



DIGITAL SOLUTIONS:

# SMART MOBILITY PLANNING FOR LIVABLE CITIES

SMART SOLUTIONS IMPACTING URBAN TRANSPORT  
INFRASTRUCTURE AND SERVICES

## OPPORTUNITY

Around the world, city planners are designing urban and transport infrastructures that are expected to last for the next 50-100 years and will be a structuring factor for the urban development in cities. As such, city planners must adopt a long-term perspective when designing transport infrastructure and move from a “best practice” approach to a “next practice” approach. While livability is the objective of a next practice approach, sustainability and “smartness” are part of a vast toolbox that raises the level of livability in cities. “Next practice” must be human-centric with the aim of improving the livability of people and not just sustain an “outdated” system.

Mobility has been a defining parameter of cities and has influenced their shape, scale, land-use, spatial distribution, livability, and social and cultural interactions. City planners need to be flexible in their designs for transport systems; thus, when introducing new smart digital technologies, it is crucial to consider technologies that are flexible enough to adjust to the future needs of the city and its citizens. Smart mobility is all about human-centric planning, where technology is an enabler to create sustainable foundations for life and to support citizens in making sustainable choices.

## BENEFITS

- Smart digital solutions exist to help predict and visualize the anticipated outcomes of innovative solutions, e.g., with 3D micro-mobility simulation models;
- Better planning for urban density problems with digital solutions such as micro-mobility-sharing schemes, and Mobility as a Service (MaaS);
- Transportation and mobility infrastructure are very long term and defines the urban structural development. Strong digital tools combined with human-centric strategies can pave the way for sustainable solutions;
- Digital technologies such as sensors can improve the ability and speed of cities to establish a baseline, while data can inform city planners on how to rethink traffic systems.

## PRECONDITIONS

- Any transport infrastructure plan and construction must take departure in a human-centric strategic vision or action plan;
- New technologies such as autonomous cars require consistency in policies and plans even across borders.



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### KEY TAKEAWAYS ON SMART MOBILITY

From the ASEAN Australia Smart Cities Webinar Series Part 6: Next Practice Smart Mobility Lab

- Cities are currently at the brink of a fundamental mobility transition where a shift in communications systems, an economic transition in mobility services, climate change mitigation, and the COVID-19 pandemic are driving factors and are setting their mark, and technologies are enablers.
- Data is vital in informing and rethinking future design scenarios of transport infrastructure systems, not only for building new infrastructure but also for optimizing existing ones. Mobility simulation models are excellent digital solutions that can visualize how new policies affect people’s behaviors and guide city planners to develop a human-centric design.
- City planners need to make human-centric planning where technology is an enabler to create a sustainable life and enable citizens to make sustainable choices. The energy and human interaction that urban environments provide and cities’ cultural gravity will keep drawing people into cities. Still, for cities to work, they must be livable. To do so, smart solutions must be considered and deployed, and transport systems are a critical factor to make cities livable.

SCAN  
CODE FOR  
DIGITAL  
VERSION



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## Intelligent Transport Systems in Australia

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### AUSTRALIA

#### AGENCIES INVOLVED

- [Australian Trade and Investment Commission \(AUSTRADE\)](#)

Australia is continuously rethinking its transport infrastructure to manage increasing urbanization, rapid population growth, and environmental sustainability. The country has established a track record in developing and adopting new technologies and the capacity and enthusiasm of its transport authorities, education institutions, and industry to collaborate and deliver innovative solutions.

As a result of a diversified and multifaceted transport infrastructure network, Australia has developed world-leading technologies to alleviate congestion and improve traffic and safety conditions. Intelligent Transport Systems (ITS) have provided substantial but gradual changes to the country's transport systems thanks to considerable benefits from the deployment of various solutions. These solutions include smartcard ticketing technology and contactless payments, vehicle telematics, GPS-enabled e-tolling, artificial intelligence (AI) and machine learning for autonomous vehicles, and on-ramp metering. These technologies played a big role in reducing congestion and improving the safety of inner-city driving.

Australia is also actively developing Connected and Automated Vehicle (CAV) technology, commencing a wide range of connected and automated vehicle trials, and has a nationally consistent and principles-based approach to the timely deployment of emerging transport technologies.

#### ABOUT THE ASEAN AUSTRALIA SMART CITIES TRUST FUND

The ASEAN Australia Smart Cities Trust Fund (AASCTF) assists ASEAN cities in enhancing their planning systems, service delivery, and financial management by developing and testing appropriate digital solutions and systems. Digital solutions address vital cross-cutting themes such as social inclusiveness, gender equity & women's empowerment, climate change & environmental sustainability, and public-private partnerships. By working with cities, AASCTF facilitates their transformation to become more livable, resilient, and inclusive, while in the process identifying scalable best practices to be replicated across cities in Asia and the Pacific.



## Malaysian cities building back better post-pandemic via smart mobility

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### MALAYSIA

#### AGENCIES INVOLVED

- [Prosperity Fund Future Cities Programme \(UK\)](#)
- [Mott MacDonald](#)
- [UN-Habitat](#)
- [Iskandar Regional Development Authority \(IRDA\)](#)

In Malaysia, innovative smart mobility projects in Iskandar Malaysia and Melaka is helping to tackle transport challenges and support cities in building back better following the COVID-19 pandemic.

The Iskandar Malaysia region is developing a Smart Integrated Mobility Management System (SIMMS) which is expected to integrate static and real-time data from multiple data sources. The system will be customized to the needs of the relevant authorities, in consultation with citizen stakeholder groups to ensure alignment with gender, equality, and social inclusion and sustainable development goals. It is also expected to improve the capacity and efficiency of road networks and allow for better data-driven decision making for transportation or mobility management planning and fare policies.

In Melaka, a Green Bus Network Implementation Plan will enable the city to implement a suitable infrastructure and mobility system and transform existing bus services into a sustainable and efficient network. The network will enable the deployment of innovative public transport technologies, such as smart traffic management, smart ticketing, and traffic modeling to ease congestion in the city center and improve journey time reliability. Melaka will also develop a integrated mobility plan to ensure sustainable travel in the city's heritage area to promote urban improvements in a post-pandemic economy.



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# Digital solutions for smart mobility

A quick overview of some of the technologies that are helping to enhance urban mobility around the world.



## Micro-simulation

A 3D modeling system where every individual vehicle and pedestrian is simulated real-time in a virtual environment showing all the features we interact with; roads, stop signs, traffic signals, footpaths, etc.



## Mobility-as-a-Service (MaaS)

Using Mobility-as-a-Service can allow coordination of all transport modes within a single application, and cities can offer the MaaS industry pilot test locations for a broader roll-out of MaaS services.



## Intelligent Transport Systems (ITS)

Real-time data collection using smart technologies such as smart poles and sensors can give real-time network performance data and be provided to consumers wishing to observe congestion, public transport status, or parking availability.



## Shared/Autonomous Vehicles

Availability of a shared car fleet capable of sensing the environment and navigating without human input. Transportation via these vehicles can be ordered through a mobile device or other digital touchpoints.



## Micro-mobility sharing services

Micro-mobility solutions such as e-bikes and electric scooters can offer geo-fenced areas for last-mile connectivity, while autonomous shuttles could bring people from centralized car parks on the edge of the city center into their destinations, allowing on-street parking to be reclaimed as spaces for people to enjoy, further boosting the attractiveness and commerce of the city center.



## Digital/touchless public transit payment systems

Implementation of digital and touchless payment systems in public transportation that allow for prepayment and faster boarding. Includes smart cards and mobile payments.



## E-mobility

Electric cars, buses, trucks, bicycles, scooters; streets and sidewalks are becoming host to new fleets of vehicles that come with many benefits to noise, air quality, accessibility, equity, etc. How can communities leverage these benefits while minimizing the negative aspects of electrification? Moreover, what are the appropriate steps needed to prepare for increased electricity charge points and supply demands?



## Artificial Intelligence (AI) for optimizing road maintenance work

Scanning roads with high resolution while driving at high speed. New equipment quickly and efficiently collects large amounts of data and is a significant step forward when it comes to big data analysis and AI. This makes it possible to assess the state of the road network and optimize the maintenance regime.