



## Australian Government

### Department of Infrastructure and Regional Development

Bureau of Infrastructure, Transport and Regional Economics



## National profile of Transport, postal and warehousing workers

### At a glance

- This Information Sheet provides a national profile of persons employed in the Transport, postal and warehousing (TPW) industry, based on data from the Australian Bureau of Statistics' (ABS) *Census of Population and Housing* for 2006 and 2011.
- The focus on TPW employment means that people whose job involves transport-related duties are excluded if they work for a business in a different industry, which may undertake transport activity for its own use or on a for-hire basis. The TPW industry accounts for about half of businesses total transport vehicle running expenses and about half of employment in a set of ten occupations that perform transport and storage duties. These measures suggest that the Manufacturing, Construction, Mining, Retail trade and Wholesale trade industries also undertake considerable transport activity.
- Of the 479 181 persons that the census identifies as being employed in Australia's TPW industry in 2011, 49 per cent were employed in the Road transport sub-industry (principally in Road freight transport). Other key industries are Postal and courier pick-up and delivery services (13 per cent), Transport support services (12 per cent), Air and space transport (9 per cent) and Rail transport (9 per cent).
- Between 2006 and 2011, the TPW industry added an additional 51 400 employed persons. The main industry contributors to this growth were Road transport (which added 21 900 employed persons), Postal and courier pick-up and delivery services (8 300) and Rail transport (7 700).
- The TPW industry has a predominantly male workforce, with 77 per cent of jobs being held by males, compared to 53 per cent of jobs in the overall economy.
- As of 2011, 22.9 per cent of TPW workers nationally were aged 55 and over, which is considerably higher than the all-industry figure of 17.6 per cent. The TPW workforce has been ageing more rapidly than the overall workforce—from 2006 to 2011, the proportion aged 55 and over rose by 3.5 percentage points in TPW, compared to a 2.5 percentage point rise for total employment.
- Most people who work in the TPW industry are employed on a full-time basis (78 per cent). While a relatively high proportion reported working 49 or more hours per week, this proportion declined by 2.5 percentage points between 2006 and 2011 (from 29.3 to 26.8 per cent).
- Machinery operators and drivers contribute 42 per cent of TPW employment, compared to 7 per cent of total employment. Clerical and administrative workers are also over-represented within TPW.
- People employed in TPW are generally less educated than the average Australian worker—44 per cent hold a recognised post-school qualification (compared to 58 per cent of all employed persons), while 12 per cent hold bachelor degree or higher qualifications (compared to 26 per cent of all employed persons). However, educational attainment did improve from 2006 to 2011, with 89 per cent of the additional TPW workers holding recognised post-school qualifications.
- Average weekly incomes of full-time workers are about 5 per cent lower in the TPW industry (compared to the all-industry average), while median incomes are about 3 per cent lower.

## Introduction

This Information Sheet provides a national profile of persons employed in the Transport, postal and warehousing (TPW) industry, based on data from the Australian Bureau of Statistics' (ABS) *Census of Population and Housing* for 2011. It provides details of the sub-industries in which TPW workers are employed, their employment status, hours worked, gender, age, occupation, educational qualifications, income and commuting behaviour. In addition to providing this national snapshot of the characteristics of TPW workers in 2011, the Information Sheet also describes some of the key changes that occurred between 2006 and 2011, such as the ageing and upskilling of the TPW workforce.

The TPW industry is a significant contributor to the national economy, accounting for 5.1 per cent (or \$72.9 billion) of value added in 2012–13 (ABS 2013a) and employing 582 400 persons as of August 2013 (ABS 2013b).<sup>1</sup> This study aims to improve understanding of the current characteristics of the TPW workforce and how the workforce is evolving over time. This national profile complements the detailed spatial analysis of TPW employment that is presented in BITRE Information Sheet 58 *Major transport employment hubs* (BITRE 2014). It provides valuable contextual information for industry and for those involved in formulating policy for the transport and infrastructure sector or its workforce.

## Data sources

The principal data source for this study is the ABS *Census of Population and Housing* for 2011 and 2006. Census employment data provides a count of the total number of employed persons aged 15 and over, irrespective of whether they are working on a full-time or part-time basis.

The industry disaggregation of employment is based on the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (ABS 2006), and the analysis focuses on industry division I—Transport, postal and warehousing. The focus on employment in the TPW industry means that people whose job involves transport-related duties are excluded if they work for a business that is classified to a different industry. The potential implications of this issue are explored in the following section.

Place of usual residence data is used to ensure maximum coverage of people employed in the TPW industry, many of whom do not have a fixed place of work. While the Information Sheet focuses on place of usual residence data, the analysis of commuting behaviour does draw on place of work data to a limited extent.

Counts of employed persons from the ABS census are consistently lower than counts from the ABS *Labour Force Survey*, which provides Australia's official measure of employment.<sup>2</sup> According to the 2011 census, there were 10.058 million employed persons in Australia, which is 11 per cent lower than the *Labour Force Survey* estimate of 11.344 million for August 2011 (ABS 2013b). The 2011 census identified 479 181 persons employed in the TPW industry—this is 18 per cent lower than the *Labour Force Survey* estimate of 582 400 for August 2011, which has a 95 per cent confidence interval of plus or minus 3 per cent (ibid). Therefore, the census data presented in this Information Sheet will provide a conservative estimate of TPW employment. Census data was nevertheless preferred to *Labour Force Survey* data for this study as it is better able to support a range of detailed disaggregations of TPW employment (without sacrificing reliability).

## Identifying transport workers

This Information Sheet provides a national profile of persons employed by businesses that are coded by the ABS to the ANZSIC Transport, postal and warehousing industry. Businesses are coded to the TPW industry when their primary activity is in transport and/or storage (ABS 2011). However, significant transport activity occurs in other ANZSIC industries, such as Mining, Manufacturing, Construction, Retail trade and Wholesale trade. This non-TPW transport activity may be conducted by businesses for their own use (own-account transportation<sup>3</sup>) or on a for-hire basis.

<sup>1</sup> BITRE (2014) provides further information on the economic significance of the TPW industry, and how this has changed over time.

<sup>2</sup> ABS (2012a) outlines the methodology and scope differences between the two collections.

<sup>3</sup> For example, a retail business may use the retailer's own truck to deliver goods from the warehouse to the retail outlet (rather than hiring the transport services from a TPW business).

To obtain a more complete picture of transport employment would require identification of workers providing transport services in all industries, not just the TPW industry. A *Transport Satellite Account*—as scoped by the ABS—would address this issue and provide a unified picture of the impact of transport activity on the whole economy (ABS 2011). In the current absence of a *Transport Satellite Account*, there are several data sources that can provide an insight into the magnitude of this issue.

Table 1 summarises relevant information from ABS (2012b). 'Income from transport services' provides an indication of secondary transport production in the non-TPW industries and 'Transport vehicle and other transport running expenses' gives a very broad indication of business transport activity in the non-TPW industries.

TPW accounts for 91 per cent of income received from providing transport services. A total of \$11.0 billion of fee-for-service income was earned by the non-TPW industries for their secondary transport activities, with the Mining industry receiving the most income (\$2.0 billion).

The data on 'transport vehicle and other transport running expenses' suggests that own-account transport activity in the non-TPW industries is potentially much larger in magnitude (with expenses totalling \$22.7 billion). Of the non-TPW industries, the Construction industry incurred the highest transport running expenses (\$6.2 billion), while spending a much smaller amount (\$1.3 billion) on purchasing transport services from other businesses. The Manufacturing, Mining and Wholesale trade industries are all major users of transport services, each incurring total transport-related expenses of \$10–15 billion in 2010–11, but 75–80 per cent of the total relates to purchases from other businesses (e.g. TPW businesses), rather than to in-house transport activity.

**Table 1 Business transport activity in selected industries, Australia, 2010–11**

ANZSIC industry	Unit	Income from transport services	Payments to contractors and other businesses for transport services	Rent, leasing and hiring of transport and motor vehicles	Transport vehicle and other transport running expenses	Total transport-related expenses
TPW	\$million	113 620	22 461	3 303	24 897	50 661
Agriculture, forestry and fishing	\$million	985	2 510	533	2 977	6 020
Mining	\$million	2 046	7 939	1 236	1 228	10 403
Manufacturing	\$million	1 189	11 124	1 000	2 496	14 621
Construction	\$million	918	1 250	2 008	6 231	9 489
Wholesale trade	\$million	1 395	9 416	888	1 700	12 003
Retail trade	\$million	610	3 203	1 112	1 208	5 522
Other selected industries	\$million	3 897	4 663	4 213	6 830	15 707
Total selected industries	\$million	124 660	62 566	14 293	47 567	124 426
TPW's share of total	per cent	91	36	23	52	41

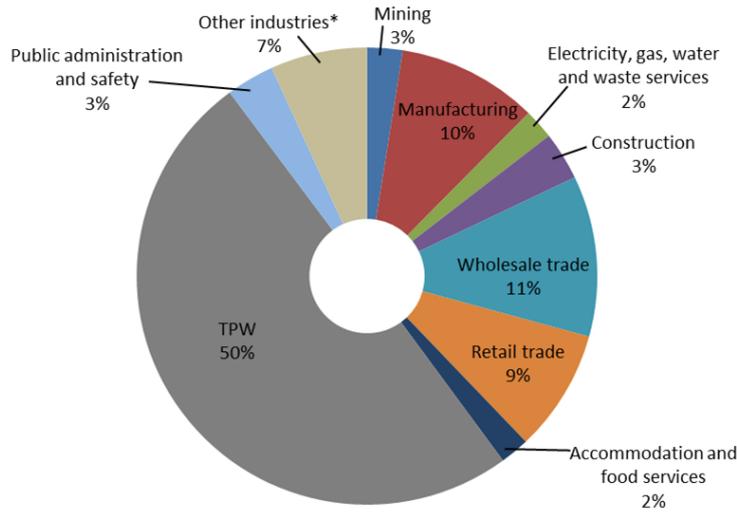
Note: Other selected industries excludes Financial and insurance services industry.

Source: ABS (2012b).

Census data on occupations provides additional insight into the extent to which transport activity is undertaken by industries other than TPW. A range of occupations that primarily undertake transport and/or storage duties were selected for further examination, based on the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS 2009). The ten selected 4-digit ANZSCO occupations are Truck drivers (which account for 35 per cent of the 418 086 jobs in the selected occupations), Storepersons (24 per cent), Bus and coach drivers (8 per cent), Delivery drivers (8 per cent), Automobile drivers (7 per cent), Transport and despatch clerks (7 per cent), Air transport professionals (3 per cent), Freight and furniture handlers (3 per cent), Train and tram drivers (3 per cent) and Marine transport professionals (2 per cent). These ten occupations account for 43 per cent of all jobs in the TPW industry, 12 per cent of all jobs in the Wholesale trade industry, and less than 8 per cent of jobs in all other industries.

Figure 1 shows that 50 per cent of jobs in the ten selected occupations are in the TPW industry. The other industries which have a large number of people employed in these occupations that undertake transport and/or storage duties are Wholesale trade (which accounts for 11 per cent of the total), Manufacturing (10 per cent) and Retail trade (9 per cent).

Figure 1 Employment in ten selected transport and storage related occupations by industry, Australia, 2011



Note: Based on ANZSIC 2006 2-digit industries (ABS 2006) and ANZSCO 4-digit occupations (ABS 2009). The ten selected 4-digit occupations are Truck drivers, Storepersons, Bus and coach drivers, Delivery drivers, Automobile drivers, Transport and despatch clerks, Air transport professionals, Freight and furniture handlers, Train and tram drivers, and Marine transport professionals.

\* Each of the remaining ANZSIC 1-digit industries individually contribute less than 2 per cent of jobs in the selected occupations.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

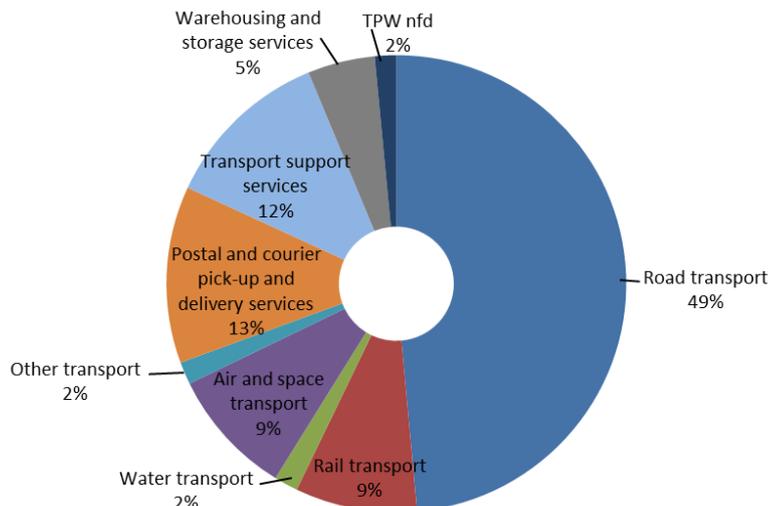
The remainder of this Information Sheet builds a profile of persons employed in the TPW industry. It does not provide a complete picture of transport-related employment, because workers providing transport services in other industries are excluded.

## National profile for 2011

### Sub-industries

Of the 479 181 persons that the census identifies as being employed in Australia's TPW industry in 2011, Figure 2 shows that 49 per cent (or 232 695 persons) were employed in Road transport. About three quarters of Road transport employment is in Road freight transport, rather than the different types of road passenger transport (see Table 2). Other important sub-industries at the 2-digit ANZSIC scale include Postal and courier pick-up and delivery services (which accounts for 13 per cent of TPW employment), Transport support services (12 per cent), Air and space transport (9 per cent) and Rail transport (9 per cent).

Figure 2 Transport, postal and warehousing employment by 2-digit sub-industry, Australia, 2011



Note: Based on ANZSIC 2006 2-digit industries (ABS 2006). nfd = not further defined.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

At the more detailed 4-digit industry scale, Table 2 shows that the top employing industries are Road freight transport (which contributes 35.8 per cent of TPW employment), Air and space transport (9.0 per cent), Postal services (8.8 per cent), Urban bus transport (5.5 per cent), Taxi and other road transport (5.3 per cent) and Rail passenger transport (5.2 per cent).

**Table 2 Transport, postal and warehousing employment by 4-digit sub-industry, Australia, 2011**

2-digit industry	4-digit industry	Employed persons	Share of TPW employment (per cent)
Road transport	Road freight transport	171 579	35.8
	Interurban and rural bus transport	3 157	0.7
	Urban bus transport (including tramway)	26 212	5.5
	Taxi and other road transport	25 392	5.3
	Road passenger transport, nfd	5 670	1.2
	Road transport, nfd	681	0.1
Rail transport	Rail freight transport	12 165	2.5
	Rail passenger transport	24 760	5.2
	Rail transport, nfd	4 148	0.9
Water transport	Water freight transport	3 612	0.8
	Water passenger transport	1 626	0.3
	Water transport, nfd	2 813	0.6
Air and space transport	Air and space transport	43 062	9.0
Other transport	Scenic and sightseeing transport	5 469	1.1
	Pipeline transport	1 650	0.3
	Other transport nec	483	0.1
Postal and courier pick-up and delivery services	Postal services	42 256	8.8
	Courier pick-up and delivery services	17 581	3.7
	Postal and courier pick-up and delivery services, nfd	121	0.0
Transport support services	Stevedoring services	4 383	0.9
	Port and water transport terminal operations	6 572	1.4
	Other water transport support services	4 101	0.9
	Water transport support services, nfd	165	0.0
	Airport operations and other air transport support services	8 818	1.8
	Other transport support services, nfd	58	0.0
	Customs agency services	1 567	0.3
	Freight forwarding services	16 399	3.4
	Other transport support services nec	14 744	3.1
Transport support services, nfd	73	0.0	
Warehousing and storage services	Grain storage services	2 936	0.6
	Other warehousing and storage services	19 654	4.1
	Warehousing and storage services, nfd	56	0.0
Transport, postal and warehousing, nfd		7 218	1.5
Total—Transport, postal and warehousing		479 181	100.0

Note: Based on ANZSIC 2006 2 and 4-digit industries (ABS 2006). 4-digit industries with zero employment were excluded from the table. nfd=not further defined. nec=not elsewhere classified.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

### Type of employment

Most people who work in the TPW industry are employed on a full-time basis. Of those who were employed in the TPW industry and at work at census time, 78 per cent worked full time, whereas across all industries only 68 per cent of people were employed on a full-time basis, according to the 2011 census. While 83 per cent of male TPW workers are employed on a full-time basis, only 62 per cent of female TPW workers are employed full time.

A relatively large proportion of TPW employed persons report working 49 or more hours per week (27 per cent, compared to 18 per cent of employed persons nationally). These long working hours are particularly

prevalent in Road freight transport (where 40 per cent work 49 or more hours per week) and in Water freight transport (45 per cent).

About 84 per cent of TPW workers are employed in the private sector, while 9 per cent are employed in state/territory governments and 7 per cent by the national government.

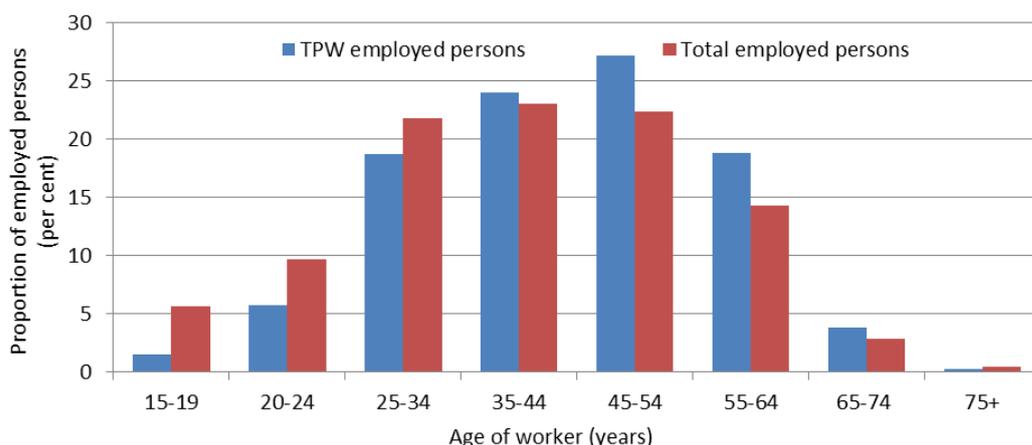
About 17 per cent of people working in the TPW industry are business owners, which is slightly above the all-industry average of 15 per cent. Of the 82 323 owner managers in the TPW industry, 44 per cent have no employees, 53 per cent have 1 to 19 employees, and 3 per cent have 20 or more employees.

### Demographics

The TPW industry has a predominantly male workforce, with 77 per cent of jobs being held by males, compared to 53 per cent of jobs in the overall economy. Males account for 82 per cent of full-time TPW jobs and 60 per cent of part-time TPW jobs, according to the 2011 census.

The age composition of the TPW industry is significantly different to that of the overall workforce. As Figure 3 shows, the younger age groups (up to age 34) are under-represented in TPW, whereas 45–64 year olds are over-represented. As of 2011, 22.9 per cent of TPW workers nationally were aged 55 and over, which is considerably higher than the all-industry figure of 17.6 per cent. Many of these workers are planning to retire in the next decade, and replenishment with younger workers is proving challenging (Transport and Logistics Industry Skills Council 2012).

Figure 3 Transport, postal and warehousing employment by age category, Australia, 2011



Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

The median age of TPW employed persons in 2011 was 45 years, compared to the all-industry median of 40 years. The TPW industry has the second oldest workforce after the Agriculture, forestry and fishing industry, which has a median age of 49 years, with 37.2 per cent of workers aged 55 and over.

This older age structure is evident for most of the TPW 2-digit sub-industries,<sup>4</sup> but is most pronounced for Road transport (which has a median age of 46, with 26.7 per cent of workers aged 55 and over) and Postal and courier pick-up and delivery services (which has a median age of 46 and 24.7 per cent of workers aged 55 and over). The TPW 2-digit occupation of Road and rail drivers—which accounts for 34 per cent of TPW jobs—is particularly affected, with a median age of 48 years, and 29.9 per cent of workers aged 55 and over.

Male TPW workers have a higher median age than female TPW workers (45 versus 42 years). Both exceed the all-industry median age, which is 40 for both males and females. Similarly, male TPW workers are more likely to be aged 55 and over than female TPW workers (24.7 versus 17.0 per cent), and both exceed the all-industry proportions of 18.7 per cent for males and 16.2 per cent for females. Thus, the older age structure of TPW workers is evident for both genders, but is considerably more pronounced for males.

<sup>4</sup> The median age of workers in the Air and space transport and Warehousing and storage services sub-industries equals the all-industry median of 40 years, and both of these sub-industries have less than 16 per cent of their workforce aged 55 and over.

The median age of TPW employed persons was 43 years in the capital cities and 47 for the rest of Australia. This compares to the all-industry medians of 39 for capital cities and 42 for the rest of Australia. Thus, the older age structure of TPW workers is more pronounced in regional Australia.<sup>5</sup>

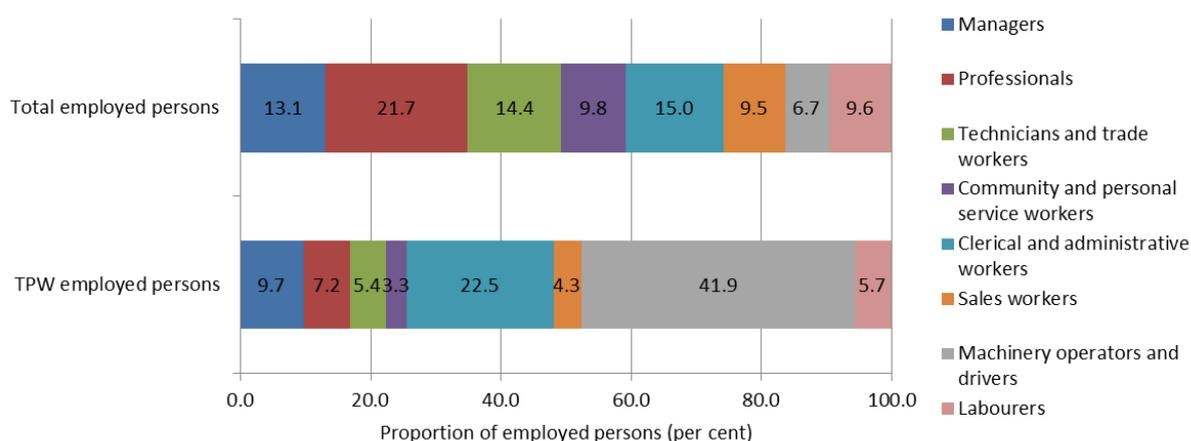
The TPW industry's representation of culturally diverse groups—such as Indigenous people, the overseas born, and those who do not speak English well—is reasonably similar to the all-industry average. For example, about 30 per cent of TPW workers are overseas born, compared to 28 per cent of all employed persons.

## Skills

### Occupation

The principal TPW occupation is Machinery operators and drivers, who contribute 42 per cent of employed persons, compared to 7 per cent of employment across all industries (see Figure 4). Clerical and administrative workers are also over-represented in TPW (23 per cent versus 15 per cent across all industries). All other 1-digit occupational categories are under-represented, particularly Professionals.

Figure 4 Occupations of Transport, postal and warehousing workers, Australia, 2011



Note: Occupational mix based on ANZSCO 1-digit occupations (ABS 2009). Proportions calculated after deducting 'not stated' and 'inadequately described' responses from total.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

ANZSCO defines the skill level of an occupation based on the range and complexity of the set of tasks performed in the particular occupation (ABS 2009). It assigns occupations to one of five skill levels, with one being the highest skill level and five the lowest.

Table 3 identifies the most common 3-digit occupations within the TPW industry, together with their predominant skill levels, as assessed by ANZSCO. The three most important occupations are Truck drivers (17.7 per cent of TPW employment), Automobile, bus and rail drivers (13.5 per cent) and Clerical and office support workers (8.7 per cent). The first two of these occupations have a predominant skill level of four, which is commensurate with a Certificate level II or III qualification, while at least one year of relevant training may substitute for the formal qualification (ABS 2009). Clerical and office support workers are classed as having a predominant skill level of five, which is commensurate with a Certificate Level I qualification or compulsory secondary education, although in some instances no formal qualification or on-the-job training may be required (ibid).

While skill level four occupations are most prevalent in Table 3, some TPW occupations have higher skill levels. For example, Air and marine transport professionals account for 2.7 per cent of TPW workers and have a predominant skill level of one (commensurate with a bachelor degree or higher qualification).

<sup>5</sup> The proportion of TPW workers aged 55 and over is much lower for the capital cities (21 per cent) than the rest of Australia (28 per cent).

**Table 3 Major occupations in the Transport, postal and warehousing industry and their predominant skill levels, Australia, 2011**

Main 3-digit occupations (from most to least prevalent)	Proportion of TPW jobs (per cent)	Predominant skill levels
Truck drivers	17.7	4
Automobile, bus and rail drivers	13.5	4
Clerical and office support workers	8.7	5
Logistics clerks	3.9	4
Mobile plant operators	3.3	4
Miscellaneous hospitality, retail and service managers	2.9	2
Air and marine transport professionals	2.7	1
Construction, distribution and production managers	2.4	1
Personal service and travel workers	2.4	3, 4
Storepersons	2.4	4
General clerks	2.1	4
Delivery drivers	2.0	4
Accounting clerks and bookkeepers	2.0	4
Miscellaneous labourers	1.9	4, 5
Mechanical engineering trades workers	1.8	3
Miscellaneous sales support workers	1.8	3, 4, 5
Sales assistants and salespersons	1.7	5
Freight handlers and shelf fillers	1.5	5

Note: Occupations and predominant skill levels based on ANZSCO 3-digit occupations (ABS 2009). ANZSCO assigns occupations to one of five skill levels, with one being the highest skill level and five the lowest. Occupations at skill level one have a level of skill commensurate with a bachelor degree or higher qualification, while at least five years of relevant experience may substitute for the formal qualification. Skill level five occupations have a level of skill commensurate with a Certificate Level I qualification or compulsory secondary education, although in some instances no formal qualification or on-the-job training may be required.

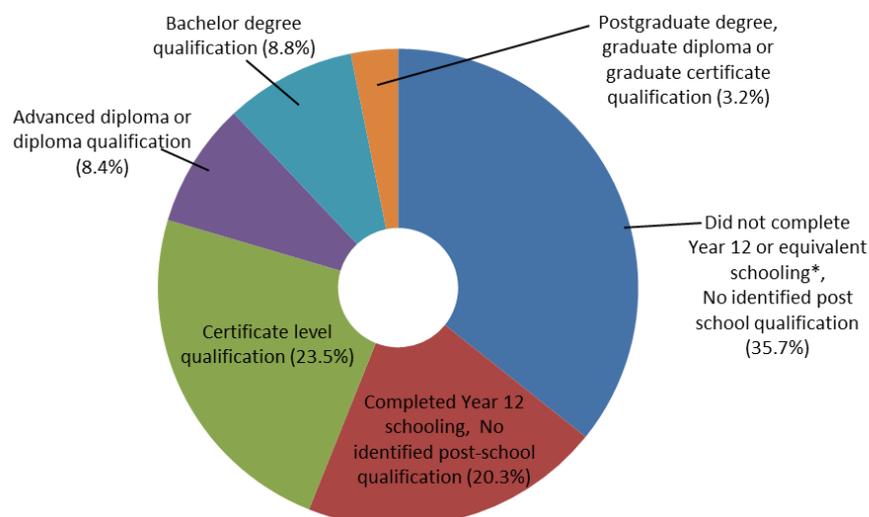
Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

## Education

People employed in TPW are generally less educated than the average Australian worker, in terms of both schooling and post-school education. About 48 per cent of those who work in the TPW industry have Year 12 or equivalent qualifications, compared to 61 per cent of all employed persons. Forty four per cent of TPW workers hold a recognised post-school qualification, compared to 58 per cent of all employed persons.

Figure 5 shows that the most common form of post-school qualification for TPW workers is a certificate level qualification, which was held by 23.5 per cent of TPW workers (compared to 22.6 per cent of all employed persons). Around 90 per cent of these are Certificate Level III or IV qualifications, rather than the less advanced Certificate Level I or II qualifications.

**Figure 5 Educational qualifications of Transport, postal and warehousing workers, Australia, 2011**



Note: \* Includes not stated level of schooling.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

The proportion of TPW workers with bachelor degree or higher qualifications (12.0 per cent) is much lower than for employed persons as a whole (25.9 per cent). Female TPW workers are considerably more likely to have a bachelor degree or higher qualification, than are males (15.6 versus 10.9 per cent).

The main fields of study for post-school qualifications are engineering and related technologies (17 per cent of TPW workers) and Management and commerce (12 per cent).

The TPW industry has a very low rate of workers who currently attend an educational institution (4 per cent), compared to 12 per cent across all employed persons. Only the Agriculture, forestry and fishing industry has a lower rate of participation in formal education.

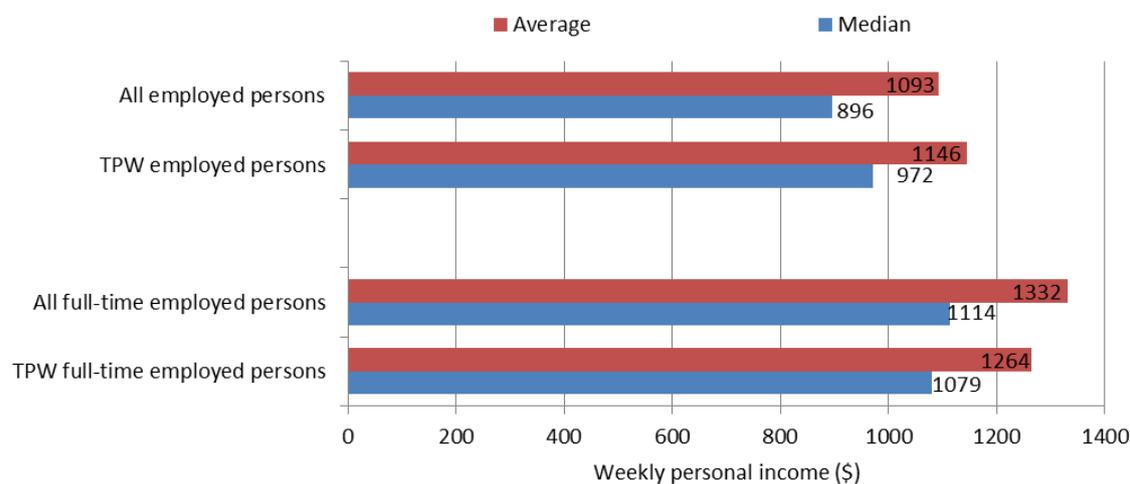
## Income

Based on responses to the 2011 census, 9.3 per cent of TPW workers had total personal incomes<sup>6</sup> of more than \$104 000 per annum, compared to 10.3 per cent of all employed persons. Only 19.6 per cent of TPW workers had incomes of less than \$31 200 per annum, compared to 28.6 per cent of all employed persons. This reflects the relatively high proportion of TPW workers employed on a full-time basis,

Figure 6 displays BITRE's estimates of the average (and median) weekly personal income of TPW employed persons and how that compares to the all-industry average (and median). The median income figures are considerably lower than the average income figures. Based on this 2011 census data, BITRE estimates that the average weekly income for the TPW industry is about 5 per cent higher than the all-industry average, while the median weekly income is about 8 per cent higher for the TPW industry.

A possible reason why the average (and median) incomes are relatively high in the TPW industry is that the higher incomes could reflect the greater number of hours being worked (see p.5), rather than reflecting above-average hourly rates of remuneration. This is confirmed by the lower half of Figure 6, which focuses on full-time employed persons, to enable a more like-for-like comparison of workers to be undertaken. Average weekly incomes of full-time workers are about 5 per cent lower in the TPW industry (compared to the all-industry average), while median incomes are about 3 per cent lower.

**Figure 6 Average and median weekly personal income of Transport, postal and warehousing workers, Australia, 2011**



Notes: 1. Total personal income includes income from sources other than employment (e.g. family benefits, investment income). BITRE has estimated median and average weekly income based on the categorical income responses in the census. For median income, a specific point estimate within the median income category is derived using a simple pro-rata approach. The approach to estimating average income involved excluding negative income responses and assigning an average value to each income category. The average value was set as the midpoint of the income range for all categories, apart from the top income category, where the average was set at \$3000, based on results from the ABS' *Survey of Income and Housing 2009-10* (which show that \$3000 is a conservative midpoint for the top income category).

2. Full-time employed persons are defined as those who work 35 or more hours per week.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2011 (data extracted using Tablebuilder Pro).

<sup>6</sup> Total personal income includes income from sources other than employment (e.g. family benefits, investment income).

## Commuting behaviour

TPW workers were more likely to travel to work by private vehicle on census day 2011 (83 per cent), compared to employed persons as a whole (77 per cent).<sup>7</sup> In particular, they were more likely to travel by car as a driver (72 versus 69 per cent) and by truck (6 versus 1 per cent), but less likely to travel by car as a passenger (4 versus 6 per cent). Public transport use is less common amongst TPW workers, compared to all employed persons (9 versus 12 per cent). Active travel use and working from home are also less common for TPW workers.

People employed in the TPW industry are more likely to report in the census that they have no fixed work address (5.2 per cent, compared to 3.8 per cent across all industries). TPW workers also have a higher incidence of responses that could not be coded to a Statistical Area Level 2 (SA2)<sup>8</sup> of work at 8.7 per cent, compared to the all-industry figure of 5.8 per cent (ABS 2012c). Compared to many other industries, TPW employment is inherently difficult to tie down to a small area location, reflecting the mobile nature of many transport jobs (e.g. truck drivers, taxi drivers). Nevertheless, the great majority of census respondents do report a usable place of work address. Using ABS census and *Labour Force Survey* data, BITRE (2014) investigates where TPW jobs are concentrated within Australia, finding that:

- TPW makes a significant contribution to Queensland employment (5.6 per cent) and a relatively minor contribution in the Australian Capital Territory (2.4 per cent).<sup>9</sup>
- TPW jobs are concentrated in Australia's main population centres and ports, with 70 per cent of people employed in TPW living in Australia's capital cities. The proportion employed in TPW is higher for the capital cities than it is for the rest of Australia (5.0 versus 4.5 per cent).
- The Significant Urban Areas (SUAs) with the most TPW jobs in 2011 were Sydney (91 489 jobs), Melbourne (79 324), Brisbane (50 371), Perth (31 422), Adelaide (20 265), Newcastle-Maitland (7 269) and Gold Coast-Tweed Heads (6 696).
- The SUAs with the highest proportion of TPW jobs were Gladstone-Tannum Sands, Port Hedland, Devonport and Broome—TPW represented 8–9 per cent of total jobs in each city. The Victorian town of Torquay has the lowest TPW representation (with just 1.1 per cent of jobs in the TPW industry).
- The Statistical Divisions<sup>10</sup> with the highest proportion of TPW jobs were in Queensland—Mackay (6.1 per cent), Fitzroy (5.8 per cent) and Brisbane (5.8 per cent).
- The 33 largest small area concentrations of TPW jobs within Australia are all located in one of the five major capital cities. These major transport employment hubs include airports, ports, industrial areas and Central Business Districts (CBDs). The three hubs with the most TPW jobs are Sydney Airport-Mascot (16 617), Altona North-Laverton North-Sunshine West-Derrimut in Melbourne's west (8 514), and Melbourne Airport (8 205).

On average, on census day 2011, the place of work of employed Australians was about 12 kilometres (km) straight line distance away from their place of usual residence. For those employed in the TPW industry, the average commuting distance was somewhat higher at 13.5 kilometres.<sup>11</sup>

Figure 7 reveals that a relatively small proportion of TPW workers (32 per cent) travelled less than 5km to work, compared to the 38 per cent of all employed persons who travelled less than 5km to work. A relatively large proportion of TPW workers (22 per cent) travelled more than 20km to work, compared to 18 per cent of all employed persons. This reflects some transport employment hubs—particularly ports and airports—tending to attract workers who live a considerable distance away (BITRE 2014).

<sup>7</sup> The mode share was calculated after excluding not stated and did not go to work responses. Worked at home responses were retained.

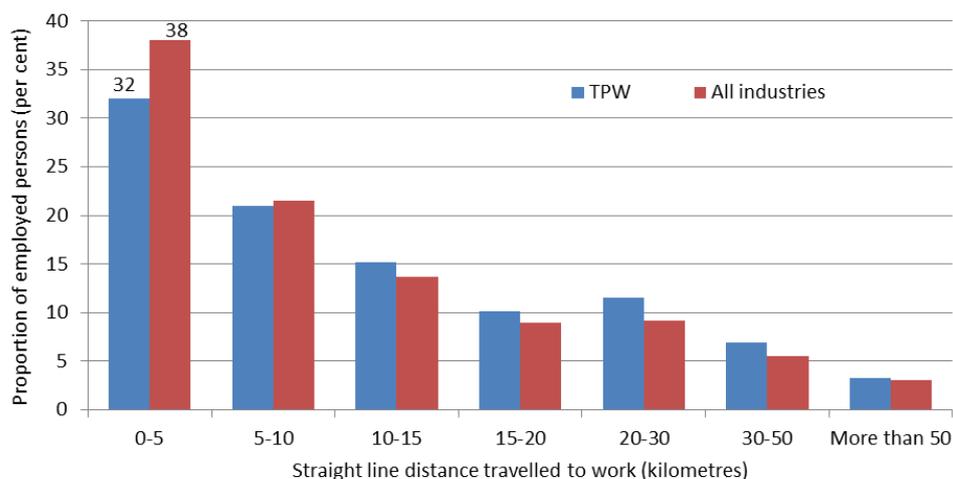
<sup>8</sup> SA2s are a small area geographic unit and key building block within the ABS' Australian Statistical Geography Standard (ASGS). There are 2196 SA2s in Australia, and SA2s typically have a population of between 3 000 and 25 000 (ABS 2010).

<sup>9</sup> This dot point relies on ABS *Labour Force Survey* data for August 2013. The remaining dot points in this list are based on ABS *Census of Population and Housing* data for 2011.

<sup>10</sup> Based on Australian Standard Geographical Classification (ASGC) 2006 Statistical Division boundaries.

<sup>11</sup> Average commuting distances were estimated by BITRE using ABS *Census of Population and Housing* data for 2011. More detail of the methodology is provided in the notes to Figure 7.

Figure 7 Frequency distribution of commuting distance for Transport, postal and warehousing workers and all employed persons, Australia, 2011



Notes: Average commuting distances were estimated by BITRE using ABS *Census of Population and Housing* data for 2011, extracted using Tablebuilder Pro. The distance for each origin-destination pair was calculated as the straight line commuting distances between the population-weighted centroid of the Statistical Area Level 2 (SA2) of usual residence (derived using SAI data) and the job-weighted centroid of the SA2 of work (derived using DZ data). Those who worked at home on census day were assigned a commuting distance of zero. Any commutes of over 200km were excluded from the calculation, on the basis that it would be generally unlikely that people would travel this distance to and from work every day.

Source: BITRE analysis of ABS *Census of Population and Housing* data for 2011 (data extracted using Tablebuilder Pro).

## Key changes between 2006 and 2011

The preceding section presented a detailed point-in-time snapshot of the characteristics of TPW workers, as of 2011. However, the TPW workforce is not static—as the industry grows, the mix of workers is gradually evolving. This section compares ABS *Census of Population and Housing* data for 2006 and 2011 and identifies some of the key changes that occurred over this period.

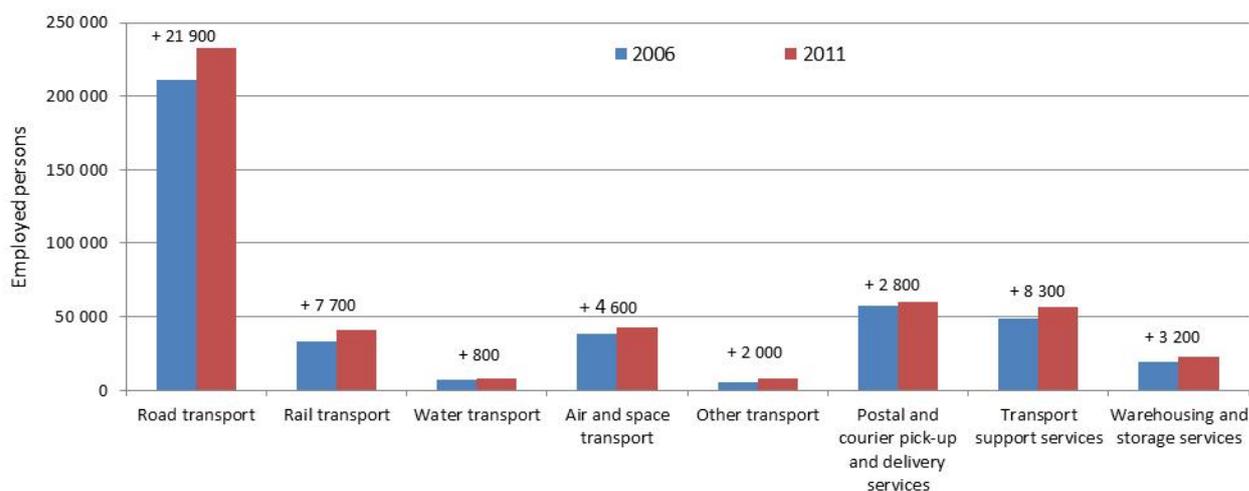
Comparison of the two most recent censuses reveals that an additional 51 400 persons were employed in the TPW industry in 2011, compared to 2006. This represents average annual employment growth of 2.3 per cent for the TPW industry, slightly above the all-industry growth rate of 2.0 per cent.

### Sub-industries

Figure 8 illustrates how the number of persons employed in each TPW 2-digit sub-industry changed between 2006 and 2011. The main sources of TPW employment growth were Road transport (which added 21 900 employed persons), Postal and courier pick-up and delivery services (8 300) and Rail transport (7 700). None of the 2-digit sub-industries experienced a decline in employment.

Employment grew relatively rapidly in the Other transport and Rail transport sub-industries, averaging 6.5 and 4.2 per cent per annum growth, respectively, between 2006 and 2011. The Postal and courier pick-up and delivery services sub-industry grew more modestly, averaging 1.0 per cent growth per annum.

**Figure 8** Transport, postal and warehousing employment by 2-digit sub-industry, Australia, 2006 and 2011



Note: Based on ANZSIC 2006 2-digit industries (ABS 2006). Excludes TPW not further defined. The numbers presented in the chart represent the change in the number of employed persons in the relevant sub-industry between 2006 and 2011.

Source: BITRE analysis of ABS *Census of Population and Housing* place of usual residence data for 2006 and 2011 (data extracted using Tablebuilder Pro).

### Employment type

Between 2006 and 2011, there was a slight decline of 0.8 percentage points (from 78.6 to 77.8 per cent) in the proportion of TPW employed persons working on a full-time basis. This represented the net effect of a 1.5 percentage point decline in the proportion of males employed full-time and a 1.2 percentage point rise in the proportion of females employed full-time.

Over the five year period, there was a 2.5 percentage point decline (from 29.3 to 26.8 per cent) in the proportion of TPW employed persons who worked 49 or more hours a week. Across all industries, there was a smaller 1.2 percentage point decline in the proportion who worked 49 or more hours per week.

There was also a 2.9 percentage point decline in the proportion of TPW employed persons who were business owners between 2006 and 2011. Across all-industries, the proportion of business owners declined by 1.4 percentage points.

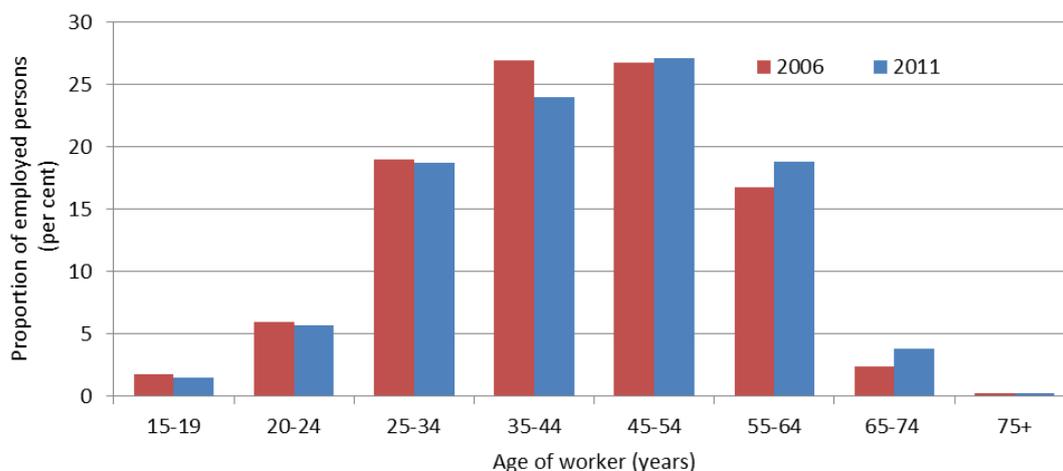
### Demographics

The gender mix of the TPW workforce remained basically unchanged, with males accounting for 76.8 per cent of employed persons in both 2006 and 2011.

The TPW workforce has been ageing more rapidly than the overall workforce—from 2006 to 2011, the proportion aged 55 and over rose by 3.5 percentage points in TPW, compared to a 2.5 percentage point rise for total employment.<sup>12</sup> Figure 9 illustrates the shift towards an older age structure in the TPW workforce between 2006 and 2011. The ageing of the workforce is regarded as one of the major challenges facing the transport and logistics industry, and this has led to a number of initiatives relating to succession planning, mature worker retention, recruitment and vocational training (Transport and Logistics Industry Skills Council 2012, 2014).

<sup>12</sup> The more rapid ageing of the TPW workforce is also evident from median age and average age data. For example, the median age of TPW employed persons increased from 43 in 2006 to 45 in 2011, but the all-industry median age remained stable at 40 years in both 2006 and 2011.

Figure 9 Transport, postal and warehousing employment by age category, Australia, 2006 and 2011



Source: BITRE analysis of ABS *Census of Population and Housing place of usual residence* data for 2006 and 2011 (data extracted using Tablebuilder Pro).

## Skills

### Occupation

Between 2006 and 2011, the 1-digit ANZSCO occupation that experienced the most employment growth within the TPW industry was Machinery operators and drivers, which added 23 100 employed persons. There were also significant increases in the number of Clerical and administrative workers (8 100) and Professionals (7 800) working in the TPW industry.

Employment of Professionals—one of the most highly skilled occupational categories (ABS 2009)—grew particularly rapidly in the TPW industry, averaging 5.4 per cent growth per annum (off a relatively low base). Across all industries, Professionals averaged 3.5 per cent growth per annum between 2006 and 2011.

The 3-digit occupational scale provides a more detailed perspective on growth occupations. The 3-digit ANZSCO occupation that experienced the most employment growth within the TPW industry was Automobile and rail drivers (which added 9 600 employed persons), followed by Truck drivers (7 500) and Logistics clerks (3 300).

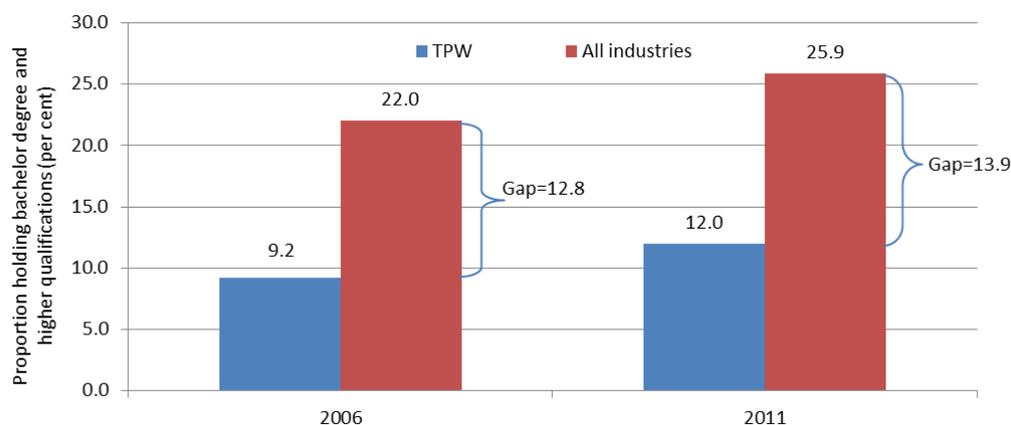
### Education

Between 2006 and 2011, there was a clear shift towards higher levels of educational attainment within the TPW industry. Of the additional 51 400 TPW employed persons, 45 700 (or 89 per cent) had certificate level or higher qualifications, while 17 900 (or 35 per cent) had bachelor degree or higher qualifications. The number with Year 11 or lower schooling (and no recognised post-school qualification) declined by 6 500 persons.

Employment of people with postgraduate qualifications grew particularly rapidly in the TPW industry (off a low base), averaging 11.0 per cent per annum growth from 2006 to 2011. The number of people with bachelor degree and certificate level qualifications also recorded above-average growth, at 6.8 and 3.4 per cent per annum, respectively.

This reflects a general trend towards higher levels of educational attainment across the Australian workforce. Figure 10 shows that while the proportion of TPW employed persons with a bachelor degree or higher qualification rose by 2.8 percentage points between 2006 and 2011 (from 9.2 to 12.0 per cent), over the same period the proportion of all employed persons with a bachelor degree or higher qualification rose by 3.9 percentage points. Thus, despite strong growth in the number of TPW workers with higher educational qualifications, the average TPW worker continues to be significantly less educated than the average Australian worker. Moreover, the gap has widened in recent years.

Figure 10 Proportion of employed persons with bachelor degree or higher qualifications by industry, Australia, 2006 and 2011



Source: BITRE analysis of ABS *Census of Population and Housing place of usual residence* data for 2006 and 2011 (data extracted using Tablebuilder Pro).

### Income

Employed Australians recorded relatively rapid income growth between 2006 and 2011. BITRE's calculations based on census data suggest the all-industry average and median incomes grew by 4.5 per cent per annum, while income growth was slightly lower for persons employed in the TPW industry. This is confirmed by ABS *Average Weekly Earnings* data for the November 2006 to November 2011 period, which shows an average annual growth rate of 3.7 per cent for the TPW industry and 4.3 per cent across all industries (ABS 2014).

The relativities between the incomes of TPW employed persons and all employed persons remained fairly stable across these time points. For example, in 2006, the average weekly incomes of full-time workers were about 5 per cent lower in the TPW industry (compared to the all-industry average), while the median incomes were about 1 per cent lower. This is similar to the gaps of 5 per cent and 3 per cent, respectively, observed in 2011.

### Commuting behaviour

The great majority (89 per cent) of the additional TPW employment between 2006 and 2011 related to people who journeyed to work on census day by car, as a driver. The car driver mode share increased by 2.9 percentage points between 2006 and 2011 (from 69.4 to 72.2 per cent), while the truck mode share declined by 1.6 percentage points (from 7.8 to 6.2 per cent).

Between 2006 and 2011, there were some significant changes in the place of work of those employed in the TPW industry:<sup>13</sup>

- The proportion of TPW employed persons who reported they had no fixed work address declined from 6.5 per cent in 2006 to 5.2 per cent in 2011.
- The proportion of Australia's TPW employed persons who worked in New South Wales declined by 1.7 percentage points (from 34.0 to 32.3 per cent), while the proportion who worked in Western Australia rose by 1.3 percentage points (from 9.2 to 10.6 per cent).<sup>14</sup>

<sup>13</sup> Methodological changes between the 2006 and 2011 censuses impact on the validity of change comparisons based on the place of work data. The non-response rate to the place of work question was considerably higher in 2006 (4.9 per cent) than it was in 2011 (2.5 per cent), but the proportion coded to the 'capital city undefined' and 'state/territory undefined' categories was much lower in 2006 (1.1 per cent) than it was in 2011 (5.8 per cent). Between 2006 and 2011, the net increase in the number of employed persons with an unidentified (i.e. 'undefined' or not stated) place of work was 297 000, which is significant in the context of the overall national gain of 954 000 employed persons during the period. The marked increase in the number of employed persons with an unidentified place of work in the 2011 census makes it difficult to identify whether the observed changes in the place of work counts reflect real employment changes or the changed coding practices. As a result, the changes described in this section should be interpreted with caution. Further discussion of these issues is contained in ABS (2012c) and .id (2012).

<sup>14</sup> The figures reported here are based on people who responded to the place of work question—not stated responses are excluded from the denominator.

- The Statistical Divisions<sup>15</sup> that recorded the largest increases in the number of TPW jobs were Melbourne (11 600 jobs), Brisbane (7 600), Perth (6 700) and Sydney (5 100). Particularly rapid TPW job growth was evident in the Pilbara, which added around 1300 TPW jobs, representing an average annual growth rate of 17 per cent.
- The major transport employment hubs of Western Sydney Employment Area-Minchinbury and Banksmeadow-Botany in Sydney added 1300 and 1600 TPW jobs, respectively, between 2006 and 2011 (BITRE 2014).

## Concluding remarks

This study provides a national profile of people employed in the TPW industry, providing details of the sub-industries in which TPW workers are employed, their employment status, hours worked, gender, age, occupation, educational qualifications, income and commuting behaviour. Just under half of all TPW employment was found to relate to the Road transport sub-industry, and principally to Road freight transport. TPW workers are predominantly male (77 per cent) and employed on a full-time basis (78 per cent), and they tend to be older than workers in other industries (with a median age of 45 years, compared to 40 years for all employed persons). TPW workers are generally less educated than the average Australian worker, in terms of both schooling and post-school education.

In addition to providing this national snapshot of the characteristics of TPW workers in 2011, the Information Sheet also describes some of the key changes that occurred between 2006 and 2011, such as:

- The shift towards fewer hours of work in the TPW industry—with the proportion working 49 or more hours a week declining by 2.5 percentage points and the proportion working full-time declining by 0.8 percentage points.
- The more rapid rate of ageing in the TPW workforce compared to the overall workforce—from 2006 to 2011, the proportion aged 55 and over rose by 3.5 percentage points in TPW, compared to a 2.5 percentage point rise for total employment.
- The shift towards higher levels of educational attainment within the TPW industry— between 2006 and 2011, 89 per cent (or 45 700) of the additional TPW employed persons had recognised post-school qualifications, while there was a decline of 6 500 persons holding neither Year 12 nor post-school qualifications. Despite this recent growth in educational attainment, the proportion of TPW employed persons with bachelor degree or higher qualifications (12.0 per cent) continues to remain well below the national proportion of 25.9 per cent.

This Information Sheet provides a useful basis for understanding the nature of employment in the TPW industry, and the transitions that are currently underway. This study could potentially be built upon with additional research that delves more deeply into the policy implications of key issues—such as ageing and changing skill needs in the TPW industry. This type of employment profile could also usefully be replicated for another sector that is fundamental to transport and infrastructure policy, namely the infrastructure construction sector. Finally, there would be considerable value in the development of a *Transport Satellite Account*—as previously scoped in ABS (2011)—which could provide a more complete and unified picture of the impact of transport activity on the whole economy.

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