




itsaustralia 
Intelligent Transport Systems



Study visit to Michigan and ITS World Congress

September 2022





Roads Australia was invited by Intelligent Transport Systems (ITS) Australia to join a study visit to Michigan and the ITS World Congress in September 2022. Roads Australia was represented by President Michael Bushby and CEO Michael Kilgariff.

MOU between Michigan and the Australian Government

The Australian Government, represented by the [Department of Infrastructure, Transport, Regional Development and Communications](#), and the State of Michigan, represented by Michigan's [Department of Transportation](#), on behalf of the Governor, signed a Memorandum of Understanding (MOU) in October 2018.

The parties agreed to enhance cooperation between their respective government bodies, knowledge-based institutions, clusters and businesses in transport research, technology, entrepreneurship, and innovation, reflecting their desire to accelerate potential social and economic benefits for future generations and vulnerable sectors of society around the world.

A core working group, including the MOU signatories and partners, was convened shortly after the signing of the MOU to facilitate the activities set forth in the agreement.

The group is known as the Michigan Australian Exchange in Mobility (MAX). MAX includes key leaders from the [Australian Government Department of Infrastructure, Transport, Regional Development and Communications](#), The Michigan Economic Development Corporation (MEDC), Austroads,

ITS Australia, and the [University of Melbourne](#). Other contributing partners include the [Michigan Department of Transportation](#) and [Austrade](#).

Under the auspices of this MOU, in 2019 Roads Australia lead a delegation to USA and Canada, a critical part of which included Michigan – a copy of the report can be accessed at [Future Transport-Smart Cities Report](#).

Michigan 14 – 16 September

This section of the visit was undertaken in collaboration with the Michigan Economic Development Corporation (MEDC) and the Michigan Department of Transportation (MDOT).

The visit was supported by the Australian Trade and Investment Commission as part of the Michigan Australia Exchange in Mobility. The visit coincided with the Detroit Motor Show.

We were also pleased to be accompanied in Detroit by Chris Elstoft Consul-General of Australia in Chicago (Head of Post ad interim). The commitment by the Australian Consulate in Chicago to the MOU and the relationship between Australian and Michigan government and industry bodies is greatly appreciated.

At Attachment A is a copy of the itinerary.

Key participants

First Name	Last Name	Job Title	Organization	State/Country
Sarah	Tennant	Sector Development Director & Cyber Initiatives	MEDC	Michigan
Charlie	Tyson	Technology Activation Manager	MEDC	Michigan
Michele	Mueller	Sr. Project Manager Connected, Automated and Electrification	MDOT	Michigan
Katelyn	Wilcox	Assistant Chief of Protocol	MEDC	Michigan
Michael	Bushby	CEO	Roads Australia	Australia
Michael	Kilgariff	President	Roads Australia	Australia
Susan	Harris	CEO	ITS Australia	Australia
Peter	Sweatman	Enterprise Professor	ITS Australia	Australia
Silje	Troseth	Vice President APAC & General Manager Australia	Q-Free Australia	Australia
Chris	Myatt	Principal Solutions Engineer	Q-Free Australia	Australia
Lee-Ann	Breger	Programs Director	iMove Australia	Australia
Ashley	Sanders	Technical Director	Federal Chamber of Automotive Industries	Australia
Jules	Snow	Senior Business Development Manager	Intelematics Australia Pty Ltd	Australia
Mario	Filipovic	Manager, Product Management Office	Toyota Motor Corporation Australia	Australia
Matt	Harrison	Marketing Manager	ITS Australia	Australia
Janette	Sofronidis	Events Manager	ITS Australia	Australia
Stacey	Ryan	Policy Manager	ITS Australia	Australia
Aaron	de Rozario	Executive Leader, Regulatory Reform	National Transport Commission	Australia

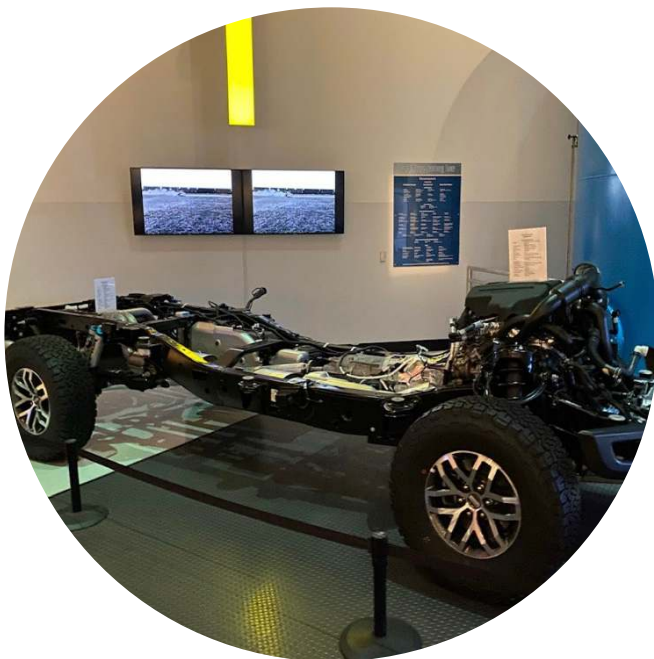
Ford Rouge Plant

Roads Australia visited the Ford Rouge Plant on Day 1. This was the original Henry Ford automated plant producing Model A's and then 40 years of Mustangs.

The Plant now produces 365,000 Ford F150's pa. The F150 is a large vehicle by Australian standards but is the biggest selling vehicle in the US. The plant produces one every 53 seconds.

It is also the location for the manufacture of the new electric Lightning F150 truck. 80,000 per annum can be built in a separate production area using the same body and similar chassis. There is currently a 2-year waiting list.

The battery for the F150 Lightning weighs 1800lbs, or approx 800kg. See the comparison of the ICE and electric F150 chassis below.



F150 Chassis



Ford F150 Lightning Chassis

Detroit People Mover

The Detroit Transportation Corporation, City of Detroit, is owner and operator of the Detroit People Mover.

The Detroit People Mover (DPM) is a fully automated light rail system that was developed as part of a planned regional transit system. The People Mover operates on an elevated single-track loop in Detroit's central business district.

The 2.9-mile system provides connections between the courts and administrative offices of several levels of government, sports arenas, exhibition centers, major hotels, and commercial, banking and retail districts. Service is frequent, unencumbered by vehicle or pedestrian traffic, and conveniently available throughout the central business district.

Observation

1. Both Q-Line and DPM are currently free to try and encourage patronage post Covid.
2. DPM was partially shut down for security reasons given the visit to Detroit by POTUS.



Q-line is a 'streetcar' (light rail) running approximately 5 km between the downtown area and the university and hospital campuses to the of Midtown to the north.

Detroit Motor Show

The North American International Auto Show (NAIAS), also known as the Detroit Auto Show, is an annual auto show held in Detroit, Michigan, USA.

The show was held in January from 1989 to 2019. It was intended to move to the summer in 2020 but was cancelled due to COVID in 2020 and 2021. The first post COVID event was held from Wednesday 14 September – Sunday 25 September, 2022.

The show featured many of the latest electric vehicles on the market, along with battery options and the technology required to provide support.

Opening Reception

The delegation was invited to attend the Michigan Governors Opening Reception on Wednesday 14 September.

The opening reception was addressed by the Governor of Michigan Gretchen Whitmer and Lieutenant Governor Garlin Gilchrist II. Governor Whitmer and Lieutenant Governor Gilchrist gave a very upbeat talk on the automotive and associated transport industries in Michigan.

From left: Susan Harris - CEO ITS Australia, Silje Troseth - Vice President APAC & General Manager Australia Q-Free Australia, Michael Bushby – President Roads Australia, Michael Kilgariff – CEO Roads Australia.



Panel Discussion: From mining to recycling: what are the bottlenecks within the battery supply chain?

RA attended a panel discussion which outlined many of the issues in the battery supply chain. Many of these relate to critical minerals and supply chains in a changing geo-political environment.

The USA Inflation Reduction Act of 2022

The USA Inflation Reduction Act of 2022 was referenced a number of times as being a legislative tool which aims to curb inflation by reducing the deficit, and investing into domestic energy production while promoting clean energy.

Among other things, the law will raise \$737 billion and authorize \$369 billion in spending on energy and climate change. The law represents the largest investment into addressing climate change in United States history.

According to several independent analyses, the law is projected to bring the U.S. significantly closer to Biden's goal of reducing greenhouse gas emissions to 50% below 2005 levels by 2030. The projected impact of the bill on inflation is disputed.

The Act is expected to increase both the production and uptake of electric vehicles.

One feature of the Act is the electric vehicle tax credit. This is estimated to be worth between \$3,500 - \$7,500.

The electric vehicle tax credit includes a requirement for the vehicle to have a final assembly in North America. Qualified EVs must have "at least 40 percent of materials sourced from North America or a US trading partner by 2024" and the batteries cannot contain minerals that "were extracted, processed, or recycled by a foreign entity of concern."

The EV Tax Credit has a sunset clause of 2032.

RA President Michael Bushby asked a question of the panel about Australian access to the US market for the mining industry and component suppliers. The Panel responded that because of the Australia USA Free Trade Agreement, Australian manufacturers and mining companies will be eligible for the EV Tax Credit.





Michigan Economic Development Corporation

The Michigan Economic Development Corporation (MEDC) was the host organisation for the Michigan leg.

MEDC believes that international investment is going through a 'de-globalisation' and the level of trade with China is decreasing. This will have a positive impact on the Michigan manufacturing sector.

MEDC believes their competitive advantage comes from a highly skilled labour market as well as a tertiary sector geared towards producing engineers.

From a foreign investment perspective, Michigan has more than 1460 foreign companies in 5346 locations across the state, totalling \$11.3 bn in investments since 2015.

MEDC put their competitive advantage down to 4 issues:

1. Industry Dominance

Michigan has 22 OEMs, 2,200 global suppliers (including 200 EV suppliers) and a growing ecosystem of leading mobility companies. Michigan is also home to 33% of the US battery production and development industry.

2. Robust Innovation Ecosystem

Michigan has a long history of supporting the industry through a range of programs, including the launch of the Office of Future Mobility and Electrification. 72% of all US automotive R&D takes place in Michigan and 50% of the top OEMs are actively working on autonomy, connectivity and EV technology.

3. Critical Mobility Assets

Michigan has a diverse range of mobility testing environments and assets including the American Center for Mobility and the recently announced CAV Corridor. Michigan also has the largest US deployment of V2I technology with 500 miles of connected roadway.

4. Talent Pipeline

Michigans' universities are well engaged with the industry and include world class research centers such as the UM Battery Lab. Michigan ranks #1 in the US for the most engineers per capita.

Detroit Traffic Management Centre

The Group also visited the Detroit Traffic Management Centre TMC).

The City of Detroit TMC is owned by the City of Detroit, under the direction of the Department of Public Works Traffic Engineering Division, and operated and maintained by a contracted agency.

Main functions of the TMC include traffic signal control, traffic detection and surveillance, traffic incident management, special event traffic management, and traveller information dissemination.

ITS devices incorporated into the system include CCTV cameras, intersection vehicle detection, as well as intelligent traffic signals. Wireless and wire line communications transfer information between these devices and the TMC. All CCTV cameras and traffic signal equipment integrated into the ITS network are operational from the TMC.

Additionally, communication and coordination with other organisations allows the TMC to better manage the City's traffic on a daily basis, as well as during unplanned incidents and planned special events.



Detroit Smart Parking Lab

The Detroit Smart Parking Lab (DSPL) is a physical parking structure operated by the American Center for Mobility, offering an open innovation and collaboration site open for real-world testing of parking-related mobility technologies, logistics and electric vehicle charging.

The DSPL offers collaboration and a neutral platform to examine ways to improve customer experiences and the efficient movement of vehicles and goods in defined spaces.

The group was given demonstrations on a range of products including:

- EV Charging Stations and Related Management Solutions
- Induction charging
- Automated Vehicle Parking Operation
- Payments Systems



Michigan Central Station

The group visited the redevelopment of the Michigan Central Station, which was opened in 1913, but post-war fell into disrepair and low use.

In 2018, a trust controlled by the Ford family bought the building, with contributions from General Motors. A redevelopment with an estimated \$1bn project cost is now underway with a project completion expected at end 2022.

Ford plans to turn the building into a hub for its autonomous vehicle development and deployment, and it will be the anchor for the company's Corktown campus. The building will hold both Ford offices and offices of suppliers and partner companies.

The first-floor concourse will reopen to the public with restaurants and retail. A Hotel will also be created on the top floors.

Restoration is anticipated to be completed in late 2022 or early 2023.



American Centre for Mobility

A highlight of the study visit was the American Centre for Mobility.

Peter Sweatman, part of the leadership group for the Australian Integrated Multimodal EcoSystem (AIMES) test bed at the University of Melbourne, played an active role in the development of the American Center for Mobility.

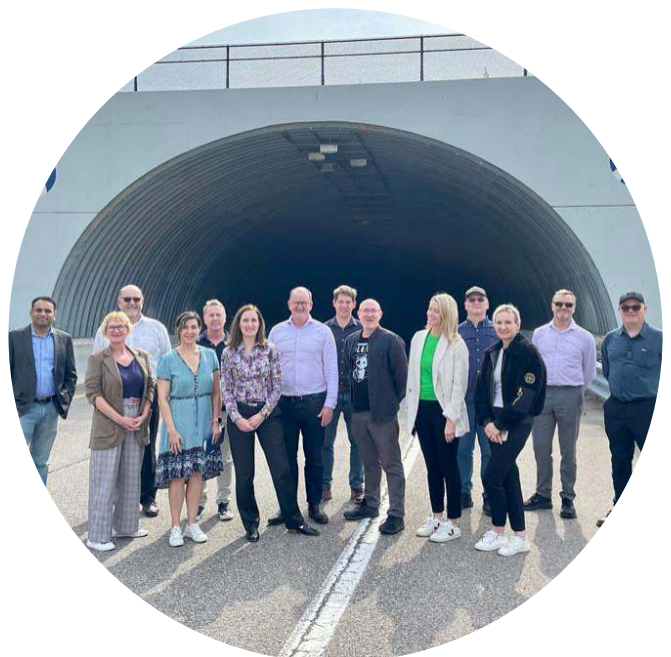
Comprised of government, industry and academic organisations, the American Center for Mobility is focused on accelerating the mobility industry through research, testing, standards development and educational programming.

Located in Southeast Michigan on over 500-acres at the historic Willow Run site in Ypsilanti, ACM offers:

- A smart mobility test center providing a safe platform for the integration, testing and validation of connected and autonomous vehicle and mobility technologies
- A innovation and technology campus for the co-location and incubation of mobility companies and activities
- Event and demonstration areas for showcasing connected and autonomous vehicle technologies and convening industry activities

The American Center for Mobility is open to private industry, start-ups, government, standards bodies, and academia.

Matt Harrison, Communications & Stakeholder Manager, ITS, Michael Kilgariff, CEO RA, Sushanta Das, Technical Director, AMC, Susan Harris, CEO ITS Australia.



ITS World Congress

The ITS World Congress 2022 was held in the Los Angeles Convention Centre from 18-22 September.

The theme was “Transformation by Transportation” and brought together world leaders, practitioners, policy makers, researchers, and private industry to advance and unite the intelligent transportation systems (ITS) industry. The program covered many of the issues on the RA and Australian policy agenda including: Mobility; Road Safety; Digital Infrastructure; Electric Vehicles; Intelligent, Connected and Automated Vehicles, and Sustainability and Resiliency.

The ITS Schedule at a Glance is at Attachment B.



Michael Bushby – President Roads Australia, Dean Zabrieszch - President ITS Australia, Susan Harris - CEO ITS Australia, Michael Kilgariff – CEO Roads Australia, and Silje Troseth - Vice President APAC & General Manager Australia Q-Free Australia.



AASHTO International Day

The American Association of State Highway and Transportation Officials (AASHTO) International Day was held on Sunday 18 September.

AASHTO is the USA equivalent of Austroads. It is a non-profit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all transportation modes including: air, highways, public transportation, active transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system.

AASHTO works to educate the public and key decision makers about the critical role that transportation plays in securing a good quality of life and sound economy for our nation. AASHTO serves as a liaison between state departments of transportation and the Federal government.

AASHTO is an international leader in setting technical standards for all phases of highway system development. Standards are issued for design, construction of highways and bridges, materials, and many other technical areas.

The Keynote was delivered by Roger Millar, Secretary Washington State Dept of Transport and the incoming Chair of AASHTO. Roger Millar presented on a number of issues relevant to Australia, including: resilience and climate change, road safety, congestion and demand management. A major focus was the economic need to invest for safety and the need to have a well-maintained network to support economic activity.



Meeting with AASHTO

Following the AASHTO sessions, Roads Australia and ITS Australia met to consider closer collaboration and the 2023 ITS Australia Global Summit.

Attendees included:

- **Scott Marler**
Director Iowa Dept of Transport
- **Jim Tymon**
Executive Director of AASHTO
- **Tom Kern**
Managing Director the National Operations Center of Excellence
- **Gummada Murthy**
Program Director, AASHTO
- **King W Gee**
Director of Safety and Mobility at AASHTO
- **Michael Bushby**
President Roads Australia
- **Silje Troseth**
Vice President APAC & General Manager Australia Q-Free Australia
- **Michael Kilgariff**
CEO Roads Australia
- **Dean Zabrieszach**
President ITS Australia
- **Susan Harris**
CEO ITS Australia

The ITS Australia team is very keen to introduce an international focus and registrations to the 2023 ITS Global Summit to be held in Melbourne from 28-31 August. This has raised interest internationally as there is little enthusiasm to attend the 2023 ITS World Congress in Suzhou, China, due to both health concerns and geo-political issues.

Roads Australia has offered to host and organise a similar AASHTO International Day on 27 August, in conjunction with Austroads and transport/infrastructure agencies. The agenda could be fashioned to very closely reflect the RA policy agenda.

AASHTO is also very keen to remain engaged with Roads Australia and assist in future study missions.

WSP Breakfast - Planning for Transportation Mode Shift in an Era of Decarbonisation

On Monday, members of the delegation attended a breakfast hosted by WSP on Planning for Transportation Mode Shift in an Era of Decarbonisation.

WSP Mobility Marketplace was launched, which integrates mobility services such as tolling, transit, parking, micro-mobility and more under a single payment system and operational umbrella.

Speakers discussed how the Southern California Association of Governments (SCAG) has leveraged scenario planning and system dynamics to better inform complex decisions in their long-range transportation strategies and plan.

Ian Patey from the UK outlined how ITS would assist with meeting Net Zero objectives.

- Efficient use of networks - better utility of existing roads
- Modal shift - need to make it easier for people to use public transport. Use of the kerbside is also an important consideration
- Zero Emission Vehicles

At the breakfast the RA President and CEO met with Eric Peissel Global Director Transport and Infrastructure at WSP. Eric Peissel will be speaking at an RA lunch in November.



Opening Ceremony

The ITS World Congress welcome was given by Laura Demeo Chace, President and CEO at Intelligent Transportation Society of America, and was opened by Eric Garcetti, Mayor of Los Angeles.

The Opening session featured a Panel session of the Southern Californian Association of Governments, that included Toks Omishakin, Secretary of Transportation, California State Transportation Agency.

Toks Omishakin said his four priorities are: climate, equity, economics and safety. He aims to improve capacity and safety through a lens of climate and equity.

His future technology vision includes freight signal prioritisation, transit signal prioritisation, a Very Fast Train costed at \$10m with a speed of 200mph, and advanced air mobility.

Dr Peter Sweatman presented with a Lifetime Achievement Award

At the Opening Ceremony, Dr Peter Sweatman of Melbourne University was presented with a Lifetime Achievement Award.

Peter Sweatman is part of the leadership group for the Australian Integrated Multimodal EcoSystem (AIMES) test bed at the University of Melbourne. He is an active participant in the Michigan Australian Exchange in Mobility (MAX).

Dr. Sweatman is a past chairman of the board of ITS America, and also served as founding chair of the ITS America Leadership Circle. He served on the U.S. Department of Transport's ITS Advisory Committee, as well as a number of roles with the Society of Automotive Engineers. At the Transportation Research Board, he chaired the recent EU-US Symposium Towards Road Transport Automation and served on the Committee on National Research Frameworks: Application to Transportation. He was admitted to the ITS America Hall of Fame in 2017. He served as director of the University of Michigan Transportation Research Institute (UMTRI) from 2004 to 2015 and founded Mcity in 2013 and was the director of the Mcity until January 2016.

Technical Program

The World Congress is exceptionally large with up to nine concurrent sessions at any one time. A range of topics were selected for attendance, but there is no attempt here to capture the technical content of those sessions.



National Women in Transport

A National Women in Transport Networking Reception was held at the ITS Australia stand on Wednesday 21 September.

Roads Australia was very pleased to be a sponsor of the event, which reflects our very close support for the National Women in Transport network in Australia.

Laura Demeo Chace, President and CEO of ITS America, and Susan Harris, CEO ITS Australia both addressed the gathering on the importance of diversity in the transport technology industry.



Susan Harris – CEO ITS Australia, Michael Kilgariff – CEO Roads Australia, Laura Demeo Chace, President and CEO of ITS America, and Silje Troseth – Vice President APAC & General Manager Australia Q-Free Australia.



Caltrans TMC Control Centre

The California Department of Transportation (Caltrans) is responsible for planning, design, construction, maintenance and operation of the state highway system.

District 7, which includes Los Angeles and Ventura counties, has the second largest workforce of 12 Caltrans districts statewide. District 7 employs nearly 2,800 people with the largest workforce in construction and maintenance, and others in the administration, environmental, design, program/project management, planning, traffic operations, external affairs and right of way divisions.

Caltrans operates the Los Angeles Regional Transportation Management Center in partnership with the California Highway Patrol to rapidly detect and respond to incidents while managing the resulting congestion.

With electronic technologies such as Changeable Message Signs, closed circuit television, fiber optic lines and wire loop detectors embedded in pavement, motorists using the largest freeway system in the world benefit from a more efficient transportation management network.

Hosts cited significant constraints with coordination between State, County and Local government.



Port of Los Angeles and Port of Long Beach

40% of US imports come through the Port of Los Angeles and Port of Long Beach

The **Port of Long Beach**, also known as the Harbor Department of the City of Long Beach, is a container port which adjoins Port of Los Angeles. Acting as a major gateway for US–Asian trade, the port occupies 3,200 acres (13 km²) of land with 25 miles (40 km) of waterfront in the city of Long Beach, California.

The seaport generates approximately \$100 billion per year in trade and employs more than 316,000 people in Southern California.

The **Port of Los Angeles** is a seaport managed by the City of Los Angeles. It occupies 7,500 acres (3,000 ha) of land and water with 43 miles (69 km) of waterfront and adjoins the separate Port of Long Beach. Promoted as "America's Port".

The cargo coming into the port represents approximately 20% of all cargo coming into the United States. The Port's Channel Depth is 53 feet (16 m). The port has 25 cargo terminals, 82 container cranes, 8 container terminals, and 113 miles (182 km) of on-dock rail.





Conclusion

ITS World Congress 2022 concluded on Thursday 23 September. The Congress Statistics were:

- Total registrations: +6500
- Countries: 64
- Registered press: 52
- ITS Nationals: 19
- Students: 200+
- Speakers: 750+
- Technical tours and demonstrations: 15
- Emergency response demonstrations: 10
- Exhibiting companies: 211
- Exhibit square footage: 57,424 sq ft
- Sessions: 205
- Scheduled business to business meetings: 50+



Overall Observations

- From the visits to the Detroit and Caltrans Transport Management Centres it is clear that the ability to control overall traffic flows does not match the facilities in Australia. This is put down to diversified responsibility for road networks with limited communication and coordination.
- Supply of Electric Vehicles by manufacturers in the US far exceeds the Australian offering. All manufacturers were displaying new EV models to meet both consumer demand and mandated requirements.
- The US appears to be close to a ‘tipping point’ where EV’s are the likely next vehicle purchase. In Australia this is likely to arrive quickly and will be governed by vehicle supply and the role out of supporting infrastructure.
- The desire for the Optimisation of traffic flows by traffic authorities means a range of technology suppliers are developing and marketing ‘Adaptive Traffic Signal Technology’ with much of the capability designed to mimic, match or exceed the capabilities originally delivered in SCATS.
- The impact of the Inflation Reduction Act in the US could be significant for the electric vehicle market and could potentially provide opportunities for battery supply chain players in Australia. The act will favour countries with Free Trade Agreements with the US, especially in the mining and refinement of critical minerals for batteries.
- The profile of ‘Equity’ in all decision making is overt and very deep in California. This is something that Australia could investigate further and formally account for in business cases.

Participation on the study tour achieved the following

- Closer cooperation and understanding between Roads Australia and ITS Australia.
- Fostered a clearer appreciation of the pace of change in production of Electric Vehicles and their adoption.
- Identified potential Roads Australia policy direction for consideration in the future Transport Future stream.
- Recognised the largely technical content of the ITS World Congress.
- Recognition that AASHTO had a broader agenda than just ITS and would be an appropriate organisation for further liaison and engagement.

Recommendations

- That the report be noted by the Board and consideration be given to potential future initiatives.
- Monitor future opportunities for collaboration with ITS Australia.
- Follow up engagement with AASHTO for future study tours.





**Roads Australia Study
visit to Michigan and
ITS World Congress**

6/437 St Kilda Road
Melbourne VIC 3004

P +61 3 9821 5255

E office@roads.org.au

 [roads-australia](https://www.linkedin.com/company/roads-australia)

 [@RoadsAustralia](https://twitter.com/RoadsAustralia)

roads.org.au