Welcome back IBTTA Engineering community!

This annual Workshop has a new name and new content focused on the engineering aspects of running a toll facility. There’s still plenty of content for Maintenance and Roadway Operations professionals but we hope the addition of Engineering topics will bring new ideas from our Engineering Community as well. The planning committee is looking forward to expanding our horizons in Louisville – send us your presentations!

**GENERAL SESSIONS**

**GOOD COP/BETTER COP: LAW ENFORCEMENT AND SECURITY**

Now more than ever, Law Enforcement is playing a major role in the toll industry. From enforcing traffic laws and Homeland Security to toll enforcement, work zone safety and protecting the driving public, the role of law enforcement is critical. Many toll agencies have dedicated law enforcement for their facilities and some share with other jurisdictions. But in all cases, toll agencies typically have higher levels of enforcement and roadway presence when compared with conventional highways. With law enforcement being a critical part of operations and customer satisfaction, it is important that we share our experiences and lessons learned. How does your agency use law enforcement in daily operations and special assignments? How does technology, such as weigh-in-motion, smart vehicles, and drones help law enforcement accomplish their mission? How do you address security for critical infrastructure to help ensure the safety and security for agency personnel, contractors, and the traveling public? We want to hear about your agency’s experiences, case studies and successes in providing law enforcement to enhance your operations and customer satisfaction.

**TECHNOLOGY TOOLS OF THE TRADE (AKA “HOW DO YOU USE TECHNOLOGY?”)**

We know that there are many new advances in technology that can assist toll agencies with engineering design, maintenance programs and traffic operations. While we don’t want to necessarily delve into the details of these technology tools at this workshop, we do want to discuss how you use these tools to be more efficient and cost effective in your everyday business. For example, how do you use technology in your engineering design process? Do you use Lidar? Pavement inspection technologies? How about electronic submission and review processes for plans and specifications? Do you use data analytics in your traffic management center, for accident statistics, or for highway capacity monitoring? There probably many of you that use technologies for maintenance programs such as snow removal, weather monitoring, landscape maintenance, fleet maintenance, materials and supplies management, and others. Share your triumphs and your difficulties using technology tools in your engineering, operations and maintenance activities.
RESILIENCY & SUSTAINABILITY IN THE TOLL INDUSTRY
The effect of climate change and variability and the impact of catastrophic weather incidents seem to be far more prevalent in recent years. Unfortunately, we are all familiar with the devastating, immediate, and lasting effects of recurring hurricanes, wildfires and major winter storms. With each response to every new incident/challenge, the collective understanding of how to be well prepared and to effectively react to these challenges should continue to grow, especially if these experiences can be shared. Through these experiences, many infrastructure owners have developed more robust preparedness plans and programs to enhance the resiliency of their assets and systems with an eye on continuing to optimize their infrastructure through sustainable engineering practices. Send us your new ideas for readiness, business continuity in adverse situations and preparedness planning. Are we still in unknown territory or are we better prepared for anything Mother Nature sends our way?

INNOVATIVE USE OF DRONE TECHNOLOGY
The use of drones continues to grow -- from recreational use to business applications and they are increasingly efficient in providing valuable information. Innovative users are collecting better data while increasing the safety of their staff and customers. In addition to inspection uses, drones are being used for delivering information supporting facility security, law enforcement and accident response. And most recently, there is active interest in drones for package delivery by some of our biggest customers (e.g. Amazon, UPS, FedEx), which poses new issues for toll operators on how to regulate and manage airspace. This session is interested in hearing about innovative ways that you’re using drones in today’s working environment and what creative applications you’re considering or planning for the future.
**TECHNICAL TRACK**

We’re bringing the “TECHNICAL” back to the Maintenance, Engineering & Roadway Operations Workshop by focusing our Technical Track on “how to” discussions and presentations. We will have a separate Technology Workshop where technology is all the rage and will be highlighted in the discussions. But here in Louisville, we want to take it back to the “hands-on” technical practice of engineering, operations, and maintenance. We think you’ll like it!!

**TECHNICAL TRENDS IN ENGINEERING: WE CAN DESIGN A BETTER MOUSETRAP!!**

Every toll agency has an engineering department, hires engineering consultants, and performs or oversees engineering design for their toll road, bridge, or tunnel assets. These critical transportation facilities have all been designed and constructed using the latest and greatest design criteria, means and methods, and technology available at the time. But, the times “they are a changing”!! What exactly are the latest trends and models in engineering design and construction in the toll industry? Inquiring minds want to know! Do you have a unique way of quickly and efficiently procuring engineering consultants for fast-track projects, early construction packages, and other project acceleration ideas? How about telling us about the latest design standards and safety standards and how you incorporate them into your existing procedures and deploy them in the field as you expand and maintain your facilities? We want to know about new and improved construction materials! We would love to hear from general contractors regarding procurement processes, how the use of technology can speed construction and make it more cost effective, how to minimize claims, etc. Come tell us about your experiences with innovative engineering design and construction at your toll agency.

**TECHNICAL TRENDS IN OPERATIONS: HOW IN THE WORLD WILL WE MOVE MORE TRAFFIC?**

Traffic operations are a critical piece of the puzzle for toll agencies in serving their customer base. Literally, this is where the rubber meets the road and where you can gain or lose customers on your toll facility. We know that a successful traffic operations department requires an adaptive staff and the latest tools to help keep operations running smoothly. You will have an eager audience to listen to your “war stories” of daily congestion management, incident management and response, special event traffic management, and construction work zone operations and how you solve those issues every day. So please tell us about your great staff, tools, traffic management centers, resources and equipment, and of course your successes and disappointments.

**TECHNICAL TRENDS IN MAINTENANCE: POTHOLES, WEEDS, AND LITTER – OH MY!**

This isn’t Oz and there is no yellow brick road – instead, we have high volumes of heavy trucks, snow/rain, freeze/thaw, landscaping that needs care, and customers who litter. How can we maintain our roadways? Well, we do maintain them, and we do a darn good job of it too!! We know there are new and improving trends in maintenance practices for roadways, bridges, tunnels, and general areas, but we want to hear how well some of these trendy ideas are working. Do you use an asset management system? If so, we’d love to hear about how you use it and whether it helps with cost
efficiencies and results in better overall maintenance. How do you keep up with pothole repair, resurfacing, striping, and other pavement-related maintenance? How do you prioritize your bridge/tunnel repairs? Do you partner with local communities for landscape upkeep or litter patrols? How do you manage your mowing program? Got snow? Tell us how you deal with that! Do you use software technology, drones, robots, and any other technical support? Send us ideas describing technical trends in the maintenance arena that you’re employing that others may want to apply to their own facilities.
MANAGEMENT TRACK

MANAGEMENT TRENDS IN OPERATIONS: THE SCIENCE OF DECISION MAKING - USING DATA TO DRIVE THE RIGHT DECISION AT THE RIGHT TIME

Managers, and Operations Managers in particular, face many decisions each day – some critical and sensitive, others that will set the direction of an agency or department for years in the future. Sound decision-making is part art, part science. Do you have the information you need to make the critical decision when you need to make it? Is your data ‘truthful’? Is it just data or is it information? Do you have to re-create the same information on a regular basis to understand trends and drivers that affect your decisions? What data do you use? How do you ensure the quality of data? How do you synthesize it into actionable information for roadway operations in real-time? Or for planning and improving your roadway operations program for the future? Do you use dashboards, report cards, third-party information? Tell us how about the ‘science’ of your decision-making.

MANAGEMENT TRENDS IN ENGINEERING: ASSET MANAGEMENT -- ‘YOU NEED HOW MUCH FOR YOUR PROGRAM?’

Few, if any, agencies have the funds to meet the needs – whether it’s the highway, bridges, toll equipment, stormwater facilities, vertical facilities, fleet or IT resources. When a decision is made to make investment in a particular asset, or portion of the asset, it generally has long-term impacts and is difficult to reverse. So, making decisions across the various assets and the organization is critical. How do you ensure your asset management is cross-cutting and not siloed? How do you set priorities and make decisions, knowing you can’t address every need, for every asset? How do you plan for new assets being added to your portfolio, including technological and roadway appurtenances that are more prevalent today? Properly managing an agency’s assets will positively long-term costs, credit ratings, or even productivity or safety. How does an agency develop an enterprise-wide program to manage all their assets? What is the best way to convey the program’s value and have buy-in from executive management? We’re looking for presentations that address the steps needed to identify assets and create a program that is holistic in its approach.

MANAGEMENT TRENDS IN MAINTENANCE: ‘THAT’S A GREAT IDEA, BUT...’ - FOSTERING A CULTURE OF INNOVATION

Every agency is faced with the same issues or concerns that range from finding better ways to do everyday tasks to motivating and retaining their workforce. Usually managers are the ones who are responsible for providing input or resolution, but another resource, which is often overlooked, are frontline employees. They are the ones performing the work and have insight into how maintenance programs and tasks can be improved. The challenge becomes how to create and foster an environment for these employees, and others, in which innovative ideas can be presented as well as channels for validating and approving viable ideas after they are submitted. How does an agency foster innovation among their employees? How do you validate an employee’s idea? What happens if an employee provides several ideas, but they are never used? Should incentives be provided to employees to submit ideas or should credit/acknowledgement be given to employees whose ideas are implemented? Let us know how your agency fosters innovation among your workforce.