



Transport
Roads & Maritime
Services

Minister for Roads, Maritime and Freight

Overseas Study Tour – Key Outcomes Report



California → London → Sweden

Wednesday 31 August 2016 – Thursday 8 September 2016

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1. Executive Summary

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight, travelled to California, London and Sweden to:

- Investigate development into automated and connected vehicles and current status in key markets.
- Understand the policy, legislation, regulation and operational processes that need to be considered to introduce self-driving vehicles safely to the NSW road network.
- Collaborate and share lessons learned with key experts from across the UK, who have demonstrated experience in Smart Motorways having comprehensively rolled this across their network.
- Discuss other matters of common interest.

The key objectives of the study tour were to:

- Ensure NSW remains at the forefront of road, freight and vehicle technology by engaging with industry and government leaders to harness innovative thinking and inform the development of strategies to enable NSW to become a world leader in applying technology to deliver better transport outcomes.
- Provide an opportunity to inform NSW Government investment in road, freight and vehicle technology in the future.
- Provide an opportunity to promote NSW's ambitious road infrastructure investment program and build international relationships with key infrastructure industry representatives and investors

There are a range of issues that will shape how NSW responds to automated and connected vehicles:

- Timeframes – there is a lot of debate around the timeframes for the entry of automated vehicles into the fleet. While currently there are Level 2 partially automated vehicles on roads, manufacturers are working on accelerated timeframes for more highly automated vehicles to be on roads.
- Business models – while some manufacturers are offering partially automated vehicles at a premium in their fleet, there is speculation about whether highly automated/driverless vehicles will be owned by individuals or whether it will be more economic for manufacturers to also manage and operate a fleet that works on a shared basis where people use vehicles as needed.

There is a strong safety case for highly automated vehicles, removing the chance of human error, and there are also potential congestion benefits from reduced headways, crashes and footprint of highly automated vehicles (though the congestion benefits could depend on the business model adopted).

- Technology – there are a range of capabilities and approaches currently being used and some are highly dependent on infrastructure, while other vehicles operate more independently of infrastructure. With around 180,000 kilometres of road in the NSW road network the infrastructure investment/need

could be significant depending on where the technology goes and what supporting infrastructure it needs. The bandwidth of the cellular network could also become a significant issue if there are a lot of vehicles sending and receiving data.

- Role of government – key regulatory issues include: an appropriate testing regime both off road and on road; when or if to move to a regime that does not require on-board driver or operator; liability issues; safety and community perception of safety; data security and privacy; and the impact of the business model on whether more or less vehicle trips will result from connected and autonomous vehicles.
- Freight/bus transport – while there is a focus on the light vehicle fleet, there is interest in the benefits of automation in commercial and public transport fleets including for safety reasons, fuel savings and operator cost reductions.
- Infrastructure – key issues include what infrastructure is required to facilitate connected and autonomous vehicles and at what point, if ever, does some infrastructure (for example signs and signals) become redundant.

This report outlines the key observations and findings from the study tour, together with actions for the Transport Cluster to further progress on behalf of the Minister.

2. Key Findings and Actions

2.1 Connected and autonomous vehicles

Action 1

Transport for NSW develop a regulatory road map relevant to both the testing of fully autonomous (Level 5) vehicles on NSW roads and the ongoing expansion of general deployment of current levels (Level 2) of automation and connectedness. This path should be consistent with the approach being taken by the National Transport Commission.

There are two separate paths being pursued by vehicle manufacturers. The auto-pilot path which seeks to build on current Level 2 automation and the driverless path, which seeks to go straight to full autonomy.

Generally the auto-pilot path has a greater need for 'vehicle-to-vehicle' and 'vehicle-to-infrastructure' connectedness.

Proponents for the driverless path are designing fully autonomous vehicles that can run on any infrastructure and do not need vehicle to vehicle and vehicle to infrastructure connectedness. These proponents see vehicle to vehicle and vehicle to infrastructure as optional extras that could be added later to capitalise on the potential network efficiency that could be achieved once saturation is reached with driverless cars (for example, they are designing the vehicles to read traffic signals rather than be connected to them).

Most proponents believe that commercially available, fully driverless cars are still some time off (at least five years) and that there will be mixed fleet for many, many years.

Some proponents do not think liability and insurance issues will be a barrier, believing that insurance companies could price the risk under the current regulatory regime, although others are looking to government regulation on this issue. The key regulatory issue that is being raised is data protection and privacy.

To the extent they were familiar with it, most proponents believed the approach being taken by Australia at a national level is sound. Most advocated minimal change to regulation rather than wholesale change.

Action 2

The regulations developed need to be informed by national guidelines to ensure consistency of technical standards, be light touch and consider carefully the reporting requirements imposed on industry. Safety and the precautionary principle need to remain at the forefront of all road regulation.

The main regulatory issues raised by proponents are the need for consistency at a national level and consistency as much as possible at an international level on technical standards and questioning the need for the extensive reporting requirements when in testing mode.

Action 3

Transport for NSW allocate a well-resourced project team to the development of the regulations for driverless and connected vehicles.

The California Department of Motor Vehicles acknowledged they were not prepared to regulate for testing of driverless vehicles and lacked the people with the requisite skills to quickly develop an appropriate regulatory regime.

Action 4

Roads and Maritime and Transport for NSW develop a working relationship with companies who are seeking to test Level 5 autonomous vehicles to inform the right regulatory approach and encourage on road testing in NSW.

Action 5

NSW not seek to establish an off road testing facility for autonomous vehicles but instead concentrate on the right regulatory approach for on and off road testing.

The GoMentum facility in California developed due to a unique set of circumstances. Attention in NSW would be better directed at regulation of both on and off road testing rather than direct provision of facilities.

2.2 Network Management and Infrastructure

Action 6

Roads and Maritime continue on its current path with regard to 'vehicle-to-infrastructure' technology enablement and infrastructure design.

Vehicle-to-infrastructure connectedness is required for the auto pilot path of development and also useful to gaining the full network benefits in the long term of a majority of the driverless fleet, therefore, continued investment is warranted.

Most proponents believe mixed levels of automation will exist in the road environment for many years, therefore there is no basis to discontinue provision and ongoing development and improvement of current ITS, signage, information and management systems.

Action 7

Roads and Maritime report on the suitability of its line marking systems and associated infrastructure for further development of Level 2 and 3 automated cars and trucks

The most common infrastructure issues raised by proponents pursuing the auto-pilot path are clarity of line marking and consistency in signage.

Action 8

Roads and Maritime seek to strengthen its data relationship with providers such as Google to seek opportunities to further strengthen network reporting, augment of traditional sensor data used to drive traffic signals, motorway management systems and other road based ITS.

Roads and Maritime should also investigate whether the detailed physical mapping information gathered to facilitate autonomous vehicle testing could have a valuable role in network management, ITS operations or asset management.

Currently road based ITS rely heavily on sensors to inform the system decision making. It is possible that these ITS systems would benefit from broader network data now available from Google, point to point vehicle operators and navigation systems.

Level 5 automated vehicles require very detailed mapping of the road infrastructure and surrounding areas. It is possible that this data may also be useful for asset and network management.

Action 10

Roads and Maritime consider the cost advantages and risks of using wireless technology verses fibre for some ITS applications, including developing guidelines for where this technology might be appropriate.

Wireless technology may be substantially less expensive to deploy than fibre although these are issues with reliability. It could be considered for non-safety critical systems such as smart motorway development.

Action 11

Roads and Maritime not implement the Exhibition Road or Kensington High Street road design on any state road.

These types of interventions may have some place on council roads; however, they are not suitable for state roads which perform a different function.

2.3 Smart Motorways

Action 12

Roads and Maritime continue to develop its current Smart Motorways for implementation by 2018.

This includes:

- Producing a discussion paper on the merits, benefits, risks and costs of implementing Dynamic Hard Shoulder Running on its smart motorways in the long term.
- Developing a comprehensive communication and education strategy for the implementation of smart motorway technology.

- Reviewing the regulatory environment with Transport for NSW to ensure enforceability of all smart motorway signals and signs.

The approach being taken to smart motorways in the UK and California are different from each other. The approach planned for NSW contains elements of both the UK and Californian systems.

Overall the logic of the planned NSW deployment is supported by findings in the UK and the US.

Driver education is critical to the successful roll out of smart motorway technology. It is important that drivers understand, support and comply with the interventions.

Enforcement of smart motorway signalling has been a difficult issue in the UK environment.

Summary of Meetings

3.1 Google

Meeting details

2.00pm – 4.00pm Wednesday 31 August 2016

Google Quad Campus, The Quad 369 N. Whisman Road Building QD7 Mountain View, CA 94043

Attendees:

Tarun Bhatnagar, Managing Director,
Google Maps

Jay Remley, Global Sales Director, Google
Maps

The Hon. Duncan Gay MLC, Minister for
Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for
Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and
Maritime Services

Peter Duncan AM, Chairman, ARRB Group



Observations and discussion

Mapping and network performance data

The arrangement Google has with Roads and Maritime is unique for them and they see it as a chance to develop new products to solve problems such as:

- prediction of traffic for events and roadworks but also network performance
- smart kerb use.

There are ongoing discussions between Google and Roads and Maritime to be held in 2016-17. Roads and Maritime is also working with other suppliers.

Roads and Maritime will explore opportunities to use its Google or other third part data to drive ITS devices and network management initiatives.

Google car

Google approach is that they are developing fully self-contained and fully autonomous vehicles (that is, straight to Level 5 autonomy) that do not need vehicle to vehicle or vehicle to infrastructure connectivity.

Google understand the regulatory approach being taken in Australia and recommended that we:

- Don't try and solve problems before they exist.
- Don't try too hard to predict the future.



Google also suggested the regulatory environment will not need much change, although it is clear Google are keen for Californian regulations to be changed so the car does not have a “driver” or “operator” which is a substantial change. This would move to a model where the operator of the vehicle is the system operator (that is, Google) rather than the driver on board. It is also a model which would encourage shared use of vehicles rather than individual car ownership (that is, mobility as a service).

Legislation is still in place in the US requiring a steering column/wheel and brake pedals.

Other points made by Google:

- Google vehicles cannot platoon due to an absence of ‘vehicle-to-vehicle’ connectivity.
- Google need to create very detailed three-dimensional images of all roads and surrounds.
- Mixed use (autonomous and non-autonomous) period will be the challenge.
- Business model private ownership verses shared is a key issue to achieving congestion relief
- Google has very strong mapping capability in its Sydney operation which presents an opportunity for collaboration on better using mapping data for network and asset management purposes. Roads and Maritime would work with other suppliers on this issue as well.



3.2 California Department of Transportation (Caltrans)

Meeting details

9.00am – 10.00am Thursday 1 September 2016

California Department of Transportation, 1120 N Street Sacramento, CA 95814

Attendees:

Brian Kelly, Secretary of the Department of Transportation

Malcom Dougherty, Director Caltrans

Kome Ajise, Chief Deputy Director, Caltrans

Bernard Soriano, Deputy Director, California Department of Motor Vehicles

Brian Soublet, Deputy Director and Chief Counsel, California Department of Motor Vehicles

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Peter Duncan AM, Chairman, ARRB Group

Observations and discussion

Road toll

- California has the same pattern as NSW although their rate of fatalities overall is higher than NSW. Caltrans suspect distraction is the key driver but don't have reliable information and data to prove this. Caltrans also mentioned how a post-GFC environment may also be a contributing factor in the overall road toll; since people are driving more frequently in a stronger economy.



Smart motorways

- California do ramp metering, but nothing else. This was originally implemented in the peak only, but now operates 24 hours in Los Angeles.

Connected and automated vehicles

- California was the third US state (after Nevada and Florida) to allow the operation of automated vehicles on public roads in September 2012.
- As expected safety and the precautionary principle are key driver of their regulatory approach.

- In December 2015, California announced proposed changes to regulations governing automated vehicles. The changes require self-driving cars to have a steering wheel and pedals, and a human driver on board who holds an 'autonomous vehicle operator certificate'. Google is lobbying against this proposal as their latest self-driving cars have no steering wheels or pedals.
- California has been leading the way on this issue, although guidelines from the US Federal Government were due out at the time of our visit.
- Department of Motor Vehicles, who are doing the regulatory work, do not support "no driver" regulation at this stage.
- In California there must be a driver in the test car and that driver must be an employee of the company testing.
- The general view is that regulatory change is minimal until the concept of a driver of a driver is abandoned.
- Data privacy issue and protection is the most complex regulatory issue.
- Environment is a key driver for regulation of electric vehicles in California.
- The advent of electric vehicles will have an impact on fuel tax and thus on the government's ability to fund roads. California is undertaking a pilot for a vehicle miles travelled pricing model. This is similar to the Transurban trial in Melbourne.
- California is looking at a four state truck platooning trial.

3.3 Alliance of Automobile Manufacturers (Auto Alliance)

Meeting details

10.30am – 11.30am Thursday 1 September 2016

Auto Alliance, 1415 L Street Suite 1190 Sacramento, CA 95814

Attendees:

Curt Augustine, Director of Policy & Government Affairs

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Peter Duncan AM, Chairman, ARRB Group

Observations and discussion

- The Alliance of Automobile Manufacturers (Auto Alliance) is the leading advocacy group for the auto industry, representing 77 per cent of all car and light truck sales in the US. It includes the BMW Group, Chrysler Group, Ford Motor Company, General Motors Corporation, Jaguar Land Rover,

Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of Americas and Volvo Cars North America.

- Auto Alliance's purpose is to develop and implement constructive solutions to public policy challenges that promote sustainable mobility and benefit society in the areas of environment, energy and motor vehicle safety.
- A number of Auto Alliance member organisations are investing heavily in research and development for the introduction of automated vehicles. Auto Alliance plays a strong advocacy role on behalf of its members with the US Department of Transportation to:
 - Preserve automaker innovation
 - Streamline legislative and regulatory activity to support the global manufacturing process
 - Provide automakers clear liability protection regarding aftermarket conversion.

Auto Alliance position is:

- The liability issues remain unresolved in their view and they are looking for government action in this area.
- The Department of Motor Vehicles was not prepared for the advent of driverless and connected vehicles.
- The reporting requirements for testing of automates vehicles have gone too far (each time a driver has to "take over" this needs to be documented and reported).
- "No driver" regulation in a controlled environment should be allowed – for example, last mile on public roads.
- Impacts on infrastructure will be minimal; industry does not want too much.
- Driverless cars are a regulatory not an infrastructure issue at this stage.
- Line marking and connection to traditional signals are the extent of industry infrastructure requirements.



3.4 General Motors and Cruise

Meeting details

2.30pm – 3.30pm Thursday 1 September 2016

Cruise Headquarters, 201 11th Street
San Francisco, CA 94103

Attendees:

Juanita Martinez, GM Regional Manager, Public Policy

Matt Gipple, Head of Legal and Regulatory, Cruise

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Peter Duncan AM, Chairman, ARRB Group



Observations and discussion

- Cruise:
 - Are going for full driverless, using radar, lidar and cameras (Level 5 autonomy).
 - Need to create a detailed 3D map of the road before they can travel on the road.
 - Are trialling the vehicles in the complex inner city streets of San Francisco.
They claim this is the most sophisticated testing that is occurring.
 - Started with a Level 2 auto pilot style of product.
 - Are aiming at production of commercial product by 2018.
- Main concern with regulation is the need to report every single “takeover”. This is reported to the DMV.



3.5 Contra Costa Transportation Authority & GoMentum Station

Meeting details

9.00am – 12.00 noon Friday 2 September 2016

Contra Costa Transportation Authority, Suite 100, 2999 Oak Rd Walnut Creek, CA 94597

GoMentum Station, Concord

Attendees:

Randy Iwasaki, Executive Director

Jack Hall, ITS CV/AV Program Manager

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Peter Duncan AM, Chairman, ARRB Group

Observations and discussion

- GoMentum Station in Concord, California is where the Contra Costa Transportation Authority and its partners lead and facilitate a collaborative effort aimed at accelerating the next generation of transportation technologies.
- The 5,000-acre former naval weapons station is the largest connected and autonomous vehicle test facility in the US.
- It's location in the San Francisco Bay Area gives GoMentum Station easy access to the world's top technology companies.
- The GoMentum facility developed due to:
 - Unused military land
 - Good environment for testing including being able to provide secrecy for manufacturers
 - Federal land, so not subject to complex state regulation
- EasyMile is one of the projects that GoMentum is involved with. EasyMile is looking at first and last mile connectivity.
- GoMentum Station will receive its first shipment of EasyMile shuttles to begin testing these shared autonomous vehicles. Testing will occur in three stages between 2016 and December 2018:



1. At GoMentum Station
 2. On private property at Bishop Ranch in nearby San Ramon, California
 3. Around the entire Bishop Ranch business park, including public streets
- GoMentum Station's EasyMile shuttles are aiming to become the first publicly-accessible shared autonomous vehicle technology for mobility-on-demand operating in the US.



- The EasyMile electric shuttles look to solve first-and-last mile commuting challenges. Shuttles travel at speeds under 25 miles per hour and are equipped to navigate city streets without a driver.

3.6 Tesla

Meeting details

1.30pm – 4.00pm Friday 2 September 2016

Tesla, 45500 Fremont Boulevard Fremont, CA 94538

Attendees:

Matt Schwall, Director of Field Performance Engineering

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Peter Duncan AM, Chairman, ARRB Group



Observations and discussion

- Tesla are providing Level 2 automation, using camera and radar sensors.
- Tesla's strategy seems to be based on continual feature adding (auto pilot), rather than pursuing driverless cars in the short/medium term. Although it is clear that the two streams/strategies will merge at some point.
- Their level of automation is similar to other luxury brand cars.



- Tesla are not really expecting or needing vehicle to vehicle or vehicle to infrastructure connectivity.
- In terms of regulation, the key issues for them are:
 - Consistency of regulation, particularly technical standards. Some variability in user standards is tolerable.
- A key feature of the Tesla system is the connected feedback from the vehicle back to the manufacturer.

3.7 Cringle Dock Redevelopment

Visit details

AM Sunday 4 September 2016

Cringle Dock, Cringle Street London SW8

Attendees:

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads,
Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime
Services

Observations

The Cringle Dock Redevelopment is a proposed mixed use port/residential development site on the south side of the Thames River near Battersea Power Station.

The project includes a new waste transfer station at Cringle Dock and residential buildings (up to 422 units



including affordable housing).

It is at a very early stage of development, but may have relevance for the Bays Precinct redevelopment.

3.8 Smart Motorways Roundtable

Roundtable details

12.00 noon – 2.00pm Monday 5 September 2016

Sartoria Bar Ristorante, 20 Savile Row London W1S 3PR

Attendees:

Shaun Pidcock, Programme Director – Smart Motorways Programme, Highways England

Lorraine Butler, Head of Operations – Smart Motorways Programme, Highways England

Steve Gooding, Director, RAC Foundation

Keith Jackson, Director – Special Projects, Kier Highways

Derek Turner, Director, Derek Turner Consulting

Simon Wickenden, Consultant, Mouchel

Ian Patey, Head of Profession, ITS, Mouchel

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Observations and discussion

- UK use dynamic hard shoulder and are considering all lane running.
- They do not use ramp metering, mainly because Highways England do not have control of signals or land surrounding the motorways, meaning they would have needed to deal with multiple councils in order to implement.
- The approach being taken to smart motorways in the UK and California are different from each other.
- Driver education is critical to the successful roll out of smart motorway technology. It is important that drivers understand, support and comply with the interventions.
- Enforcement of smart motorway signalling has been a difficult issue in the UK environment.

3.9 Exhibition Road and Kensington High Street

Visit Details

Afternoon Monday 5 September 2016

Attendees:

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Observations

Exhibition Road

Exhibition Road has been turned into shared zone with a very wide pedestrian zone and no traditional kerb, line marking, traffic signs or traffic signals. The traffic zone allows buses, cars and bikes with no separated areas or lane delineation. The speed limit is 20 mph (32 km/hr).



The theory is that by creating an uncertain environment drivers slow down, creating a more vibrant space. There is not much support for this type of intervention in the road safety industry.



If anywhere it is a practice that is best suited to areas with very high pedestrian flows and relatively lower traffic flows.

The practice may have some relevance for council streets, however, it is not appropriate for any State roads in the Sydney metropolitan area where:

- The street environment and function of the road is completely different.
- Exhibition Road is not a major arterial through road - it runs between a mall near south Kensington Station and Kensington Road near Hyde Park. There are two sections:
 - The section between the station and Cromwell Road has virtually no traffic, it serves as access for a small residential street down to Cromwell road and has no vehicle access from one side. This section is virtually a pedestrian zone, with street tables out in front of restaurants
 - The section between Cromwell Road and Kensington Road is a moderately traffic local street. This area has museum uses on both sides of the street, with some residential, there is no retail or business use. It needs a wide footpath as most people access the museums via a subway outlet that comes from south Kensington Station.
- The parking is either residents only or disabled parking for the museums, so this is very low turnover parking, completely dissimilar to Oxford Street.

- It has moderate traffic with some buses.
- The changes have made it into virtually a one lane in each direction traffic area, which seems fine for the volume.

Kensington High Street

- Dedicated bus lanes have been removed.
- There is a very wide median used for bicycle parking.

3.10 Scania

Meeting details

10.30am – 5:45pm Wednesday 7 September 2016

Scania, Vagnmakargatan 1, 127 29 Södertälje, Sweden

Attendees:

Jakob Wijkström, Area Manager Australia

Pär Degerman, Senior Engineer

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Observations and discussion

- Scania trucks come equipped with better technology than is used for the IAP. All vehicles have telematics.
- The focus of the Scania truck platooning project is:
 - Increased safety
 - Relieving driver fatigue
 - Fuel savings
 - CO² savings.
- As a first step Scania are looking at platooning as an exit to exit phenomenon on freeways.
- The sharing of truck performance data to improve driver performance and safety is a key focus for Scania.
- As an established truck manufacturer Scania cannot afford to take safety risk. They are focused on an incremental approach.
- Headways and “driver” behaviour are key issues with truck platooning.



- They are advocating hands on wheel regulation (except in traffic jams).
- Technology is available – it is about risk, proof of concept, community acceptance and liability.
- Community acceptance of safety is the key issue (that is, community acceptance that driverless is safer than driver operated vehicles).
- Data privacy and protection are key issues.
- Not interested in testing in Australia. No manufacturing. Small market.
- Truck driver shortage in advanced economies.

3.11 World Road Association

Meeting details

10.00am – 11.00am Thursday 8 September 2016

Radisson Blu Edwardian Berkshire, 350 Oxford Street London W1C 1BY

Attendees:

Patrick Malléjacq, Secretary General, World Road Association

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Observations and discussion

- The World Road Congress was last held in Australia in 1983 (Sydney).
- While a Sydney bid for the World Road Congress 2023 will be welcomed, it is clear that the World Road Association is very Europe focused and NSW should work with Austroads to ensure this is a genuine opportunity before investing heavily.
- Austroads are determining which city in Australia they will endorse to bid. Sydney, Melbourne and Cairns have expressed interest.
- Sydney would have a strong bid due to substantial activity in the roads industry and the new International Convention Centre.
- Issues to be overcome are distance and general lack of participation in World Road Association from Asian countries.

3.12 Investor Roundtable

Roundtable Details

12.00 noon – 2.00pm Thursday 8 September 2016

Sartoria Bar Ristorante, 20 Savile Row London W1S 3PR

Attendees:

Hayden Mursell, CEO, Kier Group

Dave Wright, Executive Director, Kier Group

Nick Probert, Head of Business Development, Australasia Sicut Enterprises

Jason Cox, Director Infrastructure Finance, ING Commercial Banking

Jol Bates, Managing Director of Transport, Mott MacDonald

Alex Yew, Head of Project Finance and New Markets, John Laing

James Kenny, Head of Global Affairs, Arup

Kathleen Devereaux, Senior Investment Manager, Austrade

The Hon. Duncan Gay MLC, Minister for Roads, Maritime and Freight

Andrew Huckel, Chief of Staff, Minister for Roads, Maritime and Freight

Ken Kanofski, Chief Executive, Roads and Maritime Services

Observations and discussion

- The level of investment in NSW roads is unprecedented in recent history.
- Over the next four years the NSW Government is investing \$73.3 billion in infrastructure and more than half – or \$41.5 billion – will be dedicated to transport and roads that will transform the way people in Sydney travel. This investment is creating jobs, supporting private investment and building business confidence.
- The focus will be to deliver the missing links on Sydney's motorways, improve and optimise the network of state roads, identify and develop new roads to improve connections throughout the state and continue to achieve the outcomes for the environment and the community.
- There are eight motorways currently in development or delivery:
 - NorthConnex
 - WestConnex – M4 Widening, M4 East and new M5
 - WestConnex M4-M5 Link
 - WestConnex Sydney Gateway
 - Western Harbour Tunnel and Beaches Link

- F6 Extension

- More than 200 major new and existing road infrastructure upgrade projects are being delivered across the state.
- This is a multi-billion dollar program over the next 10 years and the opportunities for industry are unprecedented. There will be opportunities across development, planning, financing, construction and operations.

3. Appendices

4.1 Final Itinerary

Wednesday 31 August 2016

1300	Depart Sydney on QF73
0930	Arrive San Francisco
0930	Transfer Airport to Hotel
	Accommodation: Intercontinental Mark Hopkins
1245	Transfer Hotel to Mountain View
1400 – 1600	Meeting with Google
1600	Transfer to Hotel

Thursday 1 September 2016

0630	Transfer Hotel to Sacramento
0900 – 1000	Meeting with California Department of Transportation (Caltrans)
1000 – 1030	Transfer to Auto Alliance
1030 – 1130	Meeting with Auto Alliance
1130 – 1200	Visit to California Senate Office
12.00	Transfer Sacramento to San Francisco
1430 – 1530	Meeting with General Motors and Cruise
1530	Transfer to Hotel

Friday 2 September 2016

0745	Depart San Francisco for Walnut Creek
0900 – 1000	Meeting with Contra Costa Transportation Authority
1000	Transfer to Concord Naval Station
1030 – 1200	Tour of GoMentum Station to view testing facility
1200	Transfer to Tesla
1330 – 1600	Meeting with Tesla

1600 – 1645	Transfer to San Francisco International Airport
1915	Depart San Francisco on BA0286

Saturday 3 September 2016

1340	Arrive London Heathrow
1340	Transfer Airport to Hotel
	Accommodation: Radisson Blu Edwardian Berkshire

Sunday 4 September 2016

Morning	Visit to Cringle Dock Redevelopment
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Monday 5 September 2016

1130	Transfer Hotel to Restaurant
1200 – 1400	Smart Motorways Roundtable
1430	Transfer to Hotel
Afternoon	Visit to Exhibition Road and Kensington High Street

Tuesday 6 September 2016

0830 – 1000	Transfer to Airport
1125	Depart London Heathrow on BA778
1425	Arrive Stockholm
1425	Transfer to Hotel
	Accommodation: Radisson Blu Royal Viking

Wednesday 7 September 2016

0930 – 1030	Transfer to Scania HQ
0930 – 1030	Austrade briefing on Swedish market
1030 – 1230	Meeting with Scania
1230	Transfer to Vidbynäs Gård Hotel

1300 – 1430	Lunch with Australian delegation
1430	Transfer to Scania Technical Centre
1500 – 1630	Interview with Mr Ulf Ceder, Senior Manager Research Support Office, Scania Technical Centre
1630	Transfer to Transport Laboratory
1645 – 1745	Guided tour of Scania's R&D Transport Laboratory
1745 – 1845	Transfer to Stockholm Airport
2115	Depart Stockholm on BA0783
2245	Arrive London Heathrow
2245	Transfer to Hotel
	Accommodation: Radisson Blu Edwardian Berkshire

Thursday 8 September 2016

1000 – 1100	Meeting with World Road Association
1100	Transfer to Restaurant
1130 – 1200	Austrade briefing on UK market
1200 – 1400	Investor Roundtable Lunch
1400	Transfer to Airport
2130	Depart London Heathrow on QF2

Saturday 10 September 2016

0510	Arrive Sydney
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*The Hon Duncan Gay MLC
Official Overseas Travel Report*

Estimated costs and details of Travel:

Roads, Maritime and Freight Mission to United States, United Kingdom and Sweden

Purpose of travel

- Investigate development into automated and connected vehicles.
- Understand the policy, legislation, regulation and operational processes that need to be considered to introduce self-driving vehicles safely to the NSW road network.
- Collaborate and share lessons learned with key experts from across the UK, who have demonstrated experience in Smart Motorways having comprehensively rolled this across their network.

Benefits of travel for the State of New South Wales

- Ensure NSW remains at the forefront of road, freight and vehicle technology by engaging with industry and government leaders to harness innovative thinking and inform the development of strategies to enable NSW to become a world leader in applying technology to deliver better transport outcomes.
- Provide an opportunity to inform NSW Government investment in road, freight and vehicle technology in the future.
- Provide an opportunity to promote NSW's ambitious road infrastructure investment program and build international relationships with key infrastructure industry representatives and investors

Minister	The Honourable Duncan Gay MLC
Portfolio	Minister for roads, Maritime and Freight
Destinations(s) visited a) Countries b) Cities	a) United States, United Kingdom, Sweden b) San Francisco, London, Gothenburg
Dates of travel a) Departure date b) Return date	a) 31 August 2016 b) 10 September 2016
Number of official travel days	11
Number of accompanying a) Minister's staff b) Government officials	a) 1 b) 1
Accompanied by spouse a) in an official capacity b) in a private capacity	No
Costs	
Airfares a) Minister and Minister's staff b) Government officials	a) \$24,761.80 b) \$12,363.95
Accommodation (includes any meals/incidentals charged to room) a) Minister and Minister's staff b) Government officials	a) \$7,390.89 b) \$4,305.15
Official hospitality a) Minister and Minister's staff b) Government officials	a) Nil b) Nil

Other expenses a) Official gift presentation b) Ground transport c) Meals and refreshments d) Other miscellaneous costs	a) Nil b) Nil c) Nil d) Nil
TOTAL estimated travel cost a) Minister and Minister's staff b) Government officials	a) \$32,152.69 b) \$16,669.10
Currency conversion rate based on:	1 AUD = 0.75206 USD 0.57213 British Pounds 6.43463 Swedish Krona

This report does not include costs for data roaming, official passports, visas, vaccinations, insurance, translation or printing of business cards.