

# IBTTA/TRB JOINT SYMPOSIUM ON MANAGED LANES & AET

## DURING THIS SYMPOSIUM

- ▶ 2018 Conference Planning Meeting
- ▶ IBTTA Foundation Golf Tournament
- ▶ Poster Sessions
- ▶ LBJ TEXpress & Reversible Lanes Technical Tour
- ▶ TRB Committee Meetings
- ▶ ATI Annual Meeting/Roundtable

Hosted by:



**IBTTA**  
TOLLING. MOVING SMARTER.

**TRB**

JULY 16-18, 2017  
DALLAS, TX

**PROGRAM**

# WELCOME TO DALLAS AND THE JOINT SYMPOSIUM ON MANAGED LANES & AET!

## ABOUT OUR HOSTS



The North Texas Tollway Authority (NTTA) has been

connecting North Texans for more than 20 years. The only regional tollway authority in the state of Texas, NTTA serves the fastest growing metro areas in the United States. At the agency's core is a focus on its 7.4 million customers, safe, well-maintained and efficient roadways, and economic growth and development. NTTA has been at the forefront of tolling technology as the first toll agency to employ an electronic toll collection system (ETC) in 1989 and the first to convert an entire toll road system to all-electronic tolling (AET) in 2010.



As a division of the Texas Department of Transportation, the Toll Operations Division is

a customer-focused service provider that creates economic opportunities, stimulates investment and enhances quality of life by supporting high-performing transportation systems in Texas and beyond.

## ABOUT THE TRANSPORTATION RESEARCH BOARD COMMITTEES



### TRB Committee on Managed Lanes (AHB35)

Co-Chairs: Casey Emoto and Chuck Fuhs

This Committee is concerned with the evolving role of high-occupancy vehicle, high-occupancy toll and managed lanes in response to the challenges of congestion, energy consumption and climate change. The Committee examines methods for enhancing person throughput, energy conservation, air quality and user choices and safety through the optimization of preferential lanes, priority treatments and other supporting systems for bus transit, carpooling and vanpooling. The Committee's activities focus on the planning, design, operation, pricing and evaluation of preferential lane facilities and on the development, validation and dissemination of theoretical, experimental and applied research related to preferential lanes. <http://managedlanes.org>. See meeting schedule on page 4.

### TRB Committee on Congestion Pricing (ABE25)

Chair: Richard "Trey" Baker

The Committee fosters research aimed to gain a better understanding of the technological, operational, business, administrative, political and institutional aspects of innovative congestion pricing of systems and services for all modes of transportation. Strategies include integrated transit, variable aviation pricing, parking pricing, parking "cash-out" and other mechanisms that seek to affect transportation demand and use. The Committee seeks to develop a comprehensive understanding of the effects of congestion pricing on the transportation system, in addressing passenger and freight mobility, transit and highway interdependence and interoperability of systems. [www.trb-pricing.org](http://www.trb-pricing.org). See meeting schedule on page 4.

## POSTER SESSION PRESENTERS

Tina Geiselbrecht, Texas A&M Transportation Institute  
Jon McGill, Lindsay Transportation Solutions  
Garth Lynch, P.E., AICP, HNTB Corporation  
Toshi Shepard-Ohta, CDM Smith  
Venktesh Pandey, UT Austin

Scott Pietra, WSP USA  
Dee Anne Heath, Central Texas Regional Mobility Authority  
Shannon Estep, Florida's Turnpike Enterprise  
Kenneth Buckeye, AICP, Minnesota DOT  
Tyler Patterson, Washington State DOT



## MEETING PLANNING GROUP

### Co-Chief Meeting Organizers



Michael Davis  
RS&H



René Moser  
ASFINAG

### TRACK TEAMS LEADERS

#### Technology Track

Tyler Milligan, Milligan Partners

#### Business & Operations Track

James Hofmann, North Texas Tollway Authority

#### Innovation "Tech" Talks Track

Jeff Weiss, TTI Consulting

There were more than 75 members of IBTTA and TRB involved with the planning of this meeting. We thank them all for their hard work in creating this content-rich and exciting program!

## CERTIFICATION/PROFESSIONAL DEVELOPMENT HOURS

IBTTA recognizes the need for professional engineers and planning professionals to demonstrate continuing professional competency in their respective fields and earn certification maintenance (CM) credit or professional development units (PDU). IBTTA will provide interested attendees with a certificate of attendance following the workshop.

## ABOUT IBTTA

The International Bridge, Tunnel and Turnpike Association (IBTTA) is the worldwide association for the owners and operators of toll facilities and the businesses that serve them. Founded in 1932, IBTTA has members in 25 countries on six continents. Through advocacy, thought leadership and education, members are implementing state-of-the-art, innovative user-based transportation financing solutions to address the critical infrastructure challenges of the 21<sup>st</sup> Century.

## HOTEL INFORMATION

### LOCATION

**Hilton Anatole Dallas**  
2201 N. Stemmons Freeway  
Dallas, Texas 75207  
Phone: (214) 748-1200  
Toll-Free: 1 (800) 445-8667  
[www.hiltonanatolehotel.com](http://www.hiltonanatolehotel.com)



### IBTTA MEETINGS APP



Scan this QR code with your smartphone to download the IBTTA Meetings app



**BADGES:** Badges are required to gain entry into all sessions. In consideration of other attendees, please wear your name badge to all scheduled functions.

**White:** Delegate (Member)      **Blue:** Companion/Guest      **Yellow:** Media  
**Orange:** Delegate (Non-member)      **Green:** Exhibitor

**CERTIFICATION MAINTENANCE:** IBTTA will forward a certificate of attendance to all who sign the attendance form at the IBTTA registration desk.

**COMPETING EVENTS:** It is against IBTTA policy for other organizations to schedule events or meetings during the program.

**CONSIDERATIONS:** During the meeting, please silence all cellular phones and take side conversations outside of the room.

**DRESS:** Business or business casual is encouraged for all sessions.

**MEDIA:** Members of the media are permitted to attend sessions only and can be identified by green ribbons on their badges.

**MEMBER PUBLICATIONS AND COLLATERAL:** All members of IBTTA are welcome to place their publications in the registration area.

**NEW ATTENDEES:** First-time attendees will have an aquamarine ribbon attached to their badge. New IBTTA members will have purple ribbons. Get to know your new colleagues and help introduce them to other IBTTA members.

**PRESENTATIONS:** Presentations authorized for distribution will be available to IBTTA members only on IBTTA's website within two weeks following the meeting.

**RECORDING OF SESSIONS:** Personal recording of any session is strictly prohibited. IBTTA reserves the right to video and record sessions for future repurposing.

**REGISTRATION FEES AND EVENT TICKETS:** Delegate and Speaker fees include all meals, functions and sessions. Tickets may be available to evening and other events.

**SATISFACTION SURVEY:** Please help IBTTA improve future meetings by completing the survey that will be emailed to you following the conference.

**SPECIAL ACCOMMODATIONS:** If you need special accommodations to fully participate in IBTTA events, please notify the staff at the IBTTA registration desk.

**SPONSOR INFORMATION:** Please support our generous sponsors and exhibitors by reviewing the Sponsor and Exhibitor section of this program as well as the material tables in the registration area.

# AGENDA

## FRIDAY JULY 14, 2017

10:00am – 3:00pm

**2018 CONFERENCE PLANNING MEETING** *(Wedgwood Ballroom)*

## SATURDAY JULY 15, 2017

6:00am – 2:00pm

### IBTTA FOUNDATION GOLF TOURNAMENT

Dallas Cowboys Golf Club

Buses load from the Grand Entrance on the Lobby Level of the hotel 15 minutes prior to departure.



### TRB MANAGED LANES COMMITTEE MEETINGS *(Wedgwood Ballroom)*

2:00pm – 3:00pm Subcommittee on Outreach  
3:00pm – 4:00pm Subcommittee on Planning  
4:00pm – 5:30pm Committee on Managed Lanes  
6:30pm – 9:30pm Subcommittee on Research

### TRB CONGESTION PRICING COMMITTEE MEETINGS *(Morocco)*

2:00pm – 3:00pm Subcommittee on the Economics of Pricing  
3:00pm – 4:00pm Subcommittee on Research  
5:30pm – 6:30pm Subcommittee on Multimodal Pricing Implementation  
6:30pm – 9:30pm Congestion Pricing Committee

4:00pm – 6:00pm

**NIOP STEERING COMMITTEE** *(Miro)*

## SUNDAY JULY 16, 2017

7:00am – 2:00pm

**EXHIBIT HALL AND POSTER SESSION SET UP** *(Chantilly East & Foyer)*

7:30am – 6:00pm

**REGISTRATION** *(Chantilly Foyer)*

8:30am – 12:30pm

### TECHNICAL TOUR

LBJ TEXpress Lanes & Reversible Lanes

Buses load at 8:15am from the Grand Entrance on the Lobby Level of the hotel.

9:00am – Noon

**PLATINUM SPONSORS ADVISORY COUNCIL** *(Miro)*

(by invitation)

2:00pm – 3:30pm

### GENERAL SESSION

#### OPENING REMARKS

*(Chantilly West)*

Patrick Jones, Executive Director & CEO, IBTTA, Washington, DC

Emanuela Stocchi, Director of International Affairs, AISCAT and President, IBTTA, Rome, Italy

Kenneth Barr, Chairman, North Texas Tollway Authority, Fort Worth, TX

Rick Nelson, Toll Operations Division Director, TxDOT, Austin, TX

Richard "Trey" Baker, Chair, TRB Committee on Congestion Pricing and Consultant, Advisory Services, WSP USA, Austin, TX

Casey Emoto, Chair, TRB Committee on Managed Lanes and Deputy Director, Santa Clara Valley Transportation Authority, San Jose, CA

Michael Davis, Vice President, National Tolls Service Group Leader, RS&H, Orlando, FL and René Moser, Head of Strategy, International Relations & Innovation, ASFINAG, Vienna, Austria, **Co-Chief Meeting Organizers**

3:30pm – 4:00pm

**REFRESHMENT BREAK WITH EXHIBITORS** *(Chantilly East)*

4:00pm – 5:30pm

### GENERAL SESSION

#### SO MUCH TO LEARN FROM THE TEXAS EXPERIENCE!

*(Chantilly West)*

This session is an opportunity to hear about the depth and breadth of the managed lanes experience Texas. As managed lanes become more common in major metropolitan areas, transportation agencies and elected officials around the country want to learn about creative financing, planning and operations for managed lanes, as well as enforcement and success measures. Panelists will share experiences and lessons learned in all aspects of managed lane operations, from developing operational concepts to implementation and beyond.

**MODERATOR: Tom Bamonte, Esq.**, Senior Program Manager, Automated Vehicles, North Central Council of Governments, Dallas, TX

Ginger Goodin, P.E., Senior Research Engineer, Texas A&M Transportation Institute, Austin, TX

Belén Marcos, P.E., President, Cintra US, Austin, TX

Dan Lamers, P.E., Senior Program Manager, Metropolitan Transportation Planning, North Central Texas Council of Governments, Arlington, TX

Bob Poole, Director of Transportation Policy, Reason Foundation, Plantation, FL

Brian Barth, P.E., Transportation Program Officer, Ft. Worth District, TxDOT, Fort Worth, TX

Kelly Selman, P.E., District Engineer, Dallas District, TxDOT, Dallas, TX

6:00pm – 7:30pm

**EVENING RECEPTION WITH EXHIBITORS & POSTER SESSIONS** *(Chantilly East & Foyer)*

7:30pm – 9:00pm

**TRB MANAGED LANES SUBCOMMITTEE ON RESEARCH** *(Miro)*

(by invitation)

## MONDAY JULY 17, 2017

**7:00am – 5:30pm**

### REGISTRATION

*(Chantilly Foyer)*

**7:00am – 8:30am**

### BREAKFAST WITH EXHIBITORS

*(Chantilly East)*

**8:30am – 10:00am**

### GENERAL SESSION

#### MANAGED MOBILITY TRENDS: RESEARCH NEEDS IDENTIFIED

*(Chantilly West)*

Implementation of managed lanes with and without nearby conventional toll facilities has given rise to a range of research topics associated with managed lane operations including communications with customers; customer management; public and private agency partnering; innovative practices integrating systems into the larger transportation network; and the impact connected and automated vehicles may play in a mixed and exclusive managed lane environment. Guidance from recent research will be drawn from the Federal Highway Administration pooled fund study supported by a number of public agencies and recently published research and National Cooperative Highway Research Program guidelines. Panelists with experience in managed lane projects will present recent research and experience and speak to future needs.

**MODERATOR:** Dave Kristick, Deputy Executive Director and Director of Operations, E-470 Public Highway Authority, Aurora, CO

#### TRB Research Needs and Topics Being Funded

**Chuck Fuhs**, Transportation Consultant, Chuck Fuhs, LLC, Houston, TX

#### Managed Lane Research in the U.S.

**Greg Jones**, Transportation Operations Specialist, Federal Highway Administration, Atlanta, GA

#### Performance Management Research Opportunities

**Darryl VanMeter, P.E.**, GDOT Asst. P3 Division Director/State Innovative Delivery Administrator, Georgia Department of Transportation, Atlanta, GA

#### Impacts of ETC on Managed Lanes Users

**Richard "Trey" Baker**, Consultant, Advisory Services, WSP USA, Austin, TX

#### Surprising Findings on the Use of Managed Lanes

**Mark Burris, Ph.D.**, Herbert D. Kelleher Professor and Associate Department Head for Research and Operations, Zachry Department of Civil Engineering, Texas A&M University, College Station, TX and **John Brady**, Director, Strategy & Revenue, LBJ Express & NTE Mobility Partners, Dallas, TX

**10:00am – 10:30am**

### REFRESHMENT BREAK WITH EXHIBITORS

*(Chantilly East)*

**10:30am – Noon**

### BREAKOUT SESSIONS

#### TECHNOLOGY TRACK **SHRM | 1.5**

*(Chantilly West)*

#### Enabling Technologies Driving Customer Behavior and Decisions

Technology in the driver's vehicle, in their pocket, or attached to an overhead sign provides insight into what, why and how a driver makes certain decisions. What human factor research and analysis are you performing and what types of results are being revealed? What technology are you currently using or considering using to manage the day to day operations of your facility/corridor? What technologies affect your facility's operations, efficiencies and customer experience? Our panelists will discuss a few examples of how technology and human factors are being leveraged to further congestion mitigation.

**MODERATOR:** Tyler Milligan, Managing Partner, Milligan Partners, Dallas, TX

#### Using Technology to Successfully Manage Congestion Pricing During Changing Conditions

**John Miller**, Vice President, Product Management, Kapsch TrafficCom, Austin, TX

#### Advancing Traveler Information Technologies for Managed Lane Networks

**Nick Wood, P.E.**, Associate Transportation Researcher, Texas A&M Transportation Institute, Austin, TX

#### Innovative Apps Lightning Round

##### Satelise

**Javier Martinez Ordoñez**, General Manager, Vialivre, Porto, Portugal

##### FastToll

**Rodney Landers**, Co-Founder, eToll Systems, Las Vegas, NV

##### M50 Quick Pay

**Grace Hague**, Marketing & Communications Manager, emovis, Dublin, Ireland

##### PayTollo

**Abenezer Yohalashet**, CEO, PayTollo, San Francisco, CA

##### PToll

**Glenn Deitiker**, Chief Executive Officer and CTO, BancPass, Austin, TX

#### BUSINESS & OPERATIONS TRACK **SHRM | 1.5**

*(Monet)*

#### Using Big Data and Intel to Drive Organization Efficiencies

Toll agencies harvest massive, often real-time datasets from toll equipment, roadside sensors, customer surveys, customer contact channels and billing and collections, to name a few. Notwithstanding the challenges, working with big data provides significant opportunities to transform data into valuable information, gain insights and improve business processes by offering new products and services. Examples of how big data could help toll agencies is through the development of targeted marketing plans for non-transponder customers, understanding the collection differences between traditional toll roads and managed lanes, helping contact centers reduce average handle (talk) time and managing traffic and providing proactive traffic communications to our customers. Come hear examples of how agencies leverage business intelligence and big data to strengthen the business and provide a better customer experience.



# AGENDA

**MODERATOR: James Hofmann**, Assistant Executive Director, Operations, North Texas Tollway Authority, Plano, TX

## A Big Data Solution from the Telecommunications Industry and How Tolling Can Do the Same

**Craig Bettmann**, Senior Vice President, Client Solutions, Cogensia, Schaumburg, IL

## Combining Business Intelligence Tools and Lean Six Sigma to Drive CSC Customer Satisfaction

**John Davies**, Head of Customer Insight, emovis, Leeds, United Kingdom

## Big Data Insights Help to Increase TollTag Numbers

**Pat Louthan**, Business Operations Manager, North Texas Tollway Authority, Plano, TX

## Unknown Knowns – How Data Helps Us Understand Customers in Cashless Tolling

**Michael Catolico**, General Manager, Performance Measurement, Illinois Tollway, Downers Grove, IL *and* **Sean Tihal, P.E.**, Senior Toll Program Manager, Jacobs Engineering, Chicago, IL

### **INNOVATION “TECH” TALKS TRACK – #1 SHRM | 1.5** *(Metropolitan)*

The tolling and transportation industry is facing many technical, financial, business and communication challenges and potential changes in the next decade. The “Tech” Talks track is modeled on the famous TED Talks series, in which dynamic speakers will communicate a story about a solution, innovation, service or idea that addresses an industry challenge, introduces a new idea or presents an old idea in new light.

**FACILITATOR: Thomas (TW) Lowe, P.E.**, Tolls Division Manager, Central Region, Atkins N.A., Austin, TX

## The Next “One” Thing

**Michael Davis**, Vice President/Tolls Service Group Leader, RS&H, Orlando, FL

## Leveraging Transformative Technologies, Congestion Pricing and PPPs for Efficient Transportation Infrastructure

**Patrick DeCorla-Souza**, P3 Program Manager, FHWA Center for Innovative Finance Support, U.S Department of Transportation, Washington, DC

## Shaping Driver Behavior Through Effective Communication

**Adam Feldman**, Product Manager, Flow, A Sidewalk Labs Company, New York, NY

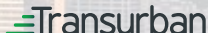
## Effects of the Fully Autonomous Vehicle Future

**Adrian Moore**, Vice President, Policy, Reason Foundation, Sarasota, FL

**Noon – 1:30pm**

### **LUNCH WITH EXHIBITORS**

*(Chantilly East)*

Sponsored by:  **Transurban**

**1:30pm – 3:00pm**

### **BREAKOUT SESSIONS**

#### **TECHNOLOGY TRACK SHRM | 1.5**

*(Chantilly West)*

#### **Data Infrastructure, Management & Security**

Remember that route that your phone just navigated you through? ...or that movie Netflix just recommended? We all rely on “big data” to help manage our daily lives. It is estimated that 2.5 quintillion bytes of data

are produced daily. This creates planning nightmares for all industries and exciting opportunities for data hackers. What does the transportation industry need to consider to effectively manage and secure all of our data? Does infrastructure-as-a-service, mobility-as-a-service, software-as-a-service or cloud-based hosting solutions really reduce operational costs and increase security? How do we best make use of this data? What are the key challenges the transportation industry faces when it comes to infrastructure design and security, and what are the benefits it can receive by studying the lessons learned from other industry sectors?

**MODERATOR: Sabu Stephen**, Director of Information Technology, North Texas Tollway Authority, Plano, TX

## Is the Cloud Really Back Office Ready? Planning Your Next Back Office System

**Andrew Tate**, Senior Solutions Architect, Cubic Transportation Systems, Austin, TX *and* **Nick Smith**, Principal Cloud Specialist, Microsoft, Irving, TX

## Lessons from Beyond Tolling: Securing and Managing Data

**Fred Philipson**, Director, Toll Systems & Services, Cognizant Technology Solutions, Austin, TX

## How Do We Secure Tolling Data in the Cloud?

**Waseem Naqvi**, Director, Technology, Raytheon, Boston, MA

### **BUSINESS & OPERATIONS TRACK SHRM | 1.5**

*(Monet)*

#### **Emerging Trends & Opportunities**

Emerging trends and the opportunities they pose over the next five years to change or impact operations are not solely limited to IT. Increases in the number of un/under-banked customers, connecting with millennials’, proliferation of the Internet of Things (IoT), transition to connected and/or autonomous vehicles, limited transportation funding, mobility-as-a-service, influencing driver behaviors, and workers searching for jobs that provide flexible schedules and fit their values are all examples of emerging trends. Some trends are positive to our business and operations, others may not be so. How is the toll industry viewing these trends and are we seizing the opportunity to look within our industry to transform our thinking and drive change.

**MODERATOR: Matthew Click, AICP**, Vice President, National Director of Priced Managed Lanes, HNTB Corporation, Atlanta, GA

## Scout Your Commute: An Empirical Look at Dallas’ Peak-Spreading Incentive Pilot Program

**John Brady**, Director, Strategy & Revenue, LBJ Express & NTE TEXpress, Dallas, TX

## Maturing Managed Lanes: Saving Them From Their Own Success

**Ed Regan**, Senior Vice President, CDM Smith, Maitland, FL

## Toll Collection in a Shared Economy

**Lisa Telles**, Chief Communications Officer, Transportation Corridor Agencies, Irvine, CA

## The Benefit of Software as a Service (SaaS) and Hosted Back Office Solutions

**Martin Stone, Ph.D., AICP**, Chief Operations Officer, Egis Projects, Tampa, FL

## **INNOVATION "TECH" TALKS TRACK – #2 SHRM | 1.5** *(Metropolitan)*

**FACILITATOR:** Jeff Weiss, Senior Manager, TTI Consulting, New Windsor, NY

### **SunTrax – Thoughts on Mobility, Tolls & Automated Vehicles**

**Paul Satchfield**, Program Management Administrator, Florida's Turnpike Enterprise, Ocoee, FL

### **From Managed Lanes to Managed Freeways – Down Under is Now Up On Top**

**David Ungemah**, Vice President, Director, Managed Lanes & Roadway Service Area, WSP USA, Denver, CO

### **Data for a Connected World in Motion**

**Monali Shah**, Director, Global Intelligent Transportation Solutions, HERE, Chicago, IL

### **The Math and Language of LPR**

**John Mike**, Chief Operating Officer, Perceptics, Farragut, TN

**3:00pm – 3:30pm**

## **REFRESHMENT BREAK WITH EXHIBITORS** *(Chantilly East)*

**3:30pm – 5:00pm**

## **BREAKOUT SESSIONS**

### **TECHNOLOGY TRACK SHRM | 1.5** *(Chantilly West)*

#### **Emerging Technology Trends – What's Around the Corner?**

New technology developments are emerging at an electrifying pace and many of these will have direct impacts on our industry. What technologies have we identified and what are we doing to evaluate the impacts they will have? This session will highlight these technologies and innovations so that we can apply practical approaches to accommodate them.

**MODERATOR:** Mark Hicks, Senior Toll Technology Specialist, RS&H, Austin, TX

#### **Alexa: What is the Future of All-Electronic Tolling?**

**Rafael Hernandez**, Director of Toll Operations, Tampa-Hillsborough Expressway Authority, Tampa, FL

#### **Solid-State LiDAR: Enabling Cost-Efficient Optical Sensing for AET/Managed Lane Applications**

**Frédéric Gagnon**, Ing. | Eng., Product Manager, LeddarTech, Quebec City, Quebec, Canada

#### **How 3D Video Technology is Enabling Cost-Efficient AVDC**

**Mike Maitland**, Solutions & Product Manager, Kapsch TrafficCom, McLean, VA

#### **I-77 Express Lanes – Automated HOV Enforcement**

**Manjeet Bawa-Cavia**, Director, Technology & Toll Systems, I-77 Mobility Partners, Huntersville, NC

## **BUSINESS & OPERATIONS TRACK SHRM | 1.5** *(Monet)*

### **Policy Implications Affecting Customers and Customer Service**

Whose toll? What toll? Where and how much was I tolled? While driving on tolled facilities today, motorists and customers are faced with numerous variables and information rooted in policy. Existing facilities converted to cashless systems, authorities building new cashless facilities, and interstate highways expanding to include ETC express/HOV lanes

have, at times, stressed the relationship between policy and operations. "If I don't have a tag how I will I pay the toll? Is this an HOV lane and do I have enough passengers? Why is the toll higher in the morning than at night? Why does my invoice have an additional fee associated with it? I don't remember seeing a sign..." As the toll industry continues to embrace all-electronic tolling and managed lanes, legislators, lobbyists, commissioners, concessionaires and executives need to research, analyze and develop policies and standards that support and guide decisions for successful implementation and operation.

**MODERATOR:** Alan Williamson, P.E., Senior Engineer Project Manager, Pennsylvania Turnpike Commission, Harrisburg, PA

### **Introducing Continuous Access Express Lanes to the San Francisco Bay Area**

**Elizabeth Rutman, Ph.D., P.E.**, Express Lanes Operations and Maintenance Manager, Alameda County Transportation Commission, Oakland, CA

### **Policy's Effect on Our Business Operations**

**Leigh Petschel**, Vice President, Operations, Transurban, Tysons Corner, VA

### **Technology & Operations – Rating Agency Perspective**

**Scott Monroe, CFA**, Director, Fitch Ratings, San Francisco, CA

### **Florida's Express Lanes – A Statewide Approach**

**Barbara Davis**, Express Lanes Development Administrator, Florida's Turnpike Enterprise, Ocoee, FL

### **Who Drives Policy and Why Flexibility is Key**

**Patty Rubstello, P.E.**, Assistant Secretary, Office of Urban Mobility and Access, Washington State Department of Transportation, Seattle, WA

## **INNOVATION "TECH" TALKS TRACK – #3 SHRM | 1.5** *(Metropolitan)*

**FACILITATOR:** Usha Elyatamby, Program Manager, IBI Group, Toronto, Ontario, Canada

### **Seeking Relief With Part-Time Dynamic Tolling: I-66 Inside-the-Beltway – Is it an Emerging Trend?**

**Dan Papiernik**, Associate Vice President, Toll Practice Leader Mid-Atlantic, HNTB Corporation, Arlington, VA

### **The Potential and the Value of Big Data for Tolling**

**Scott Berns**, Director, Database Marketing, CenturyLink, Denver, CO

### **Curious Austin: Public Education for Express Lanes**

**Dee Anne Heath**, Director of External Affairs, Central Texas Regional Mobility Authority, Austin, TX

### **CAVs and Express Lanes – A Match Made in Heaven**

**Robert Deans**, Vice President, Technology, North America, Transurban, Tysons Corner, VA

**6:00pm – 10:00pm**

## **EVENING EVENT – NETWORKING AT GILLEY'S**

Sponsored by:



Buses load from the Grand Entrance on the Lobby Level of the hotel 15 minutes prior to departure.



TUESDAY JULY 18, 2017

7:00am – 2:00pm

**REGISTRATION** *(Chantilly Foyer)*

7:00am – 8:30am

**BREAKFAST WITH EXHIBITORS** *(Chantilly East)*

8:30am – 9:00am

**GENERAL SESSION**

**THE MELBOURNE ROAD USAGE STUDY** *(Chantilly West)*

Leigh Petschel, Vice President, Operations, Transurban, Tysons Corner, VA

9:00am – 10:30am

**GENERAL SESSION**

**INTERNATIONAL EXPERIENCES DRIVING MANAGED MOBILITY** *(Chantilly West)*

Mobility is crucial for economic growth and prosperity all around the Globe. Nevertheless, transit and transport infrastructure capacities are limited and the continuous increase of mobility demand requires new mobility concepts. But which concepts are most promising? What are international best practice examples when it comes to managed mobility? Which concepts are employed in countries around the world? Which solutions are preferred by our customers? Are customers willing to pay more for faster and/or more reliable connections? Are customers focused on a single mode of transport or do they want truly multi-modal service propositions? Can tolling, in isolation or in combination with others, be used as a traffic management tool? Which international best practice examples exist when it comes to shifting transportation modes, fighting congestion, city tolling etc.? Which technologies and applications are used today and even more important which are expected to be available tomorrow? The audience will be invited to engage in a lively debate.

**MODERATOR: René Moser**, Head of Strategy, International Relations and Innovation, ASFINAG, Vienna, Austria

**Managed Roadways – The Most Important Transportation Strategy You Have Probably Never Heard Of!**

Darren Henderson, Vice President, WSP USA, Tempe, AZ

**Sharing the City – How Seven Cities from Around the World are Re-Inventing Mobility for Everyone**

Marc Deflin, Vice President, Conduent, Pittsburgh, PA

**Changing Driver Behavior Using MaaS – The European Experience**

Pascal Lemonnier, Business Development Vice President, Egis, Paris, France

**An Upside Down Approach to Interoperability – The Versatile HU-GO Toll System to Support Other Transportation Needs**

Zoltán Varga, CEO, Toll Service PLC-Hungary, Budapest, Hungary

10:30am – 11:00am

**REFRESHMENT BREAK WITH EXHIBITORS** *(Chantilly East)*

11:00am – 12:30pm

**GENERAL SESSION**

**WHETHER WE LIKE IT OR NOT, THE TOLL INDUSTRY IS HEADED FOR CHANGE**

*(Chantilly West)*

Is the way we do business changing because we want it to or is the industry being influenced to change by outside forces creating the prospect that our industry must now operate outside of our comfort zone? Consider the major changes within the telecommunications and automobile industries. Until the past few years, a telecom company based its business primarily on routing calls and data. But now, almost 25 years after the launch of the World Wide Web, telecom companies have become entertainment content companies. Technological change has taken them across industry borders. With the continued emergence of connected and automated vehicles, does this bring a new platform to collecting tolls electronically through the vehicle? Does the value of service for managed lanes facilities now change due to more efficient use of capacity by these connected vehicles? Do generational differences begin to sway the types of services we provide our customers in the tolling industry? Are we being forced to become an industry that is globally interoperable so that we maintain our customers? This session will focus on what those outside influences are, and how we prepare for, and react to them, to stay ahead of the curve.

**MODERATOR: Michael Davis**, Vice President/Toll Service Group Leader, RS&H, Orlando, FL

**If There's No One in the Vehicle, Who Pays the Toll?**

**Joe Mahoney**, Tolling/Managed Lane Manager, Colorado Department of Transportation – High Performance Transportation Enterprise, Denver, CO

**Bay Bridge Forward! Emerging Trends in Tolling and Mobility Management**

**Andrew Fremier**, Deputy Executive Director, Operations, Bay Area Toll Authority, San Francisco, CA

**The Future of Managed Lanes – A Look at Emerging Trends and Their Impacts on the Business of Tolling**

**David Ungemah**, Vice President, Director, Managed Lanes & Roadway Service Area, WSP USA, Denver, CO

**V2X – Beyond the Horizon**

**Jeff Adler, Ph.D., P.E.**, Vice President, ITS & Solution Consulting, Kapsch TrafficCom, McLean, VA

**Modular Managed Lanes**

**Bernie Arseneau, P.E., PTOE**, Highways & Local Roads Director, HDR, Minneapolis, MN

12:30pm – 2:00pm

**LUNCH WITH EXHIBITORS**

*(Chantilly East)*

2:00pm

**IBTTA/TRB PROGRAM ADJOURNS**

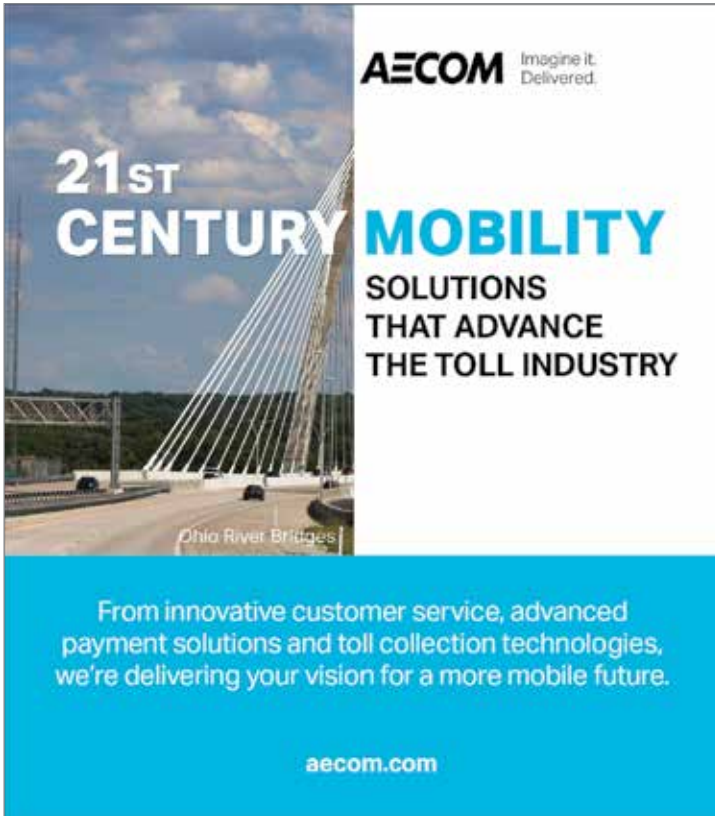
2:00pm – 5:00pm

**ATI ANNUAL MEETING AND ROUNDTABLE SESSION**

*(Monet)*







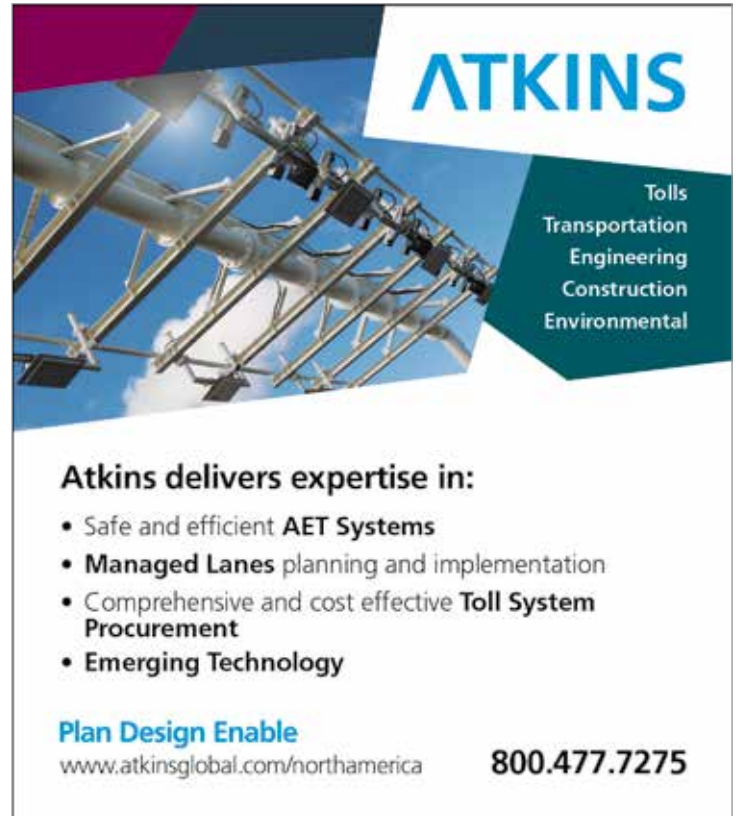
**AECOM** Imagine it. Delivered.

## 21<sup>ST</sup> CENTURY MOBILITY SOLUTIONS THAT ADVANCE THE TOLL INDUSTRY

Ohio River Bridges

From innovative customer service, advanced payment solutions and toll collection technologies, we're delivering your vision for a more mobile future.

[aecom.com](http://aecom.com)



# ATKINS

Tolls  
Transportation  
Engineering  
Construction  
Environmental

**Atkins delivers expertise in:**

- Safe and efficient **AET Systems**
- **Managed Lanes** planning and implementation
- Comprehensive and cost effective **Toll System Procurement**
- **Emerging Technology**

**Plan Design Enable**  
[www.atkinsglobal.com/northamerica](http://www.atkinsglobal.com/northamerica) **800.477.7275**



**listen. think. deliver.**

*Serving the toll industry for more than 60 years with traffic and revenue studies, feasibility analyses, technology design and operations.*

**CDM Smith**  
[cdmsmith.com](http://cdmsmith.com)

More than 120 offices worldwide



Advancing transportation every day.

[conduent.com/tolling](http://conduent.com/tolling)

**CONDUENT**  
Technology. Operations. Process.

©2017 Conduent Business Services, LLC. All Rights Reserved. Conduent® is a trademark of Conduent Business Services, LLC in the United States and/or other countries.

## Tolling Innovation that Keeps People and Business Moving



Cubic provides a modern tolling alternative that is flexible and scalable, allowing you to combine multiple transportation modes and facilities into one.

Let us show you how.

[cubic.com/transportation](http://cubic.com/transportation)

**CUBIC** | Transportation Systems

# @egis

Global Transportation Solutions  
For Sustainable Operations

**emovis**  
an Alberta company

2017 Platinum Sponsor  
**IBTTA**  
TOLLING. MOVING SMARTER

**ALL ELECTRONIC TOLLING SOLUTIONS  
FOR TODAY'S AND TOMORROW'S MOBILITY**

[emovis.com](http://emovis.com) Follow us 

# ETC

**GET MORE THAN INNOVATION.  
GET REAL SOLUTIONS.**

At ETC, we pride ourselves in creating equipment agnostic solutions resulting in optimized system integration on the roadside and back office.

Learn more by visiting us at

[www.etcc.com](http://www.etcc.com)



**TRUSTED ADVISOR TO THE TOLL INDUSTRY**

TOP: New Jersey Turnpike Authority 6 to 9 Widening | LEFT: LBJ Express, Dallas | RIGHT: Miami Dade Expressway Authority

**HNTB**

The HNTB Companies  
Infrastructure Solutions  
hntb.com

**PARSONS**

**Knowledge. Expertise. Resources.**

Engineering the future.

Ohio River Bridges, East End Crossing  
Clark County, Indiana and Jefferson County, Kentucky

www.parsons.com

Parsons PLUS envision more

perceptics™ HIGH-PERFORMANCE IMAGING perceptics.com

**LICENSE PLATE IMAGING PERFECT FOR THE OPEN ROAD**

35 YEARS

**WE READ YOU LOUD AND CLEAR.**

**Preparing Your Tolls Infrastructure for an Uncertain Future.**

To learn these tips and other tolls insights visit:

[rsandh.com/tollsblog](http://rsandh.com/tollsblog)

ARCHITECTURE  
ENGINEERING  
CONSULTING

**RS&H**





**READY FOR TOMORROW. TODAY.**

[www.tollplus.com](http://www.tollplus.com)

A forward-thinking approach to tolling industry challenges.

**RELY ON TOLLPLUS FOR YOUR TRANSPORTATION AND MOBILITY SOLUTIONS.**

- Back Office for ETC, AET and Managed Lanes
- Road, Ferry, Parking, Transit
- Interoperability & Clearing House
- Image Processing & Enforcement


**TOLL PLUS**  
Advanced Tolling Solutions



**TRANSCORE.**  
*Trusted Transportation Solutions.*

**TRUSTED BY AGENCIES**

To Successfully Deliver Highly Complex Projects with Challenging Schedules, On Time. Every Time.



**tti** CONSULTING 1996-2016 **20 YEARS**

**CONCEPT TO COMPLETION**  
TTI delivers successful toll programs through a culture of innovation and pragmatic solutions.

PROGRAM MANAGEMENT  
STRATEGIC PLANNING  
SYSTEM ASSESSMENT  
REQUIREMENTS & DESIGN

[tticonsulting.com](http://tticonsulting.com)



Formerly  
**WSP | PARSONS BRINCKERHOFF**

**WSP**

**Question the ordinary  
Imagine the extraordinary  
Create the enduring**

*We've engineering some of our nation's tallest buildings and designed transit systems for cities from coast to coast.*

**We are WSP USA.**

*Partner with us to deliver toll facilities that reduce congestion and improve mobility.*

[wsp.com/usa](http://wsp.com/usa)



# SPONSORS

## GOLD & EVENING EVENT SPONSOR

**HDR** For more than a century, HDR has partnered with clients to shape communities and challenge the boundaries of what's possible. Our expertise spans 10,000 employees, in more than 225 locations around the world—and counting. Our engineering, architecture, environmental and construction services bring an impressive breadth of knowledge to every project. Our optimistic approach to finding innovative solutions defined our past and drives our future. [www.hdrinc.com](http://www.hdrinc.com)

## GOLD SPONSORS

**Raytheon** Raytheon's All Electronic Tolling System converts opportunities into revenue for our customers. Our market-leading solution delivers superior image clarity and automation that maximizes income collection while helping to reduce carbon emissions and highway congestion. Raytheon Company, with 2015 sales of \$23 billion and 61,000 employees, is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions. [www.raytheon.com/highways](http://www.raytheon.com/highways)



STAR Systems International is a market leader in providing passive ISO 18000-63 (6C) UHF RFID transponders, readers, solutions and consulting services for vehicle identification systems. STAR Systems leverages technical implementation expertise, training and support to ensure customer success. Our focus on "Making RFID Work" for ETC, EVR, Fleet Management, Parking and Access Control applications allows our customers to deliver high-performance and reliable integrated solutions. [star-int.net](http://star-int.net)

## SILVER SPONSOR



For more than 60 years, Michael Baker has been providing General Consulting Engineering and Managed Lane design services to toll clients by consistently delivering high-end, professional engineering and integrated management solutions. Michael Baker's experience with tollway systems, including HOV and HOT, encompasses the planning, design, and construction of new and rehabilitated tollway systems and elements, including highways, bridges, Intelligent Transportation Systems (ITS), connected and autonomous vehicles, and communication systems. Michael Baker consistently ranks among the top 10 percent of the 500 largest U.S. design firms by Engineering News-Record. Understanding the time constraints of our toll clients, Michael Baker's professional staff delivers value-added solutions, done right the first time. [www.mbakertntl.com](http://www.mbakertntl.com)

## EVENING EVENT SPONSOR



Duncan Solutions specializes in revenue recovery for toll violations and negative balance customer accounts. Our delinquent account collection service is customized to meet the specific business rules of each client agency, with a unique focus on customer service. Customer contact and enforcement options include outbound calling, inbound call handling, customer service, tag holder account management, skip tracing, and civil litigation. Through our Law Enforcement Systems (LES) division, our DMVRegInfo service provides a fast, easy and cost effective way to retrieve out-of-state registered owner information from all 50 states, the District of Columbia as well as Canadian provinces (when/where obtainable, as permitted by law). Our embedded business rules and license plate configurations for the various states deliver improved hit rates and reduce toll revenue leakage. [www.DuncanSolutions.com](http://www.DuncanSolutions.com)

## MONDAY LUNCH SPONSOR



Transurban is a toll road owner and operator with interests in the United States and Australia. The company's focus is on partnering with governments to deliver roads that meet community needs over the long term. Transurban's U.S. headquarters is in Alexandria, Virginia. Transurban employs around 1,000 people and serves customers across its 14 toll roads – including more than 3 million customers on the 495 and 95 Express Lanes in Northern Virginia. The company is a Top 20 company on the Australian Securities Exchange. Transurban has an agreement with the Virginia Department of Transportation to manage and operate the 495 and 95 Express Lanes. [www.transurban.com](http://www.transurban.com)

# EXHIBITORS



BancPass serves a niche in the toll industry where the growing demand for efficient mobile payment technologies can lower costs and increase the quality of the consumer experience. BancPass' systems make use of mobile technologies, advances in banking account management, increases in efficiencies of the electronic payment rails, and the cash service offerings of retail outlets. Our systems are designed with security in mind, and are fully PCI compliant. BancPass' systems also bring the potential for using common payment platforms as a path to national interoperability. [www.bancpass.com](http://www.bancpass.com)



Cofiroute USA, LLC, a wholly owned subsidiary of Cofiroute (France), is a leader in the development and operation of industry-leading toll facilities worldwide. Cofiroute USA specializes in toll and roadway operations, customer relationship management, integrated technology solutions and consulting services for the toll and transportation industry. [www.cofirouteusa.com](http://www.cofirouteusa.com)



Cogensia is a big data analytics consulting firm that brings customer-level data analysis to the tolling industry to enable initiatives such as converting cash payers to transponders, congestion analysis and alleviation, and targeted communications programs. By combining analytics expertise, toll client experience, and our ConsumerIntelliBase™ data enhancement, we offer the most robust, insightful, and innovative data-driven solutions for the toll industry. [www.cogensia.com](http://www.cogensia.com)



Cubic Transportation Systems, Inc. is a leading integrator of payment and information technology and services for intelligent travel solutions. We deliver integrated systems for transportation and traffic management, including a next-generation, tolling back office system. We're uniquely positioned between traditional tolling, road user charging suppliers and large payment processors. At Cubic, we believe our identity is intrinsically linked with our customers and the people our customers serve. How they get from one place to the next – how that impacts their lives, their fellow travelers and their cities – and how it feels along the way. That is why we are passionate about developing transportation solutions that improve the way we move throughout cities. Innovation is in our culture, and our 45-year history speaks for itself. We've delivered state-of-the-art public transit and traffic management system to over 450 operators in major cities and four continents. We are getting you there. Smarter. [www.cubic.com/Transportation](http://www.cubic.com/Transportation)



Duncan Solutions specializes in revenue recovery for toll violations and negative balance customer accounts. Our delinquent account collection service is customized to meet the specific business rules of each client agency, with a unique focus on customer service. Customer contact and enforcement options include outbound

calling, inbound call handling, customer service, tag holder account management, skip tracing, and civil litigation. Through our Law Enforcement Systems (LES) division, our DMVRegInfo service provides a fast, easy and cost effective way to retrieve out-of-state registered owner information from all 50 states, the District of Columbia as well as Canadian provinces (when/where obtainable, as permitted by law). Our embedded business rules and license plate configurations for the various states deliver improved hit rates and reduce toll revenue leakage. [www.DuncanSolutions.com](http://www.DuncanSolutions.com)



ETAN Industries develops customized business process solutions for the tolling, utilities, telecom and cable markets. For the tolling community, we proudly offer FASTLane—our award-winning Back

Office System that houses every component necessary to manage the electronic tolling environment. FASTLane combines advanced transaction processing capabilities with a state-of-the-art financial infrastructure to bring unsurpassed financial accountability and operational flexibility to the tolling industry. Visit ETAN online at [www.etanindustries.com/tolling](http://www.etanindustries.com/tolling) to find out how FASTLane can bring accuracy, efficiency and economy to tolling operations. [www.etanindustries.com/tolling](http://www.etanindustries.com/tolling)



For more than two decades, ETC Corporation has delivered innovative solutions to the toll industry that increase mobility, improve operational efficiency, and support high levels of customer service. Today, ETC's solutions collect nearly one-third of the toll transactions in the United States on some of the most technically advanced toll facilities in the industry. These solutions enable all-electronic toll collection, dynamic pricing, express lanes, interoperability, and open road tolling. ETC's integrated lane-to-back office solutions are supported by an impressive array of operations and maintenance services. ETC offers its solutions and services as both a customer-delivered model as well as through a hosted environment at ETC's state-of-the-art technology and operations centers. [www.etc.com](http://www.etc.com)



INEX TECHNOLOGIES designs, develops, manufactures and sells comprehensive Automatic License Plate (ALPR) hardware/software solutions for license plate recognition and vehicle identification. As the developer of both proprietary ALPR imaging hardware and firmware/software analytical engines, INEX TECHNOLOGIES achieves the optimum synergy to create the world's premier license plate recognition systems for any plate, any ambient lighting, any weather condition, and for vehicle speeds of up to 120 mph (194 km/h). INEX TECHNOLOGIES' ALPR & vehicle identification technology accurately captures license plate data from passing vehicles in real-time, and identifies customized information, such as color, make, and model. Applications would include, as examples, Managed Lanes and VES (Violation Enforcement Systems) on toll roads as well as travel-time systems - ATIS (Advanced Travel Information Systems). Integrated with: Kapsch, TransCore, ETCC, Delcan, Etransit and many more - please call for additional information. INEX TECHNOLOGIES has over 900 Active Lanes of Equipment in the United States. [www.inextechnologies.com](http://www.inextechnologies.com)



See the possibilities

JAI is a world leader in high-performance vehicle imaging technologies targeting the specific needs of roadway operators and transit authority executives. JAI's advanced lane hardware and software enables quick and accurate identification of vehicles for tolling, red light enforcement, speed control, congestion charging, weigh-in-motion, homeland security, and a wide range of other free-flow ITS applications. Products include camera systems, LED flash units, and software to support image capture of high-speed vehicles (0-200 MPH), license plate reading, vehicle fingerprinting, and more. [www.jai.com](http://www.jai.com)



Kapsch TrafficCom is an internationally renowned provider of intelligent transportation systems in the fields of road user charging, traffic management, smart urban mobility, traffic safety and security, and connected cars. As a one-stop solutions provider, Kapsch TrafficCom offers end-to-end solutions covering the entire value creation chain of its customers, from components and design to the implementation and operation of systems. The mobility solutions supplied by Kapsch TrafficCom help make road traffic safer and more reliable, efficient, and comfortable in urban areas and on highways alike while helping to reduce pollution. The family-owned company is headquartered in Vienna, Austria and in 2017 celebrated 125 years of successfully developing and implementing new technologies for the benefit of its customers. [www.kapsch.net](http://www.kapsch.net)



Lindsay Transportation Solutions is the

manufacturer of The Road Zipper System™ and the world leader in moveable barrier technology. The Road Zipper is used for both construction and managed lanes applications. It is used to create additional highway capacity, relieve traffic congestion, and provide positive barrier separation between opposing lanes of traffic. The Road Zipper reconfigures the roadway based on peak traffic demand, borrowing lanes from the off-peak direction to improve traffic flow in the peak direction. LTS also manufactures a full line of highly reusable, cost-effective crash cushions, specialty barriers, and guardrail terminal end products. [www.lindsaytransportation.com](http://www.lindsaytransportation.com)



Linebarger collects unpaid tolls and toll tag accounts. We build a custom, customer service-focused collections program for each client that includes components such as: portfolio analysis and best-practices recommendations, secure enhanced file transfers and data exchanges, contact campaigns, skip tracing, secure payment processing, legal counsel, project oversight, specialty campaigns, registration hold and tax intercept programs, legal representation in the administrative hearing and lawsuit processes, and comprehensive reporting. [www.lgbs.com](http://www.lgbs.com)



Multilink is an engineering and product development based manufacturer of telecommunications network components, servicing the traditional CATV MSO's (Cable Television Multiple System Operators), CLEC's (Competitive Local Exchange Carriers), RBOC's (Regional Bell Operating Companies), Independent Telco's, Regulated Utilities, and LAN (Local Area Network) providers and end users. The core business was developed in the United States and remains there, while an aggressive global marketing plan has been developed and put into place to keep pace with the ever-expanding marketplace. [www.gomultilink.com](http://www.gomultilink.com)



PayNearMe is a cash payment system that enables a variety of businesses — including tolling agencies — to accept cash payments 24 hours a day at over 30,000 locations nationwide. With the industry moving towards all-electronic tolling, many consumers, who don't have a bank account or otherwise prefer cash, need another way to pay. PayNearMe is the most convenient way for these consumers to pay



with cash at a local CVS Pharmacy, 7-Eleven or Family Dollar store. Our technology has been implemented by tolling agencies across the country, to allow customers to submit their tolling fees in cash. It's as easy as placing our barcode on your invoice. CVS Pharmacy and 7-Eleven are already accepting toll payments. Add our barcode to your toll bill and your customers will just need to scan, pay, and go at any participating retail locations. <http://paynearme.com/en/industries/tolling-and-transportation>



Penn Credit is a leading provider of delinquent account collection services to public entities throughout the United States. Founded in 1987, we customize

collection solutions and use the highest ethical standards to earn an unsurpassed reputation for attaining optimum results and a superior level of service for our clients. Penn Credit has extensive experience collecting delinquent toll violations and negative balance accounts, parking and red light/speed camera violations. Our DMV.Info.Now registered owner retrieval service enables your agency to submit out-of-state plates for retrieval from most state DMVs. DMV.Info.Now uses your existing RO interface and is offered at the best pricing in the industry. Please contact Richard Carrier at 212.300.5930 or Richard.Carrier@PennCredit.com. [www.penncredit.com](http://www.penncredit.com)



Perceptics engineers and delivers the most accurate high performance

imaging systems in the industry. For more than 35 years we have designed vehicle identification and license plate recognition products that serve the Border Security, Electronic Toll Collection, Commercial Vehicle Enforcement, and Highway & City Security markets. Today, our high performance imaging systems are optimized for the revenue collection demands of electronic toll collection, providing more complete data capture, guaranteed accuracy, higher confidence levels, and more reliable automation capabilities to reduce the cost of collecting tolls. With imagers that can read plates other systems may not, and an OCR engine that learns from ongoing exposure to the widest possible range of plate types from across North America, Perceptics delivers performance you can truly bank on. Contact us to learn more about our imaging technologies and their impact on ETC. [www.perceptics.com](http://www.perceptics.com)



Perdue Brandon Fielder Collins & Mott, L.L.P., is one of the oldest, largest and most experienced law firms providing collection services exclusively to public entities and agencies. Founded in 1970 in

Texas, Perdue Brandon has 12 offices, 5 call centers and over 400 employees. Our largest office in Houston is home to our toll road collections division. The firm's attorneys and professional staff collect: toll violations, photo enforcement, state receivables/taxes, court fines, parking citations and other receivables owed to local governments and agencies. We also provide litigation services as part of our toll road collection representation. Perdue Brandon's proprietary collection management software integrates with over 50 different software systems used by our government clients in their billing and collection process. Our staff of professional programmers is led by a senior programmer who came out of the toll road software development industry. [www.pbfcm.com](http://www.pbfcm.com)



As a leading global supplier of products and solutions within the Intelligent Transportation Systems (ITS) market, Q-Free provides a wide range of state-of-the-art tolling and traffic management technologies which address a variety of user needs. These, combined with consulting and managed services, ensure that the right choices are made at every point in traffic and tolling operations. Our turnkey solutions guarantee

journey times using dynamic pricing for the use of managed lanes, and highly accurate image review solutions, which enable toll road agencies and system integrators to significantly reduce overall operational expense. [www.q-free.com](http://www.q-free.com)



As a developer of innovative, high accuracy, intelligent transport solutions, Red Fox ID has unique and specialist skills specifically focused on tolling applications. The skill set covers sensor

technology development with a particular specialty in; automatic vehicle identification and classification, lane controller design, lane system design and installation. For over 20 years, systems integrators, toll authorities, roadway operators and others looking for the best possible results for vehicle detection and classification systems have turned to the team behind the new Quantum technology for their vehicle detection solution. The Red Fox ID team, (including Andy Lees, the inventor of Idris AVC technology) has unmatched experience in free-flow toll system development enabling its customers to install low risk, operationally-proven solutions, extracting the full value from their transport system. Red Fox ID's innovative patented Quantum software has been proven to deliver 99.8% or better axle class accuracy in all traffic conditions. [www.redfoxid.com](http://www.redfoxid.com)



Profiling, classifying and detecting vehicles at all traffic speeds, SICK sensor solutions increase the accuracy of your toll collections. Tracking vehicles in intersections or monitoring dangerous traffic conditions is possible due to the technology from SICK. Laser-based solutions designed to withstand harsh outdoor environments are easy to setup while time-of-flight technology solutions ensure maximum application reliability. [www.sickusa.com](http://www.sickusa.com)



STAR Systems International is a market leader in providing passive ISO 18000-63 (6C) UHF RFID transponders, readers, solutions and consulting services for vehicle identification systems. STAR Systems leverages technical implementation expertise, training and support to ensure customer success. Our focus on "Making RFID Work" for ETC, EVR, Fleet Management, Parking and Access Control applications allows our customers to deliver high-performance and reliable integrated solutions. [star-int.net](http://star-int.net)



SWC brings proven experience in the highway toll, government, utility, telecommunications, cable,

property management and education industries. Over the past 40 years, we have partnered with numerous clients to maximize the management of their accounts receivable, annually managing billions of dollars. From large Fortune 500 companies to small organizations, SWC has a proven history of connecting to understand the client's challenges, developing solutions that resolve receivables concerns, and delivering desired results. In addition to tradition accounts receivable management, SWC has also provided staff augmentation and 1st party customer service activities specifically in the tolling market. SWC also developed a guaranteed toll solution for video transactions, known as TollMaxx ([tollmaxx.com](http://tollmaxx.com)). TollMaxx offers toll agencies the opportunity to leverage the capabilities and efficiencies of large volumes to reduce cost, eliminate collection risks and improve customer experience! [www.swcgroup.com](http://www.swcgroup.com)



TollPlus LLC, a software company founded in 2007 by a group of seasoned professionals from the Tolling, Banking and IT industry. TollPlus has designed from ground up a sophisticated end-to-end toll management solution, scalable, lightweight, secure, and highly customizable to address the challenges of the Electronic

Toll Collection (ETC) market. Innovation-driven, TollPlus' core products and services include the design, integration, implementation and maintenance of ETC/AET, violation enforcement, image processing and clearing house systems for toll roads, parking, ferry, metro and other transit operations. In a fast changing market, TollPlus puts a strong focus on technology and R&D to offer world class level products and services. Our products are developed using advanced technologies that focus on significantly improving transportation agency efficiencies by reducing operating expenses and maximizing revenue, while ensuring the highest level of service to our customers. TollPlus LLC is head-quartered in Chandler, AZ. [www.tollplus.com](http://www.tollplus.com)



For over 40 years, Trinity Highway and its brands Energy Absorption, Safe-Hit, and Yodock have been leading innovators of solutions for both domestic and international roadways. The product lines include

guardrail, cable barrier, crash cushions, end terminals, truck and trailer mounted attenuators, steel and water filled barriers, sign supports, flexible delineators, and other roadway products. [www.trinityhighway.com](http://www.trinityhighway.com)



Versilis is dedicated to the development of innovative solutions that maximize road safety while minimizing impact on traffic flow. The highway traffic gate called SwiftGate was

designed by Versilis traffic engineers to allow safe and effective highway lane closure. Used for HOV reversible and Toll lane control, on-ramp and off-ramp control and for Bridge/Tunnel emergency closure, it is the most advanced traffic gate solution on the market. Substantial in size, this highly visible traffic gate with LED lighting sends a clear message that a lane is closed. The gate has been crash tested to NCHRP 350 requirements and is accepted by the FHWA. Tested and proven in the most adverse environmental conditions, this gate is there to last. [www.versilis.com](http://www.versilis.com)

# CONCEPT TO COMPLETION

TTI delivers successful toll programs through a culture of innovation and pragmatic solutions.

Program Management  
Strategic Planning  
System Assessment  
Requirements & Design



1996-2016  
**20**  
YEARS

[tticonsutling.com](http://tticonsutling.com)