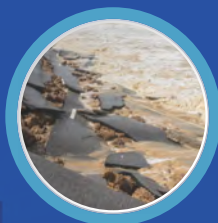


2018 TRANSPORTATION
RESILIENCE INNOVATIONS SUMMIT AND EXCHANGE

R|I|S|E



OCTOBER 9–10, 2018 | DENVER • COLORADO
SHERATON DENVER DOWNTOWN HOTEL



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Laurel Radow, RISE Co-chair; Chair, TRB Standing Committee on Critical Infrastructure Protection (ABR 10)



Dana Hendrix, RISE Co-chair, Caltrans

As co-chairs of the Summit Planning Committee, we welcome you to the first Transportation Resilience Innovations Summit and Exchange (RISE) Conference. We in the transportation community have learned that the incorporation of resiliency into our daily responsibilities prepares our agencies and organizations for the myriad of events we face - whether they be natural or man-made events. This conference is designed to share and learn from each other.

Organizational Structure, Partnerships, and Making the Case are the conference's three themes or tracks. We've designed a program that encourages you to participate. As you attend the roundtable discussions, work through modules of practice-ready tools for you to take home to apply, or the other sessions, please think of ways to incorporate this information into your resiliency programs. As part of these discussions, we also hope to learn about the resiliency gaps you face. Those gaps may become future research topics as Transportation Research Board (TRB) continues our work in resiliency.

Please take some time to meet your fellow participants. Learning from each other about what each of us is doing with regard to resiliency can only help to strengthen all of our agencies and organizations.

On behalf of the Summit planning committee, TRB, FHWA, AASHTO, TSA and all of our sponsors, welcome.

RISE Summit Planning Committee

- **Dana Hendrix**, Co-chair, Caltrans
- **Laurel Radow**, Co-chair, Planning Committee; Chair, TRB Standing Committee on Critical Infrastructure Protection (ABR 10)
- **Nicole Boothman-Shepard**, AECOM
- **Joshua De Florio**, Port Authority of New York and New Jersey
- **Mike Lewis**, Colorado Department of Transportation
- **Emmanuel (Cris) Liban**, Los Angeles County Metropolitan Transportation Authority
- **Michael D. Meyer**, WSP Inc.
- **Steven Miller**, Massachusetts Department of Transportation
- **Tom Moran**, All Hazards Consortium
- **Debra A. Nelson**, New York Metropolitan Transportation Council

Transportation Research Board (TRB) Staff

- **William B. Anderson**, TRB
- **Stephan A. Parker**, TRB

- **Gary A. Jenkins**, TRB

Liaison Representatives

- **Melissa Savage**, American Association of State Highway and Transportation Officials (AASHTO)
- **Patrick B. Zelinski**, AASHTO
- **Jeffrey A. Lindley**, Institute of Transportation Engineers (ITE)
- **Heather Holsinger**, Federal Highway Administration (FHWA)
- **Therese McAllister**, National Institute of Standards and Technology (NIST)
- **Richard Weaver**, American Public Transportation Association (APTA)
- **C. Forbes Tompkins**, Flood-prepared Communities
- **Nancy M. Pomerleau**, Department of Homeland Security (DHS)
- **Sherrie Forrest**, National Academies of Sciences, Engineering, and Medicine
- **Brooks D. Nelson**, Corporate Citizenship Center

2018 TRANSPORTATION

RISE

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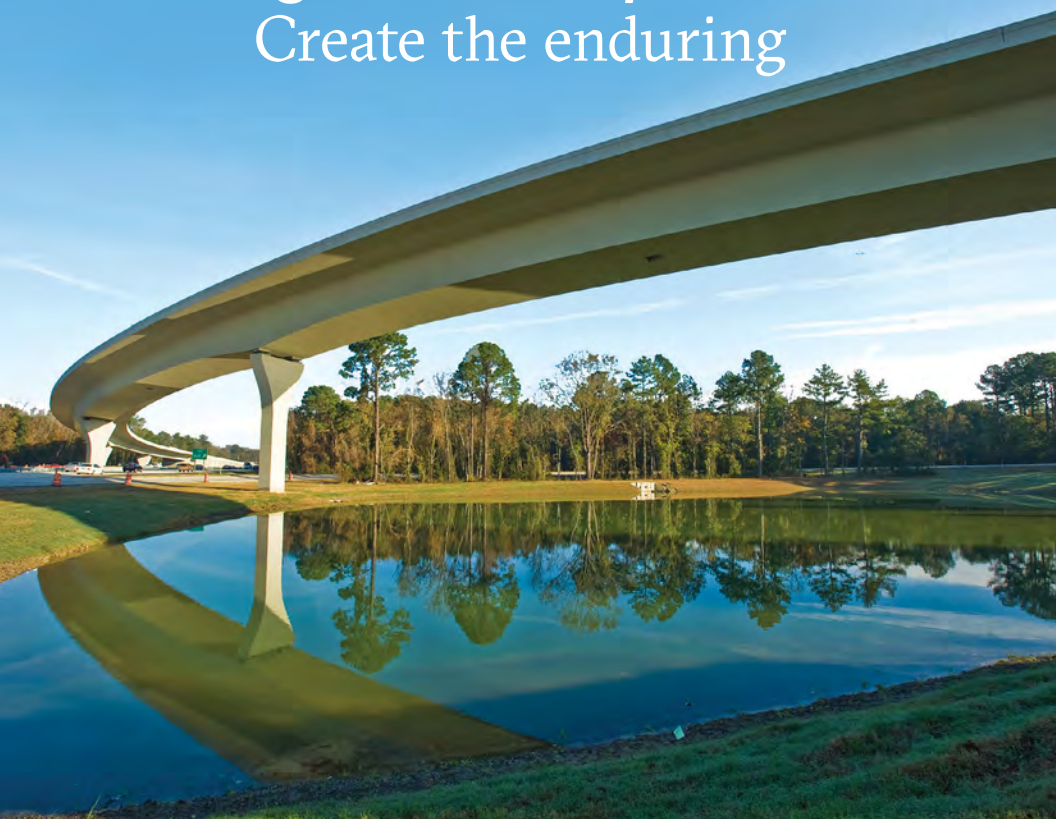
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Create the enduring



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Local Information

The 2018 Transportation RISE is taking place at the Sheraton Denver Downtown Hotel. The hotel is located on the 16th Street Mall, a mile-long pedestrian promenade of restaurants, shopping and entertainment. The hotel is situated perfectly to encourage professional networking after-hours.

Registration

Registration and Check-In will be available for the duration of the Transportation RISE. Check-In will open on Monday, October 8, 2018 at 8:00 a.m. in the South Convention Lobby.

Professional Development Hours (PDH)

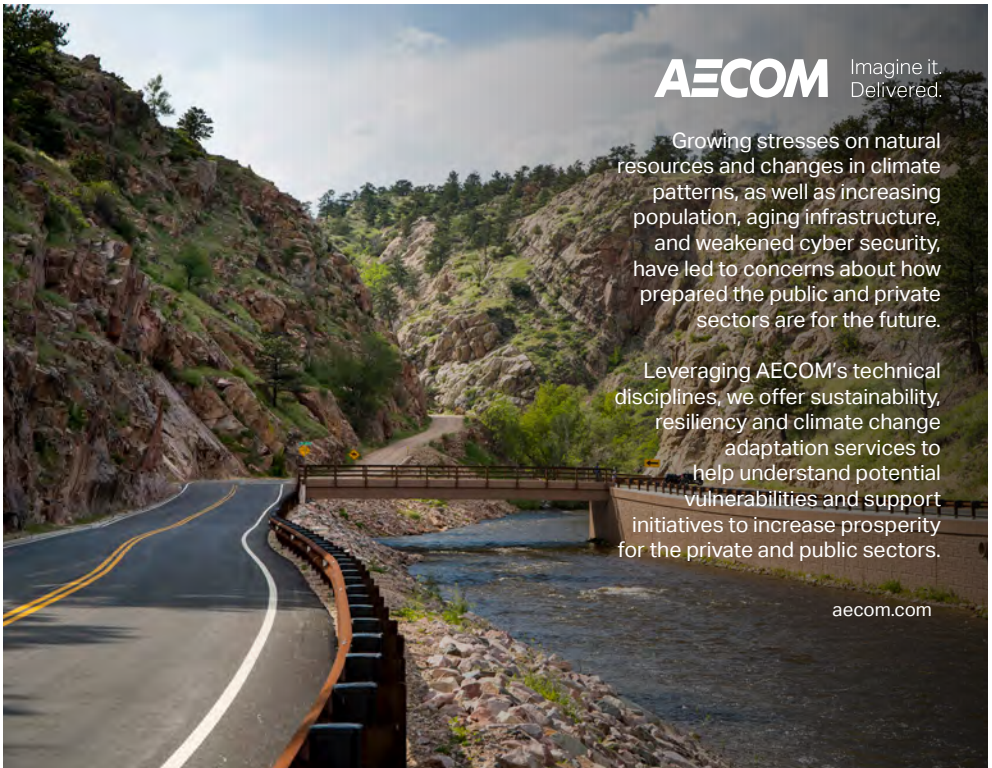
The PDH form on pages 27 and 28 can be used to record professional development units/ hours for the sessions you attended. The form is a self-reporting form that once signed can be used as evidence of attending the noted sessions. TRB keeps conference registration records.

Poster Session Information

Posters will be on display for the duration of the Transportation RISE; however, the main poster session will take place during the Tuesday, October 9, 2018 Welcome Reception from 6:30 - 8:30 p.m. We encourage you to view the posters and visit exhibitor booths during the reception.

Summit Reminders

Please silence your cell phones during all meetings and sessions.



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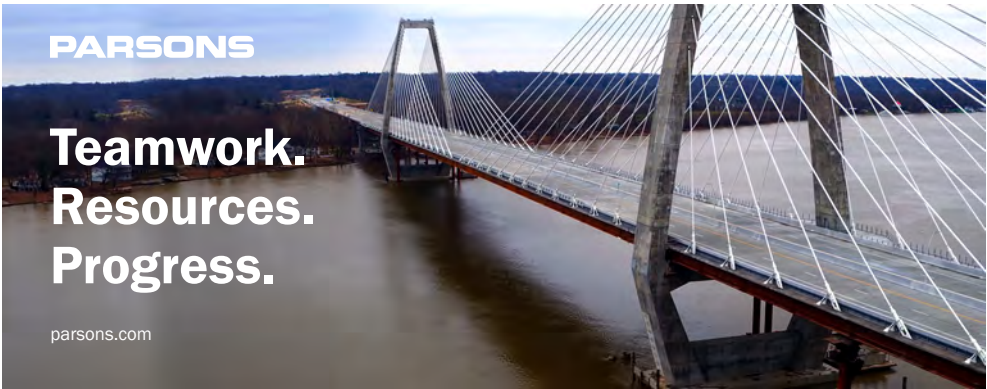
Growing stresses on natural resources and changes in climate patterns, as well as increasing population, aging infrastructure, and weakened cyber security, have led to concerns about how prepared the public and private sectors are for the future.

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Schedule-at-a-Glance

Time	Room	Session
Monday, October 8		
8:00 a.m. to 5:00 p.m.	South Convention Lobby	Registration
9:00 a.m. to 12:00 p.m.	Tower Court D	NCHRP Project Panel 20-59(30A) Train-the-Trainer Regional Workshops for Incident Command System (ICS) Training for Field Level Transportation Supervisors and Staff (<i>Closed Meeting by Invite Only</i>)
1:00 p.m. to 2:45 p.m.	Tower Court A	ABR10 — Critical Transportation Infrastructure Protection Committee
1:00 p.m. to 2:45 p.m.	Tower Court B	ABR20 — Logistics of Disaster Response and Business Continuity Committee
1:00 p.m. to 2:45 p.m.	Tower Court C	ABR30 — Emergency Evacuations Committee
1:00 p.m. to 2:45 p.m.	Tower Court D	A0020T — Climate Change and Energy Special Task Force
3:00 p.m. to 4:30 p.m.	Windows	TSA Vehicle Ramming Workshop
3:00 p.m. to 7:30 p.m.	Offsite	Eisenhower/Johnson Tunnels Fire Suppression System Field Trip (<i>Advanced Registration Required</i>)
4:30 to 5:00 p.m.	Tower Court D	ABR00 - Transportation Systems Resilience Section (<i>Closed Meeting by Invite Only</i>)

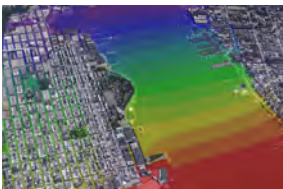


Time	Room	Session
Tuesday, October 9 - RISE Summit Day 1		
7:00 a.m. to 8:00 a.m.	South Convention Lobby	Networking Breakfast
8:00 a.m. to 9:00 a.m.	Grand Ballroom	Opening Plenary
9:15 a.m. to 10:30 a.m.	Windows	How Resilience Can Help You Sleep Better at Night <i>(Invite Only)</i>
9:15 a.m. to 10:30 a.m.	Silver	Approaches to Cybersecurity and Man-made Disruptions: Part A
9:15 a.m. to 10:30 a.m.	Tower Court D	Frameworks for Resilience Strategies: Part A
9:15 a.m. to 10:30 a.m.	Tower Court A	TRB Executive Committee Resiliency and Sustainability Task Force: Challenges, Recommendations, and the Way Forward
10:30 a.m. to 11:00 a.m.	South Convention Lobby	Networking Break
11:00 a.m. to 12:30 p.m.	Windows	How to Become Resilient (in State DOTs) <i>(Invite Only)</i>
11:00 a.m. to 12:30 p.m.	Silver	Approaches to Cybersecurity and Man-made Disruptions: Part B
11:00 a.m. to 12:30 p.m.	Tower Court D	Frameworks for Resilience Strategies: Part B, Dutch Experience with Resilience
11:00 a.m. to 12:30 p.m.	Tower Court A	Considering Resilience in Transportation Planning: Laying the Groundwork
12:30 p.m. to 1:30 p.m.	Grand Ballroom	Luncheon Speaker
1:45 p.m. to 3:15 p.m.	Windows	Resilience Starts at Home: How to Build on What You Are Already Doing and Fill Any Gaps <i>(Invite Only)</i>
1:45 p.m. to 3:15 p.m.	Silver	Capability Maturity Self-Assessment Tools/ Education and Training Needs
1:45 p.m. to 3:15 p.m.	Tower Court D	Incorporating Resilience into Asset Management
1:45 p.m. to 3:15 p.m.	Tower Court A	Incorporating Resilience into Project Development: Risk-based Design
3:15 p.m. to 3:45 p.m.	South Convention Lobby	Networking Break

Schedule-at-a-Glance

Time	Room	Session
3:45 p.m. to 4:30 p.m.	Grand Ballroom	Plenary Session: Collaboration is the Key to Successful Resilience Efforts
4:45 p.m. to 6:15 p.m.	Windows	Making the Case for Resilience: How Do We Get What We Need? <i>(Invite Only)</i>
4:45 p.m. to 6:15 p.m.	Silver	All-Hazards and Operations Approach to Disruptions
4:45 p.m. to 6:15 p.m.	Tower Court D	Interdependent Infrastructures
4:45 p.m. to 6:15 p.m.	Tower Court A	Multi-sector Partnerships
6:30 p.m. to 8:30 p.m.	South Convention Lobby	Welcome Reception and Poster Session
Wednesday, October 10 - RISE Summit Day 2		
7:30 a.m. to 8:30 a.m.	South Convention Lobby	Networking Breakfast
8:30 a.m. to 10:00 a.m.	Windows	Make it Last: Incorporating and Sustaining Resilience in Agency Functions and Operations <i>(Invite Only)</i>
8:30 a.m. to 10:00 a.m.	Silver	Workshop on Community Resilience Approaches and Considerations
8:30 a.m. to 10:00 a.m.	Tower Court D	Application of Technology to Enhance Asset (Tunnel) Resilience
8:30 a.m. to 10:00 a.m.	Tower Court A	Fostering Researcher/Practitioner Partnerships
10:00 a.m. to 10:30 a.m.	South Convention Lobby	Networking Break
10:30 a.m. to 11:00 a.m.	Grand Ballroom	Plenary Session: Resiliency as a Key Concern for Agency/Firm Decisions
11:15 a.m. to 12:30 p.m.	Windows	Incorporating Resilience into Decision-making <i>(Invite Only)</i>
11:15 a.m. to 12:30 p.m.	Silver	Social and Economic Considerations and the Value of Transportation in Risk Determination
11:15 a.m. to 12:30 p.m.	Tower Court D	How to Define Benefits of Resilience Actions
11:15 a.m. to 12:30 p.m.	Tower Court A	Disruptions due to Man-made and Natural Causes: Lessons Learned from National Efforts
12:30 p.m. to 1:30 p.m.	Grand Ballroom	Networking Lunch

Time	Room	Session
1:30 p.m. to 3:15 p.m.	Windows	Developing an Action Plan and Implementation Strategy (<i>Invite Only</i>)
		New Resilience Resources Available to State DOTs: CEO Primer (<i>Invite Only</i>)
1:30 p.m. to 3:15 p.m.	Silver	Benefit Cost Assessments for Infrastructure Resilience: Tools and Approaches
1:30 p.m. to 3:15 p.m.	Tower Court D	Communications and Outreach Strategies
1:30 p.m. to 3:15 p.m.	Tower Court A	Securing the Supply Chain/Freight Flows
3:15 p.m. to 3:30 p.m.	South Convention Lobby	Networking Break
3:30 p.m. to 4:30 p.m.	Grand Ballroom	Final Panel with Lessons Learned
Thursday, October 11		
8:00 a.m. to 2:00 p.m.	Tower Court A	International Tunnel Information Exchange Meeting Please RSVP to Jeff Western if you will be attending this meeting - jeffrey.western@consultingwestern.com
7:30 a.m. to 9:30 a.m.	Tower Court B	AASHTO Committee on Transportation System Security and Resilience (<i>Closed Meeting by Invite Only</i>)
9:30 a.m. to 12:30 p.m.	Tower Court B	Joint meeting of NCHRP 20-59, NCHRP 20-117, NCHRP 20-59(55), NCHRP 20-59(54), NCHRP 20-59(56); RISE Planning Committee (<i>Closed Meeting by Invite Only</i>)



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<p>3:00 p.m. to 4:30 p.m.</p> <p>Room: WINDOWS</p>	<p>TSA Vehicle Ramming Workshop - Sign-up Required</p> <p>TSA will provide a briefing on the current threat landscape to include vehicle ramming, indicators of suspicious behaviors and actions, and discuss countermeasures to prevent, protect, and mitigate a potential vehicle ramming attack. Facilitated discussion of state DOT roles and responsibilities during an event to prepare for and mitigate a vehicle ramming attack and other potential threats will also be explored. The purpose of the workshop will be to raise the level of awareness of potential threats and provide tools and resources to be utilized by state DOTs to enhance security preparedness and overall resiliency to man-made disasters.</p>
<p>3:00 p.m. to 7:30 p.m.</p> <p>BUS TOUR (box dinners to be provided)</p>	<p>Eisenhower/Johnson Tunnels’ Fire Suppression System Field Trip Advanced Registration Required, Bus Will Meet At Front of Hotel</p> <p>Join us for a half-day tour to the Eisenhower/Johnson Tunnels (EJMT) to see the recently added fire suppression system. EJMT are a twin-bore tunnel complex carrying Interstate 70 underneath the continental divide. I-70 is a critical east-west connection for the national transportation network. Joining us on the field trip will be tunnel fire suppression experts from Sydney, Australia, who will discuss during the trip some state-of-the-art fire suppression technologies that have been implemented in Sydney tunnels.</p> <p>The EJMT facility is 9,000 feet long and at an elevation of 11,000 feet. The first bore was completed in 1973, the second in 1979, using traditional drill and blast construction. A deluge fire suppression system was added to the tunnels in 2015. The system is completely self-contained, pulling water from Straight Creek on the west side of the tunnel. It was designed to function in the Alpine climate that exists at the tunnel, and protect both the traveling public and the facility from fires that occur within the tunnel about once per year on average.</p> <p>Refreshments and box dinners will be provided on this coach bus tour to see this impressive facility. Please be aware of the effects of high altitude if your health is sensitive to such elevation.</p>

Committee Meetings – Monday, October 8

Unless otherwise indicated, Summit participants are welcome to attend committee meetings.

9:00 a.m. to noon Room: TOWER COURT D	NCHRP Project Panel 20-59(30A) Train-the-Trainer Regional Workshops for Incident Command System (ICS) Training for Field Level Transportation Supervisors and Staff (Closed Meeting by Invite Only)
1:00 p.m. to 2:45 p.m. Room: TOWER COURT A	ABR10–Critical Transportation Infrastructure Protection Committee This committee considers issues relating to threats posed by potential physical, chemical, biological, and cyber-attacks on critical transportation infrastructure in the United States. It will develop activities and provide a forum for discussion among the academic community, the private sector, and appropriate government agencies regarding transportation infrastructure assurance. The Committee will also be in a position to support outreach efforts of the USDOT and other federal agencies to the owners and operators of the nation's transportation system from states and municipalities to trucking companies, airlines, barge operators, ocean shipping companies, railroads, mass transit, port and airport authorities, pipelines, and shippers. Attention will be given to a full range of security issues including risk assessment, prevention, technology, procedures and applications, emergency preparedness and response, as well as the integration of security considerations in the planning and operation of the nation's transportation systems. Website: http://sites.google.com/site/trbcommitteeabe40



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Committee Meetings – Monday, October 8

1:00 p.m. to 2:45 p.m.	ABR20–Logistics of Disaster Response and Business Continuity Committee
Room: TOWER COURT B	<p>The purpose of this committee is to consider issues related to the processes for managing and executing transportation and logistical efforts associated with response to and recovery from disasters. Areas of specific attention include operations management, analytical methods, research techniques, decision processes, and knowledge concepts to achieve highest levels of efficiency and preparedness to plan for, respond to and recover from catastrophic events. This committee serves as a forum to initiate, facilitate and advance discussion, feedback and exchange among the parties involved in various aspects of disaster relief, supply chain resiliency, and humanitarian aid logistics—from academia, industry, government, military, research, NGOs, and U.S. and international relief agencies. This forum is intended to share practices, provide a setting for gap analysis, identify new research needs, and advance research in resilience as a key pre-emptive strategy to disaster response and business continuity.</p> <p>Website: https://sites.google.com/view/abr20</p>



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Committee Meetings – Monday, October 8

<p>1:00 p.m. to 2:45 p.m.</p> <p>Room: TOWER COURT C</p>	<p>ABR30–Emergency Evacuations Committee</p> <p>This Committee is concerned with preparedness for, and operational issues of, emergency evacuations associated with any natural or human made hazards. Evacuations with notice, little, or no notice, as well as building, urban and regional evacuation are included. It seeks to identify research needs, encourage and facilitate individual and joint research efforts, and disseminate research findings aimed at enhancing the effectiveness and efficiency of operations and increasing safety and survivability of those involved in emergency evacuation. The Committee acts as a resource to governmental and nongovernmental organizations concerned with evacuation planning and operations.</p> <p>Website: https://sites.google.com/site/trbabr30evacuations/</p>
<p>1:00 p.m. to 2:45 p.m.</p> <p>Room: TOWER COURT D</p>	<p>A0020T–Climate Change and Energy Special Task Force</p> <p>This Task Force coordinates activities and products addressing climate change with a focus on mitigation and adaptation activities in supporting a resilient transportation system. The goal is to enhance the resilience of the nation's transportation infrastructure, outlining and facilitating a roadmap for addressing critical climate change mitigation and adaptation issues that affect all modes of transportation through policy and technology innovation, and developing guidance on our current transportation infrastructure and use. This includes: 1) soliciting and vetting research needs, 2) disseminating information to the transportation community, 3) seeking research funding, and 4) helping to incorporate research findings into practice.</p> <p>Website: http://www.trb.org/Main/SpecialtyPageClimateChange.aspx</p>
<p>4:30 p.m. to 5:00 p.m.</p> <p>Room: TOWER COURT D</p>	<p>ABR00–Transportation Systems Resilience Section (Closed Meeting by Invite Only)</p> <p>The Transportation Systems Resilience Section is part of the Policy and Organization Group. It consists of 3 committees and a task force that promote discussion among principals, disseminate research findings, and identify priority research topics in the area of transportation systems and services before, during and after periods of increased stress, service disruptions, and human need. The chairs of each of these committees are members of the Transportation Systems Resilience Section Executive Board, who along with the Section chair, provide general oversight of the activities within the Section.</p>

Summit Day 1 – Tuesday, October 9

7:00 a.m. to 8:00 a.m.	Breakfast
8:00 a.m. to 9:00 a.m. BALLROOM	Opening Plenary: Opening Session, Grand Ballroom <ul style="list-style-type: none">• Laurel Radow, co-chair, RISE Summit Planning Committee• Neil Pederson, Executive Director, Transportation Research Board• Sarah Ellis Peed, Senior Counselor, National Risk Management Center, Department of Homeland Security• Bud Wright, Executive Director, AASHTO• Keynote Address: Brandye Hendrickson, Acting Administrator, Federal Highway Administration (FHWA)• Dana Hendrix, Caltrans, co-chair, RISE Summit Planning Committee
9:15 a.m. to 10:30 a.m. Room: WINDOWS	State DOT Leadership Track (<i>Invite Only</i>) How Resilience Can Help You Sleep Better at Night Moderator: Paula Hammond, WSP Inc. (former Secretary, Washington State (DOT)) <p>What is Resilience (and a Resilience Culture)?</p> <p><i>Areas of state DOT functions where resilience can be considered;</i> <i>Different perspectives on steps in considering resilience.</i></p> <p>FHWA Perspective on Resilience and Resources, John Cater, Division Administrator, Colorado, FHWA; and Robert Kafalenos, FHWA, HQ</p> <ul style="list-style-type: none">• Resilience tie-in to agency mission• Benefits to you, your community and the economy• Cross-cutting, “silo busting” aspects of resilience• Resilience resources
9:15 a.m. to 10:30 a.m. Room: SILVER	Approaches to Cybersecurity and Man-made Disruptions: Part A Moderators: Doug Couto, Center for Digital Government and Michael Dinning, Volpe Center, retired <ul style="list-style-type: none">• Welcome and Overview of Agenda, Doug Couto, Senior Fellow, Center for Digital Government• State DOT Issues and Challenges, Ryan Rice, Director, Transportation Systems Management & Operations, Colorado DOT and Rick Tiene, Vice President, Mission Secure, Inc.• Reducing the Risk Through Collaboration with ITE, AASHTO, and ITSA, Jeff Lindley, ITE• TRB Research and Activities, Mike Dinning, Volpe Center, retired• Smart Cities and Cybersecurity – Ken Carter, Parsons Corp.• Challenges and Risks – A Facilitated Discussion with Transportation Organizations Attending Session – Doug Couto, Senior Fellow, Center for Digital Government

<p>9:15 a.m. to 10:30 a.m.</p> <p>Room: TOWER COURT D</p>	<p>Frameworks for Resilience Strategies: Part A</p> <p>Moderator: Rebecca Lupes, FHWA</p> <p><i>National, state and community-level resilience frameworks; Role of technologies in enhancing resilience</i></p> <ul style="list-style-type: none"> • FHWA's Resilience Framework: Highlights from State and MPO Pilots, Rebecca Lupes, FHWA • ARC's Resiliency Framework, David D'Onofrio, Atlanta Regional Commission (ARC) • Climate Safe Infrastructure in Communities, Cris Liban, LA Metro
<p>9:15 a.m. to 10:30 a.m.</p> <p>Room: TOWER COURT A</p>	<p>TRB Executive Committee Resilience and Sustainability Task Force: Challenges, Recommendations, and the Way Forward</p> <p>Moderator: Vicki Arroyo, Georgetown Climate Center</p> <p>TRB formed a Resilience and Sustainability Task Force to provide recommendations to the Executive Committee on how TRB could more strategically align and direct its research and engagement efforts relating to resilience and sustainability. The Task Force identified four Working Groups to develop its recommendations, including: (1) The nexus of resilience and sustainability, (2) Multimodal and crossmodal issues, (3) Cost and financing issues, and (4) Community resilience. This session will feature the Chairs of all four Working Groups and will provide an overview of the recommendations and engage the audience in a dialogue focused on implementation and the way forward.</p> <ul style="list-style-type: none"> • Steven Cliff, California Air Resources Board (CARB) • Josh DeFlorio, Port Authority of NY & NJ • Susanne DesRoches, City of New York
<p>10:30 a.m. to 11:00 a.m.</p>	<p>Networking Break</p>
<p>11:00 a.m. to 12:30 p.m.</p> <p>Room: WINDOWS</p>	<p>State DOT Leadership Track <i>(Invite Only)</i></p> <p>How to Become Resilient (in State DOTs)</p> <p>Moderator: Paula Hammond, WSP Inc.</p> <ul style="list-style-type: none"> • Oregon DOT (seismic): Matthew Garrett, Director • Maryland DOT (cyber): Pete K. Rahn, Secretary • Alaska Department of Transportation and Public Facilities: (Climate): Marc Luiken, Commissioner

Summit Day 1 – Tuesday, October 9

11:00 a.m. to 12:30 p.m. Room: SILVER	Approaches to Cybersecurity and Man-made Disruptions: Part B Moderator: Dave Weitzel, National Cybersecurity Center of Excellence <ul style="list-style-type: none">• Workshop: Cybersecurity Framework Profile – Securing the Future, Melissa Wong, Innovation Research Program Office, Volpe, The National Transportation Systems Center, US DOT• Getting the Most from the NIST in Transportation Deployments, Dave Weitzel, National Cybersecurity Center of Excellence• Application of the NIST Framework to the Connected Vehicle Pilots – What We’re Learning for Deployment, Dave Weitzel• What’s Next? - Doug Couto, Center for Digital Government and Mike Dinning, Volpe Center, retired
11:00 a.m. to 12:30 p.m. Room: TOWER COURT D	Frameworks for Resilience Strategies: Part B, Dutch Experience with Resilience Moderator: Robert Kafalenos, FHWA <p><i>Risk assessments and stress tests; Lessons learned during implementing projects in the Netherlands and other parts of the world; Developing action plans for an uncertain future.</i></p> <ul style="list-style-type: none">• The Dutch Approach: Policy, Implementation, Challenges, Examples, Kees van Muiswinkel, Ministry of Infrastructure and Water Management, The Netherlands• Stress Testing the Dutch National Highway system for Climate and Extreme Weather Effects, Thomas Bles, Deltares, the Netherlands.• Applying Risk Assessment Methods in The Netherlands, Paraguay and Albania, Mike Woning, Deltares, The Netherlands.• FHWA-Rijkswaterstaat Cooperation on Resilient Transportation, Robert Kafalenos, FHWA
11:00 a.m. to 12:30 p.m. Room: TOWER COURT A	Considering Resilience in Transportation Planning: Laying the Groundwork Moderator: Heather Holsinger, FHWA <p><i>State, regional and community planning for resilience; Examples; Policy and process</i></p> <ul style="list-style-type: none">• Allison G. Yeh, Hillsborough MPO• Tracey Frost, California Department of Transportation (Caltrans)• Johnny Olson, Colorado DOT

<p>12:30 p.m. to 1:30 p.m.</p> <p>Room: BALLROOM</p>	<p>Introduction: Neil Pedersen, Executive Director, TRB</p> <p>Luncheon Speaker: “State DOT Example of Incorporating Risk Consideration into DOT Decision Making”: Michael Lewis, Executive Director, Colorado DOT</p> <p><i>Lunch provided</i></p>
<p>1:45 p.m. to 3:15 p.m.</p> <p>Room: WINDOWS</p>	<p>State DOT Leadership Track (Invite Only)</p> <p>Resilience Starts at Home: How to Build on What You Are Already Doing and Fill Any Gaps</p> <ul style="list-style-type: none"> • Sharing of current practices and identification of gaps in resilience assessment – planning, design, operations, maintenance, asset management, and emergency response • Touch on all resilience-related aspects including interactions with external stakeholders and discuss communications activities and approaches • Share examples of proactive O&M practices like sealants, clearing culverts and trimming trees, regional coordination and co-benefits, as well as capital strategies • Share examples on working with legislators, governor’s office, business community, press, public and other stakeholders
<p>1:45 p.m. to 3:15 p.m.</p> <p>Room: SILVER</p>	<p>Capability Maturity Self-Assessment Tools/ Education and Training Needs</p> <p>Moderator: Laurel Radow</p> <p>Topics covered in this session include a recently completed FHWA National Highway System resiliency study, an organization-focused capability maturity framework (CMF) that focuses on recommended organizational change strategies leading to enhanced transportation resilience, and issue-focused CMF tools on road weather, planned special events, traffic signal systems, traffic management, work zone management, and traffic incident management. Session will include a hands-on activity to showcase the use of these tools. Attendees will leave with an action list they can use to organize a discussion/ workshop upon their return home on how to employ either a macro or micro capability maturity framework to improve their agency’s resiliency.</p> <ul style="list-style-type: none"> • Ben Hawkinson, FHWA, Office of Policy • Michael D. Meyer, WSP Inc. • Paul Pisano, FHWA, Office of Operations

Summit Day 1 – Tuesday, October 9

1:45 p.m. to 3:15 p.m.	Incorporating Resilience into Asset Management Moderator: Robert Kafalenos, FHWA <i>Risk-based asset management programs and plans; Risk-based investment decision making</i> <ul style="list-style-type: none"> • Robert Kafalenos, FHWA • Steven Olmsted, Arizona DOT • Elkins Green, New Jersey DOT • Ty Ortiz, Colorado DOT • William Johnson, Colorado DOT Interactive activity using risk-based asset management checklist
Room: TOWER COURT D	
1:45 p.m. to 3:15 p.m.	Incorporating Resilience into Project Development: Risk-based Design Moderator: Josh DeFlorio, Port Authority of NY & NJ <i>Resilient design criteria; Risk-based design approaches (FHWA); Examples on how resilience is incorporated into project designs; Criteria and code considerations for infrastructure</i> <ul style="list-style-type: none"> • Sarah Hammitt, Port Authority of NY & NJ • Susanne DesRoches, City of New York • Heather Paddock, Colorado DOT • Brian Beucler, FHWA and Roger Kilgore, Kilgore Consulting & Management
Room: TOWER COURT A	
3:15 p.m. to 3:45 p.m.	Networking Break
3:45 p.m. to 4:30 p.m.	Introduction: Nick Ivanoff, Louis Berger Plenary: “Collaboration is the Key to Successful Resiliency Efforts,” James F. Murley, Chief Resiliency Officer, Miami-Dade County, FL; and C. Forbes Tompkin, Officer, The Pew Charitable Trusts.
Room: BALLROOM	



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4:45 p.m. to
6:15 p.m.

Room:
WINDOWS

State DOT Leadership Track *(Invite Only)*

Making the Case for Resilience: How Do We Get What We Need?

Moderator: Joan McDonald, former NYSDOT Commissioner

- How to express the overall community social and economic benefits to different audiences
- Working with legislators, governor's office, business community, press, public and other stakeholders
- Importance of linking to agency decision-making; Agency benefits
- Financial and program development interests; Approaches to benefit cost analyses; Identifying cost effective actions and strategies-project options

Panel Members:

- John Schroer, Tennessee DOT
- Malcolm Dougherty, former Director, Caltrans
- Sherry Labas, former Secretary, Louisiana DOTD
- Sue Minter, former Secretary, Vermont DOT

4:45 p.m. to
6:15 p.m.

Room:
SILVER

All-Hazards and Operations Approach to Disruptions

Moderator: Jeff Western, Western Management and Consulting

Examples of multiagency partnerships in dealing with all hazards. In this discussion-based exercise, attendees will explore options to a jurisdiction's Emergency Operation Plan via partnerships among public agencies. This session will focus on the roles for managing and supporting the allocation of emergency supplies and services during a disruption to the transportation system. The types of considerations will include agency and disaster protocols, terminology, contracting agreements, coordination with private sector resources and partnerships, and more.

Panel:

- Jason Carnes, FHWA
- John Himmel, Washington State DOT
- Cory Stark, Colorado Division of Homeland Security and Emergency Management
- Maria Garcia, FEMA
- Barton Newton, WSP Inc, formerly CA State Bridge Engineer (retired)
- Dan Goodrich, Mineta Transportation Institute

Exercise examples will be on bridge failures; 1) A small local bridge - local impacts. 2) An Interstate bridge - local and state impacts. 3) A major high traffic interstate bridge - multistate and international impacts.

Summit Day 1 – Tuesday, October 9

4:45 p.m. to 6:15 p.m.	<p>Interdependent Infrastructures (e.g., electrical grid and transportation)</p> <p>Moderator: Thomas A. Wall, Argonne National Laboratory</p> <p>This session will combine brief panelist presentations with audience-based discussion to explore essential questions about interdependent infrastructure systems: What are interdependencies and cascading impacts, and what conceptual frameworks and tools are available to evaluate them systematically? What real world examples illustrate the benefits of evaluating infrastructure interdependencies? How do cyber-systems influence physical infrastructure interdependencies? This session will address these questions through a practical discussion for transportation and other critical infrastructures</p> <ul style="list-style-type: none">• Frederic Petit, Argonne National Laboratory• Nick Martin, RiskLogik• Robert Bosco, HDR, Inc.• Claire Bonham-Carter, AECOM
4:45 p.m. to 6:15 p.m.	<p>Multi-sector Partnerships</p> <p>Moderator: Dana Hendrix, Caltrans</p> <p><i>Roundtable discussion on creating collaborative partnerships for multi-hazard environments.</i></p> <p>Come meet representatives of regional and state public-private collaboration networks whose missions are to advance community and regional security and resilience of all sectors. In a roundtable discussion, attendees will address common issues and learn how a collaborative network that is available back home would work to reduce risk and increase preparedness.</p> <ul style="list-style-type: none">• Anne Strauss-Wieder, Director, Freight Planning, North Jersey Transportation Planning Association• Rob Pressly, Resiliency Program Manager, Colorado DOT• Tracey Frost, Chief, Office of Smart Mobility and Climate Change, Caltrans
6:30 p.m. to 8:30 p.m.	<p>Welcome Reception and Poster Session</p>

7:30 a.m. to 8:30 a.m.	Breakfast
8:30 a.m. to 10:00 a.m.	State DOT Leadership Track <i>(Invite Only)</i> Make it Last: Incorporating and Sustaining Resilience in Agency Functions and Operations Moderator: Michael D. Meyer, WSP Inc. <i>How to implement resilience in your agency and how to sustain or institutionalize it so it continues beyond CEO tenure; Examples of how to incorporate resilience into your agency and collaboration with others in making them happen;</i> <ul style="list-style-type: none">• Institutionalizing resilience such as incorporating resilience practices into SOPs for long-term• Planning: Vulnerability and risk analyses (identify likely hazards and threats)• Projects: Resilient design criteria and risk-based design• Operations: Flexibility in system operations and emergency response• Maintenance: Preventing future problems• Joyce Coffee, Climate Resilience Consulting, Inc., “Broadening the Consideration of Resilience to Community Concerns”
Room: WINDOWS	

Summit Day 2 – Wednesday, October 10

8:30 a.m. to
10:00 a.m.

Room:
SILVER

Workshop on Community Resilience Approaches and Considerations

Moderator: Nicole Boothman-Shepard, AECOM

*Community resilience approaches; Metro and city examples;
Partnership examples*

This interactive, community resilience session will be divided into two components: The first engages participants in a community-centric tabletop exercise to map the critical interplay between community assets/lifeline infrastructure and a community's habitability immediately following disaster. The exercise is modeled around a flood scenario for Denver. The second component will showcase case studies from around the US that are leveraging co-benefits in recovery to enhance multi-modal mobility and reliability along with opportunities to improve quality of life, catalyze economic growth, and promote environmental sustainability.

The intended outcomes are to raise awareness about the intersection of mission-critical infrastructure and assets with community needs and habitability immediately after disaster, and leveraging co-benefits, including multi-modal mobility and reliability, as part of a broader mix of community improvements following a major disaster.

Introduction/Exercise Intended Outcomes/Scenario + Session Logistics

Table Welcome Case Study, Brief on Shock Impacts + Critical Challenges Facing the Sector

Part A: Impact Assessment

The discussion will identify impacts of the event in the group's area of focus, including transportation dependencies, that inform community habitability.

Part B: Response + Recovery Strategies

Now that the challenge is understood, participants will identify solutions for response and recovery and highlight where/how transportation matters.

Gallery Walk + Session Outcomes + "Bringing it Home"

In the second half of the session, participants will walk around to see and contribute to ideas presented by each sector.

8:30 a.m. to
10:00 a.m.

Room:
TOWER
COURT D

Application of Technology to Enhance Asset (Tunnel) Resilience

Moderators: Steve Ernst, SME and Bill Bergeson, FHWA

Through its Global Benchmarking Program, the Federal Highway Administration (FHWA) examined fixed firefighting systems in New Zealand and Australia. This session is an opportunity to learn about the study findings and how these world leaders in tunnel operations tackle tunnel design, construction, operation and maintenance to keep their highway systems robust and resilient.

Expect to hear about tunnel operator certification, the concept of alliance contracting and how to integrate design, safety and operations. See how fixed firefighting systems have become integral to safety in New Zealand and Australia, including exciting examples of real tunnel fires and effective response. U.S. examples of operation and design will also be examined and participants will have an opportunity to meet and interact with panelists from the U.S., Australia, and New Zealand.

- Steve Ernst, SME - What makes a tunnel resilient?
- Conrad Stacey, Stacey Agnew, Australia - Fire Engineering is About Protecting Life
- Steve Harelson, Colorado DOT - Briefing on Eisenhower Tunnel
- Bob Allen, Sydney Harbor Tunnel, Australia - The Importance of Life Safety in Tunnel Operations – Australian Experience
- Barry Wright, New Zealand Transportation Agency - Resilient Tunnel Design and Operations in New Zealand
- Dan Williams, Maryland Transportation Authority - Addressing the Hurdles of Adding Fixed Firefighting Systems to Existing Tunnels
- Bill Bergeson, FHWA - Tunnel Panel Discussion

8:30 a.m. to
10:00 a.m.

Room:
TOWER
COURT A

Fostering Researcher/Practitioner Partnerships

Moderator: Mark Abkowitz, Vanderbilt University

Roundtable discussion on how to enable effective practice-research collaboration

- Steve Olmsted, Arizona DOT
- Sue McNeil, University of Delaware
- Elizabeth Habic, Maryland Department of Transportation State Highway Administration
- Stephan Parker, Transportation Research Board

Summit Day 2 – Wednesday, October 10

10:00 a.m. to 10:30 a.m.	Networking Break
10:30 a.m. to 11:00 a.m.	Introduction: John Contestabile, Applied Physics Laboratory, John Hopkins University Plenary: “Resiliency as a Key Concern for Agency/Firm Decisions,” Brooks Nelson, Director for Global Resilience, U.S. Chamber of Commerce Foundation and Hyun-A Park, President, Spy Pond Partners, LLC
11:15 a.m. to 12:30 p.m. Room: WINDOWS	State DOT Leadership Track (<i>Invite Only</i>) Incorporating Resilience into Decision-making: Asset Management <i>How to incorporate resilience into risk-based asset management along with risk-based investment decision making and performance metrics</i> <ul style="list-style-type: none">• Carlos Braceras, Utah DOT• Debra Perkins-Smith, Colorado DOT
11:15 a.m. to 12:30 p.m. Room: SILVER	Social and Economic Considerations and the Value of Transportation in Risk Determination Moderator: Christine Baglin, Project Performance Company, LLC <i>Community factors; Social considerations; Interactive session on societal concerns for resilience planning</i> <ul style="list-style-type: none">• Adam Whelchel, The Nature Conservancy• Cassie Bhat, ICF• Ed Fritz, Wyoming DOT
11:15 a.m. to 12:30 p.m. Room: TOWER COURT D	How to Define Benefits of Resilience Actions Moderator: Kevan Stone, National Association of County Engineers <i>Benefit and cost factors; Total benefits and costs perspectives</i> <p>The opportunity to build resilience in our transportation systems requires more conversation across government silos – what are our mutual roles and responsibilities, how we advance the resilience of our communities across geographic boundaries, and why this is important.</p> <ul style="list-style-type: none">• Dr. James H. Lambert, University of Virginia• Josh Laipply, Colorado DOT• Marianne Jang, 100 Resilient Cities

Summit Day 2 – Wednesday, October 10

<p>11:15 a.m. to 12:30 p.m.</p> <p>Room: TOWER COURT A</p>	<p>Disruptions due to Man-made and Natural Causes: Lessons Learned from National Efforts</p> <p>Moderators: Jeff A. Lindley, ITE and Steven Miller, Massachusetts DOT</p> <p>This session will examine the lessons learned from national efforts to enhance resilience in the transportation sector.</p> <ul style="list-style-type: none"> • Art Guzzetti, American Public Transportation Association • Barton Newton, WSP, “Years of Experience in Resilient Bridges” • John W. Van de Lindt, Ph.D., F. ASCE, Colorado State University; American Society of Civil Engineers: “Operationalizing Infrastructure Resilience” • Mark Sieber, German Highway Research Institute
<p>12:30 p.m. to 1:30 p.m.</p> <p>Room: BALLROOM</p>	<p>Networking Lunch</p> <p><i>Lunch Provided</i></p>
<p>1:30 p.m. to 2:45 p.m.</p> <p>Room: WINDOWS</p>	<p>State DOT Leadership Track (Invite Only)</p> <p>Developing an Action Plan and Implementation Strategy</p> <p><i>Small group discussions among states on what steps each can (and will) take to enhance resilience culture in their agencies; Identifying early wins; How to get ahead of the curve in media relations on resilience</i></p>
<p>2:45 p.m. to 3:15 p.m.</p> <p>Room: WINDOWS</p>	<p>State DOT Leadership Track (Invite Only)</p> <p>New Resilience Resources Available to State DOTs: CEO Primer, NCHRP 20-117, Research Roadmaps</p> <p><i>Plenary presentation from research project representatives</i></p>
<p>1:30 p.m. to 3:15 p.m.</p> <p>Room: SILVER</p>	<p>Benefit Cost Assessments for Infrastructure Resilience: Tools and Approaches</p> <p>Moderator: David Butry, NIST</p> <p><i>Different approaches to benefit cost analyses; Transportation examples</i></p> <ul style="list-style-type: none"> • Laurel McGinley, Dewberry, “Tool for Transportation Resilience” • “NIST EDGE’s Tool”: Jennifer Helgeson <p><i>Panel:</i></p> <ul style="list-style-type: none"> • Judy Gates, Maine DOT • Sam Merrill, GEI Consultants • Lizzie Kemp Herrera, Colorado, DOT • Silvana Croope, Delaware DOT

Summit Day 2 – Wednesday, October 10

<p>1:30 p.m. to 3:15 p.m.</p> <p>Room: TOWER COURT D</p>	<p>Communications and Outreach Strategies</p> <p>Moderator: Melissa Savage, AASHTO</p> <p><i>Examples of successful communications strategies</i></p> <ul style="list-style-type: none">• Russell McMurry, Commissioner, Georgia DOT , “Immersed in Communications and Outreach in Response to a Major Disruption”• Jared Fiel, Colorado DOT, “Communicating the Unique Challenge of Transportation Resiliency and Sustainability.”• Dana Hendrix, Caltrans, “Communications Challenges for a Transportation Agency that Faces Many Types of System Disruptions.”
<p>1:30 p.m. to 3:15 p.m.</p> <p>Room: TOWER COURT A</p>	<p>Securing the Supply Chain/Freight Flows</p> <p>Moderator: Michael D. Meyer, WSP Inc.</p> <p><i>Examples of disruptions to supply chains; Examples of resilience strategies in supply chains and associated benefits</i></p> <ul style="list-style-type: none">• Tom A. Wall, Argonne National Laboratory• Anne Strauss-Wieder, North Jersey Transportation Planning Organization• Gary Tucker, Xcel Energy, Inc.• Mark Abkowitz, Vanderbilt University
<p>3:15 p.m. to 3:30 p.m.</p>	<p>Networking Break</p>
<p>3:30 p.m. to 4:30 p.m.</p> <p>Room: BALLROOM</p>	<p>Lessons Learned from the Summit: Key Messages, Research Needs and Change Strategies</p> <p>Moderator: Dana Hendrix, Caltrans</p> <ul style="list-style-type: none">• Paula Hammond, WSP Inc.• Cris Liban, LA County Metropolitan Transportation Authority• Debra Nelson, New York Metropolitan Transportation Council

**8:00 a.m. to
2:00 p.m.**

**Room:
TOWER COURT
A**

International Tunnel Information Exchange Meeting

Moderators: Steve Ernst, SME and Jeff Western, Western Management and Consulting

Please RSVP to Jeff Western if you will be attending this meeting.
jeffrey.western@consultingwestern.com

This International Tunnel Information Exchange Meeting is a follow-on to the Wednesday tunnel resilience session and an opportunity to discuss state of the art tunnel design, construction, operation and maintenance with experts from the US, New Zealand, and Australia.

There will be a few short presentations, but the meeting will provide an interactive forum to discuss topics such as tunnel fixed firefighting systems, emergency evacuation and signing, tunnel operations and operator certification, innovative contracting, construction methods, public involvement, innovative technology, and topics of interest to the audience. Current research will be discussed and future research needs identified.

These discussions will be developed into presentations for the 2019 TRB Annual Meeting in January, so please join us to help develop topics and information to advance 21st century tunnel technology.

- Conrad Stacey, Stacey Agnew, Australia
- Steve Harelson, Colorado DOT
- Bob Allen, Sydney Harbor Tunnel , Australia
- Barry Wright, New Zealand Transportation Agency
- Dan Williams, Maryland Transportation Authority
- Gary English, Underground Command and Safety
- Spencer Quiel, Lehigh University
- Shiling Pei, Colorado School of Mines
- Joseph Rigney, Massachusetts DOT
- Bobby Melvin, WSP
- Bill Bergeson, FHWA

Committee Meetings – Thursday, October 11

7:30 a.m. to 9:30 a.m. Room: TOWER COURT B	AASHTO Committee on Transportation System Security and Resilience (TSSR) (Closed Meeting by Invite Only) Purpose is to discuss impressions, etc. collected from the RISE Summit and identify action items for the Committee moving forward. Meeting will also include Committee business.
9:30 a.m. to 12:30 p.m. Room: TOWER COURT B	Joint meeting of NCHRP 20-59, NCHRP 20-117, NCHRP 20-59(55), NCHRP 20-59(54), NCHRP 20-59(56); RISE Planning Committee (Closed Meeting by Invite Only) Project panels meeting.

Professional Development Hours



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Transportation Research Board

Professional Development Hours Credit Statement for Registrant Records

Many licensure and certification agencies require the demonstration of continuing professional competency. Your attendance at this Summit and meetings entitles you to earn Professional Development Hour (PDH) units. This form is for your use in maintaining a record of the PDH units you have earned. Complete this form and retain it. **Please do not return it to TRB.** We recommend that you save the entire Summit Program for your records should the licensure or certification agency request information from you. Reporting is done on an honor basis, and members are responsible for maintaining their own records.

The table below shows the professional development hours (PDH) that can be earned for the continuing education activities included in the Transportation Research Board technical sessions and workshops at the 2018 Transportation Resilience Innovations Summit and Exchange; Denver, CO, October 8-10, 2018.

Dr. Ann M. Brach
Director, Technical Activities

Units Awarded	Units Available	Check Session Attended	Conference Sessions
	1.5		TSA Vehicle Ramming Workshop
	2.5		Eisenhower/Johnson Tunnels Fire Suppression System Field Trip
	0.5		TRB Executive Committee Resilience and Sustainability Task Force: Challenges, Recommendations, and the Way Forward
			Overall Frameworks for Resilience Strategies: Part A
			Approaches to Cybersecurity and Man-made Disruptions: Part A
			How Resilience Can Help You Sleep Better at Night
	0.5		Considering Resilience in Transportation Planning: Laying the Groundwork
			Frameworks for Resilience Strategies: Part B, Dutch Experience with Resilience
			Approaches to Cybersecurity and Man-made Disruptions: Part B
			How to Become Resilient (in State DOTs)

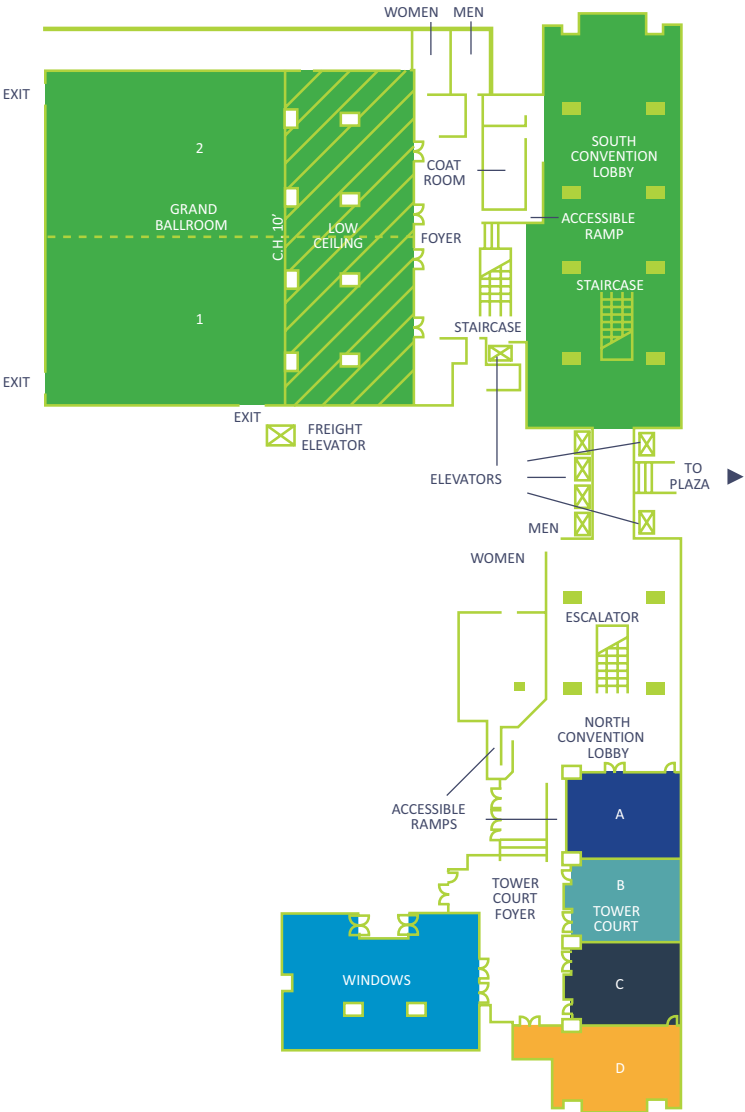
Professional Development Hours

Units Awarded	Units Available	Check Session Attended	Conference Sessions
	0.5		How to Incorporate Resilience into Project Development: Risk-based Design
			Capability Maturity Self-Assessment Tools/ Education and Training Needs
			How to Incorporate Resilience into Asset Management
			Resilience Starts at Home: How to Build on What You Are Already Doing and Fill Any Gaps
	0.5		Interdependent Infrastructures
			Multi-sector Partnerships
			All-Hazards and Operations Approach to Disruptions
			Making the Case for Resilience: How Do We Get What We Need?
	0.5		Workshop on Community Resilience Approaches and Considerations
			Application of Technology to Enhance Asset Resilience
			Fostering Researcher/Practitioner Partnerships
			Make it Last: Incorporating and Sustaining Resilience in Agency Functions and Operations
	0.5		How to Define Benefits of Resilience Actions
			Social and Economic Considerations and the Value of Transportation in Risk Determination
			Disruptions due to Man-made and Natural Causes: Lessons Learned from National Efforts
			Incorporating Resilience into Decision-making
	0.5		Benefit Cost Assessments for Infrastructure Resilience: Tools and Approaches
			Communications and Outreach Strategies
			Securing the Supply Chain/Freight Flows

Signature: _____

Date: _____

Tower Building Second Level



Tower Building Mezzanine Level

