**Feature Article**

**2017 US Open Transportation Planning**

By Art Baumann and Pat Hawley

The 2017 US Open golf championship was held at Erin Hills Golf Course in Erin, WI on June 12-18, 2017. Soon after Erin Hills was awarded the event, the Wisconsin Department of Transportation (WisDOT) agreed to be a partner in planning for and accommodating the estimated 200,000 organizers, staff, participants, and spectators. The event began with practice rounds June 12-14, with the championship tournament taking place June 15-18. The event is estimated to have had an approximately $120 million economic impact on the state. Transportation planning began in 2012, in coordination with Erin Hills, the United States Golf Association (USGA), Wisconsin State Patrol, and many other agencies including Washington and Waukesha Counties.

The Erin Hills golf course is located about 35 miles from Milwaukee, and lies 11 miles west of I-41 and 16 miles north of I-94. The roads between these transportation arteries and the golf course are almost exclusively rural, two-lane highways, many of which have geometric deficiencies. In 2011, Erin Hills hosted the US Amateur championship tournament. This was seen as a “mini-open”; however, the attendance was relatively low. All of the parking for the Amateur was accommodated on-site at Erin Hills, a very different situation from the 2017 US Open.
Much of the transportation planning was driven by the location of the spectator parking, and in 2014 the decision was made to provide remote parking with shuttle bus service. Some on-site parking was still provided for golf course staff, corporate sponsors, USGA officials, media, players, and their support personnel. There was also a parking lot about a mile away for event volunteers and vendors. For general spectators, the Blue Lot was provided at the I-94 interchange with WIS 67 in Waukesha County. It contained about 7,000 spaces with a 25-minute shuttle ride to the course. The Red Lot was initially planned for the I-41 interchange at WIS 167 in Washington County; however, the field was too wet and one week before the event the location was changed to the Washington County Fairgrounds. It contained about 4,000 spaces with a 25-minute shuttle ride to the course. The team assumed an attendance of 35,000 spectators plus volunteers and staff to analyze the routes and develop the transportation plan.

Goals for the transportation plan included:

- Protect operations on I-41 and I-94, particularly with respect to operations at the interchanges serving the Red and Blue lots.

- Manage delays and queuing on the surface streets. Standard delay and Level of Service (LOS) thresholds were not used, rather the team tried to identify reasonable conditions for a special event such as the US Open.

- Protect the bus routes to minimize delay for the spectators.

- Limit vehicle and pedestrian traffic along Washington County O in front of the golf course. To do so, County O and nearby Cork Lane were closed to non-resident and non-event traffic. Residents on these roads were provided hang tags for their rearview mirrors to access their homes.

The USGA and WisDOT worked jointly to develop the spectator and shuttle bus routes. It was an iterative process balancing many needs, including travel times, intersection delays, geometric condition of the routes, ability to sign the routes and driver convenience. The spectator route analysis was completed using estimated hourly arrivals and departures, some of which came from previous USGA and PGA events. The team used Vistro software by PTV to assign the traffic to the surrounding routes. Synchro modeling forecasted delays at key locations. The team then adjusted the routes to balance out locations with higher delays.
The signing plan was a significant effort due to the fluidity of the route selection. It included pre-event warning signs, inbound wayfinding, and outbound directions to the Interstate Highways. The team used 36 static signs and 4 Portable Changeable Message Signs (PCMS) for the pre-event signing. For inbound traffic, 150 static signs along routes to 12 parking lots and the drop off area were used. 14 PCMS and 18 Digital Message Signs (DMS) were also used for inbound signage. Outbound there were 98 static signs directing traffic to I-94 and I-41.

In addition, the team created dozens of contingency plans for incidents, weather and parking lots reaching capacity. Alternate routes were identified for every route along two-lane roads in the event of a full-roadway closure, including a plan of action for each route specifying which PCMS signs to move, where to move them, and what messages to display on them. Due to the distances between Erin Hills and the Red and Blue parking lots, the team recognized the weather at either parking location could be very different from the weather at the course itself. As such, the team created contingency plans for various combinations of weather conditions at the Red Lot, Blue Lot, and golf course area. Plans were also developed for full parking lot scenarios.

Shuttle bus operations were designed by USGA to make the process as smooth as possible for spectators. At each main satellite lot passengers were pre-screened for security. Staff then directed them into multiple staging areas set up based on per bus capacity. This allowed 4 to 6 buses to be loaded simultaneously. The USGA philosophy was for buses to wait on guests, not for guests to wait on buses. As such, bus drivers were directed to depart if no passengers were waiting to board, even if the buses had vacant seats.

Part of the planning efforts focused on being flexible during the event; and as expected, several unforeseen issues required on-the-fly adjustments. The late change in the Red Lot location resulted in some signing that was not directing guests as efficiently as desired. On Monday, June 12, the team relocated and adjusted some signs to improve traffic flow. That evening the area received 1.5-inches of rainfall. On Tuesday, June 13, the rain forced the closure of two on-site grass parking lots (2,400 spaces) and the grass vendor/volunteer lot (3,600 spaces); and the team evaluated whether to close the Blue Lot. Gravel trucks were brought in to reinforce the on-site lots, and the USGA directed vendors and volunteers to use the Red Lot. The team also began planning for a potential move of the Blue Lot traffic to a large paved parking lot in Milwaukee, which...
required a custom signing plan. On Saturday, June 17, the team observed 1-2 mile queues at the Blue Lot, and found it was approaching capacity by 10:00 AM. Multiple factors contributed to the queues, including gravel trucks on-site restricting the lot’s entry capacity. To mitigate these concerns, all northbound I-894 traffic was redirected north on I-41 to the Red Lot rather than the Blue Lot.

As with any special event, the team has some lessons learned to offer:

- Collaboration with the State Patrol is key. It should start early and continue all the way through the event.

- PCMS are important. You need them, and a lot of them. Develop message plans in advance. The team obtained 15 before the event and ultimately used 17 PCMS during the event. Be sure to field test the PCMS beforehand, sometimes they malfunction.

- PCMS messages are a challenge. There are three lines of text per panel, with eight characters per line (including spaces, commas, etc.), and two alternating panel displays, allowing only 48 characters per message.

- Use large fonts for static signs on the freeway. Install them in advance to allow for field review. Have an on-call manufacturer to handle unforeseen needs.

- Mobile cameras are a huge resource. Test the locations before the event to confirm sightlines.

- The State Patrol’s aircraft was another key resource. The team used it to monitor parking lot occupancy and to fill in the gaps where the portable cameras could not provide coverage.

- Consider the impact of private parking lots. For the US Open nearby private lots caused some congestion and pedestrian conflicts, but overall they were not a major concern.

In summary, the best thing to do for a special event like the US Open is to plan, plan, and plan some more. It is important to gather the various stakeholders and identify mutual transportation goals. Continuous and open coordination is vital. And finally, be prepared to adjust during the event and be as responsive as possible.

Pat Hawley and Art Bauman Present at the July ITS/ITE WI Meeting
President’s Message
By Brian Porter

Can you believe it’s already September? Wow, the year is flying by! I am so grateful for the amazing volunteers we have in the Wisconsin Section. Over the past three months, more than 30 people from the Section have stepped up to serve on the Midwestern District Conference Local Arrangements Committee, our Section Meetings Committee and the Social Events Committee. Please thank these individuals for all of their hard work.

Midwestern District Conference Local Arrangements Committee

John Davis (co-chair)
Jess Billmeyer (co-chair)
John Bruggeman
Alex Cowan
Sarah Gengler
Vicki Haskell
Jeff Held
Kyle Henderson
Tristan Hickman
Jennifer Kobryn
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Brian Porter
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Angel Sanchez
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Rebecca Szymkowski
Yang Tao
Alex Thornburg
Ashley Vesperman
Kevin Wehner

Section Meetings Committee

Kait Sanford (chair)
Kelly Greuel
Vicki Haskell
Diego Silva

Social Events Committee

Stacey Pierce (chair)
Alicia Dougherty
Tyler Tkachuk
Erin Schoon

I also want to thank our generous sponsors: AECOM, Ayres, CH2M, EMCS, HNTB, KL Engineering, R.A. Smith National and TAPCO.

In June, around 300 students and professionals from around the country came to Madison for the Midwestern District Conference. The Local Arrangements Committee did an awesome job planning three days of technical workshops, presentations, vendor exhibits and fun! There was definitely something for everyone. If you didn’t have a chance to attend the conference this year, I would encourage you to consider attending the 2018 conference in Minneapolis.

More than 50 people joined us for the joint ITE / ITS Wisconsin lunch meeting held in Milwaukee in July. Art Bauman and Pat Hawley had everyone’s attention during their presentation on the traffic planning work they completed for the US Open held at Erin Hills earlier this year. Thanks to Art and Pat for a great presentation!
Our annual social event was held in Waukesha at the Point Burger Bar and Veloce Indoor Speedway. I was not able to attend but everyone I spoke with had a great time. The highlight was the racers rounding turn two three wide directly in front of the spectators! Special thanks to Stacey Pierce and the rest of the Social Events Committee.

Congratulations to Justin Schueler for being chosen as the 2017 Ken Voigt Award winner! As the winner of this award, Justin traveled to Toronto for the ITE Annual Meeting at the end of July. Read more about Justin’s experience later in this newsletter. Justin is another great example of how our membership is continuing to fulfil ITE’s mission.

I hope you will take some time to join us at the remaining ITE events we have planned for 2017.

- September 13: Joint breakfast meeting with WTS Wisconsin – Waukesha, WI
- October 11: UW-Platteville / UW-Madison Student night – Madison, WI
- December 13: Annual Section meeting – Delafield, WI

We’re always looking for volunteers to help us continue to enhance the Section. If you or someone you know is interested in getting more involved with ITE Wisconsin, please contact me or one of the board members.

Thank you for taking time out of your busy schedules to continue building relationships with your fellow ITE members throughout Wisconsin! Your time and energy help us make ITE events successful.

Brian Porter
ITE Wisconsin Section President
Recent Meetings, Events, and Awards

ITE Midwestern District Annual Meeting – June 18 through 20, 2017
By Jeff Held

The Wisconsin Section hosted the 2017 Midwestern District Annual Meeting in Madison this year. The event took place at the Concourse Hotel located steps away from the State Capital building and it attracted nearly 300 transportation professionals and their families. 13 vendors exhibited their products throughout the conference. Activities began in earnest on Sunday, June 18 with a golf outing at Yahara Hills Golf Course, and technical workshops including a PTOE refresher course and another covering queue calculations in work zones. A guided tour using Madison's BCycle bike sharing service was provided. A student design competition was also held Sunday.

On Sunday afternoon 8 teams with about 30 total people participated in the Great Madison MiteY Race. This Amazing Race style competition sent participants to five Pit Stops located on State Street, the Capital Square, and the Monona Terrace. The finish line for the race was the Get Acquainted reception held at the Madison Children's Museum. The venue was a hit and a number of attendees brought their children to explore the unique museum exhibits.

Monday began with a morning plenary session featuring a welcome from Madison Mayor Paul Soglin. The keynote address was given by Russ Brooks from Transportation for America, and Yang Tao the City of Madison Assistant Traffic Engineer. Russ and Yang discussed the Smart Cities Collaborative and recent Smart City initiatives in the City of Madison. After a networking break the first of the breakout sessions occurred. The technical program offered four consecutive tracks loosely grouped around alternative modes and safety, innovation, industry trends, and communication/soft skills. A second guided bike tour was provided Monday morning as well. During lunch, Rebecca Szymkowski presented the Midwestern District awards and conducted the business meeting. There was also an address.
from the ITE International President Shawn Leight. The afternoon featured another set of concurrent breakout sessions. John Davis presided over the Collegiate Traffic Bowl after the breakout sessions. Monday evening several social activities were offered, including a brewery tour, student pizza party, and a dinner boat cruise on Lake Monona.

The conference continued on Tuesday with two sets of concurrent breakout sessions in the morning. At lunch, David Dryer presented on the City of Madison’s Journey to Platinum Status by the League of American Bicyclists. The conference concluded with an afternoon set of breakout sessions as well as two-hour workshop on ethics designed to satisfy the continuing education requirements of most states.

The section has received numerous compliments on the conference. Many thanks to the volunteer efforts of the Local Arrangements Committee and to our co-chairs John Davis and Jess Billmeyer.
ITS/ITE Wisconsin Joint Lunch Meeting – July 19, 2017
By Jeff Held

This year’s July Section meeting was held at the UW-Milwaukee School of Continuing Education at 161 West Wisconsin Avenue. The meeting was held jointly with ITS Wisconsin. Anne Reshadi, president of ITS Wisconsin, kicked things off with a welcome to the group. Anne reminded attendees about the annual Mallards game outing that was upcoming, and that this year bus transportation would be provided from Milwaukee to Madison and back. She also let the group know that ITS Wisconsin is seeking a new logo. There is an open competition to design it, with entries due October 20. Anne also reminded everyone that ITS Wisconsin has a $1,500 scholarship that is awarded each year. Applications for that are due October 11. Submittals for the ITS Wisconsin project of the year award are also due on October 11. The 23rd annual ITS Forum will be held on Wednesday, November 8 at Marquette University. This year’s theme is Innovating Towards Sustainability. Registration is currently open. The ITS Wisconsin website has more information on all of these opportunities:

http://www.itswisconsin.org/

Brian Porter also provided a brief welcome. He reminded attendees about the ITE WI annual social outing, this year at Point Burger Bar and Veloce Indoor Speedway. Brian also noted that the next section meeting will be a breakfast meeting with WTS on September 13 at the WisDOT Southeast Region offices in Waukesha. Rich Coakley awarded the 2017 Ken Voight Young Member Award to Justin Schueler. Justin will get his registration and travel expenses reimbursed for the 2017 ITE/CITE Annual Meeting and Exhibit in Toronto, ON, Canada. See Justin’s article in this newsletter for a recap of his experience there. Thanks to the Ken Voigt award committee volunteers including Rich Coakley, Bob Brison, Stephan Hoffman, Stacey Pierce, and Jeff Rohen.

The featured speakers for the meeting were Art Baumann and Pat Hawley and they discussed the transportation planning efforts for the 2017 US Open hosted at Erin Hills Golf Club in Erin, WI. See the Feature Article in this newsletter for a summary.

Thanks to Emily Silverson, Amy Worzella, and Ahmet Demirbilek from ITS Wisconsin for their help in arranging the meeting. And thanks to our section’s meetings committee including Kait Sanford, Kelly Greuel, Vicki Haskell, and Diego Silva.
As this year’s ITE Wisconsin Section Ken Voigt Young Member Award recipient, I was provided the opportunity to attend the 2017 ITE Annual Meeting and Exhibit held in Toronto, Ontario. I was joined by ten other Wisconsin Section members and many more from the Midwestern District. This year’s meeting was held jointly with the Canadian ITE Annual District Meeting and featured over 1,300 registrants, dozens of vendors/exhibitors, the Collegiate Traffic Bowl Championship, and four days of technical and social activities. The ‘first-timer’ attendee reception allowed me to meet other new attendees and current ITE leadership, including International President Shawn Leight, prior to the full meeting. Within the first hour, I connected with people from Arizona, Arkansas, Australia, and of course Canada. It was quickly apparent this was truly an international event.

Throughout the meeting, a consistent message I heard was the need for a balanced transportation system accommodating of all users and increased collaboration between engineers and non-engineers. New goals focused on providing livable, sustainable, and healthy communities have been developed, and it is clear transportation will and does play a key role in achieving these goals.

Autonomous and connected vehicles and their impact on the transportation system continue to be a leading topic of discussion. John Leonard, Ph.D, a professor at MIT and Vice President for Autonomous Driving Research with the Toyota Research Institute, shared current progress and challenges associated with autonomous technology. Some specific challenges include identifying police officer control versus signal control at an active signalized intersection and deciphering street side advertising with human imagery. John stressed as the technology continues to advance, the need for collaboration between technology experts and transportation professionals will be critical for successful implementation.

Another major transportation initiative discussed was Vision Zero, the road safety approach aimed at eliminating fatalities and serious injuries on the transportation system. Upal Barua, a Senior Traffic Engineer from the City of Austin, Texas, shared an interesting video of people being asked about Vision Zero. Many of those interviewed stated they didn’t believe zero fatalities was an achievable goal and identified a wide range of values for what they thought a ‘realistic’ goal should be: 10% reduction, 50% reduction, less than 100 fatalities, etc. Participants were then asked what the traffic fatality goal should be specifically for their family. Every response was zero. This video conveyed to me that individually we share the same goal and if applied community-wide, nationwide, and worldwide the goal can be realistic. Breakout sessions highlighted both traditional and innovative approaches communities are taking to implement their Vision Zero plan. Some innovative approaches involved working with insurance companies and hospitals to widen the scope of roadway safety analysis and aggressive outreach through the media and youth education, including the use of a traveling mock cityscape to teach children about roadway safety.

Several career advancement opportunities were also offered, including a technical session I attended titled Trial of the Century. In this session, court proceedings from a trial case involving a motor vehicle collision were
reenacted by practicing lawyers, engineers, and a judge. The reenactment included examination of engineers and their findings from both sides of the case. The session highlighted agency and consultant liability, as well as the importance of sufficient documentation and concise report writing. It also provided insight into courtroom procedures and examination/cross examination questioning that many engineers, including myself, have not experienced.

Additionally, various technical tours and vendor/exhibitor demonstrations were available as part of the meeting. I had the opportunity to tour the Toronto Transportation Operations Centre (TOC). The facility provides traffic monitoring and incident response assistance 24 hours a day/365 days a year. The TOC manages over 5,600 km (3,500 miles) of roadway, 2,300 traffic signals, and 230 traffic cameras throughout the city.

Exhibitor Hall served as a popular gathering place during the meeting and featured new equipment and technologies in the transportation field. Specific to my interests, all of the industry’s major traffic analysis software providers were represented. I was able to meet with company representatives, ask questions, and participate in hands-on demonstrations. These were valuable interactions not possible through a typical customer service call.

Beyond the technical program, a “can’t miss” event for me was the Collegiate Traffic Bowl Grand Championship. The jeopardy-style student competition featured the nine district champions, including the University of Minnesota from the Midwestern District, and a jovial standing room only crowd. I was truly impressed with the level of knowledge and competitiveness displayed by the students. In the end, Cal Poly (Western District) prevailed victorious and became the first ever two-time champion.

The Canadian District and the City of Toronto were fantastic hosts. A ‘Hockey Night’ reception and street hockey game topped off a handful of Canadian-affiliated sessions and social events. I also had an opportunity to explore the city on foot, bicycle, and transit. Many major attractions were within walking distance and a bicycle friendly downtown made using the Toronto Bike Share system a breeze. I was able to experience several bicycle facilities new to me including bike boxes, bike signals, and contraflow lanes.

In conclusion, I would like to thank the ITE Wisconsin Section and the Ken Voigt Young Member Award committee for selecting me for this year’s award. I would also like to thank my employer, R.A. Smith National, for supporting my involvement in ITE and other professional and community activities. The ITE Annual Meeting and Exhibit delivered as an international gathering of transportation minds and provided me lasting professional connections and personal memories. I encourage everyone to consider attending a future event.
Annual Social Outing at Point Burger Bar and Veloce Indoor Speedway – August 9, 2017

By Jeff Held

The Wisconsin Section’s annual Social Outing took place at Point Burger Bar and Veloce Indoor Speedway in Waukesha on Thursday, August 9, 2017. About twenty attendees enjoyed complimentary appetizers and beverages courtesy of the section. Several racers suited up to compete on the indoor electric go-kart racetrack. The drivers competed against the track trying to clock the fastest lap time. Tires squealed as the electric carts were pushed to their limit. A tight and technical course led to some elevated heart rates and sore forearms after the first 12-lap feature. Andrew Axt was the winner of feature 1 with the fastest lap time.

In the second event, Jeff Roemer and Stephan Hoffman were placed into a larger group of hooligans and nogoodniks. The first clue was that the group brought their own helmets. Jeff purposely started last and was quickly lapped. He soon was hit from behind, spun, and ended up with a car on top of his helmet and roll bar. No crash diagram was created for vehicles #1, #2 and #3. He suffered some road rash on his left leg, a bruise on his upper left arm and left index finger, and was mildly concussed. He got up, pulled off his helmet and walked away from the track. Stephan was concerned and found Jeff with ice bags on his arm and leg in the lobby. Track officials were preparing to black flag the local punks, but it was too late for Jeff. Once the event was restarted, Stephan drove with one eye on the road and one looking out for what may come next. Stephan won the side bet awarded to the fastest time. Jeff is most certainly the first member to be involved in a crash during an ITE Wisconsin event.

Despite a scare for one of our racers, everyone enjoyed themselves and agreed the new venue was a lot of fun. Thanks to Stacey Pierce, Alicia Dougherty, Tyler Tkachuk, and Erin Schoon for organizing the fun event.
Upcoming Events

September 13  WTS/ITE Wisconsin Section Joint Meeting
               WisDOT SE Region, Waukesha, WI

October 11   UW-Madison/UW-Platteville Student Chapter Meeting
              TBD

November 8   ITS Forum
              Milwaukee, WI

December 13  ITE Wisconsin Section Annual Meeting
              Delafield, WI

January 7-11, 2018  2018 TRB Annual Meeting
                    Washington, D.C.

January 17, 2018  ITE Wisconsin Section Meeting, Public Service Appreciation Luncheon
                  Madison, WI

March 7, 2018    UW-Milwaukee/Marquette University Student Night and
                  Martin Bruening Award
                  UW-Milwaukee Campus

April, 2018      Traffic Engineering Workshop and Transportation Planning Forum
                  Pewaukee, WI

May, 2018       ITE Wisconsin Section Meeting
                  Green Bay, WI

August 20-23, 2018  2018 ITE Annual Meeting and Exhibit and
                    Midwestern District Annual Meeting
                    Minneapolis, MN

Do you have some information or a transportation haiku to share? The ITE Newsletter is an excellent medium for reaching section members. If you would like something published in the upcoming newsletter, please contact the 2017 Wisconsin Section Member Director, Jeff Held at (608) 251-4843 or jeff.held@strand.com.
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