TRANSPORT INTELLIGENCE DIGEST

Issue 3

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Introduction

Welcome to the New Year issue of the Transport Intelligence Digest. This issue highlights new transport technologies and their impacts, and features contributions from the Ministry’s Technology and Transport Systems team. New Zealand, like many jurisdictions, is currently undergoing a period where technology is rapidly changing the way we travel – be it the use of your smart phone to download real time public transport information or driving an electric vehicle. It is an exciting period for road users. On the horizon we can see the advance of autonomous vehicles (AV’s), smarter roads, a change in how and where we work (from home instead of the office), and changes in quality of life (including how we travel).

Other contributions are from the Ministry’s Financial Economic Statistics & Analysis team (FESA).

We also introduce a new feature (Hub Knowledge), highlighting the Transport Knowledge Hub and keeping you up to date with Hub events and news.

Happy reading and we welcome suggestions for future editions.

Disclaimer:
This Digest references a wide range of third party articles. Reference to these articles does not constitute endorsement by the Ministry.

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Autonomous vehicles and intelligent mobility

Report back on the World Congress on Intelligent Transport Systems (ITS) 2016, Melbourne, Australia

World Congress on Intelligent Transport Systems (ITS), October 2016
Contributed by: Shelley Tucker

World Congresses on intelligent transport systems (ITS) are annual events, which rotate between Europe, the United States and the Asia-Pacific regions. The Congresses are an opportunity for policy makers, researchers and ITS providers to share information and opinions about technology developments and regulatory options to address transport issues. This key findings and insights from the ITS World Congress held in Melbourne from 10-14 October are set out in this report.

Please see appendix for the article

Our autonomous future: How driverless cars will be the first robots we learn to trust

TechRepublic, October 2016
Contributed by: John Macilree

In this in-depth report, learn why self-driving cars are inevitable, what the industry is doing about safety, and what it will take to get autonomous vehicles into the mainstream.


Intelligent Mobility Skills Strategy from Transport Systems Catapult in the UK

Transport Systems Catapult, United Kingdom, October 2016
Contributed by: John Macilree

The “Intelligent Mobility Skills Strategy” has been produced by UK’s Transport Systems Catapult. Transport Systems Catapult is a technology and innovation centre established and overseen by the UK’s innovation agency, Innovate UK. The Strategy is based on research into what skills will be needed in the UK to deliver both the key technologies and potential economic growth from what it calls intelligent mobility. The Strategy argues that an integrated range of interventions is needed to address the skills shortfall. The Strategy concludes that a portfolio of traditional and disruptive interventions is required, from early education to post-graduate training, while supporting transfers and skills growth from across other sectors.

Forget Autonomous Cars—Autonomous Ships Are Almost Here

*IEEE Spectrum, 28 January 2017*
*Contributed by: Ralph Samuelson*

If Rolls-Royce has its way, commercial vessels will soon have no crew on board. Although robotic ships of this sort are some ways off in the future, it’s not a question of if they will happen but when. This article explores how this might be possible in 10 to 15 years time.


Considering a cost–benefit analysis framework for intelligent transport systems

*AECOM New Zealand Limited, February 2017*
*Contributed by: Helen Huang*

The purpose of this research was to consider a cost–benefit analysis framework for public policy development that takes account of the potentially distinctive costs and benefits of intelligent transport systems (ITS) projects. Since ITS projects involve new technology it is likely that some of the benefits are not identified and quantified by the current New Zealand transport project evaluation procedures contained in the Economic evaluation manual (EEM). The objective of this research was therefore to explore the range of common ITS project benefits and assess if they can be evaluated using the existing EEM procedures. To satisfy this objective, a methodology was developed to evaluate the value of the ITS project components where the EEM procedures do not satisfactorily capture ITS benefits. Such a methodology would enable a comparison of the non-monetised aspects with the monetised outputs of ITS projects.


Peak Car Ownership - the market opportunity of electric automated mobility services

*Rocky Mountain Institute, October 2016*
*Contributed by: John Macilree*

The Rocky Mountain Institute (RMI) is an independent non-profit organisation in the US that runs a Mobility Transformation program. It recently carried out research on the potential market sizes and plausible rates of mobility service proliferation that could occur under reasonable circumstances. It also identified key pitfalls that could delay the envisioned system and potential solutions.

The RMI’s report called “Peak Car Ownership” notes that analysis by leading organizations and individuals indicates the technical, logistical, and economic plausibility of a future where most mobility needs are met by mobility services, enabled by autonomous driving technology, and powered by electric powertrains. It reports that this future system has the potential to reduce costs by over $1 trillion, reduce CO2 emissions by a gigatonne, and save tens of thousands of lives per year in the US alone.
RMI concludes it is technologically, logistically, and economically plausible for electric automated mobility services to garner large portions of the market share currently held by personally-owned vehicles by 2035.


Connected car report 2016: Opportunities, risk, and turmoil on the road to autonomous vehicles

*Strategy & PriceWaterhouseCoopers, 28 September 2016*

*Contributed by: Jennifer McSaveney*

This report focuses on key questions about the opportunities and risks to be found in the industry's business models, ecosystem, market growth, geographic distribution, and technologies involved in developing the connected car:

- How does technological change affect the distribution of value in the rapidly restructuring automotive industry?
- How can automakers recoup their investments in connected and autonomous vehicles?
- How quickly will the market for connected car packages grow, and how will the revenue opportunities break down in terms of region, car segment, and type of package?
- How will suppliers be transformed by this industry-wide change, and what will it take for them to succeed?
- How will China move into the connected car market, and how will those efforts, abetted by its digitally sophisticated car buyers and broad range of innovation, affect the car of the future?
- How will connected car technology be protected against cyber-attack, and how can automakers effectively meet the related organizational and technical challenges?
- How will autonomous vehicle technologies, now in the early stages of development, transform the driving experience of tomorrow?"

http://www.strategyand.pwc.com/reports/connected-car-2016-study

Sales of green vehicles are booming in Norway

*The Economist, February 2017*

*Contributed by: Ralph Samuelson*

This brief article backgrounds how electric vehicle sales are progressing in Norway. Norway first introduced tax perks to boost the electric-car market in the 1990s. But sales only sparked in the past five years or so after slicker vehicles with better batteries appeared. Now the country's 5m citizens constitute the most developed national market for electric cars anywhere.

City streets become a living lab that could transform your daily travel

*The Conversation, February 2017*
*Contributed by: Jennifer McSaveney*

The National Connected Multimodal Transport Test Bed is creating a living laboratory for developing a highly integrated, smart, multimodal transport system north of Melbourne’s CBD. It will use advanced sensors and communications infrastructure to collect data on vehicles, cyclists, public transport, pedestrians and traffic infrastructure, such as signals and parking. This will allow the transport system to be more responsive to disruption and more user-focused, and test technology deployment.

[https://theconversation.com/city-streets-become-a-living-lab-that-could-transform-your-daily-travel-71272](https://theconversation.com/city-streets-become-a-living-lab-that-could-transform-your-daily-travel-71272)

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**Future funding and charging**

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**Revenue, Finance, Pricing and Economics**

*Transportation Research Record: Journal of the Transportation Research Board (TRB), Vol 2597, 2016*
*Contributed by: Joanne Leung*

This edition of the TRB’s Transportation Research record consists of 16 papers that explores revenue, finance, pricing and economics.

The Effectiveness of Average Speed Cameras in Great Britain

Royal Automobile Club Foundation (RAC), October 2016
Contributed by: Stephen Evans

This research found that the use of average speed cameras has, on average, cut the number of collisions resulting in death or serious injury by more than a third. The study found that, having allowed for natural variation and overall trends, the number of fatal and serious collisions decreases by 36% after average speed cameras are introduced. In addition, the number of collisions resulting in injuries of all severities is cut by 16%.

http://www.racfoundation.org/assets/rac_foundation/content/downloadables/Average_speed_camera_effectiveness_Owen_Ursachi_Allsop_September_2016.pdf

How to get there? A critical assessment of accessibility objectives and indicators in metropolitan transportation plans

Transport Policy, Volume 55, April 2017, pp 38-50
Contributed by: Joanne Leung

Accessibility, the ease of reaching destinations, is increasingly seen as a complimentary and in some cases alternative to the mobility oriented planning paradigm, as it allows capturing the complex interactions between land use and transportation systems while providing a social perspective on transportation planning.

The aim of this study is to critically assess how accessibility is incorporated into metropolitan transportation plans and translated into performance indicators around the world, to ultimately derive policy recommendations. This research assesses 32 recent metropolitan transport plans from North America, Europe, Australia and Asia with respect to their goals, objectives and performance indicators.

The results suggest that there is a trend toward a greater integration of accessibility objectives in transport plans, yet few plans have accessibility-based indicators that can guide their decision-making processes. The study shows that in order to foster accessibility-based approaches to transportation planning, plans need to have clearly defined accessibility goals with a distinction between accessibility and mobility.

See link here
USA: 'Road to Zero' Coalition to end roadway fatalities

National Highway Traffic Safety Administration (NHTSA), October 2016
Contributed by: Stephen Evans

U.S. Department of Transportation's National Highway Traffic Safety Administration, Federal Highway Administration, and Federal Motor Carrier Safety Administration are joining forces with the National Safety Council (NSC) to launch the Road to Zero Coalition with the goal of ending fatalities on the nation's roads within the next 30 years. The Department of Transportation has committed $1 million a year for the next three years to provide grants to organizations working on lifesaving programs.

http://www.nhtsa.gov/About-NHTSA/Press-Releases/nhtsa_zero_deaths_coalition_10052016

Zero Road Deaths and Serious Injuries: Leading a Paradigm Shift in Road Safety: International Transport Forum

International Transport Forum, November 2016
Contributed by: Stephen Evans

This report describes a paradigm shift in road safety policy, being led by a handful of countries, according to the principles of a Safe System. A Safe System is based on the premise that road crashes are both predictable and preventable, and that it is possible to move towards zero road deaths and serious injuries. This, however, requires a fundamental rethink of the governance and implementation of road safety policy. Written by a group of international road safety experts, this report provides leaders in government, administrations, business and academia with emerging best practices and the starting point to chart their own journeys towards a Safe System.

New Zealand Population Projections: 2016(base)–2068

*Statistics New Zealand (SNZ)*, 19 October 2016

*Contributed by: Helen Huang*

Statistics New Zealand (SNZ) has released its latest population projections. They have provided short term (to 2025) and long term (to 2068) projections in the below link. A key projection finding is that NZ's population (4.69 million in 2016) has a 90 percent probability of increasing to 5.29–6.58 million in 2043, and to 5.30–7.88 million in 2068.


Reported road casualties Great Britain: 2015 annual report

*Department for Transport (DfT), Great Britain, October 2016*

*Contributed by: Stephen Evans*

Final figures published by the DfT in this annual report show there were 1,730 reported road deaths in 2015, a year-on-year decrease of 3%, following a 4% increase in 2014. The figure is the second lowest annual total on record (after 2013) and very slightly adjusts initial estimates published earlier this year, when the figure stood at 1,732. The number of people seriously injured fell by 3% to 22,144, while the total number of casualties also saw a year-on-year reduction, down 4% to 186,189.

Road Use Statistics in Great Britain 2016

Department for Transport (DfT), Great Britain, October 2016
Contributed by: Stephen Evans

This publication provides an overview of statistics on Great Britain's roads and how they are used. It brings together information previously released by the Department for Transport on vehicles, travel, and traffic. Over the last two decades the rate of car traffic growth has slowed. For an average person, car use fell throughout the 2000s, but this was partially offset by an increase in population using the roads. Despite growth in traffic, there have been large decreases in road casualties on all roads.


Europe

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EU Transport Scoreboard: EU

European Commission, November 2016
Contributed by: Stephen Evans

The EU Transport Scoreboard, a grading system published by the European Commission which compares all 28 EU member states for a number of measures such as: road fatalities per million inhabitants; hours spent in road congestion annually; quality of roads; and new passenger vehicles using alternative fuels.

https://ec.europa.eu/transport/facts-fundings/scoreboard_en

Australia

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A dozen facts about transport in Australia

Bureau of Infrastructure, Transport and Regional Economics (BITRE), August 2016
Contributed by: Stephen Evans

This information sheet covers a wide range of subjects, including commuting, freight, rail, energy and safety. Facts such as ‘how big is the transport network?’ and ‘is transport becoming more energy efficient and causing less emissions?’ are included.

Five facts about commuting in Australia

Bureau of Infrastructure, Transport and Regional Economics (BITRE), August 2016
Contributed by: Stephen Evans

This Information Sheet covers a wide range of subjects, including volume and length of commuting, traffic congestion and commuting patterns. The following five questions are discussed:

1. Is commuting a big part of urban transport demand?
2. Is it true that a lot of people are spending hours stuck in traffic?
3. What has an Italian physicist got to do with commuting?
4. Why do some people commute longer? and
5. Are our commuting patterns changing?


Appendix

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The 23rd annual World Congress on Intelligent Transport Systems, Melbourne, October 2016 – emerging insights

World Congresses on intelligent transport systems (ITS) are annual events, which rotate between Europe, the United States and the Asia-Pacific regions. The Congresses involve formal presentations, exhibits and practical demonstrations of the latest ITS technologies. The Congresses are an opportunity for policy makers, researchers and ITS providers to share information and opinions about technology developments and regulatory options to address transport issues.

The Congresses are, and will likely remain, one of the best opportunities to obtain the latest information on all aspects of ITS.

Members of the Ministry’s Technology and Transport Systems team have attended the annual Congresses since 2012.

The 2016 World Congress on Intelligent Transport Systems took place in Melbourne from 10-14 October and attracted more than 11,000 delegates from over 70 different countries. This included more than 150 delegates from New Zealand.

Key findings and insights from the Congress

There was an increased focus on the pathway to deployment and likely benefits of ITS technologies, rather than technical development

A phrase, apparently coined by the German technology producer Bosch, but used by a range of speakers was that: “The future will be connected, automated and shared”. Many also added electric to this list. This view of the future reflects a clear transition from a focus on how to develop ITS technologies and the technical challenges of doing so, to what is needed for their effective deployment, especially from a regulatory and policy perspective.

A recurring theme, for example, was how ITS technologies will help to optimise the use of road networks and reduce congestion. For some, this was by enabling more vehicles to use the same roads (by getting more vehicles on the same road through platooning and by improving intersection management), while for others it was from better use of existing...
networks, especially public transport networks, by improved use of data from new sensors. Most speakers also sought greater sharing of vehicles, both as a way to reduce congestion by increasing vehicle occupancy rates generally, and potentially as a way to improve access to public transport networks. These themes are consistent with the conclusions of the Technology Report\(^1\) from the Auckland Transport Alignment Project, which highlighted the potential of connected and automated vehicles to reduce congestion and improve mobility.

Many presenters spoke on the likely uses and potential benefits of automated vehicles. Many cities around the world already have trials of autonomous shuttles, like the trial of the Navya driverless shuttle launched earlier this year by Christchurch International Airport, planned or underway. Presenters spoke of how automated vehicles would integrate with existing public transport systems, to carry people for the ‘first and last mile’ (i.e. from their house to the bus or train stop or from the bus or train stop to their destination). This will enable easier access to existing public transport infrastructure and potentially reduce congestion.

There was also discussion around how the benefits of ITS, especially from connected and autonomous vehicles, and from new business models, will not be limited to one demographic group. The elderly, the young, and the disabled will all experience these benefits. Technology is likely to improve safety outcomes for the elderly and potentially increase the driving age. The disabled will experience increased freedom with the ability to travel alone and younger generations will also experience this freedom, with less need to obtain a driver’s licence.

**ITS is expected to improve road safety significantly**

Many of the ITS technologies discussed at the Congress will have road safety benefits. In the United States, road safety, rather than other benefits such as improved network efficiency, is the driving force behind the plan to mandate connected vehicle technology (discussed below). Speakers said that widespread deployment of connected vehicle technology could save up to 1000 lives per year in the United States. However, safety benefits were not a key topic of the Congress. It seems the safety benefits are largely taken for granted.

Advanced Driver Assistance Systems (ADAS) technologies, such as autonomous emergency braking, are expected to provide significant safety benefits for the vehicle fleet in the near future. This is because there are good reasons for the public to buy these technologies without the need for government intervention and the ADAS technologies are readily available now.

In the longer term, it is likely that highly automated and fully autonomous vehicles will increase safety. In the interim, though, connected vehicle technologies are likely to have the greatest fleet-wide safety potential. This is partly because the technology can be retrofitted, possibly through cellphones, so that the technology can benefit existing vehicles. Connected vehicle technology may also be attractive to a wider range of the public than automated vehicles, as the driver will remain in control of the vehicle. The ability to retrofit technology will be especially important for New Zealand because of the large number of used vehicles entering our fleet.

**There was an increased focus on mobility as a service (MaaS)**

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While not entirely new, mobility as a service (MaaS), referred to in the United States as Mobility on Demand, was widely discussed during the Congress. MaaS is effectively a new business model that exploits ITS technologies and communication systems, rather than being an ITS technology itself.

The core concept of MaaS is that people buy all their transport services as they need them, rather than owning and operating their own vehicle. These services can include ride-sharing, taxis, public transport and in some cases, active transport modes such as bicycle hire. For end users, MaaS is primarily enabled by the use of dedicated cell phone apps that bring together the various travel options, travel times, and equally importantly, payment systems, into one place. Most people expect autonomous vehicles will form a key part of future MaaS schemes.

For an effective and comprehensive MaaS system, developers and providers need to have access to standardised data. One approach that was discussed at the Congress, is the Finnish Ministry of Transport and Communications' recently submitted legislative proposal that will open all essential data generated by transport services, including data held by private companies (a world first). In doing so, the Finnish Government hopes that it will enable high quality, cost-effective mobility services that dynamically respond to users' needs. Other approaches are also possible and will need to be explored.

Another example is Sampo Hietanen's (the founder of MaaS Global (formerly MaaS Finland)) recent launch of a MaaS cellphone application called Whim, with strong support from the Finnish Government. The Whim app is available in Helsinki, Finland and the West Midlands in the UK, where consumers can subscribe voluntarily.

During the Congress, some speakers suggested that cities would consider preventing vehicles from entering the central city, unless they have a pre-booked parking space, both to reduce congestion and as a way of promoting MaaS.

*Smartphones will enable ITS to be retrofitted to older vehicles and provide benefits for all road users*

As well as enabling MaaS, the use of smartphones and smartphone applications to enable other aspects of ITS was discussed at several Congress sessions.

Smartphone applications will provide transport network users with the ability to pre-book parking spaces, arrange travel journeys, adjust their trips according to real-time information, and more. They can also provide information on driving style to promote efficient driving and other real time navigation assistance.

Smartphones are likely to be central to enabling the retrofit of ITS technologies, especially connected vehicle technologies. This is particularly important for New Zealand because 50 percent of vehicles that are imported are used vehicles. Technology developers were also demonstrating the use of smartphones to transmit and receive information to warn pedestrians, cyclists and other vulnerable road users of the presence of vehicles, especially heavy vehicles, and vice versa. A critical consideration in exploring this area further will be the impact on driver distractions.
Location data will play a significant role in future ITS technologies

Increasing amounts of data will be created and collected by network managers, vehicle manufacturers, vehicle owners, vehicle users and governments. This dynamic relationship between parties creating and collecting data will require decisions to be made on who owns the data, and how to define that ownership.

This new and ever increasing amount of information is expected to be valuable to deploy, improve and create transport services. The data will need to be accurate and trustworthy to create an effective and reliable system. Data will also need to be accessed by third parties to enable them to operate and create new and improved transport technologies and applications.

The Government will have an ongoing role in generating and analysing its own data from sensors along the sides of roads and embedded into physical infrastructure. However, it is likely to need to collaborate with other organisations to collect, share, analyse and gain the maximum benefits from a range of data sources about roading networks.

Data, in the form of maps, will be crucial to the deployment of ITS technologies. Almost all vehicle-based ITS will require accurate and up-to-date maps to operate safely and efficiently. Detailed maps may also provide extra information to assist driving, in case sensors cannot clearly see the road ahead. While governments are not likely to develop the detailed maps, it may have a role in setting standards for them, to ensure that vehicles can move between jurisdictions without having problems accessing suitable information.

Satellite-based augmentation systems (SBAS) to enable centimetre level accuracy of satellite positioning systems is likely to be important for the effective deployment of ITS, and in particular, connected and autonomous vehicles. For example, automated vehicles will need to know exactly where temporary obstacles like road works and slippery surfaces like ice are, so they can avoid these.

Sessions on how to regulate automated vehicles had a high level of attendance

Without a clear definition of liability, it will be difficult to determine responsibility for traffic offences and accidents involving automated vehicles.

Along with looking at liability, most jurisdictions are trying to determine how to ensure the safe deployment of connected and automated vehicle technologies. Unlike more conventional technologies, such as electronic stability control, there are still no international standards for the technologies that will enable connected and automated vehicles. Countries, or in some cases, state and regional level governments, must currently decide whether a vehicle is safe to be operated on its roads, based on the legal controls in place today.

Some speakers, mainly technology developers, argued that existing laws are adequate to cover these new concerns. They said that the lack of specific controls makes innovations easier to deploy. However, most speakers thought that the public would expect governments to develop legislation around liability and technical safety before autonomous vehicles would become common on our roads. It was noted that international bodies, such as the UN ECE WP29, are starting to work on safety standards for ITS technologies, but these will take many years to develop.

Deployment of connected vehicle technology was also widely discussed

It is widely expected that connected vehicles (other than those in Japan which use different frequencies), will use a band of spectrum in the 5.9GHz region for dedicated short-range
communications (DSRC). In New Zealand, the Ministry of Business, Innovation and Employment’s Radio Spectrum Management team has already reserved the 5.9GHz part of the spectrum for use by connected vehicles.

Although it is widely expected that connected vehicles will use DSRC over 5.9GHz, there is still no formal international agreement as to whether this will be how connected vehicles will communicate with each other. Different organisations continue to promote different technical solutions to enable vehicles to communicate with each other. Some, especially cellphone companies, argued at the Congress that transmitting data over cellphone networks (and especially over the planned 5G network) will be better than DSRC for connected vehicles.

Japanese vehicle manufacturers have already begun to produce and sell vehicles with connected vehicle technology. Speakers from Japan discussed the preliminary findings from their deployment, which they said were largely positive and supported wider deployment. However, fitment of connected vehicle technology is not a legal requirement in Japan.

The United States Government is the most advanced in legal preparations for deploying connected vehicles, with plans announced in 2014 for a Rule that will require all vehicles to be fitted with DSRC equipment using the 5.9Ghz frequency. In December 2016, a Notice of Rule Making was published by the United States’ Department of Transportation. This proposes that deployment of the connected vehicle technology begins two years after the Rule is signed, which is expected to be in late 2017.

One of the matters complicating the deployment of connected vehicles in the United States is that manufacturers and users of WiFi equipment also want to use the part of the 5.9GHz band planned for identified for connected vehicles. This may affect the safe operation of connected vehicles if it caused unacceptable interference. The potential co-existence of connected vehicles with WiFi has been a major point of discussion at Congresses since 2014, when it was first raised. Despite research and high profile lobbying by both sides of the discussion, Federal regulators have not been able to reach a formal decision on whether the 5.9GHz band will be reserved for exclusive use by connected vehicles, or will be opened up for shared use.

Conclusions

New Zealand Government’s approach to ITS deployment, as set out in the Intelligent Transport Systems Technology Action Plan 2014–2018 (the ITS Action Plan), aligns well with other major jurisdictions. The ITS Action Plan outlines the role Government departments and transport agencies play in ensuring New Zealand gets the greatest benefit from ITS and achieves value for money when investing in infrastructure. The ITS Action Plan has initiated a number of pieces of work that means that New Zealand is well-placed, and in some areas ahead of many other jurisdictions, when it comes to the adoption of, and preparedness for, ITS technologies. This includes ensuring that we have supportive legislation (across all modes), promoting New Zealand as a test-bed, promotion of harmonisation of standards at an international level, ensuring we have access to accurate satellite positioning systems and investigating our data opportunities and challenges.

In particular, New Zealand appears to be taking a more enabling approach to the testing and regulation of new technologies, than other jurisdictions.

The findings and insights from the Congress will be used as inputs into updating the ITS Action Plan in 2017. The insights of the conference will also be shared with the wider ITS community, as part of the Ministry of Transport’s ongoing leadership though presentations to stakeholders and articles in magazines.
2017 ITS World Congress

The next ITS World Congress will be in Montreal, Canada in early November 2017. It will have a strong focus on Smart Cities.
Sharing transport data, evidence, knowledge, research, information, capabilities and ideas

The Transport Knowledge Hub is a structure for communication between the people and agencies that generate, supply, and demand transport data, information and research. The Hub strives to encourage collaboration and raise awareness of related work and future opportunities or needs.

### Upcoming Hub Events

#### March 2017
An Economics Hub seminar will be held on 30 March, 3pm to 4pm at the NZ Productivity Commission, level 15, Fujitsu Tower, 141 The Terrace: Economic impact of the 2016 Kaikōura earthquake. This will be a presentation given by Garry McDonald and Nicky Smith from Market Economics. Please RSVP to knowledgehub@transport.govt.nz

#### April 2017
A joint seminar for the Aviation and Forecasting hubs will be held on Tuesday 04 April 2017. Michael Webster and Wei Zhang from MBIE will talk about their international tourism forecast programme. Please RSVP to knowledgehub@transport.govt.nz by Thursday 30 March.

#### November 2017
Transport Knowledge Conference, 27-29 November 2017, Auckland - in conjunction with the 39th Australasian Road Research Forum (ATRF).

Please email knowledgehub@transport.govt.nz to register for these upcoming events.

### News

The main development has been the formation of a Cross-Agency Governance Committee (CAGC) to provide leadership and guidance to the Transport Knowledge Hub.

The CAGC has met three times in 2016: in September to confirm the terms of reference, in October to discuss research topics and action maps, and November to workshop strategic challenges.

The current CAGC members are:

- Andrew Jackson, Ministry of Transport – Chair;
- Prue Williams, Ministry of Business Innovation and Employment;
- Jenny Chetwynd, New Zealand Transport Agency;
- Peter Clark, Auckland Transport;
- John Kay, Civil Aviation Authority;
- David Taylor, The Treasury;
- Bill Frith, IPENZ Transportation Group;
- Janet Stephenson, Universities New Zealand;
- Helen Mexted, Local Government New Zealand;
Stephanie Winson, Maritime New Zealand; and
Simon Douglas, New Zealand Automobile Association.

The next meeting will be held on Wednesday 05 April.

A new Knowledge Hub webpage on the Ministry of Transport’s website has been developed to promote the hub to potential members. http://www.transport.govt.nz/research/transport-knowledge-hub/