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SIDRA INTERSECTION 9

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Environmental impacts of proposed traffic design, operations and planning schemes can be assessed using the powerful and accurate fuel consumption and emission models (CO2, CO, HC, NOx) in SIDRA INTERSECTION 9.

The highly accurate four-mode elemental model uses detailed vehicle path modeling based on work by Dr Rahmi Akçelik and his colleagues – winning the Institute of Transportation Engineers 1986 Transportation Energy Conservation Award for research into energy savings from urban traffic management.

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Las Vegas as a Microcosm

It’s difficult to project the long-term effects of the pandemic on transportation and our communities. While Las Vegas, NV, USA is a rather unique place, with its primary reliance on gaming and hospitality, there are trends and factors that may be relatable to other communities as we emerge from the pandemic.

Despite an unemployment rate well above the national average, the Las Vegas housing market is on fire. Inventory is low and prices continue to climb. According to a January 2021 article in *Forbes*, Zillow reports more than 60 percent of searches for Las Vegas homes come from outside the valley, and of those, about a third come from the southern California area. There are likely a number of reasons for the phenomenon, but one factor is the ability to telecommute. The Nevada tax environment is attractive to out-of-state workers—coupled with historically low mortgage rates, the buying ensues. This has a few impacts on transportation. The first is obvious—fewer work-related commutes due to a higher percentage of telecommuters. The second is related to inventory for locals. Should the trend continue, new inventory is constructed on the edge of town at greater volumes. These newer communities are longer distances from the Strip, the primary employment center, and have no transportation alternatives beyond the personal automobile. Thirdly, community members who have given up their commutes may be more desirous of transportation infrastructure that allows walking and biking to nearby amenities.

A Trip Advisor review in 2006 of the Red Rock National Conservation area listed two stars, and stated that traffic was awful. Visitor volume has since tripled. The pandemic exacerbated the issue. Parking lots were overflowing, and gate traffic queued onto the highway. When other recreation options were closed and many were stuck indoors, the ability recreate outside has proved enticing. However, this emphasized the fact that most areas are only accessible by car, with insufficient facilities, resulting in disturbances to natural areas as a result. Fortunately, a multi-use trail is planned for Red Rock in the near future, but other areas aren’t so fortunate.

Las Vegas is asking the same questions about conferences as ITE. An in-person event requires attendees willing to travel, employers willing to fund, and vendors and sponsors willing to showcase. In 2019, more than 6.6 million people attended conferences in Las Vegas. Interestingly, while convention attendance decreased by 74 percent during COVID, visitor volume was down about 55 percent, indicating that the desire to travel still exists. Additional statistics from the Las Vegas Visitors and Convention Authority show that while airport traffic was down 56.9 percent for the year, vehicle traffic was only down 16.2 percent. Backups continued on I-15 at the California border during busy weekends. Air travel may rebound at a slower rate, affecting taxis and ride-share companies as well as arterials throughout the resort corridor. The ability for tourism-based communities to recover will depend on vaccine distribution and trust in air travel. However, if anything is apparent by our smothering love of local outdoor spaces, people want to get away.

What phenomenon are you seeing in your communities as a result of the pandemic and how may they affect transportation? Find me on the ITE e-Community or on Twitter: @a2reyrod, and let me know.

Alyssa A. Rodriguez, P.E., PTOE (F)
ITE International President

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Las Vegas is a Microcosm

What phenomenon are you seeing in your communities as a result of the pandemic and how may they affect transportation? Find me on the ITE e-Community or on Twitter: @a2reyrod, and let me know.

Alyssa A. Rodriguez, P.E., PTOE (F)
ITE International President
Moving Toward a Post COVID-19 World

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COVID-19: One Year Later

It is hard to believe we have been at this for a year—and yet what a long year it has been. As I reflect back to just before the pandemic, I was at a Washington Nationals Spring Training game, blissfully unaware of what was about to hit our organization, country, and the world. While it is encouraging to see vaccines roll-out and COVID-19 rates dropping, we have a ways to go to return to a life even close to the one we knew. But it finally feels like we are on the way.

The past year was a time of challenge and loss, but it has also been a year of creativity and innovation. At ITE, as throughout our industry, we have adapted on the fly to a virtual world, successfully retooling business practices, committees, meetings, and product development. We have created new initiatives and services that fit our remote circumstances. Our member organizations have done the same. Starting on page 26, we provide a snapshot of the results from a COVID-19 member survey led by the ITE Industry Council. This work provides insights on how prepared public and private sector organizations were for working remotely and how well they have adapted. It also provides an assessment of the impact of COVID-19 on our industry in 2020 and 2021.

While these data capture the nearer-term impacts, the question that many are now turning to is the longer term, lasting impacts of COVID-19. Some parts of our society and industry will rapidly recover. For others it may take years, and still other aspects are forever changed. The challenge is to adapt to a new environment that will be in recovery and reinvention for quite some time, and to carry forward the positive lessons learned.

These experiences will continue to shape ITE in a number of important ways. It has made us a more flexible and nimble organization. We are employing a variety of new collaboration tools, most notably, Microsoft Teams, not only to support our internal operations, but also our many Councils and Committees, significantly enhancing our real-time collaboration abilities and effectiveness.

We have learned how to provide services and support from anywhere, not just in our offices. Going forward, I envision using a hybrid work schedule that maximizes the value of in-office collaboration while providing a better work-home balance (not to mention congestion and climate change reduction) through increased remote work. While we look forward to resuming in-person meetings, we have seen how virtual events allow us to reach those that are geographically separated or unable to travel. We intend to continue to offer more opportunities like our recent virtual Technical Conference.

Just as we are reshaping our business practices, so too have our members. In the second phase of the Industry Council COVID-19 effort, we are examining the key themes that emerged from the survey and how these themes will shape organization and workplace environments. Results should be available by the ITE Annual Meeting in July.

COVID-19 was a terrible tragedy, but in the end, it will make our organizations stronger and more resilient. It forced many to relinquish long-held norms that constrained creativity and innovation in the work place, and reaffirmed the value of in-person, human connections as co-workers, in our peer networks, and between clients and service providers. Reach me on the ITE e-Community or on Twitter: @JPaniatiITE.
Courses Offered as Part of ITE’s Partnership with the Consortium for Innovative Transportation Education at the University of Maryland

ITE members receive a 20% discount by registering through ITE.

Transportation Cybersecurity
April 8 – May 23
Data, technology, and the Internet of Things (IOT) are playing a prominent role in delivering today’s transportation services. More public sector agencies and municipalities are being targeted and attacked. Information and operations technology professionals need a practitioner’s perspective to vigilantly address these evolving threats. This course is designed to equip participants to know what to do and what to look for in relation to cybersecurity.

Instructors: Murali Rao and Micah Dalton,
Office of Strategic Innovation
Virginia Department of Transportation

Communicating the Value of TSMO: A Three-Part Program to Get the Skills You Need Now
April 8 – May 12
You completed the analysis; you did the research and fine-tuned the engineering. And that’s not enough. Successful persuasion requires more than facts and data. Learn the skills you need to be an effective and memorable communicator. Discover tips from neuroscience to enhance audience connection and solidify the relevance of your work to their interests. Through this interactive workshop, you will learn and apply the steps of converting technical material into an interesting, informative, and relevant presentation that resonates with non-technical audiences.

Instructor: Shelley Row,
President and CEO, Blue Fjord Leaders

Upcoming Live Webinars

April 1
Developed by the ITE Traffic Engineering Council

Road Safety Fundamentals Webinar Series (8 of 10): An Introduction to Network Screening and Systemic Safety
April 6
Developed by the ITE Safety Council

April 8
Developed by the ITE Traffic Engineering Council

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.

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 (Recording available on-demand)
- Human Factors (Recording available on-demand)
- Road Geometry and Roadside Safety (Recording available on-demand)
- Systemic Safety and Network Screening (Scheduled for April 6)
- Safety Considerations in Transportation Planning
- Road Safety Audits
Obituaries

ITE recently learned of the passing of the following members. We recognize them for their contributions to ITE and the profession, and send condolences to their families.

Honorary ITE member Francis B. Francois ("Frank"), who served as executive director of the American Association of State Highway and Transportation Officials (AASHTO) for nearly 20 years, passed away on February 17, 2021 in Chicago, IL, USA. He was 87 years old.

Frank began his career in 1956 as a Patent Examiner in the U.S. Patent Office upon graduating in engineering from Iowa State University, and entered politics in Prince George's County, MD in 1962, eventually serving for 10 years as a member of the City Council. In 1980, Frank resigned from the County Council to become executive director of AASHTO, where he remained until his retirement in 1999.

Frank supported the transportation profession in myriad ways, including serving on the Executive Committee of the Transportation Research Board (TRB) and on many TRB committees, including the Task Force on Critical Transportation Infrastructure and the Committee for Study of a Future Strategic Highway Research Program. He was instrumental in establishing the original Strategic Highway Research Program and was one of the incorporators of ITS America where he served a term as chair and was named an honorary life member of its Board. In 1989 he received TRB's W.N. Carey Jr. Award for his leadership in supporting transportation research. In 2007, TRB awarded him the Frank Turner medal, which recognizes lifetime in achievement in transportation. He was also elected to the National Academy of Engineering in 1999. Frank's ability to see both sides of an issue—and to issue a verdict that withstands scrutiny—made him a treasured leader.

Frank was the recipient of the ITE Theodore M. Matson Memorial Award in 1993. He was named an ITE Honorary Member in 2002, the highest recognition of notable and outstanding professional achievement presented by ITE. Since 1933 when the first Honorary Member was selected, only 83 individuals have achieved the recognition.

AASHTO established the Francis B. Francois award in his honor, an award bestowed annually to state departments of transportation that have developed innovative projects, according to his obituary in AASHTO Journal. Frank was the recipient of the ITE Theodore M. Matson Memorial Award in 1993. He was named an ITE Honorary Member in 2002, the highest recognition of notable and outstanding professional achievement presented by ITE. Since 1933 when the first Honorary Member was selected, only 83 individuals have achieved the recognition.

Frank is preceded in death by his wife of 43 years, Mary, and is survived by his five children—Joseph, Marie, Michael, Monica, and Susan, who is formally known as Sister Susan of the Congregation of the Sisters of St. Joseph of Peace.
Former ITE International President and Honorary Member Neilon Rowan, Ph.D., of College Station, TX, USA passed away on January 28, 2021. He was a retired Texas A&M Transportation Institute (TTI) research engineer and a professor emeritus with Texas A&M University’s Zachry Department of Civil and Environmental Engineering. As a faculty member at Texas A&M, Neil received the 1989–90 Zachry Teaching Excellence Award, for which he was nominated by his students, and was named Outstanding Professor in 1985. His alma mater also named him to the Texas Tech Engineering Hall of Fame.

Neil led the Texas A&M Transportation Institute’s (TTI) Traffic Operations program in the 1970s and 1990s, and held several senior-level TTI management positions at the institute. He served as an expert witness in highway design and operations, rail-highway grade crossings, roadway lighting, and highway safety. “His research on these topics and other areas of highway safety is well known across the country, having published more than 25 definitive papers and reports,” according to an article in Texas A&M Engineering News, which adds that he was active developing the continuing education program in traffic and highway engineering for Texas and the Federal Highway Administration.

New Members
ITE welcomes the following new members who recently joined our community of transportation professionals.

Canadian
Awele Ezenwa Nwaesei
Eric H. Fox
David Retzer
Roanna Cruz
Blaine Garrison
Andrew Harris

Florida Puerto Rico
Tyler Blair, PTP
Alison Rae Greer
Joangelli Gonzalez Compré
David Genson
Armando Gonzalez
Alex M. Bermudez Arbona
Thomas Hatcher
Md Imran Shah
Elaine M. Brown

Global
Konstantinos Christidis
Sandeep Koniki
Lachlan Lee Beckworth

Great Lakes
David M. Buck, PE.
Maria J. Donnelly, PE., PTOE
Tracie Leix
Ganapathi Bharadwaj Badireddi
Chloe Weber
Cassie Reimbold

Mid-Colonial
Lorraine Tennant Tacinelli
Jeffrey Ding
Ryan Thomas Fyock
Cesar Barreto
Sandeep Thapa

Missouri Valley
Luke Peter
Steve T. Stirmemann

Mountain
Timothy Jutras
Brian Horan
Adam O’Brien
Joon Dokgo
James Hartman
Miranda Sundblom

Northeastern
Paul Ruggeri
Peter Ribek
Martin S. Evans
Adam Prichard
Jake Robbins
Victoria Edith Epstein

Southern
Kenneth Dunn
Steve Piotrowski
Ben Upshaw, PE.
Robert S. Gallo
Sean P. Matuszewski, PE.
Christopher D. Palsgrove, E.I.T.
Sarah Wilson
Andrew M. Knop, PE.
Victoria Forrester
Bria M. Greene
Jarod Johnson
Rocky Garrison
Andrew Mix
Lei Zhu
Golam Moinuddin
John Bradley Meyer
Charles K. Deeb
Kirsten Mote
Christopher Connelly, E.I.T.
Rossius A. Dragon
Stonewall D. Mathis, PE.
Kathryn M. Voller, PE.
Robbie Weisz, PE.
Olga Beltsar

Texas
Rosvel Hinojosa
John Michael Carl
Jorge Mendoza
Joshua Han
Mark R. Scharff
Sharareh Kermanshachi

Western
Aung M. Naing, PE.
Son T. Nguyen, PE.
Patricia F. Srinver, PE.
Kamal Atwal, PE., T.E.
Andrew Krause, PE.

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.

www.ite.org April 2021 9
Neil’s contributions to ITE began at the state level. He achieved presidency of the Texas Section by 1973, and was elected to the International Board representing District 5 (Southern District) in 1975. Neil helped to initiate and guide the development of the Transportation Technician Curriculum of ITE through his service as a member of the Steering and Advisory Committee. He was also named Transportation Engineer of the Year for the Texas Section in 1975. During his term as ITE International President in 1981, Neil initiated the Institute Voluntary Contributions Program that provided nearly hundreds of thousands of dollars to help fund programs not able to be accomplished within ITE’s operating budget. Neil was also a member of the Philanthropic Advisory Committee since its formation, and served on the Task Force on Transportation Engineering Education and the Philanthropic Advisory and Steering Committee.

In 1992, ITE named Neil an Honorary Member. His achievements in the transportation field have been inspiring to many colleagues, young professionals, and students alike. ITE International Vice President Beverly Kuhn recently reflected on these contributions in a post on the ITE e-Community, providing several testimonials from those impacted by Dr. Rowan. “What is repeated through many of these memories, and which likely resonated with every student who had the privilege to know Dr. Rowan, is his genuine concern for students and the value he placed on mentoring the next generation of transportation professionals,” Beverly writes. “He was a rare individual who impacted the careers of so many of us and whose passing leaves a mark on us all!”

Freddie A. Vargas (M) of Parkland, FL, USA passed away on September 27, 2020.

Kevin L. Jones, P.E., PTOE (M) of Kirkland, WA, USA passed away on November 13, 2020.

Industry Updates

Henry (“Hank”) Gutman was recently appointed as commissioner of the New York City Department of Transportation (NYCDOT). Mr. Gutman will lead the department through the last critical year of the current administration as NYCDOT continues with its essential life-saving work and help the New York City recover from this challenging year.

Commissioner Gutman is an insightful member of key infrastructure projects under the Mayor’s Brooklyn Queens Expressway (BQE) Expert Panel, convened in 2019 and 2020. He is also Chair of the Brooklyn Navy Yard, the city’s largest industrial park, and serves on the Board of Brooklyn Bridge Park, helping create a world-class park on what was previously abandoned waterfront. He brings with him a wealth of civic experience, a deep commitment to New York City and to the department’s mission, and a clear vision for the vital role NYCDOT and its programs play in New York City during its recovery and in the long-term.

Member Updates

Rizwan Baig, P.E., PTOE, PTP (F) has been appointed deputy chief engineer at the Port Authority of New York and New Jersey. In this capacity, he will support the chief engineer in the management of the day-to-day operations of the Engineering Department, which provides architectural, engineering, asset management, project delivery, and construction services that further the Port Authority’s critical infrastructure projects in the New York-New Jersey Metropolitan Region. In his 30-year Port Authority career, leading to his previous role as chief traffic engineer, Rizwan proved himself to be a transportation industry leader, collaborating with both agency stakeholders and regional partners to deliver critical elements of complex agency projects.

Erik R. Maki, P.E., PTOE (M) has been promoted to vice president of the Traffic Engineering Group at Tetra Tech in Boston, MA. Erik, a member of the New England Section of ITE, has 30 years of experience in the transportation industry.

Thomas D. Polech, P.E. (M) was recently promoted to chief of Traffic Signal Engineering and Operations for the Monroe County Department of Transportation in Rochester, NY, USA. As part of his duties, Thomas will be responsible for the construction, maintenance, and operation of more than 630 traffic signals on Monroe County highways and City of Rochester streets, including more than 500 signals on the County’s Advanced Traffic Management System (ATMS). Thomas is also concluding a six-year term on the Executive Board of the ITE New York Upstate Section.
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 ITE Journal that goes out on the first or second of each month and have full access to the digital edition.

Call for Data: ITE Trip Generation Manual, 11th Edition

The 11th Edition of the ITE Trip Generation Manual will be released in the fall of 2021 along with an updated ITETripGen web app. The 11th Edition will provide guidance on the estimation of post-pandemic site-generated trips. For some combinations of land use type and time period, pre-pandemic (i.e., 2015-2019) data may continue to be appropriate. For other combinations, adjustments will be necessary.

For prior editions, ITE has typically posted a Call for Data that highlighted new or emerging land uses as high priorities. For this edition, ITE requests that its members submit data for any land use for the years 2017 through 2021. In order to develop tools that optimize ITE members’ ability to estimate trip generation, ITE needs a robust database with trip generation counts across the entire gamut of conditions (pre-pandemic, mid-pandemic, and post-pandemic).

If you have counted site-generated trips for any land use within the past five years, please consider submitting the data for use in the 11th Edition.

If you have compiled trip generation data collected by others for any land use within the past five years, please consider submitting the data. ITE will track down the source and obtained their permission before using the data.

If you know of any trip generation data collected or compiled by others, let us know the agency or consulting firm (and a potential contact if possible). ITE will track down the source.

You can submit the data by visiting www.itedatasubmission.org, or by contacting Lisa Fontana-Tierney, Traffic Engineering Senior Director at lfontana@ite.org with any questions. The deadline for data submission is May 1, 2021. ITE encourages you to start reviewing your files now for potential data.

ITE Talks Transportation Podcast

New from the Thought Leadership Series

INRIX President and CEO Bryan Mistele: Transforming Transportation with Big Data

Bryan Mistele, president and CEO of INRIX, talks about the impact of big data and data analytics on the transportation sector, including how his company utilizes real-time information to improve location-based insights for companies, cities, and road authorities around the world.

All episodes available at www.ite.org/learninghub/podcast.asp | Subscribe for free via iTunes at http://apple.co/2hOUz8t
ITE Hosts First Virtual International Student Leadership Summit

By Cecilia Kadeha (S),
Florida International University

ITE hosted the virtual International Student Leadership Summit (SLS) from February 19-20, 2021. This event, the first of its kind, brought together nearly 300 students from across 90 universities. The summit also welcomed 60 professionals as speakers and panelists from across the United States, Canada, Australia, and New Zealand. With the tremendous support from ITE, the SLS was organized by students, for students, and a total of 15 ITE Student Chapters were instrumental in organizing the event.

The SLS included more than a dozen interactive technical and non-technical sessions, competitions, and socials. The sessions brought students together from different chapters and locations, facilitating critical interaction in the midst of COVID-19 restrictions. All of the sessions and discussions included a chance for questions and comments from the audience on a virtual platform, and participants shared resources on different topics and exchanged contacts to maintain the connections they made during the event.

The opening session, “Purposeful Leadership: Becoming a Leader Who Positively Influences Communities, Companies, and the Profession,” featured a panel of esteemed leaders in ITE and the transportation sector. ITE International President, Alyssa Rodriguez, P.E., PTOE (F) led the discussion. The speakers shared their personal experiences, how and what motivated them to choose a career in transportation, and the choices they made to grow into leaders who inspire their communities. They shared pointers on work-life balance and other aspects of personal development.

Leadership sessions from Australia and New Zealand gave insights on “Australian Leadership – What Does it Look Like and How is it Different” and “A Journey of Growth and the Importance of Diversity” from an amazing set of panelists. These sessions threw light on the friendly culture of the Australian leadership style.

The students had a chance to strike up a conversation with professionals and practiced different activities geared towards improving soft skills, particularly during the session “Leadership: What It Means to You, Why It’s Important to Develop Leadership Skills, and How ITE Helps Develop Leaders.”

Another session that caught the students’ interest was the panel discussion on “What You Need to Know (Before You Graduate!)”. The panelists gave tips on career paths regarding the public, private, and academic sectors. Guidance included interview tips, resume preparation, how to present yourself professionally, and proper networking etiquette. A similar session, “Career Connect
with Students and Professionals," provided students with ideas on key skills that will help them prepare as they transition to professionals.

The "All-Aboard Design" and "Stand Up on your Soapbox" competitions were designed to assess the students' ability to convey their technical knowledge in a time-constrained environment. Student teams presented excellent ideas for designing inclusive lesson and activity plans that expose K-12 students to an element of transportation engineering.

Several companies gave their viewpoints on the use of technology—in particular, the implications for safety and the future of planning and engineering in the "Artificial Intelligence and Transportation Technology" session.

Here’s a glance at the other sessions that took place:
- The panel discussion "Incorporating Sustainability in Transportation Infrastructure and Planning" focused on the often-overlooked, yet important topic of sustainability.
- "Equity and Transportation – What Does It Mean and How You Can Affect Equity" discussed how students and professionals alike could work to put equity at the forefront of their careers.
- "Professional Dilemmas and Ethics" was designed to promote a discussion on ethical dilemmas. Attendees were presented with four scenarios on ethical dilemmas to discuss, and panelists provided several resources on ethics.
- "Sharing Across Student Chapters – Ideas with Student Chapter Leaders and Learn about Hosting an SLS" was another very important and timely session for student leaders to share their experiences in hosting local Student Leadership Summits.

While the technical and non-technical sessions were well attended, the social activities stole the show. Friday night’s activity involved an engaging “Escape Room” game designed by students to test the knowledge of participants in transportation. A murder mystery, team games, and party games concluded the event.

Overall, the program was well received, with nearly 90 percent of participants reporting they were satisfied or very satisfied with the program. The majority of the students suggested carrying on this culture in the future, made possible now that we have demonstrated the power of coming together. If anything, this first virtual SLS has proven that students can pull off anything that they set their mind to (of course with the help of ITE International and transportation professionals). As students, we pledge to keep pushing forward, remain curious, and take on leadership opportunities.
Through a wealth of resources, information, and timely communication, ITE has provided a nimble response throughout the COVID-19 pandemic for its membership and industry to help transportation professionals navigate the uncertain times. Two of the most significant examples of those offerings are the Virtual Drop-In Sessions and the white paper What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic. With the world looking toward recovery, ITE is poised to continue providing similar resources, keeping its members engaged and informed as the "new normal" emerges.

**Virtual Drop-In Sessions.** ITE has provided largely unstructured forum for members who want to engage "virtually" with colleagues and fellow practitioners on cutting-edge industry topics and challenges through the Virtual Drop-in Sessions. These sessions, launched in March 2020, begin with a short presentation by a member followed by a discussion, led by the presenter. Topics range from Complete Streets and crosswalk design to traffic management centers and innovative data collection. In response to popular demand, Virtual Drop-Ins continue in 2021 and are ongoing. For the latest list of upcoming sessions and to participate, visit www.ite.org/events-meetings/virtual-drop-in-sessions.

**Guide on Traffic Counts and Studies during a Pandemic.** Typical transportation activities changed significantly with the COVID-19 pandemic—home and work environments and travel patterns have altered dramatically, and congestion rates dropped significantly. As the pandemic transitions from outbreak to management, some of these changes are returning to normal while others are establishing a “new” normal.

In May 2020, a Task Force led by ITE International Immediate Past President Randy McCourt, P.E., PTOE (F) was formed to address various questions the transportation profession faces regarding the management of collecting traffic data during the pandemic and into the future.

The Task Force released What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic in July 2020—just three months after the group’s formation—to provide guidance regarding traffic counting in the fluid and dynamic circumstances of the COVID-19 pandemic (or other future unusual circumstances). As ITE works to release the 11th edition of the Trip Generation Manual later this year, the work accomplished in this guide will provide valuable information regarding pandemic-related trends to include in the upcoming publication. **itej**
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

2021 EVENTS

MOVITE SPRING MEETING
April 8  Virtual Meeting

SDITE ANNUAL MEETING
April 12–16  Virtual Meeting

MID-COLONIAL DISTRICT ANNUAL MEETING
April 26–28  Virtual Meeting

NORTHEASTERN DISTRICT ANNUAL MEETING
May 13–14  Virtual Meeting

INTERMOUNTAIN SECTION ANNUAL MEETING
May 13–15  Jackson, WY, USA

CITE ANNUAL CONFERENCE
June 8–10  Virtual Meeting

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

ITE INTERNATIONAL ANNUAL MEETING AND EXHIBITION
July 2021  See page 25 for more information

GREAT LAKES DISTRICT ANNUAL MEETING
August 30–31  Columbus, OH, USA

TRANSPO (ITE AND ITS FLORIDA EVENT)
September 27–29  Bonita Springs, FL, USA
Transportation Impacts of COVID-19 in the United Kingdom

This article was produced in collaboration with Transportation Professional, the magazine of the Chartered Institution of Highways and Transportation in the U.K.

United Kingdom (U.K.) Prime Minster Boris Johnson announced in late February 2021 a plan for easing COVID-19 restrictions in England over the coming months. As residents in the U.K. are currently looking toward some relief from the drastic changes caused by the pandemic, the country’s transportation industry has been impacted over the last year in countless ways. Now, the sector is beginning to focus on recovery, as well as how to maintain some of the transportation practices that emerged during the pandemic and implement lessons-learned.

The U.K. government announced national lockdown restrictions in March 2020, asking people to travel only for essential purposes and to avoid public transport where possible. Those who could work from home were asked to do so. This resulted in a significant shift to remote work, while essential workers, including doctors and nurses as well as highway maintenance teams, continued to travel to their jobs.

Initially, trip making became much more localized under COVID restrictions, and walking and cycling levels increased significantly. This continued over the summer of 2020, when some of the lockdown restrictions were eased for a time. The Department of Transport pledged a £2 billion pound ($2.8 billion USD) fund to improve active travel infrastructure across the country, including £500 million pounds ($699 million USD) allocated for temporary “pop-up” walking and cycling infrastructure to give more space to these modes during the pandemic. In London, for example, the “Streetspace” program completely shut down certain parts of the roadway to motor vehicles, making it one of the largest car-free schemes in the world. Much like the “Open Streets” movement in the United States, while some of the U.K. pop-ups have proven controversial, in many cases there are plans to make these temporary lanes permanent.

The public transport sector has been hard-hit in the United Kingdom by COVID-19. In the early months, overall ridership of the London Underground plummeted by as much as 95 percent, and bus ridership in the London transit system by 85 percent.* In the first quarter of 2021, the transit sector is slowly starting to recover—with bus transit faring better than rail—though ridership overall is nowhere near pre-pandemic levels.

Transport planners are also bracing for a major uptick in car traffic as restrictions lift, and are working to encourage the public to find alternatives to private car usage, such as electric scooters, public transport, walking, and cycling. While trials of rental e-scooter services have now begun in several cities in

*Wikimedia.org
the U.K., the Parliamentary Advisory Council for Transport Safety (PACTS) expressed skepticism toward both the transport mode’s safety and its adoption by the public. “If the government is determined to legalize e-scooters, we believe a proper and open examination of the evidence should be undertaken first,” PACTS said in a statement.

Infrastructure projects aimed at improving the nation’s roadways faced delays due to COVID-19 restrictions including social distancing requirements on construction sites, while in Scotland, sites were shut down for several months in response to the pandemic last year. U.K. Prime Minister Boris Johnson promised in June of last year that his government would limit bureaucracy and provide funding to invigorate life back into these projects.

In November 2020, a long-awaited National Infrastructure Strategy was published pledging investment worth £600 billion pounds ($838 billion USD) in economic infrastructure over the next five years. This includes more than £27 billion pounds ($37.7 billion USD) for strategic road improvements. The strategy also sets out policies to accelerate and improve the delivery of projects and to help meet the U.K. target of net-zero carbon emissions by 2050.

As vaccine rollouts have started in the country and recovery hopes gain momentum, the U.K. government launched the “Build Back Better” Council to achieve a set of five economic goals to ensure an equitable, environmentally sustainable, and resilient comeback from COVID-19. The council, comprised of stakeholders from private and public sectors collaborating with government, will work to “secure the health and needs of everyone in the UK now and into the future; protect and invest in our public services; rebuild society with a transformative Green New Deal; invest in people, and build solidarity and community across borders.”

Many U.K. transportation professionals support the Build Back Better Council and feel that the behavioral changes enforced by the pandemic should be used to ensure transportation becomes more sustainable as part of the overall recovery. However, these same professionals caution that if health and safety are not at the forefront of the build-back process for the transportation sector, and individuals do not feel confident to return to public transit services, the recovery may be led by private vehicle use, further slowing the sector’s recovery and negatively impacting the environment. *itej

* www.ciht.org.uk/news/go-ahead-for-electric-scooter-trials
** www.buildbackbetteruk.org
It’s easy to understand why the Georgia Section of ITE (GAITE) took home the ITE Outstanding Section/Chapter Award in 2020. Incredibly engaged with its membership and proactive about partnering with outside organizations, GAITE takes every opportunity to maximize its offerings to support its members—from students to seasoned professionals—through a wide range of activities, events, fundraisers, and scholarships.

GAITE holds nine monthly meetings in a given year, three conferences/workshops, and a yearly awards banquet, helping members meet their continuing education requirements while providing networking opportunities. Monthly meetings feature diverse speakers on a wide variety of topics relevant to the transportation industry. Prior to COVID, meetings were held in person at different locations around the metro Atlanta area. Since the pandemic, meetings have transitioned to a virtual format, streamed live on the Section’s YouTube page and also available to view on-demand. Both pre- and post-COVID, GAITE has continued to average more than 100 people at its meetings. Once it is safe to resume in-person gatherings, GAITE plans to continue offering a virtual attendance option for all events.

Annually, GAITE hosts a Winter Workshop, Summer Seminar, and Technical Exchange, providing unique experiences and opportunities for members to learn and interact with professionals outside the organization. The Winter Workshop is a two-day conference hosted with the American Society of Highway Engineers (ASHE) Georgia Chapter. This event often changes locations to meet the needs of the conference and allow members from across the state to attend. Summer Seminar is GAITE’s largest annual conference with total registration exceeding 300 people. This four-day event takes place at the King and Prince Resort on Saint Simons Island, GA, USA often drawing attendees from around the nation. The Technical Exchange is a one-day event organized between GAITE and a different partnering ITE Section from a neighboring state. The meeting is held in Georgia or the parenting state, near the state borders, to encourage participation from both Sections.

The Section announces its annual award winners, scholarship winners, and the next year’s board at the Annual Awards Banquet every December. The meeting was held in person in 2020, but was limited to essential personnel and prerecorded for broadcasting on the Section’s YouTube channel. Thanks to GAITE’s creative marketing team, the recording was edited to provide an awards ceremony feel, complete with a cheesy monologue from a host, and—of course—jokes.

GAITE’s relationship with Student Chapters is a priority for the Section. In 2020, GAITE supported the Georgia Tech Student Chapter with its preparation and hosting of the Southern District of ITE (SDITE) Student Leadership Summit, held on Georgia Tech’s campus with more than 140 attendees. Outside of COVID, meetings are held on two campuses a year to promote networking opportunities, and social activities are organized with each student chapter. GAITE also allows students to attend any of its monthly meeting for free, and actively assists Student Chapters with finding speakers for their meetings. Traffic Bowl practice events helps students to prepare for competitions, and GAITE provides travel allowance for teams traveling a considerable distance to compete in the Traffic Bowl competition.
Multiple scholarships are awarded yearly through GAITE’s student scholarship program. This past two years, nine scholarships totaling $30,000 were awarded to students from Georgia Tech, Kennesaw State, and Georgia Southern. Annually, the top student candidate is awarded the John D. Edwards Memorial Scholarship in honor of this GAITE member.

Events and meetings are hosted with other organizations including ASHE Georgia, ITSGA, American Councils of Engineering Companies GA, and more. These events provided the opportunity for members to network with others in the same industry but with potentially different focuses and experiences. Additionally, public sector “coupons” are provided to members employed by a government agency at the beginning of the year. These coupons can be used by the member or a guest of theirs to cover the registration cost of a monthly meeting to encourage public sector involvement. These have helped public sector members to attend more monthly meetings. Nomination were opened for board members and committee chairs to the general membership, to promote inclusivity. These positions are typically nominated or appointed by the Nominations Committee and the Section board, respectively. For 2020 GAITE modified its Board to include three new positions, Board Member at Large, Board Liaison, and Past President Representative. These positions provide more opportunity for member involvement around the state and help the

**Georgia Section of ITE (GAITE)**

**Southern District**

**Membership**
Approximately 385 members

**Leadership**
- President – Chris Maddox, P.E., PTOE (M)
- Vice President – Meredith Emory, P.E., IMSA II, PTOE (M)
- Secretary/Treasurer – Christina Barry, P.E. (M)
- Past President – Katherine Shearin, P.E., PTOE (M)
- SDITE Representative – Sean Coleman, P.E., PTOE (M)
- SDITE Representative – Kelly Patrick, P.E., PTOE (M)
- Board Member at Large – Alan Davis, P.E., PTOE (M)
- Board Liaison (Non-voting) – Robinson Nicol, P.E., PTOE (M)
- Past President Representative (Non-voting) – Kenneth Voorhies, P.E. (F)

**Committee Chairs**
- Awards/Nominations – Katherine Shearin, P.E., PTOE (M)
- Engineering Outreach – Robert Baker (M)
- Finance – Charles Bopp, P.E. (R)
- History – Charles Bopp, P.E. (R)
- Host Committee – Harrison Forder (M)
- Legislative Affairs – Daniel Dobry, P.E., PTOE (M)
- Leadership Program (Co-chairs) – John Bolen (M), Elizabeth Shaw, E.I.T. (M)
- Marketing/Communications – Paul A. Slone, P.E., PTOE (M)
- Website – Katherine Shearin, P.E., PTOE (M)
- Safety – Darren Harris, E.I.T. (M)
- Scholarship – Jinwoo Seo, P.E. (M)
- Student Chapter Liaison Coordinator – Madison Dorminey (M)
- Student Chapter Liaisons – Brianna Bolen (M), Scott Zehngraff, P.E., PTOE (M)
- Sponsorship – Jacquelyn Kawa, P.E. (M)
- Summer Seminar – William Ruhsam, P.E., PTOE (M); Mi Hyeon Jeon, Ph.D., P.E., AICP (M); Patrick McAtee (M)
- Technical – Joe Gillis, P.E., PTOE (M)
- Winter Workshop – Md Shah Imran, P.E. (M)
- Golf Tournament (Co-chairs) – Robert Jacquette, P.E., PTOE (M); Scott Zehngraff, P.E., PTOE (M); Comptroller – James Pohlman, P.E. (F)
- Clerk – Elizabeth Shaw, E.I.T. (M)
- Virtual Event – Mary Thumaty, P.E. PTOE (M)

**Marketing Efforts**
The GAITE Marketing and Communications Committee plays a starring role in continuing recruitment efforts. The group keeps the Section’s social media platforms active and up-to-date with current information and activities. Bi-weekly emails from GAITE reach an additional 780 people besides its membership, totaling more than 1,150 people.

**Annual Golf Tournament**
The annual GAITE/Georgia Department of Transportation Employees Association (GDOTEA) Golf Tournament is another way GAITE raises funds. Proceeds from the ITE/GDOTEA Golf Tournament are split equally between the two organizations. The GAITE funds are earmarked for sponsorship of the Transportation Engineer of the Future (TEOF) program, established in 2006 to identify and retain high quality talent in the local transportation community. The program provides the recipient a $15,000 scholarship in addition to their Graduate Research Assistantship, with a requirement that the student be employed by GDOT for three years after graduation. Throughout the TEOF program, GAITE has been very successful in recruiting talented students to retain transportation talent in the Georgia transportation community.

**Special Awards Named for Members**
- John D. Edwards, Jr. Individual Achievement Award
- Marsha Anderson Bomar Young Member of the Year Award

[www.ite.org](http://www.ite.org) April 2021
Board in receiving more input and advice for the board in their decision-making processes. Board meeting dates are posted on the GAITE website and open for any members to attend. At the request of SDITE, this year GAITE will partner with the South Carolina Section to mentor each other and cross-participate in events.

Before COVID, quarterly networking events organized by the Activities Committee included happy hours, sporting events, or social gaming events (TopGolf, Axe Throwing). Networking events are currently included in virtual meetings—activities like Pictionary, poker, bingo, charades, and other card games—with more work put into marketing efforts. GAITE even held a virtual bike safety webinar to help educate members and their families as people are spending more time outside and on their bicycles. For the 2021 Winter Workshop, GAITE held a virtual cocktail making class and Texas Hold’em tournament.

GAITE raises funds through annual sponsorships to reinvest in its members. GAITE’s Yearly Diamond Sponsors receive recognition at multiple events, along with a few extra privileges. The Section’s budget includes the Leadership and Mentorship programs, President’s Discretionary Fund, Section Technical Award, financial travel support for board members to conferences, and events by the Activities Committee. Large portions of these events are supported through the Section Sponsorship program, lowering the cost for members to participate. GAITE also raises scholarship funds through auctions, a golf tournament, the Past President’s luncheon, and open contributions to advance the education of civil engineering students at Georgia universities. The Scholarship Committee holds the John D. Moskaluk Scholarship Auction at the Summer Seminar, funds that assist with the student scholarships.

Pandemic or not, GAITE is poised to continue serving its membership effectively through a variety of creative, educational, and engaging ways, ensuring the Section’s continued success.

**K-12 STEM Competition Winner**

The Georgia Section is dedicated to promoting education about the transportation profession through STEM work with K-12 students. In the 2019 ITE STEM Competition, the Section took home the prize in the Large Event category for its efforts that included 19 members speaking across 10 schools.
The Value of Perspective

ITE JOURNAL: You wear many hats as the director of transportation for the Village of Schaumburg, IL, USA. What is the key to working across various areas with multiple stakeholders to ensure that you are supporting a sound transportation network?

ROBLES: One of the things I love most about my job is the ability to engage with a range of stakeholders through the different projects and programs run by my department. Connecting with people and knowing the impact I am making to improve our transportation network is so satisfying! In my experience, the key to working well with stakeholders is to find common ground and, ideally, a unified purpose. Working together towards a goal, such as improving the transportation network or addressing a specific issue, often makes tough discussions or compromises a little bit easier. It can be easy to get caught up in the details, but taking a step back to think about the big picture can help to refocus the group on the most important decision points.

ITEJ: When helping develop What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic, how did you bring your experience as a director of transportation and your knowledge as a transportation planner to the table?

ROBLES: One of the greatest things about our profession is the wide variety of experiences, specialties, and backgrounds that contribute to the industry. One of my goals is to share my perspective and insights in the hopes that it will benefit others. There is so much value in understanding how different people are managing during difficult times. As a member of the team, I shared my experiences and focused on how the team’s viewpoints could help others continue their work during the pandemic. Working for a suburban municipality, the pandemic has had direct impacts on our traffic programs, but the business perspective is that my organization also suffered financial impacts from the pandemic that reduced my department’s budget. I was able to share both our technical struggles of counting during a pandemic as well as the operational challenges—such as budget cuts—that factor into my decision-making process. By bringing together so many different points of view, our team was able to develop a report that provides a range of options for transportation professionals to consider as we all navigate our way through the pandemic.

ITEJ: You serve as Vice-Chair of the Public Agency Council as well as supporting the Illinois Section as Activities Co-Chair. How has holding leadership positions in ITE helped enhance your career?

ROBLES: ITE has provided me with countless opportunities to broaden my knowledge and has given me the chance to contribute to the transportation profession on a larger scale. Through ITE, I have been so fortunate to meet people who have pushed me to get more involved and to share my knowledge and experiences. I have learned so much about the different facets of the transportation profession, developed relationships with industry leaders that I admire, and have found an invaluable resource that improves how I approach my job. These opportunities afforded by ITE have not only made me a more well-rounded transportation professional—they have also helped me expand my leadership skills and taught me the value of giving back by supporting others in the industry. itej

Karyn Robles (M)
Director of Transportation
Village of Schaumburg, IL, USA

Education
Bachelor of Arts, Public Administration and Urban and Regional Planning, Miami University
Masters of Public Administration, University of Illinois at Springfield

ITE Leadership
Public Agency Council, Vice Chair
LeadershipITE Class of 2021
Illinois Section of ITE, Vice Chair

Professional Involvement
American Planning Association
American Institute of Certified Planners
Vice-Chair, Illinois Public Airports Association

Fun Fact
Karyn loves to travel. Among her favorite trips are Oktoberfest in Munich, Germany; Egypt; Turkey; and South Africa. She hopes 2021 allows for some new adventures!
Leveraging Technology to Enhance Transportation Practices in Times of Crisis

By Amir Rizavi, P.E., ENV SP (F), Director of Transportation Systems, VHB

Adapting to change and continuing critical business functions despite serious, disruptive incidents is a huge opportunity to make a positive impact on the architecture, engineering, and construction (AEC) industry and our communities. Having responsive yet flexible continuity plans in place allows businesses—including those who contribute to the built environment—to remain resilient, innovative, and collaborative during times of disruption, such as the recent global pandemic, economic shutdown, and political unrest. If the COVID-19 pandemic has imparted any lessons, it’s that businesses and organizations can transform quickly to a dynamic environment that withstands both culture and workflow disruptions.

VHB is a 1,600-person company serving the eastern seaboard of the United States by providing integrated consulting services to public- and private-sector clients. The company’s global risk committee frequently examines business disruption scenarios, such as cyber-attacks and natural disasters or global pandemics. The Business Continuance Program prepared VHB to meet the challenges resulting from COVID-19 across its footprint, even as various regions were impacted differently, allowing focused time to develop solutions and tools most helpful to teams and clients during the pandemic and beyond.

Collaboration Across Teams

The Applied Technology and Transportation teams at VHB frequently partner to develop data-driven, technology-empowered tools to keep projects moving forward, positioning the transportation industry to restore service and passenger confidence.

“We serve a variety of markets by collaborating with other VHB teams, data providers, and technology companies,” explains Steve Anderson, GISP, director of Applied Technologies. “Together, VHB’s Transportation and Applied Technology teams continue developing and implementing new innovations to help clients keep their mobility projects on track, even during COVID-19, using data and analytics to make more informed decisions and deliver smart solutions.”

Once stay-at-home orders were put into place in March 2020, everyday life was disrupted, and traffic volumes fell dramatically—in some instances greater than 75 percent. With traffic data collection being a critical piece of advancing transportation projects, development of Intersect gave VHB the ability to leverage probe data at intersections to produce traffic volumes during atypical (and typical) conditions. Intersect’s flexibility allows data to be produced more efficiently than the traditional counting of vehicles and can be collected anytime, anywhere virtually, minimizing field work, and improving safety.

COVID-19 also highlighted the need to address existing health concerns and equitable access to community resources. VHB’s Healthy Mobility Model correlates land use, mobility, and urban design factors to estimate community health levels in a designated area to assist in planning and designing communities.
and built environments in a way that makes it easier for people to live healthier lives. The model leverages big data to help authorities make smart decisions related to physical improvements—such as complete streets with sidewalks and bike lanes—that contribute to better health outcomes.

VHB has also leveraged technology to help clients adapt to new ways of connecting with not only each other, but with the public. For the Federal Highway Administration and the University of North Carolina (UNC) Highway Safety Research Center, VHB conducted virtual meetings and surveys on several critical projects that required public review. Rather than host simple webinars, the team created interactive, virtual rooms where large numbers of attendees were able to review plans and ask questions directly to project managers in their own time, opening the opportunity for more people to participate.

“We reached close to 2,000 attendees across the two episodes, and the survey responses have been overwhelmingly positive,” said Dan Gelinne, senior research associate, UNC Highway Safety Research Center. “We have avoided important issues of accessibility in our past webinars, and there is likely still a huge demand for more attention to these topics in the future. With your [VHB’s Virtual Meeting Team’s] help, we’ve taken a big step in that direction.”

To further provide connectivity across markets and geographies, VHB continues to host virtual roundtable discussions with clients and industry leaders on a continuing basis, providing opportunity to share perspectives on COVID-19 impacts. During two cross-market roundtable events, industry leaders representing transportation, energy, real estate, higher education, manufacturing, and technology sectors discussed challenges, concerns, best practices, and future visions. The sessions provide an opportunity to share common challenges and concerns, as well as learn about impacts in other markets, sectors, and geographies.

A Connected Culture
The company’s People & Culture Team works to continually enhance the employee experience, keep connected, and promote self-care during unprecedented times. VHB Together, created as a hub for everything-engagement, provides employees with resources, support, and connections that emphasize VHB’s core value of “Balance.” Regularly occurring events include companywide virtual stretch breaks, virtual escape rooms, and a parenting panel offering resources and support for working parents now faced with the added stress of remote learning.

The shift to a virtual work environment has not impacted VHB’s dedication to giving back to our communities. Our employees’ creativity, caring and camaraderie throughout 2020 raised $140,000 through various online programs, with the added benefit of strengthening connections across the company.

The transformations brought on by COVID-19 are here to stay—not just for the AEC industry, but for us all. In the transportation market, VHB is future-focused and dedicated to leveraging technology to help clients create organizational efficiencies, improve workflow, increase productivity, and keep critical infrastructure projects moving forward.
NOCoE Announces 2021 TSMO Award Winners
The National Operations Center of Excellence (NOCoE) recently announced the winners of its 2021 Transportation Systems Management and Operations (TSMO) Awards Competition. The national contest represents the latest TSMO projects and programs that are increasing the efficiency of America’s existing infrastructure to address air quality and improve the safety and mobility of the traveling public.

The winners across this year’s categories are:
- **Best TSMO Project:** Pennsylvania DOT – TSMO Performance Program and Traffic Operations Analytics Tool
- **Agency Improvement:** North Carolina DOT – TIM Training Track
- **Work Zones Using TSMO:** Iowa DOT – Comprehensive Work Zone Management Program
- **Project Selection and Prioritization:** Pennsylvania DOT – Regional Operations Plans

The winner in each category automatically becomes a nominee for the Overall TSMO Award, presented in late spring. NOCoE released case studies and case study videos for each of the four winners and four runners-up in the 2021 competition. In the coming year, NOCoE will release the case studies for each of the projects entered in the competition. Transportation practitioners and decision makers can access more than a hundred case studies available on NOCoE’s website at www.transportationops.org to learn about how TSMO practices and programs are benefiting travelers and transportation agencies and practitioners across the country.

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NEW PRODUCT

FHWA CASE Webtool
The Federal Highway Administration (FHWA) is pleased to announce the release of the Contracting Alternatives Suitability Evaluator (CASE) Webtool. The CASE Webtool can help project teams to evaluate risk and support decisions regarding the appropriate contracting method for multiple situations. The webtool allows you to:

- Rapidly compare and rank short-term contracting methods (i.e., Design-Build (DB), Design-Build-Finance (DBF), Construction Manager/General Contractor (CM/GC), and Progressive Design-Build (PDB))
- Evaluate financing benefits and long-term impacts of Public-Private Partnerships (P3) contracting on cost, schedule, and quality of service.
- Use a rigorous quantitative and qualitative evaluation approach that is consistent and performance driven.

For more information, visit http://bit.ly/CASEWEB where you can find guides for accessing the webtool and the webinar, An Introduction to the CASE Webtool. Itej

Product reports are based on information and literature provided by the manufacturer/distributor. Publication herein does not constitute endorsement of the product by ITE. If you have a new product announcement you would like considered for publication, please send to Holly Stowell at hstowell@ite.org. When contacting a manufacturer/distributor for more information, please mention that you learned about the product in ITE Journal.

Navigating a New Future

The 2021 ITE Annual Meeting and Exhibition (#ITE2021) is now virtual!

(Technical Program: July 20–30; ITE Council and Committee Meetings: August 2–5)

July 20–August 5

Same great content and networking opportunities will be available online.

Registration is now open.

More information – www.iteannualmeeting.org

www.ite.org April 2021 25
COVID-19 Impacts on ITE Members: An Early Snapshot

COVID-19 has had a significant impact on our society, the transportation industry, and on ITE. In an effort to better understand these impacts, the Industry Council, with support from ITE staff, issued a short COVID-19 survey to our members. This survey was directed at members working as solution providers (industry), private sector consultants (consultants), and in government entities (public agency).
The survey was open between November 16-December 4, 2021 with 1,150 members responding. This was not a scientifically designed survey and, as such, it is subject to response bias. However, we believe the results can provide insights into the degree to which COVID-19 has impacted ITE members in 2020 and the outlook for 2021 and beyond.

The Industry Council is conducting an in-depth analysis of the data with additional insights expected to be available this summer. This article seeks to provide an early snapshot of the results in several key areas.

**Demographics**

Of the 1,150 respondents (approximately 9 percent of ITE professional membership), approximately 60 percent were from the private sector (industry and consultants), and 40 percent from public agencies. These results are somewhat skewed toward the private sector as compared to ITE’s general member population, which is equally split between the public and private sectors.

Of those responding, 90 percent reside in the United States, with the remaining 10 percent predominately from Canada. The ITE membership split is 85 percent U.S.-based and 15 percent outside of the United States.

**Format and Topics**

Each survey recipient received approximately 10 questions. Some of the questions were identical across all recipients, with others tailored to the recipient’s area of employment (industry, consultant, public agency). The majority of the questions were multiple-choice with several open-ended questions included. For the purposes of this snapshot the results have been organized as follows:

**Operations**
- Impacts – to what degree are members working remotely
- Readiness – how prepared was their organization was for remote operations
- Effectiveness – how effective are remote operations

**Private Sector**
- 2020 Impacts – how did COVID-19 affect business results in 2020
- 2021 Outlook – what are business expectations for 2021

**Public Sector**
- 2020 Budget Impacts – how did COVID-19 impact agency budgets in 2020
- 2021 Budget Outlook – what are the expected budget impacts in 2021
- COVID-19 Staffing Impacts – how is COVID-19 affecting agency staffing

**Results**

**Operations.** The first area explored through the survey was the degree to which members are working remotely. As shown below both private sector (83 percent) and public sector (76 percent) members have moved into remote or mostly remote operations. Interestingly, the public sector (25 percent vs. 17 percent) has maintained somewhat more in-person operations.

The second area examined was organizational readiness to move to remote operations. There was a very clear divergence between the private sector and public sector. Nearly half of private sector respondents indicated that they were well-prepared to move to
We are predominately operating remotely. All non-essential operations are remote, other operations are in-person. We shut down temporarily, but are predominately operating in-person.

**Public Agency Responses**
- Well-prepared with significant experience and procedure in place
- Some limited experience with working remotely, but not fully prepared
- No real preparation or experience

**Private Sector**
- Well-prepared with significant experience and procedure in place
- Some limited experience with working remotely, but not fully prepared
- No real preparation or experience

If you are predominately working remotely, how effectively are you able to do your job?

**Public Agency Responses**
- More effectively
- As effectively
- Less effectively

**Private Sector**
- More effectively
- As effectively
- Less effectively
remote operations. Only 21 percent of public agencies were similarly prepared, and 20 percent had little to no preparation, as compared to 6 percent in the private sector.

The last area explored under the Operations theme was remote work effectiveness. Both private sector and public sector members were overwhelmingly positive about their effectiveness while working remotely, with more than 75 percent of both public and private sector respondents indicating they were at least as effective while working remotely. Despite the lack of preparedness indicated by the public sector, slightly more (20 percent vs. 15 percent) public sector members believed they were more effective while working remotely.

Private Sector. Insights were gathered from both industry and consultant members regarding the impacts of COVID-19 on their business in 2020 and prospects for 2021. Because of the relatively small number of industry responses the results, and because the results tracked one another closely, they have been combined here.

In 2020, approximately 50 percent of private sector members indicated a decrease in business with almost 20 percent reporting an increase.

Looking forward to 2021, respondents were more optimistic with more than 35 percent expecting increases in business, versus 30 percent who expected business to decrease.

Public Sector. Of interest were the impacts that COVID-19 has had on public agencies, both from a budget and a staffing perspective.

In 2020, 30 percent of respondents indicated that they had experienced significant budget cuts with an additional 51 percent seeing some decreases. Conditions are expected to worsen in 2021 with 37 percent expecting significant cuts and an additional 47 percent expecting some decrease.

To what degree has your agency been impacted by budget cuts in 2020?

As you look forward to 2021 to what degree do you expect your agency to be impacted by budget cuts?

How has your agency staffing been impacted by COVID-19? (Check all that apply)
Similar impacts can be seen in public sector staffing with 57 percent of respondents having experienced or expecting a hiring freeze, 22 percent having experienced furloughs, and 22 percent expecting a reduction in staffing.

Lessons Learned, Thus Far

While we are still in the midst of the pandemic and the lasting impacts on both private and public sector operations are yet to be determined, some insights can be drawn from the responses provided to open-ended questions regarding factors that have impacted members’ work environment and lessons learned from their remote work experience to date.

Overwhelmingly, the most positive response was with regard to the time saved from commuting and the ability to provide a more balanced lifestyle. Members appreciated the flexibility provided in a work-from-home (WFH) environment.

The two biggest success factors, or conversely barriers, cited regarding members’ ability to quickly and easily transition to a WFH setting were prior telework experience and technology. Organizations who had previously implemented telework policies and encouraged employees to WFH were highlighted in the comments. Similarly, employees who were well-equipped technologically from a hardware, application, and connectivity perspective were better able to work productively from home.

Unlike a typical WFH scenario, COVID-19 has introduced additional complexities for those with school-age children. Distractions were frequently cited as a barrier for those working remotely during the pandemic and attending to children’s needs while trying to remain productive.

Looking forward, many members commented on how the pandemic has broken through old norms and accepted practices, forcing organizations that were reluctant to embrace a WFH environment to do so out of necessity. The general sentiment was that this has demonstrated that many, but not all, of their work functions can be successfully accomplished in a remote environment. There was clearly an expectation that significant flexibility would remain available in post-COVID-19 environment.

However, there was also the recognition that some aspects of the in-person workplace cannot be easily duplicated or can be lost in a WFH setting. Impromptu discussions and the ability to easily brainstorm and problem-solve with colleagues was frequently cited. While technology can fill some of this void, it was recognized that it was hard to replicate the “watercooler” or the ability to “stick your head in someone’s office.” For some, being at home was a very “isolating” experience where they felt distanced from their colleagues.

A particular area of concern was for new hires and younger staff. The ability to effectively hire, develop, and integrate new and younger staff into the workplace in a WFH setting was identified as a significant challenge, and one that could limit the career development of the individual and the effectiveness of the organization.

Respondents consistently cited communication as a key ingredient in creating a successful WFH environment. Frequent communication between employees and supervisors and among colleagues is key. This communication must be more intentional than in a traditional office setting, and a variety of technological tools need to be employed to create the necessary personal connections.

This is particularly true in the private sector. While many of the comments were similar from public sector and private sector members, business development and client relationships were cited as a challenge by those private sector members working from home. Relationships matter in business, and creating those relationships is much harder in a remote work environment.

Conclusion

There is no doubt that the COVID-19 experience will leave a lasting impact on our society and our industry for years to come. Beyond the tragic loss of life and the direct impact this has had on so many families, the pandemic will impact how we live, work, and play. With vaccines now rolling out, there is hope for some return to normalcy as we defined it in a pre-COVID world, but it is clear that there will be no going back. Rather, we must navigate a new future. A central element of this future will be the workplace. Many questions remain regarding the degree to which organizations will continue to operate remotely. The idea of “hybrid” schedules with some structured office time combined with more liberal WFH arrangements are likely to become the norm in many organizations. The story of how these types of arrangements impact organizational culture, commuting patterns, transit systems, commercial office space, retail and restaurant industries, and much more is yet to be written, but we hope that the results of this survey provide a glimpse into the impacts of COVID-19 and some of the permanent changes that may be on the horizon. In the second phase, the Industry Council hopes to provide additional insights and guidance on how organizations can successfully navigate this new future.

Acknowledgement

ITE extends thanks to former Industry Council Vice Chair Erin Skimson (M) for her leadership, as well as the other members of the Industry Council COVID-19 Task Force, for their efforts and contributions that resulted in this article.
Quantifying the Transportation Impacts of COVID-19 on Orlando’s Tourism Corridor

By Paul O’Rourke, Mark Welsh, and Brittany Wood, Ph.D.

The first cases of COVID-19 in Florida, USA were identified on March 1, 2020. As the number of confirmed cases began to grow, preemptive measures were implemented statewide to slow the spread of the virus, including the closure of Disney parks and Universal Orlando on March 16. A mandatory statewide stay-at-home order followed on April 1 and was lifted on May 4 for most Florida counties. Additionally, some city and county governments, as well as organizations in the private sector, implemented unilateral mandates and policies in response to the virus.
As tourist attractions closed, traffic counts plummeted while travel speeds increased closer to free-flow, implying reduced tourist and commuter activity when compared with counts and speeds measured earlier in the year. Simultaneously, passenger activity at the Orlando International Airport declined by around 97 percent for both arrivals and departures between January and April 2020. The Orlando area’s hotel occupancy rate also declined significantly, from 76.7 percent in March to 12.3 percent for the week ending April 11, 2020.

Later in the month of April, there was an initiative to start reopening beaches, and by May 18 Governor Ron DeSantis announced the first phase of reopening for the state, with Universal Orlando reopening on June 5. Disney followed the next month, with the Magic Kingdom and Animal Kingdom reopening on July 11, and Epcot and Hollywood Studios reopening on July 15. As attractions have reopened (at a reduced capacity), traffic and pedestrian/bicycle (ped/bike) counts are increasing and travel speeds are decreasing, though not to their pre-COVID numbers.

**Objective**

To quantify the effects of COVID-19 on tourism, this study analyzes traffic counts and travel speeds along the I-4 corridor and in the vicinity of Orlando’s flagship attractions during 2020. An analysis of Uber data, which provides travel times and extent of travel for Uber drivers, is also included. Finally, ped/bike data is analyzed to examine impacts on bicycle and pedestrian activity in the area.

**Figure 1. Map of Study Area Along Interstate 4 with Real-time Traffic Count Locations and Selected Traffic Analysis Zones.**

**FDOT Traffic Counts**

Under normal conditions, I-4 carries a high volume of traffic that includes many tourists in addition to those working in the tourism-related service industry. This section presents an overview of the impact of COVID-19 on traffic counts along the I-4 corridor. The I-4 corridor spans 132 [212.4 kilometers] miles from Daytona Beach to Tampa, and includes the city of Orlando in Orange County, a major tourist destination for the state of Florida. As such, it is critical for the movement of goods, services, and visitors.

The traffic volume data was collected at hourly intervals from four of the Florida Department of Transportation’s (FDOT) real-time traffic monitoring sites along I-4 located in Orange, Hillsborough, Volusia, and Seminole counties during the period from March through September 2020. The historical volume data is a five-year (2015-2019) month-day-hour median.

**Figure 2. Weekend Traffic Volume Differences**

(Friday–Sunday, 9 a.m. to 9 p.m. EST)

**Figure 3. Weekday Rush Hour Traffic Volume Differences**

(Monday–Friday, 3 p.m. to 7 p.m. EST)

**Sources:** Florida Department of Transportation; Uber Movement; OpenStreetMap
Figures 2 and 3 depict two different time windows. Figure 2 shows the percent difference between observed and historical volumes during the weekend interval (Friday to Sunday between 9:00 a.m.-9:00 p.m.). Figure 3 shows the difference in volume during afternoon rush-hour (Monday to Friday 3:00-7:00 p.m.).

The graphs highlight the steep decline that culminated in the greatest volume differences in April 2020. At the height of the COVID-19 traffic volume drop, the difference ranged from 54 to 37 percent decline for afternoon rush-hour volumes on I-4. The greatest decline in traffic volumes was during the weekend interval, where traffic volume differences dropped from 68 to 56 percent. For both the afternoon and weekend interval, Orange County (Orlando) had the biggest decline, while Hillsborough County (Tampa) had the lowest percentage decline in traffic volumes.

(Incidentally, the Florida Department of Transportation put the lower traffic numbers to productive use by expediting construction projects, including five ramps at the interchange of the new I-4 Ultimate and State Road 408 in Orlando.)

Between May and June, there was a significant rebound in traffic volumes for both rush hour and weekend traffic. In Hillsborough County, traffic along I-4 approached normal volumes. In Orange County, traffic volumes also returned to more normal levels, but traffic volume differences remained lower than the I-4 sites in the other counties.

The rate of decline in traffic volumes decreased between June and September after the sharp increase in volumes between April and June. By July, Hillsborough County was seeing volumes on I-4 above the five-year historical median. In late summer, both the rush-hour and weekend volumes settled between 0 to 20 percent below median volumes.

Tourist activity, especially in Orange County, appears to have contributed in part to the traffic volume rebound that followed the state’s phased re-opening and resorts returning to regular operations, albeit with restrictions on the number of visitors allowed in theme parks, resulting in traffic volumes that remain slightly below the five-year historical median.

**INRIX Travel Speeds**

Travel speeds typically exhibit an inverse relationship with traffic volume—i.e., as traffic decreases, speeds increase. In response to decreased traffic volumes associated with COVID-19, this section includes an analysis of travel speeds along I-4 in Orlando between SR-429 and Florida’s Turnpike from 5:00 p.m.-5:59 p.m. This stretch of I-4 includes Universal Orlando and Disney, among many other tourist attractions. The INRIX travel speed data was acquired from the Regional Integrated Transportation Information System (RITIS) at the University of Maryland. 4

**Daily Observations.** Analyzing travel speeds by day provides a direct observation of the effects of the COVID-19 timeline. Figure 4 shows that during the first half of March, observed travel speeds along I-4 closely resembled those measured earlier in the year in both directions of travel (east and west). On I-4 eastbound, the slowest days were March 5 and March 10 with a speed of 41 miles per hour (mph) (66 kilometers per hour [km/hr]). On I-4 westbound, the slowest day was March 6 with a speed of 31 mph (50 km/hr).

As the decrease in traffic counts during the second half of March would imply, travel speeds along I-4 increased to near free-flow beginning on March 14 (two days before Universal and Disney closed). Since then, the highest speed on I-4 eastbound was 75 mph (121 km/hr) on March 28, and on I-4 westbound it was 72 mph (116 km/hr) on March 29. Increased travel speeds were also observed throughout the month of April and into May.

Beginning on May 22, the data indicated that travel speeds were slowing down, at least on a few days. This trend continued through November, with slower speeds occurring more frequently, particularly along the westbound side of I-4. However, these slower speeds were still above those measured earlier in the year.

Although travel speeds were showing signs of slowing, August 7 was the slowest day since early March on the eastbound side, with a speed of 48 mph (77 km/hr). On the westbound side, the slowest day was September 4 with a speed of 31 mph. This was equal to the slowest observed speed in March, which was 31 mph on March 6.

**Monthly Observations.** Summarizing travel speeds by month is useful for observing the overall trend in speeds during 2020. Because speeds in early March closely resembled those measured earlier in the year, speeds during March are slower than during the other months included in the study. For both directions of I-4, April was the fastest month, followed by May (see Figure 4).

Since June, the general trend has seen either a slight decline in travel speeds each month, or no change from the previous month. On the eastbound side this trend continues, with the November average speed equal to the March average of 60 mph (96 km/hr). On the westbound side, the monthly average speed for November dropped to 50 mph (80 km/hr), which is below the 55-mph (89 km/hr) average speed observed for March.

Regarding tourism recovery, these are encouraging trends—and although travel speeds along both directions of I-4 are declining in general, they have not returned to the speeds observed in January and February 2020.

**Uber Movement Travel Times**

This section presents an understanding of how travel times may have been impacted by the pandemic by comparing Uber travel times from the Orlando International Airport to the Orlando tourist zones. Travel time data was acquired from Uber Movement for January-March 2019 and January-March 2020. 5 (Note: March 2020 is the latest available travel time data from Uber Movement. Based on the COVID-19 timeline, the first half of March is “pre-COVID-19,” and the second half is “post-COVID-19”.)
Figure 5. Uber Travel Times from Orlando International Airport to Orlando Tourist Zones

Source: Uber Movement

Figure 5 indicates that travel times from the airport to the Orlando tourist zones have decreased from the previous year’s average travel times, implying less traffic between the 2019 and 2020 date ranges. Uber travel times decreased from February 2020 to March 2020 by approximately two minutes and from March 2019 to March 2020 by approximately seven minutes. These travel times may indicate that there was less traffic from the Orlando Airport to the Orlando tourist zones. Since March 2020 is the latest travel time data available from Uber Movement, Uber travel time trends during the pandemic have not yet been explored further.

StreetLight Data Bicycle and Pedestrian Movements

Bicycle and pedestrian traffic are important measures of transportation activity in the vicinity of Orlando’s more popular attractions. This section compares monthly pedestrian and bicycle activity in Orlando tourist zones from January 2019 through September 2020. Pedestrian and bicycle counts were acquired from Streetlight Insight, a product that focuses on bicycle and pedestrian movements.6

To identify areas in Orlando that have a high concentration of tourist activities, Traffic Analysis Zones (TAZ) were utilized as the unit of geographic analysis and overlayed with Florida Department of Revenue parcel data consisting of land use types associated with predominant tourist activity. For this analysis, Orlando tourist zones are defined as TAZs with more than 35 percent acreage that consist of the following land use types: tourist attractions, permanent exhibits, other entertainment facilities, fairgrounds, golf courses, driving ranges, hotels, and motels. These tourist zones are depicted in Figure 1 and are used as the geographic zone of interest wherein pedestrian and bicycle traffic consists of trips that pass through, start, or end in each tourist zone.
Figure 6 represents relative monthly bicycle and pedestrian traffic in Orlando tourist zones. It is expected that the tourist zones would have a heavy amount of foot traffic, considering Orlando has multiple amusement parks where visitors typically spend time walking throughout most of the day. At the beginning of the year, pedestrian traffic percent change in tourist zones was greater in 2020 than in 2019, and appears to have been increasing from January to February. After the state began a phased reopening, pedestrian traffic gradually increased from July to September and appears to be on track to match the previous years’ pedestrian traffic activity.

Like pedestrian traffic, bicycle traffic in tourist zones was also greater from January to February in 2020 compared to 2019 and then steeply declined in March and April. Bicycle traffic in tourist zones does not appear to be recovering at the same rate as pedestrian traffic—the percent change of bicycle traffic from 2019 is approximately 40 percent lower, compared with approximately 5 percent lower pedestrian traffic for September.

Since bicycle trip purpose is unknown and the bicycle traffic data include pass through trips, not just trips that begin and end in tourist zones, the bicycle traffic patterns may be indicative of broader Orlando bike traffic trends. Due to these factors, it is difficult to draw verifiable conclusions from the bicycle activity in Orlando tourist zones. On the other hand, since the phased reopening was announced in June, pedestrian traffic trends indicate that pedestrian activity in Orlando’s tourist zones should return to last year’s pedestrian activity levels, which is promising in terms of Orlando’s tourism recovery.

Conclusion
Following a rapid decline in tourism beginning in mid-March, the data indicates a trend that is slowly moving towards a return of pre-COVID traffic counts, travel speeds, and ped/bike movements. Traffic counts continue to steadily increase along I-4 in Orlando and other locations. The frequency of slower daily travel speeds is increasing, with more daily 5:00-5:59 p.m. speeds closely resembling those measured pre-COVID. Average monthly travel speeds are also decreasing. However, traffic volumes and travel speeds have not yet returned to those observed in January and February. Uber travel times appeared to have decreased in the earliest days of the pandemic, though data is insufficient at this time to show a rebound in tourism. Pedestrian movements appear to be approaching pre-COVID levels, and bike movements are trending in that direction, albeit slower than for pedestrians.

As tourist numbers steadily increase, so too will commuting as more employees return to work in the tourism-related service industry, likely resulting in a continuation of the observed transportation trends. It is worth noting, however, that the state legislature’s top economist anticipates that it will take Florida’s tourism industry two to three years to rebound fully. Whether it takes this long for Orlando to recover remains to be seen. In the meantime, transportation data and analytics can serve as key indicators that monitor continued progress toward post-COVID-19 normalcy.

References

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Post-COVID-19 Transportation Trends

By Steven E. Polzin, Ph.D.
As spring 2021 arrives, the United States and its transportation systems have suffered through a full year of the impacts of COVID-19. It is unprecedented and destined to be remembered as a historic and transformational event impacting all elements of society both domestically and internationally. Transportation is among the most affected sectors, where the long-term impacts are expected to play out over several years. COVID-19 has produced changes in behaviors of individuals, businesses, and governments that impact transportation. Some of these changes are expected to be retained long after COVID-19 has diminished as an overwhelming public health threat. The depth and duration of the pandemic are among the factors that influence the magnitude of changes and the ultimate new normal for travel.

Changes in roadway travel give perspective to the impact of COVID-19. Roadway travel is the least impacted because it allows persons to socially distance and control exposure to contagion risk, yet this mode suffered dramatically, with volumes for 2020 anticipated to post final numbers approximately 13 percent below 2019 levels. By March of this year, when a full year of COVID-19-impacted vehicle miles of travel (VMT) will have accrued, rolling 12-month totals will be approximately 15 percent below prior year levels. This decline compares with the approximately 2 percent decline during the great recession and puts VMT at levels not seen since 2003. The impact on many other modes is far more significant.

This article provides a brief descriptive portrait of the pandemic’s transportation impacts and shares a scenario for recovery trends. Associated changes that are and will continue to influence travel are previewed. Most of the attention focuses on roadway and public transit travel, as they are a large focus of transportation planning and engineering. The balance of the paper focuses on the implications on how planning and delivering transportation might change going forward. COVID-19 enhanced and revealed a need for review of how transportation is planned, designed, funded, delivered, operated, and governed. The unprecedented changes in travel merit an unprecedented reconsideration of how transportation professionals carry out their responsibilities going forward.

The Transportation Impacts of COVID-19

Figure 1 shows the trend of travel volumes in the first 10 months of 2020 for passenger travel modes. The magnitude of the impact is readily apparent by the dramatic percent declines in travel volumes. These were most pronounced during the time when shutdowns dramatically impacted activity levels. Volumes increased as activity levels ramped up in parts of the country. The second clear observation is the disparate impact of COVID-19 on personal vehicle travel versus modes with group travel. For personal vehicle travel, the traveler can control their exposure risk by controlling who is in the vehicle and the extent of exposures and interactions getting to and from the vehicle. Personal vehicle travel was dramatically less impacted than airlines, public transportation, intercity bus, and Amtrak travel. In these modes, the traveler has exposure risk to other parties in the vehicles and higher probabilities of exposure at terminals and stations as they interact with fellow travelers, pay fares, handle luggage, and have other interactions, in addition to exposure to high-touch surfaces. Use of these modes is also impacted by the level of service provided. The dramatic initial declines in ridership resulted in diminished service levels in many instances—which further diminished attractiveness as a travel choice.

Figure 1 does not include several modes such as bike, pedestrian, taxi, transportation network services, rental cars, cruise, ferry services or freight, or commercial travel. Each of these travel modes has been influenced by COVID-19 and merits analysis by transportation professionals but are beyond the space available to discuss here.

Figure 2 portrays scenarios of potential travel recovery for the modes referenced in Figure 1. The pace and extent of recovery is highly uncertain. It is expected that travel volumes will increase as the fear of exposure diminishes. The pace of recovery is likely to be influenced by the extent to which fear of activity participation...
Figure 1. Change in Demand for Person Travel by Mode

Source: Data from various sources compiled by USDOT Bureau of Transportation Statistics (Polzin, 2021)

Figure 2. Travel Recovery Scenarios, Comparison with 2019

Source: Polzin, 2021
and shared travel diminishes based on progress in mitigating the COVID-19 health challenges. Expectations fluctuate regularly. Vaccine rollout, development of more effective standards of care and protective therapeutics, and the unknown extent to which new variants of the virus influence health risks are among the factors that will influence the extent of recovery. Similarly, the acceptance levels of vaccination and compliance with other safety protocols can influence the levels of activity engagement and even the relative acceptability of utilizing different means of travel.

The recovery scenarios are not modeled numbers or mathematically derived trends, but judgement-based recovery scenarios informed by reviewing various industry and stakeholder perspectives of how recovery may occur. Early in the pandemic, analysts reviewed historic weather, natural disaster, and man-made events such as energy crises, 9-11, and hosting Olympics to garner insight on recovery after travel disruptions. More recently, analysts have recognized the unique nature of this pandemic. Both its duration which enabled the adaption of behavior changes, and the ability to substitute communications for travel, are unprecedented. What is widely shared is a recognition that there will be an extended recovery period and the new normal is likely to be different than the pre-COVID-19 travel conditions.

Travel volumes will be affected by several considerations:

1. The cancellation or discontinuation of activities that one would travel to such as work, sports events, school, shopping, worship, medical visits, business meetings and conferences, and related activities.
2. Individuals’ decisions to forego or postpone travel for activities that are available but where the traveler decides not to incur the risk of exposure by participating in the activity.
3. Individuals’ decisions to forego or postpone travel due to the perceived risk of exposure during travel to and from the activity.
4. Activities foregone due to secondary impacts of COVID-19 that affect the economy and activity levels. For example, persons losing employment and can no longer afford going out to dinner, shopping, or accessing other goods and services.
5. Travel foregone due to the COVID-19 induced availability and awareness of virtual and digital means of carrying out activities that previously required travel. This includes dramatic improvements in web-portal availability and user-friendliness and improved access to and user knowledge of communications options.
6. Changes in travel mode due to changes in the competitive attributes of the choices. For example, lessened congestion and more available parking favor greater auto use. Promotional discount fares may favor use of alternative modes—conditions potentially offset by diminished levels of service.

Progress in combating the pandemic should mitigate the first two factors, but one might anticipate some residual health risk fears, perhaps even fear of new health risks. Residual safety concerns may favor additional demand for individual vehicles, as airlines, public transit, and other shared use modes might be perceived as having higher health risks.

The third factor, economic impacts of a disrupted economy, will inevitably impede travel demand. While recovery and stimulus appropriations may dampen the magnitude and timing of the economic drag, multiple trillions of dollars in additional deficits risk an extended period of slowed economic activity with travel dampening impacts. There may be a stimulus effect and a surge in demand for “catch-up” travel initially before more stable, true post-COVID-19 trends emerge.

Perhaps the most significant consideration in the recovery is the prospect that communications in lieu of travel will have a meaningful impact on future travel demand. As noted in factor 5, the availability of virtual and digital communications and the exposure and experience with using them have proven their functionality and are expected to result in continued use after the pandemic. Most visible of these changes have been the dramatic increase in telecommuting and use of e-commerce, but numerous other substitutions are occurring for all trip purposes. The prospect of more telecommuting is significant in several respects. Commuting defines the peak travel periods, which drives the design capacity of infrastructure and peak supply levels for services. Commuting demand also tends to be clustered around central business districts and other job centers. As telecommuting is most likely to occur for office workers, its impact will be more pronounced for central business districts and other office employment clusters. A modest 5 percent shift to work-at-home for the overall workforce could mean a 10-20 percent change in travel to office employment centers, where workers that are most likely to be in a position to shift to work-at-home are concentrated. This could produce potentially important changes in congestion levels, transit ridership, and the geographic locations of traffic.
Factor 6 refers to other COVID-19 encouraged or caused changes that influence travel. This includes the prospect for changes in auto availability based on anecdotal data on household vehicle additions that enable personal vehicle travel during COVID-19, and changes in the geographic and temporal travel patterns. These changes include residential moves, often to suburban or other areas perceived to provide greater safety or more affordable space to enable work-at-home activities. Other changes include different destination choices as office space, retail space, and other activities relocate, often in response to market adjustments influenced by COVID-19. The pandemic has resulted in a flattening of peak-period travel. The ability to carry out activities via communications has led to greater flexibility in work engagement including less peak travel as a result of full-time telecommuters, as well as flexible work hours as individuals mix at-home and in-office work during the day and across the days of the week.

The collective consequences of the COVID-19 pandemic and the transition to a new normal for transportation will leave the transportation profession with numerous challenges in the months and years ahead. Four of those challenges are touched on in remainder of this paper.

### Transportation Planning after COVID-19

COVID-19 provides a strong argument for updating transportation planning processes and methods. Virtually every step in the planning process—the identification of goals to the assessment of needs, collection of data and information, generation of ideas and options, etc.—will all benefit from a review. For example, post-pandemic planning goals may add integrating flexibility and adaptability, increasing resilience, enhancing accessibility, and supporting equity aspirations. Planners and policymakers will have a host of challenging questions and tasks to address as they rethink transportation planning post-COVID-19.

- Planning data needs to be updated to include 2019 base year data, new data that reflects post-COVID-19 conditions and trends, and embraces new considerations reflective of post-COVID-19 priorities. COVID-19 reinforces the desire to have data collected more frequently, delivered more expeditiously, and provided with more geographic precision/specificity.
- Forecasting models need to be recalibrated to reflect the emerging importance of communication as a substitute for travel and altered travel behaviors resulting from the pandemic.

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Planners have leaned on scenario planning as a tool to accommodate uncertainty. Scenario planning is not enough. It is necessary to integrate flexibility and adaptability of investments and operations into decision-making. It may merit postponing major irreversible decisions until some uncertainties have passed. For example, expansion projects highly dependent on work trip commuters for justification might best be postponed until post-COVID-19 commuting patterns reveal themselves.

Methodologies for planning for stable or declining travel need to be developed. Future per capita vehicle travel growth is not anticipated to be robust and may even decline in some geographies. Thus, some geographies will be challenged to maintain current infrastructure and services in the face of declining demand and weakening economies. Planning practices need to address this challenge.

Performance metrics for transportation need to be updated post-COVID-19 (capital and operating costs, capacity, productivity, energy/missions efficiency, etc.) to reflect actual conditions. Many existing perceptions as to attributes of various investment and service options are dramatically out of date and reflect historic conditions that no longer exist.

The evolution to far more complex funding strategies with reduced dependence on user fees has increased uncertainty regarding future resource availability. This ad hoc funding of transportation and/or dependence on reoccurring general fund appropriations undermines historic programming strategies which may need review.

A comprehensive rethinking of transportation planning is in order. While this change may be incremental and vary across geography, COVID-19 should serve as a trigger for an updating of transportation planning. This does not imply abandoning the decades of progress, but rather building on that knowledge and adapting transportation planning to a post-COVID-19 world. If planning is not significantly updated and redesigned, it will lose its credibility and relevance to decision making.

COVID-19 and Safety

Transportation safety has historically been the top priority for transportation stakeholders at the federal, state, and local levels inclusive of operating entities and private sector partners. The COVID-19 pandemic has raised new safety concerns and may influence consideration of travel safety going forward. While roadway fatalities historically correlate with roadway volumes, the nature of that relationship has changed during the pandemic. Early evidence indicates that fatality rates, the single most widely observed safety metric, increased significantly from 1.17 fatalities to approximately 1.48 fatalities per 100,000,000 vehicle miles during the third quarter of 2020. Exploratory research by the U.S. Department of Transportation (USDOT) National Highway Traffic Safety Administration attributes fatality rate changes during COVID-19 to a myriad of factors:

- Of the drivers who remained on the roads, some engaged in riskier behavior, including speeding, failing to wear seat belts, and driving under the influence of alcohol or other drugs. Traffic data indicated average speeds increased during the second quarter, and extreme speeds became more common. Other data suggested fewer people involved in crashes used their seat belts.1

Over time, researchers will gain a richer understanding of the myriad of safety influencing factors that impact emerging trends and their persistence after COVID-19. Reduced congestion enables higher speed travel and more variability of speeds within the traffic flow. Higher speed crashes increase the probability of fatalities. Younger, more risk-taking drivers may have been a larger share of the traveling population. Lockdowns and diminished activity levels may have motivated careless driving behavior as travelers “escaped” being confined.

Strategic implications relating to safety may emerge. As more is learned about post COVID-19 travel conditions and behaviors, safety strategies and priorities may shift. Critical locations for safety investment, design features, regulation, education, enforcement, and other elements in the arsenal of tools to improve travel safety may merit changes.

Transportation and Equity

COVID-19 has affected different population groups in different ways, and new and existing inequities have been emphasized by social unrest. Lower income household members, often inclusive of disproportional shares of racial and ethnic minorities, are more likely to have been hurt by job layoffs or engaged in high exposure service or production employment not conducive to telework. They are also more likely to depend on shared modes of travel with higher exposure risk. This differential effect of COVID-19 has sensitized the public to disparities in transportation and a rethinking of the role of transportation in the welfare of low-income population segments.
Similarly, the availability of robust transportation options and contingency transportation capabilities for persons with disabilities were reinforced by the COVID-19 pandemic. Part of the equity challenge is ensuring access to transportation for all segments of the population, especially in times of crisis and when travel options, features, and delivery methods are changing.

The sensitivity to equity stands in contrast to a market-driven delivery of transportation capacity and services. Measuring, modeling, and forecasting demand have been critical elements of transportation planning and decision making. The ability to scale services and infrastructure to demand, and the subsequent effects on the productivity of transportation, contribute to the affordability of mobility. To the extent that equity considerations diminish the sensitivity to demand in the allocation of resources, it could affect the productivity and benefits of transportation investments and the willingness of the private sector to accept market risks as a participant in providing mobility.

Understanding and analyzing equity issues will be an important but challenging consideration in decisions on providing transportation in a post-COVID-19 era. If not executed carefully and governed by clear objectives, consideration of equity could become a contentious process that delays and disrupts transportation progress.

Future Challenges for Public Transportation

The COVID-19 pandemic exacerbates an already challenging environment for public transportation. Ridership had declined over several years despite a robust economy and growing levels of service. Record auto ownership, burgeoning travel choices such as transportation network company services, e-scooters and bikes, growing telecommuting and e-commerce, and changing demographics had been challenging public transportation. The competitive advantages of mass transit’s space, energy, and emissions efficiencies were already being diminished, as personal vehicles have become more efficient and evolve toward electric propulsion.

The future risk to demand is compounded by the possibility that automated vehicle services could render uncompetitive traditional public transit services in all but high-volume corridors. The emergence of COVID-19 and its substantial reduction in public transit ridership results in a perfect storm of challenges for public transportation as we know it today.

Social distancing undermines the fundamental advantage of “mass” transportation, namely the ability to carry large numbers of passengers on larger shared vehicles. Until progress on the medical front enables public transportation safety risk to return to near normal, public transit is unsustainable. However, transit’s role in providing mobility for those without alternatives remains a serious public concern and require strategies for meeting this mobility need. The gravity of this concern will be among the most pressing challenges for transportation policy makers.

Transit data show that the effect of the public health emergency is pronounced and unprecedented. There is growing evidence that post-COVID-19 travel behavior will be different in ways that challenge many current public transportation services. The magnitude of the COVID-induced changes in travel means that a swift return to normal is unlikely. Rather, transportation professionals need to monitor emerging trends and plan accordingly for public transportation.

Closing Thoughts

Transportation has not been without its challenges, and the COVID-19 pandemic has both highlighted some of those challenges and added others. We are in a particularly challenging and exciting time. Transportation is changing at a far faster pace than in prior decades as demographic, economic, technological, governance, and public behaviors, values, and priorities are shifting. We face—hopefully—transitioning to a post-COVID-19 world, one with new transportation needs. We also are on the verge of reauthorization of federal transportation legislation, seeing the prospect for infrastructure initiatives, facing the persistent transportation funding challenges, addressing the troubling transportation safety trends, confronting challenges associated with defining the role of transportation in addressing equity and opportunity, sorting through a path forward for automated vehicles, and finding ways to mitigate the environmental consequences of transportation without diminishing its role in supporting the economy and quality of life.

We are armed with a more diverse and multi-disciplinary workforce strong private sector engagement, and investment in the future of mobility, including a plethora of technologies to assist us in addressing the various problems including everything from virtual participation in public meetings to logistics and operations enhanced with artificial intelligence and powerful computing. But we are burdened with a highly polarized and contentious
decision-making environment, an incomprehensible governance structure, and perhaps the lack of discipline and shared values that would make this task easier.

The immediate challenge of transportation professionals is to understand the impacts of COVID-19 in the context of transportation and then revisit everything we do, and how we do it, to best accommodate the post COVID-19 transportation reality.  

**References**

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COVID-19 Changed the World – Now We Must Ensure That Change Is for the Better

by Yassmin Gramian, P.E., Secretary of Transportation, PennDOT

Throughout the COVID-19 pandemic, our transportation system has been at the center of the maelstrom that upended all our lives. The urgent task of moving essential people and goods around the world to where they are most needed has shone a bright light on the indispensable purpose that transportation serves in supporting society’s vital functions and activities.
As the pandemic has persisted, transportation providers remain tightly focused on the immediate tasks of providing life-saving mobility services and operations as safely as can be delivered—the sooner to win the battle against this relentless disease.

Equally important, this world-changing event has prompted a stem-to-stern rethinking across all portions of our transportation community. We are all asking questions: What has the pandemic exposed about how we do our work that we must improve on? What are the new practices and behaviors that we want to reinforce and build upon going forward? How can the technology, tools, and applications that enabled us to manage in the storm now be brought to bear to make a smarter, cleaner, safer, more efficient, more reliable, more affordable, more accessible, and more inclusive transportation and mobility ecosystem?

Rising to the Moment
At the Pennsylvania Department of Transportation (PennDOT), like all transportation agencies, responding to emergencies promptly and effectively is what we do, and what we’ve always done. But unlike a multi-vehicle crash or a drifting blizzard, COVID-19 has neither been a localized event nor a temporary disruption. Every community and every person everywhere have felt the effects of this pandemic in multiple ways. As the weeks have turned to months, its tenacity as a deadly threat to public health and day-to-day life has tested our resolve and endurance.

There were so many instances of these adaptations and adjustments, some carefully mapped out in advance, others impromptu responses developed by trial and error to address unforeseen problems as they arose. A couple are included here, not because they were exceptional, but because they were typical of what happened across the agency.

To resume non-commercial road testing, the Driver and Vehicle Services staff developed a modified test procedure adhering to testing requirements while keeping the examiner outside the vehicle to maintain safe distance from the driver. By September, all testing backlogs had been cleared and customers were able to schedule a driver’s skills exam within normal timeframes. As of January, PennDOT Driver License Centers had administered approximately 150,000 skills tests using this modified process.

In the district office serving Greater Philadelphia, Traffic Control Manager Fran Hanney developed a system to enable virtual inspections of utility and highway-occupancy work sites, ensuring that essential safety, maintenance, and construction work continued uninterrupted by leveraging advanced telecommunication and video technologies.

Much effort went into keeping PennDOT’s eight Traffic Management Centers open, which monitor real-time incidents and conditions along 3,885 miles of highway and communicate vital information to motorists. When COVID-19 hit, we distributed hundreds of pieces of computer equipment, configured them into a network and within days had established dozens of home-based monitoring stations that actually handled more volume in 2020 than the year before.
An extraordinary effort went into keeping open our eight Traffic Management Centers, which monitor real-time incidents and conditions along 3,885 miles (5,448 kilometers) of highway and communicate vital information to motorists. When COVID-19 hit, PennDOT distributed hundreds of pieces of computer equipment, configured them into a network, and within days had established dozens of home-based monitoring stations that actually handled more volume in 2020 than the year before.

Even as we grieve the incalculable losses and suffering of the past year, we also can celebrate the many triumphs of commitment to service, flexibility, and resilience that stories like these convey—and there is a multitude of them.

**Envisioning Possibilities**

Understanding what our future may look like is a matter of envisioning possibilities, and at PennDOT, various efforts are underway with that purpose. One of them has been the Post-Pandemic Roundtable, a gathering of eminent planning academics and practitioners who meet with PennDOT regularly to help us understand the changes in travel demand and behavior that may last beyond the pandemic, and to begin to build that learning into our planning, policies and processes. In doing so, PennDOT is paying special attention to exploring solutions that will reduce inequities in the system, build resilience against future disruptions, improve safety, and support both environmental and financial sustainability.

By looking at major trend shifts emerging during the pandemic, the Roundtable developed eleven speculative scenarios, ranging from factors like telework, walking and biking, transit demand, ecommerce, and alternate uses of the roadway (see sidebar on page 48). PennDOT then surveyed dozens of public planners across Pennsylvania to learn how these developments were being experienced and thought about locally.

PennDOT is still absorbing the findings from that survey, but it is clear that the explosive growth witnessed in ecommerce, remote work, school, and other online life activities will continue, and that their influence on transportation patterns and needs will be enormous. And many of these trends are intertwined: transit demand will affect vehicle-miles-traveled, transit and car trips will in turn be affected by the resurgence of walking and biking, as well as emerging micromobility devices that are beginning to take hold. Housing and commercial real estate patterns are always reshaping supply chains, and ecommerce will require thinking differently about our use of the right-of-way to balance the needs of a variety of emerging, often competing, use cases. Telemobility, be it for work, shopping, socializing, or health-care delivery, will have a profound impact on virtually all these other trends.

**Challenged to Lead**

Now is the time to partner with the public to envision the possibilities for building a new transportation system, one that will support and advance America for decades to come, and not simply keep patching up the one our parents and grandparents built five or six decades ago.
Planning Around The Corner: PennDOT’s Post-Pandemic Roundtable

A distinguished panel of transportation planners has been advising PennDOT on how to think about structural changes in transportation demand and traveler behavior that may outlast the COVID-19 pandemic. Dubbed the Post-Pandemic Planning Roundtable, its members represent Carnegie Mellon University, the University of Pennsylvania, Bucknell University, Traffic 21 University Transportation Center, the Southeastern Pennsylvania Transportation Authority (SEPTA), the American Road & Transportation Builders Association (ARTBA), and the Transportation Research Board (TRB). The Roundtable conducted research around 11 possible scenarios based on trends that emerged during the pandemic. The scenarios are:

- **Altered demand for Public Transit**: Public anxiety about crowding causes fall-off in ridership, especially in the densest, most transit dependent urban centers.
- **Increased Bicycle and Pedestrian Activity**: Active transportation for shorter commutes grows, especially during mild weather months.
- **Increased Micromobility Adoption**: Public acceptance and low-cost devices growth in the use of micromobility devices, such as electric scooters. A growing adoption of micromobility options fills transit deserts, while presenting sidewalk and safety issues.
- **New Urban/Suburban Land Use and Real Estate Patterns**: Young urban professionals seek lower density and more space for telework, driving development outward.
- **Telework Growth**: More residents teleworking results in fewer commutes and a reduced need to congregate in central business districts.
- **E-commerce and delivery growth**: Increased growth puts more small- and mid-size trucks on the road and curbside, placing pressure on brick-and-mortar downtown and mail retail outlets.
- **Shift from Air to Vehicle Miles**: Travelers avoid plane travel, resulting in the increased use of personal automobiles for leisure travel.
- **Reconfiguration of Supply Chain**: Growing tensions between the United States and China, trade protectionism, and supply anxiety cause producers and distributors to build supply-chain redundancy, especially domestically.
- **Demand for Alternate Use of Right of Way (ROW)**: Use of ROW for pedestrians, cyclists, outdoor dining, and other uses increases, creating congestion, contamination, and safety issues.
- **Decrease in Vehicle Miles Traveled (VMT) Across the Roadway Network**: Persistent economic weakness puts downward pressure on overall transportation demand, causing a decrease in VMT.
- **Increase in Aggressive Driving Behavior**: Despite a reduction in VMT, aggressive driving and crash rates increase.

The Roundtable also surveyed more than 60 planners from Pennsylvania’s regional planning organizations, county, and city planning offices and PennDOT district planning groups. The planners were asked to evaluate each scenario for their likelihood to increase and how great an impact they would have on transportation in their jurisdictions over the next two to four years. Results of the survey are depicted above.
New information technologies are opening up possibilities that were only dreamed of a few years back, so we now have an array of new tools at hand to reimagine and rebuild transportation that efficiently, safely, and reliably serves our economy, communities, and people by orders of magnitude better than anything we’ve known before.

DOTs All In
Just as we have been all-in on fighting this virus, America’s state transportation departments will be right in the epicenter of the country’s efforts to recover and build something new out of this terrible experience. We can envision the possibilities of something that is measurably better across many dimensions.

To envision the possibilities is to be excited about what lies ahead. And some of the best news is that investment in transportation has historically always paid for itself many times over in greater prosperity and thriving communities. Amid all that will be different, this should remain unchanged as our basic mission. 

Yassmin Gramian, P.E. serves as the secretary of the Pennsylvania Department of Transportation, a position that she assumed in May 2020. She manages PennDOT’s annual budget of $9.5 billion and oversees programs and policies affecting highways, urban and rural public transportation, airports, railroads, ports, and waterways. Under her leadership, the department is directly responsible for Pennsylvania’s vast system of state and local highways and bridges, as well as oversees the state’s vehicle registration, driver’s licenses and ID operations. Before joining PennDOT, Gramian worked for more than 30 years in operations, design, and management of transportation infrastructure systems, including highway, tolling, bridge, and railroad projects. Gramian earned master’s and bachelor’s degrees in Civil Engineering from the University of Michigan and completed the Tuck Management Training Program at Dartmouth College. She is a professional engineer in Pennsylvania, Delaware, New Jersey, and Florida, USA.

Many accounts of PennDOT’s response to the pandemic can be found at: https://www.penndot.gov/PennDOTWay/Pages/Blog.aspx?tag=COVID-19

ITE Transportation Transforms Communities Video Challenge

Enter Now! Submission Portal Closes May 1, 2021

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.

Entries must be received by May 1, 2021.

Questions? Email Bridget Wendling at bwendling@ite.org

For more information and for inspiration, visit www.ite.org/video-challenge.
2021 Vision
Zero Sandbox Competition

The goal of this challenge is to think beyond the traditional ways of assessing crash data based on historic information and move towards a more proactive approach by leveraging new near-miss data analytics and technology.

Teams are challenged to demonstrate how automated conflict data being collected through innovative technologies can be used to gain new insights into safety problems and the selection of low-cost countermeasures at intersections.

Sponsored by the ITE Consultants Council

There will be separate professional and student categories.

Submission deadline approaching FAST!
Submit by April 15

For more information: www.ite.org/sandboxcompetition
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Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
Pedestrian and Bicyclist Safety in Parking Facilities
Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges: An ITE Recommended Practice
What a Transportation Professional Needs to Know about Counts and Studies during a Pandemic
Sustainable Traffic Signal Development: An Informational Report of the Institute of Transportation Engineers
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