MINUTES

Journey Reliability Policy Chapter Workshop

Strategic Road Maintenance – Making money work smarter

Thursday 13 July 2017

Location: Advisian, Level 17, 141 Walker St, North Sydney

Welcome and Introduction

Steve Cooley the Roads Australia Journey Reliability Chapter Deputy Chair (and Technical Executive, Asset and Network Performance at WSP) welcomed guests and speakers to the workshop, kindly hosted by Advisian.

Steve recognised the mix of 45 organisations in the room representing road agencies, construction and engineering companies, consultants, legal services, local and state government and others.

Steve introduced the forum as an invaluable policy discussion on strategic road maintenance, aiming to examine the attributes of an optimally operated network through the eyes of an asset owner. It discussed the outcomes asset owners seek; and as stewards of the road network, and examined the measures in place to ensure asset owners that maintenance funding is providing the best return on investment.

Presentation 1 – Craig Moran, Director, Network Operations Planning, Transport for NSW

Craig Moran from TfNSW gave the opening presentation outlining the key attributes to optimally managing a road network. Craig spoke about the network in terms of what customers value from it, highlighting that the customer is at the centre of everything that we do.

Craig outlines four main attributes that customer's value – good roads and networks, synchronised and steady traffic, predictability and convenience, and safety and enforcement. These four attributes are ultimately what our journeys will be measured on, and where we should be focussing our efforts to improve.

Craig also mentioned the importance of information and communication, for example, customers receiving real time information about maintenance on the networks, traffic congestion, timings for journeys etc.

People's expectations are higher now due to increased access and reliance on technology, and they expect that this technology can not only make their journey easier and more time efficient, but also keep them safe on our roads.

Craig highlights the need to consider all of these customer values and expectations, and translating these into real actions.

To put these thoughts into practice, Craig split the room into four groups, each of them taking one of the attributes, and discussing how industry can respond to these customer expectations.

The discussion points from each group are detailed on the following page.

SAFETY & ENFORCEMENT

- Monitoring fatalities and serious injuries on our roads is a priority, as is documenting and reviewing near misses to improve the safety performance around the network and better target maintenance dollars. Are we doing the right thing in the right place?
- Collaboration, engagement and good working relationships with enforcement agencies is imperative
- Feedback where fines and infringements are occurring need to be passed on to better inform where issues need to be addressed
- Focus should be on safety, not generating revenue
- Better clarification of incidents at work zones is need. Decrease speed limits around road works to protect workers
- Improved technology to inform issues around safety
- More research on preventing driver fatigue and looking at ways we can use the outcomes of this to send a positive message to drivers
- Use big data to inform the insurance industry
- Reward drivers when they are behaving well
- Currently the networks are collecting data that we are not using to our best advantage
- Looking at the response time and resolution when incidents do occur
- Looking at the issue around oversize vehicles and unlicensed drivers, how can we better control lack of compliance around vehicles and drivers on the network
- Ensure signage is clear, some are currently confusing
- Rethink wide variations on speed limits in areas with the same risk factors

PREDICTABILITY

- Looking at your individual journey and personalise it with tailored information to make it more convenient
- Providing more information to the public about the availability of parking
- Increase the predictability of road maintenance by focussing on when works are going to be done and not. Ensure your communications strategy is robust before starting the project.
- Use technology to push out more information to individuals. Accurate, timely and relevant information is key

SYNCHRONISED & STEADY TRAFFIC

- Predictability, confidence and reliability are key to a smart road network. A steady traffic flow is optimal
- Incident response rate should be monitored and improved on
- Customers expect value for money when they are paying to use a toll road. If they are not moving on the road they will not be happy
- Information is key when dealing with disruption on the network. How disruption is managed and how it affects the system impacts people's lives

GOOD ROADS AND NETWORKS

- Good planning and good preparation is key
- Adequate funding
- Apply best practice construction techniques to ensure that it is built to perform in the way that our customers expect it to
- What does smoothness of a road mean? Conduct research to define smoothness from a customer's perspective

- Performance standards that prevents cracking
- Recognising that a lot of the damage on the roads is due to high volume traffic. Rectify this by re-routing and taking them out of the equation, which could help smoothness of the ride
- Consistency of road width is important and should be customised based on road conditions
- Maintenance contractors must collaborate
- Whatever we are delivering and managing, we need it to perform as expected in the customers view. We may have a technical view, but we need to understand a customer's view.

Craig's key take home messages from the group work – **Plan, predict and inform**.

Presentation 2 – Pascal Felix, Intelligent Transport Executive, WSP

Pascal Felix from WSP presented on best practice in road maintenance investment, and gave an overview of the current road maintenance funding situation across governments and how we make intelligence-led decisions about infrastructure investment requirements.

Pascal highlighted that new automated vehicle (AV) technology is driving change in this area and that it is going to be how soon, not when. The data we can gather from this new technology via drones, 360 degree cameras, sensors, lidar and mobile mapping will provide us with highly consistent and reliable information about how the asset is performing and modernise our decision making. It is predicted that there will be 50 billion connected objects by 2020, and that the Internet of things will continue to grow exponentially as it becomes the 4th industrial revolution.

Pascal outlined a few of the benefits of this technology including allowing us to make better investment decisions and keep road operators better informed about road conditions. Currently much of this information is kept in people's heads, but for the best outcome it needs to be stored in a central place and available for all. There is a lot of data out there, it's a matter of identifying a way of managing the data to personalise each customer's journey. Once sensors become cheaper, they will be able to be used on all vehicles to gather data on daily journeys.

On the issue of using personal data, Pascal believes that the value to the individual of governments and industry collecting and using this data for public good will outweigh any privacy concerns they may have. We already provide so much data through our mobile phones, and that the public is already generally on board with this.

Pascal concluded by stating that we generally do not 'Value Manage' maintenance investment decisions against a measurable, repeatable framework. We cannot define the benefit of asset maintenance investment, but there needs to be collaboration to be able to deliver the services needed that enable the customers to receive the value that they expect.

Funding is still an issue that needs to be addressed, but ideally the availability of information and data will be able to make the case for increased funding for councils to enable them to undertake maintenance on areas where most vehicles are present.

Digital disruption will impact all areas of road operations, management and maintenance in ways that we have not yet defined, but it is important to embrace and leverage this new way of the future for the benefit of all society. Anything can be improved if we put our minds to it.

Presentation 3 – Wayne Sharpe, Senior Associate, Advisian

Wayne Sharpe from Advisian discussed the issues surrounding improved road maintenance funding and why this is important. Whilst road infrastructure's asset base is increasing, the amount of maintenance funding remains static across most states.

Data presented suggested that SA spends the least, with an estimated maintenance spend of $2,300 per lane km, and NSW spending the most at $7,000.

The current pattern observed is that road agencies keep going back to Treasury for funding but may not build a strong enough case to secure enough funding for today's road asset. Traditionally road assets were pavement, bridges etc, but today they also include sophisticated and expensive technology. A consequence of this is that it is not only the roads that need to be maintained, but the technology too.

Commonly there is only public outcry about maintenance when there is an election, or a new report comes out, or where you get a natural disaster such as a flood. The level of routine maintenance is directed and governed by road agencies and is engineering-based. The consequence of that is that one third of VicRoads funding goes towards routine road maintenance. Most of the routine maintenance is delivered as a lump sum and many councils use the same model, focussing on major highways and arterials.

Data presented highlighted that most public-sector asset owners have 60 – 75% of their assets in a database, whilst most private sector owners have 100% of their assets in a database. Lack of detailed asset knowledge determines the levels of partnering with private sector for delivery of maintenance, and if you don't know your assets it's hard for private sector to price it. In VIC and SA they are looking at partnering with the private sector to increase knowledge and collect data.

Wayne discussed the future – who will pay for AV lanes and other requirements? How will maintenance interact with the roads? ITS was once an extra, now it is a necessity on the roads. The cost of maintaining roads that include these new technologies will be more expensive than today, so we need to find ways to fund it. Also, the value of these new asset types is unknown, which makes them difficult to insure. In order to get smarter about how we deliver maintenance, we need to know what our assets are.

Wayne summarised by stating that there is a lot more work to be one in this space, and that technology will assist funders in making informed decisions on where and how best to maintain our road networks.

Presentation 4 – Nick Koukoulas, Chief Executive, Austroads and Angus Draheim, Data Harmonisation Project Manager, Austroads

Nick from Austroads outlined their new road asset data standard, which sets out how core asset information can be described in a common way.

Traditionally, governments have approached funders with different languages, so the standard provides a common understanding for all customers to be compared like for like.

The new data standard has 5 main aspects:

1. Road Network Definition – pre-requisite for effective information management
2. Location Referencing System – level of sophistication to be assessed, to assist with determining minimum data set required. May vary between asset groups.
3. Asset Planning
4. Asset Data
5. Data Schemas – describes the structure of this Data Standard

The key users of this new data standard will be primarily: road asset owners, managers, road network funding agencies, stakeholders and service providers in the planning, delivery, operation, maintenance, disposal and reporting of asset management functions across the road asset portfolio. Also, organisations involved in provision of funding and investment to road asset owners and organisations monitoring road network performance, contractors, service providers or project developers that perform asset management related services for road organisations and software vendors involved in developing, structuring and/or configuring asset management information systems/software solutions.

Potential benefits of adopting the new data standard include lower maintenance costs, comparable performance and improved investment outcomes. NZ are currently adopting these activities and are already quite advanced.

Angus outlines the benefits of data harmonisations, and the approach to doing so effectively.

Implementation of asset management solutions aligned to the standard will take time through a series of releases (process modes, taxonomies, standardised BI models) to support stakeholders. These phases need to be paced to meet the needs of the users. Once a data standard has been agreed upon by the industry and government, it needs to be distributed, with the efficacy of the standard depending on successful distribution accessible to all. It is imperative that the standard is up to date and that everyone is using the latest version. Most importantly the standard needs to be used in order to be effective.

Nick opens up the discussion to questions from the audience. Some of the value-add comments from guests included:
- Clear concise definition of an operating layer of the network – what kind of road is this?
- Can measure the customer experience on the network
- Accreditation inspection taking a standardised approach using data standard
- Investing in a consistent blueprint can create savings in construction

Some of the challenges around implementing the standard include:
- The cost, up to billions of dollars nationwide
- There is a risk that road agencies and councils may not update to the new standard quickly
- As you move into construction the standard gets left on the wayside – after designing – must push it through the whole lifecycle
- There can be big differences in how people interpret standards
- How will councils who have their legacy databases come across to the new standard?
- Councils already have a lot of data that they don't use, might this continue?
- Users may be reluctant to change systems, so it is important to work with software providers to understand how to embed the new standards in existing systems

Nick highlighted the importance of remembering that the customer experience is the main driver behind the standard. There will be a webinar coming up soon for more information.

Sign up for updates here: http://www.austroads.com.au/road-operations/asset-management/road-data-harmonisation-project

Report available here: https://www.onlinepublications.austroads.com.au/items/BA2057-DRAFTV2

Conclusion

In closing, Steve acknowledged everyone for coming and sharing their perspectives. Steve also extending RA's thanks to presenters for their insights, and to Advisian for hosting the event.

All presentations and photos from the day are now available on RA's website: http://www.roads.org.au/Policy/Network-Reliability/Presentations-and-Minutes

Participants

Organisation	First name	Last name	Role
Acciona Infrastructure	Fraser	Leishman	Project Director, O&M
Advisian	Alex	Li-Kim-Mui	Consultant
Advisian	Pat	Doyle	Principal and Sector Lead - Asia Pacific - Roads & Airports
Advisian	Susette	Dixon	Executive Consultant
Advisian	James	Brett	
Advisian	Clarence	Bong	
AECOM	Alison	Koh	Digital Director
Amey	Michael	Saba	Senior Civil Engineer
Aquenta Consulting	Darren	Holt	NSW Director â€" Cost Management Services
Aquenta Consulting	Vignone	Emilio	Manager - Cost Management Services
Arcadis Australia Pacific	Justin	Moss	Principal Pavement Engineer & Team Leader
Arcadis Australia Pacific	Adam	Halpin	Business Development Manager - Infrastructure
Arcadis Australia Pacific	Austen	Shoebotham	Associate Technical Director - Highways
Arcadis Australia Pacific	Liz	Mathews	Major Pursuits Manager
Arup	Shane	Day	Senior Engineer, Asset Managment
Aurecon	John	Figueroa	Technical Director, Transport Services
Austroads	Nick	Koukoulas	Chief Executive
Austroads	Angus	Draheim	Data Harmonisation Project Manager
BG&E	Kaiyu	Lin	Associate Director
BG&E	Matt	Ing	
Boral Australia	Max	Dallarmi	Major Projects Manager
Bouygues Construction Australia	Peter	Tilley	National Strategic Projects Manager
Broadspectrum	Sujoy	Nandi	Maintenance Programme Co-ordinator

Organisation	First name	Last name	Role
Broadspectrum	David	Wilson	Contract Manager
Broadspectrum	Kamini	Choudhry	Executive General Manager Roads
Cement Concrete & Aggregates Australia	John	Nichols	Engineer Construction Solutions
Colas Australia	Ray	Simpson	Project Manager - TMC
Constructive	Clare	Veness	Senior Consultant
Constructive	Natalie	Carn	Senior Consultant
Department of Infrastructure, Transport, Regional Development	Mark	Darrough	
Downer Infrastructure	Ross	Ioakim	Account Manager - Local Government & Airports
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DownerMouchel	Neil	Barker	ITS Improvement Works Manager
DownerMouchel	Claire	Martin	
DownerMouchel	Phil	Jones	Program Manager
DownerMouchel	Gavin	Bolton	Asset Maintenance Planning Manager
Everything Infrastructure Group	Kay	Salvair Smith	Executive General Manager, Commercial
Fulton Hogan	David	Paine	National Asset Manager
Fulton Hogan	Tarmo	Saar	Executive General Manager
GHD	Nick	Patras	Principal ITS Consultant
GHD	Graham	McCabe	Service Leader, Transport Optimisation & Planning/Infrastructure Advisory
Interlink Roads	Monique	Bray	Environmental / Civil Engineer
Interlink Roads	Dave	Warne	Work Supervisor
Interlink Roads	James	Kao	Asset Engineer
Jacobs Group	Alan	Hillhouse	Section Leader, Roads & Highways
John Holland Group	Peter	Trueman	Industry General Manager - Transport Infrastructure
Kellogg Brown & Root	Marcus	Moore	Industry Lead - Roads, NSW & ACT
Kier Group	Simon	Berry	Technical Lead - Roads
Laing O'Rourke Australia	David	Whatmough	General Manager - Project Delivery
LB Australia	Swami	Nathan	International Consultant
LB Australia	Paul	Hansen	Chief Executive Officer
LB Australia	Swami	Nathan	International Consultant
Lendlease	Matthew	Brown	Regional Manager NSW/QLD
Lendlease	Eckart	Schlotfeldt	General Manager, Roads Services
No Company	Diane	Niu	Marketing Director
No Company	Gavin	O'Connor	Central Region Manager - NZ
North Projects	Clair	Chen	Consultant
North Projects	Stephen	Rowe	Director
North Projects	Ross	O'Sullivan	Associate

Organisation	First name	Last name	Role
Opus International Consultants	Hugh	Tait	Sector Leader Transportation Asset Development Australia
Pacific Partnerships	Niall	Lyons	Operations Maintenance Manager - Head of Quality & Sustainability
Pacific Partnerships	Camilla	Drover	Project Director, Head of Business Development
pitt&sherry	David	Coe	Group Executive - Technical Development & Risk
Rider Levett Bucknall	Richard	Talbot	Advisor
Roads & Maritime Services	Peter	Wells	Non-Executive Director
Roads Australia	Mandi	Mees	Executive Director - Policy
Roads Australia	Alex	Stott	Policy Manager
SMEC Australia	Brendan	Leader	
SMEC Australia	John	Wheatley	AM Manager Central
Transport Canberra & City Services	Ken	Marshall	Director Roads - ACT
Transport Certification Australia (TCA)	Gavin	Hill	General Manager Strategic Development
Transport for NSW	Craig	Moran	Director, Network Operations Planning
Transurban	Sharen	Hanna	Contracts Engineer
Transurban	Jessica	Georgeski	Works Program Delivery Manager - Northern
Ventia	Christine	Kanellakis	Strategic Business Director - Transport
Western Sydney Regional Organisation of Councils Ltd	Charles	Casuscelli	
WSP	Peter	Letts	Transport Major Project Executive
WSP	Michael	Bushby	Technical Director, Asset & Network Performance
WSP	Steve	Cooley	Technical Executive, Asset & Network Performance
WSP	Pascal	Felix	Intelligent Transport Executive

For information about the Roads Australia Journey Reliability Policy Chapter, please contact Mandi Mees, Executive Director – Policy: mandi@roads.org.au