A Year of Challenge and Change
BUDGET CUT BY 20% OR MORE?
SAVE UP TO 70% OR MORE ON YOUR VEHICLE DETECTION

<table>
<thead>
<tr>
<th>Product</th>
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<tr>
<td>Radar*</td>
<td>$20K - $30K</td>
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<tr>
<td>Video/Radar Hybrid</td>
<td>$16K - $25K</td>
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<td>Thermal*</td>
<td>$15K - $20K</td>
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<td>Single Camera 360 Video*</td>
<td>$14K - $18K</td>
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<tr>
<td>Traditional Video*</td>
<td>$12K - $16K</td>
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<tr>
<td>ITS Plus Lightning Series</td>
<td>$6K - $9K</td>
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* PRICING MAY NOT INCLUDE ADVANCED DETECTION.

The ITS Plus 7th Generation Lightning Series of Vehicle Detection products provides the best performance at the best price. The multi-patented design can detect vehicles even in complete white out or glare conditions (like thermal) while simultaneously providing Advanced Detection to 1,000 ft and Vehicle Counts (like radar) and Ethernet at a fraction of the price. Only ITS Plus offers Optical Mask Technology (OMT) and a Dual Algorithm based detection. Clever software replaces expensive hardware to achieve the most cost effective and highest performance vehicle detection system on the market. Find out why everyone is talking about ITS Plus.

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December is a time of reflection, family gatherings, and contemplation of the past year as we ready ourselves for what comes next. Frankly, most of us would like to put 2020 in our rearview mirror as quickly as possible. It seems to have been the year that careened from one unusual event to the next far too rapidly. I think we all want to change lanes and get right to 2021.

I have witnessed far too many families impacted by 2020 in ways that no one would have imagined a year ago. Our hearts and prayers go out to so many people that have had to endure unimaginable hardships this year. Yet in what has felt at times like one insurmountable crisis after another, I have seen extraordinary acts of service. ITE members are beacons of leadership, and their kindness and compassion rise from our fundamental values of making a difference in our communities. These members have chosen to be more than our circumstances, advancing the opportunity for change. We celebrate the collaboration of the International Board, ITE staff, and ITE leaders bringing value to you as members. Read more on these accomplishments at www.ite.org/ibodrecap.

As 2020 draws to a close, I am excited for what lies ahead in 2021. What is on “Santa’s List” for transportation and ITE? Let me tell you.

• Helping members understand the role of big data in our industry’s future;
• Understanding the role work-from-home will play in commute travel;
• Exploring the role equity, diversity, and inclusion plays in transportation;
• Working together to determine how ITE can play a valuable role in STEM and the career trajectory of students in their transition to young professionals;
• Making the ITE leadership experience one that advances your career development at each contact point—District, Section, Chapter, Council, Committee, LeadershipITE, etc.;
• Continued sharing of the global knowledge and successes in our industry through before and after studies;
• A reauthorization of U.S. federal transportation funding;
• Advancing speed management and sharing new research such as the forthcoming NCHRP 17-76; and
• A wealth of technical products from ITE, including reports, guides, and recommended practices (see the “Year in Review” article starting on page 26, which lists recently released and forthcoming technical products).

If these are not enough reasons to stay connected to ITE in the coming year, there is one more: you. Your technical excellence, your desire to make a difference, and your collaboration and diversity of perspectives. You are the engine of our industry. None of these activities in 2021 are possible without you. Together, we can rise up above the norm to shape our communities.

ITE will be there with you creating the fundamental foundation of change and advancement.

Finally, in my last month as International President of ITE, I want to thank each of you. It is your passion, kindness, energy, and courage to seek change that has made it an honor to serve you. Take care and be safe.
A Year of Challenge and Change

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Challenge and Change

In selecting the tagline for this issue of ITE Journal, we settled on “A Year of Challenge and Change” to capture the range of emotions and responses that we have been through in 2020. The year started so innocuously in January with the annual gathering for the Transportation Research Board Meeting and all the ITE events that surround it. As February turned to March, it started to become clear that this might not be a normal year. From there—everything was turned on its head, with remote operations, virtual everything, and Zoom-time filling up the calendar.

Many challenges presented themselves—from assuring the well-being of our staff and their families, to how to continue to serve our members remotely, to what to do with our Annual Meeting, to how to best help our District, Section, Chapter (D-S-C) and Student leadership stay connected with their members, and so much more.

I am very proud of how well ITE volunteer leadership and staff have responded to these challenges. They say leadership starts at the top, and ITE International President Randy McCourt, P.E. (F) has led the way. I’m sure he did not imagine that he would spend most of his presidential year stuck behind a monitor peering into a camera, but he has let this pandemic define his agenda—rather, he has provided strong leadership for our Board and members, and took on a number of key initiatives himself, most notably development of the What a Transportation Professional Needs to Know about Traffic Counts and Studies during a Pandemic white paper, which went from concept to delivery in less than three months.

The ITE staff quickly adapted to our new virtual work environment and reimagined how to deliver products and services. From our COVID-19 Resources Page to our highly successful virtual Annual Meeting to our new Virtual Drop-In Sessions, to expanded professional development offerings at reduced prices, to supporting a virtual Traffic Bowl and virtual D-S-C meetings, they responded with nimbleness, creativity, and hard work.

What we miss is the opportunity to be together in-person. No amount of Zooming can replace the genuine joy that ITE members get from being with one another. The opportunity to renew friendships and build new relationships, exchange ideas and see and experience transportation innovations, and the chance to help students and young members build their brands and chart their futures are hard to replicate virtually. It is clear that 2021 will be a year of transition toward a normal year as we await development and distribution of vaccines. We won’t be going back to where we were in January 2020, but instead will continue to create a new ITE experience that blends the richness of being together in-person with the ability to use our new virtual tools to connect with and engage more members than ever.

I am excited about the possibilities. Next month, I will focus on some of the new initiatives we have planned for 2021. We intend to leverage the power of our new tools to bring a ONE ITE experience to our members, while planning to gather again, safely and in-person. This will not be a normal holiday season, but I wish you a joyous holiday and hope you can find ways to be connected with family and friends. Stay safe and well, and you can reach me on the ITE e-Community or on Twitter: @JPaniatiITE.

Jeffrey F. Paniati, P.E. (F)
Executive Director and Chief Executive Officer
Thank you to our ITEJ Reviewers!

ITE Journal would like to thank all those who completed peer reviews of articles in 2020. We also want to say thank you to those who have indicated they are willing to be a peer reviewer. These volunteers provide an invaluable service to ITE Journal and the ITE community by helping us select and enhance articles for publication. If you are interested in becoming a peer reviewer, please contact ITE Journal Sr. Editor Holly Stowell at hstowell@ite.org.

How to Submit an Article

If you would like to submit an article to ITE Journal, please check out our 2021 editorial calendar at www.ite.org/publications/ite-journal/editorial-calendar and email ITE Journal Sr. Editor Holly Stowell at hstowell@ite.org with your ideas.
New Members
ITE welcomes the following new members who recently joined our community of transportation professionals.

**Canadian**
- James Macfarlane
- Donna M. Baugh
- Adam Sweanor, MPL
- Serena Lam

**Florida Puerto Rico**
- Steven Hollenkamp
- Lishengsa Yue
- Karla C. Rodrigues Silva

**Global**
- Rick Lewis
- Rashid Al Ali
- Ibrahim Alsghan
- Gareth Evans

**Great Lakes**
- Annette Stroman, P.E.
- Elizabeth Harding
- Nick Hegemier, P.E.
- Olivia Polinsky
- Trevor Reich
- Nada Naffakh

**Mid-Colonial**
- Charles Nicholas Driban
- Seongah Hong
- Robert Molster

**Mountain**
- Robert E. Hunter, PE.
- Sara Going
- Samantha Cole

**Northeastern**
- Muna Mahmud
- Nicole Silvestro
- Moriah Richardson

**Southern**
- Nancy Pullen-Seufert
- Sean Goldsmith
- Patrick E. Stiegman
- Andrea Gabriela Ruano Duke

**Texas**
- Ximena Jauregui
- Ning Zou
- James Patrick Janulis

**Western**
- Barton G. Treece
- Mark Friedlander
- Tulsi Chudgar
- Daniel C. Co
- Darren Arrieta
- Joshua M. Hazlett

Letters in parentheses after individuals’ names indicate ITE membership status: S - Student Member; IA - Institute; M - Member; F - Fellow; R - Retired Member; and H - Honorary Member. Information reported here is based on news releases and other sources. If you have news of yourself or the profession that you would like considered for publication, please send it to Holly Stowell, hstowell@ite.org.

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Save the Date!
February 19-20, 2021
ITE Virtual Student Leadership Summit
An exceptional conference experience designed by students for students. Sessions focusing on leadership, networking, career development, and professional advice.

Colleges and universities involved in planning include: BYU, Cal Poly SLO, Florida International, Georgia Tech, Michigan State, Monash, Oregon State, Texas A&M, UMass, University of Canterbury, University of Florida, University of Kansas, University of Texas – San Antonio, Villanova, and York University

For more information, visit www.ite.org/virtualSLS.
ITE NEWS

Go Green with ITE Journal

Not in the office to get your mail, or would you like to be more “green”? You can choose to stop the mailed delivery of ITE Journal by filling out a quick online survey at http://bit.ly/ITEJGoGreen.

You will still get the emailed version of the ITE Journal that goes out on the first or second of each month and have full access to the digital edition.

Community Corner

Community Corner highlights the efforts of ITE members to not only encourage transportation education among our youth but to improve the daily lives of people in their community beyond transportation through acts of service.

Jackets for the Homeless

While we are dealing with so many new experiences this year, one aspect of 2020 has remained consistent: Jackets for the Homeless, founded by former ITE International President Zaki Mustafa, P.E. (R) and his wife, Loretta. The Mustafas are again providing jackets to homeless individuals to around the United States with the help of many friends, including ITE Districts, Sections, and ITE staff.

This year, donations to needy individuals included:

• Forty child- and teenager- sized jackets to Never Alone Again, an organization that works with women and children that left domestic abuse situations and homeless families (on behalf of Kiwanis Club of Eastern Bergen County, NJ, USA).

• Nearly 30 jackets to English as a Second Language (ESL) students in need at Clifton High School in New Jersey—many from warmer climates (on behalf of Kiwanis Club of Clifton).

• Twelve jackets to homeless people in Dover, NJ along with backpacks filled with supplies (on behalf of the Tri-Town Morris County Kiwanis Club).

• Jackets donated by the Kansas City ITE Chapter to Uplift Organization, Inc. in Missouri, USA.

If you have any questions or are interested in volunteering, please contact Zaki at zakiladot@gmail.com or visit www.transformalife.org.

We want to hear from you!

Have you, your Section, or Chapter taken on a community project or provided assistance to a non-profit organization? Large or small, we want to hear about it! Please send photos (300 dpi or higher) along with a write-up (no more than 200 words) to Pam Goodell, pgoodell@ite.org for inclusion in a future issue of Community Corner.

ITE Talks Transportation Podcast

New from the Thought Leadership Series

Professional Development in a Virtual World with Shelley Row - Founder, Blue Fjord Leaders

Shelley Row, P.E., CSP, CEO and Founder, Blue Fjord Leaders, discusses effective professional development within this new virtual landscape brought on by COVID-19. Hear her advice for those wanting to develop their leadership traits and perspective on how well transportation professionals have adapted their communication and interpersonal skills to the new environment. As the facilitator for LeadershipITE, she also highlights the adaptation of the program to the virtual format for 2021 and discusses the engaging features that participants can expect from the program.

All episodes available at www.ite.org/learninghub/podcast.asp | Subscribe for free via iTunes at http://apple.co/2hOUz8t

ITE staff pose at headquarters in Washington, DC, USA with coats being donated this year as a part of Jackets for the Homeless.
The 11th Annual ITE Collegiate Traffic Bowl Grand Championship Tournament was held in a virtual format due to the COVID-19 pandemic. The Southern District’s Traffic Bowl in February was the only District event that took place in the conventional, in-person format, while events for the other Districts and the Grand Championship were all held virtually. The Traffic Bowl committees for the Western and Mountain Districts designed the virtual format to conduct the Traffic Bowls during their virtual joint meeting in June. This event was so successful that the ITE Traffic Bowl Committee decided to use this format to conduct the remaining district events and the Grand Championship! In July, a crew of 45 dedicated volunteers started the work to produce the remaining seven District tournaments and the Grand Championship Traffic Bowl.

In 2020, 53 ITE Student Chapters formed teams so that more than 185 student members across Canada and the United States could test their knowledge of ITE, transportation planning, and engineering, as well as in some fun categories to qualify for the Grand Championship tournament on October 21, 2020.

The Grand Championship featured 10 teams for the first time with the addition of the Mountain District! Five schools made their very FIRST appearances in the Grand Championship.

Each team completed a 10-question quiz to determine their seeding position in the 10-team bracket. Oregon State was seeded first, with Purdue and Brigham Young seeded second and third respectively.

The first semifinal game pitted Brigham Young, Florida, York, and Texas-San Antonio. The game was well played, with Brigham Young winning by a one-point margin with 1,801 points over Florida, who wagered all their points on the final clue. The second semifinal match had Oregon State playing UAB and Minnesota. An exciting game was played with UAB wagering 1,799 of their 1,800 points on the final clue, but Oregon State wagered 1,001 points of their 2,600 accumulated points to win by 2 points! The third semi-final game featured Purdue, NYU, and Penn State. Purdue jumped out to an early lead, but NYU came on strong. However, Purdue retained their lead into the final clue and only required a one-point wager to win even though NYU wagered all their points with a correct response to come within one point of the Boilermakers.

The final match featured the top three seeds of Oregon State, Purdue, and Brigham Young. The play was hard fought and low scoring in the beginning with Purdue pulling away with a commanding lead at the end to win going away with Brigham Young placing second and Oregon State placing third in the 11th annual Grand Championship.

Students participating in the Grand Championship received a gift card and the top three teams each received a plaque for their place in the final match. The Purdue University Student Chapter will have their name placed for a second time on the Voigt/Davis Cup as the ITE Traffic Bowl Grand Champion for 2020.

The objectives of the ITE Collegiate Traffic Bowl are to encourage students to become more active members in ITE, to enhance their knowledge of ITE and transportation engineering and planning, and to strengthen the programs of ITE student chapters.
Grand Championship Traffic Bowl Tournament Records – Teams and Individuals

The 2020 Grand Championship Tournament did not see any new scoring records set due to playing matches with 21 clues in each game instead of 26 used in conventional play. Penn State and Purdue participated in their 8th Grand Championship event tying them with the University of Massachusetts – Amherst. The following are other records of outstanding performances in the Grand Championship Traffic Bowls.

Planning for the 2021 ITE Collegiate Traffic Bowl Program has started. We are planning for the 12th Annual Grand Championship that will be held during the Joint ITE International and Mountain and Western Districts Annual Meeting that will be held July 18-21 in Portland, Oregon, USA. The 2021 season will still feature 10 District events, but with events in the new Missouri Valley District and the new alignment of the Great Lakes District.

To qualify for the Grand Championship Tournament, a team must first compete and win their District’s traffic bowl. For more information and the schedule of ITE District events, be sure to visit ITE’s website at www.ite.org in the coming months. We hope to see you in person next year in Portland! #ITEPortland2021

<table>
<thead>
<tr>
<th>Category</th>
<th>Year</th>
<th>Schools</th>
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<tbody>
<tr>
<td>Highest Semi Final Match Score</td>
<td>6,055 points</td>
<td>2018                  Penn State University</td>
</tr>
<tr>
<td>Highest Final Match Score</td>
<td>4,700 points</td>
<td>2019              University of Texas-Austin</td>
</tr>
<tr>
<td>Greatest Total Team Scores - Semi Final</td>
<td>10,001 points</td>
<td>2016      UMass-Amherst, University of Manitoba, &amp; Cal Poly SLO</td>
</tr>
<tr>
<td>Greatest Total Teams Score - Final</td>
<td>11,910 points</td>
<td>2012  NC State, Texas A&amp;M, &amp; University of Toronto</td>
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<tr>
<td>Highest Final Clue - Semi Final</td>
<td>2,500 points</td>
<td>2016  University of Manitoba</td>
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<tr>
<td>Highest Final Clue - Final</td>
<td>2,200 points</td>
<td>2017  NC State &amp; University of Toronto</td>
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<tr>
<td>Most Tie Breakers - Semi Final</td>
<td>4 times</td>
<td>2014  University of Texas-Austin &amp; UMass-Amherst</td>
</tr>
<tr>
<td>Most Tie Breakers - Final</td>
<td>7 times</td>
<td>2012  NC State &amp; University of Toronto</td>
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<thead>
<tr>
<th>Category</th>
<th>Schools</th>
<th>Years</th>
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<tr>
<td>Most appearances in Grand Championship Final Match for a school</td>
<td>Penn State</td>
<td>2013, 2014, 2018, 2019</td>
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<tr>
<td></td>
<td>University of Florida</td>
<td>2010, 2013, 2014</td>
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<td></td>
<td>Cal Poly SLO</td>
<td>2015, 2016, 2017</td>
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<tr>
<td></td>
<td>Texas A&amp;M</td>
<td>2010, 2012, 2018</td>
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<td></td>
<td>Texas-Austin</td>
<td>2014, 2017, 2019</td>
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<tr>
<td>Most Grand Championship matches won by a school (all-time)</td>
<td>Cal Poly SLO</td>
<td>2015, 2016, 2017</td>
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<td></td>
<td>Purdue University</td>
<td>2015, 2016, 2020</td>
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<td></td>
<td>Texas-Austin</td>
<td>2014, 2017, 2019</td>
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<tr>
<td>Most Grand Championships won by a school</td>
<td>Cal Poly SLO</td>
<td>2015 &amp; 2017</td>
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<td></td>
<td>Texas-Austin</td>
<td>2014 &amp; 2019</td>
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<tr>
<td></td>
<td>Purdue University</td>
<td>2016 &amp; 2020</td>
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<table>
<thead>
<tr>
<th>Individual Records</th>
<th>Schools represented</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Grand Championship appearances by a student with one or more schools</td>
<td>NC State &amp; University of Florida</td>
<td>2011, 2012 &amp; 2013, 2014</td>
</tr>
<tr>
<td></td>
<td>Purdue University</td>
<td>2014, 2015, 2016, 2017</td>
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<td></td>
<td>UMass-Amherst</td>
<td>2015, 2016, 2018, 2019</td>
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<tr>
<td>Most Grand Championship appearances by a student with one school</td>
<td>Purdue University</td>
<td>2014, 2015, 2016, 2017</td>
</tr>
<tr>
<td></td>
<td>UMass-Amherst</td>
<td>2015, 2016, 2018, 2019</td>
</tr>
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The Charlie Brown Syndrome

Facts
The Town of Folly sent out a request for engineering services including the work to be completed and a general outline for the proposal submittal. It was noted that the project would proceed under Qualification Based Selection (QBS) procedures with the option of terminating the process at any time. Several engineering firms prepared and submitted proposals for the work, with three firms selected for interview. The interview covered the planned work and each firms’ experience in this type of work. The firm, CB Engineering, was selected, with the work scope and budget negotiated in preparation for a contract of the engineering services.

Then, for unexplained reasons, the Town of Folly pulled the project with a decision to do the work “in-house” with their personnel. It is recognized that CB Engineering invested considerable time and money responding to the request for proposals, scope of work, and negotiating a contract amount. However, the Town of Folly pulled the engineering contract (the “football”) just before it was going to be kicked into action. Considering that the Town of Folly worked through the QBS process, were they unethical in not proceeding through the final award of the contract to CB Engineering?

The member will act in professional matters for each client or employer as a faithful agent or trustee.

RECOGNIZING OUR FUTURE:

Young Leaders to Follow for 2021

Let’s shine a spotlight on the best young professionals in ITE and the profession. We are looking for the top young members to recognize as the ITE Young Leaders to Follow for 2021, a group of 20 young members that represent the best of our emerging leaders.

Help us cast a wide net across all of ITE and the industry to find the best of the best among up-and-coming professionals. Nominate a young leader today! Employers, peers, friends, colleagues, and mentors can all nominate, and you can also self-nominate.

Eligibility: Candidates must be an ITE member and 35 years of age or younger on January 1, 2021.

Nominate a Young Leader Today! The application deadline is March 15, 2021. For all the details, visit www.ite.org/youngleaders.
Questions
1. Was the Town of Folly honest and impartial in their application of the QBS procedures?
2. Did the Town of Folly act in a professional manner in dealing with CB Engineering?
3. Did the Town of Folly give due regard to all aspects of the project work plan?

Discussion
There are several reasons that the project may have been terminated such as:
1. An unforeseen catastrophic event that impacted the Town's resources.
2. A limited understanding of the full scope and cost of the project.
3. Political issues that were raised once the project became known by the public.
4. Changes in the town's staffing that permitted the “in-house” work.

If there was some uncertainty in the scope and cost, that could have been resolved with a limited initial project or a phased approach to the QBS process. Any political issues and the town’s staffing considerations should have been readily foreseeable and predictable reasons to not start the project.

The Town of Folly should not have proceeded with the project until they had a firm scope in mind and the available resources to complete the project. Only a catastrophic event may have been unforeseeable, and that should have been immediately recognized by all parties, and the project put on hold until there was determination of resources to proceed. The Town of Folly carried this project beyond a reasonable level of consideration and acted poorly in administrating the project just short of an actual signed contract. The Town of Folly owes the firms that participated in this “dead-end” project an apology and reasonable explanation for the decision to do the project “in-house.”

There is no indication that CB Engineering failed to meet the technical, experience, creativity, and suitability requirements for the work since the project proceeded through negotiation of the scope of work and budget. Also, there is no indication that the project was not needed or impacting the safety and welfare of the public since the project was administered up to the contract phase. It appears that the Town of Folly acted professionally working through all the recommended administrative procedures to select a firm for the engineering services. There appears to be no activities that would have prevented the Town of Folly from proceeding with the CB Engineering contract if they so desired. They also had the option of negotiating the contract with the next qualified firm if they were not satisfied with CB Engineers’ final scope and budget. It would be expected that future requests from the Town of Folly may result in limited response or abbreviated proposals until they re-establish trust and credibility with the engineering community.

Conclusions
It is unfortunate that CB Engineering had to invest the time and effort on this proposal for engineering services without gaining a contract for the work. It was poor behavior on the town’s part and represents a waste of the taxpayers’ and firm’s resources that will be passed on to the public. However, there is no indication that the community acted unethically or CB Engineering breached any QBS or contract considerations. Therefore, it is concluded that there was no questionable practice by either party, other than the Town of Folly’s belated decision to perform the work “in-house,” which is not unethical. 

Note: The above discussion and opinions are based on the data submitted and do not necessarily represent all of the pertinent facts when applied to a specific case. The opinions are for educational purposes only and should not be construed as expressing ethical opinions of individuals. The discussion and opinions do not represent the opinion of the Institute of Transportation Engineers nor do they represent decisions of the ITE International Board of Direction. The Committee for the Ethical Forum: W. Hibbett Neel Jr., PE. (H); James L. Pline, PE., PTOE (H); Jeremy R Chapman, Ph.D., PE., PTOE, J.D. (F), and Richard F. Ryan, PE. (M).

This information is not intended or offered as legal advice. The advice and/or situations presented in this column are for illustrative purposes only. Always consult your legal counsel before taking any actions or making any decisions that would require legal input. No person should act or fail to act on any legal matter based on the contents of this column.

www.ite.org December 2020
What is the Industry Council?

In January 2019, the ITE Industry Council was launched to provide private sector organizations and solution providers with a forum to help shape ITE’s programs and policies. It also provides the opportunity for the Council members to demonstrate their commitment and leadership in the transportation industry to the larger ITE membership. Abbas Mohaddes P.E. (F), President and COO of Econolite, serves as the Industry Council’s inaugural chair and an ex-officio member of the ITE Board of Direction. The Council vice chair is Erin Skimson (M) of Miovision.

The Industry Council’s mission is to build working relationships and increase collaboration with industry solution providers by enhancing engagement with senior-level executives within the ITS Industry. Partnering with ITE leadership, the Industry Council addresses its mission by focusing on educating the public sector and consulting members on existing, new, and emerging technologies and solutions, allowing them to make more informed regulatory, management, and purchase decisions, as well as maximizing the benefit from those products and solutions. Working closely with ITE leadership, the Industry Council also supports executive-level development efforts to foster the next generation of transportation professionals.

Why We’re Different

Unlike the traditional council and committee structures of ITE, the Industry Council is organization-based. Being organization-based, instead of individual-based, means that all solution providers that address or target the transportation space, including traffic management, information and communications networking, connected and autonomous vehicle, and new mobility services companies (Mobility as a Service, Mobility on Demand, etc.) are encouraged to join the Industry Council.

Industry Council members are positioned as leaders within the transportation industry to ITE’s nearly 16,000 transportation professional members. This is done by showcasing the members on ITE’s homepage and in its monthly publication, ITE Journal, as well as acknowledgments during the ITE Annual Meeting and Exhibition. Industry Council members will also receive opportunities regarding participation in ITE’s activities throughout the year.

What We Do

The ITE Industry Council endeavors to build closer working relationships and to increase collaboration with solution providers that address all facets of the transportation industry. Important goals of the Industry Council include:

- Advise ITE leadership on how it can better support the needs of solution providers and in turn better meet the needs of its members.
- Partner with ITE leadership on improving education to public sector and consulting members on existing, new, and emerging solutions to allow them to make better informed regulatory, management, and purchase decisions and maximize the benefit from the products and services that they receive.
- Support ITE’s efforts to develop the next generation of transportation professionals.

What We’re Planning

The Industry Council has already helped to update the ITE’s Innovative Traffic Management and Control Equipment Procurement Methods, recently published and available at http://bit.ly/InnovativeTraffic. The Council has also conducted several educational webinars and collaborated with other Councils on various activities such as the first-ever Micromobility Sandbox Design Competition. Our plan for next year is to focus on preparation of white papers/technical documents such as “Lessons Learned during the COVID-19 Pandemic” and others. In addition, we plan to conduct several webinars and hold/participate in technical and educational sessions at various regional and national/International ITE conferences.
How to Join
The Industry Council is organization- and fee-based. Participation is at a corporate level with a focus on engaging senior management. The annual membership fee is $2,500, which includes ITE membership fees for the principal representative and an alternate. This fee will be used specifically to support the goals of the Industry Council following a plan of action developed by the Industry Council Executive Committee.

What to Expect As an Industry Council Member
The Industry Council serves as a member advisory group intended to support the ITE Board of Direction on strategic planning by working with ITE staff and helping to identify and develop products and services of benefit to its member firms. As part of the Industry Council, members can expect:
• Recognition as an industry leader through all ITE Communication channels
• Access to ITE Board Members and input on new ITE programs, products, and services
• Two complimentary ITE memberships for designated company lead representatives
• Exclusive networking opportunities, including an invitation to the VIP reception at the ITE Annual Meeting
• Showcase opportunities, including new Hot Products/Hot Companies features in ITE Journal
• Priority access to reach potential buyers through online and in-person training sessions

Contacts
If you have any questions or would like additional information about the Industry Council and becoming a member, please contact Pam Goodell at pgoodell@ite.org.

Chair
Abbas Mohaddes
amohaddes@econolite.com

Vice Chair
Erin Skimson
eskinson@miovision.com

SEE YOU THERE!
Joint ITE International and Mountain and Western Districts Annual Meeting and Exhibition
www.ite.org/annualmeeting
The Winning Formula

Adam Allen, P.E., PTOE, TSOS, IMSA II (F) is the chair of ITE’s premiere leadership program, LeadershipITE, and has served in numerous ITE volunteer leadership roles. He talks to ITE Journal about his leadership path and career goals, and how he has been impacted by the COVID-19 pandemic.

ITE JOURNAL: You have emerged as a strong leader within ITE and in the profession. Where do you want to go from here professionally—what are your near- and long-term goals?

ALLEN: I am driven and energized by people. I love working alongside talented, driven individuals and having the opportunity to influence and lead. That’s why I have enthusiastically taken on roles with ITE and why I love being a part of the Maser Consulting team. Our business is in the midst of an exciting evolution, as Maser Consulting will be re-branded as Colliers Engineering & Design in 2021. So, many of my goals center around helping with the further development and growth of both our company and ITE.

ITEJ: How have you benefited from LeadershipITE (LITE), and what appealed to you about taking on a leadership role?

ALLEN: LeadershipITE was the most profound professional experience of my career. It helped me evolve into the man I am today, and I use the lessons that I learned from the program on a daily basis. Most importantly, it taught me that doing the right thing is always the winning formula in leadership. If you lack values like character, trust, and compassion, you might be able to achieve some short-term results, but will not be able to build anything for the long term. LITE is—and always will be—a true leadership program. Many such programs focus on things like project delivery and financial management. LITE focuses on concepts like self-awareness, deploying empathy, empowering others, staying calm under pressure, understanding your triggers, and developing a growth mindset.

As for the leadership role, it’s not in my DNA to sit on the sidelines. If I am passionate about something, I need to be all in. So naturally, after the great experience in 2014, I jumped at each opportunity to get more involved with the program, starting as the recruiting chair early on, eventually serving as the vice chair under my dear friend Carrie Falkenrath, P.E., PTOE, PTP, RSP1 (F) and now as the chair. This seven-year journey has reaffirmed that “you get back what you put in” to something. I have invested a lot of time into this program, and the rewards are immense. The most rewarding part is getting to know so many of our 140 talented LeadershipITE alumni, many of whom I admire immensely and, in many cases, consider great friends.

ITEJ: What have been the professional and personal impacts of COVID-19 for you, and how are you adapting?

ALLEN: I really try to keep things in perspective. In 10 years when my kids are in college, I think I will look back fondly on this moment in time. Sure, it was scary and challenging, but sitting next to my daughter as her remote 2nd grade class learned math is priceless. That perspective has helped me to stay sane (somewhat) and motivated. Professionally, this has forced us to adapt. We tend to get stuck in our ways, especially as engineers who live and die by our spreadsheets and checklists. Now, we are meeting differently. We are presenting our ideas in different ways. We are being forced to over-communicate with team members. I think some of these changes are here to stay, as some of them are far more efficient and effective than the old way of doing business.
2021 EVENTS

CAL POLY SLO VIRTUAL STUDENT LEADERSHIP SUMMIT
January 15–17
Visit www.sls2021cpslo.weebly.com for more information.

ITE VIRTUAL STUDENT LEADERSHIP SUMMIT
February 19-20
Visit www.ite.org/virtualSLS for more information.

MOVITE SPRING MEETING
April 7–9 | Bentonville, AR, USA

MID-COLONIAL DISTRICT ANNUAL MEETING
April 25–27 | Baltimore, MD, USA

TEXAS SPRING MEETING
May 5-7 | Corpus Christi, TX, USA

NORTHEASTER DISTRICT ANNUAL MEETING
May 12–14 | Long Island, NY, USA

WHERE IN THE WORLD?
Can you guess the location of the “Where in the World?” photo in this issue? The answer is on page 50. Feel free to send in your own photos to hstowell@ite.org. Good luck! itej

CITE ANNUAL CONFERENCE
June 6–9 | Hamilton, Ontario, Canada

FLORIDA PUERTO RICO SUMMER MEETING
June 23–25 | Fort Lauderdale Beach, FL, USA

JOINT ITE INTERNATIONAL AND MOUNTAIN AND WESTERN DISTRICTS ANNUAL MEETING AND EXHIBITION
July 18–21 | Portland, OR, USA

Save the Date
Upcoming Conferences

ONLINE CONFERENCE!
Innovative Intersections and Streets
March 23-24, 2021
An online technical conference focused on new and innovative solutions to transportation solutions being implemented in communities in the United States and around the world. This two-day event will feature 10 technical sessions developed by the ITE’s Councils and Committees along with a plenary session and engaging networking activities.

2021 National Rural ITS Conference
October 31–November 3
Raleigh, NC, USA
Come to learn about creative ITS implementation solutions for your community. The National Rural ITS Conference + Exhibit provides participants a one-stop resource focusing on Intelligent Transportation Systems (ITS) implementation in local communities and the opportunity to hear new and thoughtful perspectives from a wide variety of ITS topics. ITS improves transportation safety and mobility and enhances productivity by integrating advanced communication technologies into vehicles and infrastructure.

www.ite.org December 2020 17
Effect of the Pandemic on Bicycle and Pedestrian Activity in Spring 2020 in Phoenix, AZ

The City of Phoenix, AZ, USA has been conducting bicycle and pedestrian counts at 40 citywide locations every year for the past three years as part of the Transportation 2050 (T2050) evaluation of Mobility and Access. T2050 is a Transit and Streets improvement program, and includes enhancements to active transportation infrastructure such as bicycle lanes, sidewalks, and ADA ramps. It is funded by a voter-approved, 35-year, 0.7 percent sales tax initiative.

The bicyclist and pedestrian counts are captured using video cameras. Post-processing is done by manually viewing the video and summarizing the counts by one-hour intervals, which can be broken down by sidewalk vs. street, direction of travel, and side of street. The citywide counts are conducted for weekday and weekend conditions, starting on a Wednesday and extending through Sunday, during the hours of 6 a.m. to 6 p.m. Twenty-two of the 40 citywide bike counts were

### Non-Recreational Count Locations

<table>
<thead>
<tr>
<th>Street Location</th>
<th>Facility Type</th>
<th>Weekdays</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>BL</td>
<td>84</td>
<td>78</td>
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<td>BL</td>
<td>248</td>
<td>207</td>
<td>162</td>
<td>191</td>
<td>242</td>
</tr>
<tr>
<td>Baseline Rd e/o 51st Ave</td>
<td>BL</td>
<td>93</td>
<td>65</td>
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<td>232</td>
<td>162</td>
<td>201</td>
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<tr>
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<td>67</td>
<td>47</td>
<td>31</td>
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<tr>
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<td>103</td>
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<tr>
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<td>213</td>
<td>292</td>
<td>158</td>
<td>119</td>
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<tr>
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<td>275</td>
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<td>395</td>
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<td>121</td>
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<tr>
<td>Van Buren St w/o 16th St</td>
<td>N/A</td>
<td>183</td>
<td>209</td>
<td>185</td>
<td>105</td>
<td>114</td>
</tr>
<tr>
<td>Encanto Blvd w/o 35th Ave</td>
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<td>60</td>
<td>53</td>
<td>53</td>
<td>44</td>
<td>21</td>
</tr>
<tr>
<td>Sweetwater Ave e/o 35th Ave</td>
<td>BL</td>
<td>119</td>
<td>106</td>
<td>56</td>
<td>33</td>
<td>32</td>
</tr>
<tr>
<td>19th Ave n/o Deer Valley Rd</td>
<td>BL</td>
<td>131</td>
<td>73</td>
<td>151</td>
<td>76</td>
<td>60</td>
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<tr>
<td>56th St s/o Osborn Rd</td>
<td>BL</td>
<td>278</td>
<td>209</td>
<td>277</td>
<td>159</td>
<td>263</td>
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<td>2,991</td>
<td>1,964</td>
<td>1,972</td>
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</table>

**Year over Year % Change**

| NA | -6% | -1% | NA | 0% | 35% | NA | -4% | 13% |

### Recreational Count Locations

<table>
<thead>
<tr>
<th>Street Location</th>
<th>Facility Type</th>
<th>Weekdays</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Canal Trail n/o Thomas Rd</td>
<td>TR</td>
<td>276</td>
<td>294</td>
<td>643</td>
<td>163</td>
<td>183</td>
<td>762</td>
<td>439</td>
<td>477</td>
<td>1405</td>
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<tr>
<td>Campbell Ave w/o 44th St</td>
<td>BL</td>
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<td>363</td>
<td>890</td>
<td>589</td>
<td>502</td>
<td>1,358</td>
<td>873</td>
<td>867</td>
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<td>TR</td>
<td>394</td>
<td>385</td>
<td>811</td>
<td>500</td>
<td>557</td>
<td>851</td>
<td>894</td>
<td>942</td>
<td>1,662</td>
</tr>
<tr>
<td>Arizona Canal Trail e/o Central Ave</td>
<td>TR</td>
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<td>583</td>
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<td>742</td>
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<td>1,688</td>
<td>1,380</td>
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<td>4,659</td>
<td>3,586</td>
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</table>

**Year over Year % Change**

| NA | 2% | 128% | NA | -5% | 147% | NA | -2% | 138% |

_Facility Type: BL (Bike Lane), TR (Trail)_

Table 1. Comparison of 2018, 2019, and 2020 citywide bicyclist counts for 22 locations (Total bicyclists counted 6 a.m. to 6 p.m. for three weekdays, two weekend days, or five total days).
conducted during the last two weeks of April. Nearly half of the spring counts are set to start on Maricopa County Bike-to-Work Day, however, Bike-to-Work Day in 2020 was not observed due to the pandemic.

The spring 2020 counts coincided with the Arizona Governor’s Stay Home, Stay Healthy, Stay Connected order, issued to minimize the spread of COVID-19. This allowed a comparison of the bicycle counts during the pandemic conditions with the prior two years at the same 22 citywide count locations.1

Four locations were primarily recreational routes. Two of the recreational routes are paved multiuse trails along a canal, one is a multiuse trail that provides access to a mountain preserve, and the remaining recreational route is a collector street adjacent to a city park. The counts of both bicyclists and pedestrians increased substantially in 2020 along the four recreational routes.

The other 18 locations were primarily commuter routes (arterial and collector streets).

On weekdays, both bicycle and pedestrian counts in 2020 were either largely unchanged or slightly lower at the non-recreational locations from previous years, a possible result of increased work-from-home during the pandemic. However, on weekends both bicycle and pedestrian activity increased compared to prior years. Comparison of bicycle and pedestrian counts between non-recreational and recreational routes is shown in Tables 1 and 2.

Temperature and precipitation data were also gathered to determine if environmental factors affected the active transportation counts from year to year. There has been no recorded rainfall on any of the count days and the temperature fluctuations observed were within the normal range for each year. Environmental factors

### Non-Recreational Count Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Facility Type</th>
<th>Weekdays</th>
<th>Weekends</th>
<th>All Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jefferson St w/o 19th Ave</td>
<td>SW</td>
<td>292</td>
<td>163</td>
<td>142</td>
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<td>Central Ave n/o Elwood St</td>
<td>SW</td>
<td>180</td>
<td>139</td>
<td>148</td>
</tr>
<tr>
<td>Baseline Rd n/o 51st Ave</td>
<td>SW</td>
<td>302</td>
<td>228</td>
<td>174</td>
</tr>
<tr>
<td>51st Ave n/o Baseline Rd</td>
<td>SW</td>
<td>409</td>
<td>462</td>
<td>369</td>
</tr>
<tr>
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<td>SW</td>
<td>265</td>
<td>191</td>
<td>85</td>
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<td>48th St s/o Warner Rd</td>
<td>SW</td>
<td>91</td>
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<td>SW</td>
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<td>560</td>
<td>428</td>
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<td>SW</td>
<td>439</td>
<td>375</td>
<td>567</td>
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<tr>
<td><strong>Year over Year % Change</strong></td>
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<td>-8%</td>
<td>-17%</td>
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</table>

### Recreational Count Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Facility Type</th>
<th>Weekdays</th>
<th>Weekends</th>
<th>All Days</th>
</tr>
</thead>
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<td>397</td>
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<td>375</td>
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<td>121</td>
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<td>NA</td>
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Table 2. Comparison of 2018, 2019 and 2020 citywide pedestrian counts for 22 locations (Total pedestrians counted 6 a.m. to 6 p.m. for three weekdays, two weekend days, or five total days).
inside the industry

BEFORE v. AFTER T2050 BIKE AND PEDESTRIAN COUNT COMPARISON

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Ped</th>
<th>Bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian Bend Wash Trail west of Tatum Blvd</td>
<td>2018</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2020</td>
<td>407</td>
<td>395</td>
</tr>
</tbody>
</table>

Table 3. 2018 versus 2020 count comparison for a three-day count location (6 a.m. – 6 p.m.).

did not appear to have a noticeable effect on walking or bicycling activity during the three-year study period.

The team also conducted seven, three-day project-based counts in late March and early April. All but one of these were “before” counts where new facilities are planned for the near future. One of the locations (Indian Bend Wash Trail west of Tatum Blvd.) was counted two years ago on a single day (Saturday). This is a paved trail along a recreational greenway that is also used for flood control. A pandemic versus pre-pandemic count comparison for this location is shown in Table 3.

In summary, from the comparison of counts, it can be concluded that both bicycle and pedestrian activity has been positively affected during the pandemic on weekends, especially on recreational routes and trails. The comparison also shows that weekday bicycle travel on most non-recreational routes and streets has stayed more or less constant from 2018 to 2020. On the other hand, pedestrian travel along non-recreational routes was somewhat lower during the pandemic during weekdays but increased on the weekends.

The pandemic has corresponded to a surge in bicycle sales in Phoenix. Throughout the city, former transit riders may be turning to bicycling to maintain social distancing, and other individuals may be finding bicycling an ideal way to commute, exercise, and enjoy their community.

The remaining 18 citywide locations were counted in mid-October but were not included in this paper since the numbers were still being processed at the time it was submitted. The 18 fall locations include a similar mixture of non-recreational and recreational routes. These counts will enable the team to evaluate the lasting effects of the pandemic on bicycle and pedestrian activity in Phoenix. The collection and analyses of bicycle and pedestrian counts at these same locations are expected to continue in 2021. itej

References


Congratulations to ITE’s New Districts and Sections

We look forward to an exciting year ahead!

Welcome to our New Sections!

From the Missouri Valley District
Arkansas Section
Central Missouri Section
Gateway Section
Iowa Section
Kansas Section
Nebraska Section
Oklahoma Section
Ozarks Section

From the Florida Puerto Rico District
Central Northeast Florida
Florida Panhandle
Greater Tampa
South Florida

From the Mountain District
Idaho Section
Montana Section
Nevada Section
Utah Section
Mountain District Administrator

In celebration of its 90th anniversary, ITE is recognizing each of its District Administrators throughout the year in a series of profiles. Each month this column will also feature historical facts and figures on the various Districts, including important dates and people throughout their history.

Before launching GroTrans Engineering, LLC, ITE Mountain District Administrator Jenny L. Grote, P.E., PTOE, PTP (R) worked in the private sector for the consulting firm of BRW, Inc. in Denver, CO, USA, followed by a move to Phoenix, AZ, USA where she spent more than 30 years in progressively responsible positions in the City of Phoenix. As of January 2021, she and her husband Wulf are returning to their beginnings in Denver.

Her experience from the consulting-side of engineering enabled Jenny to be the city’s “in-house transportation consultant,” which exposed her to many aspects of transportation. “That was the best place to be—to have exposure to city resources, including other professionals with many areas of expertise, and the flexibility to be creative and innovative,” Grote tells ITE Journal. “Looking back, it was “the Best Job EVER!”

At the end of 2018, then-ITE International President Michael Sanderson, P.E., PTOE, LEED AP (F) shared with Jenny the ONE ITE vision and believed she would be an excellent Administrator for the new District in the western states. Having served as the Western District Administrator from 2004 through 2013, she was familiar with the duties. However, the Mountain District had expectations to hit the ground running, and at the same level as the Western District has achieved after 50-plus years. Because it was a clean slate and a new beginning for a brand new District, the members didn’t want to simply duplicate all the programs and services of the Western District. They did, however, want to replicate the great level of service members had grown accustomed to in the Western District.

Jenny was selected to be the Mountain District Administrator in February 2019 when the ONE ITE Sub Task Force met to advance the vision of a new District for ITE, and appointed her to the position on January 1, 2020 when the Mountain District became official.

When it came time to name the new District, District 11, it was a challenge to get concurrence on a name that identified with all of its eight states. The first suggestion was “Rocky Mountain District.” While the Rocky Mountains are not part of Nevada or Arizona, all eight states do have mountains of some elevation. They all agreed on “Mountain District,” and ended up with an excellent logo.
Getting to Know
ITE’s Mountain District

U.S. States Covered
Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

Membership
1,700 members

Student Chapters: 14

District Leadership
President – Paul A. Barricklow, P.E., PTOE (M)
Vice President – Benjamin T. Waldman, P.E., PTOE (M)
Secretary-Treasurer – Devin V. Moore, P.E., PTOE, RSP2BI (F)
Secretary-Treasurer Elect – Danielle R. Scharf, P.E., PTOE (M)
International Director – Karen E. Aspelin, P.E., PTOE (F)
District Administrator – Jenny L. Grote, P.E., PTOE, PTP (R)

Section Representatives
Arizona Section – David E. Lucas (M)
Colorado-Wyoming Section – Duane J. Cleere, P.E., PTOE (F)
Idaho Section – Jeffrey W. Jones, P.E., PTOE (M)
Montana Section – Lisa Fischer, P.E. (M)
Nevada Section – Kondala Rao Mantri, P.E. (M)
New Mexico Section – James R. Barrera, P.E., PTOE (M)
Utah Section – Hal R. Johnson, PTP (M)

Committee Chairs
Advertising – David E. Lucas (M)
Annual Meeting – Lee Cabell, P.E. (M)
Awards – Joey D. Paskey, P.E., PTOE (M)
Communications – Deanna C. Haase, P.E. (M)
Membership – Lindsay S. Saner, P.E., PTOE, RSP1 (M)
Student and Younger Members – Christopher E. Sobie, P.E., PTOE (M)

Did You Know?
The ONE ITE Sub Task Force met February 22-23, 2019 in Denver, CO, USA to advance the vision of a new District for ITE. The Sub Task Force was comprised of more than 20 ITE elected, legacy, and active leaders representing ITE members in eight U.S. states (Arizona, Colorado, Wyoming, Idaho, Montana, Nevada, New Mexico, and Utah).

The charge for a new District is in-line with the directions provided by the ITE International Board of Direction (IBOD) at their August 2018 meeting, requiring the creation of a new District in the West. The meeting in February was the culmination of months of input, calls, collaboration with the Western District, and feedback, resulting in a transition plan and framework for the Mountain District.

Based on direction from the IBOD, the Mountain District consists of the eight mountain states mentioned above. Local leadership from these states are committed to making this new District successful.

At the IBOD meeting, there was a great deal of discussion on expanded leadership opportunities, what the membership experience should be, student and younger member needs, communication, annual meetings, governance, and finance. Out of those discussions, both a transition plan and a transition team were developed.
Thank you to our ITE Legacy Fund and Diversity Scholar donors throughout the year

ITE’s Legacy Society

Visionary
Organizations who have donated $100,000+
Transoft Solutions

Trailblazer
People who have donated $10,000+ and organizations who have donated $20,000+
Norma Jean & Bruce Belmore
Econolite
Enterprise Holdings
Gorove Slade

Inspirer
People who have donated $5,000+ and organizations who have donated $10,000+

Jack & Caroline Gould
Hibbett Neel
Kim & Jeff Paniati
Kenneth Voigt

ITE’s Leaders Circle
People and organizations who have donated more than $1,000+

Florida Puerto Rico District
Jenny Grote
Douglas Hattery
John J. Kennedy

In Memory of John LaPlante
Mountain District
Northeastern District
Renee Olofson
Alex Sorton
Southern District
Scott Wainright
Texas District
Alan E. Willis

Contributors

Colleen Agan
Robert Agrusa
Anonymous
Adam Allen
Jeffrey M. Arey
Karen Aspelin
Laura Aston
Big Bend Florida Section
Daniel Beatty
Susan Best
Bryant Brothers
Thomas Carmichael
Jason Crawford
Philip Dierstein
Frank Dolan
J. Edwards Doyle
Kathie Driggs
James Epps
R. Marshall Elitzer, Jr.
Erin P. Eurek
Fidelity Charitable
Don Cornthwaite
Gary W. Euler
Harry A. Fandrei
Paula Flores
Gary L. Fox
Marvin Gersten
A. Richard Gordon
Pam Goodell
Marvin Gomez
Jenny Grote
Bhaskara Gundururu
Tim Harpest
David E. Harris
John Harter
Douglas Hattery
Brian Helm
Robert Hintersteiner
Joe Hollstein
Mazen Houry
Indiana Section
Montell Irvin
James Kinney
Scott A. Knebel
Todd Knox
Robert A. Kochevar
Marcus Andrew Kochis
Walter H. Kraft
Tyler Krage
Beverly T. Kuhn
Alfred F. Kyle
Dan & Lynn LaMonyon
John LaPlante
LeadershipITE
Class of 2020
Jeffrey W. Lebsack
Cathy A. Leong
Jeff Lindley
Kenneth D. Mace
Jen Malzer
Randy McCourt
Gordon Meth
Laurence Meisner
Edward Mierzejewski
Devon Moore
Woodrow Moore
Sudhir Murthy
Olakunle I. Olassimo
Robert Owolabi
Boboye O. Oyeyemi
Johan B. Petersson
Dale Picha
Rodney P. Plourde
Scott Poska
Spencer Purdum
Alyssa Reynolds
Rodriguez
Jeff Riegner
Allyn Ritkin
David Robertson
Clarence Riser
David L. Samuelson
Michael P. Sanderson
Kristi Sebastian
Arturo Serna
Michael F. Sexton
Alex Sorton
Steve Stramsak
J. Andrew Swisher
Kam K. Szabo
Norman Lorient Tai
Toomis Telve
Lawrence Thompson
Raymond Trout
Kirsten Tynch
Deepak S. Ubhayakar
Robert Vecellio
Andrew D. Velasquez
James Williams
William Williams
Eugene Wilson
Pete Yauch
David H. Yazhari
Patrick Zilliacus

www.ite.org
*Reflects contributions received through November 1, 2020
2020
ITE Year in Review
The year 2020 will go down in history as a time of unexpected and dramatic change for not only the transportation industry, but for the entire world. Along with the vast ways in which the COVID-19 pandemic has altered life itself, it has necessitated innovative approaches and adjustments to how professionals engage with each other across the spectrum, and how the transportation industry operates. ITE has been on the forefront of this change, keeping pace with the virtual landscape we now operate in by offering new and imaginative ways to engage one another and supporting shifting demands for transportation—all while making our communities safer for all.

ITE COVID-19 Response
Since the COVID-19 pandemic began affecting businesses, communities, and individuals on a wide scale in early March, with shutdown orders causing many to telework, ITE quickly pivoted to adapt, even before it was clear how long the effects of COVID would last. With health and safety top-of-mind, staff at ITE headquarters began working remotely, and were poised to do so because of an existing telework policy. ITE worked swiftly as an organization to make products, services, and member engagement opportunities even more accessible than in the past.

ITE moved quickly to set up a COVID-19 Resources page in early April to help members during the COVID-19 crisis, and has continuously updated this page to offer the latest and most relevant information and related resources. Virtual Drop-In Sessions were created to offer short, highly interactive sessions on transportation-related subjects that allowed ITE members to engage with fellow professionals and stay on top of key industry topics, including the travel impacts of COVID-19; experience with the use of decorative crosswalks; touchless pedestrian push buttons; and more. The Traffic Counting Working Group, led by ITE International President Randy McCourt, P.E., PTOE (F), developed a publication, What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic, providing guidance on the practice of traffic counting and estimation during COVID-19.

One of the most visible ways in which ITE transformed its operations to help members cope with the changes of the COVID-19 pandemic was pivoting to a Virtual Annual Meeting and Exhibition. The event, August 4-20, was the first of its kind in ITE history, with nearly 1,800 participants—many of whom were participating in the Annual Meeting for the first time. The virtual conference was reimagined on several levels, allowing attendees to participate from the comfort of their own homes with no travel. The Annual Meeting took place during a three-week period, with two weeks of technical programming and a week of Council and Committee Meetings, and meeting times accommodated participants from multiple time zones. The virtual meeting delivered the same value members have come to expect from in-person gatherings, with the ITE Excellence in Transportation Awards, Plenary Sessions on topics like the effects of the pandemic on the profession and transportation equity, as well as engaging and creative social events.

ITE tailored many of its Professional Development offerings to help its members engage on subjects related the pandemic. The May webinar “Open Streets for Pedestrians and Bicyclists during COVID-19” dealt with the worldwide shifts and trends in adapting streets for increased walking and biking during COVID-19 social distancing. Speakers from various cities shared how they worked to make decisions to adapt or close streets for increased walking and biking, and discussed long-term impacts of increased walking and biking during COVID-19. ITE also delivered discounted webinars to its members throughout the summer, as well as special group pricing.

ITE also offered deeper dives on the pandemic and its effects on the industry via the ITE Talks Transportation podcast. The April 2020 episode featured Paul Skoutelas, president and CEO of the American Public Transportation Association, on the impacts of the pandemic on public transit. Thought leaders interviewed on the podcast throughout the remainder of 2020 all touched on COVID-19, discussing how various aspects of the industry have adapted to the uncertainty.

ITE’s Executive Committee and staff offered support and visibility to Districts, Sections, and Chapters this year. Unable to travel to
District and Section meetings this spring due to the pandemic and meeting cancellations, ITE’s Executive Committee reached out to and participated in many Board Meetings across the Districts and Sections. In addition, ITE staff have hosted 35-plus online sessions in support of our Districts, Sections, and Chapters so that they could continue providing value and connection to their members.

**2020 Successes**

The COVID-19 pandemic allowed ITE to not only continue at the forefront of industry knowledge as a globally recognized thought leader, but also offer even more resources in accessible formats. In addition to COVID-19 related activities, the following is a look at the successes of 2020.

**Membership**

After achieving a 10-year high of more than 16,000 members in 2019, the overall professional membership count in 2020 remained stable year over year with both a Chapter affiliate membership drive and retention of Section affiliates. ITE added a number of new public agencies to its member roster in 2020. While COVID-19 interrupted the academic year for many students, three Student Leadership Summits were held early in the year, with four new chapters added in North America and internationally.

ITE continued to realize results from the **ONE ITE** initiative throughout 2020. Sixteen Chapters were elevated to Sections including eight in the Mountain and Florida Puerto Rico Districts. The Missouri Valley (MOVITE) Section of the Midwestern District will transition in 2021 to a District, with eight of its nine Chapters becoming Sections. The remainder of the Midwestern Sections will become part of the new Great Lakes District.

ITE staff assisted leadership from the Districts, Sections, and Chapters (D-S-C) as all ITE organizational entities revised their Charters and Bylaws supporting the One ITE goal of a more consistent member experience. Staff-led webinars on meeting planning, social media and web development, and a wealth of other topics were held to support D-S-C leadership. Through biweekly editions of **Spotlite**, ITE’s electronic newsletter, staff kept ITE’s volunteer leaders in the loop with a D-S-C Leadership column.

**Diversity, Inclusion, and Equity.** ITE leadership is committed to supporting greater diversity in the profession and building a more diverse ITE, and is committed to realizing this promise. ITE also wants to be a voice for equity in the provision of transportation services to the public our members serve. The February 2020 issue of **ITE Journal** focused on equity, with articles contributed by partner organizations and thought-provoking subject matter experts. The February **ITE Talks Transportation** podcast candidly...
explored the topic of equity with Tamika L. Butler, Esq., who was then-director of Diversity and Inclusion at Toole Design Group.

In response to increasing societal attention to social justice issues, ITE released a Social Justice and Equality statement on June 4, 2020 that read, in part:

Transportation professionals have a profound duty to provide mobility solutions for all members of our society and to ensure that safe and dignified options exist for all. ITE believes that differences in background and experience enrich the culture and experiences of ITE for our membership as they do for the communities in which we live and work.

The ITE Diversity and Inclusion Committee, led by ITE International Vice President Alyssa Rodriguez, P.E., PTOE (F) and International Director Jeff Riegner, P.E., AICP, PTOE (F), is actively working to promote greater diversity and inclusion throughout ITE’s ranks. An Equity Plenary Panel and Diversity and Inclusion Workshop at the virtual Annual Meeting provided opportunities to consider the issues of Diversity, Inclusion and Equity more broadly.

The Diversity Scholars Program, created under the leadership of Past President Ken Voigt, P.E. (H) and carried forward by the ITE Legacy Committee, is working to provide opportunities for underrepresented populations with a focus on first generation college students. Generous donations by industry leaders Transoft Solutions, Econolite, and Enterprise Holdings will help to expand the reach of this program and enhance the diversity of the transportation profession.

Student Engagement

With assistance from a wealth of ITE volunteers, the ITE Collegiate Traffic Bowl went virtual for 2020, and the District championships still took place. Led by John Davis, P.E., TSOS, PTOE, RSP1 (F), chair of the Traffic Bowl Committee, the annual event that challenges student knowledge on transportation-related subjects was as lively and interactive as ever. The Grand Championship was streamed live via the ITE YouTube channel with 10 District teams—resulting in more than 7,200 views online—and the ITE Young Member Committee hosting a “Watch Party” via Zoom. The winner was Purdue University, with Brigham Young University and Oregon State University coming in second and third places, respectively.

Culminating at the 2020 Virtual ITE Annual Meeting and Exhibition, the ITE Micromobility Sandbox Design Competition supported by the ITE Consultants, Industry and Public Agency Councils, gave professional and student teams an opportunity to showcase their research, design, and practical application skills. The challenge was to develop innovative design solutions to accommodate the range of users of urban rights-of-way, including current and future micromobility options, and focused on a three-block section in Las Vegas, NV, USA. The winning professional team was Toole Design Group, and the student winner was Ryerson University in Toronto, Ontario, Canada.

ITE continued to offer members a wealth of job resources through the Career Center, including access to a virtual career fair and up-to-date job postings. The Matson and Hammond Mentoring Program remained a valuable resource for mentors and mentees, strategically pairing young members with seasoned industry professionals for a relationship to encourage and inspire career growth.

Thought Leadership

The ITE Policy Committee, led by John Davis, P.E., TSOS, PTOE, RSP1 (F), recently concluded a three-year effort of conducting a comprehensive updating of ITE’s policies. In April 2020, the International Board of Direction (IBOD) adopted revisions to existing ITE policies based on the recommendations of the Policy Committee, as informed by comments received from ITE members. ITE sought feedback from members again in the fall, this time on new policies developed under the leadership of the ITE Technical Councils. With approval by the IBOD in October, ITE has now completed a full update of ITE policies, found at www.ite.org/about-ite/governance-documents.

FAST Act Advocacy. With an expiration date for the Fixing America’s Surface Transportation (FAST) Act looming throughout much of 2020, the ITE Advocacy Committee led efforts to educate members on this important legislation. Building on its ITE FAST ACT Reauthorization Principles released in 2019, the Committee issued a Call to Action in September 2020. ITE also joined with other transportation associations in advocating for a one-year extension to the FAST Act while also supporting additional COVID-19 funding and action to address the long-term solvency of the Highway Trust Fund. In September, Congress passed a yearlong extension of the FAST Act.
Safety Spectrum. In late 2019, the Federal Communication Commission’s (FCC) proposed reallocating the lower portion of 5.9 GHz Safety Spectrum, designated to support Vehicle-to-Everything (V2X) communications, for unlicensed use. This prompted ITE to join other organizations in speaking out against the plan, urging that this spectrum be preserved for safety purposes. ITE submitted comments to the FCC’s Notice of Proposed Rulemaking (NPRM) in February, and encouraged its members and their organizations to submit comments.

MUTCD Interim Approvals. The Federal Highway Administration (FHWA) has indicated its intent to begin the formal rulemaking process of updating the Manual of Uniform Traffic Control Devices (MUTCD) for the first time since 2009. Recognizing that this will be a lengthy process, and working with its delegation to the National Committee on Uniform Traffic Control Devices, ITE sent a letter to FHWA Administrator Nicole Nason requesting that FHWA consider issuing a number of near term Interim Approvals directed at improving safety, particularly for vulnerable users, and asked for the opportunity to discuss ideas for streamlining the experimentation process for new traffic control devices and applications.

Additional 2020 Member Activities
Throughout 2020, ITE worked to strengthen its relationship with its global members, particularly the ITE Australia New Zealand Section (ITE-ANZ). *ITE Journal* featured an article in January on the late-2019 trip to visit the Section by ITE Executive Director and CEO Jeff Paniati, P.E. (F), then-ITE International President Bruce Belmore, P.Eng., PTOE, VMA (F), and Chief Technical Officer and Deputy Executive Director Jeff Lindley, P.E. (F). With ITE’s commitment to better communication, support, and participation with the ITE-ANZ Board, ITE has established a direct connection between ITE-ANZ members and the Younger Member Committee, student involvement, Diversity and Inclusion Committee, and Councils, including the Traffic Engineering Council, which is focused on increasing the inclusiveness of ITE-ANZ in their webinar action plan. A member profile on the president of the ITE-ANZ Young Members Committee, Matthew Bennett (M), was featured in April, and the November issue presented a full profile of the ITE-ANZ Section with a special focus on its president, Nick Szwed, P.E., MEngSC, MITE (M).

ITE’s 90th anniversary year included many celebratory activities and initiatives. *ITE Journal* featured a monthly snapshot...
of a different decade in transportation—from the 1930s through present day—as well as a monthly feature of each ITE District Administrator and profile on their respective Districts. Trivia questions in ITE Spotlite tested reader’s knowledge on ITE history, and the ITE Legacy Fund received many generous contributions to the $90 for $90 Campaign. ITE also released a member video highlighting the history and value of ITE from both an industry and a professional standpoint.

ITE’s three Employer Councils were restructured in keeping with the 2018-2021 ITE Strategic Plan—the Industry Council, Consultants Council, and Public Agency Council—in order to strengthen ITE’s ties to industry and member organizations. All three Councils are implementing new agendas and initiatives in line with the priorities of member organizations, and the Industry Council hosted several webinars that focused on bringing together the private sector with public agencies to discuss the real-world application of transportation products and services. These webinars are free for ITE public agency members. Finally, the Public Agency and Consultants Council are developing a Consultants Selection Guide to be released in early 2021. More information on the guide can be found in the October and November issues of ITE Journal.

**Technical Resources**

The following is a brief look at some of ITE’s key technical products in 2020:

The Recommended Practice Guidelines for Determining Traffic Signal Change and Clearance Intervals was the result of a years-long effort to issue guidance on yellow change and red clearance intervals for signalized intersections. The goal of the recommended practice is to create a consensus methodology for calculating and evaluating traffic signal change intervals that can be uniformly and consistently implemented by transportation agencies.

ITE released the Trip Generation Manual, 10th Edition Supplement in February 2020, which represents the next step in ITE’s continued commitment to improve the tools needed by its members and the general transportation community to understand trip-making in our communities. The supplement adds walk, transit, and bicycle trip generation data for 53 land uses. The ITETripGen app was also updated to reflect changes initiated with the supplement.

The Traffic Signal Benchmarking and State of the Practice report, produced for FHWA, is part of the continuing effort to raise awareness of the importance of and need for investment in the management and operations of traffic signal programs. The report includes the 2019 Traffic Signal Report Card as well as the latest information on successful approaches to traffic signal program management.

The Sustainable Traffic Signal Development Informational Report explores past, present, and future practices in the development of traffic signal installations and their sustainability. The Sustainable Traffic Signal Development Committee prepared the informational report as a joint effort under the guidance of the Sustainability Standing Committee, the Transportation Planning Council, and the Public Agency Council.

The ITE/FHWA Noteworthy Speed Management Practices guide offers perspectives on speed management by summarizing eight case studies that highlight noteworthy practices over a range of speed management issues.

Developed by the Industry Council, the Innovative Traffic Management and Control Equipment Procurement Methods Guide provides an updated summary of current practices in the procurement of Intelligent Transportation Systems (ITS) and traffic management and control equipment.

The 2020 Developing Trends report from ITE’s Coordinating Council addresses the question, “What will be relevant to practitioners within the next two years?” The annual report leverages ITE’s collaborative spirit and pushes the boundaries.
through diverse, inclusive, and broad thought leadership. The 2020 report includes a variety of crosscutting topics, including safety, operations, design, data, workforce, connected and automated vehicles (CAVs), ethics, and micromobility. The next version of this report, reflecting trends on new topics such as COVID-19 impacts and transportation equity, will be published before the end of 2020.

Safe System Strategic Plan (for FHWA) The Safe System approach creates a multidimensional safety net that recognizes that humans will make mistakes and the limits to human injury tolerance. This strategic plan, developed through ITE leadership of a Road to Zero Coalition working group, outlines short-, medium- and long-term actions necessary to institutionalize use of the Safe System approach in the United States.

Professional Development
ITE is committed to providing timely, relevant, and valuable professional development opportunities for members through various resources and programs. This year, more than 70 webinars on critical industry topics were held through the ITE Learning Hub, as well as a partnership Consortium for Innovative Transportation Education at the University of Maryland and the Smart Columbus Program.

The Professional Development Task Force, led by co-chairs Gene Chartier, P.Eng. (F) and Bob Murphy, P.E., PTOE (F) undertook a strategic planning process to chart a course for the future of professional development delivered by the organization. A final Task Force report, released in early 2020, was presented to the IBOD and widely accepted. This report consisted of strategic
direction for the ITE Webinar Program, identification of new certificate-based programs for 2021, and overall opportunities to explore in ITE’s Professional Development program. One specific outcome from this endeavor is a new Professional Development Board Committee that will oversee Professional Development activities, ensuring that ITE is providing the latest in continuing educational content to its members.

The Transportation Impact Analysis (TIA) Training Program is a new certificate-based, blended learning program that provides students with a comprehensive coverage of the technical elements of the TIA preparation and review. This training program consists of eight one-hour sessions providing a full understanding of the practice of transportation impact analysis including three interactive instructor-led discussions and five pre-recorded sessions. Due to high demand, two sessions of this course were delivered in the fall.

TPCB

The Transportation Professional Certification Board (TPCB) continued to build on the success of its Road Safety Professional (RSP) certification this year. Exam periods were held in February, June, and October, and 99 new RSP1s and 27 RSP2s were certified in the February and July exam periods (October numbers were not available as of ITE Journal press time). The RSP certification is extending its reach to Saudi Arabia, with work initiated to create versions of the RSP1 and RSP2-Infrastructure exams, and review courses that are relevant to transportation professionals in Saudi Arabia. The country has had significant road safety issues, and the government recognizes the availability of the RSP credential as an important part of addressing these problems. Another milestone for the TPCB was the acceptance of the Professional Traffic Operations Engineer (PTOE) certification renewal application by the National Commission for Certifying Agencies. NCCA accreditation standards set quality benchmarks to create solid certification programs that help ensure the welfare of the public.

This year, the TPCB also went digital. TPCB membership records were integrated into the same membership database as that of ITE, making it a more streamlined process for both members and staff. As of early November, members can renew their certifications online and candidates can submit their applications electronically as well.
Looking Ahead
Throughout the coming year, ITE has exciting plans in the works to continue to live out its mission as a Community of Transportation Professionals. ITE leadership has already started implementing the 2021-2023 Strategic Plan, which builds off of the previous plan and its three pillars—Membership, Technical Knowledge, and Institutional Sustainability (see more at www.ite.org/strategicplan).

ITE’s premiere leadership development program LeadershipITE (LITE) is going virtual for 2021. Led by instructor Shelley Row, P.E., CSP (F), LITE will offer the same content the program is built on while offering additional ways to engage with classmates, alumni, and the greater ITE community.

The brand new ITE Young Leaders to Follow in 2021 will recognize emerging young professionals who have distinguished themselves through their contributions to ITE in Councils, Committees, and/or in their Chapters, Districts, and Sections as rising leaders in the profession.

The first-ever virtual ITE Student Leadership Summit is planned for February 19-20, 2021, allowing students from across the globe to participate in educational activities, connect with seasoned speakers and presenters, and network with other young professionals.

In the spring, ITE plans to host a virtual Technical Conference on Innovative Intersections and Streets lead by ITE’s Councils and Committees to expand its commitment to providing top-notch education on a wealth of technical topics. Be on the lookout for more information from ITE coming soon.

Plan to join ITE in Portland, OR, USA for the 2021 Joint ITE International and Mountain and Western Districts Annual Meeting and Exhibition—July 18-21—for the chance to interact face-to-face. The conference will feature industry leading plenary speakers, a wide range of technical sessions providing practical resources, and workshops with a deeper dive into key topics. Also look out for information on a new Sandbox Competition, hosted by the Consultants Council, to give students and professional teams a chance to demonstrate their expertise on an emerging topic.


Professionals, organizations, and the transportation industry have dealt with never before seen challenges this year—and through it all, ITE has adapted providing enhanced member value and support during uncertain times. Through the wide variety of products, resources, and services that ITE has delivered to meet professionals where they are, ITE continues to be a true Community of Transportation Professionals. While the effects of COVID-19 will long outlast 2020, ITE is poised to help its members shape their communities in 2021 and beyond.

ITE ANNOUNCES CANDIDATES

For International President

Beverly Thompson Kuhn, Ph.D., P.E., PMP (F)
Division Head | Senior Research Engineer
Texas A&M Transportation Institute
College Station, TX, USA

For International Vice President

Eugene G. Chartier, P.Eng.
Vice President
Paradigm Transportation Solutions Limited
Markham, Ontario, Canada

Rosana Correa, P.E., PTOE
Project Manager, Transportation
Jacobs Engineering
Tampa, FL, USA

VOTE

The election ballot will open on February 10, 2021 at 12:00 p.m. ET and will close at 12:00 p.m. ET on March 12, 2021.
ITE Awards

Celebrating the
Best and Brightest
in Transportation

ITE’s membership is full of innovators, collaborators, and educators who make communities safer and more efficient and who actively contribute to the vibrant, essential, and evolving transportation industry.

Submissions for 2021 awards programs open on **January 1, 2021**. Eligibility guidelines, submission requirements, and judging criteria will be available at http://ite-awards.secure-platform.com in late 2020. Nominate eligible projects and receive the recognition and accolades you deserve.

**JANUARY 1**
Open for submissions

**MARCH 1**
Deadline for Council and Committee Awards

**APRIL 1**
Deadline for District/Section/Student Chapter Awards

**In Memoriam**
While we look to the future, we also remember those who have helped to make ITE the strong organization we are today. ITE remembers all the members whose passing we learned of over the last year. We thank them for their contributions to ITE and the profession.

**Life Members**
Edward W. J. Clarke, P.Eng. (F) of Winnipeg, Manitoba, Canada passed away December 22, 2019.
John Foster, P.E. (F) of Wellington, New Zealand passed away on December 8, 2019.
Herman Haenel, P.E. (F) of Austin, TX, USA passed away on June 13, 2020.
Richard P. Kramer, P.E. (F) of Huntsville, AL, USA passed away on February 18, 2015.
John N. LaPlante, P.E., PTOE (F) of Chicago, IL, USA passed away on March 21, 2020.
Bruce G. Leonard, P.E. (F) of Raleigh, NC, USA passed away on October 28, 2019.
Dr. Vergil G. Stover, P.E. (F) of College Station, TX, USA passed away on July 29, 2020.
Patricia Timbrook-McMullan, P.E. (F) of Fairfax, VA, USA passed away on May 26, 2020.

**Members**
Brian J. Bueche, P.E. (M) of Grand Rapids, MI, USA passed away on December 5, 2019.
Matthew P. Campbell (S) passed away on April 19, 2020.
Todd B. Delk, P.E. (M) of Raleigh, NC, USA passed away on October 8, 2019.
Mr. Duaine T. Evans (F) of Baton Rouge, LA, USA passed away on March 30, 2020.
Mark Gideon Goode III, P.E. (F) of Dallas, TX, USA passed away at his home on November 15, 2018.
Richard Clinton Mobley II, ASLA, AICP (F) of Kingwood, TX, USA passed away on April 13, 2020.
Pioquinto Albert Ruiz, Jr., TSOS of Albuquerque, NM, USA passed away on June 30, 2020.
Ronald V. Sherwood, AICP (M) of Marietta, GA, USA passed away on July 21, 2019.

**Special Recognition**
Peter W. Frentz of Keedysville, MD, USA passed away on March 31, 2020. He was an ITE employee for 45 years.

(F)—ITE Fellow *ite*
Safety Criteria for Selecting a Smart Corridor:
Random Forest Approach using HSIS Data from Washington State

By Xiaoyu Guo (S), Yongxin Peng, and Chaolun Ma

A roadway crash is a multifaceted event involving circumstances such as highway geometry, traffic exposure, operating speed, driver characteristics, vehicle factors, and the interactions among them. Determining the relationship between vehicle operating speed, roadway design elements, and traffic volume on crash outcomes would greatly benefit the road safety profession in general. There is both a need and an increasing trend to use data-driven procedures, such as machine learning approaches, artificial intelligence, and logistic regression methods to better understand the causes behind crashes.1-12 Databases like the Highway Safety Information System (HSIS) contain quality data on a large number of crashes and their associated roadway and traffic records consistently across multiple years and states. These databases provide solid resources to perform innovative learnings.13-16
With the rise of the Intelligent Transportation Systems (ITS) and implementation of technologies in vehicles and infrastructures, various types of detectors, sensors, and cameras are being installed in cars and roadway systems. The ultimate aim of deploying technologies is to reduce crashes, improve safety, and achieve Vision Zero. Before implementing technologies, a smart corridor, testbed, or pilot site is an effective way to deploy technologies and test the impacts brought by them. Most of those ongoing smart corridors are constructed to practice and challenge the technology deployments, especially the Vehicle-to-Infrastructure (V2I) communications, i.e., the North Avenue Smart Corridor launched by the City of Atlanta and Georgia Tech in Georgia, USA. Moreover, there are pilot sites on a larger scale that implement Vehicle-to-Everything (V2X) on top of V2I. Take, for instance, the Connected Vehicle Pilot Deployment Program in New York City, NY, USA; Tampa, FL, USA; and Wyoming, USA supported by the U.S. Department of Transportation (USDOT). Although there are smart corridors built for both interstates, state highways, and urban streets, researchers have revealed that the frequency of crashes was higher when highways pass through the vicinity of major cities, pointing to heavy vehicular movement. Hence, in this study, the selection range of smart corridor is on state highways only.

Recently, the American Association of State Highway and Transportation Officials (AASHTO) initiated the Signal Phase and Timing (SPaT) Challenge and promoted it through the National Operations Center of Excellent (NOCoE). A guideline along with the challenge suggested the state DOT and cities involve at least two high level types of decisions when selecting a SPaT enabled corridor: 1) Need for V2I applications; and 2) Infrastructure compatibility. However, there is more to consider than these two decisions. The selection process is not only complex as suggested in the guideline, but also contains multitudinous options (i.e., potential routes). For instance, in Washington State, USA, if an agency only considers state routes, then there are 221 options; if an agency applied an additional filter over the length (i.e., in the road network). Thus, the authors integrated the HSIS data with the existing SPaT enabled corridor on WA 522. Lastly, this study predicts four potential smart corridors on WA 161, WA 99, and WA 202, and discusses their potentials in deploying connected technologies. The 13 criteria recommended in this study for selecting a smart corridor are generalized and ready to be adapted in other states. As the selection process of a smart corridor is time-consuming and expensive, the recommended criteria are efficient and effective ways for state and local agencies to identify potential smart corridors in their state route network.

**Data Description**

Data for the analyses in this study are composed of the HSIS (crash-based) and the HPMS (roadway-based) database in Washington State during 2015. The HSIS is a database managed by the University of North Carolina Highway Safety Research Center (HSRC) under contract with the Federal Highway Administration. Safety researchers have widely used the database to investigate various topics ranging from problem-identification, modeling to crash-prevention, and prediction. Different from the conventional use of the HSIS data, the authors aim to identify the safety factors that could be used in the selection process of a smart corridor for implementing ITS related technologies and deploying connected and autonomous vehicles. With the HSIS database as the main source of data, the HPMS is a supportive database that includes data on the extent, condition, performance use, and operating characteristics of U.S. highways. The HPMS data is a roadway-based (or segment-based) data frame, which means each row is one segment in the road network. Thus, the authors integrated the HSIS data with the HPMS data based on route ID and the milepost.

As one in the first group of state agencies that undertook the SPaT Challenge, WSDOT is assumed to choose the SPaT corridor on WA 522 by considering various transportation aspects (i.e., safety issues, traffic congestions) and carefully follow the guideline. With this assumption, the authors developed a RF algorithm to determine safety criteria for corridor selection process. The RF algorithm was developed by using the data associated with those selected variables (see the Step 2 selection process in the next section, Two-Step Criteria Selection Method) on WA 522. Seventy-five percent in the dataset is randomly sampled as the training set, and the rest as the test set. Descriptive statistics of those selected variables are summarized in Table 1.
Table 1. Descriptive Statistics Summary on Selected Variables.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Variable name</th>
<th>Variable Type</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Min.</td>
</tr>
<tr>
<td>Crash</td>
<td>Number of Crashes</td>
<td>Numerical</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Crash Severity</td>
<td>Categorical</td>
<td>1 = Property Damage Only</td>
</tr>
<tr>
<td></td>
<td>Crash Type</td>
<td>Categorical</td>
<td>1 = Multi-Vehicle</td>
</tr>
<tr>
<td></td>
<td>Crash Location</td>
<td>Categorical</td>
<td>1 = Intersection</td>
</tr>
<tr>
<td></td>
<td>Time of Crash</td>
<td>Categorical</td>
<td>1 = AM Peak</td>
</tr>
<tr>
<td>Road Inventory</td>
<td>Width of Right Shoulder</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Width of Left Shoulder</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Lane Width</td>
<td>Numerical</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>Median Width</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Grade</td>
<td>Categorical</td>
<td>1 = 0.0 – 0.4 percent</td>
</tr>
<tr>
<td></td>
<td>Curve</td>
<td>Categorical</td>
<td>1 = Under 3.5 degrees</td>
</tr>
<tr>
<td>Traffic</td>
<td>AADT</td>
<td>Numerical</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>AADT for Single-unit Trucks</td>
<td>Numerical</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Number of Signalized Intersection</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Number of Intersection</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Percentage of Single-unit Trucks and Buses in Peak Hour</td>
<td>Numerical</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: min. = minimum; max. = maximum; S.D. = standard deviation.
Two-Step Criteria Selection Method
The following two subsections introduce the two steps, variable pre-selection and Random Forest, in our proposed Two-Step Criteria Selection Method. The flow of the methodology is illustrated in Figure 1.

Step 1: Variable Pre-selection
After integrating the HSIS and the HPMS datasets into one dataset, there are 111 variables in total to be evaluated. Twenty variables come from HSIS, while 91 variables come from HPMS, as shown in Layer 1, Figure 1. A series of data cleaning and checking procedures were considered in the variable pre-selection step, including:
- Eliminate the variables with either empty (i.e., more than 90 percent of N/A) or erroneous data;
- Eliminate the deterministic variables (i.e., with variance close to zero);
- Examine and eliminate the correlated numerical variables; and etc.

After the data cleaning and consistency checking procedures, 111 variables with 35,298 data points are reduced into 27 variables with 8,586 data points. These 27 variables are then categorized into three safety aspects, 12 crash related variables, 10 roadway inventory related variables, and five traffic related variables (see details listed in Layer 2 in Figure 1).

Step 2 Selection: Random Forest
With these 27 pre-selected variables, in Step 2, the Random Forest (RF) machine learning algorithm, a popular tree-based regression
and classification method, is performed over these 27 variables list Layer 2, Figure 1.\textsuperscript{25} The essential idea with using the RF algorithm is to grow an extensive collection of de-correlated trees based on different parts of the same training set and averaging the results. Thus, the algorithm can provide low variance results. Practically, each feature is sampled without replacement according to proportion of its maximum in RF algorithm. Gini index is a common tool to interpret and rank the feature outcomes from RF. It is defined in Equation 1 and denotes node impurity (the probability of a wrongly classified variable when randomly chosen). Predictors with largest Gini coefficient are chosen to make a binary split on the node,

\[ Gini\ index = \sum_{i}^n p_i (1-p_i) \]

where \( n \) is the number of classes in the target variable and \( p_i \) is the probability of an object being classified to a particular class. In the RF algorithm, the Mean Decrease in Gini index is the weighted average of the predictor’s decrease in node impurity. It is a measure of variable importance. A higher Mean Decrease in Gini index indicates higher variable importance. In the Step 2 Criteria Selection, the Gini index is computed as in Figure 2.

The RF algorithm performed with a 94.3 percent accuracy for the test data during pre-training process. Then, the 27 pre-selected variables are categorized into their aspects (i.e., crash, roadway inventory, and traffic) in Layer 2 and ranked per percentile calculated from Gini Index (i.e., relative importance). Details on the relative importance (i.e., percentile) of each variable is calculated and presented in Figure 3. Lastly, 13 safety criteria are then finalized by choosing those variables with a 50-percent percentile or above in their aspects. Those safety criteria are implemented for re-training the random forest model. A final model with those key safety criteria reached 95.3 percent accuracy for the test data.

**Results and Discussions**

Two types of comparisons are visualized on the heat maps and discussed in this section. One compares the performances of identified key safety criteria in each aspect on the existing smart corridor along WA 522. The primary purpose is to evaluate whether those safety criteria describes the characteristics of this existing smart corridor. The other comparison is between potential smart corridors on WA 161, WA 99, WA 202, and the existing one on

![Variable Importance](image-url)

*Figure 2. Step 2 Criteria Selection using Random Forest.*
Figure 3. Variable Importance in Crash, Roadway Inventory and Traffic Related Aspect.
WA 522. The purpose is to study the similarities and differences between those predicted ones and the existing one on WA 522, and discuss the potentials of them as smart corridors.

Existing Smart Corridor on WA 522
Following the proposed Two-Step Criteria Selection in methodology, 13 safety criteria are selected out of 111 variables from HSIS and HPMS databases for the State of Washington:

- Crash related aspect: 1) Number of crashes occurred on driveway, 2) Total number of crashes, 3) Number of multi-vehicle crashes, 4) Number of crashes occurred on intersection, 5) Number of crashes in AM Peak, 6) Number of crashes in PM Peak, 7) Number of crashes with property damage only;
- Roadway inventory related aspect: 8) Width of left shoulder, 9) Degree of curve with 28 degrees or more, 10) Median width; and
- Traffic related aspect: 11) AADT, 12) Number of signalized intersections, and 13) Number of intersections.

The Top 1 and 2 criteria at each aspect are demonstrated in Figures 4-6. Those figures evaluate whether these safety criteria identified by RF machine learning are good representatives of a smart corridor.

![Figure 4. Heat Maps to Demonstrate the Top Two Key Criteria in the Crash Related Aspect on the Smart Corridor, WA 522.](image)

a. Number of Crashes Occurred on Driveway b. Total Number of Crashes

![Figure 5. Heat Maps to Demonstrate the Top 2 Key Criteria in the Road Inventory Related Aspect on the Smart Corridor, WA 522.](image)

a. Width of Left Shoulder b. Degree of Curve with 28 Degrees or More

![Figure 6. Heat Maps to Demonstrate the Top Two Key Criteria in the Traffic Related Aspect on the Smart Corridor, WA 522.](image)

a. Annual Average Daily Traffic b. Number of Signalized Intersections

Potential Smart Corridors in Washington State Routes
More than identifying and verifying the key criteria through the characteristics of the existing corridor on WA 522, four potential smart corridors from three separate state routes (i.e., WA 161, WA 99, WA 202) are predicted. They are selected from a total of 221 state routes in Washington State using the 13 identified safety criteria. They are circled in the heat map on Figure 7. The red color represents a larger probability to be a smart corridor.

These four potential corridors are predicted by the RF algorithm using 13 identified safety criteria. However, they are with a lower selection priority than the existing smart corridor. Figure 7 maps the locations of those corridors along with the existing one. It is noticeable that although the potential smart corridor #2, #3 and
#4 contain 35, 27, and 23 segments, these segments are identified separately by the criteria. That is, some segments on the corridor are around with safety concerns, while some are not. This leads to a lower potential to deploy smart technology than the existing corridor on WA 522. On the other hand, the potential smart corridor #1 on WA 161 has 85 continuously identified segments. It is almost identical to the existing smart corridor by considering those safety criteria. However, by examining the pre-selected variables, there is a difference brought by the truck percentage. The truck percentage on WA 522 varies from 2 percent to 8 percent, whereas it ranges from 2 percent to 13 percent on WA 161. For a smart corridor with signalized intersections, truck percentage is an additional factor to consider. It is because a higher truck percentage may minimize the benefit brought by the SPaT message and V2I applications. For example, a connected and autonomous vehicle receives signal timing message and wants to plan its trajectory accordingly to pass the intersection without a stop, but it is limited to speed up or change lanes because of trucks around intersection.

**Summary and Future Study**

This study demonstrated a use of the HSIS dataset to determine safety criteria for selecting a smart corridor using a machine learning approach, Random Forest. The HSIS contains a rich dataset and it well records data including various variables from many aspects of transportation. In this study, the authors implemented the Random Forest algorithm to finalize 13 safety criteria for selecting a smart corridor out of 111 variables in the HSIS and the HPMS from Washington State. Then, by evaluating

Figure 7. A Heat Map to Identify Potential Smart Corridors in Washington State.
those criteria with its existing SPaT enabled corridor, the authors believe that those criteria are critical to consider when selecting a smart corridor. These criteria also agree with the guidelines from FHWA and NOCoE for selecting a SPaT enabled corridor. Lastly, this study predicted potential smart corridors on WA 161, WA 99, and WA 202, and discussed their potentials in deploying ITS technologies. The safety criteria recommended in this study are generalized and ready to apply in other states. There are some limitations of this study that may lead to future improvements:

- Used limited data (i.e., data in 2015 only)
- Studied limited area (i.e., only in Washington State): The Two-Step Selection Method is adaptable to other states, a more comprehensive study is to use HSIS database in all eight states.

Nevertheless, as the selection process of a smart corridor is time-consuming and the costs of construction and maintenance are expensive, the 13 safety criteria recommended from this study are important. They are efficient and effective ways for state and local agencies to identify potential smart corridors in their state route network. Lastly, the authors believe that this study is a novel use of the HSIS data and demonstrates a diverse application of the HSIS data with the machine learning technology and the concept of ITS.

Acknowledgement
The authors would like to acknowledge Anusha Patel Nujetto, Manager at the Highway Safety Information System (HSIS) Laboratory, for providing crash data used in this study, and Dr. Dominique Lord, P.Eng. (M) as the faculty advisor of this work. 

References
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Pedestrians crossing streets between intersections can be a dangerous, and even deadly, activity. Table 1 shows that most pedestrians in the United States are killed on arterial roads and away from intersections.

Table 1. U.S. Pedestrian Deaths in 2016.

<table>
<thead>
<tr>
<th>Type of Road</th>
<th>Number of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates and freeways</td>
<td>923</td>
</tr>
<tr>
<td>Arterials</td>
<td>3640</td>
</tr>
<tr>
<td>Collectors and local roads</td>
<td>1426</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5989</strong></td>
</tr>
</tbody>
</table>

Intersections | 1528
Non-intersections | 4459
**Total** | **5987**

Adapted from Table 2 by Hu and Cicconno (2018).

By Ezra Hauer
More relevant to the context of this paper are the Toronto, Canada data for urban arterials and signalized intersections in Table 2. The message is less dramatic but similar—about a third of pedestrian injuries and 60 percent of pedestrian fatalities occur midblock, away from intersections.

Table 2. Average annual number of pedestrians injured and killed in Toronto, Ontario, Canada (2010-2018).

<table>
<thead>
<tr>
<th></th>
<th>Killed</th>
<th>Injured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial roads, not at intersections or intersection-related</td>
<td>16.7</td>
<td>454.7</td>
</tr>
<tr>
<td>At signalized intersections and signalized intersection-related</td>
<td>11.2</td>
<td>952.3</td>
</tr>
</tbody>
</table>

Whether pedestrians crossing between intersections are considered a nuisance to be suppressed or a sign of livable streets to be encouraged, the phenomenon cannot be wished away nor its riskiness disregarded; it must be managed.

Midblock crossings can be made easier and safer by providing medians, refuge islands, and pedestrian signals. Alternatively, crossings can be discouraged by median barriers or roadside fencing. However, if neither of these actions is taken, there still is a professional responsibility to consider: the timing of intersection signals.

The quality and quantity of road crossing opportunities between coordinated signalized intersections depend on the signal timing decisions made by engineers. And yet, so it seems, no signal timing software now in use takes the interests of midblock crossing pedestrians into consideration, nor do manuals recognize the connection between signal timing decisions and the ease and risk of crossing midblock.

**Signal Timing and Road Crossing Opportunities**

The essence of the relationship between signal timing and the time available for a pedestrian to cross the road is shown on the simplified time-distance diagram in Figure 1.

In this illustration, the distance (L) between intersections A and B is shown to be 500 meters (m) (1,600 feet [ft.]). At intersection A the green begins at t=0 seconds and ends effectively at t=30 seconds. The front of the platoon travels at speed $V_{front}=55$ kilometers per hour (km/hr) (34 miles per hour) and reaches intersection B $L/V_{front}=32.7s$ later. For a pedestrian standing at distance $\ell$ from intersection A the cyclically recurring effective green band defined by trajectories $\ell/V_{front}$ and $G_1+\ell/V_{rear}$ is the time when the northbound traffic obstructs the crossing. After the termination of the effective green the rest of the signal cycle is effectively red. The corresponding red bands show the times during which the crossing is not obstructed by the northbound platoon. (In Figure 1, a part of that northbound red band is obscured by the overlaid southbound green band shown by a different shade of green.)

The signals are coordinated and therefore have a common cycle time (C=60 in Figure 1). The ‘offset’ O is 30s, i.e. the green at intersection B always begins 30 seconds after that at intersection A. In Figure 1 the southbound effective green ($G_2$) is also 30s. The green and red bands emanating from intersection B are also shown. These define the times during which the crossing by a pedestrian is respectively obstructed and not obstructed by the southbound platoon.

The red triangles and rhomboids in Figure 1 are the times along the road when crossing by pedestrians is not obstructed by either the northbound or the southbound platoon. These will be referred to as the “No Platoon” or “NP” times. Of course, even during NP times there is traffic. It can come from parking, from unsignalized intersections, as well as the right and left-turning vehicles coming from the two signalized intersections. Still, even if simplified, the representation in Figure 1 makes a few things clear.
It shows that midblock locations differ in the NP time. Thus, e.g., between points 1 and 2 (as well as between points 5 and 6) where the two green bands overlap the NP time is largest. This is where crossing the road might be easiest and where crossing pedestrians interfere with traffic the least. And so, if there are places such as midblock bus stops where pedestrians tend to cross the road, one might want to locate them near these points. Alternatively, one may want to fit the signal timing to suit existing road crossing demand in the vicinity of parks, shopping plazas, movie theatres, etc. In contrast at points 3 and 4 where the green bands do not overlap, either the northbound or the southbound traffic make an uninterrupted crossing difficult. This is where one might want to have a median, a pedestrian refuge island, or perhaps a fence or barrier to restrict crossings. In sum, since where crossing the road is easier and safer and how easy or safe it is depends on the signal timing decisions and the choice of the speed limit, the connection between the two needs to be considered in the design of streets and when signal timing plans are developed.

**Examples of Application**

The conditions in Table 3 are those in Figure 1. Figure 2 is the corresponding 'NP time profile' with points 1 to 6 from Figure 1 shown.

<table>
<thead>
<tr>
<th>Table 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Data</strong></td>
</tr>
<tr>
<td>Distance between signalized intersections, L, meters</td>
</tr>
<tr>
<td>Cycle time, C, seconds</td>
</tr>
<tr>
<td>Offset, O, seconds</td>
</tr>
<tr>
<td>Effective green at intersection 1, G1, seconds</td>
</tr>
<tr>
<td>Effective green at intersection 2, G2, seconds</td>
</tr>
<tr>
<td>Speed of platoon front, Vfront, km/hr</td>
</tr>
<tr>
<td>Speed of platoon rear, Vrear, km/hr</td>
</tr>
</tbody>
</table>

The ordinates of the red and blue dots are the NP times as a function of distance from intersection A. For a road that is 12 m wide, those walking at 1.0 meter per second or faster require 12 seconds or less to cross it. This is indicated by the solid black line. When the dots are above the black line these is sufficient NP time to cross this road. Pedestrians between about 150 meters and 340 meters (492 ft. and 1,115 ft.) from intersection A may not have sufficient NP time to cross the road. The longest NP times (between points 1, 2 and 5, 6) are close to the intersections which is where they are needed least. The profile lacks NP time where pedestrians may need it most, i.e. far from the signalized intersections. This kind of NP time profile is not attractive. Suppose that there is a pedestrian attractor (a park, a movie theatre, etc.) about midway between the two intersections, and the questions is how to change the signal timing to make crossing the road at that location easier and safer. The efficient device is by changing the “offset,” i.e., changing the offset from 30 to 0 seconds produces the NP time profile in Figure 3.

![Figure 2. NP time profile for C=60 seconds, O=30 seconds and G1=G2=30 seconds (as in Figure 1).](image)

While the changed offset from 30 seconds to 0 seconds may be bad for car traffic, the road crossing opportunities for pedestrians are now where needed most. Should one wish to install a pedestrian signal at this location, here is where it would interfere least with the car traffic. To illustrate further suppose that the question is whether by prolonging the cycle time one can provide more NP time for pedestrians. After changing C from 60 to 100 seconds (and G1=G2 to 50 seconds) the corresponding NP time profile is in Figure 4. Now there is sufficient NP time all along the road.

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**Footnotes:**
- There are two more such points, 7 and 8, but they do not arise in the Figure 1 example.
- It was produced by an Excel/VBA code which can be obtained (free) by emailing Ezra.Hauer@utoronto.ca.
Eight Special Points

Point 1 in Figure 1 is where the fronts of the northbound and southbound platoon meet and the two platoons begin to overlap. A little algebra shows that

\[ \ell_1 = \frac{OV_{front} + L}{2} \text{ (when } O < L/V_{front}) \]

\[ \ell_1 = L/2 \text{ when } O=0 \text{ (as in Figure 3 and Figure 4) and increases linearly with } O \text{ (and } V_{front}). \]

It follows that small offsets provide road crossing opportunities midblock where they are needed most.

The width of the platoons is

\[ W_{Northbound} = G_1 + \frac{\ell_1}{V_{rear}} - \ell_1/V_{front} \]  

\[ W_{Southbound} = G_2 + \frac{(L - \ell_1)/V_{rear} - (L - \ell_1)/V_{front}}{V_{front}} \]

Therefore,

\[ NP \text{ time at } \ell_1 = C - \max (W_{Northbound}, W_{Southbound}) \]

It follows that adding x seconds to the cycle time increases the NP time at point 1 by the same amount. Similarly, adding x seconds to the critical G diminishes the NP time by the same amount. The algebra helps to understand and to reach general conclusions. A summary of similar results for eight special points is in Table 4.

Table 4.

<table>
<thead>
<tr>
<th>Point</th>
<th>P</th>
<th>NP time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(\frac{OV_{front} + L}{2}) when (O &lt; L/V_{front})</td>
<td>(C - \max (W_{Northbound}, W_{Southbound}))</td>
</tr>
<tr>
<td>2</td>
<td>(O + G_1 - G_2) (V_{rear} + \frac{L}{V_{front}}) when (0 \geq 0) and (0 &lt; G_1 - G_2 + \frac{L}{V_{rear}})</td>
<td>(C - \max (W_{Northbound}, W_{Southbound}))</td>
</tr>
<tr>
<td>3</td>
<td>(O + G_1 - C + \frac{L}{1/V_{front} + 1/V_{rear}}) when (0 \geq 0) and (\frac{L}{V_{front}} \geq 0 + G_2 - C)</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>(O - G_1 + \frac{L}{1/V_{front} + 1/V_{rear}}) when (0 \geq 0) and (\frac{L}{V_{front}} \geq 0 - G_1)</td>
<td>0</td>
</tr>
</tbody>
</table>
The role of professionals is to quantify some of the consequences of such public policy decisions. The NP time profile should be a useful addition to their professional toolbox. It might help planners and engineers to incorporate the interest of pedestrians in signal timing decisions. Where many pedestrians cross midblock and when traffic platoons are well defined, it could make pedestrian crossings easier, safer, and reduce interference with car traffic.

Upon reading a draft of this paper a few experienced traffic engineers expressed the concern that changes in signal timing to reflect the interest of midblock pedestrians would adversely affect intersection safety. They believe that the present signal timing practice of minimizing aggregate delay and stops is also best for safety. However, when asked about evidence to support their belief, they could not point to any. Upon examination, it turned out that research evidence about the safety effect of choosing offsets and cycle times is unclear and often contradictory. It is entirely unclear that by minimizing stops and delay one also maximizes safety. The absence of evidence-based consensus about the relationship between signal timing and intersection safety should be of concern.

### References


**Ezra Hauer** is a retired professor (emeritus) of the Department of Civil Engineering at the University of Toronto, Ontario, Canada. Active in road safety research and consulting since 1970, he is the author of two books and more than 200 scientific papers. Ezra is the recipient of the R. Crum Award from the U.S. National Academies of Sciences and Engineering (1999) and ITE Transportation Safety Award (1993). He received a Ba.Sc. and Ma.Sc. at Technion – Israel Institute of Technology in Israel, and his Ph.D., at the University of California-Berkeley. Other roles throughout his career include: director, Transportation Safety Council, Member 407 Safety Review (1997), Coordinator of “Safety Research Group Ontario” (1981 1993); vice president, Canadian Association of Road Safety Professionals (1987-1988); president, Canadian Association of Road Safety Professionals (1985-1986); member, Advisory Board, International Association of Traffic Safety Sciences, Japan, (1986); member, International Committee of Symposia on Traffic and Transportation Theory (1983); and chairman, Committee on Methodology for Evaluating Highway Improvements, Transportation Research Board (1982-1997).
ITE Announces the Transportation Transforms Communities Video Challenge

ITE is seeking short-cut videos (two-minutes max) celebrating the theme: Transportation Transforms Communities. Work with a team (one member of a team must be an ITE member) or on your own to get creative and get people excited about the transportation profession!

The challenge is to create an original video that
- Showcases the many exciting facets of transportation; and
- Highlights ways in which transportation positively affects our communities.

ITE members will vote on submissions during May 2021.

The winning video will be shown during the Opening Session at the Joint ITE International and Mountain and Western Districts Annual Meeting and Exhibition in July 2021. Recognition will also be provided to the 2nd and 3rd place videos.

The submission portal opens February 1, 2021, and entries must be received by May 1, 2021.

In an age where information is everywhere, ITE members can look to ITE Spotlite to deliver timely news.

ITE’s bi-weekly e-newsletter has a sharpened focus on the news and trends in surface transportation that matter most to you.

To subscribe to the e-newsletter, email hstowell@ite.org.

All current ITE members receive the e-newsletter.

Road Safety Fundamentals Webinar Series

Developed by the ITE Safety Council

This 10-part webinar series highlights various aspects of road safety as part of ITE’s continued focus on Vision Zero and the goal to reduce and eventually eliminate fatalities.

Presented by experts in their field, this series will have a topic appropriate for all levels. There is a suite of introductory webinars for those not familiar with road user safety as well as modules discussing safety evaluations and safety for all road users.

See below the list of topics that will be covered as a live event in this 10-part webinar series. Presentation order may be subject to change.

Individuals may sign up for individual webinars or for the entire series at a discount.

- Safety for All Road Users (Recording available on-demand)
- Partnerships that Create a Lasting Safety Culture (Recording available on-demand)
- Safety Analysis Tools (Recording available on-demand)
- Basic Statistics and Predictive Safety (Recording available on-demand)
- ITS, TSMO, and Safety in Operations (Live event: December 1)
- Safety Considerations in Transportation Planning
- Road Geometry and Roadside Safety
- Systemic Safety and Network Screening
- Human Factors
- Road Safety Audits

Upcoming Live Webinars

Missed registering for the live event? You can still register and view webinars on-demand within 60 days after the original date.

Road Safety Fundamentals (5 of 10): ITS, TSMO, and Safety in Operations

Tuesday, December 1, 2:00 - 3:30 p.m. ET, 1.5 PDH Credits

Developed by the ITE Safety Council

This webinar focuses on the role of ITS and TSMO in improving safety. It discusses roadway safety advancements through Connected and Automated Vehicles (CAVs) and how technology and TSMO strategies could be used to improve roadway safety. The audience will also learn about real-world CAV safety projects conducted by the Center for Connected Multimodal Mobility (C2M2) through CAVs. The future potentials of roadway safety improvement through CAVs will be explored. The presenters will also discuss the current ITS and TSMO-related safety measures that are being implemented.

Tools and Resources for Integrating Sustainability and Health into Transportation

Thursday, December 3, 2:00 - 3:30 p.m. ET, 1.5 PDH Credits

Developed by the ITE Sustainability Standing Committee

Join this webinar to hear how we address the interconnected challenges of sustainability and health in transportation. Learn about resources and tools available to transportation professionals to integrate sustainability and health into transportation planning, project design, and programming.

Transportation is much more than mobility. How transportation systems are planned, designed, and built can either facilitate access to health-supporting destinations, such as employment, grocery stores, or health care services, or present a barrier to reaching them. Communities are designed to support physical activity or encourage sedentary living. Exposure to vehicular air pollution, particularly along high-volume roads, increases a community’s risk to asthma and heart disease. Transportation is the leading contributor to greenhouse gas emissions in the United States. Low-income communities and communities of color are overrepresented in traffic fatalities, exposure to vehicular emissions, and will be among those most affected by climate change.

Transit Bus Prioritization in the Urban Environment - State of the Practice

Wednesday, December 9, 2:00 - 3:30 p.m. ET, 1.5 PDH Credits

Developed by the ITE Transit Standing Committee

With the persisting traffic congestions and declining bus travel speeds in major U.S. cities, transit prioritization infrastructure is a critical component in the pursuit for reliable, frequent bus service. In this webinar we will present three on-going and recently completed bus prioritization projects in New York City, Washington, DC, and Portland, OR. We will discuss the projects motivations, development, implementation and monitoring, and explore how they improve both traffic flow and bus service reliability. We will focus on the technical aspects of the projects, including the employed tools, their expected/observed performance, technical challenges in design and implementation, and lesson learned.
Getting You There. Smarter.

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