

A SUMMIT OF UNIVERSITY TRANSPORTATION CENTERS  
FOR SAFETY:  
WORKING IN PARTNERSHIP TO ADDRESS REAL WORLD  
TRANSPORTATION PROBLEMS

# ASCE and Private Sector Perspectives



THE U.S. DOT NATIONAL UNIVERSITY TRANSPORTATION CENTER FOR SAFETY



- ▶ Improving safety on our nation's roadways and surface transportation systems is a priority for ASCE and for the industry, and university transportation centers (UTCs) are a critical partner for us.
- ▶ UTCs are often the incubators of innovation. There will not be one solution to improving transportation safety but hundreds and possibly thousands of mini solutions that add up to significant safety progress.
- ▶ Risk-taking is not the first word that comes to mind when you think of state DOTs or consulting engineering firms, but we need to embrace more of a risk-taking, think-outside-the-box type of culture. Risk and experimentation thrives in the university and the corporate research sectors.
- ▶ As the leading cause of death for Americans between the ages of 8 and 34 remains motor vehicle accidents, ASCE supports a program where significant enhancements in highway safety and the resulting reduction of highway crashes can be achieved by establishing a national highway safety goal; incorporating new technology, better management practices, and a better understanding of the effect of human factors into all levels of transportation systems; and providing flexibility in federal aid for high priority highway safety improvement programs.

# ASCE & SAFETY

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ASCE

- ▶ Research to accelerate the development of existing technology and develop new technology in the fields of design, materials, construction, maintenance, rehabilitation, and operation of the infrastructure with understanding of the need for sustainability and disaster resilience;
- ▶ Research on infrastructure as a system such as network modeling involving co-located infrastructure, interdependencies of life lines, and cascading effects of compromised infrastructure on society; and
- ▶ Supporting efforts that develop and implement new strategies and technologies to mitigate the impact of disasters on the nation's infrastructure in a consistent manner.

# ASCE SUPPORTS

The ASCE logo is a dark blue square containing the white text "ASCE". The "A" has a stylized graphic of three horizontal lines to its left, representing a bridge or structure.

ASCE

- ▶ ASCE's Industry Leaders Council has issued a "Grand Challenge" for the industry to reduce life cycle cost of our infrastructure projects by 50 percent by the year 2025. To do so, will require innovation and education of life cycle analysis at all levels (planners, designers, contractors, owners, operators, users, decision makers). Considerations must be given to sustainability, resiliency and performance based outcomes/standards.
- ▶ This has implications on safety research - What time horizon should we use to evaluate the safety of our assets? Can we extend the life of our assets with new materials and technology that can ultimately improve safety?
- ▶ Technology will play a large role in the solution to many transportation safety challenges, whether it's car crashes, airplane runway accidents, or train derailments.
- ▶ One item that many of you are aware of is connected or automated vehicles. We are interested in their significant potential to reduce crashes by minimizing human factors and to help determine crash causation.
- ▶ We also need to better understand the implications for how these vehicles may change the way we design or build roadways and transportation infrastructure.

# GRAND CHALLENGE

The ASCE logo is a dark blue square with the letters "ASCE" in white. The "A" has three horizontal lines extending from its left side. The "S" has a small horizontal line above its top curve. The "C" has a small horizontal line above its top curve. The "E" has a small horizontal line above its top curve.

ASCE

- ▶ As a nation, our populations are becoming increasingly urbanized, and as our major cities were built centuries ago largely located along ocean and river shipping routes, this urban population and related infrastructure remain vulnerable to their natural environment, particularly the effort of sea level rise or extreme weather events like hurricanes, typhoons and tsunamis. This is a public safety threat.
- ▶ The flooding that occurred in New York City during Hurricane Sandy and the lingering impact felt by Hurricane Katrina are a stark reminder that much more needs to be done to ensure infrastructure can withstand future climate trends and easily bounce-back after extreme weather events.
- ▶ UTCs can lead in helping inform how public and private institutions integrate sustainability and resilience into planning and design, and how to best adapt to potential impacts of climate change in the future.
- ▶ There are big solutions here like ways to rethink underground transit construction and placement in coastal cities, but also smaller solutions on materials and “green infrastructure” can help play a role in ensuring that we are designing and building to the best of our abilities with the safety, quality of life, and prosperity of future generations in mind.

# RESILIENCE & SAFETY

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ASCE

- ▶ **Safety in Workzone During Construction**
  - ▶ **579 Deaths in 2013-NHTSA**
  - ▶ **Better techniques of working in active workzones near traffic**
  - ▶ **Night work vs Day work**
  - ▶ **Slowing down traveling public**
  - ▶ **Distracted drivers (cellphone usage, etc.)**

**PRIVATE SECTOR THOUGHTS**



- ▶ Workzone
- ▶ Fall Protection
- ▶ High Steel
- ▶ Confined Space
- ▶ Excavating & Trenching
- ▶ Lock out Tag out-Electrical, Steam, Power Source
- ▶ Asbestos & Lead
- ▶ Ladder and Scaffolding

# KCI'S SAFETY PROGRAM- CONSULTING FIRM





- ▶ It should not be lost in the discussion that quality research should then lead to deployment. ASCE and industry supports the timely deployment of materials, designs, and intelligent transportation systems technologies that have proven to be successful to increase the efficiency and safety of our transportation systems.
- ▶ We as an industry need to be better about moving the best ideas from the university research community to the decision-makers and practitioners.

## CLOSING THOUGHTS



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