

# Michiganite



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

## Letter from the President

As I begin my year as president of the section, I look forward to the coming year and the goals I have set for the section. I also look back to the past year and the accomplishments the section made last year. While looking back I notice that these accomplishments were made because of the hard work of many of the members. Without these people the section would not be a success. In this column I will thank many of the volunteers for their hard work.

My first goal as president is to make the MichiganITE a high quality newsletter. As you can see by this issue the first step toward this has been taken. The executive board is committed to getting four issues of the MichiganITE out and delivered in a timely manner. For this reason the format has been changed. The old format took too long to reach the members because it had to be sorted by hand at the post office. The new format can go through the machine sorters at the post office. We are also using a new publishing system to get the newsletter out more quickly. My thanks go to Shirley Wollner for becoming the new editor and for working hard to help the board reach our goal. My thanks also go to Lee Liston for working hard for the past three years as editor. Lee took over when the MichiganITE was floundering and built a solid foundation upon which Shirley can build. Thanks again Lee.

The next goal is to continue the great technical sessions as we have had in the past. Thanks go to Matt Simon who has already started to do a great job in coordinating this year's technical sessions. He is continuing the great work that Art Slabosky started. Art was the technical program chairman for the last three years and did a great job. Thanks Art!

Another goal as I look forward to this year is to have another excellent turn out at the education fund golf outing. Last year we raised \$9000 to support the education scholarship fund. It is the goal of the board to get the balance in the fund high enough to have the interest on the account fund the scholarship given out. Another way section members can help is by making contributions to the fund when paying their dues. Thanks go to all the members who have done this in the past. Special thanks go to Vicki Holland for her work on the golf outing since the beginning. Thanks also go to the rest of the committee for the work they have put into the outing.

Last year the board appointed a technical project committee that consisted of these members: Lori Swanson, John Abraham, Matthew Smith, Mshadoni Smith, and Eric Tripi. Lori Swanson did an excellent job of chairing the committee. Thanks Lori. The committee's work is complete and the booklet only



Tim Haagsma

needs be printed. Thanks again to the committee for their work.

This year we are going to sponsor a family outing to a Lugnuts baseball game. This year the date is July 25 when the Lugnuts play the Whitecaps of West Michigan (go Whitecaps). Mark your calendars so that we can have a good turn out for this outing. Thanks go to Mark Bott and Dave Berridge for their work in organizing the outing.

On the next page is a list of other members who deserve thanks for their work as committee chairs. In closing I also thank the members who hosted a technical session last year or are hosting one this year. Without the hosts our technical session would not be successful.

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Deadline for article  
 submission for the next  
 issue of Michiganite is:

**Monday, June 1st.**

**Treasurer's Report - Executive Board Meeting**  
**Ann Arbor, MI**  
**February 12, 1998**

|   |            |                    |
|---|------------|--------------------|
| <b>Section Fund Balance</b>                                     |            | <b>\$7,580.05</b>  |
| Section Regular Fund Balance                                    | \$6,375.11 |                    |
| Education Fund Balance  | \$120.50   |                    |
| Incident Management Fund Balance                                | \$1,084.44 |                    |
| <b>Education Fund at National Balance (as of 12/31/97)</b>      |            | <b>\$29,400.74</b> |
| <br><b>ACTIVITIES JANUARY 1, 1998 THROUGH FEBRUARY 11, 1998</b> |            |                    |
| <b>Income - Section</b>   |            | <b>\$828.16</b>    |
| Dues  | \$783.50   |                    |
| Interest  | \$19.61    |                    |
| December 11, 1997 Meeting                                       | \$25.00    |                    |
| <b>Expense - Section</b>  |            | <b>\$371.64</b>    |
| January 7, 1998 Meeting   | \$73.24    |                    |
| February 12, 1998 Meeting                                       | \$100.00   |                    |
| Postage (Dues and Meeting)                                      | \$198.40   |                    |
| <b>Income - Education</b>                                       |            | <b>\$350.50</b>    |
| Member Contribution   | \$350.50   |                    |
| <b>Expense - Education</b>                                      |            | <b>\$0.00</b>      |

## Letter from The Editor

I would like to welcome everyone to the first issue of Michiganite for 1998. I would first like to extend a big "Thank You" to Lee Liston for his work as previous editor for 3 years. It was a pleasure to work with Lee as co-editor.

As you read in the President's Column, we are trying to improve the production schedule and the look of the Michiganite. This is my first try at desktop publishing, so you may see some changes throughout the year as I discover new ways of presenting the material.

As Tim mentioned, one of his goals, and mine, is to make the

Michiganite a high quality newsletter. In order for this to happen we need the help of the Michigan Section Members. One of the format changes is to make the publication more article orientated again. This means that we need **YOU** as the members to submit articles for publication. I also welcome any articles that you may see in other publications that you feel would be worthy of reprinting in the Michiganite. This publication will only be as good as the materials submitted by the members. I see one of the roles of this publication as a means of information exchange among the Michigan Section members.

Another goal is to have more participation in the newsletter by our student chapters. In this issue, you will find a report on Michigan State University's trip to TRB. I invite students to submit articles regarding their research and any other relevant activities that they are involved with.

I would also like to develop a new column that helps members keep abreast of other members. Announcements of promotions, job changes, births, deaths, passing the PE or EIT exams, and other significant life events that involve our members would be suitable for inclusion. Again, I need your help to obtain this information. Let me know what you, your co-workers, or other Michigan Section members are up to. We aren't always able to attend the Technical Sessions and this would be a good way of letting the people you don't see very often know what you are up to.

Finally, I would like to invite you to submit your comments and suggestions regarding the newsletter. Let me know what you like and don't like. Let me know your ideas for other features or articles. I also welcome suggestions on individuals I can contact for article submission. This is your newsletter - lets work together to make this a useful and award winning publication.

**PLEASE CONTACT ME AT:**  
 email: esashirl@aol.com

Phone: (616) 363-8181  
 or (800) 931-9135  
 Fax: (616) 363-5656

By mail at:  
 Shirley Wollner  
 Wade-Trim, Inc.  
 2920 Fuller NE, Suite 206  
 Grand Rapids, MI 49505

## ***Speed Control in Residential Areas***

### **Michigan Section Technical Project**

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The perception of speeding on local streets is probably the most persistent problem facing residents and traffic officials, alike. Although local or residential streets carry the lowest traffic volumes and suffer the fewest traffic crashes, they are the single largest consumer of a traffic engineer's time and energy. Residents observe vehicles being driven at speeds they perceive are too fast and conclude that the speeds would decrease if stop signs were installed. Speeds considered excessive by residents are considered reasonable by these same persons when they are driving in another neighborhood. Every traffic engineer has been shaken by these same residents who announce "if something is not done about the traffic problem on my street, someone is going to be killed and it will be your fault." This is usually followed by a demand for various traffic control measures and often backed up with petitions from residents. Traffic officials then must focus their attention on responding to these pressures, often diverting resources that could be dedicated to solving major capacity and traffic crash problems on other streets.

Residents' complaints are usually accompanied by a proposed solution to the speeding problem... stop signs. Traffic officials respond that stop signs installed to control speeding: (a) don't work, (b) are frequently violated, (c) are detrimental to safety, (d) are not warranted in the Manual and, (e) actually increase speeds between stop signs. When residents are told that stop signs are not the answer to the speeding problem, they feel they must fight city hall to get them installed. A confrontational relationship is established between residents and traffic officials and the stop sign becomes a "trophy" which is awarded to the winner of the confrontation. Solving the speeding problem becomes secondary to winning the "trophy". The end results of this process are: (1) unhappy citizens, (2) continued complaints and requests for more stop signs, (3) increased political pressure and, (4) often, approval of stop sign installations to bring the controversy, temporarily, to an end. However, experience shows the speeding problem is usually not solved. Before and after studies show that stop signs usually increase mid-block speeds and create violators of the stop controls.

The "Speed Control in Residential Areas" booklet introduces traffic engineers, law enforcement officers, elected officials and community leaders to the concept of traffic calming which may help alleviate speeding in residential areas. Traffic calming is the combination of physical controls and community support to reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized users. Some objectives of traffic calming include: reducing speeds for motor vehicles, reducing crash frequency and severity, increasing safety, reducing the need for police enforcement, and reducing cut-through motor vehicle traffic.

Traffic calming measures are typically installed as part of an area wide traffic management scheme rather than on a single street to avoid shifting the problem from one street to another. A successful traffic calming program must include enforcement, education, engineering and community involvement. Community support and participation is an integral part of a successful traffic calming program. This booklet will give guidance on how to set up a successful traffic calming program in your community.

The "Speed Control in Residential Areas" booklet provides alternatives that may help decrease speeds on residential streets. It discusses the advantages and disadvantages of each alternative. It points out that there is no single, simple solution to all speeding problems that satisfies residents, is effective, and meets good engineering practices and standards. It also stresses that there may not be a tool to reduce speeds. Regardless of the approach used, there are certain criteria that should be followed:

*Continued on following page*

*Speed Control continued*

- All devices must meet Michigan Manual of Uniform Traffic Control Devices requirements.
- The integrity of streets classified as Major under the provisions of Public Act 51 must be preserved.
- Permanent traffic control devices should be used to the minimum extent required to achieve the objectives.
- Access to all properties must be accommodated.
- Access from the nearest arterial to the destination should be as direct as practical.
- Local access to neighborhood facilities must be accommodated.
- All permanently installed devices must be designed to allow emergency vehicle access.
- Consideration must be given to circulation, parking and needs of customers and business owners.
- Consideration should be given to the access needs of essential commercial services such as garbage pickup, snow plowing, student busing, etc.
- Changes must not unduly impact adjacent areas.

It states that residents and local officials must work together with a full understanding of each other's problems, limitations and concerns for the common goal of safety on residential streets. One of the best ways to accomplish this is to have citizens involved in standing or ad hoc community traffic safety committees.

The "Speed Control in Residential Areas" booklet is intended to be used as a traffic safety tool by traffic engineers, law enforcement officers, elected officials, and community leaders in their day-to-day traffic control responsibilities.

Speed Control In Residential Areas  
By: Michigan Section's Technical Project Committee

248/788-0270  
Fax: 248/788-2152



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## Does Traffic Calming Make Streets Safer?

### **Abstract**

Traffic calming techniques are increasingly being considered by communities asked by their citizens to reduce the speed and traffic volume in residential areas. Traffic calming measures can be a tool for traffic engineers, but it is important to know when and how to use this tool. These techniques usually require some modification to the road to make it less attractive to motorists. The modifications to roadway geometry reduce the design speed of the road to lower speeds and to make it unattractive to through traffic. The modifications to roadway geometry could include roundabouts, speed humps, road closures, dips, diverters, or chokers. However, the changes in roadway geometry usually make the road less safe for travel. Thus, by addressing what may be a perceived problem of speed and volume by changing the roadway characteristics, we can actually make the road a more likely site of traffic crashes, endangering both motorists and pedestrians.

When considering changes to roadway geometry, it is important to understand the traffic safety implications. If we reduce the average speed on a residential street by 5 mph but

increase the potential for traffic crashes, it is not at all clear that we have made the road safer. Two decades of experience in Troy, Michigan and other suburban Detroit communities indicate that local streets are generally a safe place to be. These are streets which have not been modified from their original geometry - a 28 ft wide pavement with parking prohibited on one side. Approximately 90% of the traffic crashes occur on arterial streets. Yet local traffic engineers spend more than half of their time addressing traffic issues and perceived traffic issues on streets which have less than 10% of the crashes.

Arterial street congestion is one of the major causes of complaints about speeding and cut-through traffic. This congestion causes motorists to seek alternate routes on local streets. Many times local street traffic issues can be addressed by improving traffic flow on arterial streets. To address the issues, it is also important to understand how much of the problem is perceived and how much is reality. Daily traffic volume on local streets can be in the range of 500 to 3000 without any cut-through traffic. The 85th percentile speed can be

in the 30 to 35 mph range on these streets with an experience of no traffic crashes. When speed enforcement is initiated on these streets, 50 to 70% of the citations go to motorists who live within 1 mile of the local street.

The prescription for addressing traffic concerns should respond to the symptoms. Traffic calming is not always the right prescription. Non-invasive surgery for local streets could include enforcement, letters to owners of vehicles observed speeding, or a "kids wear orange" program. To develop the right answer for a particular part of the city, community involvement is always needed. The assistance of a qualified traffic engineer will help the neighborhood develop the appropriate solution - which may not be modifications to the road.

Richard F. Beaubien, P.E.  
Transportation Director  
Hubbell, Roth & Clark  
P.O. Box 824  
Bloomfield Hills, Michigan 48303  
248/338-9241 fax 338-2592

1998 Michigan Section Calendar

Mark your calendar!!

6<sup>TH</sup> Annual

Michigan Section ITE

Benefit Golf Tournament

Date: May 21, 1998, (Thursday)

Place: Marion Oaks Golf Club, Howell, MI  
(same place as last year's event)

Golf, lunch, dinner, awards and many prizes

Proceeds to benefit  
Michigan Section Educational Fund

Golf will be limited to first 144 paid registrations,  
so start gathering your foursome.

Registration forms will be mailed in April.

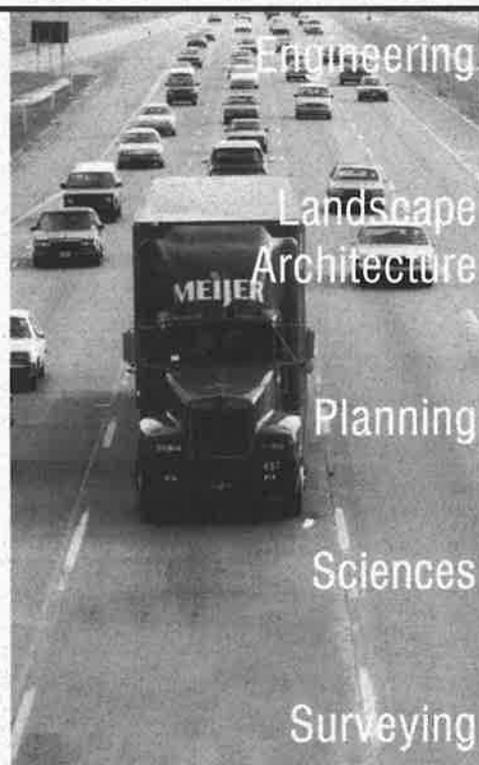
| <u>Date</u>   | <u>Location</u>  | <u>Type</u>                     | <u>Host</u>   |
|---------------|------------------|---------------------------------|---|
| March 19      | East Lansing     | Tech. Session                   | Ken Johnson<br>(517) 335-2231                                   |
| April 23 & 24 | Indianapolis, IN | District III                    |   |
| May 21        | Howell           | Educational Fund<br>Golf        | Vicki Holland<br>(313) 955-2158                                 |
| July 16       | East Lansing     | Tech. Session                   | Tom Maleck<br>Tom Krycinski<br>(517) 353-6448<br>(517) 353-9782 |
| July 25       | East Lansing     | Family Outing                   | Mark Bott   |
| August 8-12   | Toronto          | International<br>Annual Mtg.    |   |
| September 3   | Grand Rapids     | Golf Outing                     | Ron Dressander<br>(616) 249-3470                                |
| November 5    | Kalamazoo        | Tech. Session                   | John Byrnes<br>(616) 381 - 3171                                 |
| December 3    | Farmington Hills | Annual Meeting<br>Tech. Session | Kevin McCarthy<br>(248) 473-9590                                |

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## January Technical Session

### Michigan D.O.T. Reflects on Signs By: David Long – M.D.O.T.

David Long gave an in-depth overview of the Mobile Evaluation of Traffic Signs (METS) system. The system has the ability to evaluate traffic signs and record data at highway speeds. The system requires a two-person crew and they can record data for approximately 300 to 400 signs per day.

### Casino Related Traffic Impacts in the City of Windsor By: John Wolf – City of Windsor

John Wolf discussed the traffic impacts that the City of Windsor is experiencing due to the temporary casinos. Currently, approximately 4.5 million patrons visit Casino Windsor per year and 2.3 million patrons visit the Northern Belle per year. The combined number of patrons per day visiting both casinos is 19,000. Of those patrons, 80% are from the United States. During the PM peak hour of the casinos, the casinos generate approximately 400 trips. The PM peak hour of the casinos does not occur at the same time as the PM peak hour of the adjacent street system. The permanent casino with hotel is expected to attract 20,000 patrons per day. Therefore, the traffic impacts are expected to be similar to the temporary casinos.

### The Development and Implementation of a Comprehensive Transportation GIS Network

By: Adele Nwankwo and Tina Roberts - SEMCOG

SEMCOG is working with state and local agencies to create a comprehensive transportation GIS network for planning applications in the region. This is a common base that can be used by state and local agencies. The initial development is complete and the next step in the development of the GIS network is to make it a more comprehensive system, including all roads in Michigan. Key agencies have worked together to create a common base GIS network for the state. As GIS becomes an essential tool for transportation planning, agencies will easily be able to share information through a common base.

### Impacts of the Davison Freeway on Local Economic Development – After Reconstruction

By: Dennis Evans – City of Highland Park

Since the Davison Freeway was reconstructed and reopened in the fall of 1997, the City of Highland Park has seen an increased interest from new developers to bring development into the City. Millions of dollars are expected to be invested in the City of Highland Park in the form of an industrial redevelopment district, residen-

*Continued on following page*

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January Technical Session continued

tial developments, major retail centers and a cultural center. Many developers have attributed their decision to locate their development in the City of Highland Park to the reconstruction of the Davison Freeway.

**Status Report of Advanced Traffic Management System for Downtown Ann Arbor**

By: Les Sipowski – City of Ann Arbor

The City of Ann Arbor received funding for new traffic signal controllers and to upgrade the overall traffic signal system within the City. The project included 60 intersections although the new system has the capabilities of handling up to 500 intersections. The project team included Severence Electric, Carrier and Gable, Inc. and the City of Ann Arbor. The role of Severence Electric was to handle all underground electrical installation. Carrier and Gable, Inc. supplied the hardware and software and the City of Ann Arbor was responsible for system integration.

**Triton Barrier Increases Safety for M.D.O.T. Workers**

With an increased number of construction projects in 1998 coupled with additional needs for safety, M.D.O.T. is using Triton water filled barrier to provide positive protection for workers and motorists alike.

Providing positive protection in lieu of barricades or barrels keeps everyone safer. Water filled barriers will prevent errant vehicles from entering your work area.

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Triton usage in Michigan is on the rise. Several new M.D.O.T. construction projects are scheduled to use the Triton barriers during this coming construction season. Cities and counties are also experiencing the benefits of providing positive protection through the purchase of Triton for their own crews.

**If you have short term needs and want to provide a safer work environment for your construction workers and motorists, call Highway Services (313)531-6825 and Work Safe Supply (616)531-6825 for a quote. They will furnish and operate water filled Triton Barrier for your entire project! For inquiries regarding the purchase of Triton Barrier, contact Carrier & Gable, Inc. at (248)477-8700.**



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## ***Thank You ITE!!! - from Michigan State University***

Thanks in part to the generosity of the Michigan Section of ITE, 36 students attended the annual Transportation Research Board (TRB) conference in Washington, D.C. in January. Not only was MSU well represented at the conference this year but, many of the students presented the findings of research conducted in cooperation with MSU faculty.

We are pleased to announce that graduate student, Sarah Binkowski, presented a paper entitled Evaluation of Michigan 70-mph Speed Limit. Co-authors of the paper were Dr. Thomas L. Maleck, Dr. William C. Taylor, and Tamara Czewski.

Paul Dorothy presented at TRB for his second time with a paper entitled Operational Effects of Michigan Urban Diamond Interchange. This paper was co-authored with Dr. Thomas Maleck, and Kristy Miller.

Sam Castronovo, Paul Dorothy, and Dr. Thomas Maleck also co-authored a paper entitled Investigation of Effectiveness of Boulevard Roadways, which was presented by Sam Castronovo.

Engineering Properties of Polymer - Modified Asphalt Mixtures was a paper presented by Muhammad Jamal Khattak and co-authored with Dr. Gilbert Baladi.



*Michigan State University TRB Attendees*

Undergraduate student and TRB first-timer, Donald Wotring, presented his research entitled Pavement Rehabilitation: Michigan Practice. This paper was co-authored with Dr. Gilbert Baladi.

Neeraj Buch presented two of his accepted papers. One paper was entitled Implementation Issues in Mechanistic Flexible Pavement Design: Michigan Experience which was co-authored with David Smiley of the Michigan Department of Transportation and Ashok Gurjar of MSU. The other paper, co-authored with Jacob Hiller, was entitled Impact of Processed Cellulose Fibers on Portland Cement Concrete Properties.

Ashok Gurjar presented Laboratory Investigation of Factors Affecting Bond Strength in Joint Sealants, which was a paper co-authored with Hyang B. Kim, Neeraj Buch, and Eric Moody of the Texas Transportation Institute.

Finally, Mike Frabizzio presented his research in the Data Analysis Work Group (DAWG) forum, prior to the TRB conference. His presentation was on Factors Effecting Transverse Cracks in Jointed Concrete Pavements.

We are pleased to have so many students presenting their work this year!

Don't let all of this fool you, the trip was not all work. Several students took tours of Washington, D.C. and Georgetown. The group also reunited for the ITE reception and for the annual pizza part TRB trip again this year.

We greatly appreciate the support you gave us making it possible to go on the TRB trip again this year. Thanks ITE !!!

Kim Kolody  
MSU ITE Student Chapter President

## ESA Traffic Consultants Strengthens Wade-Trim Traffic Engineering Services

Wade-Trim and ESA Traffic Consultants have joined forces to expand their markets and increase service offerings. Effective January 1, 1998, ESA became part of Wade-Trim.

Located in Grand Rapids, ESA has created a niche in western Michigan over the past 14 years, providing highly specialized traffic engineering services. President, Ed Swanson, and his staff of five engineers have been designing signal systems, intersection geometrics and other programs to optimize the flow of traffic since 1967. ESA and Wade-Trim have been working together for years. The merger strengthens Wade-Trim's transportation planning and design services and addresses plans to expand into western Michigan. It also enables ESA to meet the growing needs of clients that extend beyond traditional traffic engineering services. Western Michigan clients of both firms will have access to a local office that can provide a full range of infrastructure management services.

ESA is currently answering their phone Wade-Trim/ESA. As the connection to Wade-Trim becomes better known, ESA will take on the Wade-Trim name.

Expanded transportation engineering services resulting from the merger include:

### Planning

- Site Impact Analyses
- Transportation Master Plans
- Access Management
- Parking Needs Analyses
- Incident Management Plans

### Operations

- Circulation Studies
- Corridor Studies
- Intersection Studies
- Signal Warrant Studies
- School Studies
- Sight Distance Studies
- Accident Studies

### Design

- Traffic Control Plans
- Traffic Signal Design
- Site Design
- Geometric Design
- Traffic Maintenance Plans



ESA Staff (left to right) include Shirley Wollner, Dan Robyns, Kathy Hurd, Jay Gailitis, Pat Johnson, Ed Swanson, and Jeff Michell.



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