

## House of Representatives Standing Committee on Regional Development, Infrastructure, and Transport

### Response to QN on Notice #1

Member	Page	Question
<b>Mr Pasin (Deputy Chair)</b>	p. 4	<p><b>Mr Caltabiano:</b> We collect it [data] in a standard way. We process it in a way in which each of the states' requests it. If the Commonwealth were to ask us to process the data in a uniform way, we would just write to our shareholders and say, 'For research purposes, we've got a right to use of the data for research purposes—can we now reprocess it in a standard way?' Then we can.</p> <p><b>Mr Pasin:</b> Mr Caltabiano, can I ask you on notice to write to us about what mechanism the Commonwealth could use to achieve that outcome?</p>

The Commonwealth is currently endeavouring to obtain nationally-harmonised datasets of road asset and operational data for all national and state road networks through the National Service Level Standard (NSLS) work overseen by the Road Market Reform group within the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA). The purpose of this work is to provide a data-driven input into road investment and funding decisions. NTRO has been involved in delivering several Phases of this project, and is currently partnering with another consultant to deliver on Phase 5 (2022) and Phase 6 (2023).

The NSLS is a suitable mechanism for the Commonwealth to obtain datasets that are truly nationally standardised and reliable. The current challenges and the solution that the NTRO can provide is elaborated on below:

One of the key challenges of this work is sourcing data through the state and territory jurisdictions and processing it into a nationally-consistent form. The difficulty is due to two reasons:

1. The road data which the jurisdictions collect are intended to meet their own individual requirements, existing practices, and priorities. Providing these data for nationally-consistent datasets is an additional, secondary task that no existing processes support, and significant inertia has been encountered when asking for data to be reprocessed and supplied to the Commonwealth, as this requires new processes to be put in place and resources found to enact them.
2. Since the data that the jurisdictions maintain is suited to the purposes for which they require it, the format and interval of the data are not always consistent between jurisdictions. The additional processing of these datasets to make them compliant with a national standard can result in hidden inconsistencies that across the thousands of kilometres of a road network can accumulate into inaccuracies and makes comparisons between jurisdictions less than robust. This is the nature of harmonised or consistently 'reported' data rather than standardised data.

Furthermore, the harmonised data that the Commonwealth ultimately receives through this process are aligned to eight separate geometries which must be knitted together to form a national map.

Both of these issues can be resolved by allowing the NTRO to take the survey data already collected on behalf of jurisdictions, and supply it in a nationally standardised form customised for the Commonwealth's needs.

The specific benefits are as follows:

1. It is far simpler and more efficient to produce national datasets from the underlying survey data, since this is undertaken once (rather than processes being duplicated in eight jurisdictions) and is enacted through existing work flows within NTRO. Authorising the NTRO to produce these outputs should be far more favourable to the jurisdictions than them having to establish and resource similar work flows within their own organisations (again eight times over).
2. The survey data is different to the data products supplied to jurisdictions, and is therefore a more fundamental measurement of the road network as well as all having the same geometry and location referencing across Australia. This means that the survey data can be processed into nationally standardised datasets that are reliable and enable valid comparisons to be made between jurisdictions.

To be clear, these national datasets would be the result of data sets that are both collected and reported in standardised way by a single organisation – as opposed to a process of harmonisation where multiple organisations make all of their data collected for other purposes look the same.

The current Phase 6 of the National Service Level Standards work includes entering into discussions and negotiations for the jurisdictions to sign agreements to provide their data in a consistent form to the Commonwealth. If the Commonwealth were to ask that the NTRO be authorised to provide this data on behalf of the jurisdictions, this would allow better outcomes to be achieved building on efforts that are already ongoing.

## House of Representatives Standing Committee on Regional Development, Infrastructure, and Transport

### Response to QN on Notice #2

<b>Mr Gosling (Chair)</b>	p. 8	<p><b>Mr Caltabiano:</b> We've got to step change it—giving engineers a tool so that they can overlay their maintenance in capital works programs. That means that, when ministers say, 'I'm putting \$2.2 billion into road safety, so you tell me what the star rating increase has been and what the safer network outcomes have been,' there's now a tool to measure it. You force engineers to think: 'Every time I go out and touch the network, how do I improve safety? What if I put these things on?' That's what this tool—</p> <p><b>Chair:</b> What's that tool called again?</p> <p><b>Mr Caltabiano:</b> NetRisk2. We'll send you a brief on it.</p>
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Please find attached a copy of the NetRisk 2.0 offer that has been developed by the staff at the NTRO over the past 18 months.

This tool takes the star rating of road data and combines this with an assessment of the road risk factors to determine the overall safety risk for the road and segments with a road length.

Once this has been determined the user of the program; State, Territory and Local Governments can then optimise the solutions to improve the road safety outcomes by undertaking infrastructure improvements.

These improvements can be, but not limited to, lane widening, shoulder widening, shoulder sealing, wide centre line treatment, audio tactile linemarking. The program calculates a safety benefit as a consequence of the implementation of these treatments in an individual or combined fashion and reports this as an improvement to the star rating or a decrease in the risk factors. It also provides a BCR for the works and an estimate of the cost of such works.

This tool is a ground breaking standard that should be used by all jurisdictions to provide reporting on baseline improvements to the road network and a clear method of measuring safer outcomes from the investments made.

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DELIVERING SAFER ROAD

INFRASTRUCTURE

MADE SAFER BY **iRAP**

## NetRisk2 is a web-based tool for infrastructure risk assessments, developed by ARRB.

**NetRisk2 allows road managers to:**

- Identify high risk locations on their network
- Compare treatments and their impact on safety risk
- Develop targeted and cost-effective interventions, using a data driven and evidence-based approach
- Deliver safer infrastructure and save lives

This provides a flexible approach to development of countermeasures and programs of work.

The program of works can be developed by ARRB, or by road managers in-house. The results can be used to support the business case for investment.

## What is an infrastructure risk assessment?

A proactive analysis of risk across a network allowing high risk locations to be identified, and targeted with appropriate treatments, without having to wait for a crash to occur.

The assessment involves identifying the road and roadside factors that contribute to exposure, likelihood and severity to calculate the risk on a section of road.

An assessment across a road network helps to ensure a more consistent approach to safety along a length of road, rather than more traditional project by project upgrades.



## Why choose NetRisk2? AusRAP

NetRisk2 is the only platform that incorporates both AusRAP Star Ratings and Austroads' ANRAM Fatal and Serious Injury (FSI) results.

NetRisk2 was developed by ARRB to improve the practitioner experience in using evidence-based risk assessments of road networks in Australia. The simplified user interface allows us to provide access to the data and results for further analysis.

NetRisk2 provides a flexible approach to developing a program to improve the road safety risk. Road managers can investigate the impact of alternative treatments and compare the performance of these on road safety risk and taking into account the investment required.

NetRisk2 supports evidence-based decision making to target investment where it will have the most impact, and ultimately save lives and reduce the number of serious injuries.

## Why choose ARRB? iRAP ACCREDITED

ARRB has over 20 years experience in the development of infrastructure risk assessments. This has seen us contribute to a global initiative (iRAP - the International Road Assessment Programme) that has assessed over 1.4 million kilometres of roads across 102 countries.

ARRB is Australia's iRAP Centre of Excellence and has staff accredited by iRAP.

Our expertise in assessing infrastructure risk sees us participate in the following committees:

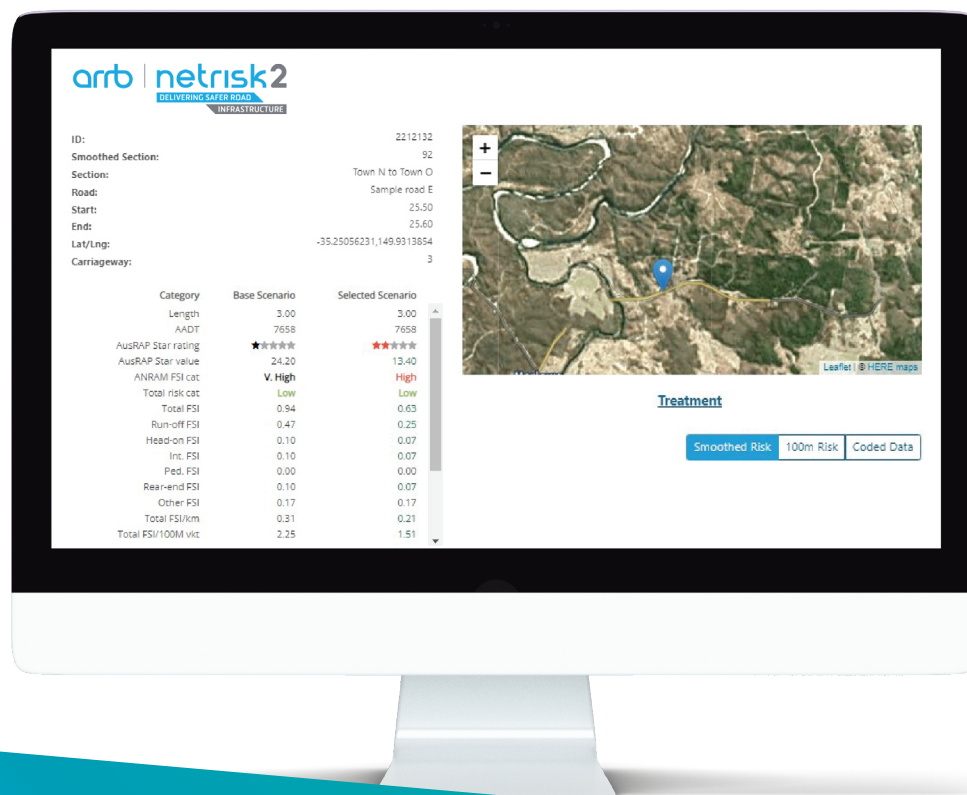
- Austroads Steering Committee.
- Austroads Infrastructure Risk Assessment Group (AIRAG) - the technical advisory group for Australia and New Zealand for infrastructure risk assessment methodologies.
- iRAP Global Technical Committee (GTC) - the group that oversee model development and the technical integrity of iRAP protocols worldwide

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## How can ARRB help?

- Expert advice - on how NetRisk2 can identify where on the network the risk is at its greatest and what factors are contributing to this. We provide support at every stage of the process from data collection, coding and development of treatment plans to training.
- Data collection - using our own iRAP accredited Hawkeye platform. ARRB maintains a fleet of over 10 dedicated survey vehicles, that can be driven anywhere in Australia for various types of data collection. With trained survey operators located nationally, ARRB has the capability to provide quality data collection assistance for your next project.
- Coding, analysis and results – ARRB has a bespoke, integrated data collection and analysis toolkit which harmonises asset management data, AusRAP and ANRAM data. The toolkit is used in all ARRB assessments and integrates with iRAPs systems and our own NetRisk2 to provide a more efficient process.
- Dashboard for results – ARRB's NetRisk2 can display both AusRAP and ANRAM results providing transport agencies with integrated and simplified access to their results.
- Program of works – ARRB can develop treatment plans for you network to mitigate the risks identified, including comparing the impact of different programs of work. Alternatively, NetRisk2 allows transport agencies to investigate the impact of various treatments in-house. The results can be used to support the business case for investment.
- Training and support - available to ensure a clear understanding at practitioner level of the process, outputs and application, as well as training tailored for project manager and executive levels.



## CONTACT

### ROAD SAFETY

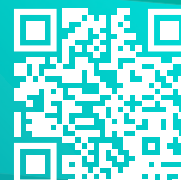
NATIONAL TRANSPORT RESEARCH ORGANISATION

E: [info@arrb.com.au](mailto:info@arrb.com.au) | P: +61 3 9881 1555

W: [ARRB.COM.AU](http://ARRB.COM.AU) | [NTRO.ORG.AU](http://NTRO.ORG.AU)

OFFICES IN: Adelaide, Brisbane, Canberra, Melbourne, Perth, Sydney

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## House of Representatives Standing Committee on Regional Development, Infrastructure, and Transport

### Response to QN on Notice #3

<p><b>Mr Pasin</b> (Deputy Chair)</p>	<p>p. 9</p>	<p><b>Mr Pasin:</b> I appreciate you're going to release that information publicly or granularly, but will you be able to release something that talks in general terms about what's happened to the road network as a result of those rain events?</p> <p><b>Mr Caltabiano:</b> We will be because we're working with the Department of Transport and Planning in Victoria and they're very keen to make it public. We've got an international conference in October in our building in Port Melbourne, and it will be one of the key feature papers, because how it measures —</p> <p><b>Mr Pasin:</b> If it's available before we report, I'd appreciate receiving a copy of it because it goes to the heart of what we're talking about. You started by saying that water is kryptonite for roads. The point is we've been inundated with kryptonite, and I'm very concerned not only about the damage that we can see but, of course, the damage we can't see that will reveal itself over time.</p> <p><b>Mr Caltabiano:</b> I will have a discussion with the DTP colleagues in Victoria. They're very keen to make sure that this information is public.</p>
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The National Transport Research Organisation (NTRO) was contracted by the Department of Transport and Planning (DTP) in Victoria to assist with the assessment and asset management outcomes for the flood recovery task in Northern Victoria.

NTRO utilised the very latest Intelligent Pavement Assessment Vehicle (iPAVE) to undertake this work. This vehicle predominantly services the State of Queensland but was relocated to Victoria for this urgent task. The iPAVE collects road pavement strength, cracking, rutting, road profile and full photogrammetry for the road network at 80kmph in an uninterrupted and consistent fashion.

NTRO has three of these vehicles in Australia and undertaken the road condition assessment for all State Transport jurisdictions on an annual or biannual basis and some Councils and Territories as required.

The data collection activity for the Northern Victorian road system has been completed and the data processing is progressing at pace to provide the Victorian DTP with a comprehensive understanding of the condition of the network post the flooding events.

The NTRO asset engineering teams anticipate that this work will be completed in regions and released to DTP from mid April onwards.

The ownership of data sets and the interpretation of the data rests with the DTP. The NTRO enjoys a very productive working relationship with all State jurisdictions and the Commonwealth and through those relationships have delivered learnings and knowledge transfer to support the national agenda of better understanding the impact of these significant flood events on our road systems. Publishing of the outcomes of the work we have undertaken will remain however at the discretion of DTP.



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NATIONAL TRANSPORT  
RESEARCH ORGANISATION

ROAD

PORTS

RAIL

AIRPORTS

# CAPABILITY STATEMENT



# NTRO is Australia and New Zealand's National Transport Research Organisation

The NTRO is the innovation portal through which government and industry can gain great outcomes and insights across all modes of transport. We offer innovative research and practical solutions to challenges across the road, rail, ports and airports sectors.

We produce the standards, guides, and specifications which drive Australia's transport and mobility industries, like the acclaimed Best Practice Guides for road materials, sealed and unsealed roads, and bridge management.

## We can help



LOCAL, STATE  
AND FEDERAL  
GOVERNMENTS



TRANSPORT  
AGENCIES



TRANSPORT  
LOGISTICS  
COMPANIES



RAIL OWNERS  
& OPERATORS



PORT AND  
PRIVATE TERMINAL  
OPERATORS



STEVEDORING  
& FREIGHT  
MANAGERS



AIRPORTS &  
AIRFIELDS - PUBLIC  
AND PRIVATE



LIGHT RAIL  
PROVIDERS



MINING &  
EXPLORATION  
COMPANIES



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# The new, integrated mobility future requires new data insights, a new set of tools and a new set of rules.

We have world-class transport infrastructure assessment and testing equipment ready for government and industry to use to help future-proof our road and rail assets and deliver new insights to builders and maintainers of ports and airports.

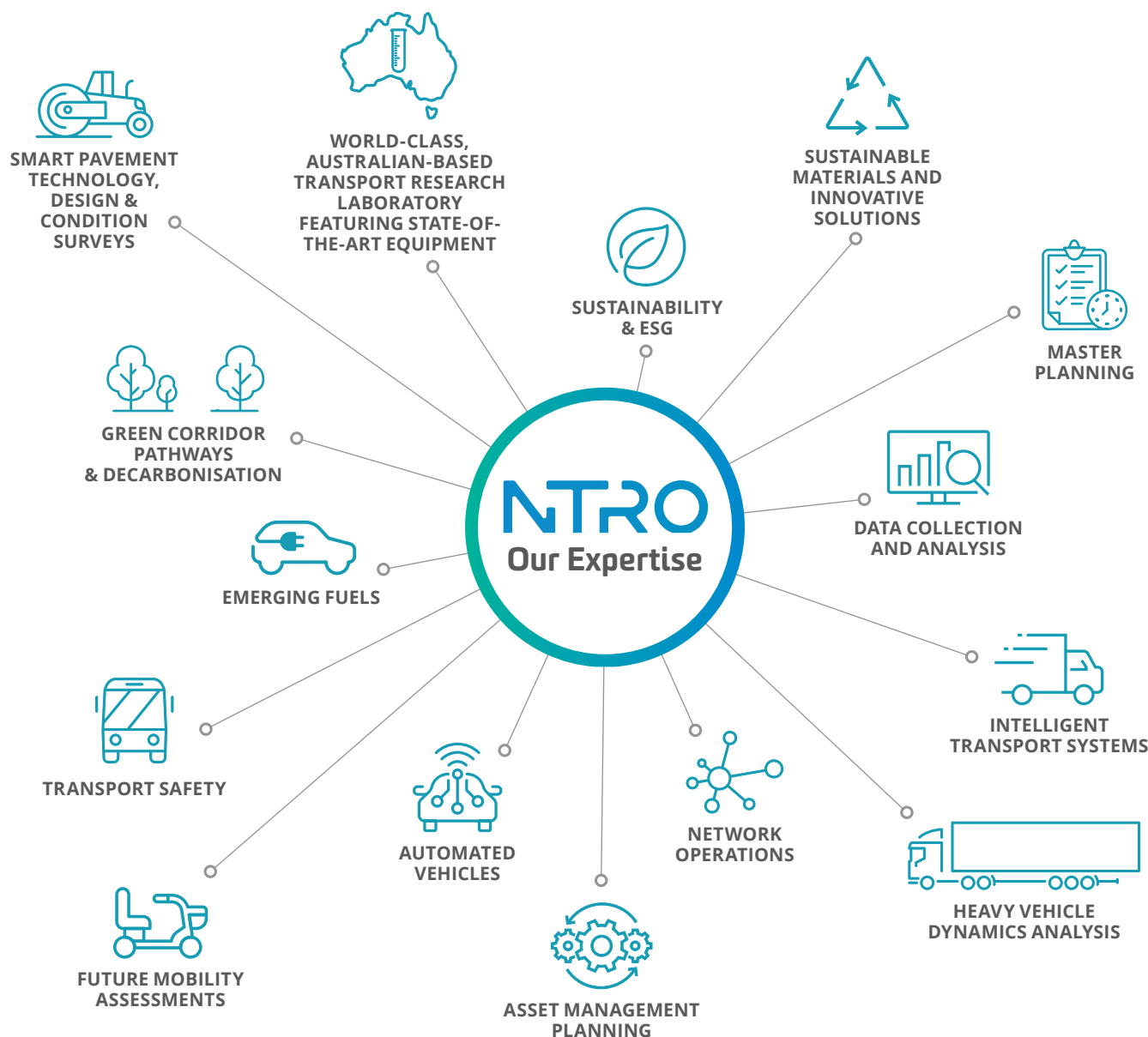
Our state-of-the-art infrastructure measurement equipment, materials laboratories and infrastructure data centre – all based in Australia – are cutting-edge. Combined with the best minds in the business, we are ready to deliver innovative, impactful mobility solutions which benefit all Australians and New Zealanders and deliver a demonstrable return-on-investment.



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## CONTACT

### FOR MORE INFORMATION

NATIONAL TRANSPORT RESEARCH ORGANISATION

E: [info@ntro.org.au](mailto:info@ntro.org.au) | P: +61 3 9881 1555

W: [NTRO.ORG.AU](http://NTRO.ORG.AU) | A: 80A Turner St. Port Melbourne, VIC 3207

OFFICES IN: Adelaide, Brisbane, Canberra, Melbourne, Perth, Sydney

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