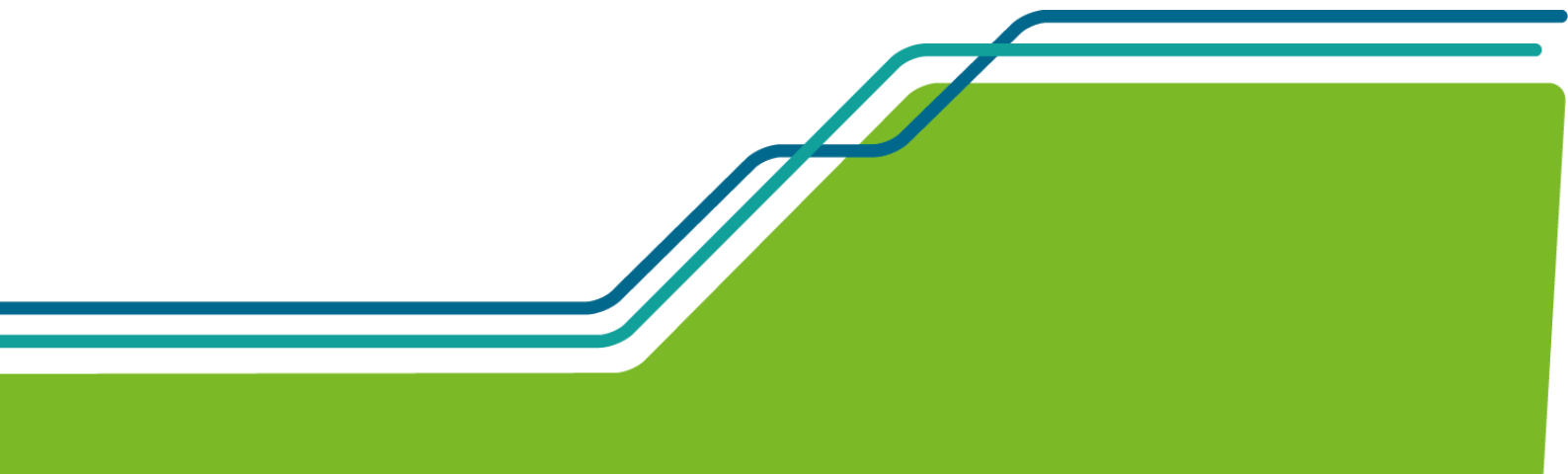# AUSTRALASIAN RAILWAY ASSOCIATION SUBMISSION

To

The Department of Employment, Skills, Small and Family Business

On

Review of the Australian Apprenticeships National Skills Needs List

CONTENTS

The ARA

The Australasian Railway Association (ARA) is a not-for-profit member-based association that represents rail throughout Australia and New Zealand. Our members include rail operators, track owners and managers, manufacturers, construction companies and other firms contributing to the rail sector. We contribute to the development of industry and government policies in an effort to ensure Australia's passenger and freight transport systems are well represented and will continue to provide improved services for Australia's growing population.

The ARA thanks the Department of Employment, Skills and Family Business for the opportunity to provide this submission as part of the Review of the Australian Apprenticeships National Skills Needs List.

For further information regarding this submission, please contact Natalie Currey, General Manager – Suppliers and Workforce Programs at ARA via ncurrey@ara.net.au or +61 499 993 021.

Summary

The Australian Apprenticeships National Skills Needs List (NSNL) does not accurately reflect the current skills shortages that exist in the Australian rail industry and the changing nature of job roles within the industry.

In November 2018, the ARA published a Skills Capability Study developed by Bis Oxford Economics titled *Skills Crisis: A Call to Action*. A copy of the Study can be found here: https://ara.net.au/ara-skills-capability-study. This Rail Skills Capability Study provides an independent assessment of the skills shortages that exist in distinct areas and occupations that the Rail Industry has identified in immediate shortage:

- Railway signalling engineers and maintenance workers
- Overhead wiring / electrical
- Tunnelling
- Training drivers
- Trainers and assessors
- Safety and track force protection

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In addition, these areas of skill shortage are further supported by the Australian Industry Standards (AIS) Rail Skills Forecast 2019[1]:

- Engineers
- Educators
- Trainers and Assessors
- Signalling Technicians
- Train Drivers
- Track workers

Of AIS's rail survey respondents, nearly 94 per cent of employers reported experiencing a skills shortage in the last 12 months.

The NSNL needs to appropriately represent the diversity of roles in rail and the impact of the changing nature of roles based on new rail technology, systems and processes. A key driver for new skills in rail is technological innovation. New technologies, including automation, digitisation and big data, remote operations and augmented or virtual reality systems have the capacity to change significantly the types of skills required by the rail industry. Based on industry consultation[2] conducted, the rail industry is likely to experience skill shortages in the future in:

- Systems engineering
- Cloud base signalling
- Cyber security
- Remote conditioning monitoring
- Simulator and virtual reality trainers
- Customer service skills for autonomous services
- Risk and assurance professionals
- Big data analytics.

A significant proportion of the rail workforce is comprised of blue-collar employees with trades competencies developed through the VET system. While new technologies systems as previously indicated will no doubt limit the growth of some trades in the future, there will still remain a dominant demand in rail for trade skills across construction, operations, manufacturing and maintenance.

The Australian rail industry recognises that the pathways into rail have become opaque over time, and the industry is committed to raising the profile of these training pathways, but would significantly benefit

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[1] Rail Industry Reference Committee Skills Forecast 2019, Australian Industry Standards, https://www.australianindustrystandards.org.au/rail-irc-skills-forecast-2019/
[2] Australasian Railway Association Skills Capability Study *Skills Crisis: A Call to Action*, Bis Oxford Economics, Bis Oxford Economics, November 2018, https://ara.net.au/ara-skills-capability-study

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from the recognition and financial incentives to encourage the uptake of training in specialised skill shortage areas. Skills on the NSNL provide further awareness for potential students considering career options, regarding the demand for these skills in the workplace, and incentivise the take up of this training.

The NSNL needs to take into account projected demand for skills to better plan and pre-empt upcoming needs, recognising the time it takes to train; not just the retrospective review of completed qualifications. Hence forecasts, as prepared by industry associations, government departments and independent companies are important information sources to take into account, specifically, the annual Rail Skills Forecast developed by the Australian Industry Standards (AIS), and the Australia & New Zealand Infrastructure Pipeline[3] published by Infrastructure Partnerships Australia. Infrastructure Australia's published research should also be taken into account. Below is an extract from the Australian Infrastructure Audit 2019[4]:

Australia faces infrastructure sector skills constraints

At all levels and for all types of infrastructure, access to appropriate skills is a problem. For major projects in fast-growing cities, the largest skill constraints are among professional project managers, bid teams and skilled labour. Key professional skills, especially in the rail sector, electricity transmission construction and maintenance as well as emerging technology sectors, are impacted by skill shortages. For example, the demand for rail industry skills are expected to rise by 5.5% from 2018 to 2023.111 Skills constraints are expected to impact frontline operational staff including drivers as well as technical skills such as signalling technicians. The sector will experience challenges meeting this requirement compounded by a decline in the proportion of national rail workforce of under 40, when compared to those over 40, of 4.4%.112 The sector also lacks diversity. The workforce is currently over 80% male, with the gender imbalance potentially reducing attractiveness of the industry to some female recruits. Future technological changes, including the introduction of automation, are expected to fundamentally

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[3] Australia & New Zealand Infrastructure Pipeline, Infrastructure Partnerships Australia: https://infrastructure.org.au/anzip/

[4] Australian Infrastructure Audit 2019 Chapter 4 page 237
https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/industry_efficiency_capacity_and_capability_-_2019_australian_infrastructure_audit.pdf

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alter the structure of the rail workforce over coming decades with a decline in some frontline skills and a greater reliance on technical infrastructure roles, such as signalling. In regional centres and remote areas, on top of the national skills constraints, labour shortages affect most levels of the workforce including attracting and retaining semi-skilled construction workers. These labour constraints present opportunities for developing local workforces, if project pipelines are certain and well understood sufficiently in advance of the skills being required.

For the Government to better understand the skills to be included on the NSNL, a closer engagement between government, industry and the education sector needs to be established.

The need to review the NSNL

The ARA broadly agrees with the issues raised as to the limitations of the NSNL as it currently is. Ensuring that a system thinking approach is taken to the issues covered in the discussion paper, highlights that some key problems have not been identified.

The methodology currently used to identify occupational skills shortages for the NSNL only considers current and historical shortages and has no thought of future infrastructure projects. It's important to note for an Australian economy that is significantly reliant on rail transport for passenger, freight, travel and tourism, the NSNL doesn't list any rail specific roles.

Supply and Demand forecasts need to be taken into account in developing the NSNL. Based on the level of committed investment to date by Commonwealth and state governments, close to $150 billion will be invested in to rail over the next 10 years. The ARA's Rail Skills Capability Study[5], among other independent research, highlights that rising demand for rail operations and infrastructure across Australia and New Zealand in the medium term is coinciding with a shortage of rail infrastructure, operational systems, telecommunications and signalling professionals.

Current NSNL methodology relies significantly on using outdated ANZSCO data to influence the three criteria used to approve a candidate role in the NSNL. There is clearly a need to introduce a new simplified and streamlined incentive program to align the NSNL with needs of the future to encourage participation in areas of skill shortages that are a critical part of the supply chain for sectors of the economy.

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[5] Australasian Railway Association Skills Capability Study *Skills Crisis: A Call to Action*, Bis Oxford Economics, Bis Oxford Economics, November 2018, https://ara.net.au/ara-skills-capability-study

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A valuable consideration to underpin this review is to examine if apprenticeships are still fit for purpose learning products, based on revisions to training approaches, time and cost. The review should leverage the flexibility and framework the Australian Qualifications Framework (AQF) offers to industry and learners and provide outcomes that are learning for life in terms of new technologies, automation and other disrupters so that traditionally relatively narrow streams of practice such as domestic electricians have a much broader set of career pathways with the AQF 3 underpinning electrical qualification.

An example of this is Cert 2 in Rail Infrastructure. Sydney Trains has a competency-based pay structure for infrastructure workers. Typically, workers were employed, undertook mandatory safety and induction training and then begin a journey over 2 – 8 years to acquire the 20 Units of Competency (UoC) required by the Technical Maintenance Plans. They were rostered into depots but were not fully productive as there were so many UoC they didn't hold. Today however, they come into training at a location where there is a training facility as well as easy access to track, turnouts, sleeper, ballast and all the tools Infrastructure workers at Certificate 2 require. They acquire the 20 units in a 46 day structured program moving from classroom to rail track. When they are assigned to a depot they know the tools, they are fully productive and they feel a sense of pride and the feedback from the local managers has been outstanding. They are enrolled in a Certificate 3 in Rail Infrastructure which they commence approximately 6 months after joining the depot. As such, they begin as defensibly competent workers and then start to acquire experience. Training is not about experience, it is about structure learning that balances knowledge, skills, values and attitudes and uses the technology that supports learners to be able to take control of their learning.

Another example is Queensland Rail who have recently undertaken a strategy to increase apprenticeships to help deliver demand needs. Shadow roles have been identified for use in Western Queensland depots where the attraction of staff with unique railway skillsets is difficult to acquire. These roles take experienced railway people and allow them to shadow a unique role where the incumbent is nearing retirement, until a transition to the role occurs. Recent Queensland Rail analysis has identified that apprenticeships, trainees and graduates represent approximately 2% of the overall network FTE, leaving a void in qualified railway skilled graduating tradespeople for permanent roles. With new incentives and streamlined programs suggested a part of the NSNL review, this space has the greatest potential to increase apprenticeships into the future.

Designing a new approach

The ARA supports the notion to settle upon a set of design principals that are forward looking, agile and that prioritise outcomes that deliver the greatest social and economic benefit.

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The ARA raises caution in requiring a single coherent approach to identifying occupation skills shortages, as this approach doesn't reflect the way jobs emerge and skills are developed, which would be different across various industries.

Reviewing frequently and ensuring methodology has flexibility will ensure the ever-changing skills are appropriately identified. The pace of change even in the context of very large capital investment projects can shift the skills requirements. Agility should not be mistaken as volatility. If there is transparency and appropriate industry and education sector engagement by its nature it is a stabilizing mechanism.

The NSNL requires a forward-looking approach that takes into account the future infrastructure pipeline but also gives consideration to supply deficits across workforce disciplines. For example, considering age profiles, retirements and cessations.

Another potential approach is to have organisations that are identified as greatest economic or social benefit by States and Territories, nominate the top business critical roles where skills shortages are identified in the future. This places ownership also on organisation to consider future skill requirements and not just the short-term or past, which is currently practice as indicated in the issue paper.

Other criteria could be used to target incentives to deliver the greatest economic or social benefit, including:

- Age
- Gender
- Location (region)
- Regional sustainability and economic growth
- Ability to create expanded and/or new learning/career pathways future focused
- Digitally enabled learning on and off the job

Other analysis that could be undertaken to address skills shortages include review of type of jobs, skills across regions and cities; number of jobs placements achieved at the completion of apprenticeships and better understand why people drop out of apprenticeship training prior to completion.

Another design consideration which would be of value is including not just qualifications but skill sets on the NSNL.

ADDITIONAL INFORMATION

Further to this submission, the Rail Industry, coordinated by the ARA, would welcome the opportunity for consultation in order to elaborate on matters raised and provide practical case studies.

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The challenges in regards to the delivery of training are complex and are highlighted in detail in the ARA's Rail Skills Capability Study[6], which provides import context to this submission.

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[6] Australasian Railway Association Skills Capability Study *Skills Crisis: A Call to Action*, Bis Oxford Economics, Bis Oxford Economics, November 2018, https://ara.net.au/ara-skills-capability-study

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