# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>3</td>
</tr>
<tr>
<td>IRC Skills Forecast</td>
<td>4</td>
</tr>
<tr>
<td>Transport and Logistics IRC Skills Forecast</td>
<td>4</td>
</tr>
<tr>
<td>Transport and Logistics Industry Reference Committee</td>
<td>5</td>
</tr>
<tr>
<td><strong>TRANSPORT AND LOGISTICS INDUSTRY OVERVIEW</strong></td>
<td>7</td>
</tr>
<tr>
<td>Transport and Logistics Industry Overview</td>
<td>8</td>
</tr>
<tr>
<td>Key Transport and Logistics Stakeholders</td>
<td>10</td>
</tr>
<tr>
<td>TLI Transport and Logistics Training Package</td>
<td>11</td>
</tr>
<tr>
<td>Training Data</td>
<td>13</td>
</tr>
<tr>
<td>Challenges and Opportunities</td>
<td>15</td>
</tr>
<tr>
<td><strong>EMPLOYMENT AND SKILLS OUTLOOK</strong></td>
<td>20</td>
</tr>
<tr>
<td>Employment Demographics</td>
<td>22</td>
</tr>
<tr>
<td>Transport and Logistics Industry Skill Shortages</td>
<td>25</td>
</tr>
<tr>
<td>Priority Skills</td>
<td>26</td>
</tr>
<tr>
<td>Workforce Supply Side Challenges and Opportunities</td>
<td>27</td>
</tr>
<tr>
<td>References</td>
<td>29</td>
</tr>
<tr>
<td><strong>PROPOSED SCHEDULE OF WORK</strong></td>
<td>31</td>
</tr>
<tr>
<td>Key Drivers</td>
<td>32</td>
</tr>
<tr>
<td>Proposed Responses</td>
<td>33</td>
</tr>
<tr>
<td>Proposed Schedule of Work</td>
<td>34</td>
</tr>
<tr>
<td>2018-19 Project Details</td>
<td>36</td>
</tr>
<tr>
<td>Appendix A</td>
<td>42</td>
</tr>
<tr>
<td>Appendix B</td>
<td>45</td>
</tr>
<tr>
<td>Appendix C</td>
<td>46</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

The Transport and Logistics industry employs over half a million people across its major subsectors – road transport, logistics, warehousing, and stevedoring. The industry provides delivery of vital goods and services throughout Australia, via road transportation and stevedoring operations. In 2017, the industry had an estimated annual revenue of $96.65 billion, with an operating profit of $10.41 billion.

Technological innovations are rapidly changing the skills required now and into the future across many industries. Challenges faced by the Transport and Logistics industry into the foreseeable future include the development of automated and semi-automated vehicles, the adoption of interconnected devices, and the increasing volume of data that these systems will bring (Big Data). The industry will also need to remain aware of disruptive innovations which carry the potential to impact enterprises.

The demand for highly personalised supply chain services will continue to increase. Areas of opportunity for industry include improving the sustainability of supply chain operations and the traceability of goods in transit. Upskilling workers in the tasks associated to the supply chain will ensure these changes are addressed.

The operating environments of Transport and Logistics will continue to change in respect to the safety and regulatory frameworks. The workforce needs to have the necessary skills and knowledge to ensure they are aware of incorporating new and changing regulations, which can vary by State/Territory. These ongoing changes will require regular revision of Training Package material.

The IRC has identified the need to review stevedoring qualifications, taking into consideration new technologies and regulatory changes. The IRC also intends to review the safe driving Units and Skill Sets, to ensure the skills of truck drivers meet regulatory requirements. Heavy vehicle driver safety and professionalisation is paramount for all drivers.

Sustainable business operations are increasingly regulated by practises including the Chain of Responsibility, which will continue to influence industry decisions. Focus will remain on pressures to reduce greenhouse gas emissions and manage environmental compliance more effectively.

Adoption of new technologies and innovations in the industry offer an exciting opportunity to promote a better skilled workforce, working smarter and more efficiently, able to cope with an ever-increasing freight task.

Mark McKenzie

Transport and Logistics IRC Chair

This IRC Skills Forecast was agreed to by the Transport and Logistics IRC on 26 April 2018.
IRC SKILLS FORECAST

The Industry Reference Committee (IRC) Skills Forecasts focus on the prioritisation of the skill needs of the industry sectors each IRC has responsibility for. They are developed and reviewed annually and submitted on behalf of the IRC to the Australian Industry and Skills Committee (AISC) for approval.

The document is deliberately brief, it does not seek to identify every issue within every sector. It is a snapshot of a continually evolving story that is intended to alert and inform a wide audience and enhance the industry’s capacity to act.

IRCs are required to consult broadly with stakeholders to ensure a whole-of-industry view about the opportunities and challenges for the workforce and the Training Package review work necessary to meet industry needs. The information is then used to develop the four-year IRC Proposed Schedule of Work.

TRANSPORT AND LOGISTICS IRC SKILLS FORECAST

This annual IRC Skills Forecast will be submitted by the Transport and Logistics IRC to the AISC for approval.

The IRC Skills Forecast identifies the priority skill needs of the Transport and Logistics industry following a research and stakeholder consultation process conducted by Australian Industry Standards (AIS) on behalf of the IRC.

Once approved by the AISC, the IRC Skills Forecast informs the development of a four-year rolling National Schedule for review and development work within the TLI Transport and Logistics Training Package.

More information on the National Schedule can be found at: www.aisc.net.au/content/national-schedule.

Quick Fact

$39.95 BILLION

Added to the Australian economy by the Transport and Logistics industry in 2017.
TRANSPORT AND LOGISTICS INDUSTRY REFERENCE COMMITTEE

The Transport and Logistics IRC has been assigned responsibility for the TLI Transport and Logistics Training Package. More information about the Transport and Logistics IRC and its work can be found here: www.australianindustrystandards.org.au/committee/transport-and-logistics-industry-reference-committee/.

Transport and Logistics IRC Members

Cathi Payne (Deputy Chair)
Payne Haulage

Craig Guthrie
BORAL

Greg Lipscombe
Linfox Logistics

Julie Russell
Australian Trucking Association

Lindsay Eisemann
Origin Energy

Lynda Douglas
Department of Defence

Mark McKenzie (Chair)
ACAPMA

Matt Threlked
BusNSW

Michael Kilgariff
Australian Logistics Council

Neville Johnstone
DP World Australia

Peter Anderson
Victorian Transport Association

Sam McIntosh
Transport Workers Union of Australia

Warren Smith
Maritime Union of Australia

For more information, please contact:

Klausch Schmidt
Transport and Logistics Industry Manager
Australian Industry Standards

M 0417 568 967
E klausch.schmidt@australianindustrystandards.org.au
Of Australia’s domestic freight task is carried by road, equating to 726 billion tonne-km.
TRANSPORT AND LOGISTICS INDUSTRY OVERVIEW
The Transport and Logistics industry in Australia has an estimated annual revenue of $96.65 billion with an operating profit of $10.41 billion. The industry employs nearly half a million people across its major subsectors: road transport, logistics, warehousing and stevedoring.

KEY TRANSPORT AND LOGISTICS METRICS
- **Revenue**: $96.65B
- **Profit**: $39.95B
- **Average Wage Per Year**: $66,712
- **Employment Growth to 2023**: 3.3%

Source: IBISWorld Reports on Courier Pick-up and Delivery Services, Customs Agency Services, General Warehousing and Cold Storage, Grain Storage, Long Distance Bus Transport, Port Operators, Postal Services, Rail, Air and Sea Freight Forwarding, Removalists, Road Freight Forwarding, Road Freight Transport, Scenic and Sightseeing Transport, Stevedoring Services, Taxi and Limousine Transport, Urban Bus and Tramway Transport.

TRANSPORT AND LOGISTICS BUSINESS COMPOSITION

Note: The absolute number of businesses nationwide: Small = 183,491; Medium = 1770; Large = 175 (0.1 per cent).

EXPLANATORY NOTES

Counts of Australian Businesses

Distinct from the Census and Labour Force data, the Counts of Australian Businesses data uses a top down approach where industries are primarily classified by the single predominant industry class associated with a business’ ABN. A limitation of this approach is that organisations with a presence in several States/Territories will be counted only once. This can lead to enterprise figures appearing low for a given state/territory, but it’s not that there are no enterprises existing in the state/territory, it’s that the headquarters are located elsewhere. A further consideration is that organisations in more than one industry will also be only counted in one industry.
KEY TRANSPORT AND LOGISTICS STAKEHOLDERS

Employers
Asciano Ltd
Allied Pickfords
BORAL Australian Construction Materials Division
Border Express
Darwin Ports - Patricks
DP World Australia
Dyson Group
Glen Cameron Group
JR Richards
K & S Freighters
Linfox Logistics
Mini Mover
Origin Energy
Patricks
Payne Haulage
Port of Newcastle
Sydney Harbour Tunnel
TNT
Toll Customised Solutions
Truckright

Employer Representatives
Australasian Convenience and Petroleum Marketers Association
Australian Furniture Removers Association
Australian Logistics Council
Australian Taxi Industry Association
Australian Trucking Association
Bus Industry Confederation
Chartered Institute of Logistics and Transport
Customs Brokers and Forwarders Council of Australia
NT Road Transport Association
Queensland Trucking Association
Queensland Transport Association
Supply Chain and Logistics Association of Australia
Victorian Transport Association
Waste, Recycling Industry Association (QLD) Ltd
Western Australia Road Transport Association Inc.

Employee Representatives
Maritime Union of Australia
National Union of Workers
Transport Workers Union of Australia

Licensing / Regulatory
National Heavy Vehicle Regulator
Safe Work Australia
State and Territory Licensing Authorities
State and Territory Work Health and Safety Authorities

Government
Federal, State/Territory Departments
Department of Agriculture
Department of Defence
Department of Immigration and Border Protection
Department of Mines and Petroleum
Department of Territory and Municipal Services - ACT
Department of Transport
Department of Transport and Main Roads
Department of Transport and Urban Planning
National Transport Commission
Roads and Maritime Services
VicRoads

Industry Advisory
State and Territory Industry Training Advisory Bodies (ITABs)

Training Organisations
TAFEs, Private RTOs, Enterprise RTOs
The TLI Transport and Logistics Training Package provides the only nationally recognised Vocational Education and Training (VET) qualifications for occupations involved in warehousing and logistics operations, driving operations, stevedoring, yard operations freight handler, furniture removals, international freight forwarding, mobile crane operations, waste driving operations, driving instruction for car, heavy vehicle and motorcycles, materiel and deployment logistics, traffic operations, bus and coach operations and customs broking.

The TLI Transport and Logistics Training Package comprises 36 qualifications, 38 Skill Sets, 464 Units of Competency and associated assessment requirements covering these sectors.

The TLI Transport and Logistics Training Package contains the following qualifications that are overseen by the Transport and Logistics IRC:

**Certificates**

- Certificate I in Warehousing Operations
- Certificate I in Logistics
- Certificate I in Transport and Logistics (Pathways)
- Certificate II in Logistics
- Certificate II in Stevedoring
- Certificate II in Driving Operations
- Certificate II in Furniture Removal
- Certificate II in Road Transport Yard Operations (Freight Handler)
- Certificate II in Warehousing Operations
- Certificate III in International Freight Forwarding (Operator)
- Certificate III in Mobile Crane Operations
- Certificate III in Stevedoring
- Certificate III in Waste Driving Operations
- Certificate III in Logistics
- Certificate III in Furniture Removal
- Certificate III in Warehousing Operations
- Certificate III in Driving Operations
- Certificate IV in Stevedoring Operations
- Certificate IV in Materiel Logistics
- Certificate IV in International Freight Forwarding (Senior Operator)
- Certificate IV in Warehousing Operations
- Certificate IV in Transport and Logistics (Road Transport - Heavy Vehicle Driving Instruction)
- Certificate IV in Driving Operations
- Certificate IV in Transport and Logistics (Road Transport - Car Driving Instruction)
Certificate IV in Logistics  
Certificate IV in Mobile Crane Operations  
Certificate IV in Transport and Logistics (Road Transport - Motorcycle Riding Instruction)  
Certificate IV in Traffic Operations  

**Diploma - Advanced Diploma**  
Diploma of Logistics  
Diploma of Deployment Logistics  
Diploma of Materiel Logistics  
Diploma of International Freight Forwarding  
Diploma of Bus and Coach Operations  
Diploma of Customs Broking  
Advanced Diploma of Deployment Logistics  
Advanced Diploma of Materiel Logistics

The TLI Transport and Logistics Training Package is in the Scope of Registration of 683 Registered Training Organisations.

---

**Quick Fact**

3.3%  
Employment growth to 2023
TRAINING DATA
The below charts investigate commencing enrolments by Australian Qualification Framework (AQF) level and funding source by State/Territory, where commencing enrolments of Units are averaged over three years.

COMMENCING ENROLMENTS BY AQF LEVEL
Changes in training funding models have contributed to a decline in commencing enrolments across most TLI qualification levels. This is particularly evident in Certificate III, where enrolments for Certificate III in Warehousing Operations have declined by 72 per cent since 2014.

UNIT ENROLMENT COUNT BY STATE AND FUNDING TYPE 2014, 2015 AND 2016 AVERAGE
Government funding for Transport and Logistics Units in Queensland and Victoria is almost identical, despite the differences in population size.
EXPLANATORY NOTES

Training Charts
Total VET Activity (TVA) data is collected from all types of training providers and not only those in receipt of Commonwealth or State funding. TVA data collection commenced in 2014.

Exemptions
Where the submission of training data to TVA conflicts with defence or national security legislation or jeopardise the security or safety of personnel working in defence, border protection, customs or Australian police departments, an exemption from reporting training data is available.

Organisations that deliver training for vital services to the community (such as emergency, fire, first aid and rescue organisations) may have received an exemption to submit data to TVA. From 1 January 2016 however, the exemption from reporting applies only in respect of training activity not delivered on a fee for service / commercial basis.
CHALLENGES AND OPPORTUNITIES

TECHNOLOGICAL INNOVATIONS
The Transport and Logistics industry is rapidly being affected by a surge of new technologies and innovations. The advent of Industry 4.0 (the next industrial revolution incorporating complex computerised systems, data and software to create ‘smart’ processes and products) will rapidly change the skill needs of the Transport and Logistics workforce. Jobs that were highly manual less than a generation ago, including bus and truck driving, are being reshaped with new technologies and equipment. This creates both new opportunities and a dissonance of the required skills in the workforce. The near-term transition to new technologies and automated processes will need to be readily considered by the industry to ensure the workforce is able to keep up with these changes.

Automation is not a new phenomenon to hit the Transport and Logistics industry, but its use is growing at a rapid pace. Mining operations have used autonomous vehicles to reduce the risk of its workers in hazardous areas and to increase efficiencies of moving cargo within mining sites since 2008. Automation of container terminal operations are also underway in Australia i.e. the fully automated Victoria International Container Terminal (VICT) at the Port of Melbourne, in Sydney at Port Botany, and at the Port of Brisbane.

It is expected that semi-autonomous vehicle technology, including buses and trucks (requiring the driver's attention or input at some point in the journey) will be introduced in Australia within the next ten years. The implementation of fully autonomous vehicles (requiring no driver interaction) may still be decades away from consumer-level products. However, it is noted that pilot-programs in limited environments, such as fully driverless buses in Darwin, are underway. How quickly these systems are introduced on a large scale will remain to be seen, but the potential disruption these may have on the workforce should be closely monitored.

Currently, the regulatory framework and legislation for autonomous vehicles is not keeping pace with the fast-tracked development of private investment, research, and development. The National Transport Commission (NTC) has recently released guidance material on the new regulatory requirements for autonomous vehicles within Australia. With varying levels of automation expected to enter the market, there is a clear need to develop accountability and legal responsibility while the vehicle is in operation.

The advent of these innovations will require new skills and impact the Transport and Logistics workforce and other supporting industries. It will also create opportunities to attract younger people to the industry, with the adoption of new innovations and systems requiring greater digital literacy skills and information systems knowledge.
Automating the processes of goods-to-person logistics will continue to expand, to make the fulfilment of e-commerce more effective and efficient. With the volume of road freight expected to nearly double between 2015-2030, the role of the Transport and Logistics workforce is anticipated to change dramatically, with more emphasis on data management and new software solutions (i.e. telematic diagnostics and electronic record keeping)\(^\text{10}\).

**Big Data**
Big Data, the ever-increasing volume of data being captured by sensors and subject to analysis, is further transforming the skill needs of the Transport and Logistics industry. Big Data enables transport systems to accurately analyse information from networks, improving real-time operations, decision-making, threat detection, and improving productivity\(^\text{11}\).

As sensors become embedded in vehicles, the volume of data collected will significantly increase. These vehicles will be able to communicate with other vehicles (‘vehicle-to-vehicle’, V2V), and with infrastructure (‘vehicle-to-infrastructure’, V2I). This will greatly increase the demand for the Transport and Logistics industry workforce to be able to interpret and analyse this data meaningfully, and in a digitally literate manner. Preparing the workforce for these autonomous and technological changes will be vital to maintain high operating standards and reliability.

**Telematics and Maintenance**
The use of telematics has been incorporated into the regulatory framework through the Intelligent Access Program (IAP). IAP is also breaking ground internationally, acting as a benchmark for the development of international standards for telematics\(^\text{12}\). Working with new computer systems and automation protocols requires a workforce with digital literacy (including data analysis), higher-order skills, and strong communication skills to liaise with colleagues and customers effectively. These skills include the ability to think critically, creatively, to problem-solve, and to respond to unforeseen tasks dynamically/adaptively.

The industry will also require new skills, such as those required for maintenance of automated equipment, diagnostics, and remote servicing of broken-down vehicles mid-transit. To maintain relevance and employability, the workforce will need to be able to adapt and prepare for the new wave of change.

**Disruptive Technology and Innovation**
New technological innovations are continually being developed that can revolutionise a market, create new markets, add new value to products/processes, and disrupt current market occupants\(^\text{13}\). Furthermore, the ‘Uberisation’ of markets (the transition to use under-utilised capacity within a market for low transaction costs) is increasingly changing transport management systems\(^\text{14}\).

Integrated transport facilities (ITF) are being developed for goods receival, logistical storage and dispatch into one unified centre. The ITFs are a significant focus of research and development activity within the...
Transport and Logistics industry. Automating the internal handling of goods in these facilities is already in use; from unloading cargo containers in ports, dispatching the contents to their appropriate storage facility, and sending the delivery to its destination.

How the industry reacts or grows with technological disruption is yet to be seen. However, lessons learnt from Uber (and other service platforms), as well as innovative technologies, show that businesses need to be proactive when developing strategies to better service customers. The Transport and Logistics industry needs to ensure the workforce can meet the skill-needs of these new disruptions and innovations.

**Internet of Things**

The Internet of Things (IoT) describes the ever-increasing trend of connecting devices, sensors and data collecting tools to networks, and relaying information without a human intermediary. IoT has the capacity to enhance asset tracking, warehousing operations, and freight transportation. Its applications extend to every aspect of the logistics supply chain and has already been incorporated into the supply chains of logistics providers.

By 2020, there will be over 50 billion IoT devices world-wide and estimates state that by 2025, up to $2.5 trillion (USD) of additional value will be generated by IoT for the global logistics industry. Spending on connected logistics solutions is expected to more than double between now and 2020 because of IoT's impact on the retail market.

The growth of these analytical capabilities is leading to new innovations across communications, systems engineering and security environments. This will improve the reliability and transparency of the transport systems. It will be necessary to develop skills to capitalise on the operational efficiencies, heightened security, improved customer experience and new business models that follow from IoT innovations. Within the Transport and Logistics industry, IoT will have an impact on the workforce, driving the demand for new skills to effectively work, operate and manage new systems in ever-changing environments.

**SUPPLY CHAIN**

**Omni-Channel Logistics**

Consumers are increasingly expecting to be able to buy products 24 hours a day, seven days a week; either online or instore; on multiple devices simultaneously; with the same level of customer service as shopping instore. This is demanding a change in the architecture of logistics. Traditional single and multi-channel logistic process chains of goods and service delivery (e.g. ‘product to premise’) are moving towards omni-channel logistics (being available 24 hours a day online, with multiple methods of delivery, at the convenience of the customer). These changes will affect marketing, merchandising, ordering, fulfilment and returns across multiple platforms.
The recent emergence of Amazon in the Australian market is likely to create significant disruption in e-commerce. Amazon's entry will create strong competition and put pressure on the current market.

Temperature and time-sensitive products will benefit from multi-modal transport methods and real-time, omni-channel logistical solutions. The existing workforce will need to be equipped with the necessary digital skills and higher-level skills if the benefits of this technology are to be fully realised.

**Sustainability and Energy Productivity**

There is increasing pressure to reduce greenhouse gas emissions and manage environmental compliance parameters more effectively. These are increasing the demand to employ sustainable business practices, including the use of new clean technology. New technologies and innovative approaches are continually being developed and implemented to address environmental issues such as vehicle emissions, energy consumption, fuel efficiency and streamlining operations through automation in facilities. Alternative fuels (including biogas, bioethanol, biodiesel), hybrid electric vehicles, and smaller vehicles capable of carrying greater capacity, are beginning to appear in everyday operations. These new energy-saving efforts are helping to achieve the Coalition of Australian Governments (COAG) target for 40 per cent improvement in energy productivity between 2015 – 2030. Tesla Motors has recently announced development of an electric truck called the Tesla-Semi. The company states the truck will deliver a substantial reduction in the cost of cargo transport, by reducing fuel consumption and CO₂ emissions and operational/maintenance costs when compared to conventional transport vehicles.

Companies are now required to focus more strongly on Environmental, Social and Governance (ESG) performance. These new performance criteria will require new approaches to workforce development and standards of performance. This will have a flow-on effect to workforce relations, safety and productivity, requiring more effort in human capital performance (upskilling and enhancing the workforce through training and development).

Supply chain sustainability extends beyond environmental compliance, it also encompasses workforce sustainability. Companies are looking to streamline operations through savings on resourcing and increasing productivity performance to ensure sustainability. An increasing societal focus on road safety will remain a focus into the future. This is reflected in the evolution of Chain of Responsibility and other safety measures.

The sustainability of operations has a trickle-down effect onto the workforce, increasing job competition and requiring workers to have knowledge and awareness of the regulatory obligations. These changes bring consequential impacts for the workforce, who will need to retrain and adapt to meet the changing skill needs.
Traceability

Tracking the identity of physical property in transit is going to be a significant business opportunity over the next decade. Logistics and supply chain companies are the key enablers that ensure retailers achieve inventory visibility and optimisation to meet customer demand.

The use of blockchain-based systems will significantly increase the traceability of goods along the supply chain. This technology distributes transactions across an open or closed ledger across a network of computers, and tracks these by consensus, enabling transparency and transaction history. This will add value by identifying the origin of goods, reducing fraudulent supply of fake goods, and enable higher levels of customer satisfaction. The impact of this technology (including further unforeseen technological changes) on the Transport and Logistics industry of the future cannot be underestimated.

SAFETY & REGULATORY ENVIRONMENT

Industry is focussed on achieving high levels of safety and effectiveness. The required sustainable operating practices and changes to regulations in the Chain of Responsibility are beginning to influence industry decisions. Over the past 34 years, there has been a 62 per cent reduction in the number of heavy vehicle fatalities, despite rapid growth of the workforce, and heavy vehicles on the road, over the same time period. Ongoing driver skill training and education in regulatory and safety requirements will be necessary to ensure those high levels of safety and efficiency are achieved.

The use of augmented and virtual reality (AR and VR respectively) and simulation-based training systems are being investigated by businesses to deliver training where it may not be financially viable or safe to conduct in the real-world. Nearly a third of businesses within the Transport and Logistics industry are investigating how to integrate VR to improve occupational health and safety training.

Any changes made to the regulatory environments within the Transport and Logistics industry directly affects the workforce. Companies will be required to upskill and retrain workers to meet these requirements, for example, new regulations in fatigue management and heavy vehicle operated competency. Consequently, the skills required by the workforce will need to keep pace with any future developments.
EMPLOYMENT AND SKILLS OUTLOOK
Quick Fact

Increase in volume and 8.2 per cent increase in spending on parcels by 2018.
EMPLOYMENT DEMOGRAPHICS
The following charts provide an overview of the Transport and Logistics workforce at a glance. These include age profiles, major occupations, gender-composition by employment type, workers by State/Territory, and the projected employment for the next five years.

TRANSPORT AND LOGISTICS INDUSTRY WORKFORCE BY STATE/TERRITORY

The Transport and Logistics workforce closely follows the general population distribution of Australia, although the less populous States/Territories are slightly underrepresented while the more populous States are slightly overrepresented.


TRANSPORT AND LOGISTICS INDUSTRY AGE PROFILE – 2006 TO 2016

Although the workforce has grown by nearly 17 per cent over the last 10 years, workers over 40 grew at twice the rate of workers under 40 (10.2 per cent) in the last 10 years.

TOP FIVE TRANSPORT AND LOGISTICS OCCUPATIONS BY EMPLOYMENT

While the number of Truck Drivers in the Transport industry has fallen since 2011, the number of Truck Drivers in all industries has risen 1.5 per cent over the same period. The Automobile Drivers, Bus and Coach Drivers, and Storepersons workforces have all increased strongly over the last ten years, while Courier and Postal Deliverers have grown by 1 per cent over the same time.


GENDER BY EMPLOYMENT TYPE

The proportion of women in the Transport and Logistics industry have remained relatively static since 1987, increasing by 1-2 per cent, while the proportion of women working part-time has grown moderately (from 5 per cent in 1987 to 8 per cent today). Over the same timeframe, the percentage of men working part-time in the industry has tripled.

PROJECTED AND HISTORICAL TRANSPORT AND LOGISTICS WORKFORCE (2005 – 2023)

All sub-sectors of the Transport and Logistics workforce are expected to grow moderately for the next five years, to 2023. The exception being Storage and Delivery which is projected to fall slightly, largely due to a decline in postal services.

EXPLANATORY NOTES

Census Data
Each respondent to the Census is asked to provide the industry of their employer at the location of where the person works. This question is designed to address the problem of single organisation operating in several industries, with the assumption being that the individual respondent is typically working in fewer industries than the company they work for. This approach aims to provide better industrial resolution in the data, however it is worth noting that the industry designation is dependent on the individual’s interpretation of the question. An example where this could provide misleading data might be a plumber in the Gas Supply industry describing their employer’s business (at the location that they are working) as plumbing which would therefore be counted in the Plumbing Services industry.

Labour Force Data
Outside of Census years, the size of an industry’s workforce is established by the Australian Bureau of Statistics using the Labour Force survey. This dataset provides a 30-year view of the industry where, like the Census, industry is assigned at the discretion of the individual respondent. Given that the survey is sample-based, it should also be understood that the smaller the industry being measured, the larger the margin of error.

The scope of the Labour Force survey is limited to the civilian population of Australia and therefore members of permanent defence forces are excluded from the survey.

IBISWorld Data
IBISWorld data is comprised from a variety of economic, demographic, government and company data, including the Australian Bureau of Statistics.
TRANSPORT AND LOGISTICS INDUSTRY SKILL SHORTAGES

On behalf of the Transport and Logistics IRC, AIS conducted an online survey for stakeholders, between 4 December and 16 January 2018. The IRC sought feedback on the current skill shortages and the reasons for the shortages, as perceived by industry stakeholders.

TRANSPORT AND LOGISTICS SKILL SHORTAGES

Over 80 per cent of employers reported experiencing a skills shortage in the last 12 months. The occupations reported as being in shortage were:

1. Truck Drivers
2. Educators, Trainers and Assessors
3. Supervisors/Managers
4. Schedulers
5. Forklift Drivers

REASONS FOR SHORTAGE

Employers identified the following reasons for the shortage with the most frequent response listed first:

1. Wages/salaries considered too low
2. Unattractive job / poor industry image
3. Ageing workforce / current staff retiring
4. Cost/time to achieve the required qualification
5. Competition from other organisations

Quick Fact

185,408 BUSINESSES

The number of businesses in Australia’s Transport and Logistics industry*
PRIORITY SKILLS
The priority skills of the Transport and Logistics industry are drawn from stakeholder responses to the Transport and Logistics IRC Skills Forecast survey conducted between 4 December and 16 January 2018.

SKILL CATEGORY
In order of priority to the industry, the following skills were identified from the survey as the most important for the Transport and Logistics workforce within the next three to five years.

GENERIC SKILLS
The Generic Skills listed are provided to AIS by the Department of Education and Training. Within the survey, the IRC asks stakeholders to rank these skills in order of importance to the industry. Ranking of the 12 generic workforce skills in order of importance to the Transport and Logistics industry are as follows:

1. Managerial/Leadership
2. Language, Literacy and Numeracy (LLN)
3. Learning agility / Information literacy / Intellectual autonomy and self-management
4. Technology
5. Design mindset / Thinking critically / System thinking / Solving problems
6. Customer service / Marketing
7. Communication / Virtual collaboration / Social intelligence
8. Data analysis
9. Science, Technology, Engineering, Mathematics (STEM)
10. Environmental and Sustainability
11. Financial
12. Entrepreneurial
WORKFORCE SUPPLY SIDE CHALLENGES AND OPPORTUNITIES

AGEING WORKFORCE, INDUSTRY ATTRACTION AND WORKFORCE FLEXIBILITY

With a large proportion of workers set to retire in the next two decades, the industry currently faces a very serious recruitment challenge\(^{25}\). The average age of all workers in the Transport and Logistics industry is 45, which has increased by two years since 2006\(^{26}\). Individual occupations within the industry have variation from this figure. For example, the average age of truck drivers in Australia is 47, while the average age of bus and coach drivers is 57\(^{27}\).

Attracting, training and retaining young workers to undertake a career in the Transport and Logistics industry is proving to be a challenge. Stakeholders report that part of the difficulty attracting young drivers is that the occupation isn't seen as a professional position; careers such as bus and truck driving are often perceived negatively. Coupled with the industry's average perception in the broader community, this amounts to a significant barrier. Compounding the issue is the increased use of sub-contracting and other forms of employment within the industry, as well as career progression being limited in driving roles and career pathways not well understood.

Planning viable recruitment strategies for succession and preparing a new cohort of workers is required to ensure industry can keep up with demand. This could include an effort by industry to target and attract young people to join the workforce at school via a range of programmes already available. Promoting the industry and the technological advances being made to young people is essential to assist in reducing the age-gap within the industry.

PERMITS AND ACCESS FOR TRANSPORT OPERATORS

Industry feedback has expressed the need to develop competency in on-line permit applications to achieve compliance with the national regulator and local council requirements. Changes to the regulatory framework in the Transport and Logistics industry now support on-line applications for permits and access. This requires operators to have the skills and knowledge to complete these applications to a compliant standard on-line (across all States and Territories). Improving the digital literacy of the Transport and Logistics industry workforce will enable the adoption of fast tracking permit applications and ensure the permits are executed correctly.
DIVERSITY

The Transport and Logistics industry consists of widely diverse businesses and a diverse range of employment opportunities. Workforce diversity helps promote cultural awareness and has a positive effect on the workforce.

Despite the industry’s broad range of diversity in general, this does not directly translate to diverse workforce demographics. Most employees in the Transport and Logistics workforce are male. Despite the industry experiencing strong employment growth of 28 per cent in the last decade, the Australian Bureau of Statistics reveals 20 per cent of employees in the wider Transport and Logistics industry are female in 2017. This proportion of male-to-female employment has largely remained the same over the last 30 years.

Stakeholders report a perception that most work undertaken is stereotypically ‘masculine’, while women are predominately employed in support roles such as administration, human resources, procurement, and finance.

While advances in technology have arguably increased employment opportunities for women, barriers still exist for certain job roles considered too dangerous or impractical for females. Despite the lower representation of women in the workforce, females in Transport and Logistics have higher education levels than their male counterparts on average; around 31 per cent have a diploma or higher, compared with 24 per cent of males.

As technology embeds itself into the industry further, opportunities for both genders to have stable careers in the industry at any level will increase. Initiatives to make roles more flexible and attractive to sections of the broader community not traditionally engaged in the Transport and Logistics workforce would be highly beneficial for the longevity and sustainability of the industry workforce.
REFERENCES

15. Logistics & Materials Handling (2017). Deutsche Post DHL and Huawei to work together on IoT supply chain tech.
Predicted increase in road transport over the next 20 years §

75%

ROAD TRANSPORT

Quick Fact
PROPOSED SCHEDULE OF WORK
KEY DRIVERS

STEVEDORING
Regulatory changes and large investments in technology, are driving this review. Technology incorporation in Stevedoring now sees automation growing in most of the areas of stevedoring operations. Effective use of these new technologies by stevedoring workers will reduce costs and improve efficiency for industry operators on Australian ports.

Relevant Australian Maritime Safety Authority (AMSA) regulatory requirements will also be incorporated into the three Stevedoring qualifications.

HEAVY VEHICLE DRIVER SAFETY AND PROFESSIONALISATION (SAFE DRIVING SKILLS UNITS OF COMPETENCY AND SKILL SETS)
Reducing the number of heavy vehicle incidents and accidents will ensure higher levels of safety for all road users. The Road Transport industry plays a key role in the Australian transport system, with heavy vehicles carrying large volumes of goods over many billions of kilometres each year; therefore, providing the skills and knowledge to operate safely is critical to improve heavy vehicle driver and community safety on Australian roads.

Technology advancements in heavy vehicles, including telematics, are designed to improve safety and deliver efficiencies in operations. New skills are needed to enable heavy vehicle drivers, and transport businesses, to operate with improved levels of safety, while ensuring compliance with the various jurisdictional legal requirements that apply to the industry.

PERMITS AND ACCESS FOR TRANSPORT OPERATORS
Arrangements for the Road Transport industry to apply for heavy vehicle permits has changed under the National Heavy Vehicle Regulator (NHVR), with the implementation of an online portal. Permits are required for vehicles and loads travelling on the nation's roads that are outside the permissible standards, such as over mass and over height. Permit applications vary depending on class, jurisdiction (state/territory, local council), and routes.

Identifying when a permit is required and how to progress the online application are important skills needed to ensure compliance with the permit process, and applicable legal requirements. Further, these skills will reduce costs for transport operators and deliver greater efficiency to customers.
PROPOSED RESPONSES

STEVEDORING
The revision of the three qualifications, Certificate II, III and IV in Stevedoring, will ensure operators stay productive and have the capability to maximise efficiencies from the technology being used in this industry.

Australia’s reliance on the Stevedoring industry continues to grow as the number of container movements increases annually. Stevedoring enterprises are continuing to invest in new technologies and equipment, with a trend towards automation, to assist in handling the additional capacity, whilst remaining competitive. Automated equipment, such as automated straddles and automated stacking cranes, have been introduced in the industry, and will impact on the skills needs of the Stevedoring industry.

This project will also address AMSA regulatory changes regarding the requirements for roll-on roll-off and break-bulk cargo.

DRIVER SAFETY AND PROFESSIONALISATION (SAFE DRIVING SKILLS UNITS OF COMPETENCY AND SKILL SETS)
A revision of the necessary skills and knowledge will focus on ensuring heavy vehicle drivers are able to operate with higher levels of safety and compliance. The differentiating skill requirements for safe operations of long and short haul drivers will be addressed.

Heavy vehicles have different safety requirements to other vehicles. There are specific road rules and added responsibilities that apply to drivers of heavy vehicles. Heavy vehicle drivers need to have the skills and knowledge to operate and interact with other traffic in all road conditions.

PERMITS AND ACCESS FOR TRANSPORT OPERATORS
This project will provide the skills and knowledge to ensure that transport enterprises and operators can efficiently and compliantly apply for permit access to move otherwise non-permissible loads and vehicles on the nation’s roads. These skills will be incorporated into a Skill Set, using relevant Units of Competency.
PROPOSED SCHEDULE OF WORK

2018-19

Stevedoring - Review
Regulatory changes and technology advancements, which are in part driven by the application of big data, have led to changes in the skills required in Stevedoring. To maximise the gains offered by these productivity developments, there will be a need to review the three current Stevedoring qualifications to incorporate the required skills and ensure that the employment pathways are clearly defined. The review will also ensure that cargo related regulatory requirements of AMSA Marine Orders 32, 41, 42 and 43 are effectively addressed.

Heavy Vehicle Driver Safety and Professionalisation (Safe Driving Skills Units and Skill Sets) - Review
In response to the incidents involving heavy vehicles, it is paramount that drivers have the skills and knowledge to operate and interact with other traffic in all road conditions. Development of a ‘Driver Professionalisation’ skills strategy aimed at better equipping new and long-term drivers with the skills to ensure their safety and the safety of others on the roads. The review of safe driving skills will include relevant Units of Competency and Skill Sets.

Permits and Access for Transport operators - New Skill Set
The regulatory changes in the Transport and Logistics industry require on-line applications for permits and access. This requires operators to have the skills and knowledge to compliantly complete permit and access applications on line across all States and Territories.

2019-20

Owner Driver - Skill Set Review
Owner Drivers make up a proportion of Road Transport workers and, as small business operators, they require a broader range of skills and knowledge, that includes business administration, finance and compliance. Identification of new operating technologies in heavy vehicles that will assist their business and enable contract arrangements with larger organisations to achieve compliant operation.

Driving Operations - Review
The three Driving Operations qualifications (Certificates II, III and IV) will be reviewed to incorporate the technology advancements in heavy vehicles. Incorporated in the review will be career pathways in heavy vehicle driving, warehousing and logistics across supply chains.
2020-21

**TLI Transport and Logistics Training Package**

There are no TLI Transport and Logistics Training Package products currently identified for review or development during this forecast period.

Where imported Units of Competency are identified as either deleted or superseded, the IRC may elect to revise the affected qualification(s) through the IRC Minor Upgrade process.

2021-22

**TLI Transport and Logistics Training Package**

TLI Transport and Logistics Training Package qualifications, Skill Sets and Units of Competency that have not been subject to review or development between 2018 and 2021, will be reviewed in this period.
STEVEDORING - REVIEW

Description
Review the Stevedoring qualifications, Skill Sets and associated Units of Competency to include technological advancements and ensure alignment with regulatory requirements (Marine Orders). Where qualifications contain Units of Competency that are in multiple qualifications being revised they will only be revised once in the process.

Rationale
Regulatory requirements and technology advancements in this sector have led to changes to the skills and knowledge to safely work in Stevedoring (see Safety and Regulatory Environment, page 19). Advancements in the design of container ships sees an increase in their size and overall capacity, which in turn has led to changes in the skills needs of stevedores responsible for loading and unloading vessels (see section Technological Innovations, page 15). To maximise the gains offered by these productivity developments, there will be a need to review the three current Stevedoring qualifications to incorporate the required skills. The review will also ensure that cargo related regulatory requirements of AMSA Marine Orders 32, 41, 42 and 43 are effectively addressed.

Ministers’ Priorities Addressed
• The project does not propose removal of obsolete and superfluous qualifications from the National Register
• The project will ensure that more information is made available about Stevedoring Operations and training delivery to training providers
• The project will address the needs of individuals and industry and provide transferable skills from one occupation to another in the Transport and Logistics and Maritime industries
• The project will support creation of Units of Competency that can be owned and used by multiple industry sectors
• The project does not propose the development of additional Skill Sets
• The project does not propose the incorporation of existing accredited course materials into the TLI Transport and Logistics Training Package

Consultation Plan
• AIS will undertake consultation on the IRCs behalf with all State Training Authorities and other key national stakeholders
• Seek public feedback and input into development of material through the project's duration
• Communicating to enterprises, State/Territory Training authorities, State/Territory Industry Training Advisory Bodies, Peak Bodies, Registered Training Authorities (RTOs) and other interested parties, of the establishment of the project
• Conducting initial consultation with stakeholders to identify and invite key representatives to establish the Technical Advisory Committee (TAC) and posting information about the project on the AIS website and newsletter
• Conduct face to face consultation sessions as required
• Conducting the first TAC meeting to explain the process and gather comments/feedback
• Communicating the process of drafting, identified Training Package material (Qualifications/ Units of Competency/Skill Sets), then verifying and validating this material with stakeholders through email, the AIS website and the AIS newsletter for wider stakeholder involvement, throughout the review process
• Continuing communication on the project via the AIS website and newsletter

Scope of Project
To incorporate the Regulatory requirements where applicable and include the relevant technology changes in the qualifications, Skill Sets and Units of Competency.

The Training Package is planned to be reviewed and developed from August 2018, with a Case for Endorsement planned for submission by 31 October 2019.

Training Package
TLI - Transport and Logistics Training Package Release 3.1

Qualifications
Three qualifications requiring review:
• TLI21416 - Certificate II in Stevedoring
• TLI33516 - Certificate III in Stevedoring
• TLI41715 - Certificate IV in Stevedoring Operations

Units of Competency
Units of Competency to be revised:
• 73 Units of Competency requiring review (See Appendix A)
• Four new Units of Competency requiring development (See Appendix A)

Skill Sets
Ten Skill Sets to be reviewed (See Appendix A)
HEAVY VEHICLE DRIVER SAFETY AND PROFESSIONALISATION (SAFE DRIVING SKILLS UNITS AND SKILL SETS) - REVIEW

Description
Review of Skill Sets and Units of Competency that include skills and knowledge around safe commercial operation of a heavy vehicles. Where qualifications contain Units of Competency that are in multiple qualifications being revised they will only be revised once in the process.

Rationale
Safety is driving this review with the support of industry and State and Territory licencing authorities. Crashes involving heavy vehicles often result in more serious road trauma outcomes, in part because when a heavy vehicle is involved in a crash their vehicle mass elevates the crash forces involved and hence increases the severity of the crash. Evidence suggests, that a driver that has the appropriate skills and knowledge is better equipped to make sound safe decisions, see page 19.

Over one third (35 per cent) of heavy vehicles involved in single vehicle heavy vehicle crashes had a driver error recorded for that heavy truck.

The most common driver errors recorded were:

- Loss of control
- Avoiding another vehicle
- Avoiding an animal

This will ensure that the training products address the findings of traffic incident investigation findings involving heavy vehicles to reduce incidents of such events, including the following:

- Day of week, time of day (relative to the Drivers Roster cycle)
- Location characteristics of the road
- Behavioural factors involved (speed, fatigue, frustration)
- Vehicle factors involved
- Road environment factors
- Heavy vehicle driver age and State of licence

Ministers’ Priorities Addressed

- The project will not propose removal of obsolete and superfluous qualifications from the National Register
- The project will ensure that more information is made available about Driver Safety and Professionalisation, training and delivery to training providers
- The project will address the needs of individuals and industry and provide transferable skills from one occupation to another in the Transport and Logistics industry
- The project will support creation of Units of Competency that can be owned and used by multiple industry sectors
The project does propose the development of additional Skill Sets
The project does not propose the incorporation of existing accredited course materials into the TLI Transport and Logistics Training Package

Consultation Plan
- AIS will undertake consultation on the IRCs behalf with all State Training Authorities and other key national stakeholders
- Seek public feedback and input into development of material through the project's duration
- Communicating to enterprises, State/Territory Training authorities, State/Territory Industry Training Advisory Bodies, Peak Bodies, Registered Training Authorities (RTOs) and other interested parties, of the establishment of the project
- Conducting initial consultation with stakeholders to identify and invite key representatives to establish the Technical Advisory Committee (TAC) and posting information about the project on the AIS website and newsletter
- Conduct face to face consultation sessions as required
- Conducting the first TAC meeting to explain the process and gather comments/feedback
- Communicating the process of drafting, identified Training Package material (Qualifications/ Units of Competency/Skill Sets), then verifying and validating this material with stakeholders through email, the AIS website and the AIS newsletter for wider stakeholder involvement, throughout the review process
- Continuing communication on the project via the AIS website and newsletter

Scope of Project
Incorporate the required skills and knowledge to address the findings of traffic incident investigations involving heavy vehicles. This includes safe driving skills and interaction with small vehicles (cars) and pedestrians on the road.

The Training Package is planned to be developed from August 2018, with a Case for Endorsement planned for submission by 31 October 2019.

Training Package
TLI – Transport and Logistics Training Package Release 3.1

Qualifications
Nil to be reviewed

Units of Competency
Units of Competency to be revised:
- 25 Units of Competency requiring review (See Appendix B)

Skill Sets
Six Skill Sets to be revised (See Appendix B)
PERMITS AND ACCESS FOR TRANSPORT OPERATORS - SKILL SET DEVELOPMENT

Description
Development of a Skill Set for transport operators who are required to use the National Heavy Vehicle Regulator (NHVR) permits. This will give the operators the skills and knowledge to successfully apply for and execute access permits.

Rationale
Regulatory compliance for transport operators operating in areas requiring the use of an access permit (page 27).

Ministers’ Priorities Addressed
• The project will not propose removal of obsolete and superfluous qualifications from the National Register
• The project will ensure that more information is made available about Permits and Access for Transport Operators, training delivery to training providers
• The project will address the needs of individuals and industry and provide transferable skills from one occupation to another in the Transport and Logistics industry
• The project will support creation of Units of Competency that can be owned and used by multiple industry sectors
• The project does propose the development of additional Skill Sets
• The project does not propose the incorporation of existing accredited course materials into the TLI Transport and Logistics Training Package

Consultation Plan
• AIS will undertake consultation on the IRCs behalf with all State Training Authorities and other key national stakeholders
• Seek public feedback and input into development of material through the project's duration
• Communicating to enterprises, State/Territory Training authorities, State/Territory Industry Training Advisory Bodies, Peak Bodies, Registered Training Authorities (RTOs) and other interested parties, of the establishment of the project
• Conducting initial consultation with stakeholders to identify and invite key representatives to establish the Technical Advisory Committee (TAC) and posting information about the project on the AIS website and newsletter
• Conduct face to face consultation sessions as required
• Conducting the first TAC meeting to explain the process and gather comments/feedback
• Communicating the process of drafting, identified Training Package material (Qualifications/ Units of Competency/Skill Sets), then verifying and validating this material with stakeholders through email, the AIS website and the AIS newsletter for wider stakeholder involvement, throughout the review process
• Continuing communication on the project via the AIS website and newsletter

Scope of Project
Develop a Skill Set and Unit of Competency to meet the National Heavy Vehicle Law (regulatory requirements) for heavy vehicle permit application and use in Australia.

The Training Package is planned to be developed from September 2018, with a Case for Endorsement planned for submission by 31 October 2019.

Training Package

Qualifications
Nil

Units of Competency
Two Units of Competency requiring development (See Appendix C)

Skill Sets
One new Skill Set requiring development (See Appendix C)
## APPENDIX A

**REVIEW TLI21416 - CERTIFICATE II IN STEVEDORING, TLI33516 - CERTIFICATE III IN STEVEDORING, AND TLI41715 - CERTIFICATE IV IN STEVEDORING OPERATIONS**

<table>
<thead>
<tr>
<th>Qualification Code</th>
<th>Qualification Code</th>
<th>Skill Set Code</th>
<th>Skill Set title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLI21416</td>
<td>Certificate II in Stevedoring</td>
<td>TLISS00169</td>
<td>Stevedoring Clerical Skill Set</td>
</tr>
<tr>
<td>TLI33516</td>
<td>Certificate III in Stevedoring</td>
<td>TLISS00170</td>
<td>Stevedoring Crane Operations Skill Set</td>
</tr>
<tr>
<td>TLI41715</td>
<td>Certificate IV in Stevedoring Operations</td>
<td>TLISS00171</td>
<td>Stevedoring Equipment Controller Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00172</td>
<td>Stevedoring Equipment Operations/Light Load Shifting Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00173</td>
<td>Stevedoring Equipment Operations/Specialised Load Shifting Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00174</td>
<td>Stevedoring Gantry Crane Operations Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00175</td>
<td>Stevedoring Operation Induction and Safety Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00176</td>
<td>Stevedoring Reefer Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00177</td>
<td>Stevedoring Ship Mounted Crane Operations Skill Set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLISS00178</td>
<td>Stevedoring Team Leader Skill Set</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Unit Code</th>
<th>New Units Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLIXXXX</td>
<td>Prepare for semi-autonomous operation</td>
</tr>
<tr>
<td>TLIXXXX</td>
<td>Co-ordinate semi-autonomous operations</td>
</tr>
<tr>
<td>TLIXXXX</td>
<td>Optimising Stevedoring operations through semi-autonomous equipment</td>
</tr>
<tr>
<td>TLIXXXX</td>
<td>Co-ordinate multi modal transport operations in a Stevedoring environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Units Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLI2003</td>
<td>Connect and disconnect reefer units</td>
</tr>
<tr>
<td>TLI2009</td>
<td>Complete and check import/export documentation</td>
</tr>
<tr>
<td>TLI2014</td>
<td>Use product knowledge to complete work operations</td>
</tr>
<tr>
<td>TLI2050</td>
<td>Lash and unlash cargo and containers</td>
</tr>
<tr>
<td>TLI3002</td>
<td>Maintain container/cargo records</td>
</tr>
<tr>
<td>TLI3004</td>
<td>Process receipt and delivery of containers and cargo</td>
</tr>
<tr>
<td>TLI3008</td>
<td>Transfer cargo</td>
</tr>
<tr>
<td>TLI3055</td>
<td>Coordinate terminal/wharf equipment operations</td>
</tr>
<tr>
<td>TLI4005</td>
<td>Check and evaluate records and documentation</td>
</tr>
<tr>
<td></td>
<td>Code</td>
</tr>
<tr>
<td>---</td>
<td>------------</td>
</tr>
<tr>
<td>10</td>
<td>TLIA4006</td>
</tr>
<tr>
<td>11</td>
<td>TLIA4040</td>
</tr>
<tr>
<td>12</td>
<td>TLIA4063</td>
</tr>
<tr>
<td>13</td>
<td>TLIB2001</td>
</tr>
<tr>
<td>14</td>
<td>TLIB3011</td>
</tr>
<tr>
<td>15</td>
<td>TLIB3012</td>
</tr>
<tr>
<td>16</td>
<td>TLIB3013</td>
</tr>
<tr>
<td>17</td>
<td>TLIB3016</td>
</tr>
<tr>
<td>18</td>
<td>TLIB3017</td>
</tr>
<tr>
<td>19</td>
<td>TLIB1001</td>
</tr>
<tr>
<td>20</td>
<td>TLIB2003</td>
</tr>
<tr>
<td>21</td>
<td>TLIB2004</td>
</tr>
<tr>
<td>22</td>
<td>TLIB2012</td>
</tr>
<tr>
<td>23</td>
<td>TLIB2013</td>
</tr>
<tr>
<td>24</td>
<td>TLIB2021</td>
</tr>
<tr>
<td>25</td>
<td>TLIB2022</td>
</tr>
<tr>
<td>26</td>
<td>TLIB2047</td>
</tr>
<tr>
<td>27</td>
<td>TLIB3011</td>
</tr>
<tr>
<td>28</td>
<td>TLIB3035</td>
</tr>
<tr>
<td>29</td>
<td>TLIB3040</td>
</tr>
<tr>
<td>30</td>
<td>TLIB3043</td>
</tr>
<tr>
<td>31</td>
<td>TLIB3044</td>
</tr>
<tr>
<td>32</td>
<td>TLIB3047</td>
</tr>
<tr>
<td>33</td>
<td>TLIB4008</td>
</tr>
<tr>
<td>34</td>
<td>TLIB4009</td>
</tr>
<tr>
<td>35</td>
<td>TLIB4032</td>
</tr>
<tr>
<td>36</td>
<td>TLIB1005</td>
</tr>
<tr>
<td>37</td>
<td>TLIB2007</td>
</tr>
<tr>
<td>38</td>
<td>TLIB2008</td>
</tr>
<tr>
<td>39</td>
<td>TLIB3002</td>
</tr>
<tr>
<td>40</td>
<td>TLIB3015</td>
</tr>
<tr>
<td>41</td>
<td>TLIB3016</td>
</tr>
<tr>
<td>42</td>
<td>TLIB4006</td>
</tr>
<tr>
<td>43</td>
<td>TLIF1001</td>
</tr>
<tr>
<td>44</td>
<td>TLIF1002</td>
</tr>
<tr>
<td>45</td>
<td>TLIF2006</td>
</tr>
<tr>
<td>46</td>
<td>TLIF2018</td>
</tr>
<tr>
<td>47</td>
<td>TLIF2068</td>
</tr>
<tr>
<td>48</td>
<td>TLIF3003</td>
</tr>
<tr>
<td>49</td>
<td>TLIF3013</td>
</tr>
<tr>
<td>50</td>
<td>TLIF3022</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>51</td>
<td>TLIF3060</td>
</tr>
<tr>
<td>52</td>
<td>TLIF3084</td>
</tr>
<tr>
<td>53</td>
<td>TLIF4007</td>
</tr>
<tr>
<td>54</td>
<td>TLIF4014</td>
</tr>
<tr>
<td>55</td>
<td>TLIG1001</td>
</tr>
<tr>
<td>56</td>
<td>TLIG3002</td>
</tr>
<tr>
<td>57</td>
<td>TLIG4006</td>
</tr>
<tr>
<td>58</td>
<td>TLJ2001</td>
</tr>
<tr>
<td>59</td>
<td>TLJ3002</td>
</tr>
<tr>
<td>60</td>
<td>TLK2010</td>
</tr>
<tr>
<td>61</td>
<td>TLIL1001</td>
</tr>
<tr>
<td>62</td>
<td>TLIL2008</td>
</tr>
<tr>
<td>63</td>
<td>TLIL2031</td>
</tr>
<tr>
<td>64</td>
<td>TLIL4005</td>
</tr>
<tr>
<td>65</td>
<td>TLIL4010</td>
</tr>
<tr>
<td>66</td>
<td>TLIL4033</td>
</tr>
<tr>
<td>67</td>
<td>TLIM4004</td>
</tr>
<tr>
<td>68</td>
<td>TLIO2021</td>
</tr>
<tr>
<td>69</td>
<td>TLIO3016</td>
</tr>
<tr>
<td>70</td>
<td>TLIP4001</td>
</tr>
<tr>
<td>71</td>
<td>TLIP4003</td>
</tr>
<tr>
<td>72</td>
<td>TLIP4005</td>
</tr>
<tr>
<td>73</td>
<td>TLIU1009</td>
</tr>
</tbody>
</table>
# APPENDIX B

## DRIVER SAFETY AND PROFESSIONALISATION (SAFE DRIVING SKILLS UNITS, SKILL SETS) - REVIEW

<table>
<thead>
<tr>
<th>Skill Set Code</th>
<th>Skill Set Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TLISS00160  LP Gas Tanker Driver</td>
</tr>
<tr>
<td>2</td>
<td>TLISS00181  Open Road Operator</td>
</tr>
<tr>
<td>3</td>
<td>TLISS00161  Owner Driver</td>
</tr>
<tr>
<td>4</td>
<td>TLISS00155  Road Safety</td>
</tr>
<tr>
<td>5</td>
<td>TLISS00157  Road Transport Driver</td>
</tr>
<tr>
<td>6</td>
<td>TLISS00156  Tow Truck Driver</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review Unit Code</th>
<th>Review Unit Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TLIB2079  Set up and secure a towing situation</td>
</tr>
<tr>
<td>2</td>
<td>TLIC0003  Operate LP gas tanker</td>
</tr>
<tr>
<td>3</td>
<td>TLIC1051  Operate commercial vehicle</td>
</tr>
<tr>
<td>4</td>
<td>TLIC2002  Drive light rigid vehicle</td>
</tr>
<tr>
<td>5</td>
<td>TLIC3003  Drive medium rigid vehicle</td>
</tr>
<tr>
<td>6</td>
<td>TLIC3004  Drive heavy rigid vehicle</td>
</tr>
<tr>
<td>7</td>
<td>TLIC3005  Drive heavy combination vehicle</td>
</tr>
<tr>
<td>8</td>
<td>TLIC3036  Apply safe car driving behaviours</td>
</tr>
<tr>
<td>9</td>
<td>TLIC3037  Apply safe heavy vehicle driving behaviours</td>
</tr>
<tr>
<td>10</td>
<td>TLIC3042  Operate coach/bus</td>
</tr>
<tr>
<td>11</td>
<td>TLIC3063  Operate vehicle carrying special loads</td>
</tr>
<tr>
<td>12</td>
<td>TLIC4006  Drive multi-combination vehicle</td>
</tr>
<tr>
<td>13</td>
<td>TLIF0075  Demonstrate awareness of interacting with other road users</td>
</tr>
<tr>
<td>14</td>
<td>TLIF0076  Demonstrate awareness of factors to reduce road harm</td>
</tr>
<tr>
<td>15</td>
<td>TLIF0077  Demonstrate knowledge of risk factors and consequences in interacting with other road users</td>
</tr>
<tr>
<td>16</td>
<td>TLIF0078  Recognise motor vehicle road crash risks and post-crash actions</td>
</tr>
<tr>
<td>17</td>
<td>TLIF0079  Select a safe vehicle</td>
</tr>
<tr>
<td>18</td>
<td>TLIF2106  Respond to emergencies and abnormal situations when driving medium/heavy on-track vehicles</td>
</tr>
<tr>
<td>19</td>
<td>TLIF3085  Apply local incident response procedures</td>
</tr>
<tr>
<td>20</td>
<td>TLIF4007  Implement and coordinate accident-emergency procedures</td>
</tr>
<tr>
<td>21</td>
<td>TLIF4069  Monitor and respond to traffic flow</td>
</tr>
<tr>
<td>22</td>
<td>TLIF4095  Apply work health and safety requirements for driving operations</td>
</tr>
<tr>
<td>23</td>
<td>TLIM0002  Conduct heavy vehicle learner driver training</td>
</tr>
<tr>
<td>24</td>
<td>TLIM4001  Develop safe car driving behaviours in others</td>
</tr>
<tr>
<td>25</td>
<td>TLIM4002  Develop safe heavy vehicle driving behaviours in others</td>
</tr>
</tbody>
</table>
# APPENDIX C

PERMITS AND ACCESS FOR TRANSPORT OPERATORS SKILL SET DEVELOPMENT

<table>
<thead>
<tr>
<th>New Skill Set Code</th>
<th>New Skill Set Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLISSXXXXX</td>
<td>TBA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Unit Code</th>
<th>New Unit Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLIXXXX</td>
<td>TBA</td>
</tr>
<tr>
<td>TLIXXXX</td>
<td>TBA</td>
</tr>
</tbody>
</table>
AUSTRALIAN INDUSTRY STANDARDS

Australian Industry Standards (AIS) provides high-quality, professional secretariat services to the Transport and Logistics IRC in our role as a Skills Service Organisation. AIS provide services to eleven allocated IRCs which cover Aviation, Corrections, Gas, Electricity Supply (Generation and Transmission, Distribution and Rail), Electrotechnology, Maritime, Public Safety (including Police, Fire and Emergency Services, Defence), Rail, Transport and Logistics, and Water industries. AIS supports these important industry sectors using our world class in-house capability and capacity in technical writing, quality assurance, project management and industry engagement in the production of Training Packages.

AIS was established in early 2016, 20 years after its predecessor the Transport and Logistics Industry Skills Council (TLISC) was established in 1996. More information about AIS can be found at http://www.australianindustrystandards.org.au.

- We support industry growth and productivity through our modern innovative approach to establishing skills standards
- We provide high-quality, professional secretariat services to help our allocated industry reference committees develop the skills that industry needs
- We partner with industry to shape the workforce of the future