was reduced.

During this time the local politicians were being faced with decreasing revenues and several agencies threatened to withdraw from the project. Eventually, approval to accept the low bid was received from each of the involved parties and the project was awarded in April 1981.

During construction, the contractor fell behind schedule in several areas, the most important of which was the manufacture of the remote communications units (RCU's). By the time the project completion date of December 21, 1982 arrived, the contractor was three months behind schedule, and

a significant noise problem was being experienced. The resolution of the problem required retrofitting each RCU with a band pass filter.

The project was finally accepted on September 27, 1983 and the contractor is currently into a six month warranty period.

The Grand Rapids Metropolitan System is configured for 375 intersections and 400 detectors in 31 sections. The current size is 243 intersection with 40 detectors.

The intersections are spread over an area of one hundred square miles and six municipalities. The System is controlled by a Perkin Elmer mini computer with 768 KB of memory and 20 MB disk storage. The software is a derivation of the UTCS enhanced version first developed in Charlotte, North Carolina and most recently installed in Alexandria, Virginia and Hartford, Connecticut.

In addition to the normal UTCS functions the Grand Rapids System has the ability to recognize the react to fire and railroad preemption and has two special functions which may be used to control any electrical device at the intersection including turn restriction signs or school flashers.

Communications is via a separate 'B' cable covering 120 miles. The cable electronics has a total capacity of 300 MHz of bandwidth of which 12 MHz in each direction is reserved for City use. Communications with the intersections is accomplished via one forward channel at 56,000 baud and 4, 28,000 baud, reverse channels. Each intersection is polled six times per second.

Approximately 50% of the cable was existing and the remainder was installed with project funds. Under the terms of the construction agreement, General Electric Cablevision now owns the cable and is free to market the additional capacity. This arrangement allowed the City to negotiate a law, fixed rate lease fee for a twelve year period.

JHK and Associates were retained through the project to provide construction engineering services and to carry out the initial timing plan and data base development.

At the present time 6 timing plans are available on a time of day basis. Further plans designed for weekend conditions and traffic responsive operation will be developed by City staff.



GET IT  TOGETHER

DOT REORGANIZES TO UPGRADE HIGHWAY SAFETY

The Reagan Administration has proposed reorganizing the Transportation Department in order to give highway safety a loftier perch within the bureaucracy. Transportation Secretary Elizabeth Dole has been emphasizing the safety theme in numerous speeches around the country. Last month her department sent proposed legislation to Capitol Hill.

Under the plan, a new National Traffic Safety Administration would be established, comprising mostly bits and pieces of already-existing units within DOT.

DOT's National Highway Traffic Safety Administration would be merged with the Bureau of Motor Carrier Safety along with certain safety-related functions of the Federal Highway Administration.

The proposal would mean "far more than merely shuffling the boxes on some federal organization chart," Dole said in announcing the plan. "We are, in fact, elevating safety to a level consistent with its importance." The change will require congressional approval.

"The Secretary considers safety her highest mandate and feels that combining these programs will permit the department to provide a sharper focus, particularly on highway safety issues," explained Robert Marx, DOT spokesman. He added that the proposed new safety sub-agency would provide "one-stop shopping" to constituency groups, as well as eliminate some redundancies and overlaps present in the current organization.

Reprint Engineering Times

"TOPICS" PROGRAM

In the summer, 1982 edition of the MICHIGANITE, we reported on the new TOPICS (Traffic Operations Program to Increase Capacity and Safety) program being administered by the Traffic and Safety Division of the Michigan Department of Transportation. This is a review and update of that program.

TOPICS is the traffic engineering element of the department's Transportation System Management (TSM) process. The program intent is to provide recommendations for improving traffic safety and operational efficiency on the existing roadway system of MDOT's 13 identified urbanized areas.

The program encompasses both state trunklines and local streets in order to reflect a comprehensive, integrated effort to identify and solve traffic engineering problems. The local street review is accommodated by our Community Assistance group, funded by Federal Section 402 monies distributed through the Office of Highway Safety Planning. The TOPICS reviews are closely coordinated with the Metropolitan Planning Organization (MPO) in the 13 urbanized areas.

Program activities include data collection and analysis, identification of corrective countermeasures, a written report of the findings and recommendations, identification of funding sources, and before-and-after evaluation of implemented recommendations. Data analysis focuses on accidents, capacity deficiencies, signal system optimization, and identification of unwarranted signals.

The focus of the TOPICS program and the majority of recommended solutions are low-cost operational countermeasures such as parking restrictions, improved signing and/or lane markings, revised signal timing, revised signal placement, and turn prohibitions. However, some construction projects such as pavement friction improvements, radius improvements, and additional laneage are identified and funded with safety improvement monies or integrated into the local MPO Transportation Improvement or Long Range Plans.

During the past year, we completed TOPICS studies in three urbanized areas; Bay City, Jackson, and Kalamazoo. Many of the recommendations have been implemented but none long enough to permit a before-after analysis. Following is a brief description of each study and estimated TOR of invested safety monies. Estimates were based on a conservative 10 percent expected reduction in accidents, 1981 National Safety Council figures for the cost of property damage, injury, and fatal accidents, and the May 1981 U.S. Department of Transportation Publication "Emergency Saving Traffic Operations Project Guide" (ESTOP).

Bay City - The Bay City report addressed 18 accident study locations, 13 determined as warranting corrective action. Recommendations included 19 low-cost operational improvements and three capital outlay (construction) projects. The construction recommendations involve two pavement friction improvement and one intersection-approach widening projects. Total implementation costs are estimated to be \$83,000, the annual safety benefit in reduced accidents is estimated to be \$57,000, yielding an expected TOR of approximately 1.5 years.

Jackson - The Jackson study addressed 50 accident locations and 16 locations where the need for existing traffic signals is questionable. Corrective actions were recommended for 37 of the accident study locations. Recommendations included 60 low-cost operational and three capital outlay (construction) projects. The construction recommendations include two pavement friction and one geometric modification projects. Total implementation costs are estimated to be \$114,000 and the annual safety benefit \$145,000, yielding a TOR of less than one year.

A review of the 16 traffic signals in the Jackson area resulted in recommendations for seven removals and nine flasher schedule extensions. Estimated annual fuel savings to the motoring public total \$84,000 (at \$1.30/gal.). Removal of the seven signals (scheduled for a six-month trial flash period) would save the city an estimated \$4,000 annually in maintenance and electrical energy costs. These recommendations are now being considered by the city.

Kalamazoo - The Kalamazoo Area study involved review of 72 accident locations and 21 locations where the need for existing traffic signals is questionable. Corrective actions were recommended for 61 of the accident study locations and included 128 low-cost operational and nine capital outlay (construction) projects. The construction projects ranged from pavement friction improvements to intersection geometric modifications. Total implementation costs are estimated to be \$410,000. The annual safety benefit at \$490,000, yields a TOR of less than one year.

A review of the 21 questionable Kalamazoo area traffic signals resulted in recommendations for 13 removals and eight flasher schedule extensions. Estimated annual fuel savings total \$103,000. Removal of the 13 signals (scheduled for a six-month trial flash period) would save the city an additional estimated \$7,500 in maintenance and electrical energy costs annually. These recommendations are also being considered locally.

Our 1982 report documented a completed TOPICS study in Muskegon. Of particular interest is the recommendation for removal of 17 signals in the Muskegon area. Removal of all 17 is estimated to save motorists \$75,000 annually in reduced fuel consumption and local communities \$10,000 annually in reduced maintenance and electrical energy costs. The signals operated as flashers for a minimum of six months. Two were returned to stop-and-go operation, six have been removed, and the remaining nine are still being studied under flash operation.

We have initiated TOPICS studies in the Ann Arbor and Ypsilanti areas and are planning to begin one for the Flint area. In an attempt to expand our TOPICS program, we have identified an additional 17 smaller communities that have over 10,000 population but are not a part of the 13 urbanized areas. In this regard, we are in the final stages of a study of the Mt. Pleasant area and plan to proceed in the Adrian, Monroe, and Midland areas. By Kurt Kunde

HIGHWAY CONSTRUCTION COSTS DECLINE

American taxpayers are getting more bang for the road-building buck as highway construction costs continue a decline that began in 1980, according to the Highway Users Federation.

An analysis of U.S. Federal Highway Administration data on federal-aid highway construction price trends shows that in the second quarter (April-June) of 1983, costs were 15% lower than those of the same period in 1980, when they were at an all-time high of 168% of the 1977 base index of 100.

The highway construction price index now stands at 143% of the 1977 base, the lowest it has been since 1979 when the base index was 138%.

The costs of six basic road-building components, including labor and overhead, are used to arrive at the composite price index: excavation, portland cement, bituminous concrete (asphalt), reinforcing steel, structural steel, and structural concrete. The sharpest drops are in steel prices, although the cost of other components is also down.

Reprint from Engineering Times

POLYPLATE: A PRACTICAL ALTERNATIVE TO METAL SIGNING

Sign blanks of fiber glass reinforced plastic (FRP) are being introduced for street, highway and traffic control by Sequentia, Inc., Cleveland, Ohio.

Described as "the practical alternative to metal signage," the Polyplate sign blanks from Sequentia are manufactured to meet roadway sign blank requirements for the most demanding field conditions.

Polyplate is a glass fiber laminate formed with high strength glass fibers imbedded in a resin system utilizing Dion FR polyester resin from Koppers Company, Inc. The composite provides a uniform surface with outstanding impact and chemical resistance, all-weather thermal stability and high strength to weight ratio.

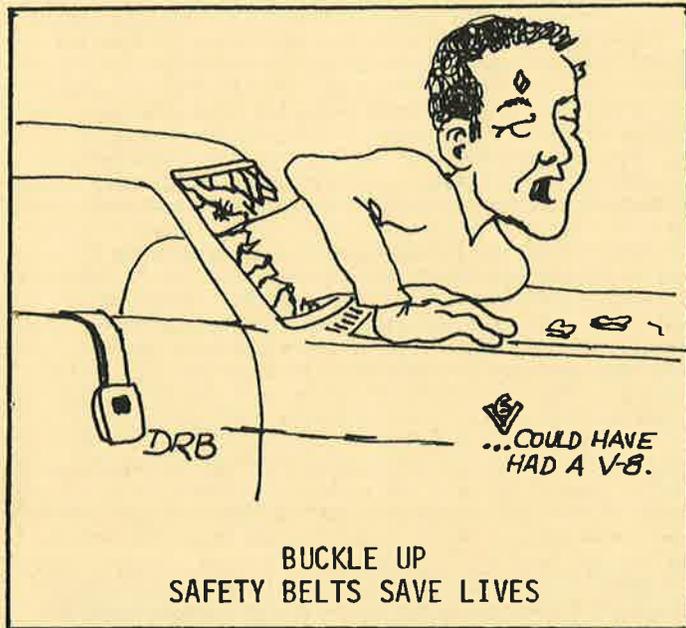
Polyplate blanks may be drilled, sheared, sawed, punched or nailed without damage using conventional equipment. They offer built-in color to eliminate a painting process, and adhesion quality for all types of

reflective sheeting.

FRP tests have been conducted in several states and major cities across the country. The state of Ohio is conducting an extensive two phase test of FRP on normal ground mounted sign installations.

Although the testing is not yet complete Mr. Bob Fox, Ohio DOT is optimistic about FRP. "In my opinion, there's nothing that should prevent us from adopting the FRP signs at least as an alternative," he says. "And there are indications we can recycle FRP signs chemically or mechanically."

The panels in the Ohio test were manufactured by Sequentia, Inc., one of the largest panel makers in the industry. For further information contact Mr. C. W. Frizzelle, Sequentia Inc., Strongsville, Ohio, (216) 238-2400. By Don Wiertella



SET AN EXAMPLE

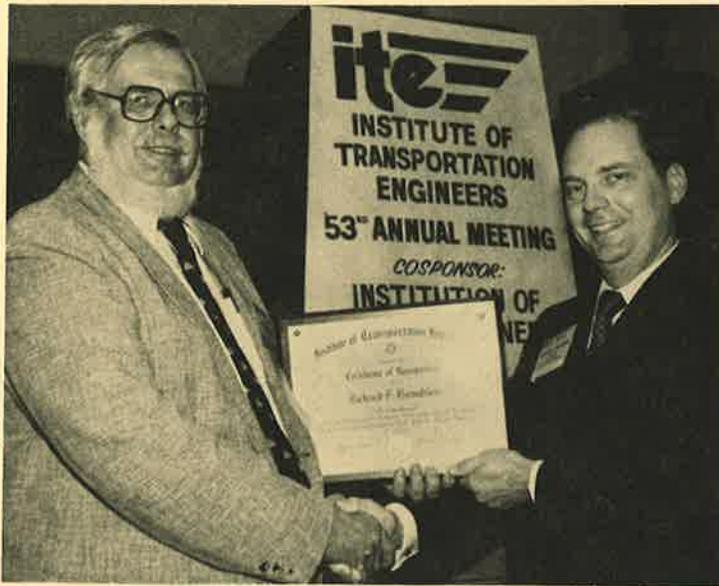
The Society of Automotive Engineers has chosen November as its month to support seat belt use. The above logo and "Set an Example" headline was part of an ad which appeared in several publications. "Seat belts save lives only when used...convince your friends, associates and family... Do your part...Set an example, use your seat belt and urge those around you to use theirs," the copy reads.



There were some lighter moments at the Annual Meeting.

SAE The Engineering Resource For Advancing Mobility

Set An Example



Troy Transportation Engineer Richard F. Beaubien, P.E. (right) receives the Institute of Transportation Engineers' Section Technical Award from Technical Council Chairman James H. Kell, P.E. (left) at the Institute's Annual Meeting in London, England, August 18, 1983.



TECHNICAL COUNCIL POTLUCK

Stan Cool opened by giving an overview of the council. He mentioned that the current Technical Committees are attempting to limit their study time to two years. Also, if anyone had a subject for research, please make it available to one of the council members in writing.

Nels Burns, past president of the International I.T.E. spoke on legislative issues. He mentioned the U.S. legislative committee who's purpose is to formulate I.T.E. input. They had a lot of input given for the Surface Transportation Act of 1982. Also, Nels pointed out that Mr. Mark Norman, from I.T.E. headquarters, handles all our contacts in Washington.

Don Wiertella, Michigan D.O.T., spoke about the objectives of Technical Committee 4M-14. This committee has been in existence since March of this year with the objective of surveying and reporting on the effects of small vehicles on traffic operations. Further committee objectives will identify areas of traffic operations being influenced by the presence of increasing numbers of small vehicles. The committee will review both operational and design aspects.

Gerald Lindgren, Barton-Ashmen, spoke about Technical Committee 6Y-20, Internal Transportation Systems for Major Activity Centers. The majority of Gerald's talk focused on the possible reduction of parking space size due to the current downsizing of automobiles. Current outside turning radius recommendation of the 1965 AASHTO "Blue Book" is well above the average of today's cars. Also, there is currently a movement to establish a national norm for sizes of parking spaces. By Mark Fisher

EXISTING AND FUTURE VEHICLE DESIGN

Charles Haddad of Ford Motor Company discussed "Existing and Future Vehicle Design." Mr. Haddad said that during the seventies, the auto industry's engineering efforts were largely concentrated on government safety and environmental regulations. With reduced government requirements, the industry is applying advanced engineering concepts to new technologies in order to become more responsive to consumer demands. The goal is to make American cars competitive on a world-wide basis.

Mr. Haddad also discussed trends in vehicle weight and fuel economy. The average American car weighed 3,800 pounds in 1975. Today's cars average 3,000 pounds and the 1990 car will weigh 2,600 pounds. The 1990 car will also be 25 percent more fuel efficient than current models.

Ford motor intends to realize these economies largely through aerodynamic improvements. The 1983 Thunderbird is the first evidence of this type of styling.

Smoother vehicle underbodies, dual air-foils on the rear of the vehicle, and a cooling system in the rear with air intake vents on the sides are examples of wind-drag reduction concepts currently being incorporated on experimental vehicles.

Safety improvements to look for on future vehicles are such things as a high-speed stop lamp on the rear of the vehicle which will activate as another vehicle approaches too quickly from the rear. Mr. Haddad estimates that this device alone may reduce rear-end collisions by as much as 50 percent.

Some other safety improvements contemplated are supplemental air bags, wheel and tire improvements for better handling, and structural improvements to reduce the severity of side collisions. By Mike Krause

Mother Earth weighs 6,586,000,000,000,000,000 tons, or 6.586 sextillion tons. By Don Wiertella

AUTO INDUSTRY MUST ADD REAR-MOUNTED LIGHT ON ALL '86 MODEL CARS

Transportation Secretary Elizabeth Dole has announced that all cars made after Sept. 1, 1985, must be equipped with an additional eye-level, center-mounted brake light.

"We expect to cut the number of rear-end collisions significantly and eliminate 40,000 injuries as well as save an estimated \$434 million on property damages annually," said Dole. The rule is also expected to lower fatalities.

The final rule is the first major rule issued by the Reagan Administration that will require auto makers to make a safety-related improvement on automobiles. The National Highway Traffic Safety Administration (NHTSA) said the new brake lamp would cost consumers from about \$4 to \$7. The initial cost to consumers would be about \$70 million, NHTSA said, but by 1988 the total annual consumer cost should drop to about \$40 million - about \$4 a car.

Subtracting the costs of adding the stop lamp from the benefits, NHTSA said the new rule should net about \$394 million in savings each year. The agency expects the new rule to have a dramatic effect on the incidence of rear-end crashes, based on studies it has performed and an independent study conducted by the Insurance Institute for Highway Safety. Reprinted from Status Report

SERB: A NEW HIGH-PERFORMANCE, SELF-RESTORING TRAFFIC BARRIER

SERB is a two staged guardrail system, developed in the late 1970's, designed to be self-restoring for most impacts at shallow angles. When struck, the beam deflects backwards and upwards as much as 11 inches. As the beam is displaced, the impacting vehicle follows the upward motion, which provides a banking effect that enhances smooth redirection. Once in contact with the posts, the rail becomes a very strong barrier. The self-restoring barrier guardrail has successfully redirected vehicles that range from a 2100 pound mini automobile to a 40,000 pound intercity bus at 60 mph and a 15° angle.

To obtain actual cost and performance data, the Demonstration Projects Division of FHWA Office of Highway Operations initiated a pilot project to install and evaluate the SERB guardrail at four locations. The locations were selected because each was a high accident location and the probability of future hits was high.

Three of the pilot locations were completed by a contractor and the fourth by the state DOT Maintenance personnel. No special equipment was needed.

Since their completion the installations have been struck several times and they have performed as expected. One location has been struck at least six times with no maintenance being required and the only REPORTED accident involved a motorcyclist, who was not seriously injured.

When compared to concrete median barrier the cost of the SERB is considered competitive. The in-place cost of the pilot projects was about \$55 per foot.

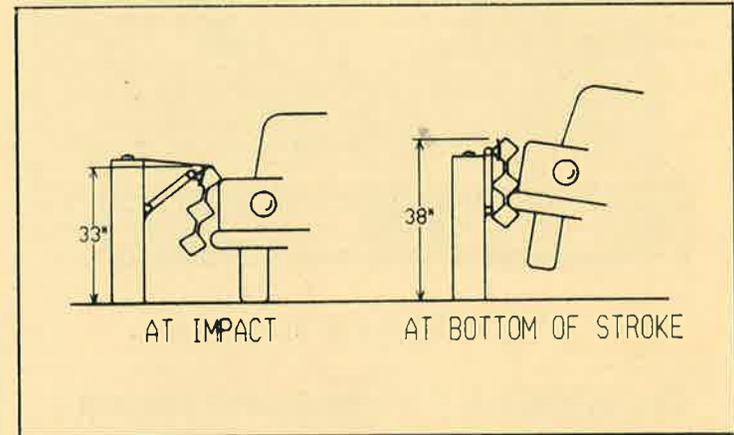
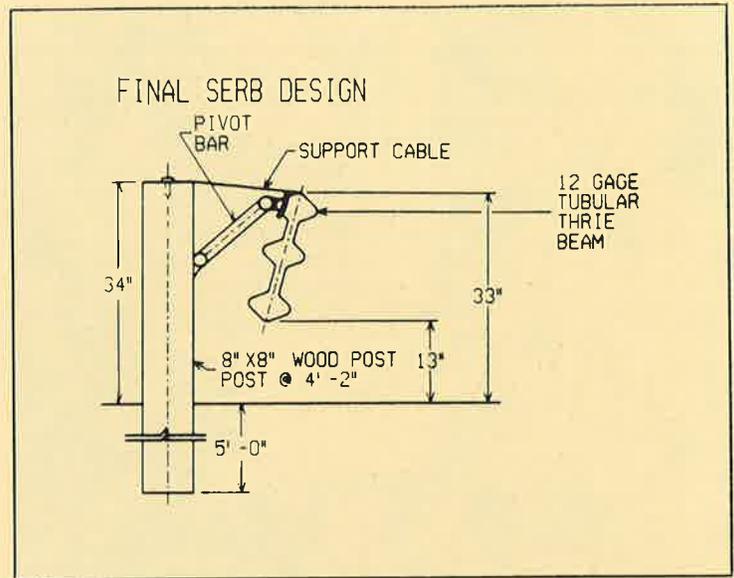
Advantages of the SERB guardrail systems when compared with other metal barrier systems include the following:

1. Damage repair from typical shallow-angle impacts is projected to be minimal;
2. Forgiving redirection is provided for all cars as well as containment of heavy vehicles under severe impact conditions;

Advantages of the SERB system when compared with concrete barriers include the following:

1. Stable redirection of all classes of cars with minimal rollover potential;
2. Demonstrated performance with heavy vehicles such as the school bus and the intercity bus;

Demonstration project funding is available to highway agencies interested in constructing and evaluating one or more of these high performance railing systems. Further information on this program can be obtained from Douglas A. Bernard, Chief; FHWA Demonstration Projects Division; HHO-40, Nassif Building; 400 7th Street, S.W., Washington, D.C. 20590. Information may also be obtained from Dave Morena, FHWA Lansing. By Don Wiertella



President-Elect Tom Krycinski (left) and outgoing President Richard Beaubien accepts the Section's thanks for his dedication.



New Section Board (left to right): Dave Bacon, Director; Bob Lariviere, Vice President; Rich Cunard, Treasurer; Tom Krycinski, President; Richard Beaubien, Past President; Tim DeWitt, Affiliate Director; Don Wiertella, Secretary.

INDIA'S ROAD TO MODERNIZATION IS PAVED WITH TRAFFIC DEATHS

The Grand Trunk Road, one of India's historic thoroughfares, is a national highway as important to India as I-94 is to the United States. The Grand Trunk, however, carries a daily traffic chaos that dramatizes the clash between traditional and modern India.

On one particularly lethal stretch normal traffic involves cars whizzing past bicycles, which in turn dodge carts pulled by horses, which must somehow get around moving tricycle rickshaws, which must in turn contend with rubber-wheeled carts pulled by bullocks.

Three-wheeled motorized rickshaws, two-wheeled motor scooters, motorcycles and mopeds dart in and out of the parade. Pedestrians cross at will, often seeming not to look. Occasionally a cow wanders into the traffic.

Into this chaotic stream plunge speeding buses, some listing and in obvious need of maintenance, so full of passengers that some hang on the outside. The buses are accompanied by trucks, the terror of Indian roads.

As India somewhat painfully evolves into an industrial nation, it is acquiring a reputation as having the most dangerous roads of any major country.

On the average, about 75 Indians a day are killed in traffic accidents, and more than 300 are injured. More than 26,000 people died on Indian roads in 1981. That is roughly half the number of traffic deaths in the United States, which has nearly 40 times as many motor vehicles.

According to statistics, India's fatality rate of 55 deaths per 10,000 motor vehicles, compared with roughly three per 10,000 in the United States, is the highest in the Third World.

As India rushes from the age of the cart into that of the internal combustion engine, experts on the problem say, its attitudes, traffic skills and resources have not been able to cope with the change.

City and Village streets often seem to operate under horse-and-buggy rules. Pedestrians cross wherever and whenever they want, as if there had been no change from the days of slower and more benign traffic.

Vehicles routinely cross the centerline and drive in the wrong lane. It is not unusual to see a scooter or a car going the wrong way on a divided highway. Sometimes two lanes of traffic travel on the wrong side of an undivided roadway.

Cars and heavy vehicles barrel through villages at high speed, relying on people and animals to scatter and save themselves.

On the open road, truck drivers and bus drivers pass each other in the face of oncoming traffic and all too often miscalculate. Newspapers often report the deaths of 10, 20 or even 60 people in a single wreck. Recent statistics suggest that such incidents are increasing, since the number of deaths per accident is rising.

Reprint from Detroit Free Press

MANY TEENS FAIL TO BUCKLE UP

Motorists are using seat belts more, but young drivers—who are most often killed in accidents—remain the least likely to buckle up.

The California-based Power Newsletter said Monday its Automotive Consumer Profile found:

* 20 percent of the 5,000 drivers interviewed said they always wear their seat belt, up from 16 percent a year ago.

* Those never using seat belts dropped to 36 percent from 42 percent.

Individual automakers and the National Highway Traffic Safety Administration have conducted extensive advertising campaigns encouraging motorists to buckle up.

* The rich are among the most careful: One-third of people with household incomes of \$50,000 or more always use seat belts.

* Teen-agers are the least likely to buckle up - followed by drivers between the ages of 20 and 24.

The National Safety Council says those two age groups are most likely to be involved in fatal car crashes. It said 70 out of every 100,000 drivers in the 20 to 24 age group were at the wheel of fatal car crashes last year. Fifty-six of every 100,000 drivers 19 and younger were drivers in fatal crashes, the council said.

* Drivers between the ages of 25 and 34 use seat belts the most.

* Californians lead the way in safety: 35 percent always use seatbelts.

The survey also revealed that drivers of foreign cars are more likely to buckle up than those driving cars made in the USA:

* 33 percent of owners of European cars always buckle up.

* 30 percent of owners of Japanese cars always use seat belts.

* Only 16 percent of owners of full-sized American cars bother to buckle up.

Reprint USA TODAY

FRIVOLOUS SUIT BRINGS PENALTY

For the first time in its history, the Supreme Court recently ordered petitioners in one of the thousands of cases filed with it each year to pay damages to the other party for bringing a "frivolous" suit. The Justices acted on a 1980 High Court rule permitting the award of damages against litigants deemed to be bringing lawsuits of dubious legal merit. Frivolous lawsuits have been blamed for helping overwhelm the courts at virtually every level of the judicial system. By Don Wiertella

1984 MEETING SCHEDULE

<u>Date</u>	<u>Location</u>	<u>Host</u>	<u>Event</u>
January 26	Farmington Hills	James Cubera	Lunch Meeting
February 23	Ann Arbor	Ken Feldt	Lunch/Tech. Session
March 22	Lansing	Glen Etelamaki	Tech. Session
April 26	Grand Rapids	Ed Swanson	Dinner Meeting
May 11	Ann Arbor-Weber's	Jerry Carrier	Ladies' Night
May 17	Southfield	Savage & Northrup	Vendors' Day
June 14	Battle Creek	Ken Shackman	Dinner Meeting
July 27-28	Mt. Pleasant	Tim DeWitt	Tech./Family Weekend
September 13	Lowell	Grand Rapids	Golf Tournament
September 23-27	San Francisco	National ITE	Annual ITE Meeting
October 4-5	Ohio	Ohio Section	District III Meeting
November 8	Frankenmuth	Roger Walther	Lunch Meeting
December	Pontiac Silverdome	Rich Cunard	Annual Meeting

KALAMAZOO COUNTY SEAT BELT OBSERVATION SURVEY

The objective of the Kalamazoo County Seat Belt Task Force is to develop and implement safety belt programs and to monitor the effectiveness of these programs. An effective means of evaluation is the observation survey. The following is a discussion of the procedures developed and implemented by the task force to provide a broad-based, unbiased, statistically significant observation survey of seat belt use in Kalamazoo County.

The design of the observation survey included the selection of survey sites that will ensure the safety of survey personnel, encompass large volumes of traffic, and be broad-based to provide a cross section of county residents. A basic desire is to provide statistically significant data for an accurate evaluation of the promotional and educational programs of the task force.

The survey will be conducted four times over a two-year period. The first survey was conducted prior to any promotional efforts to provide a benchmark from which to evaluate future surveys and the effectiveness of promotional and educational programs. Data is to be collected only at the selected sites. Future surveys will be conducted on the same days of the week and same time periods within the day.

Kalamazoo County was divided into grids from which 25 survey sites were selected. The survey sites are intersections under traffic signal or stop sign control and carry heavy traffic volumes. The survey sites are located in rural, suburban, and urban areas, including the central business district of the city of Kalamazoo. They include various socio-economic levels, avoid high crime or potentially dangerous areas, and concentrate primarily on passenger vehicles.

Maps have been prepared showing the locations of the survey sites, the specific traffic movements to be observed, and sites where survey personnel are to be located.

Each task force member completed a "Train the Trainer" session and a field trip to a local intersection to obtain first-hand knowledge of how the survey was to be conducted. Eight task force members acted as group leaders, and each was responsible for obtaining volunteers recruited through the Red Cross Transportation Department. Thirty-four volunteers were selected based on their being seat belt users and having the ability, time, and interest to properly conduct the survey. Group leaders train the volunteers, assign them to a survey site, provide survey material, and ensure that uniform data collection procedures are being followed. Survey personnel are instructed not to guess at seat belt usage, but to record data only when they are certain that seat belts are, or are not, being worn.

The survey form is designed to provide a simple,

effective method for the observer to record information and for easy analysis at the end of the observation period. A driver column and a right-front passenger column are provided on the form. The seat belt use code is 0 = None for a driver or passenger not wearing a seat belt, and a 1 for a driver or passenger wearing a seat belt.

The initial survey was conducted on August 23, and 24, 1983, at 25 locations in Kalamazoo County. A total of 24 hours of data was collected at the selected locations over the two-day period. During this period, 6,944 drivers were counted, as well as 1,678 right-front seat passengers. On a countywide basis, 17.1 percent of those observed were wearing their seat belt.

In general, peak traffic periods were selected for the survey (7 a.m. to 9 a.m., 11 a.m. to 2 p.m., 4 p.m. to 6 p.m.). These periods provided a large volume of traffic for observation in a limited span of time. Only privately-owned passenger vehicles licensed in the state of Michigan were counted. Large trucks or commercial vehicles, as well as children in child seats or wearing seat belts, were not counted.

The majority of survey locations had more than one approach lane. For safety and accuracy, only traffic in the nearest lane was surveyed with the observation being made from the passenger side of the vehicle. All eligible vehicles that passed through the survey sites, with seat belt use being readily apparent, were counted as they passed by the observation point. No attempt was made to observe only stopped vehicles at a red traffic signal. All vehicles that passed through a survey location controlled by a stop sign were counted.

Each survey volunteer was equipped with an identification tag, survey forms, and a clip board with a sign on its back indicating "Traffic Survey." In addition, the task force chairperson wrote a letter to all affected police agencies informing them of the survey sites and the times when observers would be working. Informational material about the survey was furnished to each volunteer in case vehicle occupants had any questions concerning the survey. The lowest percentage of seat belt use was 5.6 percent; this figure was obtained in a rural area of the county having a lower socioeconomic level. The highest percentage of seat belt use was 27 percent; this figure was obtained in an area where persons of higher income and better education reside.

The task force plans to conduct three more seat belt surveys, each approximately six months apart. The future surveys will be at the same 25 survey locations on the same days of the week and approximately the same time periods. The future surveys will evaluate approximately the same number of vehicles.

By Don Wiertella

SOME SEE 'CHEMICAL' COMPUTERS COMING

Within 10 years scientists expect to demonstrate molecular-scale devices that have electronic functions. And, on that day, the electronics world as it exists today will begin to shift away from a silicon base to a variety of complex chemical molecules.

This is just one of the findings in a study of molecular electronics completed by Technical Insights, Inc., Ft. Lee, N.J. The study covers the state of the art in molecular electronics - that field of research concerned with the production of small-scale electronic devices using new biological and synthetic materials.

With that demonstration, the world of electronics will change. Switches may be made of proteins or other complex molecules. The ultimate would be computers constructed by chemists that would use the molecular structure of various materials to perform the basic functions of today's silicon-based computers.

Reprint from Engineering Times

LOCAL ROAD FUNDING FUTURE

John Grubba, from the Oakland County Road Commission, spoke about future funding measures. He opened by discussing current problems with funding and what the economic trends have been during the past few years. John continued by stating a point we all know might be true that current funding is short and current construction is not enough. But what to do about it? John discussed a few ideas he had for revising the funding problems. He suggested a personal property tax or possibly a higher registration fee. This would work especially for new automobiles with a different propellant system that might become strong in the market, like electric cars. Also, do not exempt gasohol from full taxation, there was \$115 million in losses in 1981 because of it. And what if a certain political district wanted to improve just their road system? John suggested a voter approved millage or a special development tax. By Mark Fisher

PHOTOLOGGING SYNTHESIS AVAILABLE

Photologging is a method of taking photographs of a highway and its environment and, at the same time, recording specific data about the highway. The first highway photologging was performed in the early 1960's and since then more than 500,000 miles have been photologged in the U.S. Many states now use photologging to inventory and evaluate traffic safety devices like guardrails, signs or signals. The procedure is also often used to document roadway conditions immediately after traffic accidents for defense in legal actions.

NCHRP has recently released a synthesis of highway practice on photologging which includes the following conclusions:

- Photologging can be used by all organizational units within a state highway agency with significant application for traffic engineering, design and planning personnel.
- Factors that effect the degree of use are (a) the level of support by management, (b) the location of the film and viewing equipment in the area not identified with a specific unit and (c) the availability of a complete updated photolog of an entire highway system.

The study listed the following areas in which more study or research is needed:

- Videologging as a substitute for or a supplement to photologging.
- Integrating microprocessor-based inventory systems with photologging.
- Obtaining roadway dimensions accurately and efficiently from photolog film.
- Investigation the feasibility of using the global positioning system for locating roadway features via a receiver in the photolog vehicle.

The complete study may be obtained by sending \$6.80 to The National Cooperative Highway Research Program, Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Ask for Synthesis Report 94 - Photologging. Reprinted from ATSA Signal

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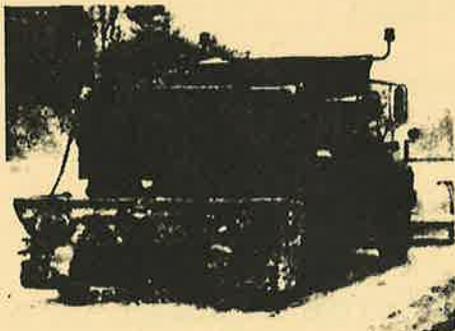
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DINGELL BILL WOULD PROVIDE FEDERAL AND STATE INCENTIVES TO INCREASE SAFETY BELT USE

Congressman John D. Dingell, (D-Mich.), has introduced legislation which would save thousands of lives each year by creating a Federal program to encourage seat belt use and to provide funding incentives to the States to enact seat belt use laws.

"Motor vehicle accidents occur quickly, usually with little warning. In seconds, passengers move from calm to disaster and, all too often, to tragedy," Dingell said. "In many cases tragedy is permanent. While there are many accidents where no type of restraint will prevent or mitigate tragedy because of speed and other factors, there are others where the wearing of a seat belt can spell the difference between life and death."

Dingell said that statistics obtained from the National Highway Traffic Safety Administration indicate that if 80 percent of all passengers used existing safety belt systems in all passenger motor vehicles in use today, at least 12,000 lives each year could be saved and a much larger number of injuries could be avoided or reduced.

"In 1982, the total number of passenger motor vehicle occupant fatalities was over 23,000 with over 21,000 estimated to be front seat occupants," Dingell said. "Programs to encourage or require seat belt use in Europe and Canada have increased belt use by 70 percent and have resulted in a decrease in highway deaths. It is time the United States recognized this as a national priority."

Dingell's bill, the "Motor Vehicle Passenger Safety Act," would direct the Department of Transportation to develop and implement a broad program to promote the use of safety belts, to educate the public about preventive health aspects of belt use, and to inform employers of the economic incentives available to them for increased belt use by employees. The legislation also provides a procedure for educating the public on the use of safety belts to ensure comfort and safety.

Dingell said the legislation provides a grant program for the States to promote increased use of safety belts and enact belt use laws and regulations. The bill authorizes \$15 million for fiscal year 1985, \$30 million each year from 1985 to 1990, and \$20 million for each year from 1991 to 1996. Funds would be allocated to the States by a formula which ensures that all States would get a substantial share.

While the bill does not mandate a safety belt use law, it does provide a reduction in grants in fiscal year 1987 of 25 percent and a 50 percent reduction in fiscal year 1988, if a State fails to enact a safety belt use law. The bill provides for a total cutoff of grants in fiscal year 1989 for a failure of State action. The legislation also makes it clear that the States--not DOT--shall develop seat belt use laws to meet their needs consistent with the purpose of the legislation. However, the bill requires States to adopt means of enforcement, including reasonable fines by a court when a belt is not in use in the event of a traffic violation and mitigation of fines where a belt is in use.

The bill also provides that within 180 days after enactment, the President will issue rules requiring:

- (1) any Federal motor vehicle to be equipped with safety belt systems in compliance with the Federal motor vehicle safety standard applicable to the model year of such vehicle;
- (2) the use of such systems by those who operate or who are transported in any Federal motor vehicle; and
- (3) the use of operable safety belt systems in any passenger motor vehicle which was required to be equipped with such systems by any such standard while operating on any public street, road, or highway located within any area of the national forest, national park, and national wildlife refuge systems, any military reservation, or any other area, street, road, or highway owned or controlled by any Executive agency.

Dingell said that he favors increased seat belt use over mandatory airbags in automobiles. "Because of the extensive costs of airbags and the limited use of airbags in accidents that are not frontal in nature, I continue to believe that the seat belt is the best and safest means of preserving life and limb in vehicle accidents," he said.

"The intent of my legislation is to provide the necessary Federal program and State incentives to foster a greater awareness of the need to buckle up and save more lives," Dingell said. "It is, in my judgment, a matter of life or death."

EPOXY THERMOPLASTIC PAVEMENT MARKING MATERIAL

On October 19 and 20 1983, the Michigan Department of Transportation (MDOT) hosted a demonstration of Epoxy Thermoplastic Pavement Marking Material (ETP) in Lansing.

A technical session and equipment inspection was held at the Secondary Governmental Complex on the morning of the 19th. Immediately following the equipment inspection 300 feet of ETP was placed on Ricks Road a bituminous surfaced road within the complex. The remainder of that afternoon was used to paint eastbound I-496.

Approximately 44,000 feet of white edge line and 12,000 feet of white lane line was placed on I-496 which is concrete.

State forces assisted FHWA personnel in the pavement marking operation and provided the necessary backup vehicles for logistical support. Traffic control during pavement marking operation was provided in accordance with the MUTCD, Chapter 6. State forces inspected the pavement surface prior to ETP application, sweeping was not necessary.

Evaluation of the ETP project will extend over a two-year period. The ETP material will be compared to other marking materials and a final report will be prepared.

The ETP installation will be inspected by an engineering task force at least seven times during the two-year period. The inspection time intervals are: initial, one-month, three-month, six-month, 12-month, 18-month and 24-month. An evaluation form is to be completed by each evaluator on each inspection.

For demonstration information, write or call John Kanillopoulos, MDOT, Traffic and Safety Division, Reflective Systems Unit, 425 West Ottawa Street, Lansing, Michigan 48933, phone (517) 373-2320. By Don Wiertella

STATE POLICE SEAT BELT PROGRAM

The Mich State Police have updated their popular seat belt slide/tape program. The shorter, new & improved version is available without cost simply by contacting your nearest State Police post. Your community or civic group may also request a trooper to present the program at your next meeting. By Don Wiertella

DOT ANNOUNCES NEW WINDSHIELD STANDARD

Secretary of Transportation Elizabeth Hanford Dole recently announced a change in the federal glazing standards to permit the use of a plastic-coated windshield which could sharply reduce facial injuries caused by broken glass.

Motorists and manufacturers can now use the new material in windshields and windows, effective immediately.

"This improved glazing technology could result in a significant reduction in the hundreds of thousands of facial lacerations caused each year by broken windshields," Dole said.

The amended standard does not require installation of the new material in motor vehicles, but permits a choice for those who want to do so.

The windshields on most cars are made of "safety" glass, consisting of a layer of plastic, laminated between two sheets of glass. The plastic serve as a soft barrier preventing the occupant's head from penetrating the windshield in a crash. The inner and outer layers tend to break on impact, however.

In the manufacture of the new material, an additional layer of thin plastic is bonded to the interior surface of the glass facing the occupant compartment, preventing the occupant's face from contacting the sharp edges of broken glass in the event of a crash.

Source: U.S. Department of Transportation

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Despite the nature of recent events at the State Capitol, the Michigan Coalition for Safety Belt Use is still "alive and kicking." Members of the Coalition consider it imperative to continue the push for a safety belt use law which they are convinced would produce significant economic and life-saving benefits for all Michigan citizens.

In the wake of the recalls of two Michigan senators, the proposed legislation (HB 4203) was referred back to the House Insurance Committee. The Coalition, a group of about 100 health care, traffic safety and private industry organizations, including the Michigan Section of ITE, understands and applauds such action at this time. The Coalition believes referral of the bill to committee will allow the sponsors and supporters time to reconsider and hopefully remove some of the unrelated amendments that were adopted earlier on the House floor.

"You can't expect serious consideration of important social legislation of any consequence amid the current confusion and rumors," noted Thomas Reel, Executive Secretary of the Coalition. "We need a short rest period," he added.

"Every piece of evidence we now have indicates that an adult belt use law would produce the kind of genuine economic relief that the taxpayers of Michigan are now demanding of the legislature," said Reel.

The bottom line for safety belt legislation is overwhelming. Over the last decade, the Michigan legislature has produced sound legislation to insure its citizens proper health care, income and retirement security, a safe working environment and safe consumer products. "A seat belt law is a natural and reasonable extension of this type of legislation. Further, it is neither fair nor right that those responsible automobile occupants who voluntarily buckle up and thus reduce health care costs, should be required to bear the expense imposed by those who don't use available seat belts," Reel stated.

Coalition members felt that legislative support for HB 4203 has been "slowly, but steadily increasing" over the past several months preceding the recall elections. By Tom Reel

VIRGINIA EVALUATES BARRICADE STRIPES

Virginia Research Council recently conducted a field evaluation of 6-inch versus 4-inch wide stripes for barricade rails less than 3 feet long. The MUTCD requires barricade rails less than 3 feet long to have 4-inch wide orange and white stripes.

They also evaluated different sizes and spacing of chevron panels used in a taper for a lane closure and reached the following conclusions:

- (1) The 6-inch wide stripe is recommended on type II barricade rails less than 3 feet long.
- (2) A 40 foot taper spacing is most effective for the standard chevron panel (18"x24").
- (3) The large chevron panel (24"x30") is the most effective channelizing device array.
- (4) Based on the legibility and detection distances, a minimum desirable site distance for lane closure workzones, especially those on urban freeways, should be 1,500 feet and the minimum allowable site distance and detection distance should be 1,000 feet.

The field tests have been conducted on Interstate 81 and used the basic premise that the earlier the driver changes lanes ahead of a lane closure, the more effective the channelizing device is. Subjective evaluations were also conducted on a closed portion of I-295 near Richmond where observers viewed tapers from different distances and indicated their preferences.

Copies of the complete report can be obtained from Ben Cottrell, Virginia Research Council, P.O. Box 3817, University Station, Charlottesville, Virginia 22903. Reprinted from ATSA Signal

PEOPLE in the news



JOHN P. WOODFORD RETIRES

January 27, 1984 will be the last day on the job with the Michigan Department of Transportation for John Woodford. Mr. Woodford spoke of his years with MDOT as "years of pride both for the Department and for the people who make up the Department".

Mr. Woodford was the 12th man to serve as chief administrative officer of the Michigan Department of Transportation (formerly the Department of State Highways and Transportation). He was named Director in December, 1972, after having served as Deputy Director-Chief Engineer for five years. He joined the Department in 1949 as a Construction Project Engineer, two years after graduating from Cornell University (Ithaca, N.Y.) with a degree in Civil Engineering. His college studies were interrupted for two years and eight months during World War II when he served as a navigator with the Eighth Air Force's Heavy Bomber Group 452 in Europe. He flew 35 bombing missions.

After joining the Department, he worked as a Bridge Project Engineer in the Detroit area until 1956 when he was transferred to Lansing as Assistant to the Department's Bridge Construction Engineer. He was named Assistant to the Department's Chief Engineer in 1961, and served as Chief Engineer of Maintenance for a brief period in 1967 prior to his appointment as Deputy Director-Chief Engineer.

Born June 23, 1923, in the Dominican Republic where his father managed an American-owned sugar plantation, he grew up in West Springfield, Massachusetts, where he graduated from high school. He is past Chairman of the Michigan Water Resources Commission and has been a member of that body since 1974. He is a member of the Michigan State Safety Commission, the Michigan Aeronautics Commission, and the Michigan Environmental Review Board. He is the 1982 Chairman of the Standing Committee on Administration, and past Chairman of the Planning Committee for the American Association of State Highway and Transportation Officials (AASHTO). A Registered Professional Engineer, he is a member of the American Society of Civil Engineers and Michigan Society of Professional Engineers. In 1971, he was selected as one of three Distinguished State Government Employees by the Governor's Awards Commission and in 1980 was named by the American Public Works Association as one of the nation's Top Ten Public Works Leaders of the year. He and his wife, Ruth, are parents of three sons and four daughters, and reside in Okemos. By Don Wiertella

DIANE STEED SWORN IN AS NHTSA ADMINISTRATOR

Secretary of Transportation Elizabeth Hanford Dole recently swore in Diane K. Steed, a federal executive for more than a decade, as Administrator of DOT's National Highway Traffic Safety Administration (NHTSA).

NHTSA is the federal safety agency responsible for enforcing the government's motor vehicle safety regulations and helping the states carry out effective highway safety programs.

Secretary Dole described Steed as "an outstanding federal careerist experienced in regulatory policy and management activities and dedicated to the agency's mission to foster a strong highway safety program."

Steed has been Deputy Administrator of NHTSA since February 1981, as in more recent months has served as the Acting Administrator. "I am proud to serve under a Secretary who has made safety her highest priority," Steed said. "The commitment to safety that Secretary Dole and I have pledged is very clear. We intend to deal with highway safety problems with imaginative solutions involving the vehicle and the roadway as well as the driver."

The new administrator said NHTSA would continue its priority programs to combat the drunk driving problem and to raise the level of safety belt usage. "These programs already are showing positive results," Steed said.

Source: U.S. Department of Transportation

LABADIE GOES TO P.E.A.

Mike Labadie, P.E. has recently left the Oakland County Road Commission to answer the duties of Senior Transportation Engineer with Professional Engineering Associates, Inc. of Birmingham, Michigan.

STEVE TOTH RETIRES

Steve Toth has retired from the Detroit Department of Transportation after nearly 35 years in various positions. He has seen it start as the Traffic Engineering Bureau, then become the Department of Streets and Traffic and finally was merged into D.O.T. with the old D.S.R.

His last position was as a liaison with SEMTA on the CBD people mover (CATS) and light-rail projects.

He and his family plan to enjoy his new found way of life unless the old work ethic beckons in the future.

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CHILD SAFETY SEAT LAW SHOWS POSITIVE RESULTS

Figures recently released by the Office of Highway Safety Planning indicate that the state's child passenger safety law has contributed to a 40.2% reduction in casualties to children under age one. That number dropped to 193 in the first full year of the law. Casualties to children one to four years old dropped from 1,887 to 1,419 in the same time period.

Occupant Protection Coordinator, Judy Nyberg, says restraint use for children under one was 24.8% before the law, but increased to 46.6% after the law (an 88% increase). For children one to four, restraint use was up from 14.4% to 41.9% (a 191% increase).

Nyberg also credits the law with a "carry-over" effect on children four to nine years old. Nyberg says seat belt use increased from 7.6% to 16.2% (a 113% jump). Casualties were down 14.6% for that age group.

The data was collected by the Michigan State Police from statewide accident reports. It reflects casualties only (injuries and deaths). Public Act 117 of 1981 went into effect April 1, 1982.



FHWA DEMONSTRATION PROJECT MICROCOMPUTERS AND TRAFFIC ENGINEERING

The Michigan Department of Transportation will sponsor a microcomputer workshop the week of June 4, in Lansing. The workshop will consist of a one and 1/2 day course with lectures, presentations, and hands on demonstration with six different types of microcomputers and considerable application software. There will be no fee and lunch is included.

Purposes of the project are to orientate state and local traffic engineers to microcomputer systems and programs and to demonstrate the usefulness of microcomputers for traffic engineering tasks.

More complete details will be available prior to the workshop, but participation is expected to be heavy, so call Bob Maki, MDOT, Traffic and Safety at 373-2333 to sign-up.

By Bob Maki



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