

JCSS

Joint Committee
on Structural Safety

Societal Preferences on Risk Acceptance

Workshop of the Joint Committee on Structural Safety

21.–22. October 2026, at the University of Waterloo, Canada



Scope of the Workshop

Introduction

This workshop revisits an age-old question: “How safe is safe enough?” and explores the societal, economic, and engineering principles that form the basis for determining acceptable levels of risk.

Topics of discussion will include the economic valuation of reductions in fatality risk through the Value of a Statistical Life (VSL), the Life-Quality Index (LQI) and its application to optimizing structural safety and deriving target reliabilities (including those adopted in ISO 2394), recent critiques and re-examinations of the LQI framework (including the break-even criterion versus net-benefit maximization), the GDP proportionality of measures of society’s willingness and capacity to invest in risk reduction (SWTP, ICAF, SCCR, and the J-value), and the influence of societal preferences, risk perception, and regulatory practices on risk acceptance criteria across engineering sectors and countries.

The workshop is intended for researchers, practicing engineers, and decision-makers interested in the theoretical foundations and practical application of risk-informed decision-making and public policy.

Workshop Details

The workshop on **Societal Preferences on Risk Acceptance**, organised by the **JCSS** and hosted by the University of Waterloo, aims to revisit the foundations of risk acceptance criteria for engineered systems in light of ongoing scientific discussion. The workshop will provide a forum to discuss the fundamental principles behind societal risk acceptance, the frameworks used to derive acceptance criteria and target reliabilities, and the implications for engineering practice, regulation, and standardisation.

Goal: The goal of the workshop is to foster a shared understanding of how societal preferences can rationally inform risk acceptance criteria for structures and infrastructure, and to identify key challenges, open questions, and future directions for research, practice, and standardisation.

Topics of the Workshop

The workshop will be based on **invited lectures** combined with ample time for discussion. Contributions and discussions will address, in particular:

- Foundations of societal risk acceptance – how safe is safe enough?
- The Life-Quality Index (LQI) framework: original intent, evolution, and reassessment
- Derived measures (SWTP, ICAF, SCCR, J-value) and their interpretation
- Life cycle cost optimization and life safety criteria for structural design
- Individual and societal risk criteria in regulation
- Target reliability levels in codes and standards (ISO 2394, Eurocodes)
- Risk perception, equity, and communication of risk acceptance decisions
- Open issues and paths towards harmonisation

Format

The workshop will consist exclusively of invited contributions from experts in structural safety, risk analysis, and standardisation. Both **in-person** and **online** participation will be supported.

Registration

We kindly request all participants to register for the workshop using the link below. Please indicate whether you will participate in person or online.

[JCSS-Oct.2026 Registration Link](#)

Registration deadline: 14 October 2026.

Program

Wednesday, 21.10.2026

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| 12.30 | Arrival and light lunch |
| 13.00 | Session 0: Introduction <ul style="list-style-type: none">• Welcome Address – University of Waterloo, <i>Mahesh Pandey, local host</i>• Welcome and Workshop Objectives, <i>Jochen Köhler, JCSS President</i>• Programme overview, <i>Arnold Yuan</i> |
| 13.30 | Session 1: Foundations of Societal Risk Acceptance – Principles <ul style="list-style-type: none">• New Insights on the LQI as Basis for Target Reliabilities and Safety Criteria in Structural Safety, <i>Michael Havbro Faber</i>• A Macroeconomic Framework for Determining a Proper Level of Investment on Infrastructure Renewal, <i>Arnold Yuan</i>• Setting Reliability Targets from Welfare Optima: Implications for ISO 2394 and the JCSS PMC, <i>Alex Sixie Cao</i>• A Reassessment of the LQI Framework for the Optimization of Structural Safety, <i>Mahesh Pandey</i> |
| 15.30 | Refreshments |
| 15.45 | Session 2: The Principles – Moderated Discussion <p>Discussion of the principles presented in Session 1: how safe is safe enough, the LQI framework and its reassessment, derived measures and their interpretation.
<i>Moderator: Mahesh Pandey</i></p> |
| 18.00 | End of Day 1 |
| 19.00 | Dinner on the university campus, further details to be announced |

Thursday, 22.10.2026

08.30	Arrival and Coffee
09.00	Session 3: Risk Acceptance in Regulation and Practice in Different World Regions • Risk Acceptance Regulation in Europe, <i>Jochen Köhler</i> • Risk Acceptance Practice and Regulation in Australia, <i>Colin Caprani</i> • Further speakers to be announced
10.30	Refreshments
10.45	Session 4: Applications • Including CO₂ in Risk Acceptance Criteria [title tbc], <i>Jelle Knibbe (online)</i> and <i>Raphaël Steenbergen</i> • Multi-Hazard Perspectives of Acceptable Shaking–Tsunami Risks for Coastal Communities, <i>Katsu Goda</i> • Probabilistic Tornado Wind Hazard Map for Canada, <i>Wenxing Zhou</i>
11.45	Session 5: Conclusions and Outlook – Open Discussion Open discussion of the workshop contributions: key challenges, open questions and future directions for research, practice and standardisation. <i>Moderator: Arnold Yuan</i>
12.20	Wrap-Up and Conclusion; Summary of Key Takeaways; Next Steps
12.30	End of the Workshop and Lunch

Technical and Organization Committee

- **Mahesh Pandey**, University of Waterloo, Canada
- **Jochen Köhler**, Norwegian University of Science and Technology, Trondheim, Norway
- **Arnold Yuan**, Toronto Metropolitan University, Toronto, Canada

Speakers (confirmed so far)

- **Alex Sixie Cao**, Nanyang Technological University, Singapore
- **Colin Caprani**, Monash University, Melbourne, Australia
- **Michael Havbro Faber**, Harbin University, China
- **Katsu Goda**, Department of Earth Sciences, Western University, London, ON, Canada
- **Jelle Knibbe**, Ghent University, Belgium (online)
- **Jochen Köhler**, Norwegian University of Science and Technology, Trondheim, Norway
- **Mahesh Pandey**, Department of Civil and Environmental Engineering, University of Waterloo, ON, Canada

- **Raphaël Steenbergen**, TNO / Ghent University
- **Arnold Yuan**, Department of Civil Engineering, Toronto Metropolitan University, Toronto, ON, Canada
- **Wenxing Zhou**, Department of Civil and Environmental Engineering, Western University, London, ON, Canada

Note that the workshop will precede a regular JCSS meeting to be held on 22 October (afternoon) and 23 October (all day), see separate program.

Venue

The venue for the workshop is the Department of Civil and Environmental Engineering at the University of Waterloo.

Address:

University of Waterloo
200 University Avenue West
Waterloo, ON N2L 3G1
Canada
Web: [Website](#)

Building: Engineering 2 (E2), Room E2-2350 ([campus map](#)).

How to get to the University of Waterloo

Air

The main international gateway is **Toronto Pearson International Airport (YYZ)**, approximately 100 km from Waterloo.

From Pearson to Waterloo:

Taxi/Rideshare: Recommended; travel time approx. 1.5–2 hours, about CAD 140–180.

GO Bus: From Pearson Airport Terminal 1 to Mississauga Square One (various routes), then transfer to Route 25 or 25A to Waterloo or the University of Waterloo. Plan your trip on the official GO website: <https://www.gotransit.com/en/plan-your-trip>

FlixBus: From Pearson Airport Terminal 1 to Kitchener downtown; only limited schedules are available, see <https://www.flixbus.ca/>. From Kitchener downtown, take a taxi (Uber) to your hotel.

Alternatively, the **Region of Waterloo International Airport (YKF)** offers a limited number of domestic connections.

Train/Bus

Kitchener station is served by regional rail and bus connections from Toronto. From Kitchener, the ION light rail and local buses connect to the University of Waterloo campus.

Hotels

The local host suggests the following places to stay. Attendees arriving with a rental car have more choices (and price ranges) in Waterloo and in the twin city of Kitchener.

- [Delta Hotels Waterloo](#), 110 Erb St. W, Waterloo, ON N2L 0C6
Closest to the University of Waterloo, within 15 minutes walking distance.

- **Courtyard by Marriott Kitchener**, 2960 King Street East, Kitchener, ON N2A 1A9
Convenient public transit (LRT) connection to the University of Waterloo.
- **Courtyard by Marriott Waterloo St. Jacobs**, 50 Benjamin Road East, Waterloo, ON N2V 2J9
Not within walking distance and public transit is quite limited; a rental car is needed.
- **Homewood Suites by Hilton Waterloo/St. Jacobs**, 45 Benjamin Road, Waterloo, ON N2V 2G8
Not within walking distance and public transit is quite limited; a rental car is needed.