
ECONOMIC SIGNIFICANCE OF THE PROPERTY INDUSTRY TO THE WESTERN AUSTRALIAN ECONOMY

PROPERTY COUNCIL OF AUSTRALIA
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KEY FINDINGS

- The property industry supported 315,500 FTE employees in 2021-22 (23.5% of Western Australia's total employment), including approximately 155,100 FTE employees directly (11.6% of Western Australia's total), and nearly 160,400 FTE jobs through flow-on activity (12.0% of Western Australia's total).
- The 155,100 FTE jobs directly supported by the property industry is more than the mining and agriculture industries combined in Western Australia.
- The property industry also directly contributed \$27.4 billion to Gross State Product (GSP) in 2021-22 (6.9% of the total contribution to GSP by all industries in the state), and is estimated to have contributed a further \$28.5 billion to Western Australia's GSP through flow-on demand for goods and services (7.2% of Western Australia's total). The combined (direct + flow-on) contribution to GSP of \$55.8 billion in 2021-22 represents an increase of 34.3% from the \$41.6 billion contribution in 2010-11, with annual growth of the property industry generally tracking in line with the broader Western Australian economy between 2010-11 and 2015-16, but below thereafter.
- The property industry's contribution to GSP (including direct and flow-on activity) has grown by \$10.5 billion since 2018-19 (23.2% overall growth), driven by annual growth of 6.2% and 14.3% in the last two years following minimal growth in 2019-20 as the Western Australian and national economy was impacted by COVID. Property industry growth since 2018-19 has been below that of the broader Western Australian economy over this period, which increased by 41.2% between 2018-19 and 2021-22.
- The slower growth of the property industry during COVID can be partly attributed to the support the property industry provided to the Western Australian and Australian business community during the pandemic, including considerable contributions in terms of commercial rent relief by property operators/ managers, which reduced overall returns of the property industry. Supply chain issues, increasing interest rates and tighter lending standards have also significantly impacted the property industry's capacity to meet demand for new property stock and increased the risk to developers.
- Of the 155,100 FTE jobs directly supported by the property industry in Western Australia, 30.8% are in professional, technical roles and service-provision, and 69.2% are in construction. Of the total workforce, 26.8% were female and 73.2% male. This is largely driven by a strong male contingent of the construction workforce (85.1%); Of the non-construction components of the property industry, female employees account for around 53.6% of FTE jobs. Of the 160,400 FTE jobs supported by the property industry through flow-on activity, 45.6% are female.
- Approximately 24.8% of wages and salaries paid to Western Australian workers is generated by the property industry, including \$21.9 billion paid for jobs directly supported by the property industry (13.9% of Western Australia's total) and \$17.1 billion paid through flow-on activity (10.9% of Western Australia's total).
- The majority of the property industry's economic contribution is generated by residential activity (61.4% of contribution to GSP; 61.5% of contribution to jobs; 61.6% of contribution to employee incomes).
- The property industry contributed approximately \$7.0 billion in combined Western Australian Government tax revenues and local government rates, fees and charges revenue in 2021-22. This equates to 27.9% of total State taxes and local government rates, fees and charges revenues in 2021-22. The property industry was the second largest contributor to Western Australian Government tax revenue (behind mining), providing \$4.5 billion of the \$22.7 billion in tax and royalty revenue received by the Western Australian Government for the year.

EXECUTIVE SUMMARY

The Western Australian Property Industry...

The Western Australian property industry consists of organisations and individuals involved in developing, operating and facilitating activities within the property industry that meet the residential and non-residential property needs of Western Australia. Typically, this includes residential and non-residential construction along with finance, property and business services associated with property development and operation. While many of these industries are also involved in non-property related activities, this report examines only the contribution of the property related components of these industries to the Western Australian economy.

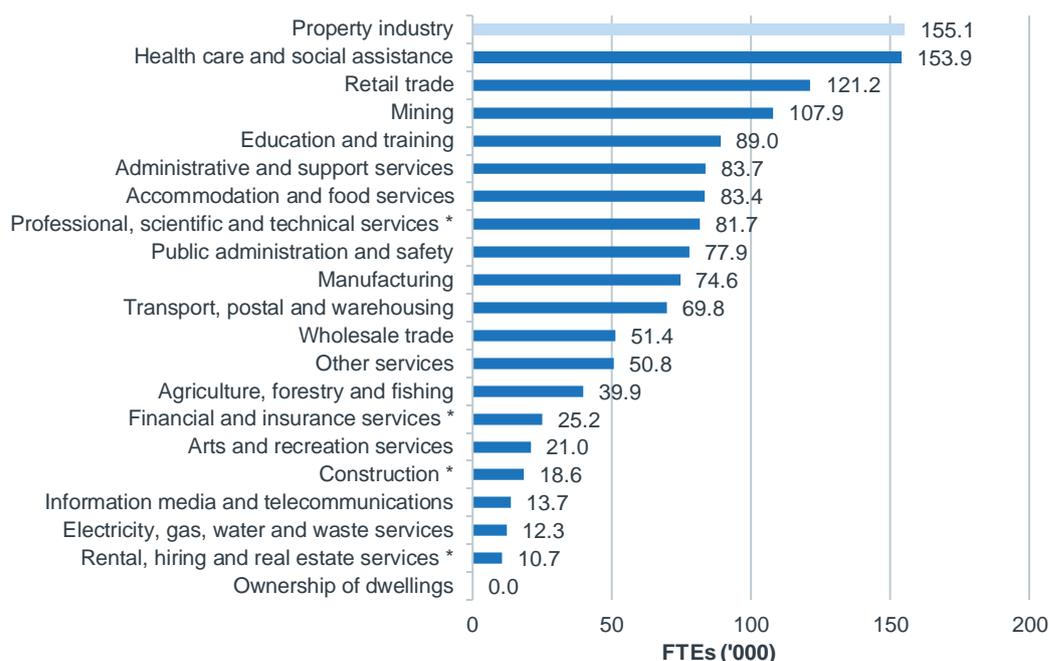
The definition of the property industry used in this report does **not** include ownership of dwellings, which are rents paid by tenants to landlords and imputed rents to owner occupiers.

The Property Industry is the largest employer in Western Australia...

The property industry directly employed 155,100 FTE jobs in 2021-22 (11.6% of Western Australia total), making it the largest employing industry in Western Australia in 2021-22.

The 155,100 FTE jobs directly supported by the property industry is more than the mining and agriculture industries combined.

Figure ES. 1. Direct Contribution to Employment by Industry, 2021-22 ('000 FTEs)



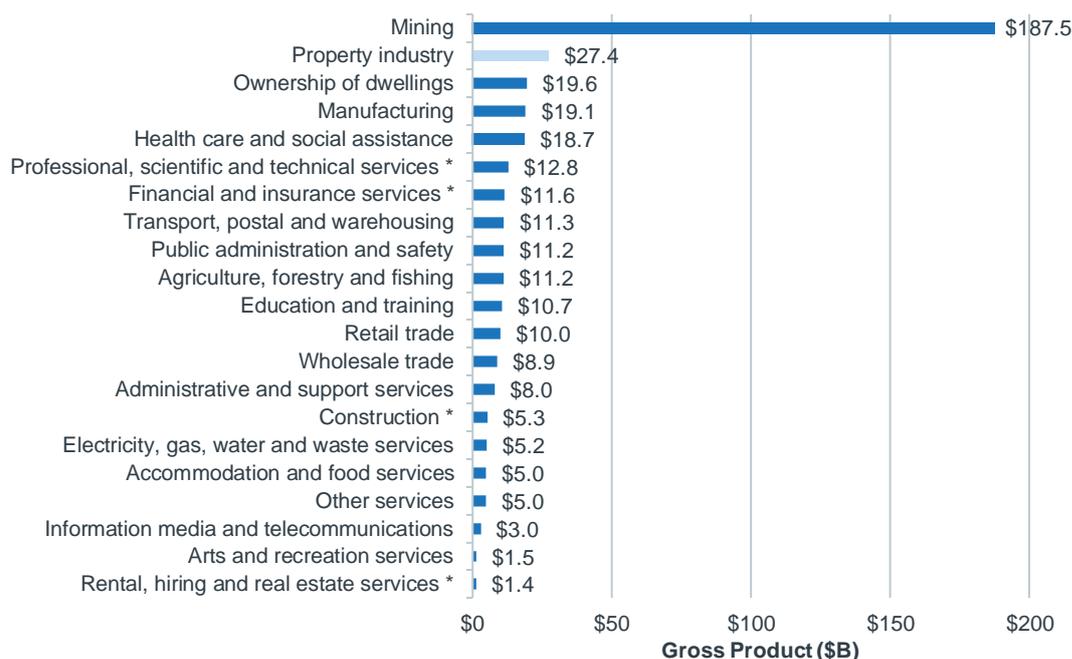
Note: * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry. Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

The Property Industry is a significant contributor to Gross State Product in Western Australia...

The property industry is estimated to have contributed \$27.4 billion directly to the state economy in 2021-22, equating to 6.9% of the total contribution to Gross State Product (GSP) by all industries in Western Australia for the year (of \$394.4 billion).¹

¹ The total contribution to GSP by all industries of \$394.4 billion differs from total GSP in the State Accounts of \$404.5 billion (ABS, 2023a) as it excludes non-industry based contributions to GSP (e.g. taxes and subsidies on products levied on households rather than industry).

Figure ES. 2. Direct Contribution to Gross State Product by Industry, 2021-22 (\$ Billion)



Note: * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry. Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

The Property Industry also contributes strongly through flow-on economic activity...

In addition to the direct contribution of the property industry to the Western Australian economy, the property industry is estimated to have contributed a further \$28.5 billion to Western Australia’s GSP through flow-on demand for goods and services, including production induced² and consumption induced³ effects. Combined, the property industry contributed \$55.8 billion to GSP in 2021-22 through direct and flow-on activity or 14.1% of total GSP.

The property industry also indirectly contributes to employment in Western Australia through flow-on demand for goods and services. The property industry supported jobs for nearly 160,400 FTE employees in 2021-22 through flow-on activity. Approximately 315,500 FTE jobs were supported by the property industry in 2021-22 through direct and flow-on activity combined.

The Property Industry has experienced strong growth over the past decade...

The property industry’s total (i.e., direct + flow-on) contribution to GSP has increased significantly over the last 12 years, increasing from \$41.6 billion in 2010-11 to \$55.8 billion in 2021-22. The property industry’s contribution to GSP dipped between 2014-15 and 2018-19 as construction activity slowed during this period and was further impacted by COVID in 2019-20.

The property industry’s contribution to GSP (including direct and flow-on activity) has grown by \$10.5 billion since 2018-19 (23.2% overall growth), driven by annual growth of 6.2% and 14.3% in the last two years following minimal growth in 2019-20 as the Western Australian and national economy was impacted by COVID. Property industry growth since 2018-19 has been below that of the broader Western Australian economy over this period, which increased by 41.2% between 2018-19 and 2021-22.

The slower growth of the property industry during COVID can be partly attributed to the support the property industry provided to the Western Australian and Australian business community during the pandemic, including considerable contributions in terms of commercial rent relief by property operators/ managers, which reduced overall returns of the property industry. Supply chain issues, increasing interest rates and tighter lending standards

² Represents the combination of activity required from all industries that supply goods and services to the property industry, as well as the induced activity from all industries to support the production of industries supplying the property industry.

³ Represents the subsequent induced activity due to spending by the wage and salary earners across all industries arising from the compensation received for their labour as part of the direct and production induced effects.

have also significantly impacted the property industry's capacity to meet demand for new property stock and increased the risk to developers.

Non-construction related Property Industry activity is a strong supporter of jobs for women...

Of the 155,100 FTE jobs directly supported by the property industry in Western Australia, 26.8% were female and 73.2% male. A key driver of the high proportion of direct male employment in the property industry is the dominance of the construction industry. Construction employs 107,300 FTEs (or 69.2% of the property industry workforce), approximately 91,300 of whom are male. Of the non-construction components of the property industry, female employees account for around 53.6% of FTE jobs.

Of the 160,400 FTE jobs supported by the property industry through flow-on activity, 45.6% are female.

The Residential Property Sub-Sector provides the majority of Property Industry economic activity...

The residential sub-sector of the property industry directly contributed 61.4% of total property industry gross product and 61.5% of employment in 2021-22. Of the non-residential sub-sector, the commercial property sub-sector is the largest, estimated to have contributed 8.4% of total direct non-residential property industry gross product and 8.3% of employment.

The Property Industry is a key contributor to taxation revenues...

The property industry contributed approximately \$7.0 billion in combined Western Australian Government tax revenues and local government rates, fees and charges revenue in 2021-22. This equates to 27.9% of total State taxes and local government rates, fees and charges revenues in 2021-22.

The Western Australian Government property related taxes of \$4.5 billion represents a contribution of approximately 19.7% of total combined Western Australian Government tax revenues in 2021-22, making the property industry the second largest contributor to Western Australian Government tax and royalty revenues behind mining.

Table ES.1. Western Australian State and Local Government Property Related Revenues, 2021-22

Level of Government/ Tax Type	Value
Western Australia Government	
Payroll Tax (\$M)	\$613.9
Transfer/ Stamp Duties (\$M)	\$2,621.0
Land Tax (\$M)	\$749.0
Other Property Related Taxes (\$M)	\$488.0
Total Property Related Taxes (\$M)	\$4,471.9
<i>Property Contribution to Total State Taxes (%)</i>	<i>19.7%</i>
Western Australia Local Government	
Rates, Fees and Charges Revenue (\$M)	\$2,555.9
Combined State and Local Government	
Total Property Related Taxes (\$M) ^(a)	\$7,027.8
<i>Property Contribution to Total State and Local Government Taxes (%)</i>	<i>27.9%</i>

Note: (a) Includes local government rates, fees and charges.

Sources: AEC, ABS (2023g), Western Australia Government (2022), supported by previous AEC analysis and benchmarking of local government rates and charges revenue.

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1. INTRODUCTION

1.1 BACKGROUND

The Property Council of Australia commissioned AEC Group Pty Ltd (AEC) to evaluate the economic significance of Australia's property industry. The industry consists of organisations and individuals involved in developing, operating and facilitating activities that meet Australia's residential and non-residential property needs.

1.2 PURPOSE OF THIS REPORT

The report uses the *Australian and New Zealand Standard Industrial Classifications* (ANZSIC) definition of industry classifications. The property industry is defined as:

- Parts of the construction industry focused on the development of residential and non-residential buildings, as well as all construction services.
- Architectural, engineering and professional services involved in the development of property.
- Non-residential property operators and real estate services.
- Parts of banking, non-bank finance and other financial and insurance services that facilitate the development, acquisition and ownership of property⁴.

While many of these industries are also involved in non-property related activities, this report only focuses on the contribution of the property related components of these industries to the Western Australian economy. The definition of the property industry used in this report does not include ownership of dwellings, which are rents paid by tenants to landlords and imputed rents to owner occupiers. **Appendix A** provides a full list of ANZSIC classes included in the definition of the property industry.

1.3 GEOGRAPHIC SCOPE

The scope of this report focuses on the economic significance of the property industry in Western Australia and each Western Australian State Electorate.

Data for State Electoral divisions as required for this study is not available from the Australian Bureau of Statistics, and to undertake analysis for the State Electorates, digital boundaries for State Electorates were downloaded from Data WA (2019) and Statistical Area 2 (SA2) geographic boundaries were downloaded from the Australian Bureau of Statistics (ABS, 2021b). These boundaries were utilised to convert SA2 data to State Electorates. All estimates of property industry activity at the State Electorate level are therefore subject to a softer confidence due to any inconsistencies introduced by transforming data using these correspondence files.

1.4 METHODOLOGY

The estimates in this report are produced using Input-Output transaction tables and models developed by AEC. Data sources used include State and National Accounts and industry specific ABS and other agency data. Input-Output models were used to produce estimates of the direct and flow-on contributions of the property industry to the Western Australian economy and each State Electorate. Measures used in this report include Gross State Product (GSP), employment, and income (i.e., wages and salaries). **Appendix B** presents a detailed description of the methodology.

All estimates are presented in nominal terms (i.e., current prices in the year received), unless otherwise stated.

⁴ Parts of banking and credit union operations facilitating acquisition/ ownership of commercial property is excluded due to data limitations (though residential property is included). This is outlined in more detail in **Appendix A**.

2. CONTRIBUTION TO WESTERN AUSTRALIAN ECONOMY

This chapter describes the property industry's significance and economic contribution to the Western Australian economy. It includes estimates of direct and flow-on contributions to other industries where relevant.

The contribution of the property industry's output to the Western Australian economy is estimated across the following three key measures:

- **Gross Product:** Refers to the value of all outputs of an industry including taxes/ subsidies on its final products after deducting the cost of goods and services inputs in the production process. Gross State Product (GSP) is the measure of a state's total gross production.
- **Incomes:** Measures the level of wages and salaries paid to employees of each industry.
- **Employment:** Refers to the part-time and full-time employment positions supported by an industry, and is expressed in terms of full time equivalent (FTE) positions.

An additional measure, industry output, is also produced from Input-Output modelling but not referenced in this chapter. Industry output refers to the total dollar value of all goods and services produced during the year. This measure overstates the true economic contribution of the industry as it double counts the value of material and services inputs used in the production of an industry's goods and services.

The economic contribution is measured in terms of:

- **Initial stimulus (direct impacts)**, which represent the economic activity of the property industry itself, in terms of revenues/ output, jobs supported, etc.
- **Flow-on impacts**, which comprise the effects from:
 - **Production induced effects (Type I)**, which represent the supply chain effects from direct operational expenditure on goods and services by the property industry as well as the second and subsequent round effects of increased purchases by suppliers in response to increased sales.
 - **Household consumption effects (Type II)**, which represent the consumption induced activity from additional household expenditure on goods and services resulting from additional wages and salaries being paid within the economy.

2.1 CONTRIBUTION OF THE PROPERTY INDUSTRY TO WESTERN AUSTRALIA

The Western Australian property industry is estimated to have contributed a total of \$55.8 billion to GSP in 2021-22. This was comprised of a direct contribution of \$27.4 billion to Western Australia's GSP, or 6.9% total GSP contributed by industries (see Table 2.1 and Table 2.2) and a flow-on contribution of \$28.5 billion, or 7.2% of total GSP contributed by industries)⁵.

The property industry supported approximately 315,500 FTE employment positions in 2021-22 (23.5% of total employment), comprised of approximately 155,100 FTE jobs directly and 160,400 FTE jobs through flow-on activity. These jobs provided approximately \$38.9 billion in incomes (wages and salaries), representing 24.8% of total incomes in Western Australia.

Table 2.1. Estimated Direct & Flow-On Contribution of the Property Industry to the Western Australian Economy, 2021-22

Property Industry Component	Gross Product (\$M)	Incomes (\$M)	Emp. (FTEs)
Direct Contribution			
Residential Building Construction	\$2,577.0	\$1,817.5	12,720
Non-Residential Building Construction	\$1,711.8	\$1,105.7	7,841
Construction Services	\$11,760.5	\$10,025.5	86,756
Finance	\$811.9	\$431.5	4,994
Insurance and Superannuation Funds	\$149.4	\$82.3	612
Non-Residential Property Operators and Real Estate Services	\$5,320.5	\$3,923.3	17,314
Professional, Scientific and Technical Services	\$5,022.3	\$4,486.3	24,833
Total Direct Contribution	\$27,353.5	\$21,872.1	155,071
Flow-On Contribution			
Production Induced (Type I)	\$14,666.7	\$9,860.3	85,275
Consumption Induced (Type II)	\$13,789.0	\$7,199.1	75,160
Total Flow-On Contribution	\$28,455.7	\$17,059.4	160,434
TOTAL CONTRIBUTION TO WESTERN AUSTRALIA	\$55,809.2	\$38,931.5	315,505

Notes: Totals may not sum due to rounding.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

⁵ The total contribution to GSP by all industries in Western Australia excludes non-industry based contributions to GSP (e.g. taxes and subsidies on products levied on households rather than industry).

Table 2.2. Estimated % Contribution of the Property Industry to the Western Australian Economy, 2021-22

Property Industry Component	Gross Product (%) (a)	Incomes (%)	Emp. (%)
Direct Contribution			
Residential Building Construction	0.7%	1.2%	0.9%
Non-Residential Building Construction	0.4%	0.7%	0.6%
Construction Services	3.0%	6.4%	6.5%
Finance	0.2%	0.3%	0.4%
Insurance and Superannuation Funds	0.0%	0.1%	0.0%
Non-Residential Property Operators and Real Estate Services	1.3%	2.5%	1.3%
Professional, Scientific and Technical Services	1.3%	2.9%	1.9%
Total Direct Contribution	6.9%	13.9%	11.6%
Flow-On Contribution			
Production Induced (Type I)	3.7%	6.3%	6.4%
Consumption Induced (Type II)	3.5%	4.6%	5.6%
Total Flow-On Contribution	7.2%	10.9%	12.0%
TOTAL CONTRIBUTION TO WESTERN AUSTRALIA	14.1%	24.8%	23.5%

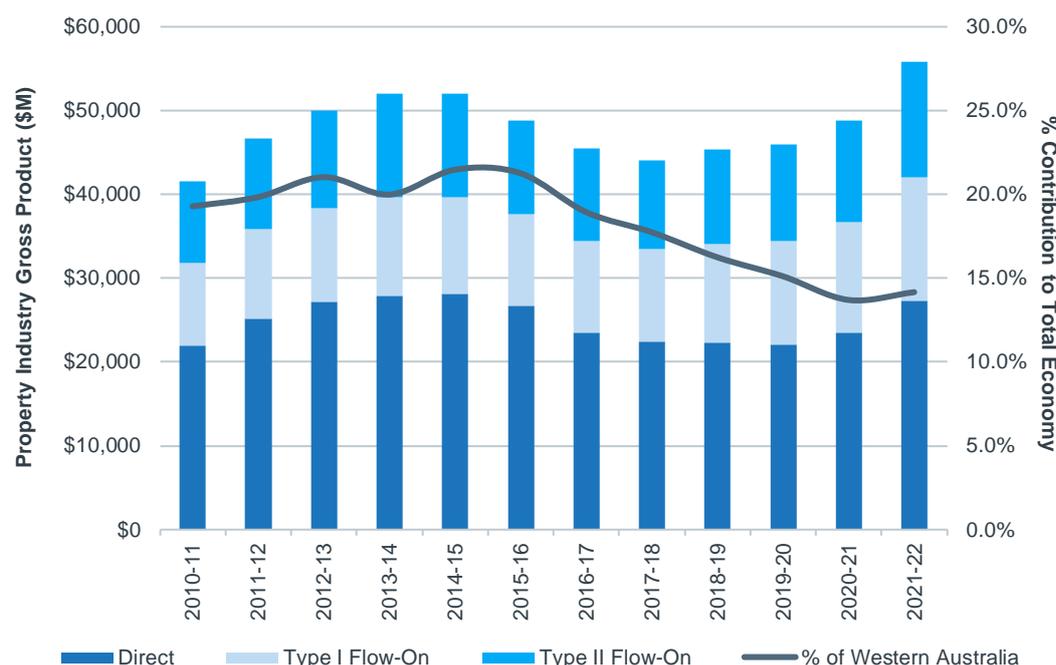
Notes: Totals may not sum due to rounding. (a) Represents percent of all industry based contributions to GSP only.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

The property industry's total (i.e., direct + flow-on) contribution to GSP has grown by 34.3% over the past 12 years, increasing from \$41.5 billion in 2010-11 to \$55.8 billion in 2021-22 (see Figure 2.1). However, throughout the 12-year period the property industry has fluctuated in total GSP contributed to the state, dipping between 2014-15 and 2018-19 as construction activity slowed during this period and was further impacted by COVID in 2019-20. However, the property industry experienced a strong recovery in the last two years with the industry's contribution to GSP increasing by \$9.8 billion.

Despite the increasing contribution to GSP since 2017-18, the property industry's share of total Western Australia industry contribution to GSP has trended downward, reaching 13.7% in 2020-21, having peaked at 21.1% in 2014-15. A key reason for this decline in the share of the state's total GSP is the expansion in value of the mining industry's contribution to GSP, principally driven by significant increases in commodity prices such as iron ore (which inflates the mining industry's impact to the state's GSP despite only a modest increase in mining production and employment). It can be expected that as commodity prices return to more normalised levels, the value of mining will recede and the percent contribution of the property industry to GDP return to pre-COVID levels.

Figure 2.1. Estimated Direct & Flow-On Contribution of the Property Industry to Western Australia GSP, 2010-11 to 2021-22, Current Prices (i.e. Nominal Terms)

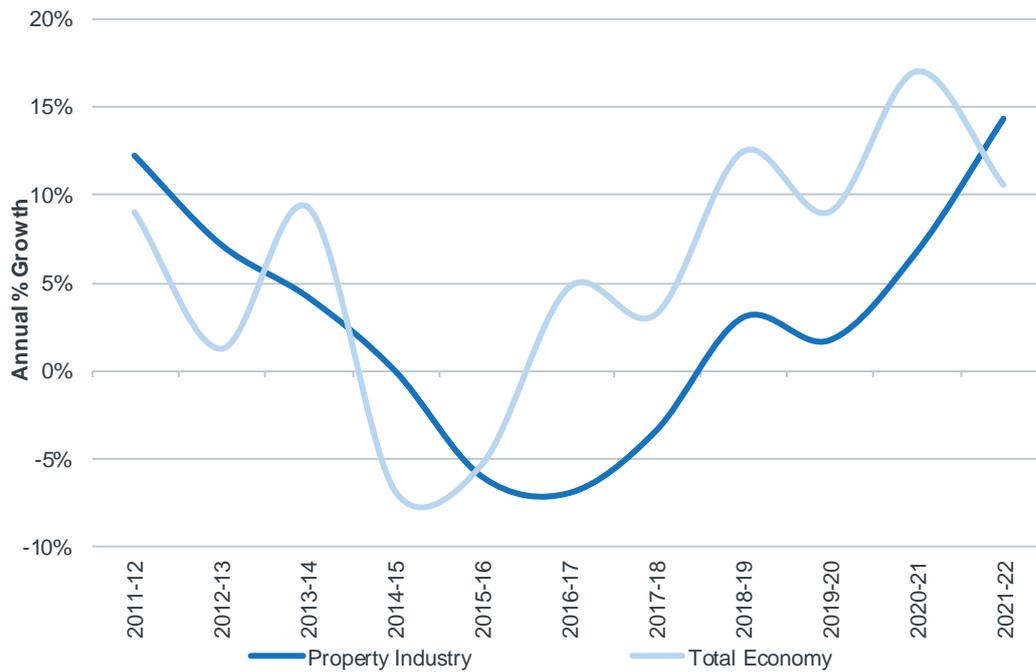


Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

Annual growth in gross product supported by the Western Australian property industry (both directly and through flow-on activity) is presented in Figure 2.2, compared to growth in Western Australia’s GSP. The figure shows the decline in the property industry between 2014-15 and 2017-18, followed by a return to growth in 2018-19 and strong growth in the last two years. Growth in the overall state economy has generally followed a similar trend but been above that of the property industry, albeit with more annual fluctuations. The property industry’s contribution to GSP (including direct and flow-on activity) has grown 23.2% since 2018-19, below that of the broader Western Australian economy over this period, which increased by 41.2%.

The slower growth of the property industry during COVID can be partly attributed to the support the property industry provided to the Western Australian and Australian business community during the pandemic, including considerable contributions in terms of commercial rent relief by property operators/ managers, which reduced overall returns of the property industry. Supply chain issues, increasing interest rates and tighter lending standards have also significantly impacted the property industry’s capacity to meet demand for new property stock and increased the risk to developers.

Figure 2.2. Annual Growth in Property Industry Supported Gross Product (Direct + Flow-On) & Western Australia GDP, 2011-12 to 2021-22, Current Prices (i.e. Nominal Terms)

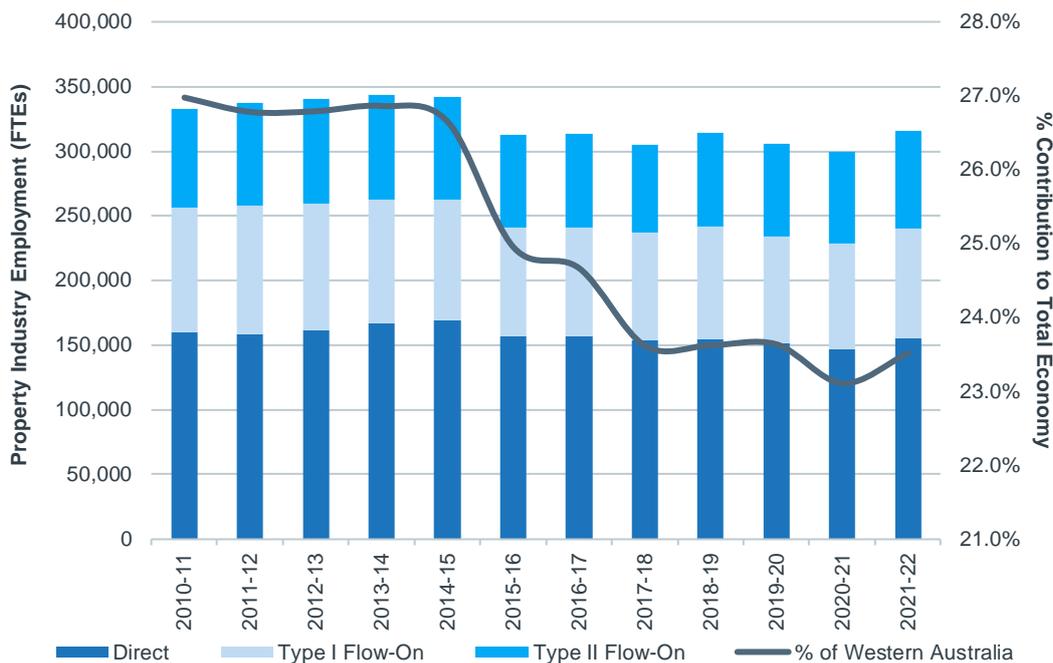


Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

Employment supported by property industry activities (including direct and flow-on jobs) has fluctuated between 299,400 and 323,400 FTE jobs between 2010-11 and 2021-22 (see Figure 2.3). Peak employment was reached in 2013-14, with employment remaining fairly comparable in 2014-15 before dropping off to 312,000 in 2015-16. From 2015-16 until 2021-22 total employment remained relatively stable, fluctuating around 310,000 FTE.

The property industry supported 27.0% of Western Australia’s total employment in 2010-11 and has since decreased its presence to support approximately 23.5% of Western Australia’s total employment in 2021-22, with the majority of this drop occurring after 2014-15.

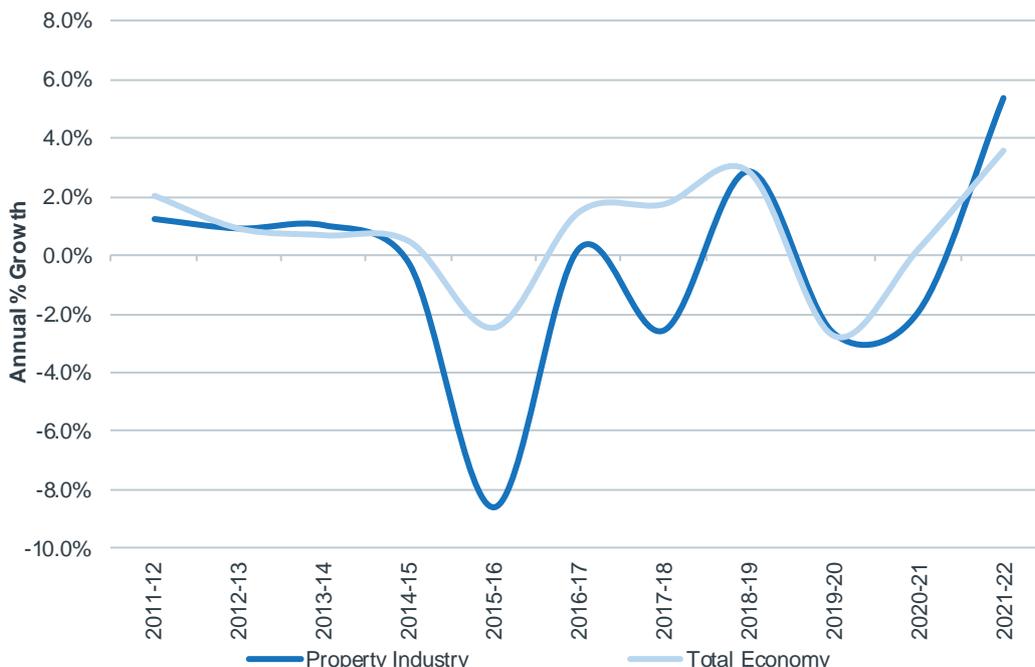
Figure 2.3. Estimated Direct & Flow-On Contribution of the Property Industry to Western Australia Employment, 2010-11 to 2021-22



Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

Annual change in employment supported by the Western Australian property industry (both directly and through flow-on activity) is presented in Figure 2.4, compared to the annual change in Western Australia’s employment. The figure shows somewhat cyclic trends in property industry employment growth every several years, largely following that of the broader state’s employment growth.

Figure 2.4. Annual Growth in Property Industry Supported Employment (Direct + Flow-On) and Western Australia Employment, 2011-12 to 2021-22



Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

2.2 CONTRIBUTION OF PROPERTY SUB-SECTORS TO WESTERN AUSTRALIA

The residential sector is the largest property sector, contributing 61.4% of direct property industry activity in Western Australia, producing around \$16.8 billion in gross product and directly supporting approximately 95,400 FTE jobs.

Table 2.3. Estimated Direct Contribution of the Property Industry to the Western Australia Economy by Property Sector, 2021-22

Property Industry Component	Gross Product (\$M)	Incomes (\$M)	Employment (FTEs)
Direct Contribution			
Residential	\$16,781.7	\$13,480.1	95,427
Non-Residential	\$10,571.8	\$8,392.0	59,644
Total Direct Contribution	\$27,353.5	\$21,872.1	155,071
Percent of Total Direct Contribution			
Residential	61.4%	61.6%	61.5%
Non-Residential	38.6%	38.4%	38.5%
Total Direct Contribution	100.0%	100.0%	100.0%

Notes: Totals may not sum due to rounding.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

The property industry was disaggregated into property type sub-sectors across both the residential and non-residential sectors (shown in sections 2.2.1 and 2.2.2, respectively) to examine their direct⁶ contributions to Australia's economy using the approach outlined in **Appendix B**.

2.2.1 Residential Sub-Sector

Three growing residential sub-sectors were examined in additional detail regarding their economic contribution to the national and state economy:

- Retirement living.
- Purpose built student accommodation.
- Build-to-rent.

An overview of the approaches used in estimating the contribution of these sub-sectors is provided in Appendix B.

Of the residential sub-sectors examined, the retirement living sub-sector was the largest, representing \$277.9 million in gross product (1.0%) and 1,700 jobs (1.1%).

Table 2.4. Estimated Direct Contribution of the Property Industry to the Western Australia Economy by Residential Property Sub-Sector, 2021-22

Property Industry Component	Gross Product (\$M)	Incomes (\$M)	Employment (FTEs)
Direct Contribution			
Retirement Living	\$277.9	\$221.5	1,708*
Purpose Built Student Accommodation	\$93.3	\$74.6	494
Build-to-Rent	\$77.4	\$62.5	466
Other Residential	\$16,333.1	\$13,121.6	92,758
Total Direct Contribution	\$16,781.7	\$13,480.1	95,427

⁶ Only direct contributions have been examined as insufficient data is available to appropriately identify any variances between sub-sectors contribution to flow-on effects.

Property Industry Component	Gross Product (\$M)	Incomes (\$M)	Employment (FTEs)
% of Total Direct Contribution			
Retirement Living	1.0%	1.0%	1.1%
Purpose Built Student Accommodation	0.3%	0.3%	0.3%
Build-to-Rent	0.3%	0.3%	0.3%
Other Residential	59.7%	60.0%	59.8%
Total Direct Contribution	61.4%	61.6%	61.5%

Notes: Totals may not sum due to rounding.

* The estimate of employment in the retirement living sub-sector is an estimate of the number of jobs and not FTEs, with this job estimate sourced from IBISWorld (2023) and disaggregated to each State/ Territory on a shares basis. It is noted that the methodology to develop the estimate of employment in the IBISWorld report differs from the approach used for examining the contribution across other measures in this report. However, to be consistent with other materials published by the Property Council of Australia, the IBISWorld job estimate has been used and is approximately in line with the modelled estimate of jobs supported by the retirement living sector by AEC.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), AFR (2023), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), EY (2023), IBISWorld (2023), Property Council Australia (2022a, 2022b, 2021 and 2014), RBA (2021 and 2022), Savills (2022), Travers (2022), Uniloge (n.d.), The Urban Developer (2023, 2022, and 2016).

2.2.2 Non-Residential Sub-Sector

Of the non-residential sub-sector, the commercial property sub-sector is the largest, estimated to have contributed 8.4% of total direct property industry GSP impacts, producing \$2.3 billion in GSP and supporting 12,900 FTE jobs. Industrial and education are the second and third largest subsectors, contributing \$2.1 billion (7.9%) and \$1.6 billion (5.8%) in gross product, respectively.

Table 2.5. Estimated Direct Contribution of the Property Industry to the Western Australia Economy by Non-Residential Property Sub-Sector, 2021-22

Property Industry Component	Gross Product (\$M)	Incomes (\$M)	Employment (FTEs)
Direct Contribution			
Retail	\$1,494.7	\$1,186.5	8,433
Commercial	\$2,284.6	\$1,813.6	12,889
Industrial	\$2,166.2	\$1,719.6	12,221
Health	\$1,176.6	\$934.0	6,638
Aged Care	\$400.9	\$318.2	2,262
Education	\$1,578.8	\$1,253.3	8,907
Entertainment/ Recreation	\$395.8	\$314.2	2,233
Short Term Accommodation	\$217.3	\$172.5	1,226
Religion	\$33.6	\$26.7	190
Other	\$823.3	\$653.5	4,645
Total Direct Contribution	\$10,571.8	\$8,392.0	59,644
% of Total Direct Contribution			
Retail	5.5%	5.4%	5.4%
Commercial	8.4%	8.3%	8.3%
Industrial	7.9%	7.9%	7.9%
Health	4.3%	4.3%	4.3%
Aged Care	1.5%	1.5%	1.5%
Education	5.8%	5.7%	5.7%
Entertainment/ Recreation	1.4%	1.4%	1.4%
Short Term Accommodation	0.8%	0.8%	0.8%
Religion	0.1%	0.1%	0.1%
Other	3.0%	3.0%	3.0%
Total Direct Contribution	38.6%	38.4%	38.5%

Notes: Totals may not sum due to rounding.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

2.3 COMPARISON WITH OTHER INDUSTRIES

This section presents comparisons of the direct contribution of the Western Australian property industry to the Western Australian economy against other industries in the economy. This section only presents the direct contribution of the property industry compared to the direct contribution of other industries. Flow-on contributions cannot be presented as this would introduce double counting across Western Australia’s economic activity (as flow-on contributions of the property industry represent direct activity of the industries it purchases from, and vice versa).

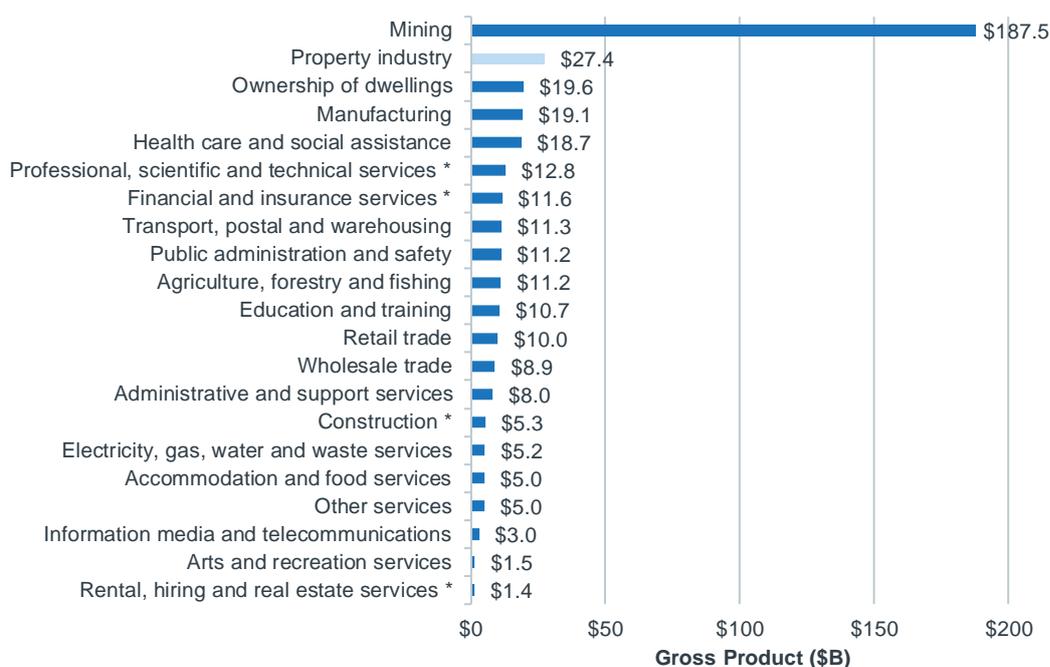
A summary table of the direct contribution of the property industry compared to other industries is provided in **Appendix C**.

2.3.1 Gross State Product

Western Australia’s total GSP contributed by industries was \$394.4 billion in 2021-22⁷. Figure 2.5 shows the property industry was the second largest industry in Western Australia contributing \$27.4 billion directly to the state economy, or 6.9% of total industry contribution to GSP.

The Western Australian economy is highly reliant on the mining industry (\$187.5 billion contribution to GSP or 47.5% of total). However, the property industry contributed approximately 28% more to GSP than the next largest sector, ownership of dwellings (\$19.6 billion or 5.0% of total).

Figure 2.5. Direct Contribution to Gross State Product by Industry, 2021-22 (\$ Billion)



Note: * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry. Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

2.3.2 Incomes

Figure 2.6 shows the property industry was the highest direct contributing sector to incomes (wages and salaries) in Western Australia in 2021-22, paying approximately \$21.9 billion to Western Australian households (13.9% of Western Australia’s total wages and salaries paid directly to workers in 2021-22).

⁷ The total contribution to GSP by all industries of \$394.4 billion differs from total GSP in the State Accounts of \$404.5 billion (ABS, 2023a) as it excludes non-industry based contributions to GSP (e.g. taxes and subsidies on products levied on households rather than industry).

Figure 2.6. Direct Contribution to Incomes by Industry, 2021-22 (\$ Billion)



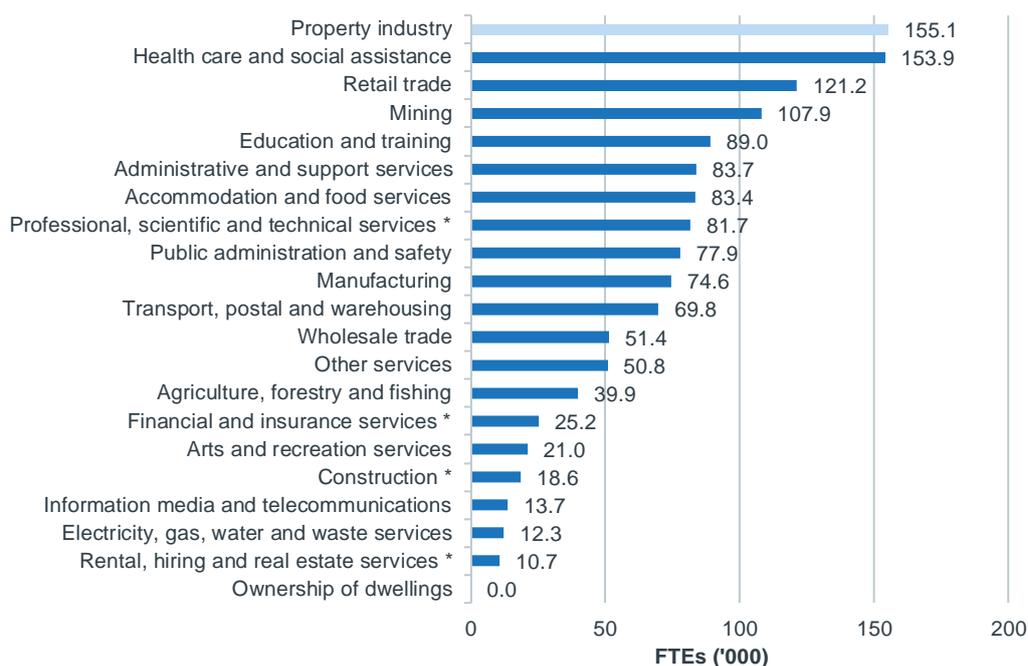
Note: * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry. Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

Mining however, as the highest contributor to GSP, is the third highest industry in terms of wages paid to Western Australians. This highlights the impact the commodity prices have in driving the value of the mining industry and its contribution to the state’s GSP. In terms of the contribution in terms of incomes and employment mining is, comparatively, not nearly as significant.

2.3.3 Employment

Figure 2.7 shows that the property industry was the highest direct contributor to Western Australian jobs in 2021-22. The industry employed 155,100 FTE workers (11.6% of Western Australia’s total). The next largest employing sector in Western Australia was health care and social assistance, which employed 153,900 FTE workers (11.5% of the Western Australian total).

Figure 2.7. Direct Contribution to Employment by Industry, 2021-22 ('000 FTEs)



Note: * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry. Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

2.4 EMPLOYMENT BY GENDER

Of the 155,100 FTEs directly employed in the property industry across Western Australia in 2021-22, 26.8% are female and 73.2% are male. A key driver of the high proportion of direct male employment in the property industry is the dominance of construction activity. Construction employs 107,300 FTE jobs (or 69.2% of the property industry workforce), approximately 91,300 of whom are male. Female employment in non-construction related property industry jobs accounted for around 53.6% of total FTE jobs.

Table 2.6. Direct Employment by the Property Industry in Western Australia by Industry and Gender, 2021-22

Industry of Activity	Total	Male		Female	
	FTE	FTE	% Split	FTE	% Split
Construction ^(a)	107,317	91,335	85.1%	15,982	14.9%
Non-Construction ^(b)	47,754	22,152	46.4%	25,602	53.6%
Total	155,071	113,487	73.2%	41,584	26.8%

Note: Totals may not add up due to rounding. (a) Includes the property related industries of residential building construction, non-residential building construction, and construction services, as outlined in section 2.1. (b) Includes the property related industries of Finance, Insurance and Superannuation Funds, Property Operators and Real Estate Services, and Professional, Scientific and Technical Services, as outlined in section 2.1.

Sources: AEC, ABS (2022a).

A detailed breakdown of direct and flow-on employment supported by the property industry across industries by gender is listed in **Appendix C** (Table C.2). Of note, of the 160,400 FTE jobs supported by the property industry through flow-on activity, 45.6% are female, including 38.7% of production induced flow-on jobs and 53.5% of household consumption induced flow-on jobs.

3. CONTRIBUTION TO STATE ELECTORATES

The following table provides a summary of the direct contribution of the property industry to each State Electorate in Western Australia, in terms of gross product, incomes and employment. The direct contribution the property industry makes to each electorate's economy is presented both in value and as a proportion of total electorate economy.

Table 3.1. Direct Contribution of Property Industry by State Electorate, 2021-22

State Electorate	Property Industry Contribution			% of Total Electorate		
	Gross Product (\$M)	Incomes (\$M)	Emp. (FTEs)	Gross Product (%)	Incomes (%)	Emp. (%)
Albany	\$345.2	\$265.7	2,019	11.9%	13.6%	12.1%
Armadale	\$152.5	\$120.9	945	10.7%	12.8%	9.9%
Balcatta	\$650.2	\$515.7	3,895	18.1%	22.6%	19.2%
Baldivis	\$104.1	\$81.9	660	8.8%	12.2%	9.3%
Bassendean	\$269.0	\$217.9	1,707	11.8%	16.1%	14.4%
Bateman	\$470.3	\$369.6	2,437	10.4%	17.8%	12.5%
Belmont	\$1,245.7	\$1,010.5	6,877	5.3%	11.2%	8.3%
Bicton	\$285.0	\$224.1	1,535	14.6%	17.9%	12.7%
Bunbury	\$673.9	\$524.4	3,788	14.3%	16.9%	13.4%
Burns Beach	\$211.3	\$171.3	1,355	15.2%	20.8%	16.1%
Butler	\$224.8	\$181.0	1,361	14.1%	20.4%	16.0%
Cannington	\$340.7	\$269.4	1,899	8.4%	11.0%	8.1%
Carine	\$266.3	\$212.1	1,527	16.2%	21.4%	15.9%
Central Wheatbelt	\$203.3	\$151.9	1,259	2.8%	4.8%	6.8%
Churchlands	\$291.3	\$234.6	1,555	11.7%	14.1%	10.1%
Cockburn	\$261.9	\$210.8	1,617	15.8%	22.1%	17.3%
Collie-Preston	\$182.5	\$148.0	1,150	6.4%	9.8%	9.3%
Cottesloe	\$401.7	\$319.0	1,987	12.5%	15.0%	10.1%
Darling Range	\$323.3	\$262.7	2,051	14.1%	18.2%	15.3%
Dawesville	\$106.1	\$86.3	692	10.7%	15.8%	12.5%
Forrestfield	\$325.5	\$263.5	1,990	9.7%	14.1%	11.8%
Fremantle	\$537.6	\$436.6	3,086	11.4%	14.4%	10.8%
Geraldton	\$336.1	\$261.7	1,956	9.5%	13.6%	11.6%
Hillarys	\$212.3	\$166.2	1,233	13.3%	17.6%	12.6%
Jandakot	\$753.3	\$619.6	4,559	8.6%	12.9%	11.1%
Joondalup	\$340.7	\$267.0	1,876	9.8%	10.3%	7.5%
Kalamunda	\$361.1	\$290.4	2,141	12.4%	16.8%	13.8%
Kalgoorlie	\$282.2	\$226.2	1,890	3.0%	6.2%	7.2%
Kimberley	\$272.0	\$220.9	1,515	1.7%	8.1%	7.4%
Kingsley	\$316.4	\$251.2	1,963	15.3%	19.7%	15.9%
Kwinana	\$741.7	\$610.3	4,628	9.3%	15.3%	15.7%
Landsdale	\$1,003.1	\$822.5	6,962	19.4%	27.6%	26.9%
Mandurah	\$374.8	\$281.3	1,949	13.9%	15.0%	10.6%
Maylands	\$350.8	\$284.8	2,194	13.8%	18.5%	15.4%
Midland	\$346.5	\$274.1	2,087	8.0%	9.8%	7.7%
Mirrabooka	\$104.6	\$84.2	634	9.5%	13.5%	10.5%
Moore	\$227.9	\$178.4	1,457	3.9%	6.1%	9.1%
Morley	\$190.8	\$149.5	1,076	11.5%	14.2%	9.8%
Mount Lawley	\$198.8	\$158.0	1,052	8.8%	12.9%	9.2%

State Electorate	Property Industry Contribution			% of Total Electorate		
	Gross Product (\$M)	Incomes (\$M)	Emp. (FTEs)	Gross Product (%)	Incomes (%)	Emp. (%)
Murray-Wellington	\$396.9	\$323.7	2,306	8.7%	13.8%	12.7%
Nedlands	\$2,055.5	\$1,623.1	9,453	10.5%	15.0%	10.0%
North West Central	\$251.4	\$202.9	1,720	0.6%	4.1%	6.3%
Perth	\$3,554.2	\$2,854.3	16,970	8.7%	16.8%	11.2%
Pilbara	\$594.8	\$483.7	3,357	0.9%	7.7%	8.1%
Riverton	\$236.3	\$185.8	1,226	14.4%	18.4%	12.5%
Rockingham	\$360.6	\$282.6	2,069	9.6%	11.7%	10.1%
Roe	\$236.8	\$174.8	1,304	4.6%	5.1%	7.1%
Scarborough	\$1,134.3	\$896.2	6,420	18.3%	22.4%	17.2%
South Perth	\$318.0	\$250.0	1,518	13.8%	17.2%	11.4%
Southern River	\$144.4	\$116.4	848	11.0%	14.9%	11.2%
Swan Hills	\$267.6	\$215.9	1,620	11.4%	15.2%	12.1%
Thornlie	\$125.0	\$100.9	736	10.6%	14.7%	11.4%
Vasse	\$455.3	\$362.8	2,695	14.1%	17.4%	13.7%
Victoria Park	\$536.2	\$431.4	2,763	9.1%	12.0%	8.3%
Wanneroo	\$347.8	\$283.2	2,249	14.0%	19.1%	15.8%
Warnbro	\$199.4	\$159.9	1,292	12.7%	18.6%	14.7%
Warren-Blackwood	\$291.2	\$226.1	1,685	8.9%	10.5%	9.4%
West Swan	\$888.7	\$722.3	5,873	16.0%	22.1%	20.1%
Willagee	\$665.0	\$544.6	4,336	11.5%	14.1%	13.1%
Migratory - Offshore - Shipping (WA)	\$8.8	\$7.4	72	0.4%	2.6%	4.7%
Western Australia	\$27,353.5	\$21,872.1	155,071	6.9%	13.9%	11.6%

Notes: Totals may not sum due to rounding.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

4. TAXATION CONTRIBUTION

This chapter outlines the direct contribution of property related activities to Western Australian government taxes as well as local government rates and charges. The approach utilised in allocating Western Australian taxes to property related activities is outlined in **Appendix D**.

4.1 CONTRIBUTION TO STATE AND LOCAL GOVERNMENT REVENUES

The property industry contributed approximately \$7.0 billion in combined Western Australian Government tax revenues and Western Australian local government rates, fees and charges revenue in 2021-22. This equates to 27.9% of total State taxes and local government rates, fees and charges revenues in 2021-22.

Property related activities generated \$4.5 billion in Western Australian Government taxation revenue in 2021-22 or 19.7% of total Western Australian Government taxation revenues, making the property industry the second largest contributor to Western Australian Government tax and royalty revenues behind mining. Transfer/ stamp duties were the largest contributor to property-based taxation revenue (58.6% or \$2.6 billion), followed by land tax (16.7% or \$749.0 million). Property related payroll tax is estimated to have contributed \$613.9 million (13.7%), with other property related taxes accounting for \$488.0 million (10.9%).

A total of \$2.6 billion in rates, fees and charges revenue is estimated to have been raised by Western Australian local government authorities in 2021-22.

Table 4.1. Western Australian and Local Government Property Related Revenues, 2021-22

Level of Government/ Tax Type	Value
Western Australia Government	
Payroll Tax (\$M)	\$613.9
Transfer/ Stamp Duties (\$M)	\$2,621.0
Land Tax (\$M)	\$749.0
Other Property Related Taxes (\$M)	\$488.0
Total Property Related Taxes (\$M)	\$4,471.9
<i>Property Contribution to Total State Taxes (%)</i>	<i>19.7%</i>
Western Australia Local Government	
Rates, Fees and Charges Revenue (\$M)	\$2,555.9
Combined State and Local Government	
Total Property Related Taxes (\$M) ^(a)	\$7,027.8
<i>Property Contribution to Total State and Local Government Taxes (%)</i>	<i>27.9%</i>

Note: (a) Includes local government rates, fees and charges.

Sources: AEC, ABS (2023g), Western Australia Government (2022), supported by previous AEC analysis and benchmarking of local government rates and charges revenue.

4.2 COMPARISON OF STATE TAX CONTRIBUTION WITH OTHER INDUSTRIES

Property related activities are estimated to have been the second largest single industry contributing to Western Australian taxes and royalty revenues in 2021-22, behind the mining industry (\$11.6 billion). The property industry provided the second highest tax contribution per dollar of GSP (\$0.16), ranked only behind arts and recreation services (\$0.26) which primarily involves taxes on gambling and gaming. However, total taxation revenues from the arts and recreation industry were significantly smaller (\$385.4 million) than the property industry.

The contribution to State taxes by property related activities and other industries of the economy has been estimated utilising the approach outlined in **Appendix D**.

Table 4.2. Contribution to Western Australian Taxes, Comparison of Property Related Activities to Other Industries of the Economy, 2021-22

Industry	Tax Estimate (\$M)	Contribution to GSP (\$M)	Tax per \$1 of GSP Contributed (\$)
Property related taxes	\$4,471.9	\$27,353.5	\$0.16
Agriculture, forestry and fishing	\$241.9	\$11,155.6	\$0.02
Mining	\$11,552.9	\$187,498.4	\$0.06
Manufacturing	\$350.6	\$19,146.6	\$0.02
Electricity, gas, water and waste services	\$48.0	\$5,195.8	\$0.01
Construction	\$93.2	\$5,338.8	\$0.02
Wholesale trade	\$161.5	\$8,946.0	\$0.02
Retail trade	\$210.5	\$10,044.5	\$0.02
Accommodation and food services	\$122.1	\$4,974.7	\$0.02
Transport, postal and warehousing	\$198.0	\$11,341.6	\$0.02
Information media and telecommunications	\$38.2	\$3,008.8	\$0.01
Financial and insurance services	\$946.5	\$11,584.2	\$0.08
Rental, hiring and real estate services	\$29.3	\$1,385.8	\$0.02
Professional, scientific and technical services	\$321.7	\$12,810.2	\$0.03
Administrative and support services	\$213.2	\$8,031.5	\$0.03
Public administration and safety	\$388.6	\$11,202.8	\$0.03
Education and training	\$272.4	\$10,700.3	\$0.03
Health care and social assistance	\$502.2	\$18,718.9	\$0.03
Arts and recreation services	\$385.4	\$1,463.5	\$0.26
Other services	\$135.9	\$4,972.3	\$0.03
Ownership of dwellings	\$0.0	\$19,552.6	\$0.00
Not allocated ^(a)	\$1,964.0	-	-
Total Western Australia	\$22,648.0	\$394,426.3	\$0.06

Note: (a) Taxes that have not been allocated to an industry include stamp duties on motor vehicle and other vehicle registrations. While a part of these taxes are payable by industry, the majority of these taxes are paid by households. Due to data limitations it is not possible to allocate the portion of these taxes that are paid by industry.

Sources: AEC, ABS (2023g), Western Australia Government (2022).

REFERENCES

- ABS (2012). Census of Population and Housing, 2011. Cat no. 2001.0. Australian Bureau of Statistics, Canberra.
- ABS (2017). Census of Population and Housing, 2016. Cat no. 2071.0. Australian Bureau of Statistics, Canberra.
- ABS (2021a). *Australian National Accounts: Input-Output Tables – Electronic Publication, 2018-19 tables*. Cat. No. 5209.0.55.001, Australian Bureau of Statistics, Canberra.
- ABS (2021b). *Australian Statistical Geography Standard (ASGS): Edition 3 – Main Structure and Greater Capital City Statistical Areas, July 2021 – June 2026*. Australian Bureau of Statistics, Canberra.
- ABS (2022a). *Census of Population and Housing, 2021*. TableBuilder. Australian Bureau of Statistics, Canberra.
- ABS (2022b). *Estimates of Industry Multifactor Productivity*. Cat. No. 5260.0.55.002. Australian Bureau of Statistics, Canberra.
- ABS (2022c). *Australian National Accounts: Input-Output Tables – Electronic Publication, 2019-20 tables*. Cat. No. 5209.0.55.001, Australian Bureau of Statistics, Canberra.
- ABS (2023a). *Australian National Accounts: State Accounts*. Cat. No. 5220.0. Australian Bureau of Statistics, Canberra.
- ABS (2023b). *Counts of Australian Businesses, including Entries and Exits, June 2019 to June 2023*. Multiple years of data used. Cat. No. 8165.0. Australian Bureau of Statistics, Canberra.
- ABS (2023c). *Australian National Accounts: Input-Output Tables – Electronic Publication, 2020-21 tables*. Cat. No. 5209.0.55.001, Australian Bureau of Statistics, Canberra.
- ABS (2023d). *Engineering Construction Activity, Australia*. Cat. No. 8762.0, Australian Bureau of Statistics, Canberra.
- ABS (2023e). *Building Activity, Australia*. Cat. No. 8752.0, Australian Bureau of Statistics, Canberra.
- ABS (2023f). *Wage Price Index, Australia*. Cat. No. 6345.0, Australian Bureau of Statistics, Canberra.
- ABS (2023g). *Taxation Revenue, Australia, 2021-22*. Cat. No. 5506.0, Australian Bureau of Statistics, Canberra.
- AEC (unpublished^a). *Employment Estimates Model 2021-22*. DataAU, AEC Group, Brisbane.
- AEC (unpublished^b). *Gross Regional Product Model 2021-22*. DataAU, AEC Group, Brisbane.
- AFR (2023). *New investment in build to rent to eclipse offices, logistics by 2030*. Retrieved from <https://www.afr.com/property/commercial/new-investment-in-build-to-rent-to-eclipse-offices-logistics-by-2030-20230605-p5de1q>.
- APRA (2021). *Quarterly Private Health Insurance Statistics, June 2021*. Australian Prudential Regulation Authority. Retrieved from <https://www.apra.gov.au/sites/default/files/2021-08/Quarterly%20Private%20Health%20Insurance%20Statistics%20June%202021.pdf>.
- APRA (2022a). *Quarterly MySuper Statistics*. Australian Prudential Regulation Authority. Available from <https://www.apra.gov.au/quarterly-superannuation-statistics>. Last accessed 1 August, 2023.
- APRA (2022b). *Quarterly Private Health Insurance Statistics, June 2022*. Australian Prudential Regulation Authority. Retrieved from <https://www.apra.gov.au/sites/default/files/2022-08/Quarterly%20Private%20Health%20Insurance%20Statistics%20June%202022.pdf>.
- APRA (2023a). *Quarterly Authorised Deposit-Taking Institution Performance*. Australian Prudential Regulation Authority. Available from <https://www.apra.gov.au/quarterly-authorised-deposit-taking-institution-statistics>. Last accessed 1 August, 2023.
- APRA (2023b). *Quarterly Superannuation Performance Statistics, March 2023*. Australian Prudential Regulation Authority. Available from <https://www.apra.gov.au/quarterly-superannuation-statistics>. Last accessed 1 August, 2023.

- ATO (2023a). *Taxation Statistics 2020-21, Table 5: Companies*. Australian Taxation Office, Canberra. Available from: <https://www.ato.gov.au/about-ato/research-and-statistics/in-detail/taxation-statistics/taxation-statistics-2020-21/?anchor=Companies#Companiesdetailedtables>. Last accessed: 21 August, 2023.
- ATO (2023b). *Taxation Statistics 2020-21, Table 2: Capital Gains Tax*. Australian Taxation Office, Canberra. Available from: <https://www.ato.gov.au/about-ato/research-and-statistics/in-detail/taxation-statistics/taxation-statistics-2020-21/?anchor=Capitalgainstax#Capitalgainstax>. Last accessed: 21 August, 2023.
- ATO (2023c). *Taxation Statistics 2020-21, Table 6: Individuals*. Australian Taxation Office, Canberra. Available from: <https://www.ato.gov.au/about-ato/research-and-statistics/in-detail/taxation-statistics/taxation-statistics-2020-21/?anchor=IndividualsStatistics#IndividualsStatistics>. Last accessed: 21 August, 2023.
- Australian Electoral Commission (2019). *Federal electoral boundaries*. Available from: <https://www.aec.gov.au/electorates/gis/index.htm>. Last accessed: 10 August, 2023.
- Data WA (2023). *State Electorates [Current] (LGATE-069)*. Government of Western Australia
- Department of Training and Workforce Development (2023). *The cost of living in Perth*. Government of Western Australia
- EY (2023). *A New form of housing supply for Australia: Build to Rent housing*. Provided by PCA
- Flegg, A.T., Lamonica, G.R., Chelli, F.M., Recchioni, M.C. and Tohmo, T. (2021). A new approach to modelling the input-output structure of regional economies using non-survey methods. *Journal of Economic Structures*, 2021, 10:12.
- IBISWorld (2023). *Retirement Villages in Australia*. Accessed from <https://www.ibisworld.com/au/industry/retirement-villages/5534/>
- Property Council of Australia (2014). *National overview of the retirement village sector*. Accessed from <https://www.grantthornton.com.au/insights/reports/national-overview-of-the-retirement-village-sector/>
- Property Council of Australia (2021). 2021 PwC / Property Council Retirement Census. Accessed from <https://www.propertycouncil.com.au/news/the-2021-snapshot-report>
- Property Council of Australia (2022a). 2022 PwC / Property Council Retirement Census. Accessed from <https://www.propertycouncil.com.au/wp-content/uploads/2023/06/20230619-2022-Retirement-Census-Snapshot-Report-Online-Version.pdf>
- Property Council Australia (2022b). *The Unsung Hero Underpinning Australia's Largest Service Export*. Provided by PCA <https://www.ibisworld.com/au/industry/retirement-villages/5534/>
- RBA (2021). *Reserve Bank of Australia Annual Report 2021*. Reserve Bank of Australia. Available from: <https://www.rba.gov.au/publications/annual-reports/rba/>. Last accessed: 1 August, 2023.
- RBA (2022). *Reserve Bank of Australia Annual Report 2022*. Reserve Bank of Australia. Available from: <https://www.rba.gov.au/publications/annual-reports/rba/2022/>. Last accessed: 1 August, 2023.
- Savills (2022). *Australian Student Accommodation 2022*. Retrieved from <https://pdf.savills.asia/asia-pacific-research/australian-research/australia-student-accommodation/australian-student-accommodation-2022.pdf>
- The Urban Developer (2016). *New Student Hotspot Underway In Brisbane*. Retrieved from: <https://www.theurbandevolver.com/articles/new-student-hotspot-underway-brisbane>
- The Urban Developer (2022). *Scape Readies \$50m Student Accommodation Project*. Retrieved from <https://www.theurbandevolver.com/articles/scape-australia-student-accommodation-130-leicester-street-calrton-development-construction>
- The Urban Developer (2023). *[+] Iglu and UNSW Agree Huge Student Village in Sydney's East*. Retrieved from <https://www.theurbandevolver.com/articles/iglu-and-unsw-agree-huge-student-village-in-sydney-s-east>
- Travers, M., et al. (2022). *Business models, consumer experiences and regulation of retirement villages*. Retrieved from <https://www.ahuri.edu.au/research/final-reports/392>

West, G. R. (1993). *User's Guide, Input-Output Analysis for Practitioners An Interactive Input-Output Software Package Version 7.1*. Department of Economics. University of Queensland, 1993.

Western Australian Government (2022). *2021-22 Annual Report on State Finances*. Western Australian Government.

APPENDIX A: DEFINITION OF THE PROPERTY INDUSTRY

The information contained in this report is obtained from published data produced by the Australian Bureau of Statistics (ABS) as well as other data sources as relevant. The ABS uses the Australian and New Zealand Standard Industrial Classification (ANZSIC) in the collection and publication of statistics. The 2006 ANZSIC has been used in this report.

The property industry as defined in this report consists of the following industries.

CONSTRUCTION

Class 3011 – House Construction

This class consists of units mainly engaged in the construction of houses (except semi-detached houses) or in carrying out alterations, additions or renovations to houses, or in organising or managing these activities.

Not included are units mainly engaging in:

- Off-site production of prefabricated buildings or building components are included in the appropriate classes of Group 222 Structural Metal Product Manufacturing
- Providing special trade repair services such as electrical or plumbing repairs are included in the appropriate classes of Group 323 Building Installation Services
- Providing architectural or building consultancy services are included in the appropriate classes of Group 692 Architectural, Engineering and Technical Services.

Class 3019 – Other Residential Building Construction

This class consists of units mainly engaged in the construction of residential buildings (except freestanding houses) or in carrying out alterations, additions or renovations to such buildings or in organising or managing these activities.

Not included are units mainly engaging in:

- Off-site production of prefabricated buildings or building components are included in the appropriate classes of Group 222 Structural Metal Product Manufacturing
- The construction of hotels, hostels, hospitals and other public buildings are included in Class 3020 Non-Residential Building Construction
- Providing special trade repair services such as electrical or plumbing repairs are included in the appropriate classes of Group 323 Building Installation Services
- Providing architectural or building consultancy services are included in the appropriate classes of Group 692 Architectural, Engineering and Technical Services.

Class 3020 – Non-Residential Building Construction

This class consists of units mainly engaged in the construction of non-residential buildings such as hotels, motels, hostels, hospitals, prisons or other buildings, in carrying out alterations, additions or renovation to such buildings, or in organising or managing these activities.

Not included are units mainly engaging in:

- Off-site production of prefabricated metal buildings or metal building components are included in the appropriate classes of Group 222 Structural Metal Product Manufacturing
- Providing special trade repair services such as electrical or plumbing repairs are included in the appropriate classes of Group 323 Building Installation Services

- Providing architectural or building consultancy services are included in the appropriate classes of Group 692 Architectural, Engineering and Technical Services.

Class 3211 – Land Development and Subdivision

This class consists of units primarily engaged in subdividing land into lots and servicing land (such as excavation work for the installation of roads and utility lines), for subsequent sale.

Not included are units mainly engaging in:

- Constructing buildings on lots they subdivide or develop are included in the appropriate classes of Subdivision 30 Building Construction
- Construction of roads on a subcontract basis for land subdividers are included in Class 3101 Road and Bridge Construction
- Legal subdivision of land without land preparation are included elsewhere in the classification system based on the primary activity of the unit.

Class 3212 – Site Preparation Services

This class consists of units mainly engaged in earthmoving work such as levelling of construction sites, excavation of foundations, trench digging or removal of overburden.

Not included are units mainly engaging in:

- Quarrying sand or gravel are included in Class 0911 Gravel and Sand Quarrying
- Quarrying earth soil or filling are included in Class 0919 Other Construction Material Mining
- Selling sand, gravel or other quarried construction materials are included in Class 3339 Other Hardware Goods Wholesaling.

Class 3221 – Concreting Services

This class consists of units mainly engaged in concreting work, concrete pouring or other concrete work on construction projects.

Not included are units mainly engaging in:

- Terrazzo laying are included in Class 3243 Tiling and Carpeting Services
- Brick paving are included in Class 3291 Landscape Construction Services.

Class 3222 – Bricklaying Services

This class consists of units mainly engaged in bricklaying or concrete block laying.

Not included are units mainly engaging in:

- Units mainly engaged in brick paving are included in Class 3291 Landscape Construction Services

Class 3223 – Roofing Services

This class consists of units mainly engaged in roof tiling, metal roof fixing and the application of roof coatings.

Not included are units mainly engaging in:

- The installation of insulation materials are included in Class 3239 Other Building Installation Services
- The installation of roof guttering are included in Class 3231 Plumbing Services
- The installation of wooden roof trusses are included in Class 3242 Carpentry Services.

Class 3224 – Structural Steel Erection Services

This class consists of units mainly engaged in the erection (including on-site fabrication) of metal silos, storage tanks or structural steel components for buildings or other structures such as bridges, overhead cranes or electricity transmission towers.

Not included are units mainly engaging in:

- The construction of buildings (which incorporate structural steel components) are included in the appropriate classes of Subdivision 30 Building Construction
- The construction of complete structures such as bridges, towers or oil refinery plants (which incorporate structural steel components) are included in the appropriate classes of Subdivision 31 Heavy and Civil Engineering Construction.

Class 3231 – Plumbing Services

This class consists of units mainly engaged in plumbing or drainage (except sewerage or stormwater drainage systems construction). Also included are units mainly engaged in septic tank and other plumbing installation and repair.

Not included are units mainly engaging in:

- The construction of sewerage or stormwater drainage systems are included in Class 3109 Other Heavy and Civil Engineering Construction
- Installation of fire sprinkler systems are included in Class 3234 Fire and Security Alarm Installation Services
- Repairing gas appliances are included in Class 9421 Domestic Appliance Repair and Maintenance
- Pumping or cleaning septic tanks are included in Class 2921 Waste Treatment and Disposal Services.

Class 3232 – Electrical Services

This class consists of units mainly engaged in the installation of electrical wiring or fittings in buildings or other construction projects. Electrical work arising from the installation of appliances is included in this class.

Not included are units mainly engaging in:

- Repairing electricity transmission or distribution lines are included in Class 3109 Other Heavy and Civil Engineering Construction
- Installing fire and/or security systems are included in Class 3234 Fire and Security Alarm Installation Services
- Repairing electrical appliances are included in Class 9421 Domestic Appliance Repair and Maintenance.

Class 3233 – Air Conditioning and Heating Services

This class consists of units mainly engaged in the installation of heating equipment, refrigeration equipment, air conditioning equipment, or in the installation of air conditioning duct work.

Not included are units mainly engaging in:

- Manufacturing air conditioning duct work are included in Class 2240 Sheet Metal Product Manufacturing (except Metal Structural and Container Products)
- The on-site assembly of industrial furnaces from prefabricated components are included in Class 3109 Other Heavy and Civil Engineering Construction
- Installing motor vehicle air conditioning equipment are included in Class 9411 Automotive Electrical Services.

Class 3234 – Fire and Security Alarm Installation Services

This class consists of units mainly engaged in the installation of fire protection, detection and control systems, and in installing security systems.

Not included are units mainly engaging in:

- Units mainly engaged in the installation and monitoring of security systems are included in Class 7712 Investigation and Security Services.

Class 3239 – Other Building Installation Services

This class consists of units mainly engaged in building installation services not elsewhere classified.

Class 3241 – Plastering and Ceiling Services

This class consists of units mainly engaged in plastering, plaster fixing or finishing.

Class 3242 – Carpentry Services

This class consists of units mainly engaged in carpentry work or the fixing of wooden formwork on construction projects.

Not included are units mainly engaging in:

- Units mainly engaged in manufacturing prefabricated, wooden built-in cabinets, cupboards or shop fronts and their installation (except on-site fabrication) are included in Class 1492 Wooden Structural Fitting and Component Manufacturing.

Class 3243 – Tiling and Carpeting Services

This class consists of units mainly engaged in laying carpet, or setting wall or floor tiles

Not included are units mainly engaging in:

- Installing roofing tiles are included in Class 3223 Roofing Services
- Installing wooden flooring are included in Class 3242 Carpentry Services

Class 3244 – Painting and Decorating Services

This class consists of units mainly engaged in painting, decorating or wallpapering houses or other structures.

Not included are units mainly engaging in:

- Units mainly engaged in roof painting, spraying or coating are included in Class 3223 Roofing Services.

Class 3245 – Glazing Services

This class consists of units mainly engaged in glazing, including glass installation and repair work.

Not included are units mainly engaging in:

- Units mainly engaged in the fabrication of aluminium and timber framed glass products are included in the appropriate classes of Division C Manufacturing.

Class 3291 – Landscape Construction Services

This class consists of units mainly engaged in constructing landscapes, including landforming and the provision of retaining walls and paths, decks, fences, ponds and similar structures. Units also engaged in garden planting or installation of sprinkler/drainage systems in conjunction with constructing landscapes are included.

Not included are units mainly engaging in:

- Landscape consultancy and design services are included in Class 6921 Architectural Services
- Garden maintenance activities and maintenance of lawns are included in Class 7313 Gardening Services.

Class 3292 – Hire of Construction Machinery with Operator

This class consists of units mainly engaged in hiring construction machinery, plant or equipment with operator(s).

Not included are units mainly engaging in:

- Units mainly engaged in hiring earthmoving plant and equipment with operator are included in Class 3212 Site Preparation Services.

Class 3299 – Other Construction Services – not elsewhere classified

This class consists of units mainly engaged in construction services not elsewhere classified.

RENTAL, HIRING AND REAL ESTATE SERVICES

Class 6712 – Non-Residential Property Operators

This class consists of units mainly engaged in renting or leasing non-residential properties.

Not included are units mainly engaging in:

- Units mainly engaged in land development and subdivision are included in Class 3211 Land Development and Subdivision.

Class 6720 – Real Estate Services

This class consists of units mainly engaged in valuing, purchasing, selling (by auction or private treaty), managing or renting real estate for others.

Not included are units mainly engaging in:

- Providing title transfer or conveyancing service are included in Class 6931 Legal Services
- Providing engineering or structural property and house inspections are included in Class 6923 Engineering Design and Engineering Consulting Services.

FINANCIAL AND INSURANCE SERVICES

Class 6221 – Banking (Partial Only)

This class consists of units mainly engaged in operating banks (except merchant banks). Banks incur liabilities by accepting demand and other deposits and make commercial, industrial and consumer loans.

Not included are units mainly engaging in:

- Performing central banking functions are included in Class 6210 Central Banking
- Operating building societies are included in Class 6222 Building Society Operation
- Operating credit unions are included in Class 6223 Credit Union Operation
- Operating merchant banks are included in Class 6229 Other Depository Financial Intermediation.

Not all of this class has been allocated to the property industry. The allocation of this class to the property industry is based on the share of loans and advances to the residential sector in the banks' total assets. Although part of loans to the commercial sector is property-related, data limitations regarding loans to the commercial sector precluded its inclusion.

Class 6222 – Building Society Operation

This class consists of units mainly engaged in operating building societies which accept deposits and provide specialised financing for home building or purchasing purposes.

Not included are units mainly engaging in:

- Operating development, savings and trading banks are included in Class 6221 Banking
- Operating credit unions are included in Class 6223 Credit Union Operation.

Class 6223 – Credit Union Operation (Partial Only)

This class consists of units mainly engaged in operating credit unions which accept members' share deposits and provide loans to their members for various purposes.

Not included are units mainly engaging in:

- Operating development, savings and trading banks are included in Class 6221 Banking
- Operating building societies are included in Class 6222 Building Society Operation.

Not all of this class has been allocated to the property industry. The allocation of this class to the property industry is based on the share of loans and advances to the residential sector in credit union's total assets. Although part of loans to the commercial sector is property-related, data limitations regarding loans to the commercial sector precluded its inclusion.

Class 6322 – General Insurance (Partial Only)

This class consists of units mainly engaged in providing general insurance cover (except life and health insurance).

Not included are units mainly engaging in:

- Providing insurance broking services are included in Class 6420 Auxiliary Insurance Services
- Providing insurance cover for hospital, medical, dental, pharmaceutical or funeral expenses or costs are included in Class 6321 Health Insurance
- Providing life insurance and life reinsurance cover are included in Class 6310 Life Insurance.

Not all of this class has been allocated to the property industry. The allocation of this class to the property industry is based on the value of gross written premiums on general insurance to homeowners/ householders as a share of total gross written premiums on general insurance.

Class 6330 – Superannuation Funds (Partial Only)

This class consists of units of separately constituted funds mainly engaged in providing retirement benefits.

Not included are units mainly engaging in:

- Investing money on their own account in predominantly financial assets (e.g. shares, bonds, bills etc, including mortgages) are included in Class 6240 Financial Asset Investing
- Managing or in carrying out the operations of separately constituted superannuation funds on a commission or fee basis are included in Class 6419 Other Auxiliary Finance and Investment Services.

Not all of this class has been allocated to the property industry. The allocation of this class to the property industry is based on the share of property assets in superannuation total investment. Although part of equity assets is property-related, data limitations regarding the proportion of equity related to the property industry precluded its inclusion.

PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES

Class 6921 – Architectural Services

This class consists of units mainly engaged in providing architectural services such as planning and designing buildings and structures; or planning and designing the development of land. Units apply knowledge of design, construction procedures, zoning regulations, location and land use, building codes and building materials.

Not included are units mainly engaging in:

- Units mainly engaged in managing or organising construction projects as the prime contractor are included in the appropriate classes of Division E Construction.

Class 6922 – Surveying and Mapping Services

This class consists of units mainly engaged in providing surveying and mapping services (including exploration surveying services on contract). Units in this class use a variety of surveying techniques depending on the purpose of the survey, including magnetic surveys, gravity surveys, seismic surveys or electrical and electromagnetic surveys. These services may also include surveying and mapping of areas above or below the surface of the earth.

Not included are units mainly engaging in:

- Units mainly engaged in exploring for petroleum or minerals are included in the appropriate classes of Group 101 Exploration.

Class 6923 – Engineering Design and Engineering Consulting Services

This class consists of units mainly engaged in providing engineering consulting services. These units are primarily involved in applying physical laws and principles of engineering in the design, development and utilisation of machines, materials, instruments, structures, processes and systems. Units provide advice, prepare feasibility studies, prepare preliminary and final plans and designs, provide technical services during the construction or installation phase, inspect and evaluate engineering projects, and related services.

Not included are units mainly engaging in:

- The physical or chemical transformation of materials into new products are included in the appropriate classes of Division C Manufacturing
- Managing or organising construction projects as the prime contractor are included in the appropriate classes of Division E Construction
- Undertaking scientific research are included in Class 6910 Scientific Research Services
- Providing scientific or technical laboratory or testing services are included in Class 6925 Scientific Testing and Analysis Services.

APPENDIX B: SIGNIFICANCE ASSESSMENT METHODOLOGY

The economic significance estimates in this report are produced using Input-Output transaction tables and models developed by AEC for the purposes of this assessment, combined with data from a range of sources, including State and National Accounts data and various industry specific data from the ABS. The Input-Output models were used to produce estimates of the direct and flow-on contribution of the property industry to the Australian, State/Territory, Federal Electorate and LGA economies in terms of output, gross product, employment and income.

OVERVIEW OF INPUT-OUTPUT MODELLING

Input-Output analysis demonstrates inter-industry relationships in an economy, depicting how the output of one industry is purchased by other industries, households, the government and external parties (i.e. exports), as well as expenditure on other factors of production such as labour, capital and imports. Input-Output analysis shows the direct and indirect (flow-on) effects of one sector on other sectors and the general economy. As such, Input-Output modelling can be used to demonstrate the economic contribution of a sector on the overall economy and how much the economy relies on this sector or to examine a change in final demand of any one sector and the resultant change in activity of its supporting sectors.

The economic contribution can be traced through the economic system via:

- **Initial stimulus (direct) impacts**, which represent the economic activity of the industry directly experiencing the stimulus.
- **Flow-on impacts**, which are disaggregated to:
 - **Production induced effects (type I flow-on)**, which comprise the effects from:
 - Direct expenditure on goods and services by the industry experiencing the stimulus (direct suppliers to the industry), known as the first round or direct requirements effects.
 - The second and subsequent round effects of increased purchases by suppliers in response to increased sales, known as the industry support effects.
 - **Household consumption effects (type II flow-on)**, which represent the consumption induced activity from additional household expenditure on goods and services resulting from additional wages and salaries being paid within the economic system.

These effects can be identified through the examination of four types of impacts:

- **Output:** Refers to the gross value of goods and services transacted, including the costs of goods and services used in the development and provision of the final product. Output typically overstates the economic impacts as it counts all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.
- **Gross product:** Refers to the value of output after deducting the cost of goods and services inputs in the production process. Gross product (e.g., Gross Regional Product) defines a true net economic contribution and is subsequently the preferred measure for assessing economic impacts.
- **Income:** Measures the level of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the project.
- **Employment:** Refers to the part-time and full-time employment positions generated by the economic shock, both directly and indirectly through flow-on activity, and is expressed in terms of full time equivalent (FTE) positions.

Input-Output multipliers can be derived from open (Type I) Input-Output models or closed (Type II) models. Open models show the direct effects of spending in a particular industry as well as the indirect or flow-on (industrial

support) effects of additional activities undertaken by industries increasing their activity in response to the direct spending.

Closed models re-circulate the labour income earned as a result of the initial spending through other industry and commodity groups to estimate consumption induced effects (or impacts from increased household consumption).

SIGNIFICANCE ASSESSMENT VERSUS IMPACT ASSESSMENT

The framework employed in significance assessment **differs from that employed in traditional economic impact analysis** in that economic significance assessment primarily seeks the contribution of an existing industry as opposed to the impact of a “stimulus” (or expansion) in a particular industry or in several industries. The usual approach of comparing what the economy would be with and without the industries whose contributions are to be assessed does not work because the inter-relationship between industries means whether or not the industries to be assessed exist, there will still be demand for their outputs (e.g., a complete vehicle needs tyres so that whether or not the entire tyre manufacturer is closed down, the car manufacturer’s demand for tyres still exists). From a modelling stance, this problem is solved by assuming that demand for outputs of the industries to be assessed will instead be met by imports.

MODEL DEVELOPMENT

Multipliers used in this assessment are derived from sub-regional transaction tables developed specifically for this project. The process of developing a sub-regional transaction table involves developing regional estimates of gross production and purchasing patterns based on a parent table, in this case, the 2018-19, 2019-20 and 2020-21 Australian transaction tables (ABS, 2021a; 2022c; 2023c).

Estimates of gross production (by industry) in the study areas were developed based on the percent contribution to employment (by place of work) of the study areas to the Australian economy and applied to Australian gross output identified in the 2018-19 Australian table (for all years between 2010-11 and 2018-19), 2019-20 transaction table (for 2019-20) and 2020-21 transaction table (for 2020-21 and 2021-22).

This is based on AEC’s annual employment estimates by industry by small area (AEC, unpublished^a) applied to Australian gross output identified in the Australian transaction table. Annual estimates between 2010-11 and 2021-22 were developed based on estimates of annual change across a range of data sets, including:

- GRP from AEC’s in-house estimates of GRP by small area (AEC, unpublished^b), as well as Gross State Product and Gross Domestic Product (ABS, 2023a), was used to estimate change in both gross product and output between years.
 - An exception to this approach was construction-based industries, which used data regarding the change in total value of construction work done by State for buildings (ABS, 2023e) and engineering construction activity (ABS, 2023d).
- Annual employment by industry estimates from AEC’s in-house employment by industry by small area model (AEC, unpublished^a) was used to estimate changes in employment between years for each industry.

Industry purchasing patterns within the study area were estimated using a Flegg Location Quotient approach, as described in Flegg *et al.* (2021), with a fixed degree of convexity applied to the regional size scalar. These were then adjusted based on differences in industry value added activity per employee between the State/ region and Australia, as estimated using AEC’s GRP and employment estimates models.

Input-Output tables utilise an aggregated system of industry classifications based on the ANZSIC system. In total, the Input-Output transaction tables produced by the ABS (2021a, 2022c, 2023c) define 114 distinct industries, some of which are aggregates of the industry classes outlined in **Appendix A**. Some of the property related industries in the Input-Output tables consist of both property and non-property related sub-sectors, and it is necessary to separate the property component from the non-property component in the related Input-Output industry.

The industries defined in the Input-Output tables that are included in the property industry are as follows:

- Residential Building Construction (all).
- Non-Residential Building Construction (all).
- Construction Services (all).
- Finance (partially).
- Insurance and Superannuation Funds (partially).
- Non-Residential Property Operators and Real Estate Services (all).
- Professional, Scientific and Technical Services (partially).

The separation of property from non-property related operation for those Input-Output industries listed as “partially” included in the property industry is based on either:

- 1 The share of total income (revenue) of the sub-sectors listed in **Appendix A** in the total income (revenue) of all sub-sectors grouped under the same Input-Output industry classification code⁸; or
- 2 The share of asset (loans and advances to as well as investment in) in the property industry in the total assets of all sub-sectors grouped under the same Input-Output industry classification code⁹.

These shares are then utilised to expand the original Input-Output tables to separate these industries into their property related and non-property related components to facilitate the economic significance assessment of the property industry in isolation. Once the transaction table is complete, the significance model is developed through the development of coefficients as per West (1993), using a Flegg Location Quotient approach.

INPUT-OUTPUT ASSUMPTIONS

The key assumptions and limitations of Input-Output analysis include:

- **Lack of supply-side constraints:** The most significant limitation of economic impact analysis using Input-Output multipliers is the implicit assumption that the economy has no supply-side constraints so the supply of each good is perfectly elastic. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- **Fixed prices:** Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using Input-Output multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. The system is in equilibrium at given prices, and prices are assumed to be unaffected by policy and any crowding out effects are not captured. This is not the case in an economic system subject to external influences.
- **Fixed ratios for intermediate inputs and production (linear production function):** Economic impact analysis using Input-Output multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. That is, the input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs). As such, impact analysis using Input-Output multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount. Further, it is assumed each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies there is only one method used to produce each commodity and that each sector has only one primary output.

⁸ The “Professional, Scientific and Technical Services” Input-Output sector uses this approach based on data from the ABS (2023b) and AEC (unpublished⁸).

⁹ The “Finance” and “Insurance and Superannuation Funds” sectors use this approach based on data from APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), and RBA (2021 and 2022).

- **No allowance for economies of scope:** The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the “additivity assumption”. This generally does not reflect real world operations.
- **No allowance for purchasers’ marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.

Despite these limitations, Input-Output techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and provide useful insight into the quantum of final demand for goods and services, both directly and indirectly, likely to be generated by a project.

In addition to the general limitations of Input-Output analysis, there are three other factors that need to be considered when assessing the outputs of sub-regional transaction table developed using the above approach, namely:

- It is assumed the sub-region has similar technology and demand/ consumption patterns as the parent (Australia) table (e.g. the ratio of employee compensation to employees for each industry is held constant).
- Intra-regional cross-industry purchasing patterns for a given sector vary from the national tables depending on the prominence of the sector in the regional economy compared to its input sectors. Typically, sectors that are more prominent in the region (compared to the national economy) will be assessed as purchasing a higher proportion of imports from input sectors than at the national level, and vice versa.
- The size of the regional economy is assumed to have an inverse relationship with the requirement to import goods/ services to meet its needs (i.e. the smaller the economy, in general the greater the reliance on imports).

SIGNIFICANCE ASSESSMENT APPROACH

Contribution to the State and its Electorates

The significance assessment is initially undertaken for the “base” financial year of the transaction table used (2018-19 for years between 2010-11 and 2018-19, 2019-20 for 2019-20, and 2020-21 for 2020-21 and 2021-22) to be consistent with the Input-Output transaction tables utilised. These estimates are then “rebased” to the year being assessed based on the approach outlined in the ‘Model Development’ section of this Appendix above.

Estimates of the flow-on effects of the property industry in each year are obtained assuming constant proportion between individual industries’ flow-on effects and the direct (total) effects (output, gross product, income and employment) in the base transaction table year. Since the relationship between industries is likely to have changed over this period, the estimates produced are indicative only. In the absence of a more recent Input-Output transaction table, which forms the basis to quantify the inter-relationships between industries, the estimates produced represent the flow-on effects of the property industry assuming no significant structural changes in the relationship between industries.

Regional allocation of the direct and flow-on effects is performed in three steps:

- 1 Individual Input-Output transaction tables and significance assessment models were developed for each State/ Territory and State Electorate (as described in the “Model Development” section of this Appendix). This approach produces regional estimates of direct and flow-on property industry contributions assuming each region operates in isolation, and therefore does not account for any inter-regional flow-on relationships.
- 2 To account for inter-regional flows of demand for goods and services between States/ Territories, the difference between the total Australian flow-on effects and the sum of flow-on effects for each State/ Territory by industry (the “inter-regional” flow-on effects) has been redistributed to each State/ Territory based on the proportion that each State/ Territory contributes to total Australian activity in each industry (i.e., if New South Wales

accounts for 50% of total Australian output in retail trade, then 50% of the inter-regional retail trade flow-on effects have been allocated to New South Wales).

- 3 To allocate to each State Electorate the same approach is used as for States/ Territories in redistributing inter-regional flows, but uses the proportional contribution of each State Electorate to the State/ Territory in which it is located to allocate inter-regional flows within the State/ Territory rather than Australia.

Contribution to State by Property Sub-Sector

The direct contribution of the property industry to the Australian economy was disaggregated across the following property sub-sectors:

- Non-Residential, split by:
 - Retail.
 - Commercial.
 - Industrial.
 - Health.
 - Education.
 - Entertainment/ recreation.
 - Short term accommodation.
 - Religion.
 - Other.
- Residential, split by
 - Retirement Living
 - Purpose Build Student Accommodation (PBSA)
 - Build-to-Rent (BTR)
 - Other Residential.

The direct contribution of each non-residential sub-sector has been estimated based on allocation of each of the Input-Output industry contributions to the sub-sectors. Allocations have been based on:

- Direct “Non-Residential Building Construction” effects are allocated across all non-residential property sub-sectors based on proportional splits of value of non-residential building works commenced for each non-residential property sub-sector in 2021-22 (ABS, 2023e).
- All other property related Input-Output industry effects are allocated based on the proportional split of value of total building works commenced for each sub-sector in 2021-22 (ABS, 2023e).

The direct contribution of each residential sub-sector has been estimated based on the new development and operational activity of each sub-sector.

- New property development: This is estimated as the cost of development on a per room (PBSA) or dwelling basis (Retirement Living and BTR) across Australia, multiplied by the number of new developments completed (on a per room or per dwelling basis) identified across each State/ Territory. Direct “Residential Building Construction” effects are entirely allocated to the Residential property sub-sector.
- Sector Operations: for each sub-sector, the total property management or relevant operating component of the properties by looking at the total properties operating across 2022 and the relevant operating expenses of each sector. The operating expenses are estimated based on either the weekly rent (PBSA and BTR) or the monthly service fee (Retirement Living).

APPENDIX C: DIRECT CONTRIBUTION TO WESTERN AUSTRALIA BY INDUSTRY

The following table presents a comparison of the direct economic contribution of the property industry to the Western Australian economy compared to other industries.

Table C.1. Comparison of Direct Contribution of the Property Industry and Other Industries to the Western Australian Economy, 2021-22

Industry	Gross Product (\$B)	Incomes (\$B)	Employment ('000 FTEs)
Property industry	\$27.4	\$21.9	155
Agriculture, forestry and fishing	\$11.2	\$8.6	40
Mining	\$187.5	\$16.5	108
Manufacturing	\$19.1	\$12.5	75
Electricity, gas, water and waste services	\$5.2	\$1.7	12
Construction *	\$5.3	\$3.3	19
Wholesale trade	\$8.9	\$5.8	51
Retail trade	\$10.0	\$7.5	121
Accommodation and food services	\$5.0	\$4.3	83
Transport, postal and warehousing	\$11.3	\$7.1	70
Information media and telecommunications	\$3.0	\$1.4	14
Financial and insurance services *	\$11.6	\$3.6	25
Rental, hiring and real estate services *	\$1.4	\$1.0	11
Professional, scientific and technical services *	\$12.8	\$11.5	82
Administrative and support services	\$8.0	\$7.6	84
Public administration and safety	\$11.2	\$9.2	78
Education and training	\$10.7	\$9.7	89
Health care and social assistance	\$18.7	\$17.9	154
Arts and recreation services	\$1.5	\$1.2	21
Other services	\$5.0	\$4.8	51
Ownership of dwellings	\$19.6	\$-	-
Total	\$394.4	\$157.0	1,342

Notes: Totals may not sum due to rounding; * Only non-property related activity is included for this industry classification. All property related activity is included in the property industry.

Sources: AEC, AEC (unpublished^a, unpublished^b), ABS (2023a, 2023b, 2023c, 2023d, 2023e, 2023f, 2022a, 2022b, 2022c, 2021a, 2017, 2012), APRA (2023a, 2023b, 2022a, 2022b and 2021), ATO (2023a), RBA (2021 and 2022).

The following table details employment (of persons, rather than FTE) by industry for direct and flow-on activity. Direct employment in the property industry has been attributed to the ANZSIC industries representative of the activity undertaken by the persons employed.

Table C.2. FTE Employment in the Property Industry in Western Australia by Industry and Gender, 2021-22

Industry	Total			Male			Female		
	Initial Stimulus (Direct)	Production Induced (Type I Flow-On) Impacts	Household Consumption (Type II Flow-On) Impacts	Initial Stimulus (Direct)	Production Induced (Type I Flow-On) Impacts	Household Consumption (Type II Flow-On) Impacts	Initial Stimulus (Direct)	Production Induced (Type I Flow-On) Impacts	Household Consumption (Type II Flow-On) Impacts
Agriculture, forestry and fishing	-	1,352	2,657	-	906	1,663	-	446	993
Mining	-	2,111	282	-	1,664	210	-	446	73
Manufacturing	-	13,236	3,549	-	10,752	2,269	-	2,484	1,280
Electricity, gas, water and waste services	-	1,569	834	-	1,154	596	-	415	238
Construction *	107,317	99	39	91,335	81	32	15,982	18	7
Wholesale trade	-	5,055	3,563	-	3,495	2,464	-	1,559	1,099
Retail trade	-	1,089	15,871	-	444	6,478	-	644	9,393
Accommodation and food services	-	5,106	11,908	-	2,202	5,252	-	2,904	6,656
Transport, postal and warehousing	-	7,587	3,513	-	5,966	2,739	-	1,621	774
Information media and telecommunications	-	1,168	897	-	737	557	-	431	340
Financial and insurance services *	5,607	4,396	2,387	2,235	2,123	1,032	3,371	2,273	1,354
Rental, hiring and real estate services *	17,314	2,518	492	6,937	1,719	336	10,377	800	156
Professional, scientific and technical services *	24,833	14,876	3,206	12,980	8,118	1,825	11,853	6,758	1,382
Administrative and support services	-	16,667	4,455	-	7,622	2,017	-	9,045	2,438
Public administration and safety	-	3,058	640	-	1,666	336	-	1,392	304
Education and training	-	304	4,372	-	118	1,320	-	186	3,053
Health care and social assistance	-	235	7,943	-	50	1,608	-	185	6,334
Arts and recreation services	-	622	2,129	-	291	1,053	-	331	1,076
Other services	-	4,225	6,423	-	3,182	3,162	-	1,042	3,261
Ownership of dwellings	-	-	-	-	-	-	-	-	-
Total	155,071	85,275	75,160	113,487	52,293	34,949	41,584	32,982	40,211
Proportion of Total	100%	100%	100%	73.2%	61.3%	46.5%	26.8%	38.7%	53.5%

Notes: Totals may not sum due to rounding
Sources: AEC, ABS (2022a).

APPENDIX D: ALLOCATION OF TAXES

WESTERN AUSTRALIAN GOVERNMENT TAXES

Western Australian government taxes were taken from the Australian Bureau of Statistics (ABS, 2023g).

Western Australian Government taxation and royalty revenues have been allocated to property related activities based on the allocation approach outlined in Table D.1.

Table D.1. Allocation of 2021-22 Western Australian Government Taxes to Property Related Activities

Tax Item	\$M	Method of Allocation
Payroll Tax	\$4,406	By industry based on contribution to incomes
Property Taxes		
Transfer	\$2,621	Property related activity
Land Tax	\$749	Property related activity
Other Property Related Taxes	\$488	Property related activity
Total Property Taxes	\$3,858	
Gambling Taxes and Levies	\$353	Not property related
Taxes on Financial Institutions ^(a)	\$845	Not property related
Guarantee Fees	\$131	Not property related
Motor Vehicle Taxes		
Stamp duty on vehicle registration	\$579	Not property related
Other Motor Vehicle Taxes	\$1,224	Not property related
Total Motor Vehicle Taxes	\$1,803	
Other Taxes	\$161	Not property related
Royalties and Land Rents	\$11,091	Not property related
Total Taxation and Royalty Revenue	\$22,648	

Note: (a) Includes insurance.

Sources: AEC, ABS (2023g), Western Australia Government (2022).

A summary of Western Australian Government taxes based on the above methodology is outlined in Table D.2.

Table D.2. Western Australian Government Property Related Taxes, 2021-22

Tax	Value
Payroll Tax (\$M)	\$613.9
Transfer/ Stamp Duties (\$M)	\$2,621.0
Land Tax (\$M)	\$749.0
Other Property Related Taxes (\$M)	\$488.0
Total Property Related Taxes (\$M)	\$4,471.9
<i>Property Contribution to Total State Taxes (%)</i>	<i>19.7%</i>

Sources: AEC, ABS (2023g), Western Australia Government (2022).

LOCAL GOVERNMENT RATES, FEES AND CHARGES

Local government rates, fees and charges data is periodically collected by AEC using a variety of data sources and an Application Programming Interface (API), supporting a database of local government rates and charges between 2015-16 and 2019-20. Municipal rates estimates are also available from the Australian Bureau of Statistics (ABS, 2023g), providing a ten-year time series between 2012-13 and 2021-22 for all States/ Territories. This data, however, excludes fees and charges and is only for municipal rates revenues. To estimate the local government rates and charges for 2021-22, a ratio of local government rates and charges to municipal rates was estimated, and the average ratio for Western Australia over the period was used for 2021-22. This ratio was then applied to the municipal rates estimates in 2021-22 for Western Australia to estimate its local government rates and charges revenue in 2021-22.

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