

Pre-Conference, February 28
Workshops
I Hotel & Conference Center, Illinois Ballroom

Workshops

Workshop #1

Topic: Connected, Autonomous, and Electrified Mobility in Illinois (9:00 am-12:00 pm)

Moderator: Jeff Roesler

Connected, autonomous, and electric vehicles are expected to improve mobility, efficiency, and safety of people, goods, and services. This workshop content will present how transportation engineers should prepare to implement connected and autonomous vehicles (CAV) and vehicle electrification particularly identifying their impact on roadway infrastructure, logistics, and safety.

1. Introduction to Autonomous & Connected Vehicle Technologies & Capabilities

Prof. Alireza Talebpour (25 minutes + questions)

The basic vehicle sensors, operational characteristics, and control strategies that transportation engineering can expect from CAV to improve road capacity and safety and what current roadway improvements are needed for better adoption of CAVs.

2. Connected Trucks and Vehicles: Impact of CAV/T on Pavement Infrastructure – Changing a Challenge to an Opportunity.

Prof. Imad L. Al-Qadi (25 minutes + questions)

The impact of connected vehicles and trucks on pavements will be discussed in terms of fuel efficiency, safety, congestion, and pavement damage. Various scenarios will be discussed to optimize connected truck platooning for fuel usage, emission, pavement damage, efficiency, and safety.

3. Lateral Positioning of CAV on all Functional Classifications and in Adverse Weather

Prof. Jeff Roesler (25 minutes + questions)

Vehicle lane keeping is one of the key safety benefits in advanced driver assist systems for roadway operations. However, upgrades are required to the existing roadway to improve the reliability of lane keeping as well as adding passive sensing systems embedded in the roadway to provide a high level of reliability during all weather conditions and on all functional roadway classes.

BREAK (20 minutes) – Go see the Autonomous Vehicle in parking lot east of I-Hotel

4. Planning for Mass Vehicle Electrification: Infrastructure Needs and Policy Impacts

Prof. Ria Kontou (25 minutes + questions)

Electric vehicles adoption and use assist with decarbonizing the transportation sector by eliminating tailpipe emissions. This talk will present insights on charging infrastructure needs and policies impacts on electric vehicle market penetration and efficient operations.

5. Last-mile delivery by CAV and UAVs: Infrastructure, efficiency, and sustainability implications.

Prof. Yanfeng Ouyang (25 minutes + questions)

Last-mile freight operations as part of a function CAV corridor impose another set of challenges on infrastructure and technology. This talk will present the infrastructure and technologies required to support last mile operations so the CAV corridor concept can be integrated to local communities.

After the seminar, attendees are invited to take a ride in an autonomous vehicle with Professor Talebpour southeast of I-Hotel parking lot.

Afternoon Workshops

Workshop #2a.

Asset Management – Federal, State & Local Approaches (1:00- 4:30 pm)

Moderator: Brian Umbright, EXP (1:00-1:05 pm)

Topic 1: FHWA Overview – What are the Requirements? (1:05-1:25 pm)

Dennis Bachman

FHWA IL-Division Office

Asset Management Engineer

Dan Brydl

FHWA IL-Division Office

Bridge Engineer

Topic 2: Statewide Bridge Policy (1:25-1:55 pm)

Patrik Claussen

IDOT – Engineer of Bridge Planning

Topic 3: District 1 Approach to Bridges (1:55-2:35 pm)

Sarah Wilson

IDOT – District 1 Bridge Maintenance Engineer

Q&A/Break (15 min)

Topic 4: Don't Forget the Road (2:50-3:30 pm)

Laura Heckel

IDOT – Asset Management Engineer

John Senger

IDOT – Engineer of Pavement Technology

Topic 5: The Tollway's Collaborative Approach to Asset Management (3:30-4:15 pm)

Nick Smith

Illinois Tollway GEC – Trust Indenture Manager

Rob Glaz

ISTHA – ITS Manager

Q&A (4:15-4:25 pm)

Workshop #2b.

3D Plan Development / Paperless Document Delivery

Moderator: Stan Hansen, Crawford, Murphy & Tilly (1:00-4:00 pm)

Topic

Presenter(s)

1. Status / Progression of 3D Plans & Paperless Delivery

- a. National Level of Advancement
 - i. Other State DOT's (Florida, Utah, Others)
 - ii. FHWA National Strategic Roadmap

Mo Harmon (Bentley)

- b. Illinois Department of Transportation
 - i. Statewide District(s) Rollout Plan
 - ii. Changes Anticipated for CAD Manual

Drew Christopher (IDOT)
Dan Mlacnik (IDOT)

- c. Tollway Continued Implementation Plan

Laura Thompson (Tollway)

2. Plan Development / Paperless Documents

- a. How Will Project Managers Review Design
- b. What Future Bidding Documents Look Like

Daniel Prokop (HDR)

Nick Laga (WSP)

Break

3. Consultant / Contractor Perspectives (Problems Encountered, Lessons Learned, Risk & Liability)

- a. Sample Consultant Documents & Process to Prepare
- b. Contractor's Field Experience Using Design Files

Nick Laga (WSP)
Daniel Prokop (HDR)

Ron Wilocki (Walsh
Construction Company)

4. Utilizing OpenRoads Designer (ORD) – Overview of Modelling Tools

- a. Survey (Mapping & Manipulation Capabilities)
 - i. Low Distortion Projection

Dan Mlacnik (IDOT)
John Mellor (IDOT)
Jamie Shaw (IDOT)

- b. Corridor Modeling
- c. StormCAD
- d. Utilities
- e. Quantity Computation Process

Volaree Rendon (Bentley)