



1ST WORLD SYMPOSIUM ON SUSTAINABLE TRANSPORT AND LIVABILITY

WSSTL-2025

SYMPOSIUM REPORT

25th - 27th June 2025

J N TATA AUDITORIUM
INDIAN INSTITUTE OF SCIENCE (IISc),
BENGALURU, INDIA

Organized By:
Department of Civil Engineering, Indian Institute of Science (IISc), Bengaluru, India
SIG-F4, World Conference on Transport Research Society (WCTRS)

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TRANSPORT AND LIVABILITY**

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Indian Institute of Science (IISc),
Bengaluru**



**SIG-F4, World Conference on
Transport Research Society (WCTRS)**

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Preface

The first World Symposium on Sustainable Transport and Livability brought together a diverse community of policymakers, researchers, practitioners, and civil society actors onto a common platform. Inaugurated at the Indian Institute of Science, Bengaluru Campus, it served as a space for dialogue, learning, and collaboration on how transport policies and systems can better support inclusive, healthy, and sustainable urban living.

On a global front, the symposium welcomed participants from five continents and 12 countries, with a national footprint spanning over 20 Indian states. The participant profile reflected a healthy diversity: 60% were drawn from academia, professors and students, while the remaining 40% represented government bodies, NGOs, industry, and think tanks. This rich mix fostered productive cross-sectoral and cross-disciplinary exchanges.

The symposium was not only a forum for discussion but also a catalyst for action.

We have prepared this report as a synthesis of all key discussions and outcomes from the three-day event. It captures the collective insights, recommendations, and interventions that emerged during the sessions. There was also extensive discussion and deliberation on two potential ideas of transformative changes in our handling of the urban transport sector in India:

- **Need for India to have a dedicated service cadre on urban and transport systems:** India needs a dedicated service cadre on urban and transport systems, which is critical to bridge the gap in skills, technical knowledge and administrative expertise present in our Urban Local Bodies (ULBs) and various mobility and traffic management organisations.
- **MoHUA to take nodal ministry role on developing design guidelines on all aspects of urban transport:** There is a compelling need for the Ministry of Housing and Urban Affairs (MoHUA) to assume the role of nodal ministry for developing comprehensive design guidelines specifically for urban transport systems. While the Indian Roads Congress (IRC) has traditionally provided standards for road and infrastructure design, the unique and evolving challenges of urban transport, such as multimodal integration, non-motorised transport, pedestrian prioritisation, and last-mile connectivity, demand a more focused and city-specific approach. MoHUA, with its broader mandate on urban development, is better positioned to deliver a cohesive, inclusive, and future-ready framework for infrastructure design and policy.

We extend our heartfelt gratitude to each of you who made this gathering a grand success. Your ideas, insights, and experiences enriched the dialogue and strengthened our collective resolve to build more equitable, resilient, and future-ready transport systems. As we look ahead, we hope the connections made here will continue to inspire action far beyond the symposium.

We also invite you to reflect on the unique setting of the event, within the lush, historic campus of IISc, and the vibrant culture of Bengaluru. This city, with its complexities and innovations, reminded us throughout the symposium why sustainable transport and livability are not just technical goals, but moral and social imperatives.

Let this be the beginning of a longer journey toward cities that move with purpose and societies that move together.



Prof. Ashish Verma

Prof. Ashish Verma

Convenor

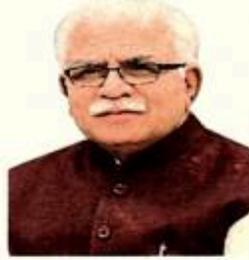
Local Organizing Committee

WSSTL 2025

मनोहर लाल
MANOHAR LAL



आवासन और शहरी कार्य मंत्री एवं
विद्युत मंत्री
भारत सरकार
**Minister of
Housing and Urban Affairs; and
Minister of Power
Government of India**



Message

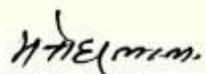
We stand today at a pivotal crossroad- where accelerating urban growth, climate uncertainty, and rapid technological advancement is coming together to shape the future of our cities. It is a moment of profound transformation, where the choices we make will determine the quality of life for generations to come. At this critical juncture, our transportation systems must evolve to be not just efficient, but equitable, accessible, inclusive, and resilient.

As governments across the world, including our own, reaffirm their commitment to sustainability and climate action, it is equally vital that we commit to building just and livable societies. Cities everywhere are grappling with the dual challenges of rapid urbanisation and environmental degradation- complex issues that demand collaborative, cross-sectoral solutions.

In this context, the **1st World Symposium on Sustainable Transport and Livability (WSSTL-2025)** takes on tremendous significance. The symposium is more than an event; it is a timely and much-needed platform that underscores the role of mobility as a cornerstone of urban livability, economic vitality, and social cohesion.

I commend the **Indian Institute of Science (IISc) Bangalore** and its partners for their vision in convening this global platform one that champions interdisciplinary dialogue, fosters innovative research, and facilitates meaningful knowledge exchange. I am also pleased to note that this symposium is part of **75th year celebrations of Dept. of Civil Engg. of IISc**, marking an important milestone of achievement and contributions to the country. By uniting researchers, policymakers, practitioners, and community leaders, this symposium creates the foundation for impactful strategies that will guide the future of transport and sustainable urban development.

Let us seize this opportunity not only to reflect on the challenges before us, but to recommit ourselves to shaping transport systems that serve all people, adapt to a changing world, and support the collective well-being of our planet.


Manohar Lal

श्रीनिवास कटिकिथाला, भा.प्र.से.
सचिव
Srinivas Katikithala, I.A.S.
Secretary



भारत सरकार
आवासन और शहरी कार्य मंत्रालय
निर्माण भवन, नई दिल्ली-110011
Government of India
Ministry of Housing and Urban Affairs
Nirman Bhawan, New Delhi-110011

Message

It is with great pride and anticipation that I extend my greetings to all participants of the **1st World Symposium on Sustainable Transport and Livability (WSSTL-2025)**. This gathering marks a pivotal moment in our collective pursuit of cities that are not only efficient but also equitable, inclusive, and truly livable.

In India, and across the world, transport plays a defining role in shaping urban life. It connects people to opportunities, facilitates economic growth, and forms the backbone of our cities' social fabric. However, we are equally aware that if not thoughtfully planned, transport systems can deepen inequalities, degrade the environment, and compromise the health and safety of our communities.

As the Secretary of the Ministry of Housing and Urban Affairs (MoHUA), I have witnessed the transformative power of well-integrated, people-centric urban mobility solutions. Whether it is a metro line easing the daily commute of thousands, a pedestrian-friendly street enhancing neighborhood life, or a green mobility initiative reducing urban pollution—each step we take in the right direction contributes to the larger vision of sustainable urban development.

WSSTL-2025 provides a unique and timely platform for policymakers, practitioners, researchers, and community leaders from across the globe to come together, share ideas, and co-create pathways for the future. The diversity of perspectives and experiences represented here is one of our greatest strengths.

Let us use this opportunity to reimagine transport not merely as a means of movement, but as a tool for social progress, environmental stewardship, and economic resilience. Let us commit to solutions that are inclusive, climate-responsive, and grounded in the lived realities of the people we serve.

I congratulate the organizers for bringing this important dialogue to life and extend my best wishes for productive deliberations. May this symposium inspire bold thinking, foster enduring collaborations, and catalyze real action toward building cities that are sustainable, just, and full of promise.

Jai Hind!



Mr. Srinivas Katikithala

Srinivas Katikithala
Secretary
Ministry of Housing and Urban Affairs, Government of India

JAIDEEP

Officer on Special Duty (UT) &
Ex-Officio Joint Secretary

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GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
NIRMAN BHAWAN, NEW DELHI-110011



Message

Urban Transport has always been close to my heart. In my work, I see every day how good transport systems can transform people's lives, giving them access to jobs, education, and community, and making their daily routines easier and safer.

I also see the other side: how poor planning can create barriers and make life harder for people, especially those who are already struggling. For me, transport is never just about vehicles or roads, it's about people and their well-being.

This is why I feel that the **1st World Symposium on Sustainable Transport and Livability (WSSTL-2025)**, organised by the Indian Institute of Science is so important. It gives us a space to learn from each other across countries and cultures and to think together about how we can build transport systems that truly work for people and make their lives better.

I believe strongly that policies and plans must be people-centric. We must listen to what communities need and want. We must think about how transport fits into their daily lives, and how it can improve their health, their safety, and their happiness.

What excites me about WSSTL-2025 is the chance to hear from experts and practitioners from both developing and developed economies. We each have our own challenges and successes, and there is so much we can learn from each other. I hope everyone here takes this chance to share openly and to ask hard questions.

As we go forward, let's remember that transport is about more than infrastructure, it's about supporting people's hopes and aspirations. Let us use this symposium to find new ideas and build partnerships that will help us create more livable, fair, and healthy cities.

I look forward to being part of these conversations and to take home ideas that can make a real difference. I extend my sincere congratulations to the organizers, contributors, and participants of WSSTL-2025. May this symposium spark new ideas, nurture impactful collaborations, and set in motion pathways that ensure our cities are not just resilient, but also livable and just for generations to come.

Jai Hind!

Date : 09-06-2025



Shri Jaideep

(Jaideep)



**Rail Infrastructure Development
Company (Karnataka) Limited**
A JV of Govt. of Karnataka & Ministry of Railways



**Bengaluru Suburban Rail Project
(BSRP)**



Message

It is with great enthusiasm that I extend my greetings to all participants of the first World Symposium on Sustainable Transport and Livability (WSSTL-2025). This symposium arrives at a pivotal moment as cities worldwide grapple with the dual challenges of rapid urbanization and the imperative for sustainable, inclusive mobility solutions.

This symposium serves as a pivotal platform for global dialogue on crafting transport systems that are not only efficient but also equitable, resilient, and centered around human well-being. The themes of WSSTL-2025—encompassing transport and well being, equity and accessibility, environmental quality, and livability—resonate deeply with the challenges and opportunities facing rapidly urbanizing cities like Bengaluru. As urban centers expand, the imperative to develop sustainable and inclusive mobility solutions becomes ever more critical.

At K-RIDE, we are committed to addressing these challenges through the development of the Bengaluru Suburban Rail Project (BSRP). This initiative aims to enhance regional connectivity, reduce congestion, and provide a reliable transit option that integrates seamlessly with existing transport networks. By prioritizing accessibility and environmental sustainability, the BSRP aligns with the core objectives of WSSTL 2025.

We view WSSTL-2025 as an invaluable opportunity to engage with experts, policymakers, and practitioners from around the world. The exchange of ideas and experiences will undoubtedly enrich our approach to developing transport solutions that are attuned to the needs of our communities.

I commend the organizers for convening this important symposium and look forward to the collaborative efforts that will emerge from our shared commitment to sustainable transport and livable cities.



Dr. Manjula N. IAS

Dr. Manjula N. IAS
Managing Director
Rail Infrastructure Development Company
(Karnataka) Limited (K-RIDE),
Government of Karnataka

M. Maheshwar Rao, I.A.S.
Managing Director



Bangalore Metro Rail Corporation Ltd.

(A Joint Venture of Govt. of India & Govt. of Karnataka)

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Message from the Managing Director, Bangalore Metro Rail Corporation Ltd (BMRC)

On behalf of Bangalore Metro Rail Corporation Ltd (BMRC), I warmly congratulate the Indian Institute of Science (IISc), Bangalore, for initiating a legacy of World Symposium on Sustainable Transport and Livability (WSSTL). This biennial global event, focusing on critical challenges in sustainable urban transport, provides an essential platform for interdisciplinary collaboration which will enhance the technology and understanding of various transportation organizations around the world for better user experience, inclusivity and a higher quality of life. By fostering international knowledge exchange through keynote speeches, panel discussions, workshops, and exhibitions, the symposium will drive integrated solutions addressing urban mobility and enhancing livability globally.

BMRC is deeply committed to environmental sustainability, consistently focusing on tree conservation, compensatory plantation, reduced energy consumption, and lowering carbon emissions. We are actively pursuing green building certifications for metro stations with the Indian Green Building Council (IGBC), reflecting our commitment to eco-friendly infrastructure. Recently, IGBC recognized BMRC as a "Green Champion" under the category of "Metro Rail Authority Leading the Green MRTS Movement in India," highlighting our sustained efforts toward sustainability.

WSSTL aligns seamlessly with BMRC's sustainability objectives. Adding beyond our own experiences at BMRC, WSSTL offers valuable insights into global best practices and innovative strategies to address Bengaluru's evolving mobility needs. It underscores the critical role transport systems play in improving quality of life, equity, and environmental resilience, helping us further refine our sustainability framework. Association with WSSTL will greatly enhance our ability to deliver a metro system that significantly boosts Bengaluru's urban livability. Once again, congratulations to IISc Bangalore for organizing this transformative forum. We eagerly anticipate the global dialogues and innovations emerging from WSSTL, supporting our mission for a sustainable and livable Bengaluru.



Mr. M. Maheshwar Rao

M. Maheshwar Rao

Managing Director

Bangalore Metro Rail Corporation Ltd

Message

It's great to see the 1st World Symposium on Sustainable Transport and Livability (WSSTL 2025) taking shape here at the Indian Institute of Science (IISc), Bengaluru. This event is a timely opportunity to explore how we can build transport systems that go beyond moving people efficiently systems that truly support equity, inclusivity, and sustainability.

At the Directorate of Urban Land Transport (DULT), we see urban mobility as the lifeline of our cities and communities. As urban areas continue to grow and the impacts of climate change become more pressing, reimagining how we move within our cities is critical. Beyond simply moving people, transport systems play a central role in enhancing livability and quality of life for all residents. The themes of WSSTL-2025 covering transport equity, accessibility, environmental resilience, well-being, and livability reflect many of the priorities we're working on in Karnataka.

In our work at DULT, we've been pushing for forward-looking initiatives and investing in non-motorized transport infrastructure. The Church Street First project in Bengaluru, where DULT collaborated with IST Lab of IISc, is a perfect example of our collaborative, people centered approach. This project not only revitalized a key urban space but also demonstrated the importance of data-driven studies on air quality, public opinion, and quality of life insights that continue to inform our work today.

Happy to see that the symposium will bring together people from different sectors researchers, policymakers, practitioners, and communities to share ideas and learn from each other. The IST Lab, which also serves as the secretariat for WSSTL-2025, has played a critical role in building this bridge between research and practice. This kind of collaboration is essential if we're going to tackle the complex challenges of urban mobility.

I'd like to thank the organizers the Department of Civil Engineering at IISc for creating this platform for discussion and partnership-building.

Here's hoping that WSSTL-2025 sparks some great conversations, practical ideas, and new connections that will help shape a future of better, more sustainable cities.



Ms. Deepa Cholan IAS

Ms. Deepa Cholan IAS
Commissioner,
Directorate of Urban Land Transport (DULT),
Government of Karnataka

Message

Civil engineers and the diligent work undertaken by them has the societal impact that forms the backbone of every thriving society. It influences quality of life as a whole underpinning the overall economic progress of society at large. I have seen how thoughtful engineering can enhance quality of transport through safer roads, climate-resilient infrastructure, and accessible public spaces and societal well-being on the whole. I have also seen the consequences of negligence on these markers of societal well being..

The 1st World Symposium on Sustainable Transport & Liveability (WSSTL-2025) is therefore a vital platform as it offers a unique opportunity for experts from across the world to learn from one another cutting across countries and cultures by bringing together the experiences garnered within their ecosystem on the impact of their research and policies on how infrastructure can go beyond mobility to support well-being, inclusivity, and environmental responsibility. This symposium is an opportunity to rethink traditional models, embrace innovative approaches, and reflect on how our work can contribute to a future where transport and infrastructure systems are sustainable (carbon neutral), efficient, and deeply aligned with improving people's day to day quality of life experience.

With contributions from both developing and developed economies, this symposium offers an opportunity to learn and assess the impact of cutting-edge smart technologies and climate-adaptive solutions so as to evolve people-first urban planning and accessible transport policies. Each idea strengthens our shared goals and helps transform aspirations into tangible outcomes.

This year, the Department of Civil Engineering at IISc Bengaluru proudly celebrates 75 years of excellence in research, education, and innovation. As a key contributor to national and global civil engineering advancements, it continues to lead in areas like sustainable infrastructure and urban development. Hosting WSSTL-2025 marks both a tribute to this legacy and a step toward shaping a more resilient and inclusive future.

I commend all participants, sponsors, and organisers of WSSTL-2025 for their dedication and commitment to this vision. I am hopeful that this symposium will act as a catalyst for crystalizing innovative ideas and foster lasting collaborations, helping to build cities that are not only strong in their infrastructure but also fair, inclusive, and truly liveable for future generation



Prof. Ananth Ramaswamy
Chair
अध्यक्ष / CHAIR
सिविल इंजीनियरी विभाग
Department of Civil Engineering
भारतीय विज्ञान संस्थान
Indian Institute of Science
बेंगलुरु / Bangalore-560 012. भारत / India



Prof. Ananth Ramaswamy

Dear Delegates of the Inaugural World Symposium on Sustainable Transport and Livability, Taylor & Francis is proud to publish the journal *Sustainable Transport and Livability*. It's the journal that inspired WSSTL!

The connection between sustainable transport and quality of life was a relatively specialized topic for many years, until the most recent decade, which began with a global pandemic. The connection became an increasingly common consideration throughout the COVID-19 pandemic, which changed – temporarily or permanently – how many people work, commute, or just perform their daily activities. Moving on from COVID-19, there is an expectation that transport policy will continue to evolve to promote sustainable travel choices and retain the improved quality of life that cities or regions experienced during the pandemic.

At the same time, the proposal for Sustainable Transport and Livability was developed and refined throughout the pandemic. The changes observed by students, researchers, policy makers, industry, and knowledge leaders in regard to the sustainability and livability of transport systems has put us in a unique position to help transform a specialized area of research into a broad-reaching and long-term field of research for decades to come. This is the ambition with which we launched *Sustainable Transport & Livability*.

This new journal's position is unique in that it aims to explore the connection between sustainable transport and a combination of factors that comprise Quality of Life. By more carefully analyzing and understanding the impacts of these interventions, cities and areas can be planned and modified to successfully deliver improved livability through more sustainable transport systems. With a passionate and purposeful editorial team led by Dr. Ashish Verma, as Editor-in-Chief, we believe these unique offerings will make *Sustainable Transport & Livability* a go-to journal for contributors like you to publish the considerable cross-disciplinary work you do to make a difference.

Thank you for all the care you take to make the world a more sustainable and livable place!

Sincerely,
Alexa Flood
Head of Engineering & Computer Science Journals,
Taylor & Francis

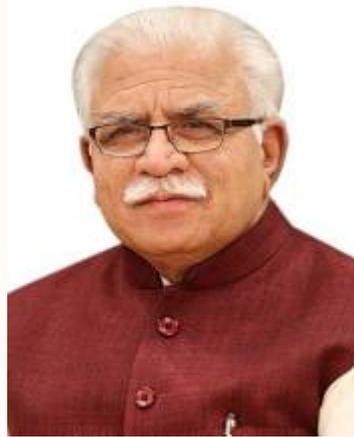
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Alexa Flood

Inaugural Function on 25th June 2025

CHIEF GUEST



Shri Manohar Lal Khattar
Honourable Minister
Ministry of Housing and Urban Affairs (MoHUA)
Government of India

Valedictory Function on 27th June 2025

CHIEF GUEST



Shri Srinivas Katikithala, IAS
Secretary
Ministry of Housing and Urban Affairs (MoHUA)
Government of India

SCIENTIFIC SUMMARY OF WSSTL 2025

The 1st World Symposium on Sustainable Transport and Livability brought together a diverse range of voices from around the world to explore the pressing themes of transport, livability, and quality of life. The call for original research attracted a wide array of contributions - from empirical studies and theoretical research to case studies, reviews, and conceptual papers.

The symposium covered several interrelated and equally important themes: Transport and Well-being; Transport, Health, and Happiness; Transport and Livability/Quality of Life (QoL); Transport, Equity, and Accessibility; Transport, Environmental Quality, and Disaster Resiliency; as well as other aspects of transport related to livability and quality of life. These themes highlighted the multifaceted role of transport in shaping not just how we move, but how we live.

We were fortunate to receive strong support from our partner journal, Sustainable Transport and Livability (TSTL), published by Taylor & Francis. The journal's review process was seamlessly integrated with the symposium, ensuring each submission was rigorously assessed by field experts in line with the journal's standards. Reviewers evaluated submissions on validity, significance, and originality - criteria central to both academic rigor and practical relevance.

In total, we received 43 submissions from researchers across the globe, representing both developed and developing economies. Of these, 18 papers were rejected in the early stages due to misalignment with the symposium's themes or other suitability concerns.

The remaining papers underwent full peer review and were evaluated by domain specialists. As a result, approximately 20 high-quality papers were accepted for presentation at the symposium. These selected works reflected a broad yet interconnected range of topics under the symposium's core themes and were featured in the technical sessions. All accepted papers are being published in the Special Issue of Sustainable Transport and Livability by Taylor & Francis. This strong and diverse selection of papers underscored the growing global interest in sustainable transport and livability.

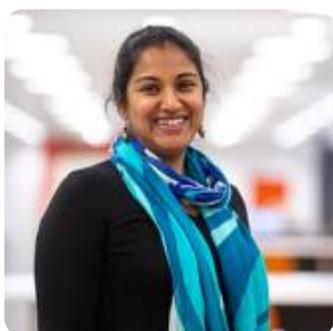
In addition to paper presentations, the symposium featured keynote addresses by global experts from Austria, Malta, and Canada, who presented impactful case studies on accessibility and community engagement in well-being. Complementing the technical sessions, the symposium hosted 12 engaging plenary sessions, each delving into a wide range of critical topics.

These sessions included a distinguished mix of voices from academia, government, industry, and civic organizations. By bringing together such diverse perspectives and expertise, the plenaries fostered meaningful dialogue, cross-sector collaboration, and forward-thinking solutions to the complex challenges of sustainable transport and livability. As the 1st World Symposium on Sustainable Transport and Livability convened global voices and groundbreaking research, it marked an important step toward reimagining transport systems that are not only efficient but also equitable, resilient, and centered on human well-being. The event offered vibrant exchanges, initiated new partnerships, and generated actionable insights - laying the groundwork for more sustainable and livable communities around the world.



Prof. Ashish Verma

International Scientific Committee Chair
WSSTL



Prof. Aruna Sivakumar

International Scientific Committee Co-Chair
WSSTL



Prof. Kazuki Nakamura

International Scientific Committee Co-Chair
WSSTL

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WSSTL

SYMPOSIUM SERIES

The World Symposium on Sustainable Transport and Livability

The World Symposium on Sustainable Transport and Livability (WSSTL) is a biennial global event that brings together leading voices from academia, policy, practice, and communities to advance the discourse on sustainable transport and livable cities. Launched to address the pressing challenges of urban mobility and quality of life, WSSTL serves as a vibrant platform for knowledge exchange, interdisciplinary collaboration, and solution-driven dialogue. Each edition explores critical intersections between transport, well-being, equity, health, environmental quality, and disaster resilience.

The symposium series explores the core 6 themes.



Transport and Well-being



Transport, Health and Happiness



Transport and Livability/Quality of Life (QoL)



Transport, Equity and Accessibility



Transport and Environmental Quality and Disaster Resiliency



Other Aspects of Transport Related to Livability and Quality of Life

"WSSTL is more than just a symposium — it is a catalyst for lasting impact"

WSSTL is designed to be an engaging and immersive platform that brings together diverse stakeholders through a variety of formats and experiences:

- Keynote addresses by global experts who will share visionary perspectives on the future of sustainable transport and livability.
- Focused, multi-stakeholder dialogues exploring current challenges and emerging strategies.
- Skill building and problem solving activities designed to foster learning, collaboration, and actionable outcomes.
- Peer reviewed academic and applied research presentations showcasing innovative approaches, case studies and tools from across the world.
- Curated exhibitions, and networking opportunities to build lasting connections with peers, collaborators, and industry leaders.

Hosted in a new city each time to reflect global diversity, WSSTL aims to shape more sustainable, resilient, and equitable urban futures through transport innovation and community driven change.

The series is committed to:

Knowledge Dissemination

Spread cutting edge research findings and innovative practices in sustainable transport and livability.

Policy Influence

Inform and inspire policymakers to implement evidence based, sustainable transport policies and make cities and regions more livable.

Interdisciplinary Collaboration

Foster connections and collaborations across different fields and sectors, leading to holistic and integrated solutions.

Capacity Building

Enhance the skills and knowledge of urban planners, researchers, and practitioners through interactive sessions and workshops.

Bring Community Participation

Encourage community leaders to discuss and share the common vision and benefit from the deliberations of the symposium, and thereby, helping them to build more inclusive and livable community spaces.

Global Awareness

Raise global awareness about the importance of sustainable transport systems in improving the quality of life in developed and developing economies.



Vidhanasoudha, Bengaluru

1ST WORLD SYMPOSIUM ON SUSTAINABLE TRANSPORT AND LIVABILITY (WSSTL-2025)

The 1st World Symposium on Sustainable Transport and Livability (WSSTL-2025) was jointly organized by the Department of Civil Engineering at the Indian Institute of Science (IISc), Bengaluru, and the Special Interest Group (SIG-F4) of the World Conference on Transport Research Society (WCTRS). This pioneering global event aimed to catalyze dialogue and collaboration toward building more sustainable, equitable, and livable transport systems for the future.

Supported by the journal Sustainable Transport and Livability (TSTL), published by Taylor & Francis, WSSTL-2025 served as a platform to connect experts, researchers, policymakers, practitioners, and community leaders from around the world, representing both developed and developing economies.

THEMES of SYMPOSIUM

Transport and Well-being



This theme focused on promoting well-being through sustainable transport. The topics included, exploring how sustainable transport interventions contribute to the overall well-being of individuals and communities, focusing on physical, mental, economic, and social well-being. It may include cognitive analyses of transport services, such as community transport and smart transport.

Transport, Health and Happiness

This theme focused on enhancing health and happiness through sustainable transport. The topics included unravelling how sustainable transport interventions can make individuals and society healthier and happier. It may include behavioural analyses of active travel and the aged society.



Transport and Livability/ Quality of Life (QoL)



This theme focused on creating livable cities with improved quality of life through sustainable transport solutions. The topics included discussing strategies for building more livable urban environments and enhancing quality of life by prioritizing sustainable transportation solutions. Investigating how sustainable transport interventions affect livability and quality of life (QoL), it may include spatial analyses of urban accessibility and street design, such as the x-minute city and walkable streets.

Transport, Equity and Accessibility



This theme focused on fostering equity and accessibility (including social accessibility) in transportation. The topics included addressing how sustainable transport impacts the safety, affordability, equity and accessibility. Highlighting the need to ensure social inclusiveness, particularly marginalized communities, to promote social justice and bridge existing disparities.

Transport and Environmental Quality and Disaster Resiliency

This theme focused on safeguarding environmental quality and building disaster resilience frameworks. The topics included investigating how sustainable transport can contribute towards improving environmental quality and disaster resiliency of urban transport systems.

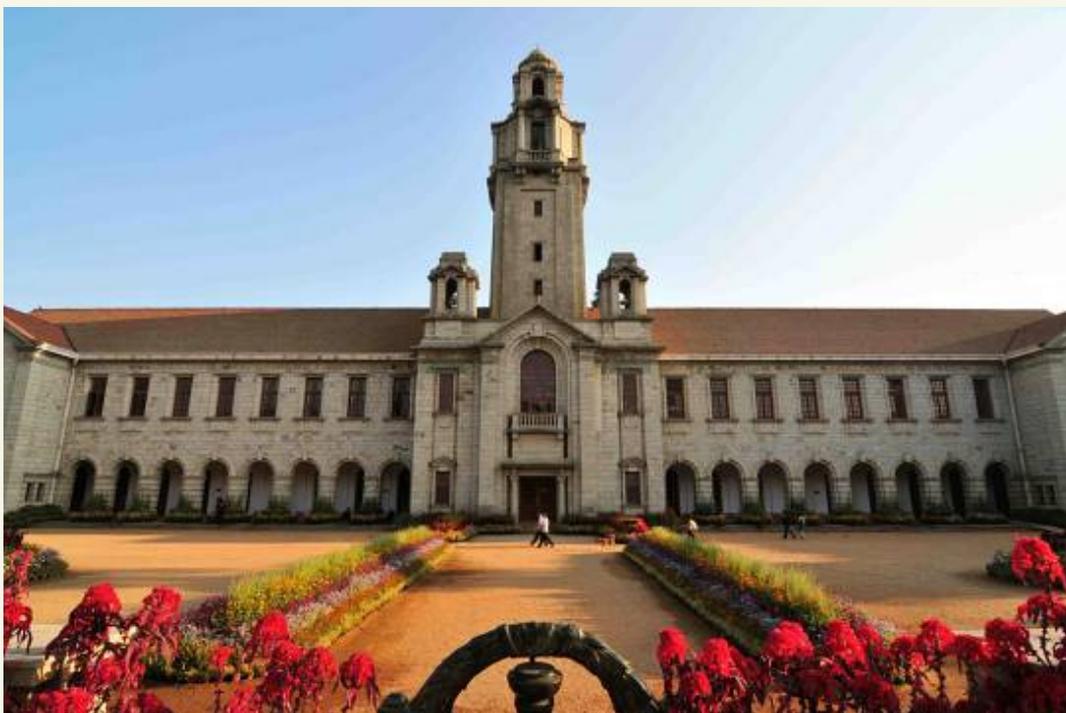


Other Aspects of Transport Related to Livability and Quality of Life (QOL)



This theme focused on exploring additional dimensions of livability and quality of life impacted by sustainable transport, such as investigating the role of technology in enhancing livability and quality of life through sustainable transport solutions, etc.

INDIAN INSTITUTE OF SCIENCE (IISc) BENGALURU, INDIA



The Indian Institute of Science (IISc), founded in 1909 through the vision of Jamsetji Nusserwanji Tata, Sir William Ramsay, Maharaja Krishnaraja Wadiyar IV, and the Government of India, is India's foremost institution for advanced research and education in science and engineering. Often referred to as the "Tata Institute," IISc has played a pivotal role in shaping India's scientific landscape. It has been home to luminaries like Nobel Laureate Prof. C.V. Raman, Dr. Homi J. Bhabha (Father of India's Nuclear Program), and Dr. Vikram Sarabhai (Founder of the Space Program), among many others. Spanning over 300 acres in the heart of Bengaluru, the IISc campus is renowned not only for its academic excellence but also for its lush biodiversity and colonial era architecture. The Institute comprises more than 46 departments and centres organized under six academic divisions, offering a range of undergraduate,

postgraduate, and doctoral programs. It consistently ranks among the top institutions in India and world. IISc is globally recognized for its contributions to science, technology, and innovation. In 2018, it was designated an "Institution of Eminence" by the Government of India.

ABOUT THE EVENT VENUE

The event took place at the J N Tata Auditorium, located within the National Science Seminar Complex (NSSC) in the IISc campus. The auditorium was built by IISc to celebrate its 100th anniversary. This was named in honor of Jamsetji Nusserwanji Tata, the founder of IISc. The NSSC, supported by the Department of Science and Technology, Tata Group, and IISc, is India's first purpose built complex for scientific events. It houses multiple seminar halls, spacious foyers for exhibitions and poster sessions, and an open air auditorium on the terrace.



Department of Civil Engineering

The Department of Civil Engineering at IISc, established in 1950, is renowned for excellence in teaching, research, and industry collaboration. Celebrating 75 years, it offers Ph.D., M.Tech (Research), and course based M.Tech programs across key areas like Structural Engineering, Geotechnical Engineering, Transportation Systems Engineering, Water Resources Engineering, and Dam Engineering. Recognised as a Centre for Advanced Studies by the University Grant Commission, the department receives significant funding and engages in national and international research partnerships.

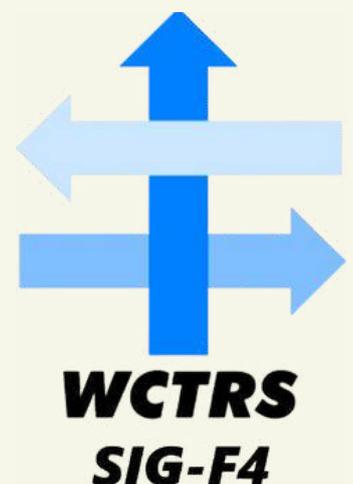


Department of Civil Engineering

The Transportation Systems Engineering (TSE) Group, formally established in 2017, builds on TSE activities started in 2009 under Prof. Ashish Verma. The group, comprising four faculty members, focuses on sustainable transportation, network equilibrium, consumer behaviour, and materials research, aiming to be a global leader in transportation research and education

WCTRS SIG -F4

Special Interest Group (SIG-F4) is one of the Special Interest Groups of World Conference on Transport Research Society (WCTRS) under the Topic Area F on “Livability and Sustainable Transport”. SIG-F4 focus on research that furthers our knowledge on the many linkages between sustainable transport and livability of cities and the policy, planning, design, and engineering interventions that affect these connections. These linkages of sustainable transport to livability may include impacts on: quality of life, equity, social justice; safety, accessibility, affordability, and environmental quality; disaster resiliency; physical, mental, economic, and social well-being, etc., and similar other indicators of livability.



INTERNATIONAL SCIENTIFIC COMMITTEE (ISC)

Scientific Committee Chair



PROF. ASHISH VERMA

Indian Institute of Science (IISc), Bengaluru, India

Scientific Committee Co-Chairs



PROF. ARUNA SIVAKUMAR

Imperial College London, UK



PROF. KAZUKI NAKAMURA

Meijo University, Japan

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IIT Bombay, India



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*Universität Bremen,
Germany*



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PATIL**

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IIT Delhi, India



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ETH Zurich, Switzerland



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University of Leeds, UK



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CIRCELLA**

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Davis, USA*



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EMBERGER**

TU Wien, Austria



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**PROF. LORI
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TU Delft, Netherlands



**PROF. MARIA
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*University of Malta,
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IIT Ropar, India

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*School of Planning and
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*Tokyo Institute of
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SHAHEEN**

*University of California
Berkeley, USA*



**PROF. TANU PRIYA
UTENG**

*Institute of Transport
Economics, Oslo, Norway*



**PROF. VARAMETH
VICHIEANSAN**

*Kasetsart University
Thailand*

LOCAL ORGANISING COMMITTEE (LOC)

PATRON



Prof. Ananth Ramaswamy

Chair, Dept. of Civil Engg., IISc Bengaluru

CONVENOR



Prof. Ashish Verma

Dept. of Civil Engg., IISc Bengaluru

MEMBERS



Prof. Chandra Kishen

Dept. of Civil Engg., IISc Bengaluru



Prof. P. Anbazhagan

Dept. of Civil Engg., IISc Bengaluru



Prof. V. V. Srinivas

Dept. of Civil Engg., IISc Bengaluru



Prof. Debraj Ghosh

Dept. of Civil Engg., IISc Bengaluru



Prof. Narayan Sundaram

Dept. of Civil Engg., IISc Bengaluru



Dr. Raghuveer Rao

Dept. of Civil Engg., IISc Bengaluru



Dr. Debsunder Dutta

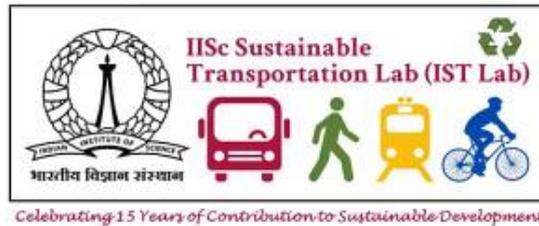
Dept. of Civil Engg., IISc Bengaluru



Dr. Satyavati Komaragiri

Dept. of Civil Engg., IISc Bengaluru

SYMPOSIUM SECRETARIAT



Symposium Secretariat during World Bicycle Day 2025

IST Lab which worked as WSSTL 2025 secretariat was established in 2009 by Prof. Ashish Verma, dedicated to advancing sustainable and resilient transportation systems that improve quality of life and support India's social and economic development. The lab's research interests encompass a wide range of topics including climate change, quality of life, travel behavior, and the modeling and optimization of transport systems. By advocating for sustainability and resilience in transportation, the IST Lab seeks to enhance the quality of life and contribute to India's economic and social progress.

Celebrating over 15 years of impactful contributions, IST Lab has led pioneering projects such as Innovating for Clean Air (IfCA) addressing urban pollution, the Kumbh Mela Experiment tackling large scale event mobility challenges, and gender focused initiatives like Gender SMART Mobility and Gender Astute Mobility, which promote equity in transport planning. With a committed team of 15 researchers and a global alumni network exceeding 70 professionals, the IST Lab continues to develop innovative, equitable, and environmentally sustainable transportation solutions that drive positive change for communities and cities.

Symposium Secretariat Members



Rohit Singh Nitwal
Research Scholar



Harendra Pratap Singh
Research Scholar



Maneesha B
Research Scholar



Ann Das
Research Scholar



Santhosh Kumar B V
Research Scholar



Gautam Narula
Research Scholar



Dr. Priyanka Das
Post-Doctoral Fellow



Tanmay Ghosh
Post-Doctoral Fellow



Aswana B
MTech Student



Aswathy Rajeev
MTech Student



Vishwapriya Sahran
MTech Student



Jatin Parashar
MTech Student



Sakshi Soni
MTech Student



K Yashwanth Kumar
MTech Student



Siti Hajar Aswad
ASEAN Fellow



Pramod Sunil Parande
Project Assistant



Sanjay G P
Senior Research Fellow



Ambika Keshav
Administrative Assistant



Prof. Guenter Emberger
TU Wien, Austria

Prof. Guenter Emberger is a distinguished authority in transportation research and an Ao.Univ.Professor at TU Wien, Austria. With over thirty years of experience, he has made significant contributions to transport planning, traffic engineering, and sustainable mobility, focusing on climate-neutral solutions and interdisciplinary approaches to urban planning.

Keynote Title

Are sustainability and quality of life and the choice of means of transport related?

Abstract

This keynote examined how sustainability, quality of life, and transportation choices are interconnected. Professor Emberger introduced a novel assessment framework for evaluating transport systems, considering global trends like technological change, demographic evolution, and climate action. Using Vienna as a case study, he demonstrated that sustainable mobility options directly enhance urban livability, encouraging a thoughtful discussion on shaping future.

Prof. Maria Attard heads Geography and the Institute for Climate Change and Sustainable Development at the University of Malta, specializing in urban transport policy and implementation. She chairs NECTAR and has led major sustainable mobility initiatives across Malta.

Keynote Title

What affects walking? Designing action research to engage citizens

Abstract

Prof. Attard examined how citizen engagement can improve walking infrastructure through action research. Rather than focusing solely on physical infrastructure, she advocates for community-based participatory approaches that incorporate diverse user perspectives to drive bottom-up change for more sustainable mobility.



Prof. Maria Attard
University of Malta,
Malta

Prof. Ahmed El-Geneidy is a transport planning professor at McGill University's School of Urban Planning. As co-editor in chief of Transport Reviews and editor of Transportation, he founded the Transportation Research at McGill (TRAM) lab in 2007, which produces impactful land use and transport research. His collaborative work has yielded over 185 peer-reviewed publications.

Keynote Title

How daily travel contributes to quality of life: Lessons from the Canadian context

Abstract

Prof. El-Geneidy explored how daily travel affects quality of life using Canadian insights. While travel is recognized as influencing well-being, current assessment methods remain too generic. His talk aimed to provide a more nuanced understanding of travel-related factors impacting quality of life to better address diverse population needs and develop more accurate evaluation approaches.



Prof. Ahmed El-Geneidy
McGill University,
Canada

INVITED SPEAKERS

Ms. Anne Cremers
Deputy Consul General of the Kingdom of the
Netherlands in Bengaluru



Mr. Anudeep Koniki
Sector Specialist
Urban Mobility
KfW



Dr. Anupama Shetty
Mission Director,
Biocon Foundation



Prof. Aruna Sivakumar
Professor,
Department of Civil and Environmental Engineering,
Imperial College London, UK



Ms. Aswathy Dilip
South Asia Director,
ITDP India



Mr. Bhaumik Gowande
Associate Researcher,
International Council on Clean Transportation



Mr. Chetan Sodaye
Program Manager,
Integrated Transport, WRI India





Mr. Christian Kapfensteiner

Director, Sustainable Urban Development, Deutsche Gesellschaft für technische Zusammenarbeit (GIZ) GmbH, India



Prof. Digvijay S Pawar

Associate Professor,
Department of Civil Engineering,
IIT Hyderabad, India



Mr. Ewout de Wit

Consul General of the Kingdom of the Netherlands in Bengaluru



Prof. Geetam Tiwari

Professor Emeritus,
IIT Delhi, India



Prof. Helena Titheridge

Professor,
University College London, UK



Shri Jaideep

Officer on Special Duty (Urban Transport),
Ministry of Housing and Urban Affairs,
Government of India



Ms. Jaya Dhindaw

Executive Program Director,
Sustainable Cities, WRI India

INVITED SPEAKERS

INVITED SPEAKERS

Dr. Jivisha Joshi Gangopadhyay, IRTS
Deputy Secretary, DPIIT,
Ministry of Commerce and Industry,
New Delhi, India



Ms. Krishna Desai
Technical Advisor,
SUM-ACA, GIZ



Mr. Krishnan Srinivasan
Senior Transport Consultant,
World Bank



Mr. Mahadevan Nambiar
Public Policy
Uber



Mr. M. Maheshwar Rao, IAS
Managing Director,
Bangalore Metro Rail Corporation Limited (BMRCL)



Mrs. Manjula V, IAS
Commissioner (Retired),
Directorate of Urban Land Transport (DULT),
Bengaluru, India



Prof. Marianne Vanderschuren
Professor,
University of Cape Town, South Africa



INVITED SPEAKERS



Ms. Meera Sundararajan
M. S. Swaminathan Research Foundation,
Chennai, India



Prof. Milad Haghani
Associate Professor
University of Melbourne, Australia



Dr. Morgan Campbell
Fellow,
Sustainability Research Institute,
University of Leeds, UK



Dr. Mukti Advani
Senior Principal Scientist
Transport Planning and Environment,
CSIR-CRRI, India



Mr. Mukund Kumar Sinha
Project Manager,
Climate Finance and Mobility Division,
South Asia, KfW, Frankfurt



Ms. Neetu Anna Joseph
Technical Advisor – Transport &
Infrastructure, GIZ India



Ms. Patricia Immler
Senior Portfolio Manager,
KfW, Germany

INVITED SPEAKERS

Prof. Prabhdeep Kaur
Professor, Isaac Centre for Public Health
IISc Bengaluru, India



Dr Pradeep Banandur
Professor and Former Head,
Department of Epidemiology
Centre for Public Health, NIMHANS, Bengaluru, India



Mr. Raghavan Vishwanath
Partner, Mobility,
KPMG India



Prof. Rahul T M
Assistant Professor, Indian Institute of
Technology (IIT) Ropar, India



Shri. Rajesh Kumar Singh, IRSE
Director (Project and Planning)
Rail Infrastructure Development Company-Karnataka (K-RIDE),
Bengaluru, India



Mr. Ramachandran R, IAS
Managing Director,
Bengaluru Metropolitan Transport Corporation (BMTC),
Karnataka, India



Dr M P Ramnavas
Director (Projects),
Kochi Metro Rail Ltd.



INVITED SPEAKERS



Dr. Ravi Gadepalli
Consultant,
World Bank & ADB



Dr. Ch. Ravi Sekhar
Chief Scientist, TPE Division
Head CCN Division, CSIR-CRRI, India



Mr. Rizwan Arshad
Member of the Legislative Assembly,
Shivajinagar, Bengaluru, India



Ms. Rutuja Nivate
Senior Associate
ITDP India



Mr. Satya Arikutharam
Independent Consultant,
Bengaluru, India



Mr. Sathya Sankaran
Co-founder & Director,
Urban Morph & Bicycle Mayor of Bengaluru, India



Mr. Saurabh Kasturia
Founder & Chief Executive Officer,
Street Surge Technologies, India

INVITED SPEAKERS

Prof. Shalini Sinha

Center Head and Principal Researcher,
Center of Excellence in Urban Transport,
CEPT University, Ahmedabad, India



Dr Shankar Deshpande

Chief,
Town & Country Planning Division
MMRDA



Ms. Shrimoyee Bhattacharya

Program Head, Urban Development,
WRI India



Mr. Sooraj E M

Deputy Manager,
ITDP India



Mr. Srinivas Alavilli

Fellow, Integrated Transport,
WRI India



Ms. Sushma Goh

Director Architecture 1,
Infrastructure Design Engineering Group,
Land Transport Authority, Singapore



INVITED SPEAKERS

Mr. Tejasvi Surya
Member of Parliament
Bengaluru South, Karnataka, India



Prof. Tina Pujara
Associate Professor,
Department of Architecture and Planning,
IIT Roorkee, India



Prof. Varameth Vichiensan
Associate Professor,
Department of Civil Engineering,
Kasetsart University, Thailand



Dr. S Velmurugan
Chief Scientist,
Head of Department,
Traffic Engineering and Safety, CSIR-CRRRI



Mr. Venkata Chunduru
Director & Head India Operations,
Arcadis, India



Mr. Vivekanand Kotikalapudi
Chief Operating Officer,
iDeck, India



PROGRAM SCHEDULE

WSSSTL-2025

Time /Date	Tue, 24 June 2025	Time	DAY 1		Time	DAY 2		Time	DAY 3	
			Wed, 25 June 2025			Thu, 26 June 2025			Fri, 27 June 2025	
			08:30 to 09:30	Registration / Exhibition Visit	08:30 to 09:00	Registration / Exhibition Visit	08:30 to 09:00	Registration / Exhibition Visit		
		09:30 to 10:30	Inaugural Session		09:00 to 10:00	Keynote Session 2	09:00 to 10:00	Keynote Session 3		
		10:30 to 11:00	High Tea / Exhibition Visit		10:00 to 10:30	Tea & Coffee Break / Exhibition Visit	10:00 to 10:30	Tea & Coffee Break / Exhibition Visit		
		11:00 to 12:00	Keynote Session 1		10:30 to 11:30	GIZ Plenary Session 2	10:30 to 11:30	Best-Biocon Plenary Session		
		12:00 to 13:00	ICCT Plenary Session		11:30 to 12:30	K-RIDE Plenary Session	11:30 to 12:30	IST Lab Plenary Session 3		
		13:00 to 14:00	Lunch Break / Exhibition Visit		12:30 to 13:30	Lunch Break / Exhibition Visit	12:30 to 13:30	Lunch Break / Exhibition Visit		
		14:00 to 15:30	Technical Session 1	Technical Session 2	13:30 to 14:30	IST Lab Plenary Session 1	13:30 to 14:30	AM-CoE Plenary Session		
14:00 to 17:00	Pre-Symposium Workshop	14:00 to 15:30	Technical Session 1	Technical Session 2	14:30 to 15:30	W/RI India Plenary Session	14:30 to 15:30	Uber Plenary Session		
		15:30 to 16:00	Tea & Coffee Break / Exhibition Visit		15:30 to 16:00	Tea & Coffee Break / Exhibition Visit	15:30 to 16:00	Tea & Coffee Break / Exhibition Visit		
17:00 to 18:00	Registration	16:00 to 17:00	GIZ Plenary Session 1		16:00 to 17:00	IST Lab Plenary Session 2	16:00 to 17:00	DP/IT Plenary Session		
		17:00 to 19:00	Technical Session 3	Technical Session 4	17:00 to 17:30	Exhibition Visit	17:00 to 18:30	Valedictory Session		
18:00 to 20:00	Welcome Reception cum Community Engagement Session	19:00 to 19:30	Exhibition Visit		17:00 to 19:00	Heritage Tours by Walking & Cycling	18:30 to 19:00	High Tea / Exhibition Visit		

DETAILED SCHEDULE

WSSTL-2025

24-06-2025

TUESDAY

 TIME	 VENUE	 EVENT
14:00 - 17:00	Ramanujan - Newton Sabhagriha, ITES Centre	Pre-Symposium Workshop Methodologies to Quantify Sustainable Transport and Quality of Life (QoL)
17:00 - 18:00	J N Tata Auditorium	Registration
18:00 - 20:00	J N Tata Auditorium	Welcome Reception cum Community Engagement Session - Poster Presentation and Interaction with Civic Groups of Bengaluru

25-06-2025

WEDNESDAY

 TIME	 VENUE	 EVENT
08:30 - 09:30	J N Tata Auditorium	Registration/ Exhibition Visit**
09:30 -10:30	J N Tata Auditorium	Inaugural Session
10:30 -11:00	Dining Area, J N Tata Auditorium	High Tea/ Exhibition Visit**
11:00 -12:00	J N Tata Auditorium	Keynote Session 1: Prof. Guenter Emberger Are Sustainability and Quality of Life and the Choice of Means of Transport Related? Chair: Prof. Aruna Sivakumar, Imperial College London Rapporteur: Ms. Ann Das, Research Scholar, IST Lab, IISc Bengaluru
12:00 -13:00	J N Tata Auditorium	ICCT Plenary Session Advancing Public Transport and Well-being through Zero-emission Buses Moderator: Mr. Bhaumik Gowande, ICCT India Rapporteur: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bengaluru

** Participants can visit the exhibition area

DETAILED SCHEDULE

WSSTL-2025

25-06-2025

WEDNESDAY



TIME



VENUE



EVENT

13:00 -14:00

Dining Area,
J N Tata
Auditorium

**Lunch Break/
Exhibition Visit****

14:00 -15:30

J N Tata
Auditorium

Technical Session 1

Chair: Prof. Manoj M, IIT Delhi

Discussant: Mr. Gautam Narula, Research Scholar, IST Lab, IISc Bengaluru

- Paper ID: TSTL-2024-0041, 245535772
Stakeholder Perceptions Towards Potential Impact of Regional Rapid Transit System on Surrounding Land Characteristics in National Capital Region
Sharma, Kritika; Pitale, Aditya Manish; Sadhukhan, Shubhajit*
- Paper ID: TSTL-2024-0049, 247392015
A Composite Index for Assessing Sustainability of Urban Transport Interventions
Nitwal, Rohit Singh; Allirani, Hemanthini; Verma, Ashish*
- Paper ID: TSTL-2024-0048, 240537060
Effects of residential relocation and modal shift on travel satisfaction: context of Hubli-Dharwad cities in India
Doddamani, Chetan; M, Manoj; Yamamoto, Toshiyuki*
- Paper ID: TSTL-2025-0004, 252879884
A Novel Transportation Quality of Life Index Framework for Evaluating Sustainable Transport Interventions
*Allirani, Hemanthini; Verma, Ashish**

14:00 -15:30

Seminar Hall-A

Technical Session 2

Chair: Dr. Mukti Advani, CSIR-CRRI

Discussant: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bengaluru

- Paper ID: TSTL-2024-0055, 248720141
A Multidimensional Spectrum of Passenger Travel in Indian Cities
Guha, Ayushman; Advani, Mukti; Puri, Khushboo; Sekhar, Ch. Ravi; Parida, Manoranjan*
- Paper ID: TSTL-2024-0086, 244514587
Redefining Livability through 15-Minute Neighborhoods in Bengaluru: An Approach to Enhance the Quality of Life Through Sustainable Mobility
Sarvadevabhatla, Pravalika; Ramesh, Nithya; Hakhu, Arundhati*

*Presenting Author ** Participants can visit the exhibition area

DETAILED SCHEDULE

WSSTL-2025

25-06-2025

WEDNESDAY



TIME



VENUE



EVENT

		<ul style="list-style-type: none"> Paper ID: 2024-0088, 240913507 Adopting a Sustainable Ground Access:Mode Choice Behavior Before and After Metro Integration at NSCBI Airport, Kolkata <i>Mondal, Debjyoti; Swami, Lalit; Ahmed, Mokaddes Ali*</i> Paper ID: TSTL-2024-0063, 244966128 Predictive Modelling of Vehicular Tailpipe Emissions Using Supervised Machine Learning Algorithms <i>D S, Reshmy*; Mathew, Binu Sara; K, Swamalatha</i>
15:30 -16:00	Dining Area, J N Tata Auditorium	<p>Tea & Coffee Break/ Exhibition Visit**</p>
16:00 -17:00	J N Tata Auditorium	<p>GIZ Plenary Session 1 Could Living Lab. approach be helpful in overcoming Barriers to Active Mobility – Lessons from India and other countries Moderator: Mr. Vivekanand Kotikalapudi, iDeCK Rapporteur: Dr. Priyanka Das, Postdoctoral Fellow, IST Lab, IISc Bengaluru</p>
17:00 -19:00	J N Tata Auditorium	<p>Technical Session 3 Chair: Prof. Meghna Verma, MSRIM, Bengaluru Discussant: Mr. Santhosh Kumar B V, Research Scholar, IST Lab, IISc Bengaluru</p> <ul style="list-style-type: none"> Paper ID: TSTL-2024-0089, 240450518 Understanding Women's Needs, Challenges, and Expectations from Urban Transport in India: A Focus Group Discussion Approach <i>Verma, Meghna*; Jain, Silky</i> Paper ID: TSTL-2024-0060, 243217747 Evaluating hospital transport system for enhancing safety and sustainability in healthcare delivery <i>Acharya, Siddharth*; Yadav, Siddharth*; Pulipati, Sasanka</i> Paper ID: TSTL-2024-0090, 244644504 Functional to Emotional: Exploring the Role of Art in Enhancing Well-Being in Singapore's MRT stations <i>Ong Ker Shing, Joni*; Schroepfer, Thomas; Goh, Sushma</i>

*Presenting Author ** Participants can visit the exhibition area

DETAILED SCHEDULE

WSSTL-2025

25-06-2025

WEDNESDAY



TIME



VENUE



EVENT

17:00 -19:00

Seminar Hall-A

- Paper ID: TSTL-2024-0044, 242815333
Review of social impact assessment in transport planning practices: Lessons from cities in England
*Wan, Zhengyue; Titheridge, Helena**
- Paper ID: TSTL-2024-0059, 240098458
A Prioritisation Framework to Identify Key Attributes of Transit-Oriented Development (TOD) using Multi-Criteria Decision Making (MCDM) approach: An Indian Context
*Manoj, BS; Goswami, Arkopal; Meena, Kapil Kumar**
- Paper ID: TSTL-2024-0047, 240009518
Exploring the Hedonic Dimensions of Mental Well-Being in Commute Experiences: Insights from the Satisfaction with Travel Scale in the Indian Context
Das, Ann; Verma, Ashish; Sivakumar, Aruna*
- **Technical Session 4**
Chair: Prof Shubhajit Sadhukhan, IIT Roorkee
Discussant: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bengaluru
- Paper ID: TSTL-2024-0058, 243848297
Feasibility assessment of last mile connectivity options for metro stations accessibility in Dwarka Sub-city, New Delhi
Umair, Mohd; Faridi, Sadaf; Ali, Sameer*
- Paper ID: TSTL-2024-0075, 249015986
Development of Route Based Assessment Framework for Lanes in Chattarpur Village, Delhi
Agarwal, Oshin; Dhingra, Mohit; Jain, Deepty*
- Paper ID: TSTL-2024-0081, 241259541
The Nexus of Urban Street Design and Human Wellbeing: A Bibliometric Perspective
Mishra, Dhruvani; Sadhukhan, Shubhajit*
- Paper ID: TSTL-2024-0076, 243910983
Developing Urban Sustainable Transportation-SDG Index for Evaluating Sustainable Transport Measures Towards Achieving Sustainable Development Goals
Nitwal, Rohit Singh; Verma, Ashish*
- Paper ID: TSTL-2024-0078, 246224028
Perceived Resilience of Transport Systems During Urban Floods: Insights from a Comparative Focus Group Study
B, Maneesha; Verma, Ashish*

*Presenting Author ** Participants can visit the exhibition area

1st World Symposium on Sustainable Transport and Livability - 2025

DETAILED SCHEDULE

WSSTL-2025

25-06-2025

WEDNESDAY

 TIME	 VENUE	 EVENT
19:00 - 19:30	Seminar Hall-A J N Tata Auditorium	Invited Technical Talk by Dr. S. Velmurugan, Chief Scientist and Head of Department, Traffic Engineering and Safety, CSIR - CRRRI on Impact Evaluation of Road Safety Audit through HDM-IV Exhibition Visit**

26-06-2025

THURSDAY

 TIME	 VENUE	 EVENT
08:30 -09:00	J N Tata Auditorium	Registration/ Exhibition Visit**
09:00 -10:00	J N Tata Auditorium	Keynote Session 2: Prof. Maria Attard What Affects Walking? Designing Action Research to Engage Citizens Chair: Prof. Ashish Verma, IISc Bengaluru Rapporteur: Dr. Priyanka Das, Postdoctoral Fellow, IST Lab, IISc Bengaluru
10:00 -10:30	Dining Area, J N Tata Auditorium	Tea & Coffee Break/ Exhibition Visit**
10:30 -11:30	J N Tata Auditorium	GIZ Plenary Session 2 Bridging Gaps for Inclusive Urban Transport Systems Moderator: Ms. Krishna Desai, GIZ Rapporteur: Mr. Tanmay Ghosh, Postdoctoral Fellow, IST Lab, IISc Bengaluru
11:30 -12:30	J N Tata Auditorium	K-RIDE Plenary Session Seamless Journeys, Healthier Lives: Integrating Public Transport for Commuter Well-being Moderator: Prof. Ashish Verma, IISc Bengaluru Rapporteur: Mr. Rohit Singh Nitwal, Research Scholar, IST Lab, IISc Bengaluru
12:30 -13:30	Dining Area, J N Tata Auditorium	Lunch Break/ Exhibition Visit**
13:30 -14:30	J N Tata Auditorium	IST Lab Plenary Session 1 Aligning Transport and Urban Planning to Enhance Quality of Life Moderator: Prof. Ashish Verma, IISc Bengaluru Rapporteur: Mr. Gautam Narula, Research Scholar, IST Lab, IISc Bengaluru

*Presenting Author ** Participants can visit the exhibition area

DETAILED SCHEDULE

WSSTL-2025

26-06-2025

THURSDAY

 TIME	 VENUE	 EVENT
14:30 -15:30	J N Tata Auditorium	WRI India Plenary Session Shift/Transport - From Congested and Vulnerable to Connected and Resilient Moderator: Mr. Srinivas Alavilli, WRI India Rapporteur: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bengaluru
15:30 -16:00	Dining Area, J N Tata Auditorium	Tea & Coffee Break/ Exhibition Visit**
16:00 - 17:00	J N Tata Auditorium	IST Lab Plenary Session 2 Accessibility-based Measures for Urban & Transport Planning Moderator: Prof. Aruna Sivakumar, Imperial College London Rapporteur: Mr. Tanmay Ghosh, Postdoctoral Fellow, IST Lab, IISc Bengaluru
17:00 - 17:30	J N Tata Auditorium	Exhibition Visit**
17:00 - 19:00	Starts at J N Tata Auditorium	Heritage Tours by Walking and Cycling

27-06-2025

FRIDAY

 TIME	 VENUE	 EVENT
08:30 -09:00	J N Tata Auditorium	Registration/ Exhibition Visit**
09:00 -10:00	J N Tata Auditorium	Keynote Session 3: Prof. Ahmed El Geneidy How Daily Travel Contributes to Quality of Life: Lessons from the Canadian Context Chair: Shri Jaideep, OSD, MoHUA Rapporteur: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bengaluru
10:00 -10:30	Dining Area, J N Tata Auditorium	Tea & Coffee Break/ Exhibition Visit**

**** Participants can visit the exhibition area**

DETAILED SCHEDULE

WSSTL-2025

27-06-2025

FRIDAY

 TIME	 VENUE	 EVENT
10:30 -11:30	J N Tata Auditorium	BeST-Biocon Plenary Session Public Health and Sustainable Mobility Moderator: Prof. Prabhdeep Kaur, IISc Bengaluru Rapporteur: Ms. Ann Das, Research Scholar, IST Lab, IISc Bengaluru
11:30 -12:30	J N Tata Auditorium	IST Lab Plenary Session 3 How Technology Based Sustainable Mobility Solutions Can Contribute to Well-being Moderator: Prof. Digvijay S Pawar, IIT Hyderabad, India Rapporteur: Mr. Santhosh Kumar B V, Research Scholar, IST Lab, IISc Bengaluru
12:30 -13:30	Dining Area, J N Tata Auditorium	Lunch Break/ Exhibition Visit**
13:30 -14:30	J N Tata Auditorium	AM-CoE Plenary Session Pedalling Progress: Advancing Active Mobility for Sustainable Cities Moderator: Mr. Sathya Sankaran, Urban Morph Rapporteur: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bengaluru
14:30 -15:30	J N Tata Auditorium	Uber Plenary Session Towards a Livable Bengaluru: Addressing Congestion through Connectivity and Care-driven Urban Planning Moderator: Prof. Ashish Verma, IISc Bengaluru Rapporteur: Mr. Rohit Singh Nitwal, Research Scholar, IST Lab, IISc Bengaluru
15:30 - 16:00	Dining Area, J N Tata Auditorium	Tea & Coffee Break/ Exhibition Visit**
16:00 - 17:00	J N Tata Auditorium	DPIIT Plenary Session Institutional Pathways to Sustainable and Livable Cities Moderator: Dr. Jivisha Joshi Gangopadhyay, DPIIT Rapporteur: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bengaluru
17:00 - 18:30	J N Tata Auditorium	Valedictory Session
18:30 - 19:00	Dining Area, J N Tata Auditorium	High Tea/ Exhibition Visit**

** Participants can visit the exhibition area

PRE-SYMPOSIUM WORKSHOP

Methodologies to Quantify Sustainable Transport and Quality of Life (QoL)



24 JUNE, 2025



14:00 - 17:00 hours



ITES CENTRE



Participants of the Pre-symposium Workshop

The workshop explored the critical connections between sustainable transport and its far-reaching impacts on well-being, livability, equity, accessibility, environmental quality, and disaster resilience. Participants engaged in discussions on how sustainable transport measures can enhance the physical, mental, social, and economic health of individuals and communities. The workshop presented a multidimensional Transportation Quality of Life (TQOL) Index framework, which evaluated the impacts of sustainable transport interventions at the network level, using the Bengaluru Metropolitan Region as a case study. In addition, it examined a local QoL Index Framework developed to assess the effects of pedestrianization, highlighting Church Street in Bengaluru as a successful real-world example. The session also delved into mental well-being, covering both hedonic and eudaimonic dimensions, as elements of subjective quality of life. Additionally, it covered equity, in particular, the distributional effect of system resilience.

Module 1: Basic concepts of Livability and Quality of Life (QoL)

The first module introduced the basic concepts of livability and Quality of Life (QoL), explaining how transportation shapes people's everyday experiences by providing access to essential activities. It covered the theoretical foundations and motivation for using sustainable transport policies to improve physical, social, and economic well-being.

Module 2: Local and Network Level Quality of Life

The second module presented a framework for assessing local-level impacts of pedestrianisation on QoL. Using Church Street in Bengaluru as a testbed, it combined subjective surveys and objective environmental data to measure how pedestrian-friendly streets can improve air quality, reduce noise, boost health, and support local businesses. Additionally, it also discussed the development of a network-level framework and the Transportation Quality of Life Index (TQLI), to measure the impact of transport interventions on quality of life.

Module 3: Transport and Well being

The third module explored the links between transport and mental well-being, clarifying the difference between QoL and well-being. It highlighted how subjective well-being can be studied through travel behavior, emotions, and the built environment, and discussed the development of context-specific scales and methods to capture these insights.

Module 4: Transportation system resilience

The final module focused on transport system resilience and equity. It discussed how resilient transport systems help communities during disruptions and emphasised the need to design for equity so that vulnerable groups are not left out.



Workshop concluded with closing remarks from Prof. Ashish Verma and distribution of certificates to the participants.

COMMUNITY ENGAGEMENT SESSION



24 JUNE, 2025



18:00 - 20:00 hours



J N Tata Auditorium

The Community Engagement Session featured poster presentation by community groups, including Resident Welfare Associations (RWAs), citizen collectives, NGOs, and think tanks, who showcased their various initiatives aimed at promoting sustainable mobility and creating more livable urban spaces. It served as an opportunity to exchange ideas, celebrate grassroots efforts, and explore how civic-led actions contribute to broader urban policy and planning.



Session Chair: Mr. Prakash Belawadi
Actor & Director

Participating Communities



IRR Street: Standstill to Active

Presented by

Bangalore Political Action Committee (B.PAC)

Sustainable, Quieter and Safer Urban Mobility

Presented by

Citizens for Citizens (C4C)



Pedal Power

Presented by

Citizens for Sustainability

HSR Cyclists Group

Presented by

HSR Feeder Service – Success Story





Empirical Work of IST Lab on Sustainable Transport and Livability

Presented by

IISc Sustainable Transportation Lab (IST Lab)

Pimpri Chinchwad Vehicle Free Day

Presented by

Institute for Transportation and Development Policy (ITDP)



Accessing Tender S.U.R.E Impact on Roads

Presented by

Jana Urban Space

Sustainable, Safe Public Transport for the Masses

Presented by

Malleswaram Swabhimana Initiative Forum (MSIF)



sensinglocal

How Can We Make Bengaluru Walkable?

Presented by

Sensing Local

Transport and Well-Being

Presented by

WoW Group Trust



Walkable Malleswaram

Presented by

Malleswaram Social

Transportation Research Innovation Analysis Lab

Presented by

BITS Pilani



URBAN MORPH
— TRANSFORMING URBAN SPACES —

Designing Future Mobility

Presented by

Urban Morph

Key outcomes and recommendations

- **Public participation** in urban development projects is not merely desirable - it is essential. Involving citizens in the planning and design process ensures that the outcomes reflect the real needs, aspirations, and lived experiences of the people who use and inhabit urban spaces daily. When communities are engaged from the beginning, it fosters a **sense of ownership, transparency, and trust** between the public and governing bodies. Participatory planning also allows for more inclusive, context-sensitive solutions that address local challenges effectively. Making public consultation and concurrence a mandatory part of project formulation helps create cities that are not only functional but also equitable, responsive, and resilient.
- Equally important is the cultivation of a **sense of respect** associated with the use of public transport. In many cities, public transport is often perceived as a last resort or a second-tier option compared to private vehicles. To reverse this perception, it is vital to design and operate public transport systems that are clean, efficient, safe, and dignified. When public transport is given the value it deserves through high-quality design, timely services, and equitable access, it elevates the status of those who use it. This transformation encourages a cultural shift where using public transport is not only a practical choice but also a socially respected and environmentally responsible one integral to sustainable urban living.



KEYNOTE SESSIONS

Keynote Session 1

“Are Sustainability, Quality of Life, and the Choice of Means of Transport Related?”



25 JUNE, 2025



11:00 - 12:00 hours



Speaker: Prof. Guenter Emberger, TU Wien

Chair of the Session: Prof. Aruna Sivakumar, Imperial College London

Rapporteur: Ms. Ann Das, IST Lab, IISc Bangalore

Summary of the session

This keynote session opened with a profound reflection on the evolution of human mobility from our ancestors who relied solely on walking, to modern societies that have become overwhelmingly dependent on motorized transport. This shift, though often associated with progress, has come at a significant cost to public health, environmental quality, and social well-being. The speaker challenged the audience to rethink whether our current trajectory truly represents advancement or a detour from sustainable human development.

He emphasized that sustainable mobility is not about going backward but about reclaiming a balance integrating technology and infrastructure with human-centric design, and re-establishing walking, cycling, and accessible public transport as the core building blocks of healthy cities.

Vienna's Transformation: A Case Study in Livability

Using Vienna as a model, Prof. Emberger, detailed the city's long-term vision in transforming itself into one of the world's most livable urban environments. This transformation was not accidental but rooted in strategic urban planning, policy alignment, and a persistent focus on public value. Over time, Vienna shifted from car-centric planning to an urban ecosystem where walking, cycling, and public transport are prioritized, making personal motor vehicles increasingly unnecessary in daily life.

The city's framework for livability was built around six core parameters:

- **Safety:** Urban systems ensure the safety of all users, especially pedestrians and cyclists, through speed control, well-lit streets, and inclusive infrastructure.
- **Environment:** Air pollution, noise, and carbon emissions are monitored and managed, supporting climate goals and respiratory health.
- **Transport:** Accessibility, affordability, and inter-modality of transit options allow all citizens to move efficiently across the city.
- **Social Infrastructure:** Everyday needs like education, health care, and grocery access are placed within walking or cycling distance to reduce travel burdens.
- **Emotions:** The psychological impact of urban mobility was highlighted as a critical, often neglected factor in urban design. Spaces should make people feel safe, dignified, and joyful.
- **Public Open Space:** Green and open areas serve not just ecological functions but also as essential venues for relaxation, recreation, and community interaction.



Prof. Emberger also introduced a conceptual trade-off model showing how increases in human well-being can lead to reductions in environmental degradation, traffic congestion, and social inequality. He asserted that quality of life is not a residual benefit but must be an intentional outcome of transportation and urban planning.

In this context, he unveiled a compelling tool: the “Walking Yardstick” a simple, intuitive framework to assess and quantify pedestrian service levels in cities. By standardising this tool, it offers city planners a clear method to identify gaps in walkability and implement corrective measures. The core principle: “What gets measured gets improved.” Professor also highlights that walking and cycling should be entirely free and institutionally rewarded.

Just as car owners often receive subsidies in the form of infrastructure investment, it's time to flip the incentive model and encourage active mobility, not restrict it. Sustainable travel modes should not be viewed as burdens or alternatives, but as default, desirable modes that elevate both personal and collective well-being.

Key Outcomes and Recommendations

Recognise Transport as a Tool for Well-being

Cities must move beyond utilitarian transport planning and begin treating mobility as an enabler of physical, mental, and emotional health.

Institutionalise Walkability Assessments

Implement tools like the Walking Yardstick in Indian cities to regularly audit and enhance pedestrian infrastructure. These should be part of local development plans and smart city initiatives.

Reprioritise Infrastructure Funding

Allocate urban transport budgets in favour of sustainable, active, and inclusive modes, especially walking and cycling over car-centric infrastructure.

Design for Emotion

Urban design should intentionally address the emotional experience of mobility, comfort, dignity, joy, and calmness, alongside functional efficiency.

Make Active Travel Free and Appealing

Introduce policies that remove barriers to walking and cycling while offering incentives such as fare-free transit zones and slow streets that prioritise pedestrians.

Learn from Global Best Practices

Cities like Vienna exemplify how sustained, integrated planning leads to measurable improvements in livability. Indian cities can adopt similar models adapted to local contexts.

Centre Livability in Urban Governance

Use the six livability parameters (safety, environment, transport, social infrastructure, emotions, public space) as benchmarks for evaluating policy success across departments, not just transport.



From left: Prof. Aruna Sivakumar, Prof. Guenter Emberger, Ms. Ann Das

Keynote Session 2

“What affects walking? Designing actions research to engage citizens”



26 JUNE, 2025



09:00 - 10:00 hours



Speaker: Prof. Maria Attard, University of Malta

Chair of the Session: Prof. Ashish Verma, IISc Bangalore

Rapporteur: Dr. Priyanka Das, IST Lab, IISc Bangalore

Summary of the session

Prof. Maria Attard’s presentation offered valuable insights into the “Walking Malta” project, is a pioneering participatory research initiative aimed at assessing and enhancing walkability in Malta’s urban environments. Rooted in the principles of sustainable mobility and inclusive planning, the project mobilises citizens, students, and planners to collectively evaluate the walking experience through structured fieldwork. The research involved a series of walking workshops, where participants, often from the University of Malta, collected both quantitative and qualitative data while walking through different urban routes. Using smartphones and physical observation sheets, they recorded details on infrastructure quality (e.g., sidewalk width, continuity, surface condition), safety (e.g., crossing visibility, traffic speed), comfort (e.g., shading, cleanliness), and accessibility for vulnerable groups. Participants also used hashtag-based tagging (#safe, #uncomfortable, #vibrant, etc.) and uploaded geo-referenced images, which were later analysed for patterns and spatial trends.

These crowdsourced inputs were compiled into walkability indices with mapped outputs showing hotspots of pedestrian discomfort and opportunities for infrastructure upgrades. In particular, areas around schools, health centres, and major bus stops were flagged as needing urgent intervention due to broken pavements, missing crossings, or high traffic exposure. The results revealed a mismatch between pedestrian needs and current infrastructure provision, especially in older urban cores and newer suburban developments.

Prof. Attard's team emphasised the importance of inclusive street design, and the data is being used to inform local councils, national transport planners, and urban designers about evidence-based improvements that can promote walking and cycling.



Key Outcomes and Recommendations

Developed a Perceived Walkability Index

The project created a comprehensive index based on citizen input, mapping pedestrian experiences across urban and suburban Malta. It assessed key parameters such as comfort, safety, accessibility, and vibrancy, helping planners visualise how people feel about the walking environment, beyond what traditional infrastructure audits reveal.

Created a National Spatial Walkability Database

Through crowdsourced data from over 1,000 walking experiences contributed by residents, the project compiled a robust spatial database of walkability conditions. This open dataset includes tagged geolocated images, survey responses, and on the ground observations, forming one of Malta's most detailed pedestrian mobility resources.

Identified Key Walkability Barriers

The research pinpointed critical obstacles to safe and comfortable walking, including missing or narrow pavements, unsafe or absent pedestrian crossings, poor street lighting, uneven surfaces, and vehicle encroachment. These findings were essential for prioritising infrastructure upgrades.

Installed Wayfinding Totems with QR Codes

To encourage walking and cycling, wayfinding totems were placed at strategic urban locations, offering QR-code access to information about distances, estimated travel times, and nearby walking routes supporting a shift toward more active, informed travel choices.

Strengthened Community Engagement

The project employed inclusive participatory tools like WhatsApp-based reporting, walking interviews, and co-design workshops. These methods empowered citizens to share their lived mobility experiences and directly contribute to improving local streetscapes.

Expanded Regional Coverage through Workshops

Active mobility workshops were extended to different regions across Malta, including the Northern, Western, and Eastern areas, ensuring that walkability improvements addressed diverse geographic and demographic needs.

Promoted Walkability Benefits

Public engagement and outreach helped raise awareness about how walkable environments contribute to better public health, social equity, and environmental sustainability. The project emphasised walkability as a shared public good.

Informed National Policy

Based on data-driven insights, the Walking Malta initiative provided concrete, evidence-based recommendations to planners and policymakers, which influenced national-level transport and land-use strategies, embedding walkability into Malta's broader urban development agenda.



From left: Prof. Ashish Verma, Prof. Maria Attard, Dr. Priyanka Das

Keynote Session 3

“How daily travel contributes to quality of life: Lessons from the Canadian context”



27 JUNE, 2025



09:00 - 10:00 hours



Speaker: Prof. Ahmed El-Geneidy, McGill University

Chair of the Session: Shri Jaideep, OSD(UT), MoHUA

Rapporteur: Ms. Maneesha B, IST Lab, IISc Bangalore

Summary of the session

The third keynote lecture by Prof. Ahmed El-Geneidy examines how daily travel modes, behaviours, and commute experiences shape people’s self-reported well-being, with data collected from Canadian commuters via social media and a public opinion company. By exploring perceptions around commute mode, duration, health, and work outcomes, the research aims to clarify how daily travel can support or hinder quality of life.

How do different people think their daily travel affects their quality of life?

- Commuters who cycle or walk as their primary mode generally agree strongly that their daily travel positively influences their overall quality of life.
- People who rely on cars, transit, or multimodal trips show lower levels of agreement, indicating that these modes are less likely to add clear value to daily well-being.
- Overall, active modes stand out as providing the clearest benefit to subjective well-being.

How does commuting by different modes impact the quality of life of workers?

- The main commute mode is linked to differences in self-reported mental and physical health, general life satisfaction, and work performance (including energy levels, productivity, and punctuality).
- Walkers and cyclists consistently report higher mental well-being, life satisfaction, and physical health.

- Transit users tend to rate their physical health somewhat positively, but generally do not agree that their travel mode boosts other aspects of well-being.
- Active commuters maintain higher energy levels and stay more productive and punctual at work. These benefits drop for car, train, subway, and bus commuters.
- Car users are somewhat better off than transit users in punctuality.

How does commute duration impact quality of life?

- For active mode users, longer-than-average commutes do not diminish their well-being; they remain satisfied with life, mental health, and productivity even when travelling farther than average.
- For car and transit users, longer commutes have the opposite effect satisfaction, mental health, and work performance measures all tend to decline as commute duration increases.



Key Outcomes and Recommendations

Active Modes Clearly Enhance Quality of Life

Walking and cycling are strongly linked to higher self-reported life satisfaction, better mental and physical health, and improved work performance (energy, productivity, punctuality).

Benefits Hold Even for Longer Distances

Unlike car and transit users, active commuters remain satisfied with life, mental health, and productivity even when they travel longer than average.

Car and Transit Commutes Show Negative Trends

Car and transit commuters report lower agreement that their travel mode adds value to well-being. The negative effects increase with longer commute times.

Transit Users Report Lower Overall Well-Being

Transit users tend to rate physical health somewhat positively, but see few benefits for mental health, life satisfaction, or work outcomes.

Commute Mode Directly Affects Work Performance

Main travel mode is linked to energy, productivity, and punctuality. Active commuters show higher scores on all three compared to car, train, subway, and bus users.

No Additional Benefit from Cars over Transit (Except Punctuality)

Car users tend to do slightly better than transit users on punctuality, but remain below active commuters overall.

Recommendation to Improve Urban Conditions for Active Travel

Improving walkability, cycling infrastructure, and better-quality transit can help expand these well-being benefits to more commuters.



From left: Prof. Ahmed El-Geneidy, Shri Jaideep, Ms. Maneesha B

TECHNICAL SESSIONS

Technical Session 1



25 JUNE, 2025



14:00 - 15:30 hours



J N Tata Auditorium

Chair of the Session: Prof. Manoj M, IIT Delhi

Discussant: Mr. Gautam Narula, Research Scholar, IST Lab, IISc Bangalore

Details of Papers Presented

Paper ID: TSTL-2024-0041, 245535772

Paper Title: *Stakeholder Perceptions Towards Potential Impact of Regional Rapid Transit System on Surrounding Land Characteristics in National Capital Region*

Authors: Kritika Sharma, Aditya Manish Pitale, Shubhajit Sadhukhan

Presenting Author: Kritika Sharma

Paper ID: TSTL-2024-0049, 247392015

Paper Title: *A Composite Index for Assessing Sustainability of Urban Transport Interventions*

Authors: Rohit Singh Nitwal, Hemanthini Allirani, Ashish Verma

Presenting Author: Rohit Singh Nitwal

Paper ID: TSTL-2024-0048, 240537060

Paper Title: *Effects of residential relocation and modal shift on travel satisfaction: context of Hubli-Dharwad cities in India*

Authors: Chetan Doddamani, Manoj M, Toshiyuki Yamamoto

Presenting Author: Chetan Doddamani

Paper ID: TSTL-2025-0004, 252879884

Paper Title: *A Novel Transportation Quality of Life Index Framework for Evaluating Sustainable Transport Interventions*

Authors: Hemanthini Allirani, Ashish Verma

Presenting Author: Ashish Verma

Summary of the Presentations

The studies presented in Technical Session 1 offer valuable insights into holistic, data-driven, and equity-focused strategies for enhancing sustainable urban transportation and quality of life in Indian cities.

Stakeholder Perceptions Towards Potential Impact of Regional Rapid Transit System on Surrounding Land Characteristics in National Capital Region

This paper explores how the planned RRTS will affect land characteristics near Sahibabad and Duhai stations, highlighting gender-based differences in perception. While all respondents expect higher property values and economic growth, men and women differ on privacy and localised impacts. The study's findings underline the importance of gender-sensitive transit planning, equitable development beyond immediate station areas, and the inclusion of affordable housing.

A Composite Index for Assessing Sustainability of Urban Transport Interventions

This study develops a Composite Sustainable Transportation Index (CSTI) using 29 indicators covering environmental, social, and economic dimensions. Comparing Business-As-Usual and Sustainable Transport scenarios for Bangalore 2031, it shows that metro expansion achieves the highest sustainability grade, with bus and NMT improvements also performing well. The framework offers a replicable, data-driven tool to assess and compare transport policy impacts and future interventions.

Effects of residential relocation and modal shift on travel satisfaction: context of Hubli-Dharwad cities in India

Focusing on Hubli-Dharwad, this paper analyses how moving house and changing commute modes affect travel satisfaction. Built environment factors like good accessibility, safety, and cleanliness raise satisfaction levels, but dense, mixed-use areas have mixed impacts. A notable insight is the strong preference for two-wheelers, which mediates the effect of urban form changes on satisfaction - highlighting the challenge of shifting people to public transport under current service conditions.

A Novel Transportation Quality of Life Index Framework for Evaluating Sustainable Transport Interventions

This paper introduces a novel Transportation Quality of Life Index (TQOLI) combining health, accessibility, environment, and mobility indicators. Using a Fuzzy-AHP method, it evaluates eight sustainable transport scenarios for Bangalore. Metro network expansion powered by renewables yields the greatest QOL benefits, with bus priority and NMT also contributing. The study provides planners with a holistic tool for prioritizing interventions that improve well-being and reduce reliance on private vehicles.





Outcomes

The four studies underscore the need for indicator-rich, equity-conscious, and context-specific transport planning in India. They demonstrate how composite indices (CSTI and TQOLI) can turn complex data on emissions, health, accessibility, and mobility into actionable guidance for metro expansion, bus priority corridors, and renewable-powered fleets. They reveal that travellers' lived experiences, such as satisfaction shifts after residential relocation and mode change, must be factored into land use and densification policies to avoid unintended boosts in 2W dependence. Gender segmented analyses around new RRTS stations show that property value gains and development pressure are perceived differently by men and women, highlighting the importance of gender sensitive planning and affordable housing safeguards. Collectively, these papers call for transport interventions that cut private vehicle travel, integrate transit with walk, cycle networks, balance station area growth, and embed subjective well-being and social equity metrics into every stage of decision making.



From left: Mr. Gautam Narula, Prof. Ashish Verma, Prof. Manoj M, Dr. Chetan Doddamani, Mr. Rohit Singh Nitwal, Ms. Kritika Sharma

Technical Session 2



25 JUNE, 2025



14:00 - 15:30 hours



Seminar Hall - A

Chair of the Session: Dr. Mukti Advani, CSIR -CRRRI

Discussant: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bangalore

Details of Papers Presented

Paper ID: TSTL-2024-0055, 248720141

Paper Title: *A Multidimensional Spectrum of Passenger Travel in Indian Cities*

Authors: Ayushman Guha, Mukti Advani, Khushboo Puri, Ch. Ravi Sekhar, Manoranjan Parida

Presenting Author: Ayushman Guha

Paper ID: TSTL-2024-0086, 244514587

Paper Title: *Redefining Livability through 15-Minute Neighborhoods in Bengaluru: An Approach to Enhance the Quality of Life Through Sustainable Mobility*

Authors: Pravalika Sarvadevabhatla, Nithya Ramesh, Arundhati Hakhu

Presenting Author: Pravalika Sarvadevabhatla

Paper ID: TSTL-2024-0088, 240913507

Paper Title: *Adopting a Sustainable Ground Access: Mode Choice Behavior Before and After Metro Integration at NSCBI Airport, Kolkata*

Authors: Debjyoti Mondal, Lalit Swami, Mokaddes Ali Ahmed

Presenting Author: Mokaddes Ali Ahmed

Paper ID: TSTL-2024-0063, 244966128

Paper Title: *Predictive Modelling of Vehicular Tailpipe Emissions Using Supervised Machine Learning Algorithms*

Authors: Reshmy D S, Binu Sara Mathew, Swarnalatha K

Presenting Author: Reshmy D S

Summary of the Presentations

The studies presented in technical session 2 shed light on innovative approaches and evidence-based strategies for improving sustainable urban mobility and livability in Indian cities.

A Multidimensional Spectrum of Passenger Travel in Indian Cities

This study analysed travel data from 27 cities, revealing that Non-Motorised Transport (NMT) plays a vital but often overlooked role in urban mobility. While motorized trip lengths increase with city size, NMT trip lengths remain steady, showing their potential for sustainable travel. Motorized two-wheelers dominate across cities, with smaller cities depending more on Intermediate Public Transport (IPT). The findings stress the need for decentralised urban development, robust IPT systems in small cities, and improved public transport infrastructure in larger cities.

Predictive Modeling of Vehicular Tailpipe Emissions Using Supervised Machine Learning Algorithms

This research applied supervised machine learning methods to predict vehicle tailpipe emissions during idling, using real-world data from 108 vehicles. The study identified vehicle age and engine speed as key predictors and achieved high prediction accuracy for pollutants like CO, NOx, and HC. The models demonstrate strong potential for low-cost, real-time emission monitoring and smarter policymaking for urban air quality, while suggesting future expansion to heavy-duty vehicles and real-world applications.

Redefining Livability through 15-Minute Neighbourhoods in Bengaluru

Focusing on the 15-minute neighbourhood (15MN) concept, this study used a Bengaluru neighbourhood (Nallurahalli, Whitefield) as a case to assess how localised, walkable urban planning can enhance quality of life. It found significant gaps in pedestrian safety, last-mile connectivity, and access to social infrastructure, despite transit proximity. The authors propose targeted interventions across mobility, public spaces, and social services, along with a nine-step framework for scaling the 15MN model city-wide through participatory, decentralised planning.

Adopting a Sustainable Ground Access: Mode Choice Behaviour Before and After Metro Integration at NSCBI Airport, Kolkata

This study examined how the upcoming metro link to Kolkata's NSCBI Airport may change how passengers access the airport. Most currently rely on private vehicles and informal transport due to limited mass transit. Survey results and mode choice models show that up to 76.5% of passengers could shift to the metro if supportive measures, like luggage-friendly stations, women's safety provisions, and last-mile connections, are put in place.



Outcomes

Together, these studies underscore the importance of integrated, people-focused, and evidence-based approaches to urban mobility planning in Indian cities. They highlight the need to align regional transit investments with gender-sensitive and equitable land-use policies, apply robust sustainability assessment tools, and design neighbourhoods that support higher travel satisfaction through safe, accessible, and mixed-use environments. By linking travel demand management, emissions reduction, and quality-of-life frameworks, these insights offer policymakers, planners, and researchers clear directions for building urban transport systems that are sustainable, inclusive, and resilient.



From left: Dr. Mukti Advani, Ms. Reshmy D S, Ms. Pravalika Sarvadevabhatla, Dr. Mokaddes Ali Ahmed, Mr. Harendra Pratap Singh, Mr. Ayushman Guha

Technical Session 3



25 JUNE, 2025



17:00 - 19:00 hours



J N Tata Auditorium

Chair of the Session: Prof. Meghna Verma, MSRIM Bengaluru

Discussant: Mr. Santhosh Kumar B V, Research Scholar, IST Lab, IISc Bangalore

Details of Papers Presented

Paper ID: -TSTL-2024-0089, 240450518

Paper Title: *Understanding Women's Needs, Challenges, and Expectations from Urban Transport in India: A Focus Group Discussion Approach*

Authors: Meghna Verma, Silky Jain

Presenting Author: Meghna Verma

Paper ID: -TSTL-2024-0060, 243217747

Paper Title: *Evaluating hospital transport system for enhancing safety and sustainability in healthcare delivery*

Authors: Siddharth Acharya, Siddharth Yadav, Sasanka Pulipati

Presenting Author: Siddharth Acharya, Siddharth Yadav

Paper ID: TSTL-2024-0090, 244644504

Paper Title: *Functional to Emotional: Exploring the Role of Art in Enhancing Well-Being in Singapore's MRT stations*

Authors: Joni Ong Ker Shing, Thomas Schroepfer, Sushma Goh

Presenting Author: Joni Ong Ker Shing

Paper ID: -TSTL-2024-0044, 242815333

Paper Title: *Review of social impact assessment in transport planning practices: Lessons from cities in England*

Authors: Zhengyue Wan, Helena Titheridge

Presenting Author: Helena Titheridge

Paper ID: -TSTL-2024-0059, 240098458

Paper Title: *A Prioritisation Framework to Identify Key Attributes of Transit-Oriented Development (TOD) Using Multi-Criteria Decision Making (MCDM) Approach: An Indian Context*

Authors: BS Manoj, Arkopal Goswami, Kapil Kumar Meena

Presenting Author: Kapil Kumar Meena

Paper ID: -TSTL-2024-0047, 240009518

Paper Title: *Exploring the Hedonic Dimensions of Mental Well - Being in Commute Experiences: Insights from the Satisfaction with Travel Scale in the Indian Context*

Authors: Ann Das, Ashish Verma, Aruna Sivakumar

Presenting Author: Ann Das

Summary of the Presentations

The studies presented in technical session 3 shed light on innovative approaches and evidence-based strategies for improving sustainable urban mobility and livability in Indian cities.

Understanding Women's Needs, Challenges, and Expectations from Urban Transport in India: A Focus Group Discussion Approach

This study uses focus group discussions in Bengaluru to reveal how women from diverse backgrounds experience urban transport. While middle-class women prefer private modes for comfort, low-income women rely on inadequate public buses, and students use public transport but aspire for private options. Poor first/last-mile connectivity limits metro use despite its popularity. Across groups, safety, reliability, clean amenities, and better connectivity emerge as urgent needs. The study shows how transport access shapes women's opportunities in education, work, and healthcare, calling for inclusive, service-quality-focused policies and behavioural change initiatives.

Evaluating hospital transport system for enhancing safety and sustainability in healthcare delivery

This paper introduces a structured transport audit framework for hospitals, broadening the focus from medical care to safe, efficient campus mobility. Applying checklists based on Indian and global standards to three hospitals revealed good design for entrances and accessibility, but major gaps in road layout, signage, pedestrian facilities, and traffic management. Recommendations include safer crossings, clear wayfinding, protected paths, and accessible design for the elderly and disabled. Embedding this audit into routine hospital evaluations could help architects and city planners integrate transport networks with hospital campuses, reducing conflicts and improving user safety.

Functional to Emotional: Exploring the Role of Art in Enhancing Well-Being in Singapore's MRT stations

This study examines Singapore's Art in Transit (AIT) program, showing how public art transforms sterile transit spaces into vibrant, emotionally engaging places. Art integration reduces commuter stress, strengthens community identity, and enhances station livability. Despite operational challenges, AIT's collaborative model demonstrates how design can humanize urban infrastructure. The paper calls for future studies to use qualitative and quantitative measures to assess how art contributes to commuter well-being and urban resilience.

Review of social impact assessment in transport planning practices: Lessons from cities in England

This paper reviews how cities in England apply Social Impact Assessment (SIA) in transport planning. The UK's Transport Analysis Guidance (TAG) supports structured, inclusive, equity-focused planning, but local application often remains inconsistent and consultative processes superficial. To strengthen SIA practice, the study recommends deeper early community engagement, more qualitative data, and systematic post-project reviews. The findings offer lessons for other cities to build more context-specific, socially sustainable SIA frameworks.

A Prioritisation Framework to Identify Key Attributes of Transit-Oriented Development (TOD) Using Multi-Criteria Decision Making (MCDM) Approach: An Indian Context

This study ranks 16 attributes of TOD in India using expert input and multiple decision-making methods. Transport affordability, seamless first/last-mile connectivity, and multimodal integration emerged as top priorities, followed by walkable non-motorized transport networks and better urban densities. Design-focused features like mixed-use streets and managed parking ranked lower due to resource constraints. The study highlights that tackling cost and connectivity barriers is crucial for TOD to reduce car use and promote equitable, sustainable urban growth.

Exploring the Hedonic Dimensions of Mental Well-Being in Commute Experiences: Insights from the Satisfaction with Travel Scale in the Indian Context

Using data from commuters in Bengaluru, this study applies the “Satisfaction with Travel” Scale to understand emotional well-being in daily travel. Calm, smooth, hassle-free journeys strongly shaped satisfaction, while excitement or happiness had less influence. This suggests that the absence of stress is more important than thrill in commuting well-being. The study advocates developing India-specific psychometric tools to better capture local commute patterns, safety concerns, and cultural perceptions.



Outcomes

The outcomes of these six studies collectively emphasize the need for inclusive, context-sensitive, and evidence-based mobility planning in India. They highlight the importance of addressing gender specific mobility needs through safer and more accessible public transport systems. A hospital transport audit framework was developed to ensure equitable and efficient access for all users, especially the elderly and disabled. The integration of public art in transit spaces was shown to enhance emotional well-being and foster social connection. Insights from Social Impact Assessment practices underline the value of participatory and interdisciplinary approaches for equitable transport planning. The TOD study identified affordability, first/last-mile connectivity, and multimodal integration as critical priorities for sustainable urban development. Finally, the commuting well-being study stressed the need for culturally relevant tools to evaluate emotional experiences during travel, linking mental well-being to daily commute patterns.



From left: Mr. Siddharth Yadav, Mr. Siddharth Acharya, Mr. Santhosh Kumar B V, Prof. Meghna Verma, Prof. Helena Titheridge, Ms. Ann Das, Ms. Joni Ong Ker Shing, Mr. Kapil Kumar Meena

Technical Session 4



25 JUNE, 2025



17:00 - 19:00 hours



Seminar Hall - A

Chair of the Session: Prof. Shubhajit Sadhukhan, IIT Roorkee

Discussant: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bangalore

Details of Papers Presented

Paper ID: -TSTL-2024-0058, 243848297

Paper Title: *Feasibility assessment of last mile connectivity options for metro stations accessibility in Dwarka Sub-city, New Delhi*

Authors: Mohd Umair, Sadaf Faridi, Sameer Ali

Presenting Author: Mohd Umair

Paper ID: -TSTL-2024-0075, 249015986

Paper Title: *Development of Route Based Assessment Framework for Lanes in Chattarpur Village, Delhi*

Authors: Oshin Agarwal, Mohit Dhingra, Deepty Jain

Presenting Author: Oshin Agarwal

Paper ID: TSTL-2024-0081, 241259541

Paper Title: *The Nexus of Urban Street Design and Human Wellbeing: A Bibliometric Perspective*

Authors: Dhruvani Mishra, Shubhajit Sadhukhan

Presenting Author: Dhruvani Mishra

Paper ID: -TSTL-2024-0076, 243910983

Paper Title: *Developing Urban Sustainable Transportation - SDG Index for Evaluating Sustainable Transport Measures Towards Achieving Sustainable Development Goals*

Authors: Rohit Singh Nitwal, Ashish Verma

Presenting Author: Rohit Singh Nitwal

Paper ID: -TSTL-2024-0078, 246224028

Paper Title: *Perceived Resilience of Transport Systems During Urban Floods: Insights from a Comparative Focus Group Study*

Authors: Maneesha B, Ashish Verma

Presenting Author: Maneesha B

Invited Technical Talk

Invited Technical Talk by Dr. S. Velmurugan, Chief Scientist and Head of Department, Traffic Engineering and Safety, CSIR - CRRI on ***Impact Evaluation of Road Safety Audit through HDM-IV***

Summary of the Presentations

Technical Session 4 explores practical solutions for improving urban mobility in India, from last-mile connectivity and walkability to sustainable transport measures and community resilience during floods. These papers highlight the need for integrated, people-focused, and climate-aware transport planning.

Feasibility Assessment of Last Mile Connectivity Options for Metro Stations Accessibility in Dwarka Sub-city, New Delhi

This paper examines how last-mile connectivity (LMC) influences metro accessibility in Dwarka, New Delhi. Despite significant metro expansion in India, LMC remains weak due to poor infrastructure, fragmented regulations, and lack of integration. Surveys at three metro stations reveal an oversupply of e-rickshaws, high preference for app-based cabs, and underuse of traditional modes. The study recommends improvements such as enhanced pedestrian and cycling infrastructure, introduction of feeder buses, fare integration, and transit-oriented development to strengthen metro access and reduce reliance on private vehicles.

Development of Route-Based Assessment Framework for Lanes in Chattarpur Village, Delhi

This paper addresses walkability challenges in urban villages like Chhatarpur, Delhi. Using 21 attributes grouped into five dimensions, safety, comfort, accessibility, connectivity, and environment, four routes were assessed. Findings show no single route performs well across all dimensions, underscoring the need for a holistic approach. The Route-Based Assessment Framework (RBAF) provides a tool to identify targeted improvements for lanes in similar urban village contexts to enhance walkability and pedestrian safety.

The Nexus of Urban Street Design and Human Wellbeing: A Bibliometric Perspective

This study explores the links between urban street design and public health using a bibliometric analysis of over 1200 documents published between 1991 and 2024. Results highlight dominant themes like the role of street design in promoting physical activity and mitigating environmental risks. The analysis identifies niche research areas such as mental health and pollution impacts, and notes emerging methods like machine learning for future study. The paper provides a comprehensive overview of trends and gaps, guiding future research on healthy urban street design.

Developing Urban Sustainable Transportation - SDG Index for Evaluating Sustainable Transport Measures

This paper proposes a framework to evaluate how transportation contributes to achieving Sustainable Development Goals (SDGs) in urban areas. Using 17 Sustainable Transport Indicators and a traditional Travel Demand Model, a composite Urban Sustainable Transportation–SDG Index was developed for the Bangalore Metropolitan Region for 2022. The index aligns with SDGs 3, 7, 11, and 13 and serves as a monitoring tool to assess transport sustainability. The framework and indicator database can help other Indian and Asia-Pacific cities track progress toward sustainable mobility.

Perceived Resilience of Transport Systems During Urban Floods: Insights from a Comparative Focus Group Study

This study investigates how prior experience with urban flooding shapes commuters' perceptions of transport system resilience in Bengaluru. A structured survey compared perceptions between people with and without flood experience. Findings show that those without experience are more optimistic, while those with experience are more realistic about system limitations and community preparedness. Both groups doubt community capacity for active engagement in resilience-building. The study highlights the need to include community perceptions in planning for resilient transport systems during climate-induced disruptions.

Summary of the Technical Talk

The invited talk by Dr. S Velmurugan focused on the effectiveness of a Road Safety Audit (RSA) conducted for the Noida–Greater Noida Expressway, an eight-lane divided carriageway that had experienced high crash rates. The RSA, carried out by a team of safety specialists, recommended measures such as replacing median concrete guard posts with double row metal beam crash barriers, redeveloping entry and exit points to meet Indian Standards, adding lane markings and road studs, and installing speed enforcement cameras, CCTV, and variable message signs. After the implementation of these measures in 2013, an impact analysis for the years 2014 –2016 showed a significant improvement: total crashes reduced by 84% and fatal crashes by 91%.



Outcomes

Together, these studies highlight critical challenges and pathways for making urban transportation in India more accessible, sustainable, resilient, and supportive of human wellbeing. Key themes include the persistent gaps in last-mile connectivity that undermine metro systems (as seen in Dwarka), the need for route-specific and context-sensitive frameworks to improve walkability in dense urban villages like Chhatarpur, and the broader recognition that urban street design directly influences public health and environmental outcomes. They also show how aligning transport planning with the Sustainable Development Goals can help cities monitor and advance sustainability targets, using composite indices and clear indicators. Finally, they emphasize that perceptions of resilience - especially during climate-related events like urban flooding - are shaped by lived experiences, underscoring the need to integrate community insights into transport resilience planning.



From left: Mr. Mohd Umair, Mr. Rohit Singh Nitwal, Prof. Shubhajit Sadhukhan, Ms. Dhruvani Mishra, Ms. Oshin Agarwal, Ms. Maneesha B

PLENARY SESSIONS

ICCT Plenary Session on “Advancing Public transport and well-being through Zero-Emission Buses”



25 JUNE, 2025



12:00 - 13:00 hours

On the Panel

Moderator: Mr. Bhaumik Gowande, ICCT India

Panelists:

- Prof. Shalini Sinha, CEPT University, Ahmedabad
- Prof. Rahul T M, IIT Ropar
- Ravi Gadepalli, Consultant, World Bank & ADB
- Prof. Aruna Sivakumar, Imperial College London, UK

Rapporteur: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentation

Advancing Public transport and well-being through Zero-Emission Buses by Bhaumik Gowande

The presentation shows the current and future state of transportation towards zero-emission buses (ZEB) deployment in India, and focuses on accessibility, sustainability, and governance. The presentation was on ongoing research into both neighbourhood-scale electric bus services within cities and long-distance intercity e-buses operations. The electric buses are increasingly seen as essential to decarbonising transport, but their widespread deployment continues to face structural, infrastructural, and institutional challenges.

The key finding of the ICCT research reveals that 31% of the city's population does not have access to a bus stop within 500 meters of their residence, a significant service gap that affects most low-income and mobility-dependent populations. Despite significant investments in metro systems and gross-cost bus contracting models, Indian cities are far from achieving seamless, integrated public transport. This accessibility gap points to a planning paradigm that continues to prioritise large-scale infrastructure without adequate focus on localised mobility needs and equitable access.

ICCT shared insights from the Delhi Electric Vehicle Initiative (DEVI) pilot, which demonstrated how deploying small electric buses at the neighbourhood level can address last-mile connectivity challenges. In parallel, the presented findings from ICCT's research on intercity e-bus deployment, highlighted slow adoption rates among private operators. Presenter explained that although central government subsidies and highway charging infrastructure are being scaled up, operators face significant hurdles within cities, such as the absence of organised bus terminals, depot access, and city-based charging facilities. Without integrated planning that considers both intercity and intracity needs, India's broader fleet electrification targets for 2030 and 2047 remain at risk.

Summary of Panel Discussion

Shifting from Isolated Investments to Integrated Multi-Level Mobility Planning for Inclusive Transit

A shift from isolated transport investments to comprehensive, multi-level mobility planning is essential for Indian cities. To effectively influence ridership behaviour and promote public transport usage, planning must occur simultaneously at the city, regional, zonal, and neighbourhood levels. It was also pointed out that many current transport networks lack a systems-thinking approach and fail to address the actual needs of commuters. Unless cities embed accessibility metrics into urban planning processes, the transit system will continue to underserve large portions of the population.

Formalising Informal Transport: A Call for Inclusive Integration and Regulatory Reform in Intercity Mobility

Addressing the widespread presence of informal transport in India, especially in intercity corridors, is critically important. It was pointed out that private operators often function without adequate terminal infrastructure, face a lack of formal recognition, and encounter bureaucratic challenges related to permits and regulations. The urgent need to formalise informal transport services was emphasised, particularly through the identification of key corridors where integration into the formal system can begin. A model was proposed in which informal operators are recognised as stakeholders and provided with access to terminals, depots, and digital ticketing systems. It was further argued that existing permit frameworks, especially those regulating intercity routes, are outdated and inflexible, hindering dynamic and responsive transport planning.

Ensuring Data Equity: The Need for Ground-Truthing and Inclusive Approaches in Transport Planning

The discussion focused on the nature and quality of data used in transport planning. While technology-driven datasets derived from mobile phone or app usage are increasingly accessible, concerns were raised about their tendency to exclude vulnerable or offline populations. Emphasis was placed on the need for renewed ground-truthing through detailed field surveys and participatory research to capture the real needs of commuters, often left out of digital data sources. Ensuring data equity is highlighted in the session as a fundamental prerequisite for any effective accessibility or sustainability intervention in public transport.

Integrating Data, Planning, and Incentives: Global Insights for Sustainable Urban Mobility in Indian Cities

A global perspective was introduced by drawing lessons from London's integrated transport planning framework. The discussion highlighted the need for a central oversight body in Indian cities to facilitate coordination across transport, land use, and energy sectors, enabling coherent and long-term urban mobility planning. The utility of simulation models and activity-based travel behaviour studies was also underscored as essential tools for identifying service gaps. However, for these models to be effective, a significant investment in high-resolution data collection, such as travel diaries, land use patterns, and dynamic ridership counts, is required. In the context of sustainability, the importance of designing incentive mechanisms, including operator subsidies or user-side benefits, was emphasized to promote a shift towards public and electric transport modes, drawing parallels to financial strategies used in India's solar energy sector.

Key Outcomes and Recommendations

Prioritising Accessibility in Urban Transport Planning

Accessibility should be embedded as a core principle in urban transport planning by implementing neighbourhood-scale bus services, using inclusive data to identify underserved areas, and investing in physical infrastructure to ensure equitable access.

Formalising Informal Transport Services

Formalising informal transport requires providing institutional support and legal reforms, developing dedicated infrastructure for informal operators, and focusing on scaling and improving the reliability of both intra- and intercity services.

Strengthening Governance and Institutional Coordination

Strengthening governance in urban transport involves establishing empowered metropolitan transport authorities, creating centralised coordinating bodies for integrated planning, and promoting cross-sectoral collaboration among transport, land use, and energy departments.



From left: Prof. Rahul T M, Dr. Ravi Gadepalli, Mr. Bhaumik Gowande, Prof. Shalini Sinha, Mr. Harendra Pratap Singh, Prof. Aruna Sivakumar

GIZ Plenary Session 1 on “Could Living Lab approach be helpful in overcoming Barriers to Active Mobility – Lessons from India and other countries”



25 JUNE, 2025



16:00 - 17:00 hours

On the Panel

Moderator: Mr. Vivekanand Kotikalapudi, iDeCK

Panelists:

- Ms. Neetu Anna Joseph, GIZ, India
- Ms. Patricia Immler, KfW, Germany
- Ms. Manjula V, Former Commissioner, DULT
- Mr. Sathya Sankaran, Urban Morph
- Prof. Ashish Verma, IISc Bengaluru
- Ms. Aswathy Dilip, ITDP India

Rapporteur: Dr. Priyanka Das, Post Doctoral Fellow, IST Lab, IISc Bengaluru



Summary of Presentation

Introduction to Living Lab Methodology by Neetu Anna Joseph

The presentation introduces the Living Lab (LL) methodology as a powerful, collaborative framework designed to tackle “wicked problems” — deeply embedded societal challenges characterized by complexity, multiple stakeholders, and no definitive solutions. These problems, such as those related to urban mobility or climate resilience, are often resistant to linear, top-down approaches and require solutions that are adaptive, context-sensitive, and co-created.

To address these challenges, the Living Lab approach emphasizes collaborative innovation, bringing together citizens, researchers, businesses, and public institutions to jointly ideate, develop, and test solutions in real-life environments. At the core of this methodology lies the principle of open innovation, which involves the transparent sharing and circulation of knowledge among stakeholders, ultimately leading to more inclusive and sustainable outcomes. Living Labs function as open innovation ecosystems, uniquely positioned in everyday settings like neighbourhoods or cities. They act as intermediaries that connect academia, industry, government, and the community. Through processes like co-creation, rapid prototyping, and iterative testing, LLs allow innovations to be refined continuously based on user feedback and local context.

The presentation also highlights a flagship example: the Green Urban Mobility Innovation Living Lab (GUMILL) — the first certified mobility living lab in Asia and a key member of the European Network of Living Labs (ENoLL)'s Mobility Working Group. GUMILL exemplifies how Living Labs can effectively advance sustainable urban mobility by integrating user-centered design, system innovation, and on-ground experimentation. It demonstrates the transformative potential of LLs to shift traditional planning paradigms and make mobility more inclusive, green, and future-ready.

Overall, the presentation positions the Living Lab methodology as a dynamic, participatory, and scalable model for addressing complex urban and societal challenges, with a strong emphasis on user empowerment and knowledge democratization.

Summary of Panel Discussion

Identifying Key Barriers to Active Mobility Globally: A Living Lab Perspective

The panel discussion focused on identifying the key barriers to active mobility and how these challenges vary across different regions and governance systems. A key theme was the lack of a single governing body responsible for active mobility, which often leads to fragmented efforts and poor coordination among departments. This institutional gap undermines the development of cohesive strategies and infrastructure for non-motorised transport. Panellists also underscored the influence of cultural attitudes, where walking and cycling are not always perceived as desirable or safe, and social norms tend to favour car-centric development. Overcoming these deeply embedded perceptions requires sustained efforts to reshape public narratives around active travel.

Another critical challenge discussed was the limited community engagement in mobility planning. Without involving citizens in decision-making, policies often fail to reflect ground realities or build public trust. Additionally, the budget allocation for active mobility remains disproportionately low in many regions, making it difficult to implement or scale impactful interventions. The panel concluded that Living Labs offer a valuable framework to address these systemic barriers by enabling localised, inclusive experimentation and co-creation that can inform broader mobility reforms.

The Living Lab Approach – Why It Matters

Panellists reflected on the importance of building trust among governments, communities, and experts, noting that the inclusive nature of Living Labs fosters a shared sense of ownership. Development agencies were encouraged to support this “learning-by-doing” ethos by balancing flexible experimentation with fiscal accountability. Importantly, the model was seen as a powerful tool for deepening citizen participation, moving beyond token consultations to meaningful involvement in shaping their urban futures.

Lessons from Implementation – What Has Worked (and What Hasn't)

The panel discussion explored practical insights from the implementation of Living Lab projects, focusing on what drives impact and what holds it back. Panellists shared those grassroots cycling and walking interventions—even in low-resource settings—can achieve transformative outcomes when grounded in local realities and driven by community engagement. A standout example was Bengaluru's Church Street First project, which temporarily pedestrianised a busy commercial street, showcasing the power of tactical urbanism.

Its success lay in quick, visible change, strong stakeholder coordination, and the ability to gather citizen feedback in real time. Similarly, the Green Urban Mobility Innovation Living Lab (GUMILL) was cited as a pioneering initiative that combines real-world testing with inclusive design processes, helping scale up active mobility solutions across urban India.

Another compelling example came from Chennai, where the city has integrated Living Lab principles into its urban mobility planning through projects like the T. Nagar Pedestrian Plaza. Despite financial and spatial constraints, the project reimaged a congested commercial area as a vibrant public space prioritizing pedestrian. What made it work was sustained political support, adaptive design, and community validation through continuous engagement. Panellists noted that tools such as data dashboards, iterative design, and structured reflection processes enabled cities like Chennai to adapt and improve continuously. The discussion concluded that projects become replicable models when they are backed by institutional commitment, embedded in long-term policy, and co-created with citizens.

Key Outcomes and Recommendations

Establish Legal Backing: Introduce an Active Mobility Bill to mandate planning, implementation and investment in walking and cycling.

Build Technical Capacity: Train planners and engineers to design effective active mobility infrastructure.

Increase Budget Allocation: Redirect funding toward pedestrian and cycling infrastructure over car-centric projects.

Define Implementing Authority: Assign a dedicated agency to implement and coordinate active mobility efforts, along with coordination among the other agencies.

Engage Communities: Involve local communities to raise awareness and shift perceptions about active travel.

Ground Plans in Reality: Base strategies on real-world contexts and lived mobility experiences.

Reposition Active Mobility: Elevate active transport as a core component of urban livability and equity.



From left: Ms. Neetu Anna Joseph, Mr. Sathya Sankaran, Ms. Patricia Immler, Mr. Vivekanand Kotikalapudi, Mrs. Manjula V, Prof. Ashish Verma, Ms. Aswathy Dilip, Dr. Priyanka Das

GIZ Plenary Session 2 on “Bridging Gaps for Inclusive Urban Transport Systems”



26 JUNE, 2025



10:30 - 11:30 hours

On the Panel

Moderator: Ms. Krishna Desai, GIZ

Panelists:

- Mr. Ramachandran R (IAS), BMTC
- Ms. Meera Sundararajan, Gender and Policy Lab
- Prof. Helena Titheridge, University College London
- Prof. Marianne Vanderschuren, University of Cape Town
- Mr. Anudeep Koniki, KfW

Rapporteur: Mr. Tanmay Ghosh, Post Doctoral Research Associate, IST Lab, IISc Bangalore



Summary of Presentation

Bridging gaps for inclusive urban transport system by Ms. Krishna Desai

The presentation highlighted that urban mobility planning has traditionally been male-centric, often failing to consider the needs of marginalised groups such as children, the elderly, and women. It was emphasised that most transport systems are still designed around the direct home-to-work journeys typically undertaken by men, whereas women’s travel patterns are more complex, characterised by trip chaining for school drop-offs, market errands, caregiving tasks, and late or early work shifts, which existing services rarely accommodate. Due to this mismatch, women are forced to endure longer journeys, multiple unsafe transfers, and higher travel costs, which in turn discourage their continued participation in the workforce.

The speaker outlined four main barriers to women’s safe and equitable participation in urban transport systems. First, inadequate lighting and poor safety measures at stops and stations. Second, rigid licensing and experience requirements often exclude women from driving and operational roles. Third, prevailing social stereotypes that women cannot handle heavy vehicles or work night shifts. Fourth, the lack of regularly collected, sex-disaggregated mobility data keeps women’s travel needs invisible to planners.

To bridge these gaps, the speaker recommended incorporating gender clauses into national schemes such as JNNURM, FAME, the National Urban Transport Policy, and the Smart Cities Mission. Presenter also urged the implementation of targeted training programmes for women drivers, conductors, and e-rickshaw owners, along with the routine collection of gender-specific mobility data.

Immediate measures - such as improved lighting, zero-tolerance codes of conduct on buses, and route adjustments to align with women's peak travel times - were presented as practical examples of how applying a gender lens can make the entire transport system safer, more reliable, and truly inclusive

Summary of Panel Discussion

Policies and Initiatives for Women's Safety and Participation

In Karnataka, the Shakti scheme has become a significant step toward enhancing women's mobility and economic participation by offering zero-fare travel on BMTC buses. This policy has noticeably increased female ridership and reduced commuting costs, helping many women stay in or return to the workforce. To complement this fare relief, BMTC has invested in newly procured electric buses that feature low footboards for easier boarding, especially for women travelling with children or carrying luggage. Inside the buses, lowered handrails provide greater stability for women passengers. Moreover, the recruitment of female conductors not only creates employment opportunities but also fosters a sense of safety and reassurance for women commuters. To strengthen this culture of vigilance, BMTC conducts regular safety audits across depots, stops, and routes, ensuring that women's safety remains a visible priority.

Embedding Gender Safety in Urban Planning

The Gender and Policy Lab in Greater Chennai Corporation, supported by the Nirbhaya Fund, has integrated gender safety into urban planning in a way that offers valuable lessons for other cities. By combining perception studies with citizen-led safety audits, the Lab has been able to identify everyday risks faced by women and trans persons in public spaces. These insights have translated into tangible improvements such as better street and stop lighting, cleaner public toilets, redesigned bus shelters, and gender-inclusive design guidelines for parks and transit stops. Beyond infrastructure, the Lab focuses on culture change through training engineers, establishing Gender Clubs in schools, and forming an inter-departmental task force to coordinate efforts. This evidence-driven, cross-sectoral approach demonstrates how cities can embed gender safety into the fabric of planning and governance.

Global Tools and Good Practices

The panel also highlighted global examples like the SHE CAN online toolkit developed through the EMPOWER programme in sub-Saharan Africa. This open-access resource equips transport authorities to diagnose harassment patterns and select appropriate, evidence-based interventions. These can range from stronger legal frameworks and targeted policing to gender-sensitive vehicle layouts, better-lit stops, operator training, and public awareness campaigns. Early implementation in various African cities has already shown promising results, with reductions in harassment reports and a rise in women's confidence while using public transport. The toolkit's modular structure and its network of partner organisations across the region make it a flexible and transferable model for embedding gender-responsive safety measures in transport systems worldwide.

Practical Measures for Safer Daily Travel

Another important theme discussed was the need to improve women's daily travel experiences through practical measures. The panel stressed that having well-trained staff visibly present at stops, stations, and on-board vehicles can provide passengers with immediate assistance for directions, boarding, or emergencies.

Clear, reliable information, through well-lit signs, audio-visual announcements, and real-time apps, helps make every stage of the journey more predictable and less stressful for women commuters. Additionally, structured travel-training programmes that explain routes, ticketing systems, safety features, and complaint channels can empower hesitant or first-time users to become confident daily riders. Together, these practical interventions can help create a safer, more accessible public transport network that truly responds to women's mobility needs.

Gender-Sensitive Financial Appraisal

The discussion emphasised that funding bodies and investment agencies must apply a gender lens when evaluating transport proposals. Before approving loans or grants, agencies should ask how well a proposed project will enhance women's access, safety, and comfort, whether through affordable fares, safer vehicle and stop designs, or inclusive staffing policies. Projects that demonstrate clear, measurable benefits for increasing female ridership should receive priority funding, while proposals that fail to address gender impacts should be revised and strengthened. By embedding gender-based criteria in appraisal frameworks, financial institutions can ensure that their investments actively contribute to equitable mobility outcomes instead of maintaining existing barriers.

Key Outcomes and Recommendations

Critical interventions: Introduce better lighting, clear signage, and well-trained staff so women can travel confidently and at a fair cost.

Participatory engagement from female commuters: Involve women in surveys, focus groups, and safety walks to shape routes, schedules, and design standards that reflect their real-world needs.

Actionable approaches: Deploy clearly identifiable staff at key points, provide live journey information, offer orientation sessions that familiarise women with routes and safety features, and use gender-based project appraisals to guide funding decisions.

Women in decision-making positions: Increase the number of women leaders in transport agencies, operators, and oversight bodies so that policies, budgets, and projects align with women's mobility priorities.



From left: Mr. Ramachandran R, Ms. Krishna Desai, Ms. Meera Sundararajan, Prof. Marianne Vanderschuren, Mr. Tanmay Ghosh, Mr. Anudeep Koniki, Prof. Helena Titheridge

KRIDE Plenary Session on “Seamless Journeys, Healthier Lives: Integrating Public Transport for Commuter Well-being”



26 JUNE, 2025



11:30-12:30 hours

On the Panel

Moderator: Prof Ashish Verma, IISc Bangalore

Panelists:

- Shri R.K. Singh, K-RIDE
- Prof. Guenter Emberger, TU Vienna
- Prof. Aruna Sivakumar, Imperial College London
- Mr. Sathya Sankaran, Urban Morph
- Dr. Mukti Advani, CSIR-CRRI
- Mr. Lakshman Singh, BMRCL

Rapporteur: Mr. Rohit Singh Nitwal, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentation

Seamless Transit, Sustainable Cities: The K-RIDE Vision by Shri R.K. Singh

The presentation focused on introducing the vision and progress of the Bengaluru Suburban Rail Project (BSRP), developed as a joint initiative between the central and state governments. Positioned as a sustainable and inclusive response to the city's growing mobility demands, the project aims to enhance regional connectivity while promoting environmental responsibility. The implementing agency, K-RIDE, has planned a network that integrates rail infrastructure with broader urban systems, emphasising efficient station design, resource-sensitive construction practices, and alignment with the city's transport and development goals.

A key aspect of the presentation was the emphasis on multimodal integration and innovation in design. The presentation highlighted efforts to create seamless connectivity between different transport modes through thoughtful station planning and coordination across agencies. Design interventions such as grade-separated alignments and vertically stacked corridors were showcased as strategies to minimise land use conflicts and reduce disruptions in dense urban zones. The removal of level crossings through track elevation was particularly noted for its potential to enhance safety, reduce emissions, and support uninterrupted traffic flow, all while preserving existing road infrastructure.

The presentation further elaborated on BSRP's broader sustainability strategies, which include measures for renewable energy generation, water conservation, and urban greening. The integration of solar power, rainwater harvesting, and compensatory afforestation reflect a commitment to minimizing the environmental impact of the project and enhancing local resilience. Concluding the session, the presentation emphasized the importance of coordinated governance and collaborative planning to ensure that the suburban rail system evolves as a reliable, climate-conscious, and future-ready solution for urban mobility in Bengaluru.

Summary of Panel Discussion

Framing Mobility as a Public Good

Panelists discussed the importance of positioning public transport as a key driver of social equity and urban well-being, moving away from car-centric development models that cater to a limited population while consuming disproportionate space and resources.

Importance of Seamless Multimodal Integration

The panel emphasised the need for interconnected transport systems that allow citizens to move smoothly across buses, metros, suburban rail, and last-mile modes, with consistent service quality and shared infrastructure.

Learning from Global Cities

Case studies from global cities such as London and Vienna were discussed to show how proactive policy decisions like Vienna's bold declaration that "cars are not important" can significantly shift public attitudes and urban form. London's model of reliable and universally accessible public transit was cited as a benchmark.

Technology and Real-Time Information

The discussion underlined the necessity of real-time transit information, open APIs, and digital platforms to enhance user experience, improve service transparency, and support innovation from startups, researchers, and civic tech communities.

Reclaiming Urban Space through Regulation

Panelists noted the urgent need for Indian cities to enforce strict parking regulations and implement penalties to discourage illegal and wasteful use of public space, freeing room for pedestrian and cycling infrastructure.

The Need for Cross-Sectoral Collaboration

The governance challenges in delivering truly integrated mobility solutions were acknowledged, with the panel stressing the importance of inter-agency coordination across transport, urban development, municipal governance, and environment departments.

Call for Localised Yet Ambitious Reform

The discussion concluded with a call to Indian cities to adopt bold yet context-specific mobility reforms drawing inspiration from global practices but grounded in local realities, institutional capacities, and citizen needs.

Key Outcomes and Recommendations

Promote Multimodal Hubs: Indian cities must prioritise the creation of transport nodes that enable effortless transfers between rail, metro, bus, and non-motorised transport, as demonstrated in BSRP's station designs.

Curb Private Vehicle Dominance: Policymakers should challenge the cultural association between cars and social status by improving public transport quality and accessibility, taking cues from Vienna's deliberate de-prioritisation of cars.

Open Data for Public Use: Real-time public transport information should be made openly accessible through APIs to support commuter decision-making and enable innovation in mobility research.

Implement Stronger Parking Regulations: Learning from global cities, stricter enforcement of parking policies and penalties should be institutionalised to discourage misuse and reclaim public space.

Adopt Low-Carbon Infrastructure Models: Projects like BSRP show how raising existing tracks and eliminating level crossings can reduce emissions and enhance efficiency with minimal urban disruption.

Align Sustainability with Governance: Cities should embed environmental measures, solar energy, water harvesting, and afforestation within transport projects and ensure inter-agency collaboration for coherent delivery.

Learn from Global Best Practices, Localise Effectively: While global models offer valuable direction, Indian cities must adapt these strategies to local conditions and institutional capacities.



From left: Dr. Mukti Advani, Shri. R K Singh, Mr. Lakshman Singh, Prof. Ashish Verma, Prof. Aruna Sivakumar, Mr. Rohit Singh Nitwal, Prof. Guenter Emberger

IST Lab Plenary Session 1 on “Aligning Transport and Urban Planning to Enhance Quality of Life”



26 JUNE, 2025



13:30 -14:30 hours

On the Panel

Moderator: Prof Ashish Verma, IISc Bangalore

Panelists:

- Shri Tejasvi Surya, Member of Parliament
- Ms. Jaya Dhindaw, WRI India
- Prof. Tina Pujara, IIT Roorkee
- Prof. Aruna Sivakumar, Imperial College London
- Prof. Marianne Vanderschuren, University of Cape Town
- Prof. Milad Haghani, University of Melbourne

Rapporteur: Mr. Gautam Narula, Research Scholar, IST Lab, IISc Bangalore



Summary of Presentations

Designing Happiness Infrastructure: Colour, Calm, and the Commute by Prof. Tina Pujara

The presentation introduced the concept of Happiness Infrastructure, positioning it as a form of urban infrastructure that extends beyond utility and mobility to support psychological, emotional, and social well-being. This approach to urban design emphasized not just movement and access, but also how environments make people feel. It highlighted the need to consider emotional and perceptual dimensions in urban planning by incorporating features such as sidewalks, lighting, and facades that promote individual dignity, community identity, and equitable access in everyday urban life. One key theme explored was Colour and the Commute, which examined how colour influences commuter experiences and emotional states. Drawing from case studies in Fontainhas, Goa, and Sitabuldi Market, the presentation showed that vibrant street facades and well-designed transit hubs not only added visual interest but also helped reduce commuter stress. Colour was presented as a low-cost yet high-impact tool of tactical urbanism that could infuse joy and engagement into public spaces. Another major focus was Calm and Commute, which addressed how particular streetscape features such as wider sidewalks, greenery, traffic buffers, and seating helped reduce anxiety levels among commuters.

These findings, supported by physiological evidence, underlined the importance of designing urban streets in ways that calm and reassure users, especially considering the psychological challenges emerging in the post-pandemic context. Finally, the presentation introduced the broader vision of Happiness Urbanism, calling for a paradigm shift towards creating “Human Cities” that engage people emotionally and socially. It recommended incorporating terms like “joy,” “calm,” and “dignity” into strategic urban plans, aligning this vision with Sustainable Development Goal 11 (SDG 11) focused on inclusive, safe, and resilient cities. The aim was to transform daily commuting into a life-enhancing experience, embedding well-being as a core objective of urban development.

Building resilience from the ground up: Measuring & strengthening community risk preparedness in crowded urban spaces by Prof. Milad Haghani

The presentation focused on advancing community-centred strategies for crowd safety and urban resilience. It introduced a paradigm shift in how crowd safety was approached, moving from a traditional, top-down, descriptive model to a bottom-up, prescriptive one that emphasised community engagement and proactive intervention. Prof. Haghani presented the concept of self-optimising crowds, suggesting that minor behavioural changes both in decision-making and physical movement could significantly enhance evacuation efficiency. This approach highlighted the potential of crowds to self-organise under risk, challenging older assumptions about panic and chaos in emergencies.

The talk also introduced and detailed the Crowd Safety Culture Scale, a tool developed to measure community preparedness. This scale encompassed various dimensions, including attitudes, situational awareness, risk aversion, knowledge, actions, and social norms. Findings from its validation revealed demographic differences and opened avenues for culture-specific safety interventions. Haghani emphasised that true urban resilience relied not only on robust infrastructure but also on informed human behaviour. He called for scientifically grounded crowd safety education for professionals and the public alike, advocating for evidence-based, targeted behavioural campaigns to improve safety culture in cities worldwide.



Summary of Panel Discussion

The requirement of an Urban Transport Cadre will be raised in the Parliament of India

In recognition of the growing complexities of urban mobility and infrastructure management, the need of creation of a dedicated Urban Transport Cadre was accepted by Shri Tejasvi Surya and is set to be raised in the Indian Parliament. This cadre would comprise trained professionals with expertise in transportation planning, traffic engineering, policy implementation, and public transit systems. It aims to institutionalize capacity-building within government frameworks, enabling cities to design and implement mobility solutions that are integrated, sustainable, and inclusive.

A shift from contractor-oriented to citizen-oriented cities is imperative

Contemporary urban development in India has often been dominated by contractor-driven approaches, focusing more on construction metrics than on end-user needs. There is an urgent need to reorient urban planning and governance models to become more citizen-centric. This includes participatory planning, inclusive design, responsive governance, and infrastructural outcomes that directly improve the quality of life of residents rather than merely fulfilling tender-based KPIs.

Reducing vehicular speed encourages cycling and enhances street safety

In London, it is observed that lowering the permissible speed limits for motorised vehicles, especially in urban cores and mixed-use neighbourhoods, plays a significant role in promoting non-motorised transport such as cycling and walking. Reduced speeds not only minimise the risk and severity of road accidents but also improve the perception of safety among vulnerable road users, thereby encouraging more environmentally friendly and healthy modes of mobility.

With a population of 1.4 billion, crowd safety studies are the need of the hour

In densely populated countries like India, crowd management is not just a public safety issue but a national priority. From the recent incidents in various parts of India, large crowds pose significant risks. Crowd management is essential even for small events in India, but it remains an under-addressed issue in current safety protocols. Investing in crowd safety studies, including simulation modelling, behavioural analysis, and safety culture assessments, is critical to building urban resilience and preventing avoidable tragedies.

The absence of Transit-Oriented Development (ToD) leads to resource inefficiency

Without a well-implemented Transit-Oriented Development (ToD) strategy, cities suffer from urban sprawl, increased car dependency, higher emissions, and inefficient land use. ToD promotes compact, walkable communities with access to high-quality public transport, reducing the need for long commutes and optimising infrastructure investment. Its absence results in the squandering of both financial and ecological resources, undermining sustainable urban growth.

Key Outcomes and Recommendations

Adopt Happiness Infrastructure as a design strategy that integrates emotional and perceptual well-being into urban planning, enhancing dignity, joy, and equity in daily urban life.

Utilize colour and sensory elements (like vibrant facades and calming streetscapes) in low-cost, high-impact ways to improve commuter experience, reduce stress, and humanize public spaces.

Prioritise calming streetscape features such as wide sidewalks, greenery, and seating to support mental well-being, especially in the post-pandemic context.

Promote bottom-up crowd safety models by recognising crowds as self-organising and capable of adaptive behaviour under stress, countering panic-based assumptions.

Implement the Crowd Safety Culture Scale to assess public preparedness across dimensions such as risk awareness, action tendencies, and social norms, enabling culture-specific safety interventions.

Institutionalise an Urban Transport Cadre in India to ensure trained professionals are guiding policy and infrastructure with a long-term, integrated vision for sustainable mobility.

Shift towards citizen-oriented planning by replacing contractor-dominated practices with participatory, inclusive, and human-centred urban governance.

Lower vehicular speed limits in dense urban areas to promote safer, more attractive environments for cyclists and pedestrians, encouraging green and active transportation modes.

Prioritise Transit Oriented Development (ToD) to prevent urban sprawl, reduce car dependency, and maximise land and infrastructure efficiency for sustainable city growth.



From left: Prof. Tina Pujara, Prof. Ashish Verma, Mr. Gautam Narula, Shri. Tejasvi Surya, Prof. Marianne Vanderschuren, Prof. Aruna Sivakumar, Ms. Jaya Dhindaw, Prof. Milad Haghani

WRI India Plenary Session on “Shift/Transport - From congested and vulnerable to connected and resilient’



26 JUNE, 2025



14:30 - 15:30 hours

On the Panel

Moderator: Mr.Srinivas Alavilli, WRI India

Presenters:

- Mr.Chetan Sodaye, WRI India
- Mr.Rohan Rao, WRI India

Panellists:

- Prof. Geetam Tiwari, IIT Delhi
- Dr. Shankar C. Deshpande, MMRDA
- Prof. Varameth Vichiensan, Kasetsart University, Thailand
- Prof. Milad Haghani, University of Melbourne
- Prof. Ashish Verma, IISc Bengaluru
- Ms. Anne Cremers, Deputy Consul General of the Kingdom of the Netherlands in Bengaluru
- Mr. Rizwan Arshad, Member of the Legislative Assembly
- Ms.Shrimoyee Bhattacharya, WRI India
- Ms. Rutuja Nivate, ITDP India

Rapporteur: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bangalore



Summary of Presentation

The SHIFT Transport Initiative by Chetan Sodaye and Rohan Rao

The SHIFT Transport Initiative (Shaping High Impact Information for Transport) is a collaborative digital platform designed to close gaps in urban mobility data and coordination. It aims to help city governments, planners, communities, and experts share insights, co-create strategies, and monitor progress toward inclusive and sustainable transport solutions.

Key aspects include developing a mobility framework covering demand, supply, and performance to help cities assess needs and adjust solutions; improving access to data for evidence-based decisions and peer learning; offering digital tools like surveys, dashboards, and forums to support continuous collaboration; and showcasing practical, scalable examples - such as city electrification, strong first- and last-mile connections, and effective public-private partnerships - to encourage innovation and replication.



Summary of Panel Discussion

Citizen Advocacy & Community Movements

Real progress towards sustainable mobility depends on active citizen advocacy, committed government support, and broad public education, just as seen in the Dutch cycling culture. Grassroots campaigns like *Stop de Kindermoed* show that meaningful change demands constant community pressure, local ownership, and ongoing engagement; it doesn't happen automatically.

Road Safety as a Public Health Priority

Road safety should be recognised as a public health responsibility, not just an engineering challenge. Treating it as a science leads to more effective solutions. Safe street design that prioritises pedestrians and cyclists over vehicles shapes safer behaviour and must be at the core of city planning.

Innovative Financing for Sustainable Mobility

Cities such as Pune and Pimpri-Chinchwad are setting examples by using innovative financing tools like green municipal bonds. These approaches help align city budgets with sustainability goals, funding better public transport, non-motorised transport options, and climate-resilient infrastructure.

Smart Solutions for Congested, Fast-Growing Cities

In cities like Bengaluru, simply adding more roads won't resolve congestion. Smarter, adaptable strategies are needed instead. Technologies like digital twins - seen in Melbourne - allow cities to model conditions, test ideas, and make informed choices in real time, avoiding costly mistakes.

Integrated Urban & Transport Planning for Resilience

Compact, resilient cities rely on tight coordination between urban development and transport planning. Public transport must be the default for expanding cities, supported by land-use plans that boost land value through good transit links. Seamless connections across buses, rail, walking, and cycling are vital - missing links can weaken even major investments like rail corridors. Dedicated agencies are needed to deliver and maintain quality pedestrian infrastructure. Long-term planning must look ahead to future challenges rather than just solving today's. Embedding equity, affordability, and resilience in mobility strategies, like Bengaluru's BCA, makes transport central to climate action.

Key Outcomes and Recommendations

Design for People: Urban streets must prioritise pedestrians and cyclists over vehicles, with accessible footpaths, safe crossings, and well-connected transit that ensures equitable access for all.

Mobility Funding: Cities should tap into innovative financing tools to expand non-motorised transport, public transport, and climate-friendly infrastructure at scale.

Change Travel Behaviour: The real solution is to shift travel behaviour through better multimodal integration, high-quality public transport, and complete street networks.

Data & Smart Tools to Guide Decisions: Data-driven, long-term planning is vital to tackle urban sprawl, rising emissions, and extreme heat. Tools like digital twins can simulate real-world scenarios, test policies in advance, and help cities adapt dynamically.

Integrate Urban & Transport Planning: Compact, resilient cities depend on aligning urban density with efficient, high-quality public transport, ensuring every mode (bus, rail, cycle, walk) connects seamlessly.

Establish a Dedicated Department for Footpaths: Create a specialised body responsible for the planning, development, maintenance, and promotion of pedestrian footpaths.

Build Political and Community Support: Cultivate strong leadership and empower citizen advocacy to prioritise walking and pedestrian infrastructure in public policy, securing long-term investment and attention.

Climate & Quality of Life at the Centre: Transport is a core climate solution - city action plans must embed equity, affordability, and resilience, recognising that mobility directly shapes people's quality of life.



From left: Ms. Maneesha B, Prof. Ashish Verma, Dr. Shankar Deshpande, Prof. Varameth Vichiensan, Prof. Geetam Tiwari, Ms. Anne Cremers, Mr. Rizwan Arshad, Prof. Milad Haghani, Mr. Srinivas Alavilli, Ms. Rutuja Nivate, Ms. Shrimoyee Bhattacharya, Mr. Chetan Sodaye, Mr. Rohan Rao

IST Lab Plenary Session 2 on “Accessibility-based Measures for Urban & Transport Planning”



26 JUNE, 2025



16:00 - 17:00 hours

On the Panel

Moderator: Prof. Aruna Sivakumar, Imperial College London

Panelists:

- Prof. Ahmed El-Geneidy, McGill University
- Mr. Satya Arikutharam, Independent Consultant
- Mrs. Manjula V, Former Commissioner, DULT
- Prof. Geetam Tiwari, IIT Delhi
- Mr. Sooraj E.M., ITDP India
- Mr. Christian Kapfensteiner, GIZ

Rapporteur: Mr. Tanmay Ghosh, Post Doctoral Research Associate, IST Lab, IISc Bengaluru



Summary of Presentations

Introduction to Accessibility Metrics – Public Transport Accessibility Levels (PTAL) by Prof. Aruna Sivakumar

Session started with the presentation on accessibility based measures. Accessibility was defined as the ease with which people at a location can reach the activities they need, governed by the spatial distribution of those activities and the generalised cost of travelling to them. Four methodological strands were discussed: cumulative-opportunity isochrones that mark threshold travel times; gravity indices that weight opportunities by impedance; random-utility logsums that aggregate destination and mode choice probabilities; and time-space prisms that embed daily scheduling constraints. The presentation then unpacked London's Public Transport Access Level (PTAL): a composite of walk access time and service frequency that scores areas from 0 (poor) to 6b (excellent), pinpoints equity gaps, guides investment, and already informs transit plans in Ahmedabad, Surat, New South Wales and Shenzhen. PTAL's clarity, modest data demands and alignment with Sustainable Development Goals make it a powerful strategic tool, though it overlooks crowding, exposure and trip purpose, and does not integrate walking or cycling networks. Nevertheless, PTAL remains a benchmark in transit planning.

Accessibility in Practice: Where we are and where we are heading by

Prof. Ahmed El-Geneidy

The session continued with the presentation on accessibility in practice. It opened by noting that contemporary transport planning is moving beyond mobility-based outcomes toward accessibility outcomes. Accessibility indicators, the presentation argued, connect transport supply, land-use patterns and residents' ability to participate in daily activities. For such indicators to serve as performance measures, they must align with policy goals, capture both current conditions and temporal trends, remain intelligible to non-experts, scale from corridor to regional levels, and reflect commuters' lived experience.

Four principal barriers to wider adoption were identified: limited and inconsistent data, insufficient technical capacity, weak institutional mandates and uncertainty over appropriate methodological choices. Nonetheless, practical demonstrations, such as Transport for London's maps of employment reach, show how accessibility evidence can channel resources toward underserved areas and sharpen regulatory oversight.

Eight policy domains illustrate the practical relevance of an accessibility-based metric: housing price dynamics, residential location choice, travel behaviour modelling, project appraisal, equity assessment, regional economic development, job-search efficiency and retail activity patterns. Neglecting accessibility in these arenas risks biased evaluations and misallocated investment. The presentation closed by advocating systematic training of practitioners, routine incorporation of clear and communicable accessibility metrics into statutory transport and land-use plans, and continuous refinement of indicators as data quality and modelling techniques mature. Positioned in this way, accessibility now serves as a central analytical lens for evidence-based and socially just transport planning.

Accessibility based measures for Bengaluru by Mr. Satya Arikutharam

The presentation began by noting that the city is "sleepwalking into a mobility crisis" as poor transport standards become normalised across society, institutions and politics. Moving beyond mobility counts, the presentation asked whether Bengaluru's accessibility is adequate and identified three levers for progress: policy, investment and governance. Policy momentum includes a Transit-Oriented Development statute that sets a 6-6-6 envelope, six-minute walks, six-kilometre safe-cycling catchments and buses every six minutes, alongside the Karnataka Active Mobility Bill prioritising pedestrians and cyclists, and an empowered Bengaluru Metropolitan Land Transport Authority responsible for integrated mobility and land-use planning. Rapid metro expansion marks a pivotal moment; embedding accessibility metrics will steer TOD corridors and advance the 15-minute-city vision. With clear targets and accountable institutions, Bengaluru can transform current investments into more equitable growth, healthier travel patterns and a resilient urban form.



Summary of Panel Discussion

Embed accessibility metrics within transport–land-use models

A clear, quantitative accessibility indicator - such as the number of jobs or essential services reachable within a set door-to-door travel time - should be directly embedded into land-use–transport models. This metric must be calibrated from the perspective of vulnerable groups like low-income households, women, older adults, and persons with disabilities to ensure equitable outcomes. It was also discussed that a standing exchange programme between universities and local planning agencies should be created, allowing researchers to gain practical experience and practitioners to stay connected with academic insights, keeping models grounded in real-world contexts.

Strengthen TOD policy by integrating affordability with accessibility

Transit-Oriented Development (TOD) policies linked to major transport infrastructure must include both an accessibility score, such as the share of jobs reachable within 45 minutes by public or active transport, and an affordability index measuring the share of household income spent on housing plus transport. Coordination between transport, land, and housing departments is essential to set inclusionary zoning targets, align land value-capture revenues and fare policies, and prevent transit-oriented areas from becoming unaffordable for marginalised groups.

Reflect accessibility benefits in project appraisal and build local capacity

A specific line for “accessibility benefit” should be added to cost–benefit analyses and stated as the extra opportunities, jobs, schools, clinics, made available to priority groups, with these benefits monetised where possible. Municipal engineers, transport officers, and urban planners should receive training in collecting and analysing accessibility data, using open-source tools, and applying results in policy decisions. University curricula for civil engineering, urban planning, and transport economics should include projects that develop city-level accessibility indexes and evaluate real projects through an accessibility perspective.

Key Outcomes and Recommendations

- Embed **equity-oriented accessibility metrics** in land-use–transport models, supported by academia–practitioner exchanges.
- Require every TOD project to **integrate both accessibility and affordability metrics**.
- Ensure **coordination across transport, land and housing departments**.
- Add a **monetised “accessibility benefit”** line to project cost–benefit appraisals.
- Provide **focused training for local officials** on accessibility analytics using open-source tools.



From left: Prof. Ahmed El-Geneidy, Mr. Satya Arikutharam, Mr. Tanmay Ghosh, Prof. Aruna Sivakumar, Prof. Geetam Tiwari, Mrs. Manjula V, Mr. Christian Kapfensteiner, Mr. Sooraj E M

BeST - Biocon Plenary Session on “Public Health and Sustainable Mobility”



27 JUNE, 2025



10:30 - 11:30 hours

On the Panel

Moderator: Prof. Prabhdeep Kaur, IISc Bangalore

Panelists:

- Prof Ashish Verma, IISc Bangalore
- Mr. Krishnan Srinivasan, World Bank
- Prof. Tina Pujara, IIT Roorkee
- Prof. Aruna Sivakumar, Imperial College London
- Prof. Marianne Vanderschuren, University of Cape Town
- Dr. Pradeep B S, NIMHANS
- Dr. Anupama Shetty, Biocon Foundation

Rapporteur: Ms. Ann Das, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentation

Public Health and Sustainable Mobility by Prof. Prabhdeep Kaur

The session explored the critical need to view transportation not merely as a logistical or infrastructure issue, but as a foundational determinant of public health and well-being. Drawing from the World Health Organisation's definition, health is not just the absence of disease, but it encompasses mental, physical, and social well-being. Sustainable transportation systems must, therefore, be designed to enhance this holistic view of health.

The presentation emphasised that mobility policies and infrastructure should not be assessed solely on efficiency or capacity, but on their ability to contribute to reduced stress, increased physical activity, better air quality, stronger social connections, and equity in access.



Summary of Panel Discussion

Reframing Mobility as a Health Action

Transportation systems must be viewed as health interventions. Long commutes have been linked to fatigue, stress, absenteeism, and declining mental well-being. Urban mobility solutions should support not only physical access but psychological comfort and social interaction.

Institutionalising Health Impact Assessments

While environmental impact assessments are standard, the discussion advocated for Health Impact Assessments (HIA) to be integrated into transportation and urban development projects. This would help systematically measure and mitigate the adverse health effects of mobility choices, especially in dense urban contexts.

Air Pollution and Emissions Management

Air pollution, especially NO_x emissions from vehicular traffic, was discussed as a serious health concern contributing to respiratory and cardiovascular conditions. Drawing on international experiences, the implementation of low-emission zones and congestion charges has led to measurable reductions in pollutants, significantly improving air quality and public health outcomes.

Walkability and Safety as Health Indicators

The design of urban streets and neighbourhoods must promote walkability, safety, and inclusivity. Participants emphasised that walking should be an equitable choice, accessible regardless of gender, age, or socioeconomic background. Safe sidewalks, shaded areas, reduced traffic speeds, and street lighting contribute to both physical and emotional security.

Urban Design for Emotional and Social Well-being

Mobility should not be reduced to getting from point A to B; it should enhance how people feel along the way. Public spaces should encourage walking, interaction, and joy. Dignified, vibrant, and calming public spaces are critical for fostering mental well-being in everyday travel. The intangible dimensions of commute mood, autonomy, stress, and comfort must be central to planning.

The Role of CSR in Enhancing QoL through Mobility

The integration of metro systems into vehicle-dependent areas was discussed as a catalyst for shifting travel behaviour toward more sustainable and healthier options. Corporate Social Responsibility (CSR) initiatives were identified as a key enabler in funding infrastructure and research that target mobility-health linkages, particularly in underserved or transitional urban zones. Importantly, CSR must also focus on measuring and tracking quality of life improvements associated with these interventions.

Key Outcomes and Recommendations

- **Mainstream Health Impact Assessments** in urban mobility projects to quantify and address physical, mental, and social health effects.
- **Recognise sustainable mobility:** Cycling, walking, and clean public transit should be considered as integral to achieving health equity and improved well-being.
- Design public spaces to **promote safety, dignity, and emotional comfort**, especially in post-pandemic urban life.

- Address pollution through **low emissions zones and regulatory mechanisms** to improve respiratory and cardiovascular health.
- Support **walkability as a public health priority**, ensuring infrastructure is inclusive and encourages active mobility.
- Promote **people-centric urban planning** that invites movement, interaction, and joy.
- Leverage **CSR to fund mobility-related health interventions** and support quality of life measurement frameworks.



From left: Prof. Tina Pujara, Mr. Krishnan Srinivasan, Prof. Ashish Verma, Prof. Aruna Sivakumar, Prof. Prabhdeep Kaur, Dr. Anupama Shetty, Dr. Pradeep B S, Prof. Marianne Vanderschuren, Ms. Ann Das

IST Lab Plenary Session 3 on “How Technology Based Sustainable Mobility Solutions can Contribute to Well-Being”



27 JUNE, 2025



11:30 - 12:30 hours

On the Panel

Moderator: Prof Digvijay S Pawar, IIT Hyderabad

Panellists and Presenters:

- Shri Jaideep, OSD (UT), MoHUA
- Mr. Venkata Chunduru, Arcadis India
- Mr. Saurabh Kasturia, Street Surge Technologies
- Dr. Mukti Advani, CSRI-CRRI, India

Rapporteur: Mr. Santhosh Kumar B V, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentations

iRASTE - Intelligent Solutions for Road Safety through Technology & Engineering by Dr. Mukthi Advani

The presentation outlined the iRASTE project, an AI-enabled initiative aimed at enhancing road safety in India through predictive analytics and intelligent systems. Traditionally, road safety efforts have relied on identifying blackspots 500-meter road segments with a high concentration of accidents or fatalities. However, iRASTE introduces a more advanced, predictive approach by identifying grey spots, which are locations with a high likelihood of future accidents, based on real-time and historical data. Central to the iRASTE framework is the Advanced Driver Assistance System (ADAS), which performs two essential functions: issuing real-time alerts to drivers and capturing detailed road and driver behaviour data. The system generates various types of alerts, including pedestrian collision warnings, lane departure warnings, and forward collision warnings. This data is integrated into a GIS-based dashboard and analysed through severity index models tailored for both intersections and mid-blocks, using a mix of static and dynamic road environment variables.

The initiative has been implemented across a road network of over 1575 km, during which 2225 FIR records were analysed, and 37 blackspots were identified. By utilizing ADAS insights and predictive modelling, iRASTE offers a comprehensive, data-driven approach to road safety, enabling authorities to take preventive action before accidents occur.

Mobility Digital Twins for Sustainable Urban Futures: Enhancing Livability and Resilience by Mr. Venkata Chunduru

The presentation explained the concept of Mobility Digital Twins (MDTs) as a transformative solution to address the growing challenges of urban mobility. With India's urban population expected to exceed 50% by 2047, the presenter emphasised the urgent need for sustainable, efficient, and inclusive transport systems. The focus was on leveraging MDTs to create digitally enabled, multimodal, and low-carbon mobility networks that can enhance livability and resilience in Indian cities. Through real-time data integration and advanced simulations, MDTs can support data-driven decisions across domains such as traffic management, road safety, emission control, and public transport optimisation.

The presentation showcased how MDTs assist in smart infrastructure planning, adaptive traffic signalling, dynamic parking management, and incident detection, while also supporting citizen engagement through mobile applications. Mr. Chunduru stressed the importance of building institutional capacity and forming cross-agency data-sharing consortia for effective deployment. Presentation also addressed key challenges such as data fragmentation, limited technical expertise, and funding constraints, proposing phased implementation, open data protocols, and public-private partnerships as solutions. The presentation concluded with a call for collaborative action, strategic investment, and relentless innovation, positioning MDTs as the digital intelligence that can drive India's urban mobility transformation toward Vision 2047.

Leveraging Big Data & AI for Transport Planning by Mr. Saurabh Kasturia

The presentation detailed how the Street Surge team emphasised the urgency of fixing urban mobility in the Global South, where, despite low personal vehicle ownership, cities are suffering from severe congestion and pollution. The focus was on demonstrating how Big Data and AI can revolutionise public transport planning, making it more efficient, equitable, and responsive to actual demand.

It was highlighted that how legacy planning based on limited surveys and manual route design has left over 70% of city dwellers with inadequate public transport. The presentation showcased the Street Surge AI-powered route planner, which leverages GPS traces and location-based services to build detailed demand matrices and optimise bus route networks. A case study on Delhi's DEVI bus service was presented, where AI algorithms helped design 146 new routes, leading to a 37% improvement in accessibility. The method involves defining homogeneous and walkable transport analysis zones (TAZs), building scaled origin-destination (OD) matrices using anonymised device data, and incorporating constraints like route length, metro connectivity, and passenger travel time expectations.

By measuring Network Health Index (NHI) and Public Transport Accessibility Index, the team demonstrated a data-driven approach to prioritise underserved areas. The core message: AI and Big Data are essential to fix broken public transit and ensure inclusive, demand-based mobility for all.

Evidence from the Ground: Assessing the Impact of Free Bus Services on Women's Travel Patterns and Livability by Prof Digvijay S Pawar

Prof. Digvijay S. Pawar shared compelling insights from a study evaluating the effects of fare-free bus services (FBS) for women on urban mobility, accessibility, and overall livability. It was emphasised that public transportation is a vital tool for equity and inclusion, especially for marginalised groups like women, who often face trip-chaining patterns and safety concerns.

The focus was on understanding how zero-fare policies implemented in Indian states such as Delhi, Tamil Nadu, Punjab, Karnataka, and Telangana have impacted women's travel behaviour and satisfaction. Drawing on survey data from 570 women across urban and semi-urban areas, the study found that 35% of occasional travellers increased their frequency of travel after the policy's introduction, while some frequent users reduced trips, indicating complex behavioural shifts.

Using Ordinal Logistic Regression and Random Forest models, Prof. Pawar analysed satisfaction levels across multiple service attributes. He adopted the Three-Factor Theory, classifying elements like frequency, crowding, and comfort as basic but poorly performing, needing urgent improvement. In contrast, staff behaviour and safety were rated highly and classified as excitement factors that enhance satisfaction.

Reflections by Shri Jaideep

In the closing reflections, Shri. Jaideep emphasised the urgent need to reimagine urban mobility with a strong focus on safety, inclusivity, and data-driven planning. He highlighted that improving women's safety in public transport must be at the core of all mobility initiatives. Providing free bus services is a progressive step, but true empowerment requires consistent attention to factors like comfort, reliability, frequency, and safe travel environments. He underlined how emerging technologies, such as AI-driven road safety systems, are shifting the focus from reactive to proactive interventions. Predictive models now allow planners to identify potential risk zones, so-called grey spots, before accidents occur, thereby strengthening both planning and enforcement measures.

Shri Jaideep also reflected on the transformative role of Mobility Digital Twins and big data analytics in modern transport planning. These tools enable dynamic simulation, real-time congestion management, emission monitoring, and smarter infrastructure investment. AI-based route planning was recognised as a significant leap forward in optimising networks to better serve high-demand and underserved areas. He concluded by urging a collective shift towards intelligent, equitable, and resilient urban mobility systems, emphasising that technology should serve people, especially the most vulnerable, by making cities safer, cleaner, and more accessible for all.



Key Outcomes and Recommendations

Advancement in Traffic Safety Equipment: Cutting-edge technologies like Advanced Driver Assistance System (ADAS), and predictive analytics enable real-time monitoring and risk mitigation to enhance traffic safety.

Ensuring Safety, Comfort, and Accessibility for Women: Initiatives such as fare-free travel, reserved seating, and well-lit stops improve safety and empower women's mobility and participation.

Application of Big Data in Transportation Planning: Big data from GPS, apps, and sensors helps optimise routes, allocate resources efficiently, and support inclusive urban mobility.

Enhancing Livability and Resilience through Mobility Digital Twins: Mobility Digital Twins use real-time simulations to test policies, improve reliability, and create resilient, sustainable cities.



From left: Prof. Digvijay S Pawar, Mr. Venkata Chunduru, Shri. Jaideep, Mr. Saurabh Kasturia, Mr. Santhosh Kumar B V, Dr. Mukti Advani

Active Mobility - Centre of Excellence Plenary Session on “Pedalling Progress: Advancing Active Mobility for Sustainable Cities”



27 JUNE, 2025



13:30 - 14:30 hours

On the Panel

Moderator: Mr. Sathya Sankaran, Co-founder & Director, Urban Morph

Panellists:

- Mr. Ewout De Wit, Consul General of the Kingdom of the Netherlands in Bengaluru
- Dr. Morgan Campbell, University of Leeds, UK
- Prof. Ashish Verma, Indian Institute of Science, Bengaluru
- Prof. Milad Haghani, University of Melbourne, Australia

Rapporteur: Mr. Harendra Pratap Singh, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentations

Pedalling Progress: Advancing Active Mobility for Sustainable Cities by Mr. Sathya Sankaran

The presentation highlighted the critical role of cycling in promoting public health and sustainable urban mobility, with a focus on the evolving story of cycling in Bengaluru. It emphasized how initiatives like public bicycle parking and bicycle-sharing systems can be transformative for cities by fostering cross-sectoral community engagement and encouraging wider public participation. Drawing on contributions from other Indian cities such as Delhi, Chandigarh, and Surat, the presentation demonstrated how diverse efforts are helping advance cycling initiatives across the country. Despite this progress, several key gaps continue to hinder the growth of cycling in Indian cities, including government inertia in developing dedicated infrastructure, lack of strategic planning, limited knowledge of effective methods and global best practices, poor quality of existing infrastructure, inadequate road safety measures and enforcement, absence of impact analysis for cycling adoption, a weak bicycle marketplace with limited variety and availability, and low public acceptance and cultural integration of cycling. The presentation concluded by posing a compelling question: Can the Centre of Excellence on Active Mobility bring these elements together through better forecasting, planning, and implementation to create a supportive ecosystem that enables cycling to thrive with robust infrastructure and strong community backing?

Understanding cycling from the perspective of food delivery cyclists by Dr. Morgan Campbell

The presentation sheds light on the lived experiences of food delivery cyclists, a workforce often marginalized in transport planning and policy discourse. While cycling is typically framed as a green and health-promoting activity, the reality for gig workers who rely on it for income is marked by precarity, exploitation, and systemic neglect. Through a seven-month Participatory Action Research (PAR) project involving ethnographic methods, interviews, travel diaries, and video recordings, the study documented the perspectives of riders, primarily immigrants with limited employment options, who face low pay, unsafe conditions, harassment, and lack of institutional support.

Key findings revealed that inadequate infrastructure, bike theft, and discriminatory behaviour from both the public and law enforcement severely impact the safety and dignity of delivery cyclists. Furthermore, platform algorithms prioritise motorised delivery modes, contradicting sustainability claims and reinforcing social inequities. The study calls for inclusive planning that integrates gig workers into the active travel agenda. Recommendations include improving cycling infrastructure, revising insurance and legal protections, and adopting participatory budgeting to ensure that the needs of these essential yet overlooked workers are met. The presentation ultimately challenges the dominant narratives around cycling and advocates for justice-oriented urban mobility policies.



Summary of Panel Discussion

Lessons from Decades of Cycling Infrastructure: Advancing Active Mobility and First-Mile/Last-Mile Integration

The evolution of cycling infrastructure in the Netherlands over the past six to seven decades offers key insights into promoting active mobility. Drawing on personal experiences of cycling to school, university, and work, it was emphasised that well-developed and widespread infrastructure can make cycling seamless and convenient, effectively removing concerns related to traffic. The potential of intercity bicycle highways was also noted as a means to encourage cycling as a practical mode of travel between locations. Additionally, the importance of data collection was underscored, along with the observation that expanding public transport infrastructure can further support cycling for first- and last-mile connectivity.

Redefining Urban Safety: Integrating Cycling, Reducing Car Dependency

The discussion in a global context emphasizes that a truly “safe city” is one that ensures safe cycling. The importance of integrating cycling into urban planning was highlighted as a critical step toward achieving zero pedestrian fatalities. This requires bold policy actions and strategic infrastructure investments to support active mobility.

The symbolic role of large family cars was also discussed, suggesting that fewer individual vehicles on the road can reduce congestion and vehicle-bicycle conflicts, ultimately improving safety for cyclists. The conversation further underscored that positive experiences should inform future improvements, while negative experiences must be addressed with timely corrective measures.

In a broader perspective, the challenges posed by extreme climatic conditions on large religious gatherings were also noted, using the Hajj pilgrimage in Saudi Arabia as an example.

Bridging the Mobility Gap: Prioritising Active Transport and Data-Driven Urban Planning

The urban discourse continues to focus predominantly on health aspects, often overlooking the critical dimension of mobility. It is noted that adopting evidence-based approaches is key to identifying and addressing real mobility challenges. Bengaluru was cited as an example of a once-livable city that, over time, failed to develop adequate infrastructure for pedestrians and bicyclists.

The need to incentivise the systematic collection of data on active modes of transport, such as walking and cycling, was emphasised, given their frequent underrepresentation in traditional transport datasets. Without reliable data on travel behaviour, infrastructure usage, safety concerns, and user perceptions, planners and policymakers are left without the necessary evidence to make informed, effective decisions. Ensuring high-quality data was therefore underscored as essential to supporting inclusive and sustainable urban mobility planning.

Adapting Global Lessons: Linking Urban Scale to Sustainable Cycling in Growing Indian Cities

Insights from the UK experience offer valuable lessons that could be adapted to the Indian context. It was highlighted that sustainability is closely tied to the scale of urban travel, particularly the extent to which distances can be effectively covered by bicycle. In rapidly expanding Indian cities such as Bengaluru, it is observed that urban growth has not been accompanied by a proportional development of sustainable infrastructure for walking and cycling.

Key Outcomes and Recommendations

Invest in Cycling Infrastructure

Develop safe, seamless, and connected cycling networks, including intercity bicycle highways, to promote active mobility and support first- and last-mile connectivity.

Integrate Cycling into Urban Safety and Planning

Recognise cycling as central to urban safety; reduce car dependency to minimise conflicts with cyclists. Use real user experiences to guide continuous improvements.

Adopt Data-Driven, Inclusive Planning

Prioritise mobility alongside health in urban discourse. Collect high-quality, inclusive data on walking and cycling to support evidence-based planning and decision-making.

Localise Global Best Practices

Adapt lessons from the UK and Netherlands to the Indian context. Align urban growth with sustainable infrastructure, ensuring short travel distances support cycling and walking.



From left: Prof. Milad Haghani, Prof. Ashish Verma, Mr. Sathya Sankaran, Dr. Morgan Campbell, Mr. Ewout De Wit, Mr. Harendra Pratap Singh

Uber Plenary Session on “Towards a Livable Bengaluru: Addressing Congestion through Connectivity and Care-driven Urban Planning”



27 JUNE, 2025



14:30 - 15:30 hours

On the Panel

Moderator: Prof Ashish Verma, IISc Bangalore

Panellists:

- Mr. Mahadevan Nambiar, Uber
- Prof. Guenter Emberger, TU Vienna
- Prof. Varameth Vichiensan, Kasetsart University
- Mr. Raghavan Vishwanath, KPMG India
- Prof. Digvijay S Pawar, IIT Hyderabad
- Mr. Lakshman Singh, BMRCL
- Dr. M.P. Ramnavas, Kochi Metro Rail Ltd.

Rapporteur: Mr. Rohit Singh Nitwal, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentations

First and Last mile connectivity: Opportunity and Challenges by Mr. Raghavan Vishwanath

The presentation focused on the growing demand for urban travel in India and the associated rise in private vehicle dependence, leading to increased congestion across major cities. It highlighted how rapid urbanization, economic growth, and evolving lifestyle patterns have contributed to this shift, while public transport systems—especially metro rail—continue to be underutilized. The limited success of metro systems was attributed largely to gaps in first and last mile connectivity, which make door-to-door commuting inefficient and inconvenient for a large segment of the population.

The talk introduced a detailed analysis of existing first and last mile modes in Indian cities, particularly shared auto-rickshaws and feeder buses. While these options are generally affordable, they are often inefficient, slow, unsafe, and inflexible. In contrast, the presentation positioned bike-taxis as a promising alternative that offers the balance across affordability, convenience, speed, and accessibility. It emphasized how two-wheelers are already deeply embedded in Indian mobility patterns, especially through app-based delivery platforms, making them an ideal candidate to fill urban mobility gaps if integrated strategically with public transport.

The presentation also explored the regulatory landscape around bike-taxis, noting that fragmented state-level policies and resistance from traditional transport unions have hindered their wider adoption. Drawing from global practices, it proposed a balanced set of policy recommendations that include short-duration commercial authorizations, integration with metro systems, safety training, and promotion of electric variants. The talk concluded by underscoring the importance of enabling flexible, inclusive, and tech-supported last-mile systems to unlock the full potential of urban mass transit and reduce congestion sustainably.



Summary of Panel Discussion

Context-Aware First and Last Mile Solutions

The panel opened with a recognition that mobility strategies must be locally relevant. It was emphasised that private sector solutions should be sensitive to the spatial, demographic, and economic contexts of different urban areas. Tailoring services, whether bike taxis, e-rickshaws, or shuttles, based on local user behaviour, was seen as essential for successful adoption.

Decongesting Cities through Shared Mobility

The discussion highlighted the rising strain on urban infrastructure due to private vehicle use. Promoting shared options like carpooling and ride-hailing was suggested as a pragmatic path to reduce congestion, emissions, and road space usage without requiring large-scale infrastructure expansion.

Private Services as Enablers, Not Competitors

A key message was the importance of positioning private mobility providers as complementary to public transport, especially for bridging first and last-mile gaps. Solutions like on-demand shuttles and bike taxis can act as feeders to metro and bus systems, enhancing network accessibility rather than drawing commuters away.

Collaborative Governance Models

The panel referenced recent partnerships, such as the BMRCL–Namma Yatri MoU (2024), as proof of evolving collaboration between public authorities and private platforms. While regulatory ambiguities persist, such partnerships were seen as progressive steps in building trust and aligning shared mobility with public objectives.

Need for Seamless Journey Integration

A recurring theme was the importance of end-to-end journey continuity. Participants emphasised that users should be able to transition between metro systems, bike taxis, and other modes without friction, through interoperable ticketing, route integration, and digital platforms.

Balancing Innovation with Regulation in Two-Wheeler Mobility

The rise of 2W bike taxis was acknowledged as a practical and scalable solution for last-mile mobility, particularly given India's already existing two-wheeler ownership numbers. However, their unregulated growth and associated risks were seen as requiring a structured policy response.

Addressing Safety as a Collective Concern

With two-wheelers posing higher safety risks compared to other modes, the discussion stressed the need for multi-stakeholder dialogue. Policymakers, aggregators, enforcement agencies, and civil society must co-create safety protocols that include training, equipment standards, and awareness.

Advocating Outcome-Based Regulatory Frameworks

Finally, the panel endorsed a shift away from mode-specific bans and fragmented state policies toward outcome-driven regulation. The focus should be on improving service quality, passenger safety, and accessibility while enabling innovation and livelihood opportunities.

Key Outcomes and Recommendations

Localise Solutions: Encourage context-aware mobility models by empowering city-level planning and private innovation that respond to unique geographic and demographic needs.

Promote Shared Mobility: Incentivise carpooling, ride-sharing, and micro-mobility to ease road congestion and reduce the urban carbon footprint.

Strengthen First/Last Mile Services: Introduce well-integrated shuttle and two-wheeler services that serve public transit hubs, particularly metro and BRT stations.

Foster Public-Private Cooperation: Institutionalise models like BMRCL–Namma Yatri to formalise partnerships, clarify roles, and facilitate data and fare integration.

Support Journey Continuity: Develop unified digital platforms and multimodal route planning tools that allow for seamless commuter experiences across transport types.

Develop a Unified Policy for Bike Taxis: Recognize the economic and operational relevance of bike taxis and frame national guidelines that ensure safety, insurance, electrification, and legitimacy.

Prioritize Safety Protocols: Implement mandatory training, helmet usage, SOS features, and regular audits for 2W operators, especially those operating under shared mobility platforms.

Reframe Regulations Around Outcomes: Create flexible, technology-neutral policies focused on safety, efficiency, and accessibility rather than rigid mode-specific controls.



From left: Prof. Varameth Vichiensan, Prof. Guenter Emberger, Dr. M.P. Ramnavas, Prof. Ashish Verma, Mr. Lakshman Singh, Mr. Mahadevan Nambiar, Mr. Raghavan Vishwanath, Mr. Rohit Singh Nitwal, Prof. Digvijay S Pawar

DPIIT Plenary Session on “Institutional Pathways to Sustainable and Livable Cities”



27 JUNE, 2025



16:00 - 17:00 hours

On the Panel

Moderator: Dr. Jivisha Joshi Gangopadhyay, DPIIT, Ministry of Commerce and Industry

Panellists:

- Mrs. Manjula V, Former Commissioner, DULT
- Prof. Maria Attard, University of Malta
- Dr. S Velmurugan, CSIR - CRR
- Dr. Ch. Ravi Sekhar, CSIR - CRR
- Mr. Mukund Kumar Sinha, KfW, Frankfurt
- Ms. Sushma Goh, Land Transport Authority, Singapore

Rapporteur: Ms. Maneesha B, Research Scholar, IST Lab, IISc Bengaluru



Summary of Presentations

Institutional Pathways to Sustainable and Livable Cities by Dr. Jivisha Joshi Gangopadhyay

The presentation highlighted how India’s fast-paced urbanisation brings both serious challenges and vital opportunities, stressing that strong institutions are central to managing this transition. Rapid population growth strains ageing infrastructure, basic services like sanitation, waste management, housing, and healthcare, and leaves urban transport fragmented and congested, especially in smaller cities. Environmental pressures mount as green spaces and natural ecosystems are lost, increasing pollution, urban heat, and climate risks due to inadequate integrated planning. The presentation argues that fragmented planning, poor multimodal integration, and high logistics costs hinder progress, making robust institutional frameworks essential for cohesive urban development. Such institutions ensure coordinated planning, fair resource distribution, and a link between transport systems and broader goals like health, equity, resilience, and climate sustainability. India’s flagship initiatives - PM GatiShakti for multimodal connectivity, the National Logistics Policy, Smart Cities Mission, AMRUT, PMAY-Urban, Swachh Bharat Mission, the National Urban Digital Mission, and the Climate Smart Cities Alliance - showcase how institutional reforms can drive integrated urban growth, digital transformation, and climate-responsive planning.

Transit-Oriented Development (TOD) is also helping align land use and sustainable mobility. Finally, the presentation stresses building institutional capacity at all governance levels, learning from global best practices, and aligning local action with the SDGs and New Urban Agenda to create cities that are not only sustainable and efficient but also inclusive, healthy, and resilient for all citizens.

The Indian Trip Generation Manual by Dr. Ch. Ravi Sekhar

The Indian Trip Generation Manual is prepared by CSIR-Central Road Research Institute (CRRI) under the CSIR-FBR Project. It aims to offer standardised guidelines for estimating trip generation rates for different urban land uses across India. To develop this manual, extensive data were collected from Indian cities, with contributions from eight reputed academic institutions, including IIT Jammu, SPA Delhi, and multiple NITs (Nagpur, Surat, Surathkal, Tiruchirapalli, Bhopal, Warangal).

Purpose: The manual is designed as a practical reference for urban planners, transportation engineers, and policymakers to accurately forecast travel demand and plan urban transport systems efficiently. The manual will help standardize trip generation estimates for Indian cities, enabling data-driven urban transport planning tailored to India's unique travel patterns and urban form.

Key Features:

- Defines various urban land uses (residential, commercial, office, educational, recreational, etc.).
- Provides trip generation rates specific to India's urban context.
- Details methodologies for estimating household passenger trip rates based on multiple factors:
- Includes trip rates for private vehicle usage (2-wheelers and cars) based on house type (BHK) and city population size.

Summary of Panel Discussion

The panel discussion addressed the core question: *How can we ensure that transportation is delivered as an efficient, people-centered service?* The conversation focused on how planning, infrastructure, institutional capacity, and technical guidance can work together to advance sustainable and livable urban transport systems.

Effective Institutional Structures

Panellists stressed that robust government structures are vital for delivering sustainable transport and livability. This requires long-term visions, clear priorities, and measurable targets to guide action. Because governance models differ across contexts, frameworks must align multiple institutions and agencies under shared policies and goals, with clearly defined roles and responsibilities to avoid overlaps and gaps.

Singapore's Model

Singapore's Land Transport Authority (LTA) was presented as an exemplary case where a single authority manages planning, design, and operations, ensuring seamless coordination. Long-term master plans like the 2008 Land Transport Master Plan provide strategic direction, while cultural initiatives such as public art help build community identity and reinforce the transport vision. Consistent implementation of these plans has enabled Singapore to maintain a reliable, integrated, multimodal system.

Role of Technical Institutions

Technical and research bodies like CSIR-CRRI play a key role in supporting agencies through capacity-building workshops, training, and the development of manuals and standards. These resources ensure consistent, high-quality planning and design practices across projects.

Capacity Building and Coordination

Strong institutional capacity and cross-departmental coordination are essential for transport projects to succeed as reliable services. Local organisations and stakeholders should actively lead programs to ensure local ownership, while cities should build multi-disciplinary teams including planners, community engagement experts, and data specialists. Partnerships with communities, academia, and the public help maintain transparency and trust.

Institutional Maturity and Financing

Well-defined governance structures and proven institutional maturity are crucial for securing loans and international funding. Adequate procurement capacity and safeguards ensure proper fund use, and projects succeed when institutional capability is matched by sufficient operational and capital investment.

Use of Technical Manuals Across Agencies

Finally, institutionalising technical manuals and standards across agencies promotes consistency in planning and implementation. Digital integration, feedback loops, and local adaptations keep these tools practical and relevant, guiding agencies toward safer, more sustainable outcomes.



Key Outcomes and Recommendations

From the discussion, the following practical priorities emerged:

- Build and maintain **government structures with clear visions** and context-specific roles.
- Strengthen **alignment across institutions** for coherent policy and implementation.
- **Learn from examples** like Singapore, where a single empowered authority oversees integrated, long-term planning.
- Expand the role of **technical institutions in training and updating standards**.
- Develop **multi-disciplinary teams and stakeholder engagement** frameworks.
- Recognise that **institutional maturity is essential** for attracting investment and ensuring delivery.
- Use digital platforms to make **technical manuals accessible, updatable, and adaptable** for local needs.



From left: Dr. S Velmurugan, Prof. Maria Attard, Mrs. Manjula V, Dr. Jivisha Joshi Gangopadhyay, Dr. Ch. Ravi Sekhar, Ms. Sushma Goh, Mr. Mukund Kumar Sinha



SYMPOSIUM CYCLE TOUR

Pedal Through IISc: A Heritage Cycle Tour

The IISc In-Campus Heritage and Ecological Cycle Tour offered participants a unique chance to discover the Indian Institute of Science's lush green campus while celebrating its remarkable history and pioneering role in Indian education and research. Riders explored significant landmarks, from the Civil and Electrical Engineering Departments to the Mini Forest and the historic Founder's Memorial, uncovering stories of visionaries like Jamsetji Tata and Swami Vivekananda, and learning about the campus's ecological treasures, heritage buildings, and avenues lined with diverse trees. This leisurely ride highlighted the importance of sustainable mobility while honouring the institute's legacy as a beacon of innovation and learning.



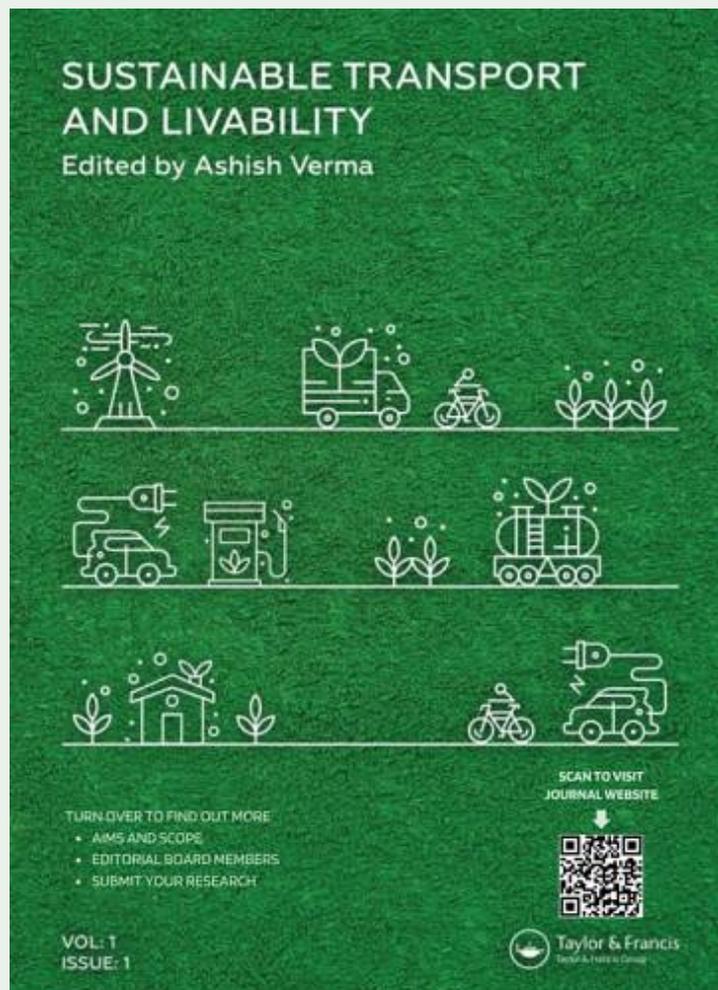


SYMPOSIUM WALK TOUR

Wander through Malleswaram: A Walk Tour

The Malleswaram Walk Tour guided participants through one of Bengaluru's oldest planned neighbourhoods, celebrated for its deep cultural roots and timeless charm. Walkers traced the area's journey from a plague-era urban expansion to a sanctuary for noble families and artists, exploring vibrant local markets, and quiet conservancy lanes transformed by the Walkable Malleswaram initiative. This immersive stroll showcased how Malleswaram continues to blend heritage, art, community, and sustainable urban living.





Launched online on 7th November 2023, the Sustainable Transport and Livability journal held a successful event featuring nine speakers from academia, government, and NGOs. With nearly 286 participants from 35 countries, the launch highlighted the journal's mission to advance research on the links between sustainable transport and quality of life.

TSTL focuses on publishing interdisciplinary research that explores how sustainable transport interventions impact physical and mental well-being, social equity, safety, accessibility, environmental quality, and urban resilience. The journal welcomes empirical studies, theoretical work, case studies, and reviews from both developed and developing contexts, prioritizing original contributions that inform practical improvements in urban livability. Edited by Dr. Ashish Verma of IISc, TSTL is a new Open Access journal published by Taylor and Francis.



Scan to visit the journal website

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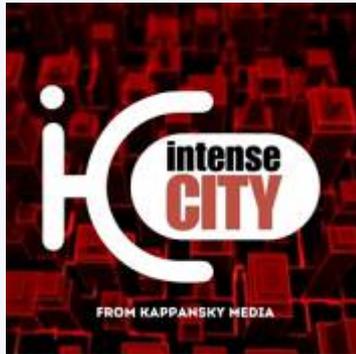


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