IRF
GLOBAL
Building Climate-Resilient Highways & Rural Roads
Washington, D.C., USA
October 19-25, 2024
Workshop

Building Climate-Resilient Highways & Rural Roads

Pavements, Climate Change, and Resilience

October 19-25, 2024

Washington DC USA

Background

This training course is designed to provide a comprehensive knowledge of the basic concepts and recent advances related to climate change and its impact on resiliency of pavement structures. Participants will learn about recent developments in pavement resilience due to the impacts of climate change stressors. They will be guided through various interactive course modules to develop skills and knowledge to understand the basic knowledge and skills to evaluate different climate change factors and how they impact the performance of pavement systems.

Throughout this course, the extreme weather events such as sea level rise, floods, hurricanes, and extreme heat, and their impacts on pavement structures will be discussed. Advances in pavement resilience evaluation with regards to design and construction of climate resilient pavements, will also be addressed through dedicated modules for each topic. A special focus will be on accessing the vulnerability of pavements, resilient pavement design strategies, monitoring performance parameters, and pavement adaptation strategies.

Learning Objectives

- ✓ Understand the basic concepts of pavement resilience
- ✓ Become familiar with different climate stressors and extreme weather events that can impact the performance of pavements
- ✓ Understand the basic concepts of pavement performance parameters and evaluation methods
- ✓ Understand the process for design of resilient pavement systems
- ✓ Learn about adaptation strategies and vulnerability assessment frameworks
- ✓ Gain practical experience in employing pavement resiliency evaluation tools
- ✓ Learn about the advances and innovations in climate resilient pavements

Target Audience

Civil Engineers and Infrastructure Planners: Professionals focused on the design and construction of road networks who need to integrate climate resilience into their projects.
Environmental Engineers: Engineers specializing in minimizing the environmental impact of infrastructure projects and ensuring that road constructions are sustainable and resilient to climate change.
Transportation Policy Makers: Government officials and policy advisors responsible for developing and implementing transportation policies that address climate change resilience.
Urban and Regional Planners: Planners involved in the development of urban and rural areas who need to ensure that infrastructure is resilient to climate impacts.
Disaster Risk Management Specialists: Experts focused on assessing and mitigating the risks associated with natural disasters, including those exacerbated by climate change.

Lead Instructor

Gordon Keller
Genesee Consulting

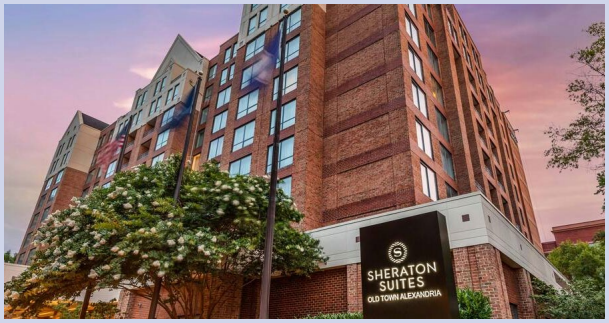
Mr. Keller is a highly experienced Geotechnical Engineer and Project/Program Manager, with an impressive career spanning several decades. He has made significant contributions to the U.S. Forest Service, where he has worked on numerous projects throughout his professional journey from 1972 until his retirement in late 2011.

Mr. Keller's educational background includes a Bachelor of Science degree in Civil Engineering from UCLA, which he earned in 1968. Following his undergraduate studies, he served as an officer in the U.S. Navy for two years before pursuing further academic achievements. In 1972, he successfully obtained a Master's degree in Geotechnical Engineering from U.C. Berkeley, solidifying his expertise in the field.

To add to his impressive qualifications, Mr. Keller holds active professional licenses as both a Civil Engineer and Geotechnical Engineer in the State of California. These credentials testify to his professional competence and dedication to maintaining high standards in his field of practice.

Registration

- **3,000 USD IRF Members / Groups of 3 or more**
- **4,000 USD Non-IRF Members**



Seminar Hotel:

Sheraton Suites Old Town Alexandria
801 North Saint Asaph Street,
Alexandria, Virginia 22314 USA
Tel: +1 703 836 4700

Website:
https://www.marriott.com/hotels/travel/wassi-sheraton-suites-old-town-alexandria/

Registration: https://www.irf.global/event/crr24-ws-dc/
For any support, please contact melabyad@irf.global

Agenda

Saturday – Friday (9:00 AM – 4:00 PM)

Day 1: Introduction to Climate Resilience in Road Infrastructure

- Morning Session:
  - Course Introduction and Objectives Overview
  - Understanding Climate Change and its Impact on Road Infrastructure
  - Principles of Climate Resilience in Highway and Rural Road Design
- Afternoon Session:
  - Case Studies: Global Examples of Climate Resilience in Road Infrastructure
  - Interactive Discussion: Challenges in Building Resilient Roads

Day 2: Climate Risk Assessment and Management

- Morning Session:
  - Climate Risk Assessment Methodologies for Road Projects
  - Identifying and Analyzing Climate Hazards for Highways and Rural Roads
- Afternoon Session:
  - Integrating Climate Risk Management into Road Planning
  - Workshop: Conducting a Mock Climate Risk Assessment

Day 3: Resilient Road Design and Construction Techniques

- Morning Session:
  - Designing Roads for Extreme Weather Conditions
  - Sustainable Materials and Technologies in Road Construction
- Afternoon Session:
  - Engineering Solutions for Enhancing Roadway Resilience
  - Group Activity: Designing a Climate-Resilient Road Segment

Day 4: Adaptation and Mitigation Strategies

- Morning Session:
  - Climate Adaptation Strategies for Highways and Rural Roads
  - Ecosystem-based Approaches to Road Design
- Afternoon Session:
  - Mitigation of Environmental Impacts in Road Construction
  - Role of Green Infrastructure in Climate Resilience

Day 5: Policy, Planning, and Community Engagement

- Morning Session:
  - Policy Frameworks Supporting Climate-Resilient Roadways
  - Integrating Climate Resilience into Transportation Planning
- Afternoon Session:
  - Community Engagement and Stakeholder Involvement
  - Collaborative Exercise: Developing a Community Engagement Plan

Day 6: Future Trends and Course Wrap-Up

- Morning Session:
  - Emerging Trends in Climate-Resilient Road Infrastructure
  - Innovations in Resilient Highway and Rural Road Design
- Afternoon Session:
  - Course Recap and Key Takeaways
  - Group Presentations: Proposing a Climate-Resilient Road Project
  - Certificate Distribution and Closing Remarks

Day 7: Field Trip

- Full Day:
  - Visit to a Site Demonstrating Climate-Resilient Road Infrastructure
  - Certificate Distribution and Closing Remarks

GLOBAL

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Better Roads. Better World.

IRF GLOBAL

International Road Federation

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