



# Building Climate Resilience Roads

Washington DC, USA  
May 8-12, 2023



## Workshop





## **Building Climate-Resilient Roads**

*Pavements, Climate Change, and Resilience*

**May 8-12, 2023**

**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.



IRF Global is now recognized as an approved training provider by the Chartered Institution of Highways and Transportation (CIHT), a respected professional body that provides transportation professionals with recognition, support and business insights to accelerate their careers and influence the future of the sector.

### **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**

- ✓ Road Authorities & Operators
- ✓ Road Design Consultants
- ✓ Road Contractors
- ✓ Maintenance Personnel
- ✓ Pavement design engineers
- ✓ Geotechnical engineers & Materials engineers

## Lead Instructor



### **Mehran Mazari, Ph.D.**

#### **Associate Professor, California State University Los Angeles**

*Dr. Mehran Mazari* is an Associate Professor in the Department of Civil Engineering at Cal State LA, specializing in Transportation Infrastructure, Pavement Materials, Sustainability and Resilience. He is the faculty director of Sikand Center for Sustainable and Intelligent Infrastructures (SITI-Center) and founder of Sustainable Infrastructure Materials Research Lab (SIM-Lab) at Cal

State LA. His research interests include sustainable and resilient transportation infrastructure, transportation infrastructure materials, and non-destructive evaluation of transportation infrastructure. He is member of technical committees at the Transportation Research Board of National Academies of Science and Engineering and co-chair of the LTPP subcommittee of the Highway Pavement Committee of the American Society of Civil Engineers (ASCE). Dr. Mazari has published more than 60 peer-reviewed journal and conference papers. He has been actively involved in several national and state research projects, including the National Highway Cooperative Research Program (NCHRP) and Federal Highway Administration (FHWA), among others.

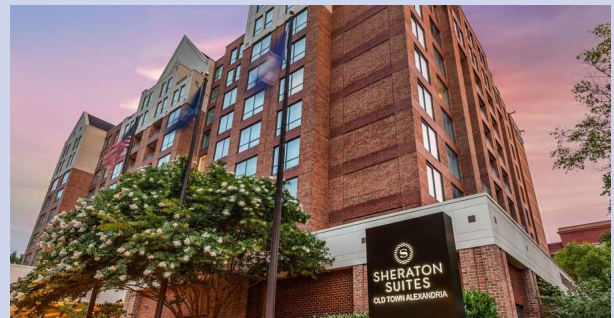
## Registration

- **2,500 USD IRF Members / Groups of 3 or more**
- **3,000 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/event-reservations/reservation-link.mi?id=1652279312690&key=CORP&app=resvlink>



**Registration:** <https://www.irf.global/event/crr23-ws-dc/>

**For any support, please contact** [melabyad@irf.global](mailto:melabyad@irf.global)

# **Agenda**

**Monday – Friday (9:00 AM – 4:00 PM)**

## **Monday**

Introduction and Overview of Pavement Resilience Concepts  
Climate Change and Impact on Pavements  
Extreme Weather Events  
Sensitivity of Pavement Performance to Climate Stressors  
Climate, Pavement Performance, Maintenance and Costs  
Climate Resilient Pavement Design Strategies

## **Tuesday**

Introduction to Pavement Vulnerability Assessment Framework  
Fundamental of Pavement Resiliency  
Objectives and Scope of Resiliency Framework  
Compiling Pavement Asset Data  
Vulnerability Assessment and Engineering-Informed Analysis  
Adaptation Scenarios and Analysis  
Agency Decision-Making and Planning for Resiliency

## **Wednesday**

Climate Change Adaptation Methodology  
Quantitative and Qualitative Assessment Methods  
Enhanced Integrated Climate Model  
Pavement Performance Modelling  
Mitigation Strategies  
Life Cycle Assessment (LCA) and Life Cycle Cost Analysis (LCCA)

## **Thursday**

Pavement Climate Adaptation and Risk Mitigation  
Short- and Long-Term Climate Impacts on Pavement Performance  
Environmental Impact Analysis and Parameters  
Risk-Based Approach for Pavement Design  
Adjusting Pavement Mix Design and Materials  
State of Practice for Climate Resilient Pavement Planning

## **Friday**

Introduction to Adaptation Software Tools  
Evaluating Network-Level Pavement Resiliency  
Innovations and Emerging Topics in Resiliency and Climate Change Adaptation  
Advances in Non-Destructive Pavement Performance Evaluation  
Best Practices in Implementing Pavement Resiliency and Adaptation Strategies

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## **International Road Federation**

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### **REGIONAL OPERATIONS**

Brussels, Belgium | Accra, Ghana

Nairobi, Kenya | Kuala Lumpur, Malaysia

### **TRAINING INSTITUTES**

Alexandria, VA USA | Dubai, UAE | Zagreb, Croatia

**[www.IRF.global](http://www.IRF.global)**