ACIL ALLEN CONSULTING

REPORT TO
THE RESIDENTIAL DEVELOPMENT COUNCIL

07 JUNE 2018

TAXES AND CHARGES ON NEW HOUSING

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This study

Australians today expect to have a range of basic services when they purchase a home. These include sewerage, drainage, water, electricity, roads, public transport and facilities such as schools, hospitals, parks and libraries (collectively described as urban infrastructure).

Providing urban infrastructure requires significant investment, particularly in a time of increased community expectations about improved infrastructure services and higher community standards (for instance, in terms of access to community facilities, safety and environmental protection).

Much of this infrastructure is usually funded through up-front charges to developers. These charges are applied by both state and local governments and are known by a variety of names, including infrastructure charges, infrastructure levies, developer contributions, developer charges and developer levies (these terms are used interchangeably throughout this report).

In addition to infrastructure charges, there is a wide variety of other taxes and charges that are applied to residential developments in Australia which add to the cost of new housing production, the price paid by homebuyers and indirectly, to the volume and strength of housing supply.

In light of the recent increases in house prices in Australia's capital cities and increased concerns about housing affordability, the use and application of infrastructure charges and other mechanisms to fund urban infrastructure has become increasingly important.

Against this background, the Residential Development Council has commissioned ACIL Allen Consulting (ACIL Allen) to undertake this research, which aims to:

- produce a snapshot of the current scope, reach and quantum of property taxes and charges borne by new housing
- assess the relative weight of property taxes and charges in new housing development relative to a series of benchmarks (including the final acquisition cost of the dwelling, the original land cost and available homebuyer concessions)
- identify existing regimes for funding infrastructure and the issues related to the current charging regime to fund urban infrastructure
- produce a series of core principles to guide the design of infrastructure charges / developer contributions to fund urban infrastructure based on best practice.

Key findings

The report's headline findings are outlined below.

1. There is a wide variety of taxes and charges that are applied to residential developments in Australia. These are levied at all three levels of governments as well as by agencies of governments and government owned businesses providing utility and other services.
2. Taxes and charges are a significant proportion of the cost of a new home. Across Australian capital cities they represent between 17 per cent and 25 per cent of the acquisition costs of houses and between 17 per cent to 22 per cent of the acquisition costs of apartments.
3. In greenfield developments, government taxes and charges are:
   - more than three times the cost of land in Brisbane and Melbourne, more than double the cost of land in Perth and Darwin, and nearly $85,0000 more than the cost of land in Sydney
   - 3.9 - 7.3 times the maximum concessions available to first home owners in capital cities if the eligibility requirements and relevant price thresholds are met.
4. In infill developments, government taxes and charges are:
   - higher than the cost of land in each capital city in Australia, except in Sydney where taxes and charges are broadly the same as the costs of land
   - 2.5 – 6.4 times the maximum concessions available to first home owners in capital cities if the eligibility requirements and relevant price thresholds are met.
5. Infrastructure charges are fees levied on developers to compensate governments for providing the infrastructure necessary for land development. In some capital cities, these charges are a significant proportion of the total government taxes and charges imposed on new dwellings.
6. While the widespread use of infrastructure charges has been justified on the grounds of their role in encouraging efficient use and provision of infrastructure, in practice, infrastructure charges have a number of problems.
   - These charges can be *sometimes used to raise tax revenue*, rather than focusing on providing efficient user charging (Henry 2009).
   - Infrastructure charges *not always reflect the efficient cost of infrastructure provision*. Funding infrastructure through developer contributions can result in councils and utilities requesting developers to fund more expensive infrastructure that what is required.
   - Infrastructure charges *not always allocate costs in an efficient and equitable way*, as these charges can recover the costs of infrastructure that benefits a wider number of people than just those in the particular development.
   - These types of charges can be *complex and costly to levy*, and there is a trade-off between the accuracy of these charges and their administrative feasibility (Henry 2009).
   - Where infrastructure charges are *implemented poorly* or are designed to operate as taxes (i.e. where the charge effectively exceeds the cost of providing infrastructure), they *can discourage housing supply and contribute to higher house prices*.
   - When infrastructure charges are set in an ad hoc fashion (something common in various jurisdictions across Australia) or are subject to unexpected changes (for instance, the removal of the cap in NSW from 2019-20 onwards), *they create uncertainty* around new developments and discourage development activity, reducing overall housing supply and increasing the price of housing.
   - There are concerns that *councils are stockpiling the funds* collected through infrastructure charges to developers instead of investing them in the infrastructure required.
   - Developer Contributions Plans once approved are *relatively difficult to change to adapt to changing need, priorities and other circumstances*.
7. Infrastructure charges are not the only (nor the best, as they are currently applied) way to fund the infrastructure necessary for the development of new housing. There are a number of proven mechanisms to fund infrastructure. However, there is no silver bullet, and there will continue to be a need for a mix of mechanisms to raise the necessary infrastructure funds (including general government revenue, which will always be a major funding source).
8. When looking at different ways to fund infrastructure, government needs to strike a balance between raising revenue, using infrastructure efficiently and encouraging a productive economy and inclusive

communities. Continuing to increase or levying multiple taxes and charges on selected groups in the community can create disproportionate or unfair financial burdens (IV 2016b, p.38).

9. While no funding approach is perfect, sound governance and getting the best value for the community requires that any funding option for urban public infrastructure incorporates best-practice economic and taxation principles. This report suggests following the principles in Table ES 1 below when designing infrastructure charges / developer contributions to fund urban infrastructure. These principles represent sound economic and taxation practices and highlight that equity, fairness, efficiency and effectiveness play a key role in designing infrastructure funding mechanisms.

TABLE ES 1 PRINCIPLES FOR INFRASTRUCTURE CHARGING

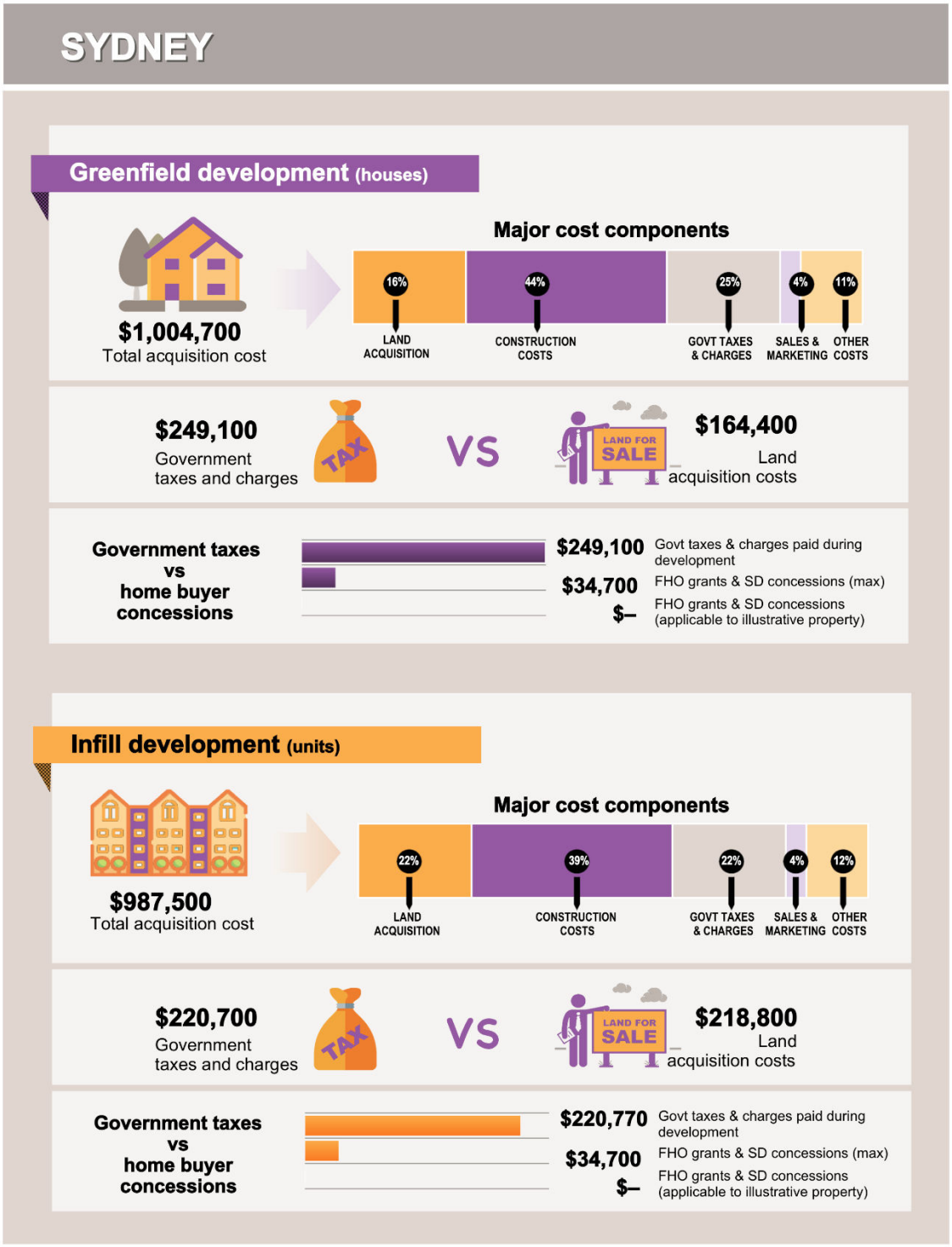
1. Need	8. Simplicity
2. Nexus	9. Accountability
3. Equity	10. No double charging
4. Transparency	11. Appropriate apportionment of infrastructure costs
5. Certainty	12. Flexibility
6. Efficiency	13. Reasonableness
7. Consistency	14. Stakeholder support

SOURCE: ACIL ALLEN CONSULTING, PC 2004, PC 2011A, PC 2014.

SUMMARY OF DEVELOPMENT COSTS

The following figures provide a snapshot about the cost of greenfield and infill developments across Australia's capital cities in 2017, and in particular of the quantum of property taxes and charges paid for new housing.

FIGURE ES 1 HOUSING COSTS – SYDNEY, $2017

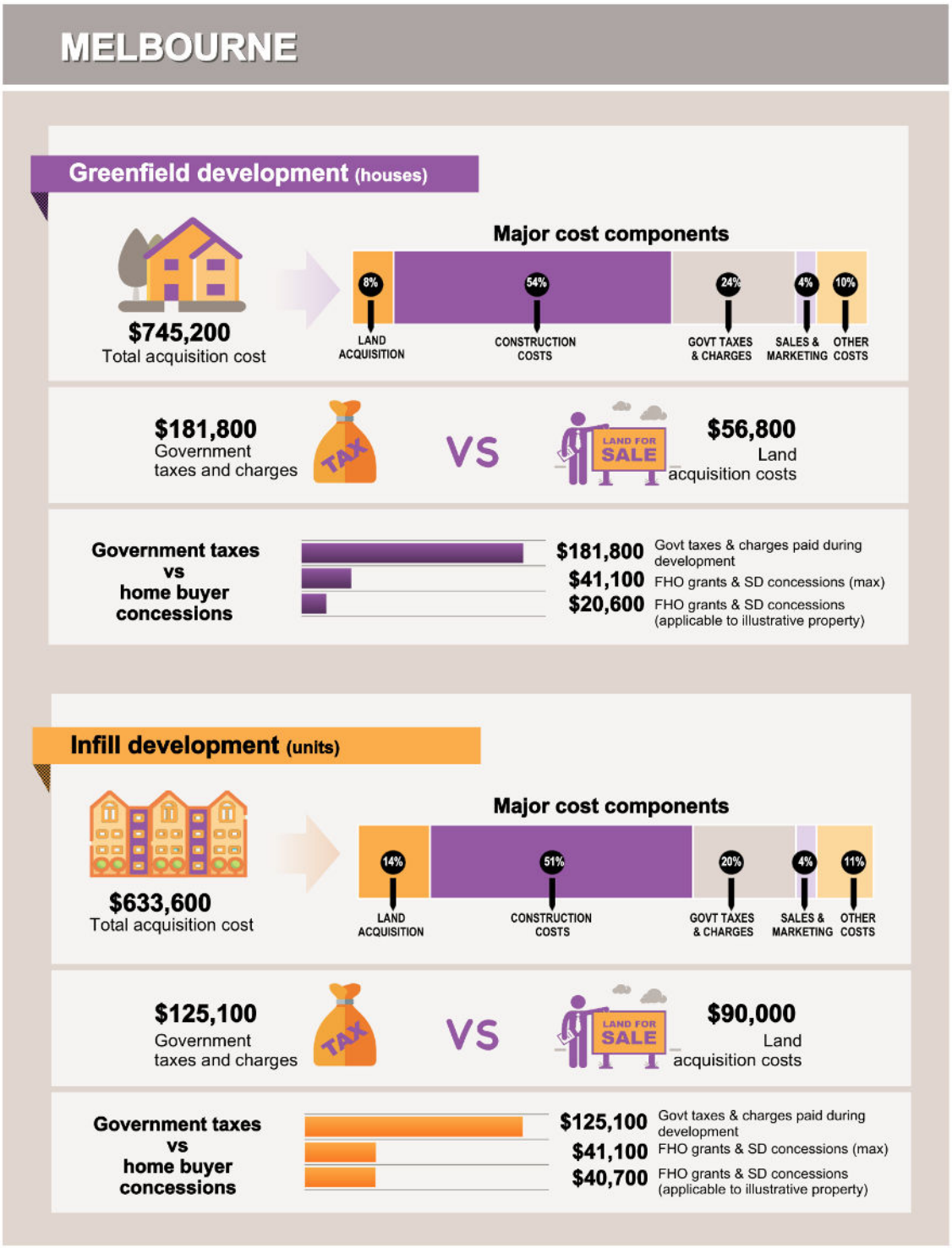


Notes:

- Total indicative cost of acquiring a new house/unit includes the stamp duty that would be paid by the buyers of these properties.
- Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.
- FHO = First Home Owner. SD= Stamp Duty. FHO grants and SD concessions (max) refers to the maximum amount of grants and concessions available to FHO in each capital city if the eligibility requirements and relevant price thresholds are met. FHO grants and SD concessions (applicable to illustrative property) refers to the grants and concessions that a FHO buying the case study property would be entitled to. Maximum grants and concessions for apartments in Adelaide assume that apartment is bought off the plan and that the stamp duty concession has been claimed when work has not commenced (hence attracting the highest concession available).
- Figures have been rounded.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 2 HOUSING COSTS – MELBOURNE, $2017



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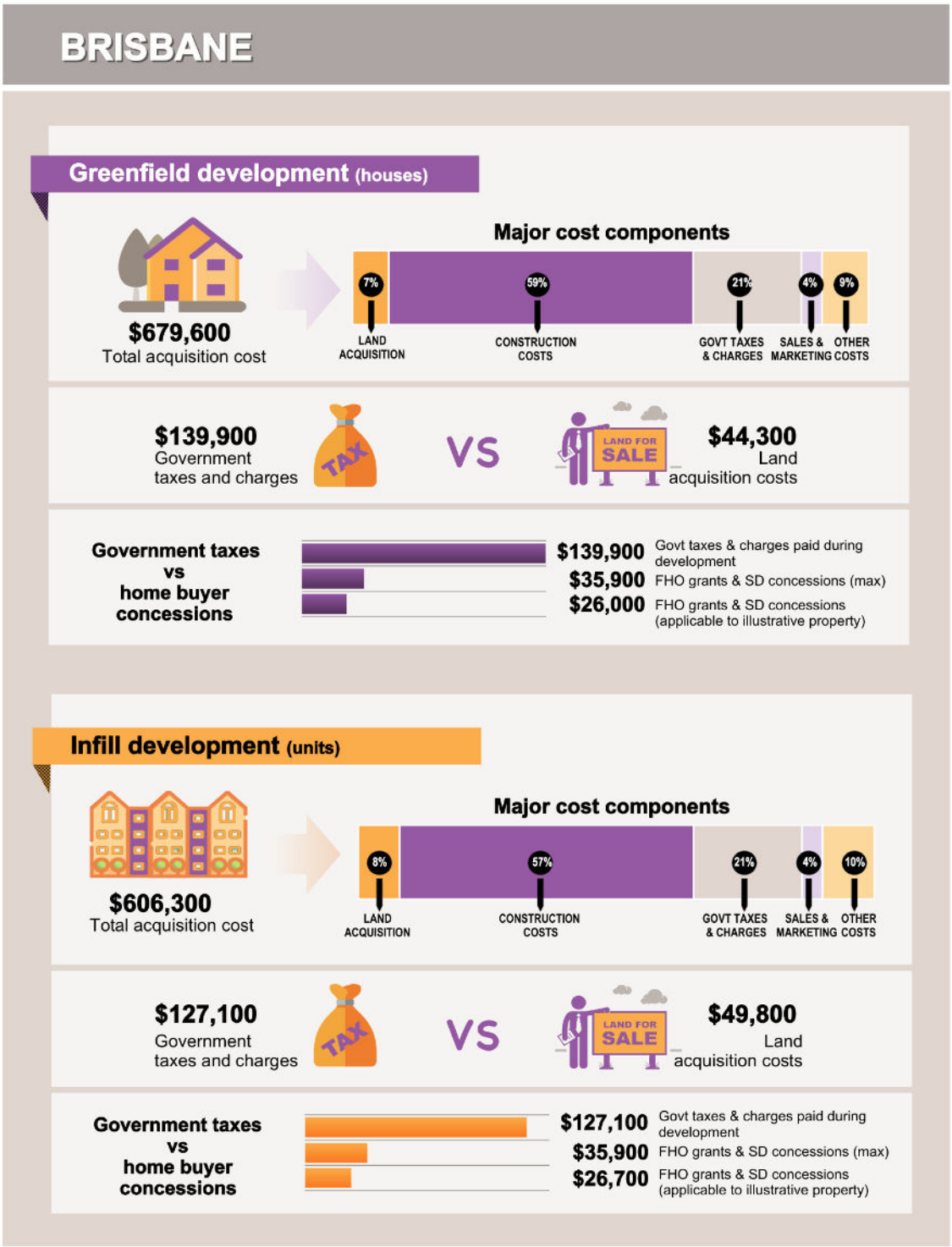
- Figures have been rounded.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 3 HOUSING COSTS – BRISBANE, $2017



Notes:

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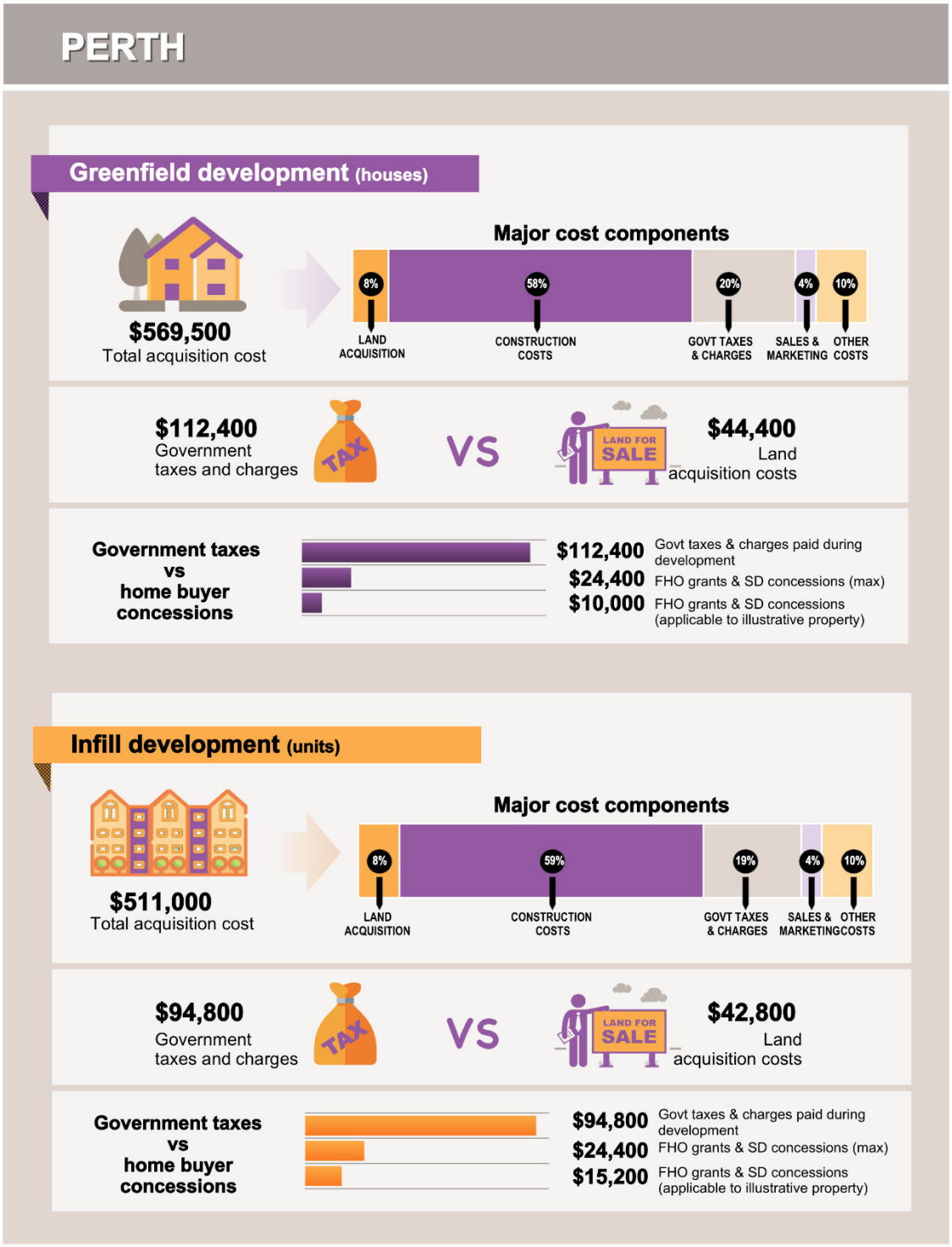
- Figures have been rounded.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 4 HOUSING COSTS – PERTH, $2017



Notes:

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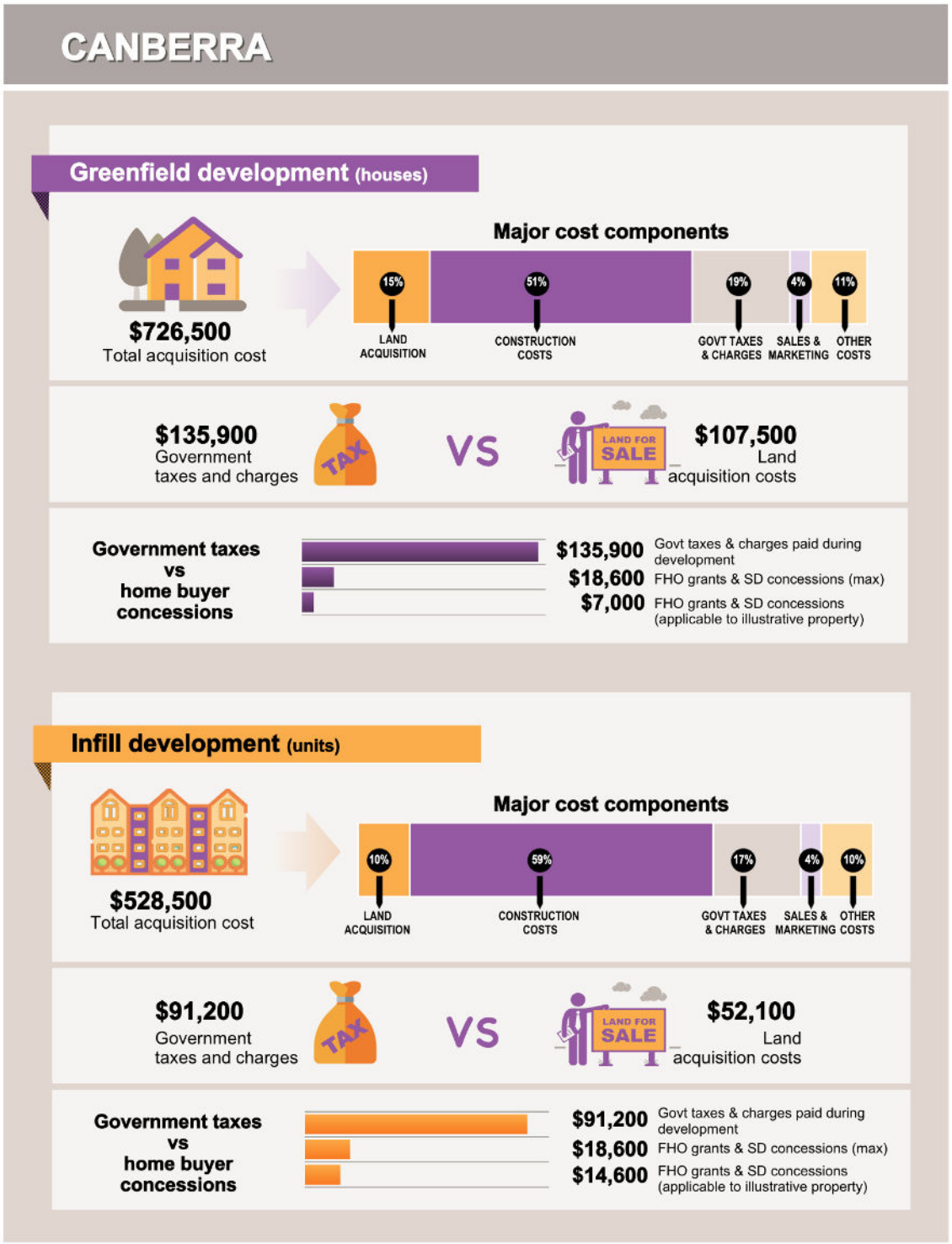
- Figures have been rounded.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 5 HOUSING COSTS – CANBERRA, $2017



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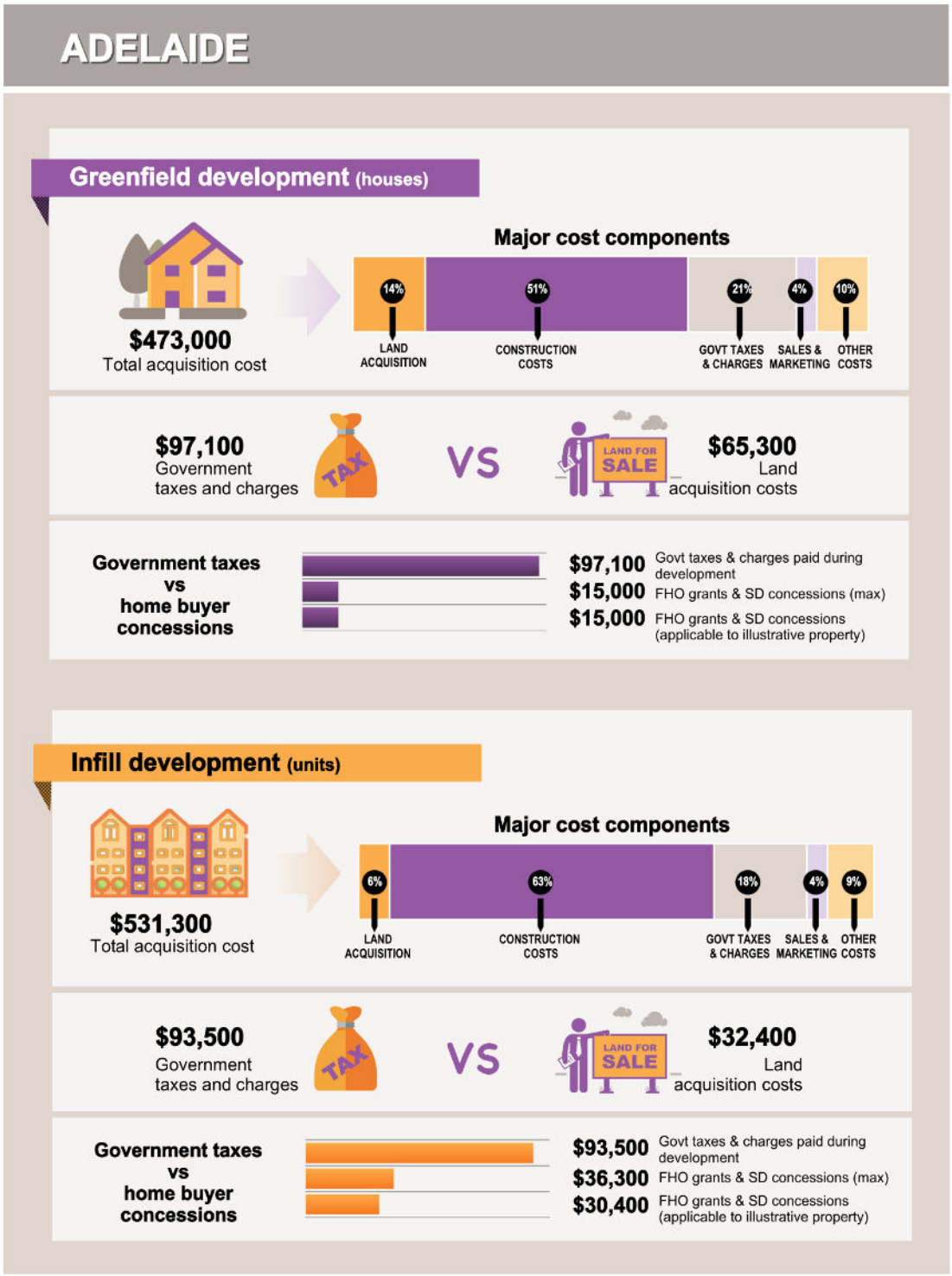
SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 6 HOUSING COSTS – ADELAIDE, $2017



Notes:

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SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE ES 7 HOUSING COSTS – HOBART, $2017

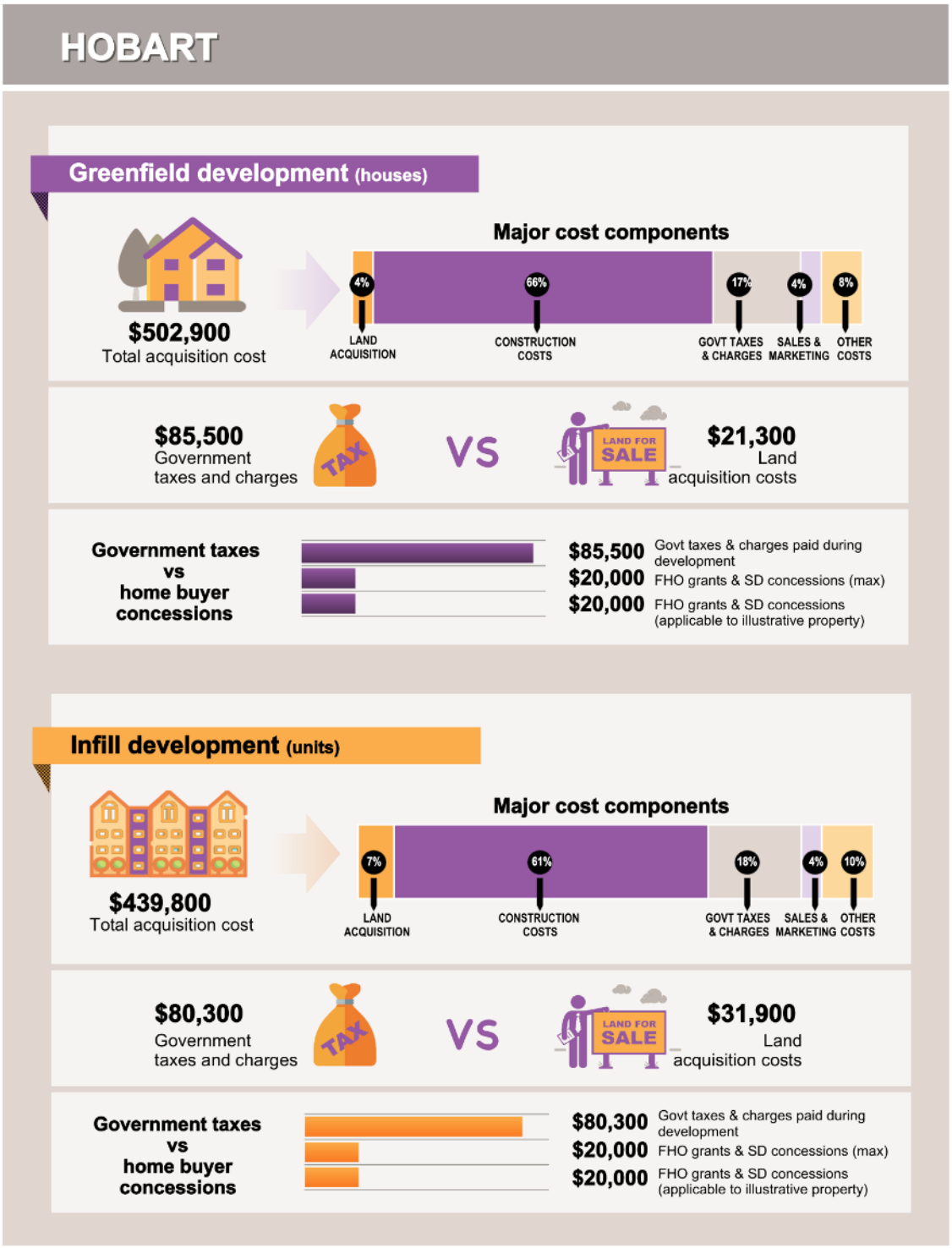

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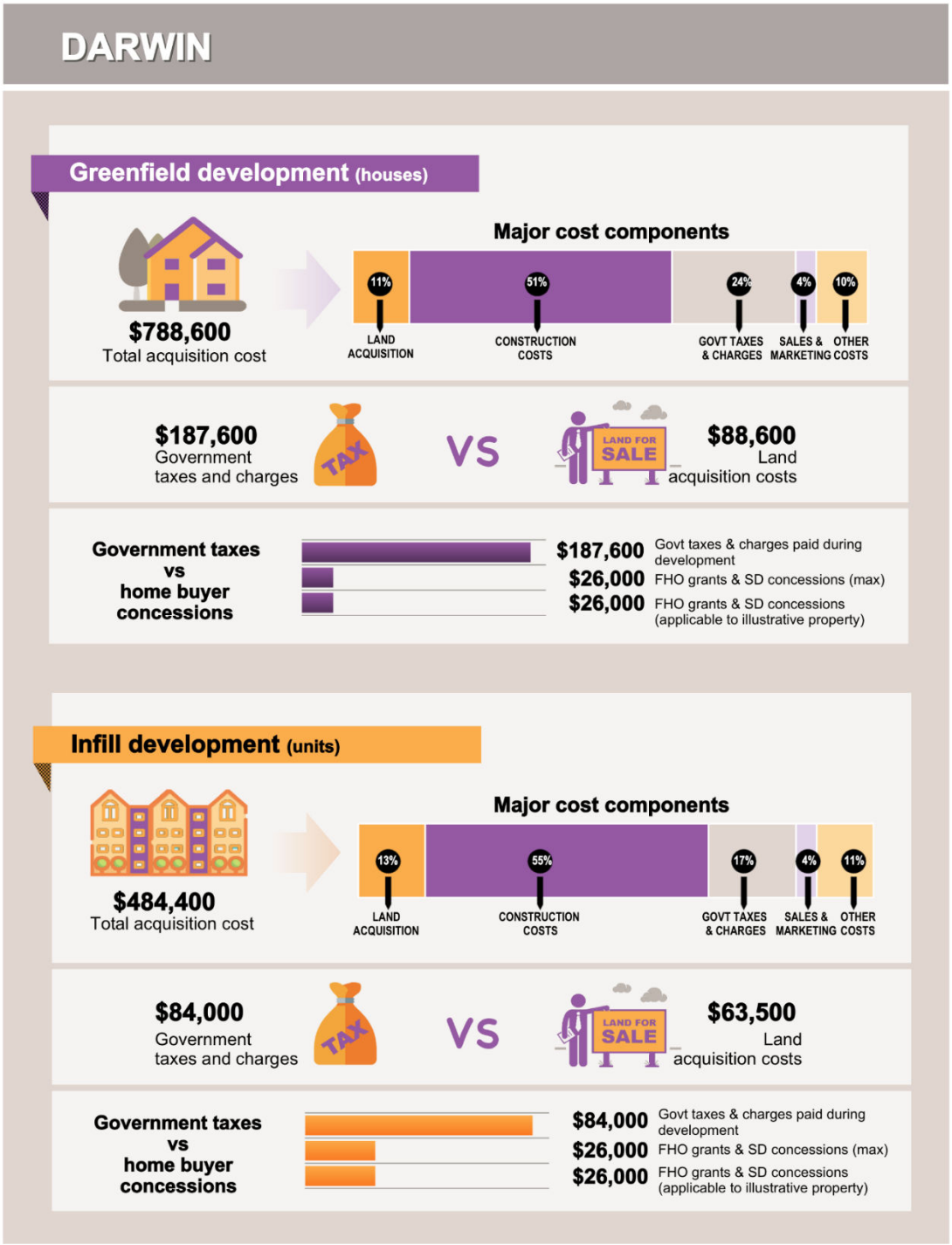
FIGURE ES 8 HOUSING COSTS –DARWIN, $2017



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- Figures have been rounded.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

1 INTRODUCTION

1.1 Research brief

The Residential Development Council has commissioned ACIL Allen Consulting (ACIL Allen) to undertake this research. The terms of reference for the study are to:

- produce a snapshot of the current scope, reach and quantum of property taxes and charges borne by new housing
- assess the relative weight of property taxes and charges in new housing development relative to a series of benchmarks (including the final acquisition cost of the dwelling, the original land cost and available homebuyer concessions)
- identify existing regimes for funding infrastructure and the issues related to the current charging regime to fund urban infrastructure
- produce a series of core principles to guide the design of infrastructure charges / developer contributions to fund urban infrastructure based on best practice.

1.2 Why this study?

Australians today expect to have a range of basic services when they purchase a home. These include sewerage, drainage, water, electricity, roads, public transport and facilities such as schools, hospitals, parks and libraries (collectively described as urban infrastructure).

Providing urban infrastructure requires significant investment, particularly in a time of increased community expectations about improved infrastructure services and higher community standards (for instance, in terms of access to community facilities, safety and environmental protection).

Much of this infrastructure is usually funded through up-front charges to developers. These charges are applied by both state and local governments and are known by a variety of names, including infrastructure charges, infrastructure levies, developer contributions, developer charges and developer levies (these terms are used interchangeably throughout this report).

In addition to infrastructure charges, there is a wide variety of other taxes and charges that are applied to residential developments in Australia which add to the cost of new housing production, the price paid by homebuyers and indirectly, to the volume and strength of housing supply.

In light of the recent increases in house prices in Australia's capital cities and increased concerns about housing affordability, the use and application of infrastructure charges and other mechanisms to fund urban infrastructure has become increasingly important.

While the widespread use of infrastructure charges has been justified on the grounds of their role in encouraging efficient use and provision of infrastructure, in practice, infrastructure charges have a number of problems.

There are a number of proven mechanisms to fund infrastructure, but no funding approach is perfect. In fact, there is no 'silver bullet' when it comes to infrastructure funding. However, best-practice economic and taxation principles should be taken into consideration when designing infrastructure funding models, and these best practice funding models should be fundamental to planning and approval process.

This report aims to provide additional insights into these issues.

1.3 Report structure

The reminder of this report is structured as follows.

— Chapter 2 discusses the variety of taxes and charges that are applied to residential developments in Australia and sets the scene for the analysis provided in the following chapters.

— Chapter 3 discusses the purpose of infrastructure charges imposed during property development, its use in practice and the issues associated with the use of infrastructure charges.

— Chapter 4 provides insights about the current scope and quantum of taxes and charges imposed on new housing development in greenfield areas across Australia's capital cities.

— Chapter 5 assesses the taxes and charges imposed on infill developments across Australia's capital cities.

— Chapter 6 discusses different mechanisms for funding the infrastructure necessary for the development of new housing on the urban fringe.

— Chapter 7 presents a series of core principles to guide the design of infrastructure charges / developer contributions to fund urban infrastructure.

— Chapter 8 provides the conclusions of this study.

— Appendix A provides details about the approach used to measure the cost of developing new housing across Australia.

2 TAXES AND CHARGES ON HOUSING

This chapter discusses the variety of taxes and charges that are applied to residential developments in Australia and sets the scene for the analysis provided in the following chapters.

2.1 Taxation of the property sector

The property sector is a vital part of the Australian economy. It is estimated that it contributes to around 13 per cent of Australia's gross domestic product (GDP) and directly employs more than one million people. The majority of this economic activity (around 60 per cent) is generated by residential activity / the housing sector (AEC 2017).[1]

In addition to its direct economic contribution, the property sector also significantly impacts on the efficiency and productivity of other sectors of the economy through its role as a supplier and consumer of goods and services to/from other sectors.

As a result of its economic contribution, the property sector also makes a significant contribution to the tax revenue collected across all governments. Indeed, AEC (2017) estimated that in 2015-16 the property industry contributed approximately $87.9 billion in revenue to federal, state and local governments. This represents 18.2 per cent of the nation's total tax revenues in 2015-16.

The housing sector is one of the most heavily taxed sectors of the Australian economy. Indeed, analysis by ACIL Allen (2015) and CIE (2011) found that the housing sector alone (i.e. not the property sector in its entirety) pays significantly higher taxes than other sectors. In particular, these analyses found that:

- new housing is particularly inequitably taxed. It accounts for about 1.2 per cent of total value added in the economy, yet contributes 2.8 per cent of government taxation revenues[2] (CIE, 2011, p.7)
- existing housing accounts for about 7 per cent of total value added, while contributing about 8.4 per cent of taxation revenue (CIE, 2011, p.8)
- residential building construction is the third most heavily taxed sector among Australia's largest sectors (those with value added higher than $10 billion), with an average tax burden of 33.1 per cent of the value of output. This compares with an economy-wide average of 21 per cent.

[1] These statistics refer to the property industry as defined by AEC (2017), which includes: parts of the construction industry focused on the development of residential and non-residential building, 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; and parts of banking, non-bank finance and other financial and insurance services that facilitate the development, acquisition and ownership of property.

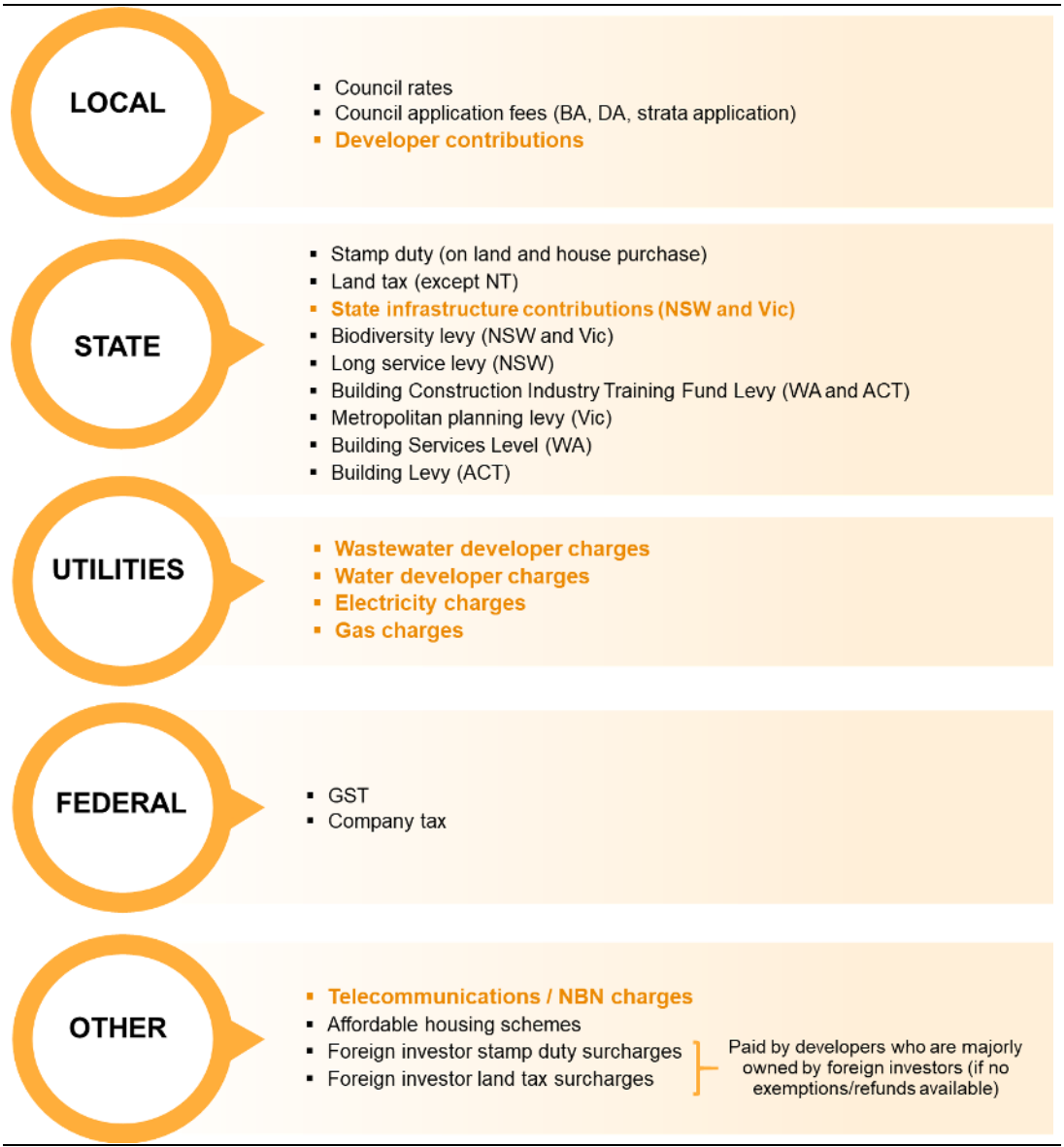
[2] Gross value-added measures the value of an industry's production. It is used to measure the contribution of individual industries to the gross product of a state or territory.

2.2 Taxes paid on new property

There is a wide variety of taxes and charges that are applied to residential developments in Australia. These are levied at all three levels of governments as well as by agencies of governments and government owned businesses providing utility and other services (see Figure 2.1— the magnitude of these taxes and charges across Australia's capital cities is illustrated in more detail in Chapters 4 and 5).

The yellow entries in Figure 2.1 relate to infrastructure specific charges. Local government infrastructure contributions (developer contributions) are levied by local governments in most local government areas throughout Australia. Infrastructure charges at the state level relate to existing charges in New South Wales (NSW) and Victoria.

FIGURE 2.1 TAXES AND CHARGES IMPOSED ON RESIDENTIAL DEVELOPMENTS



SOURCE: ACIL ALLEN CONSULTING.

In addition to infrastructure charges there is a raft of other taxes and charges imposed on development. For instance:

— Victoria imposes a biodiversity conservation levy and NSW recently introduced a new Biodiversity Offsets Scheme under which developers have to offset any native vegetation they remove.

Preliminary modelling conducted by Urban Development Institute of Australia NSW (UDIA, 2017) forecast an additional cost of $30,000 per lot as a result of this new scheme

- NSW also has a long service levy for building and construction projects
- Western Australia (WA) and the Australian Capital Territory (ACT) impose a levy on all construction projects for the Building and Construction Industry Training Fund, the ACT Government imposes a building levy and the WA Government also imposes a Building Services Levy.

Most Australian states have also recently introduced stamp duty and land tax surcharges for foreign investors. A summary of the current state of play in relation to the various stamp duties and land tax surcharges across Australia is provided in Table 2.1. While these surcharges were originally meant for individual foreign buyers acquiring residential property, property developers who are majorly owned by foreign investors could also be liable for these surcharges. The application of surcharges to foreign-owned residential property developers could place these developers at a competitive disadvantage relative to Australian-owned developers, affect the profitability of projects being considered by these developers (a case study in Chapter 3 illustrates the potential effect of these surcharges in more detail) and have an adverse impact on the supply of new dwellings.

TABLE 2.1 STAMP DUTY AND LAND TAX SURCHARGES FOR FOREIGN INVESTORS

State/Territory	Stamp duty	Land tax	Potential relief for developers?
New South Wales	8% surcharge purchaser duty from July 2018	2% for 2018 land tax year (i.e. as at 31 December 2017). Previously 0.75% for the 2017 land tax year	Yes – On 5 March 2018, legislative provisions came into effect which give allow for refunds of, and exemptions from, surcharge purchaser duty and surcharge land tax. These concessions are only available for Australian-based developers who are Australian corporations(i.e. a corporation that is incorporated under the Corporations Act 2001) that otherwise qualify as "foreign persons", including corporations acting as trustees. – Refunds of amounts previously paid and an exemption for future amounts otherwise payable relating to residential land in NSW are available where the foreign person will use the land for the following purposes: – construction and sale of new homes, or – subdivision and sale for new home construction. – The provisions operate retrospectively so that a refund can be available for both transfers that occurred before 5 March 2018 and transfers that occur on or after 5 March 2018. Likewise, a refund of surcharge land tax can be available in respect of the 2017 land tax year and subsequent tax years. – A refund of surcharge duty or surcharge land tax is available where the foreign person has not been granted an exemption from surcharge, but has used land in respect of which surcharge has been paid for either of the purposes specified. – Exemptions from surcharge duty may apply to more than one transfer (including future transfers) and exemptions from surcharge land tax may be granted for more than one land tax year (including future land tax years). – Applications for a refund must be made within 12 months of the home being sold and no later than 10 years after the acquisition of the land concerned by the corporation.

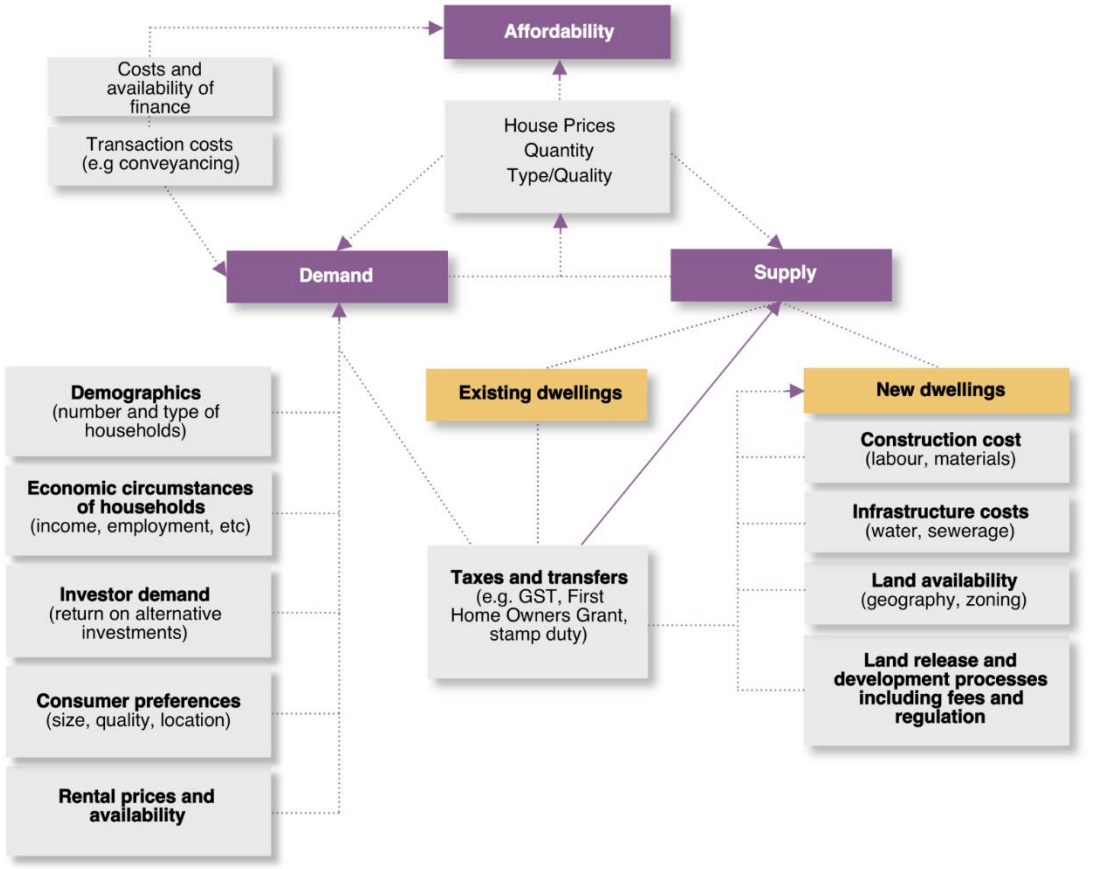
State/Territory	Stamp duty	Land tax	Potential relief for developers?
Victoria	7% foreign purchaser additional duty (FPAD)	1.5% absentee owner surcharge[3]	Yes – Foreign corporations and foreign trusts may, in some circumstances, be eligible for an exemption from the FPAD. The exemption is intended to apply to those corporations or trusts that are Australian based and whose activities in the development or re-development of property add to the supply of housing stock in Victoria. – An absentee person who holds a controlling interest in an absentee corporation may, in some circumstances, be eligible for an exemption to the absentee owner surcharge. The exemption is only available to an absentee person who holds a controlling interest in a corporation that is incorporated in Australia and owns land in its own right. It is not available where the corporation owns land as the trustee of an absentee trust. The exemption is intended to apply to those corporations which conduct a commercial operation in Australia and whose commercial activities make a strong and positive contribution to the Victorian economy by engaging local labour and using local materials and services through an Australian-based entity.
Queensland	3% additional foreign acquirer duty (AFAD). The AFAD will be increased to 7% on 1 July 2018	1.5% absentee surcharge (individuals only)	Yes – Land acquisitions for significant development that are liable for AFAD may be considered for ex gratia relief in certain circumstances. Ex gratia relief can be considered for transactions undertaken by Australian-based foreign corporations or trusts whose commercial activities involve significant development by adding to the supply of housing stock in Queensland, where such development is primarily residential.
Western Australia	7% foreign owner duty surcharge from 1 January 2019	No surcharge	Yes Surcharge will not apply to: – residential developments of ten or more properties – commercial residential property such as hotels, student accommodation, retirement villages – mixed use properties that are used primarily for commercial purposes.
South Australia	7% foreign ownership surcharge from 1 January 2018	No surcharge	No
ACT	No surcharge	0.75% surcharge from 1 July 2018	Unknown (at the time of writing this report the details of the surcharge were yet to be released)
Tasmania, and Northern Territory	No surcharge	No surcharge	Not applicable

SOURCE: FROM KING &WOOD MALLESONS 2017, STATE REVENUE OF VICTORIA, QUEENSLAND GOVERNMENT, CLAYTON UTZ 2017, HALL&WILCOX 2018.

Taxes and charges are one of the many factors that influence the cost of housing. As shown in Figure 2.2, the cost of housing is shaped by a range of factors influencing demand and supply.

[3] Absentee persons being: (a) a natural person absentee: a person that is not an Australian or New Zealand citizen or a permanent resident of Australia, who does not ordinarily reside in Australia; (b) an absentee corporation: a corporation incorporated outside Australia or a corporation in which an absentee person, or that person together with another absentee person, has a controlling interest; or (c) a trustee of an absentee trust: a trust that has at least one absentee beneficiary.

FIGURE 2.2 FACTORS INFLUENCING HOUSING SUPPLY, DEMAND AND AFFORDABILITY



SOURCE: ADAPTED FROM NHSC, 2010.

As shown in Figure 2.2, housing supply is driven by factors such as land availability, construction costs, government taxes and charges, profitability for developers and infrastructure costs such as water, power, sewerage and public transport. Housing demand is driven by factors such as the number and type of households looking for housing, household income and preferences (such as size, location and tenure type), investor demand and interest rates.

Given the time that it takes to construct new homes, market adjustments to increase the supply of new housing can lag behind demand. Land made available for urban use will typically take between 6 to 15 years to progress to dwellings for sale in a new suburb (NHSC, 2010). As such, the removal of supply side constraints that limit the responsiveness of housing supply, including excessive taxes, charges and infrastructure costs, is an important factor in reducing the pressure of rising house prices.

3 INFRASTRUCTURE CHARGES IN NEW HOUSING

This chapter discusses the purpose of infrastructure charges imposed during property development, its use in practice and the issues associated with the current infrastructure charging regimes used across Australia.

3.1 The purpose of infrastructure charges during property development

Australians today expect to have a range of basic services when they purchase a home. These include sewerage, drainage, water, electricity, roads, public transport and facilities such as schools, hospitals, parks and libraries (collectively described as urban infrastructure).

While nowadays planning approvals for construction are not normally granted unless most of these services are available, historically, some of this urban infrastructure was put in place only after new housing had been established. The infrastructure would be paid for either through general rates or tax revenue, or by charging the households in certain districts a special rating levy to cover the costs of the infrastructure installed for their benefit — for example, sewerage, curbing and guttering. The initial capital outlays would be paid for out of capital works funding or borrowings, or from infrastructure utilities' retained earnings (PC, 2004).

For at least the last 30 years, the trend has been to install infrastructure from the outset and impose up-front charges to developers to recover the costs of infrastructure provided by government for new developments. These charges are applied by both state and local governments and are known by a variety of names, including infrastructure charges, developer contributions, charges or levies.

3.2 Infrastructure charges in practice

Infrastructure charges take an array of different names and forms and are applied in different ways across Australia. They may be collected through levies (calculated either per lot, hectare or dwelling or as a proportion of development value depending on the location and type of development) or as impact fees in certain localities with reference to the actual impact/costs on local infrastructure associated with the development (typically for infill developments). Infrastructure charges or contributions are set as part of the planning process and their payment effectively becomes a condition of final approval (PC 2011a).

In general, the payment of these charges or contributions can generally take four forms (PC 2014, ACG 2012):

— land transfer — land ceded or 'gifted' to the government by the developer for roads, public open space, primary school sites, drainage and other reserves

— direct infrastructure provision by developers (work in-kind) — infrastructure works and facilities constructed by developers and subsequently transferred to public authorities on completion

— local government charges — financial contributions generally specified in local government plans to fund infrastructure such as footpaths, streetlights and district utilities. These vary from council to council and may take the form of compulsory conditions in local planning permits or be negotiated between developers and local government

— state charges — these are financial contributions levied to help fund regional infrastructure that supports different communities across the state (e.g. schools, hospitals and public transport).

In most jurisdictions, the supply of major economic infrastructure items (such as major roads, energy infrastructure, schools and hospitals) are the separate responsibilities of state/territory governments, state/territory government business enterprises and private sector infrastructure providers, and the cost of this infrastructure is typically recovered from developers via infrastructure charges. In contrast, in most states, developers are typically responsible for the minor works connecting the subdivision and individual lots to the main infrastructure networks. Many jurisdictions also allow for voluntary agreements (or negotiated contributions) between consent authorities and developers to extend the range of infrastructure for which contributions can be levied (PC 2011a).

3.3 Infrastructure charges and house prices

The impact of infrastructure charges on house prices (and affordability) has long been the subject of debate. Although the legal incidence of infrastructure charges falls on the developer, in practice, the economic incidence (i.e. who actually pays) is likely to fall elsewhere.

Tax incidence theory suggests that who actually bears the charge is likely to be determined by the relative elasticity of the demand and supply of land: backward if the supply of raw land is less elastic and forward if the demand for serviced land is less elastic (Neutze 1997).[4] Several analyses have examined the economic incidence of infrastructure charges.

There is an extensive body of international literature that discusses the passing forward (to homebuyers) or passing back (to land owners) of developer contributions (Nelson et. al. 2008 cited in Bryant 2015b). Bryant notes that '[r]egardless of the direction of passing and the various market elasticities, in the long term the outcome appears inevitable that house prices rise as a result of developer contributions' (Bryant 2015b, p.1). However, not many empirical studies have been carried out in Australia to test if similar shifting occurs.

Neutze (1997), writing with respect to Australian experience, noted that the general view is that such charges are passed forward as higher prices for serviced land. He noted that the demand for serviced land is likely to be inelastic because servicing costs are only part of the cost of land, land is only a minor part of the cost of housing, and the demand of households for separate dwellings is itself relatively inelastic. The supply of raw land is likely to be elastic. Owners of land which can be connected to urban service networks recognise that the supply of such land is limited, and if they defer sale for development, eventually the price will rise.

In the Australia's Future Tax System Review, Henry (2009) notes that the incidence of infrastructure charges can also be determined by the design and administration of the charge. Where land supply is constrained, well-designed infrastructure charges are more likely to be passed backwards and factored into the price that developers pay for raw land. However, where infrastructure charges are poorly administered, complex and not transparent they can discourage overall investment in housing, which can lower the overall supply of housing and raise its price.

Doctoral research completed by Bryant (2015a) examined the effect of developer contributions on both new and existing houses in Brisbane over the period 2005 to 2011 using a hedonic price model[5] (and provided the first empirical evidence of the impact of developer contributions on house prices in Australia). After accounting for macroeconomic conditions and other factors that influence house prices, this study found that developer contributions significantly increased the price of both new and existing houses during the study period. In particular this study found that:

[4] The elasticity of demand is a measure used in economics to measure the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price, all other things being equal. Similarly, the elasticity of supply is a measure used to assess the responsiveness, or elasticity, of the quantity supplied of a good or service to a change in its price.

[5] A hedonic price model identifies price factors according to the premise that the price of a good is determined both by internal characteristics of the good being sold and external factors affecting it.

— a $1.00 increase in developer contributions increases new house prices in Brisbane by $4.69
— a $1.00 increase in developer contributions increases existing house prices in Brisbane by $3.56 (i.e. existing homes share the burden of developer contributions by the way of increased cost of housing — a windfall capital gain to existing home owners, but a detriment to housing affordability as the price of existing houses increases due to their close substitutability with new houses).

Bryant argues that these findings of over-passing the cost of the contributions is consistent with the literature and theory.

In contrast, using an econometric model with data from Brisbane and the Gold Coast from 2011 to 2016 (i.e. after the Queensland Government capped developer contributions in 2011), Murray (2016) found that there are no measurable effects on price or quantity of new dwellings from developer contributions, supporting the view that the economic incidence of these charges fall fully on the landowner, even when the landowner is a property developer. Murray argues that these findings are consistent with previous studies using similar methods to assess the economic incidence of property transaction taxes (stamp duties) which found that the full tax was capitalised into lower prices, being incident on the seller and having no price effects.

This discussion highlights the lack of agreement about the economic incidence of developer contributions and their impacts on house prices. In reality, the situation is likely to fall somewhere in the middle, with some of the costs of the developer contributions being pass forward to house buyers and some pass back to landowners in the form of lower prices for land.

3.4 Issues with the current infrastructure charging regime

Many reasons are advanced for the use of infrastructure charges. Those that are regularly cited include the capacity of infrastructure charges to:

— capture the windfall gains that result from changes in planning restrictions or rezoned land — this is closely related to the idea of a 'betterment tax'
— obtain a contribution from the beneficiaries of the provision of new infrastructure
— provide a price signal and remove cross-subsidisation that would exist if infrastructure costs were spread across the community (e.g. through rates)
— provide developers an incentive to take account of a wider range of infrastructure costs when deciding where and how to develop land (PC 2014)
— provide a source of revenue to government.

While infrastructure charges have a role in funding and encouraging efficient infrastructure provision, there are a number of aspects of infrastructure charging policies that are often expressed as a source of concern.

Double charging and cross subsidisation

One of the most contentious issues related to infrastructure charges is whether is fair to shift from spreading the cost of previous infrastructure widely through utility charges and councils rates, to up-front payment of infrastructure charges while requiring new home owners to also pay similar utility charges and rates (resulting in home buyers paying twice for economic infrastructure — once upfront through infrastructure charges and again through general property rates or taxes and regular payments for utility services).

While the shift to up-front recovery can be justified on economic grounds (infrastructure charges provide developers an incentive to take account of a wider range of infrastructure costs when deciding where and how to develop land, which facilitates more efficient provision of housing and associated infrastructure (PCA 2014)), over recovery of the capital costs of major infrastructure from new developments contravenes the principle of equity (particularly if the proceeds are used to cross subsidise infrastructure provision to those living in more established areas).

Excessive charges and increased use of negotiated contributions

Another great concern is the possibility that infrastructure charges do not reflect the efficient cost of infrastructure provision. Indeed, as noted by the Productivity Commission (PC 2004, p. 169):

[O]ne potential problem with funding such infrastructure through developer contributions, is that councils and utilities could have both the incentive and the scope to insist on standards that are excessively high, either in relation to what home buyers want, or to the efficient costs of providing infrastructure over the whole life of the assets.

Several jurisdictions have measures in place to discourage this. For example, Western Australia, Tasmania and the Northern Territory have legislative provisions stipulating that councils and utilities are not to levy developers for contributions that exceed the costs of infrastructure provision (PC 2014, p. 170). In Western Australia councils are also required to provide justification for the infrastructure included in development plans and the estimated costs of providing infrastructure should be reasonable. In New South Wales, developer contributions are currently capped, and development plans with contributions above the cap are referred to the Independent Pricing and Regulatory Tribunal (IPART), which evaluates if the proposed costs are reasonable. However, the NSW caps only apply to certain growth areas (with older released areas charging above the capped amounts) and these will be removed by 2020.

While these measures could address the incentive for councils to get developers to fund more expensive infrastructure, it is unclear whether they actually do, particularly given that many jurisdictions allow for voluntary agreements (or negotiated contributions) between councils and developers to extend the range of infrastructure for which contributions can be levied. As noted by the Australia's Future Tax System Review, 'infrastructure charges can sometimes be used to raise tax revenue, rather than focusing on providing efficient user charging. Where the charge exceeds the cost of providing infrastructure, it acts like a tax and can discourage development' (Henry 2009, p.424).

Inefficient and inequitable allocation among users

A further concern is that developers are required to contribute to infrastructure that benefits more than the properties that are being developed. As noted by the Property Council of Australia in its submission to the Productivity Commission Inquiry into Public Infrastructure (PCA 2013, p.25):

Developers face an ever-expanding range of charges and levies aimed at funding the infrastructure needs of a site … These requirements have grown from a requirement to provide green space in the 1970s to now including the provision of community buildings, childcare centres, aquatic facilities and traffic management solutions … Consent authorities frequently seek the full cost of infrastructure through developer charges — despite the facilities servicing a much broader area than the development site.

In principle, an efficient and equitable infrastructure charging regime would only charge developers for the incremental cost attributable to each property being developed. Indeed, the Productivity Commission notes the following regarding the most efficient and equitable allocation of costs among users (PC 2011a, p.203).

- For basic economic infrastructure, the practice of developers constructing local roads, paving and drainage up-front, contributing these assets to local government and passing the full costs on to residents (through higher land purchase prices) is both efficient and equitable as the assets are predominantly used by or for the benefit of local residents (the principle of user or beneficiary pays).
- For major (shared) economic infrastructure, the application of a user pays approach is less straightforward as the extent to which any investment will be used by those in the development relative to others needs to be established. Where the incremental costs associated with a new development can be well established (and in particular where such increments are likely to vary across developments), then there is merit in upfront charging to finance this infrastructure (with charges attributed in line with incremental costs). Investment for infill development, where it is required to upgrade or augment system-wide components that provide comparable benefits to users in well-established areas should be funded out of borrowings and recovered through rates or taxes (or the fixed element in periodic utility charges).

— For social (community) infrastructure, where this infrastructure satisfies an identifiable demand related to a particular development (such as a neighbourhood park), allocating the costs to that development through upfront developer charges is appropriate. However, in most cases, beneficiaries of these services are likely to be dispersed throughout the community and accurate cost allocation of infrastructure that provides broadly-based benefits would be difficult if not impossible. Hence, requiring developers to contribute upfront to finance the costs of provision will likely be inefficient and inequitable, with general revenue being the only realistic option unless direct user charges (such as for an excludable service like a community swimming pool) are possible.

Notably, while the principle of apportioning only attributable costs to developers has been embodied in legislative arrangements in various states[6], feedback from property developers point to considerable variation across states and councils in the application of this principle when imposing up-front infrastructure charges (particularly when voluntary agreements are used). Furthermore, developers are often under pressure to accept infrastructure items in Developer Contributions Plans (DCPs) to get a development approved for market, or to meet other deadlines.

Complex and non-transparent

Another concern related to infrastructure charges is that these are often designed and implemented in a complex and non-transparent way, creating high levels of uncertainty for developers about future costs. The Australia's Future Tax System Review noted that:

Difficulties in administering infrastructure charges can increase uncertainty, potentially deterring investment. For example, charges on proposed developments are sometimes used to offset local objections, such as community concerns about traffic congestion or overcrowding of public transport. In some cases, councils or State governments have responded to these concerns by imposing additional charges on proposed infill development to upgrade local infrastructure, such as railway stations and pedestrian bridges. When development approval is contingent on development charges of uncertain size, this can also add risk to projects and affect their viability.

Where developer charges are set in an ad hoc fashion or are subject to unexpected changes, they can create uncertainty around new developments. If infrastructure charges are increased after a developer has bought land from its original owner, they cannot be factored in to the price previously paid for the raw land. In this case, the charge would lower the expected return from the development. In addition, general uncertainty about charging is likely to discourage development activity, which could reduce the overall supply of housing and increase the price of housing.

Henry 2009, p. 426-427

Indeed, property developers need certainty on costs to undertake feasibility studies with a greater level of confidence. Government taxes and charges (including developer contributions) are one of the development costs that influence the feasibility of development projects. An example of the effects that changes in government taxes and charges can have in the feasibility of projects is provided in Box 3.1.

[6] Including New South Wales, Queensland, Western Australia and Tasmania (PC, 2014).

BOX 3.1 EFFECTS OF UNCERTAIN GOVERNMENT TAXES AND CHARGES ON PROPERTY DEVELOPMENT

A key concern of the residential development industry is the uncertainty about the amount of infrastructure contributions (and other government taxes and charges) that they will be required to pay.

The aspect of most concern to most property developers is that they do not know in advance the level of charges and contributions that will be required. When developers assess whether to buy land, they do their feasibility studies backwards, working from the lot price they can achieve in a competitive market and deciding how much they can pay for that piece of land.

If developers know exactly what taxes and charges they will be required to pay (including infrastructure charges and any other local or state taxes and charges), then these can be added to the feasibility calculations and if the investment is not viable (i.e. not profitable), developers would not buy the land.

Any increases in development costs (including taxes and charges) affect the viability of projects (unless these can be fully passed forward to consumers in the form of higher prices, which as discussed in Section 3.3 is unlikely). If a developer already owns a parcel of land for development and a new cost is introduced, then this increase could make the project unfeasible.

An example of the impact of increases in infrastructure charges and uncertainty about future development costs (under a scenario where cost increases cannot be passed forward to home buyers) is presented in the table below (the figures in this table are as at November 2017). This table provides a summary of the changes in profitability of a project in a growth area in NSW when:

- Section 94 (S94) contributions are increased (in line with recent announcements by the NSW Government)[7]
- a biodiversity offset/levy is introduced [8].

These figures have been sourced from a feasibility study for a project in North West Sydney (and refer to land lots only, not fully built houses).

	Base Case	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Section 94 contributions ($ per lot)	$30,000	$45,000	$45,000	$60,000	$60,000
Biodiversity offset ($ per lot)	-	-	$30,000	-	$30,000
Total government taxes and charges (land only, $ per lot)	$83,600	$98,600	$128,600	$113,600	$143,600
Development margin (%)	22.3%	16.9%	7.4%	12.0%	3.2%

Note: Except for the changes noted above, all other development costs remain equal across the different scenarios.

SOURCE: PROPERTY DEVELOPER.

As shown in this table, a project that shows a commercially feasible development margin of 22 per cent under the capped S94 contributions as at November 2017 (and when no biodiversity offsets are paid) could become significantly less viable as S94 contributions are increased and other taxes and charges are accounted for. Indeed, the development margin decreases to:

- 17 per cent when S94 contributions are increased to $45,000 per lot (as they will be by July 2019) (Scenario 1)
- 7 per cent when S94 contributions are increased to $45,000 and an additional $30,000 are paid per lot as a biodiversity offset (Scenario 2).

Furthermore, because the S94 cap will be removed in July 2020, developers do not know about the contributions they will be required to pay for some projects. If these are assumed to be $60,000 per lot (as they currently are in some older release areas not subject to the cap) and no biodiversity offsets are paid, then the development margin would decrease to 12 per cent (Scenario 3). However, when an additional $30,000 are paid per lot as a biodiversity offset then the development margin is reduced to only 3 per cent (Scenario 4).

Under these significantly reduced profitability scenarios, the developer would not buy the land and this land may remain undeveloped. Furthermore, the removal of the cap on S94 contributions creates additional uncertainty for developers and increases the risk of further reductions in development margins.

SOURCE: ACIL ALLEN CONSULTING.

Costly to administer

As noted by Henry (2009, p. 424-425), 'infrastructure charges can be complex and costly to levy. Ideally, each individual development would be assessed for the avoidable costs of infrastructure, which can be different for a similar item in different developments […]. There is therefore a trade-off

between the accuracy of user charging and its administrative feasibility'. Furthermore, the administrative cost associated with infrastructure charges can be considerable due to complex systems for standard setting, negotiations and compliance evaluation. The end result of these additional costs and uncertainties can be to discourage development and shrink the housing supply (ACG 2012).

Banking of unspent infrastructure funds

There are concerns that councils are stockpiling the funds collected through infrastructure charges to developers instead of investing them in the infrastructure required. Research by the Property Council of Australia (2017) using local government financial statements for 2015-16 found that there is around $1.1 billion dollars of unspent funds from Section 94 contributions across 27 Sydney councils as at June 2016. The research also found that over the past four years, the amount of unspent levies has increased by over 40 per cent.

Other concerns

Other key concerns related to infrastructure charges include the following.

— Developer Contributions Plans once approved are relatively difficult to change to adapt to changing need, priorities and other circumstances.

— Lack of scope for, or excessive costs in, appealing against particular infrastructure charges or requirements (PC 2004).

[7] Developer contributions in NSW are referred to as 'Section 94 contributions' as Section 94 of the *Environmental Planning and Assessment Act, 1979* enables councils in NSW to levy contributions upon a development where that development generates an increased demand upon council's services and facilities. As at November 2017, the cap on developer contributions in NSW was $30,000 in Greenfield areas and $20,000 in infill areas. However, this cap was increased by $5,000 (to $35,000) on 1 January 2018 and will be further increased by $5,0000 on 1 July 2018 and 1 July 2019. At the end of the financial year 2019-20, the cap will be removed entirely. In addition, the NSW Government has also expanded the use of Special Infrastructure Contributions (SIC) to 10 new growth areas in Sydney.

[8] A new Biodiversity Offsets Scheme was introduced in NSW on 25 August 2017 under the Biodiversity Conservation Act 2016. Under this scheme, developers have to offset any native vegetation they remove. Preliminary modelling conducted by Urban Development Institute of Australia (UDIA, 2017) NSW forecast an additional cost of $30,000 per lot as a result of this new scheme.

4 GREENFIELD DEVELOPMENT COSTS

This chapter provides insights about the current scope and quantum of taxes and charges imposed on new housing development in greenfield (or broadhectare) areas across Australia's capital cities.

A good way of measuring the relative costs involved in property development and investment is to examine actual projects. This can enable assessment of the real costs of property developments in specific parts of Australia. This is the approach that has been used to produce the analysis presented in this and the following chapter.

The information about development costs for each capital city has been sourced from property developers. Additional information about the approach used to measure these costs is presented in Appendix A .

4.1 Quantum of taxes and charges paid on new houses

Table 4.1 provides a comparison of the main cost components for new houses across Australia's capital cities. Notably, the table provides an estimate of the final indicative cost of acquiring a new house (that is, the government taxes and charges category includes the stamp duty that would be paid by the new owners when acquiring these properties, which adds to the total tax burden).

As shown in this table, Sydney ($1,004,700) remains the highest cost city for greenfield dwelling development followed by Darwin ($788,600), Melbourne ($745,200), Canberra ($726,500) and Brisbane ($679,600).

TABLE 4.1 COMPARISON OF GREENFIELD HOUSING COSTS ACROSS CAPITAL CITIES, $2017

	Sydney	Melbourne	Brisbane	Perth	Canberra	Adelaide	Hobart	Darwin
Land acquisition	$164,400	$56,800	$44,300	$44,400	$107,500	$65,300	$21,300	$88,600
Construction costs	$437,400	$400,800	$403,200	$334,000	$373,400	$240,400	$329,800	$400,200
Government taxes & charges	$249,100	$181,800	$139,900	$112,400	$135,900	$97,100	$85,500	$187,600
Sales and marketing costs	$41,100	$30,100	$28,000	$23,400	$30,000	$19,300	$20,700	$32,000
Other costs	$112,700	$75,700	$64,200	$55,300	$79,700	$50,900	$45,600	$80,200
Indicative house acquisition cost	**$1,004,700**	**$745,200**	**$679,600**	**$569,500**	**$726,500**	**$473,000**	**$502,900**	**$788,600**

Notes: Figures have been rounded. Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Figure 4.1 shows that while construction is the largest cost component of greenfield dwellings (representing between 44 per cent and 66 per cent of total acquisition costs), the second most significant cost component is government taxes and charges. GST, stamp duty and infrastructure charges are the most significant components in this category. Little progress appears to have been achieved in this regard across most jurisdictions about addressing the big issues of tax reform. Indeed, government taxes and charges:

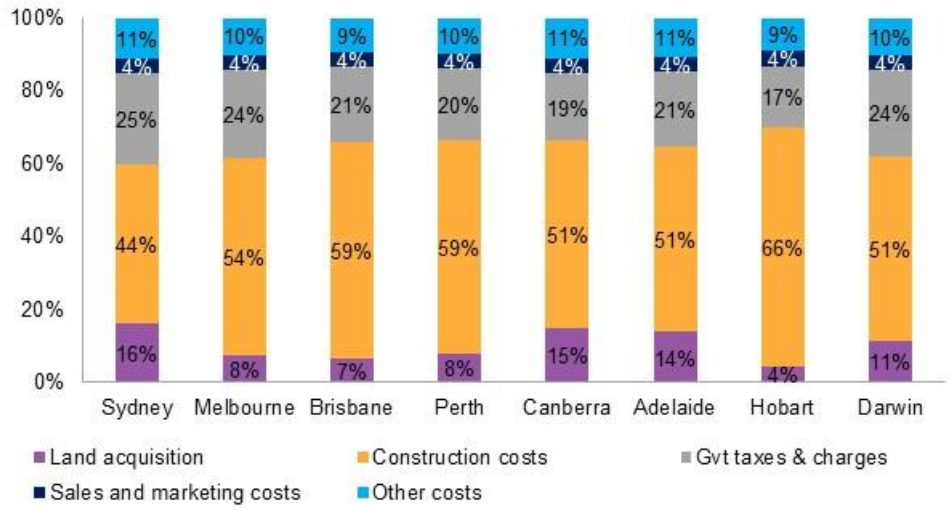
— range between 17 per cent to 25 per cent of the acquisition costs of greenfield dwellings across Australian capital cities

— are highest in Sydney, where they contribute 25 per cent to the total costs of acquiring a house, followed by Melbourne and Darwin where they make up 24 per cent of total costs

— range from 17 per cent to 21 per cent of total acquisition costs in other capital cities.

The land cost is also a significant component for greenfield dwellings in Sydney, Canberra, Adelaide and Darwin.

FIGURE 4.1 COMPARISON OF GREENFIELD HOUSING DEVELOPMENT COSTS, SHARE OF FINAL HOUSE ACQUISITION COST (PER CENT, 2017)



Notes: Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Figure 4.2 compares total taxes and charges imposed in new greenfield dwellings across capital cities. As shown in this figure, while these costs are consistently high across all locations (spanning from around $85,500 to around $250,000), government taxes and charges are:

— highest in Sydney (where they amount $249,100), followed by Darwin (where they amount to around $187,600)

— lowest in Hobart and Adelaide, where they amount to around $85,500 and $97,100 respectively.

FIGURE 4.2 GOVERNMENT TAXES AND CHARGES, CAPITAL CITIES ($, 2017)

Note: Figures have been rounded. Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

In terms of infrastructure charges, Figure 4.3 reports the amount collected per greenfield dwelling. These charges include developer contributions, utilities levies and state infrastructure charges. The data presented in this figure is for a dwelling sold in 2017 (and developed over the period 2013-2017[9]), but because of recent announcements regarding changes to developer contributions (Section 94 contributions) in NSW, additional figures are provided for Sydney.

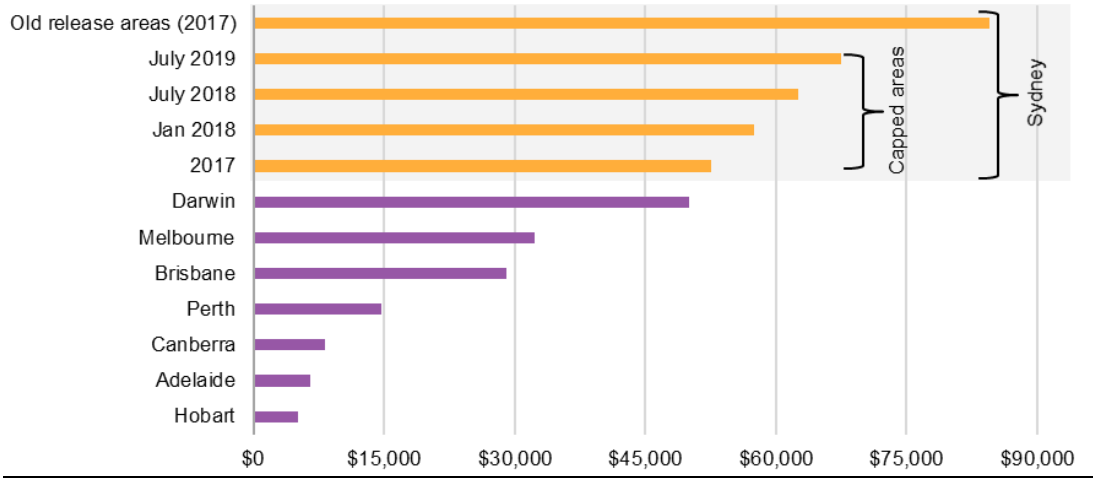
As at November 2017, Section 94 contributions in NSW were capped at $30,000 in greenfield areas and $20,000 in infill areas. In mid-2017, the NSW Government announced that these caps will be increased by $5,000 on 1 January 2018, 1 July 2018 and 1 July 2019 and will be removed entirely at the end of the financial year 2019-20. In addition, the NSW Government has also expanded the use of Special Infrastructure Contributions (SIC) to 10 new growth areas in Sydney (currently in place in three growth areas). Notably, property developers consulted for this project said that the current contributions caps do not apply to old release areas in Sydney (for instance, Elderslie and Spring Farm) where Section 94 are around $62,000 per lot.

Some key points to be drawn from the figures provided in Figure 4.3 are as follows.

- Even under the current capped Section 94 contributions, Sydney has the highest infrastructure charges in the sample. The current charges for the greenfield dwelling examined in Sydney average around $52,000 per housing lot (including Section 94 contributions, utilities levies and state infrastructure charges). These charges will significantly increase in the next few years in line with the increase (and eventual removal) of the caps on Section 94 contributions.
- Hobart and Adelaide have the lowest infrastructure charges in the sample at around $5,000 and $6,600 per lot, respectively.
- There is a wide range of variation in infrastructure charges across Australia's capital cities. Developments in Sydney, Darwin, Brisbane and Melbourne required contributions of greater than $29,000 per housing lot sold in 2017, while other four capital cities required less than that.

[9] See Appendix A for more details.

FIGURE 4.3 INFRASTRUCTURE CHARGES/DEVELOPER CONTRIBUTIONS PER DWELLING ($, 2017 – EXCEPT FOR SYDNEY AS NOTED)



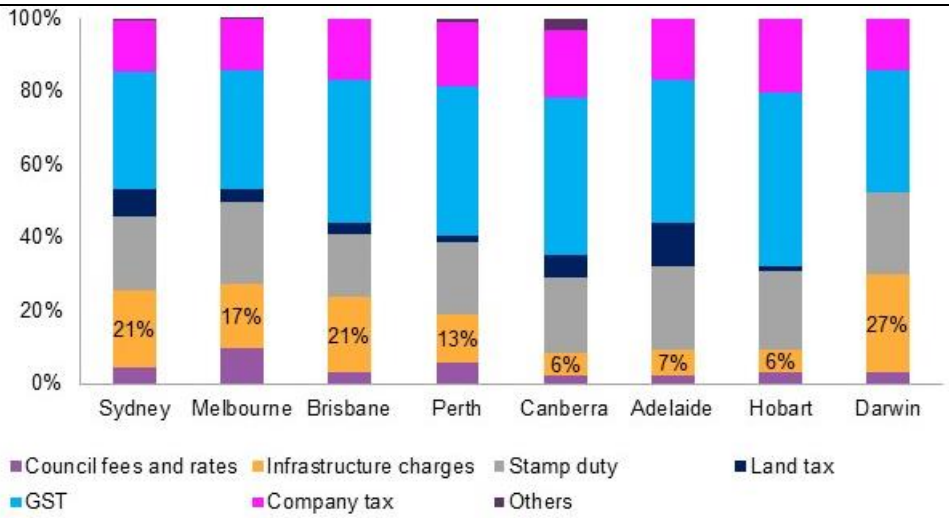
Note: Infrastructure charges in this figure include developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN) and state infrastructure charges. Old release areas in Sydney include, for instance, Elderslie and Spring Farm where Section 94 are $62,000 per lot (developers noted that in these older release areas the caps on developer contributions do not apply).

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Infrastructure charges represent a significant proportion of the total costs of government taxes and charges in some capital cities. Figure 4.4 shows the composition of government taxes and charges imposed on greenfield dwellings. This figure shows that:

- there is considerable variation in the share of government taxes and charges raised through developer contributions, with proportions spanning a range of between 6 per cent and 27 per cent
- infrastructure charges as a share of total taxes and charges paid for new houses are highest in Darwin. While the cost of infrastructure charges imposed in Darwin is not the highest in the capital cities studied (in level terms), these charges are a large share of the resources obtained from new greenfield dwelling development
- infrastructure charges make up the highest proportion of total taxes and charges in Darwin, Sydney and Brisbane with shares of 27 per cent, 21 per cent and 21 per cent, respectively.

FIGURE 4.4 COMPOSITION OF GOVERNMENT TAXES AND CHARGES IN GREENFIELD DWELLINGS, CAPITAL CITIES (PER CENT, 2017)



Note: Infrastructure charges in this figure include developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN) and state infrastructure charges. Stamp duty includes land and house purchase. Others include the Long Service Levy in NSW, the Metropolitan Planning Levy in Victoria, the Building Construction Industry Training Fund Levy in WA and ACT, the Building Services Levy in WA and the Building Levy in ACT.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

4.2 Greenfield taxes and charges in perspective

To put the amount of government taxes and charges paid for greenfield developments in perspective, this section compares them to a selection of benchmarks. Figure 4.5 provides a comparison of taxes and charges and the cost of land across Australia's capital cities. As shown in this figure, government taxes and charges outstrip land costs in each capital city in Australia. This is even so in Sydney, where the cost of land is significantly larger than in other capital cities.

As illustrated in Figure 4.5, government taxes and charges are:

— more than three times the cost of land in Brisbane and Melbourne

— more than double the cost of land in Perth and Darwin

— nearly $85,0000 more than the cost of land in Sydney.

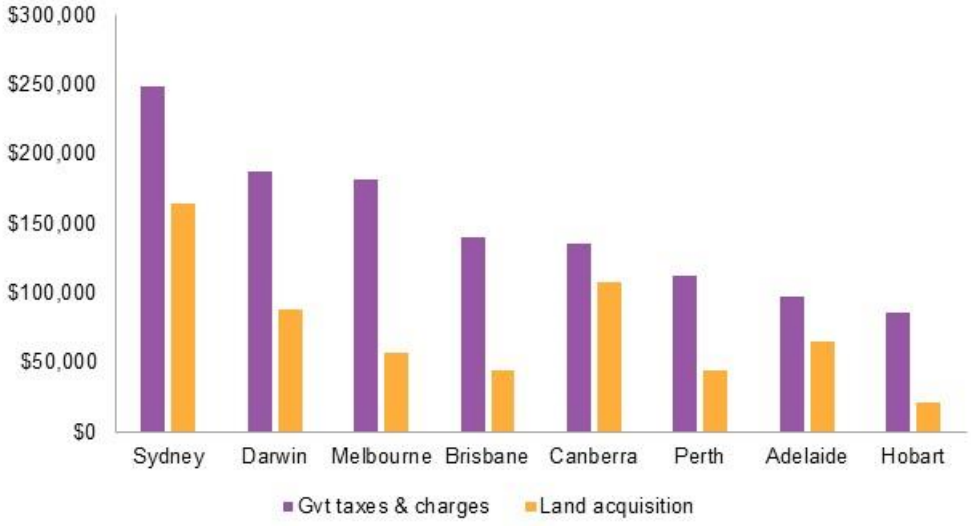
Figure 4.6 drills down on some of the key drivers of non-construction housing costs across Australia's capital cities. Examination of these drivers suggests that high infrastructure charges play a significant role in overall housing costs. Notably:

— Sydney, Darwin, Melbourne and Brisbane have the highest infrastructure charges in Australia. In these cities infrastructure charges are a bigger driver of housing costs than stamp duty on house purchases (except in Melbourne where stamp duty on house purchase is around $6,000 more than the infrastructure charges)

— in Sydney, infrastructure charges alone amount to around 32 per cent of land costs, while in Melbourne the cost of infrastructure charges is more than half the cost of land

— in Brisbane, infrastructure charges amount to 66 per cent of land costs.

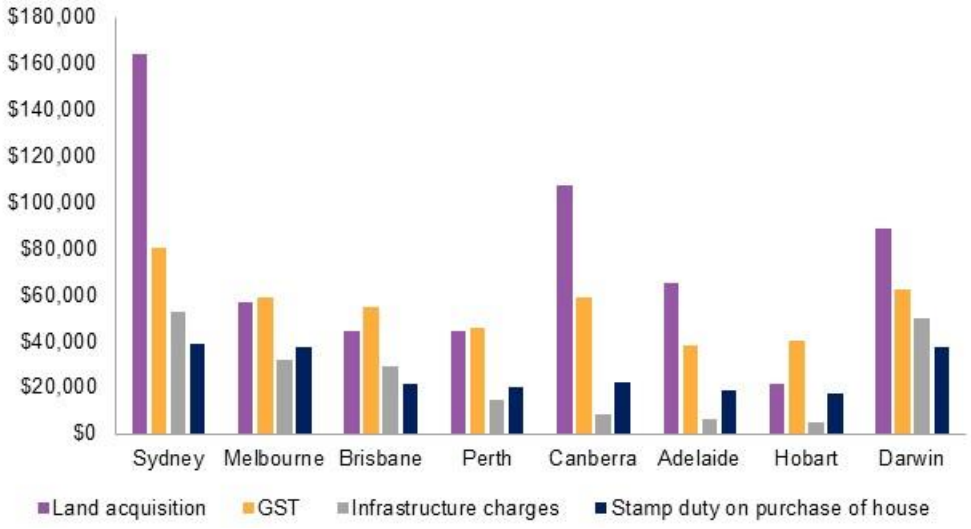
FIGURE 4.5 COMPARISON OF GOVERNMENT TAXES AND CHARGES AND LAND ACQUISITION COST IN GREENFIELD DEVELOPMENTS ($,2017)



Note: Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

FIGURE 4.6 COMPARISON OF SELECTED COST COMPONENTS ($,2017)



Note: Infrastructure charges in this figure include developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN) and state infrastructure charges.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Australian Governments are increasingly concerned about the cost of housing and have implemented a number of initiatives and concessions aimed at improving housing affordability (see Box 4.1).

BOX 4.1 CURRENT HOME BUYER GRANTS AND CONCESSIONS

New South Wales

- First home owner grant — $10,000 grant for the building of a new home worth up to $750,000 (including building a home on vacant land); $10,000 grant for the purchase of a new home worth up to $600,000.
- Stamp duty exemptions and concessions — stamp duty exemption for first home buyers on the purchase of new and existing houses valued up to $650,000 and reductions in stamp duty for all homes valued between $650,000 and $800,000.

Victoria

- First home owner grant — $10,000 grant available when buying or building a new home valued up to $750,000 (established homes are no longer eligible to receive this grant). The grant increases to $20,000 if the house is in regional Victoria.
- Stamp duty exemptions and concessions — stamp duty exemption on the purchase of new and existing houses valued up to $600,000 and reductions in stamp duty for all homes valued between $600,000 and $750,000.

Queensland

- First home owner grant — $20,000 grant available or newly constructed or substantially renovated homes purchased on or after 1 July 2016 valued up to $750,000 (established homes are not eligible).
- Stamp duty home concession— concessional transfer duty rate applied to the first $350,000 of the value of the home (for existing home owners acquiring a residence that they intend to occupy as their home).
- Stamp duty first home concession— a first home concessional transfer duty rate is available for first time buyers purchasing a house valued at less than $550,000. If the house is valued more than $550,000 the first home concession cannot be claimed but the home concession rate will still apply.

Western Australia

- First home owner grant — $10,000 grant available when buying or building a new home valued up to $750,000 if the property is located south of the 26th parallel of south latitude (all Perth metropolitan areas are south of the 26th parallel) or up to $1,000,000 if located north of the 26th parallel of south latitude. Established homes are not eligible to receive this grant.
- Stamp duty exemptions and concessions — stamp duty exemption for first home buyers on the purchase of new and existing houses valued up to $430,000 and reductions in stamp duty for all homes valued between $430,000 and $530,000.

ACT

- First home owner grant — $7,000 grant available when buying a new home valued up to $750,000. Established homes are not eligible to receive this grant.
- Stamp duty exemptions and concessions — minimum stamp duty ($20) for first home buyers on the purchase of new houses valued up to $470,000 and reductions in stamp duty for new homes valued between $470,000 and $607,000.
- From 1 July 2019 stamp duty will be abolished for first home buyers earning under $160,000 who buy new and established homes.

South Australia

- First home owner grant — $15,000 grant available when buying or building a new home valued up to $575,000 (established homes are no longer eligible to receive this grant).
- Stamp duty exemptions and concessions — stamp duty concession on the purchase of off-the-plan apartments valued up to $500,000. Amount of concession depends on the construction stage of the apartment (with apartments where no work has commenced receiving the highest concession).

Tasmania

- First home owner grant — $20,000 grant available when buying or building a new home (no maximum value threshold). From 1 July 2018 onwards, the grant amount will be $10, 000.
- No stamp duty concessions or exemptions in place for Tasmanian home buyers.

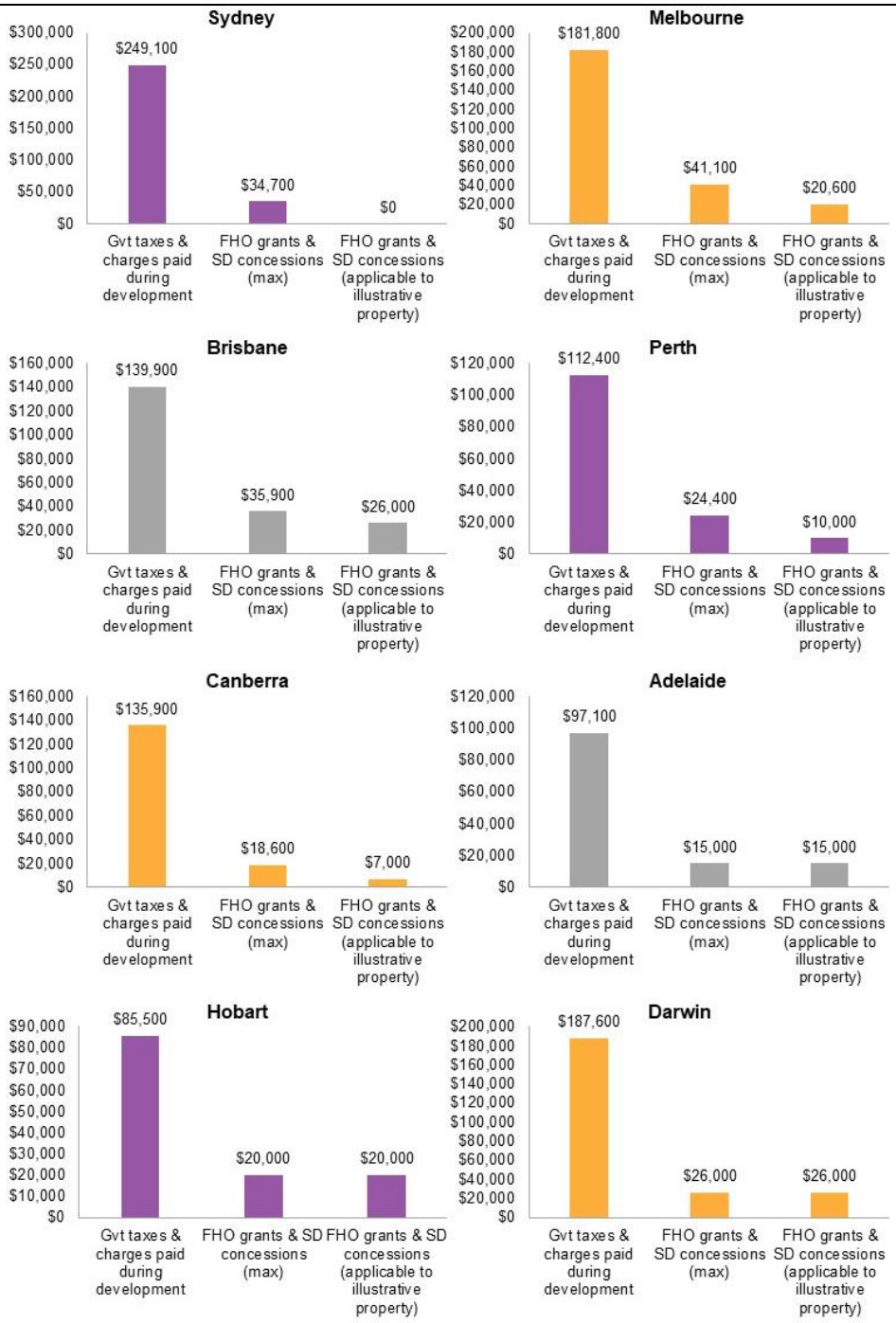
Northern Territory

- First home owner grant — $26,000 grant available when buying or building a new home (no maximum value threshold).
- Stamp duty exemptions and concessions — the First Home Owner Discount (FHOD) is a full stamp duty concession available to first home buyers on the initial $650,000 value of a home (available only for existing houses). First home buyers that are building or acquiring a new home are not entitled to the FHOD. The FHOD reduces the payable stamp duty by up to $23 928.60 where the value of the home does not exceed $650,000. The FHOD is not available if value of the home exceeds the FHOD threshold.

SOURCE: ACIL ALLEN CONSULTING.

As shown in Box 4.1, all state and territory governments assist first home ownership through a range of grants and stamp duty exemptions and concessions. However, when compared to the magnitude of taxes and charges paid when acquiring a new house, these subsidies and concessions are dwarfed (see Figure 4.7).

FIGURE 4.7 COMPARISON OF TAXES AND CHARGES PAID FOR GREENFIELD DWELLINGS AND AVAILABLE HOME BUYER CONCESSIONS AND INCENTIVES (AS AT NOVEMBER 2017)



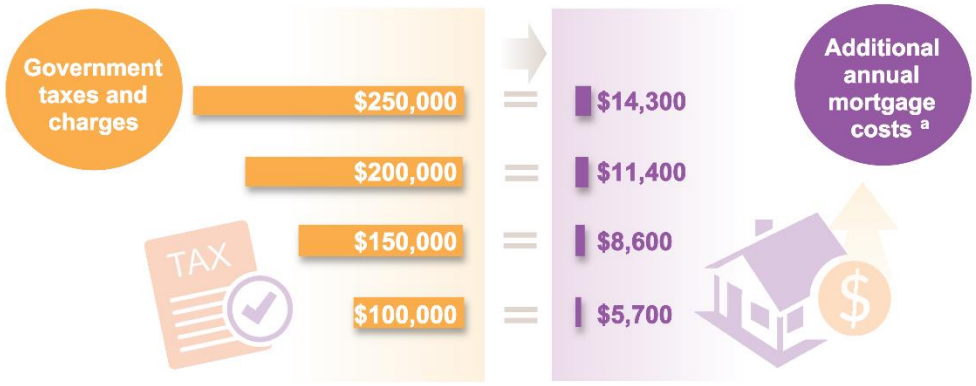
Note: FHO = First Home Owner. SD= Stamp Duty. FHO grants and SD concessions (max) refers to the maximum amount of grants and concessions available to FHO in each capital city if the eligibility requirements and relevant price thresholds are met. FHO grants and SD concessions (applicable to illustrative property) refers to the grants and concessions that a FHO buying the case study property would be entitled to. Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), state infrastructure charges (NSW and Victoria), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Figures have been rounded.

SOURCE: ACIL ALLEN CONSULTING.

Some key observations about Figure 4.7 are provided in the points below.

- Government taxes and charges in Sydney amount to more than seven times the maximum concession available if the eligibility requirements and relevant price thresholds are met. However, given the price of the illustrative property analysed in this study, no First Home Owner (FHO) grants or stamp duty concessions would be available to people aiming to buy this property. Notably, given the current median price for new houses in Sydney (approximately $980,000 as at March 2017 according to CoreLogic), many first buyers looking at purchasing a new house in Sydney would not be able to access these concessions either.
  - Even if the grants and concessions did not have price thresholds, government taxes and charges add $249,100 to the cost of acquitting a new house in a broadacre development in Sydney, while first home buyer concessions would offer a maximum benefit of $34,700, making the net impost of government policy on housing costs equal to $214,400.
  - To illustrate the magnitude of these costs, $200,000 worth of government taxes and charges could add around $11,400 per year to the costs of servicing a new home mortgage (see Figure 4.8).[10]
- Government taxes and charges across other capital cities amount to around 3.9 - 7.3 times the maximum concession available if the eligibility requirements and relevant price thresholds are met. Even in Hobart (the city with the lowest amount of taxes and charges), these charges are more than four times the maximum level of grants and concessions available.
- Different government concessions and incentives across states do not make up for the wide variation in infrastructure charges. For instance, Sydney has the highest level of infrastructure charges in Australia, however, it has only the third highest maximum level of concessions and incentives.

FIGURE 4.8 ILLUSTRATIVE IMPACT OF GOVERNMENT TAXES AND CHARGES ON MORTGAGE REPAYMENTS



a Figures calculated using the following mortgage assumptions: prime borrower, standard loan, 20 per cent deposit (i.e. Loan to Valuation Ratio (LVR)=80 per cent), standard variable rate of 5.20 per cent per year (Reserve Bank of Australia's variable standard interest rate for housing loans for owner-occupier as at February 2018) and a 25-year repayment period.

SOURCE: ACIL ALLEN CONSULTING.

[10] Figure calculated using the following mortgage assumptions: prime borrower, standard loan, 20 per cent deposit (i.e. Loan to Valuation Ratio (LVR)=80 per cent), standard variable rate of 5.20 per cent per year (Reserve Bank of Australia's variable standard interest rate for housing loans for owner-occupier as at February 2018) and a 25-year repayment period.

5 INFILL DEVELOPMENT COSTS

This chapter provides insights about the current scope and quantum of taxes and charges imposed on infill developments across Australia's capital cities. Additional information about the approach used to measure these costs is presented in Appendix A .

5.1 Quantum of taxes and charges paid on new apartments

The main cost components for new apartments across Australia's capital cities are outlined in Table 5.1. Similar to the costs of new houses, the table provides an estimate of the final indicative cost of acquiring a new apartment (that is, the government taxes and charges category includes the stamp duty that would be paid by the new owners).

As shown in this table, Sydney ($987,500) is the highest cost city for infill dwelling development followed by Melbourne ($633,600), Brisbane ($606,300), Adelaide ($531,300) and Canberra ($528,500).

TABLE 5.1 COMPARISON OF INFILL HOUSING COSTS ACROSS CAPITAL CITIES, $2017

	Sydney	Melbourne	Brisbane	Perth	Canberra	Adelaide	Hobart	Darwin
Land acquisition	$218,800	$90,000	$49,800	$42,800	$52,100	$32,400	$31,900	$63,500
Construction costs	$384,200	$323,900	$345,400	$302,600	$310,200	$334,600	$267,700	$265,800
Government taxes & charges	$220,700	$125,100	$127,100	$94,800	$91,200	$93,500	$80,300	$84,000
Sales and marketing costs	$40,400	$25,700	$25,000	$21,000	$21,900	$21,700	$18,100	$19,700
Other costs	$123,400	$68,900	$59,000	$49,800	$53,100	$49,100	$41,800	$51,400
Indicative apartment acquisition cost	**$987,500**	**$633,600**	**$606,300**	**$511,000**	**$528,500**	**$531,300**	**$439,800**	**$484,400**

Notes: Figures have been rounded. Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.

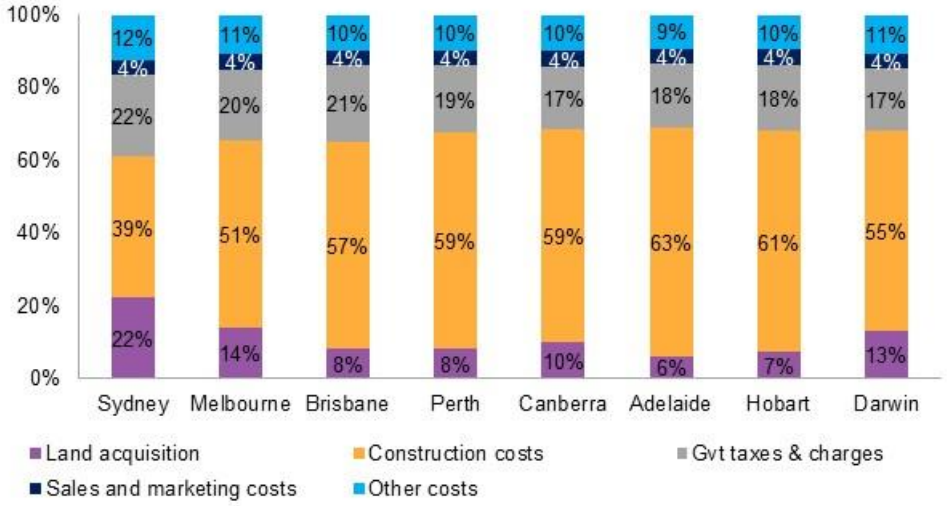
SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

As shown in Figure 5.1, construction costs, including materials and labour, make up the largest component of total costs for typical apartments in infill developments in each capital city (representing between 39 per cent and 63 per cent of total acquisition costs). The second most significant cost component is government taxes and charges. Indeed, government taxes and charges:

- range between 17 per cent to 22 per cent of infill dwelling acquisition costs across Australian capital cities
- are highest in Sydney, where they add 22 per cent to the total costs of acquiring an apartment, followed by Brisbane where they make up 21 per cent of total costs.

The land cost is also a significant component for apartments in Sydney, Melbourne and Canberra.

FIGURE 5.1 COMPARISON OF INFILL HOUSING DEVELOPMENT COSTS, SHARE OF FINAL HOUSE ACQUISITION COST (PER CENT, 2017)



Notes: Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Other costs include: legals, holding costs and developer margins.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

When taxes and charges imposed in infill developments are compared across capital cities (see Figure 5.2) the following messages emerge.

- Government taxes and charges are significant across all capital cities (spanning from around $80,000 to around $220,000).
- These costs are highest in Sydney (where they amount $220,700), followed by Brisbane and Melbourne (where they amount to around $127,100 and $125,100, respectively).
- The lowest amount of taxes and charges are paid in Hobart and Darwin, where they amount to around $80,300 and $84,000 respectively.

FIGURE 5.2 GOVERNMENT TAXES AND CHARGES, CAPITAL CITIES ($, 2017)

Note: Figures have been rounded. Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included.

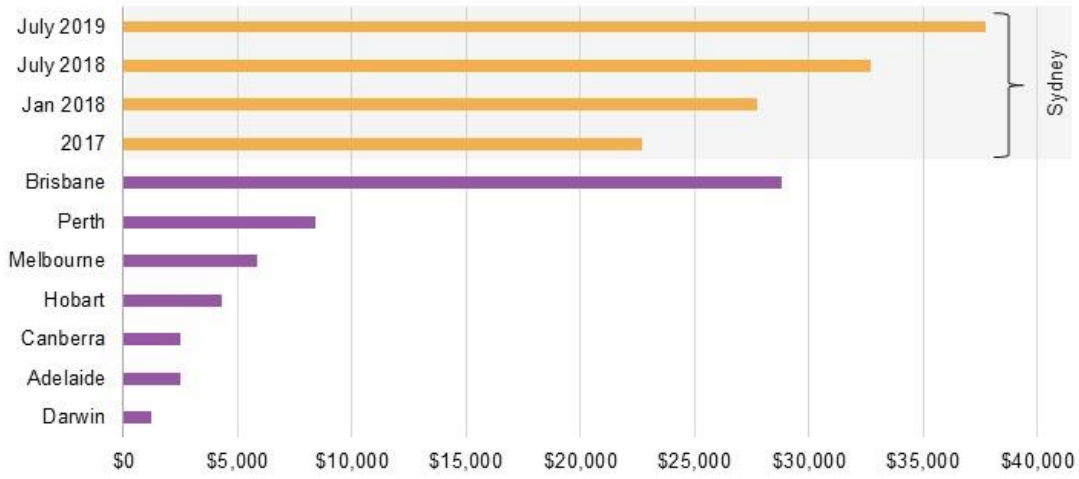
SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

In terms of infrastructure charges, Figure 5.3 reports the amount collected per apartment. These charges include developer contributions and utilities levies. Similar to greenfield developments, the data is presented for apartments sold in 2017 (and developed over the period 2013-2017), but because of recent announcements regarding changes to Section 94 contributions in NSW, additional figures are provided for Sydney. As noted before, Section 94 contributions in NSW for infill dwellings were capped at $20,000 in 2017, but have now increased to $25,000 from 1 January 2018 and will be further increased to $30,000 on 1 July 2018, to $35,000 on 1 July 2019 and will be uncapped from the beginning of the financial year 2020-21.

As shown in Figure 5.3:

- Brisbane has the highest infrastructure charges in the sample
- Sydney has the second highest infrastructure charges in the sample and these charges will significantly increase in the next few years
- Darwin and Adelaide have the lowest infrastructure charges in the sample at around $1,200 and $2,500 per apartment, respectively
- there is a wide range of variation in infrastructure charges across Australia's capital cities
- developments in Brisbane and Sydney required contributions of greater than $22,000 per apartment, while the rest of the capital cities required much less than that (between $1,200 and $8,400).

FIGURE 5.3 INFRASTRUCTURE CHARGES/DEVELOPER CONTRIBUTIONS PER DWELLING ($, 2017 – EXCEPT FOR SYDNEY AS NOTED)

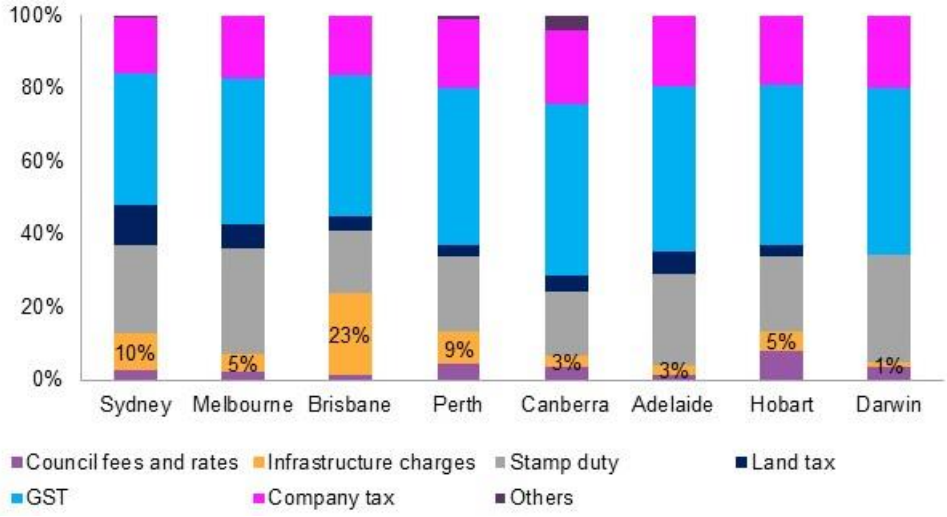


Note: Infrastructure charges in this figure include developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN) and state infrastructure charges.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Figure 5.4 shows the composition of government taxes and charges imposed on infill dwellings. As shown in this figure, the proportion of infrastructure charges as a share of the total costs of government taxes and charges is, in general terms, less significant than in greenfield dwellings. However, infrastructure charges represent a somewhat significant proportion of the total costs of government taxes and charges in Brisbane (23 per cent), Sydney (10 per cent) and Perth (9 per cent).

FIGURE 5.4 COMPOSITION OF GOVERNMENT TAXES AND CHARGES PAID BY INFILL DWELLINGS, CAPITAL CITIES (PER CENT, 2017)



Note: Infrastructure charges in this figure include developer contributions and utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN). Stamp duty includes land and house purchase. Others include the Long Service Levy in NSW, the Metropolitan Planning Levy in Victoria, the Building Construction Industry Training Fund Levy in WA and ACT, the Building Services Levy in WA and the Building Levy in ACT.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

5.2 Infill taxes and charges in perspective

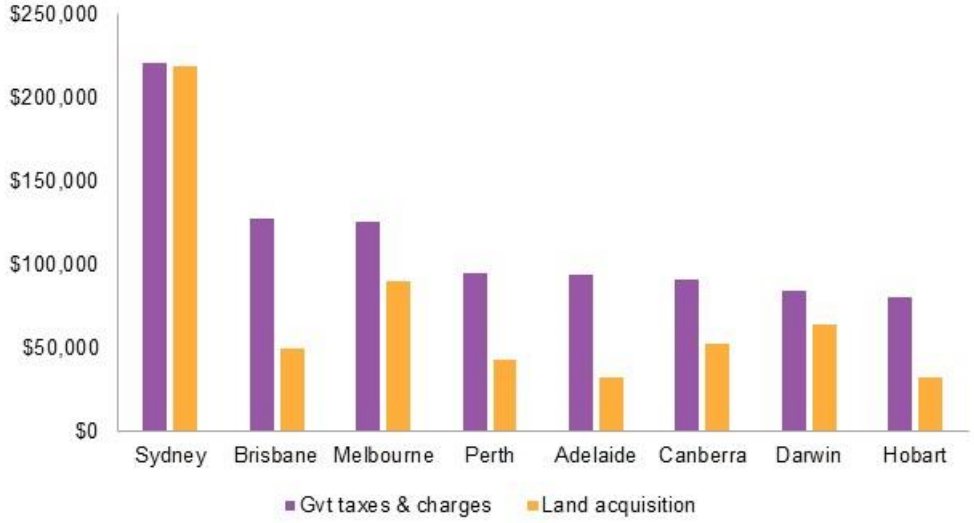
A comparison of the amount of government taxes and charges paid in infill developments to the cost of acquiring land is provided in Figure 5.5. Key messages from this figure are as follows.

— Government taxes and charges paid for apartments outstrip land costs in each capital city in Australia.

— Except in Sydney (where taxes and charges are broadly the same as the costs of land), these costs are between 1.3 and 2.9 times the cost of land across Australia's capital cities.

— In Brisbane, infrastructure charges alone amount to nearly 60 per cent of land costs, while in Perth these charges amount to around a fifth of the costs of land and in Sydney to 10 per cent of the cost of land.

FIGURE 5.5 COMPARISON OF GOVERNMENT TAXES AND CHARGES AND LAND ACQUISITION COST IN GREENFIELD DEVELOPMENTS ($,2017)



Note: Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included.

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

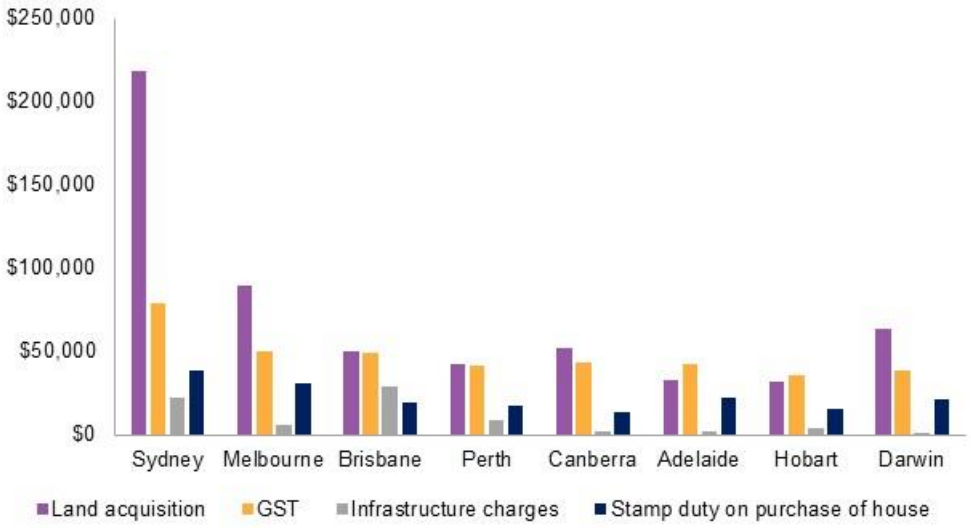
Figure 5.6 drills down on some of the key drivers of non-construction costs for apartments across Australia's capital cities. As shown in this figure:

— Brisbane and Sydney have the highest infrastructure charges in Australia. These charges are more than $22,000 per apartment

— in Brisbane, infrastructure charges are a bigger driver of housing costs than stamp duty on apartment purchases

— infrastructure charges are not a key driver of non-construction costs for apartments in Darwin, Adelaide, Canberra and Hobart where charges are less than $5,000 per apartment.

FIGURE 5.6 COMPARISON OF SELECTED COST COMPONENTS ($,2017)



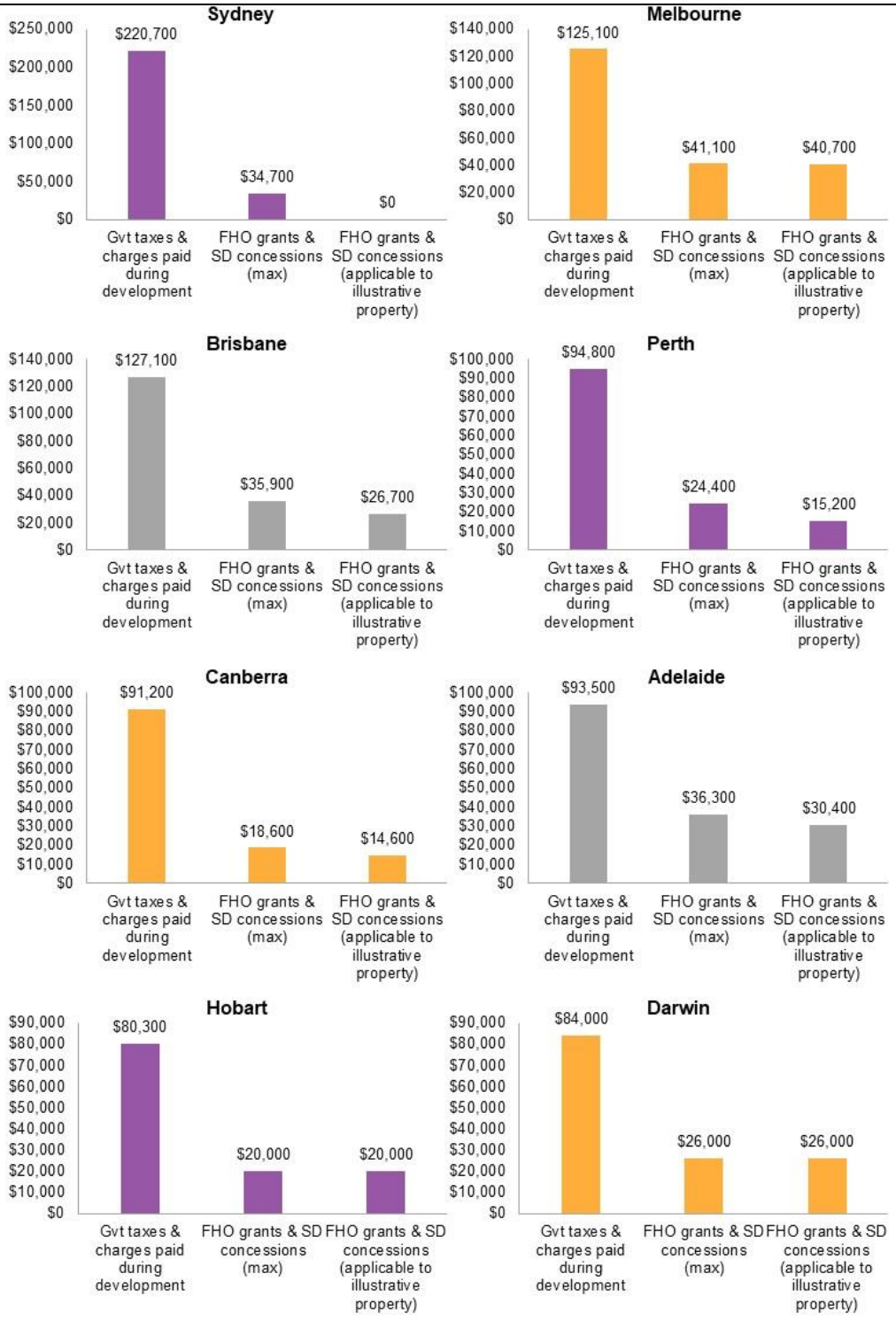
Note: Infrastructure charges in this figure include developer contributions and utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN).

SOURCE: ESTIMATES BY ACIL ALLEN CONSULTING BASED ON INFORMATION PROVIDED BY PROPERTY DEVELOPERS.

Figure 5.7 compares the magnitude of taxes and charges paid when purchasing a new apartment against the grants and concessions available for first home buyers. As shown in this figure:

- Government taxes and charges in Sydney amount to around six times the maximum concession available if the eligibility requirements and relevant price thresholds are met. However, given the price of the illustrative property analysed in this study, no First Home Owner (FHO) grants or stamp duty concessions would be available to people aiming to buy this property. Despite this, given the current median price for new apartments in Sydney (approximately $610,000 as at March 2017 according to CoreLogic), some first buyers looking at purchasing a new apartment in Sydney would be able to access some of these concessions (either partially or in full)
  - even if grants and concessions could be accessed by all buyers, government taxes and charges in Sydney add around $220,700 to the cost of acquiring a new apartment, while first home buyer concessions would offer a maximum benefit of $34,700 making the net impost of government policy on housing costs equal to $186,000.
- Government taxes and charges across other capital cities amount to around 2.6 – 5 times the maximum concession available if the eligibility requirements and relevant price thresholds are met. Even in Hobart (the city with the lowest amount of taxes and charges), these charges are four times the maximum level of grants and concessions available.

FIGURE 5.7 COMPARISON OF GOVERNMENT TAXES AND CHARGES PAID FOR GREENFIELD DWELLINGS AND AVAILABLE HOME BUYER CONCESSIONS AND INCENTIVES



Note: FHO = First Home Owner. SD= Stamp Duty. FHO grants and SD concessions (max) refers to the maximum amount of grants and concessions available to FHO in each capital city if the eligibility requirements and relevant price thresholds are met. FHO grants and SD concessions (applicable to illustrative property) refers to the grants and concessions that a FHO buying the case study property would be entitled to. Maximum grants and concessions in Adelaide assume apartment is bought off the plan and that the stamp duty concession has been claimed when work has not commenced (hence attracting the highest concession available). Government taxes and charges include council rates, councils fees (Building Application/Development Application/Strata Application fees), Section 94 contributions/developer contributions, utilities levies (including water & sewerage, electricity & gas and telecommunications/NBN), Metropolitan Planning Levy (Victoria only), Building Construction Industry Training Fund Levy (WA and ACT), Long Service Levy (NSW only), Building Services Levy (WA only), Building Levy (ACT only), land tax, stamp duty (for land and house purchase), GST and company tax. Biodiversity Levy for NSW and Victoria not included. Figures have been rounded.

SOURCE: ACIL ALLEN CONSULTING.

6 ALTERNATIVE INFRASTRUCTURE FUNDING MECHANISMS

This chapter discusses different mechanisms for funding the infrastructure necessary for the development of new housing on the urban fringe. In this context, it is important to distinguish between funding and financing.

Financing is concerned with the upfront provision of capital (private or public) to pay (finance) the upfront investment costs of an infrastructure project. Funding deals with servicing this financial capital and ultimately with the party that actually bears the cost of providing the infrastructure. These issues are complicated when a developer pays for publicly provided infrastructure, and hence appears to finance and fund the infrastructure. However, when the developer passes the payment back to landowners or forward to the lot or house purchaser, the cost is borne ultimately by either the initial landowner or the home buyer (Applied Economics, 2003).

Notably, obtaining financing does not preclude the need for funding. That is, money can only be borrowed if there will be some way to pay it back in the future (Terrill, 2017).

There are many ways to raise revenue to fund infrastructure. Different revenue options affect who pays and who benefits and how infrastructure is paid for and used. In general, there are five main mechanisms to fund public infrastructure:

- user charges
- value-capture approaches
- developer contributions (also referred to as infrastructure or beneficiary charges or levies)
- government funds
- brownfield recycling (also referred to as capital or asset recycling).

These mechanisms are discussed in more detail in the sections below (except for developer contributions / infrastructure charges which were discussed in detail in Chapter 3).

6.1 User charges

User charges are distinguished from taxation where they are applied in regard to use of infrastructure services. The funds raised from charges are also generally applied, linked or hypothecated to support the service, although this is not always so (ACG, 2003).

As noted by the Productivity Commission (2014), user charges (prices) based on the (efficient) cost of provision are in principle the preferred option for funding infrastructure. This is because user charges:

- provide a clear signal to individuals about the cost of infrastructure, incentivising its efficient use
- can signal infrastructure providers where changes in infrastructure capacity are warranted
- can address equity concerns because the primary beneficiaries of the infrastructure are the ones who pay for it

— can be set to influence when and how people use infrastructure (which can help optimise its use) (IV 2016a)

— can help achieve social and environmental outcomes by providing pricing incentives to minimise waste or pollution through efficient use of natural resources (IV 2016a).

While in theory user charges are an efficient mechanism to fund infrastructure, they are not without limitations. In practice, it is difficult to assign user charges in a manner that achieves efficient pricing, resulting in charges set too high to encourage optimal use or too low to cover the cost of capital. In addition, because revenue from user charges is related to use, and demand for goods and services may vary from what was anticipated at the planning stage, revenue can be quite volatile and affect financial returns (ACG, 2003).

User charges are already the norm for most types of economic infrastructure, such as electricity, telecommunications, gas, water and many transport sectors. However, user charging is not the solution to meet all public infrastructure needs. There will continue to be a role for governments to fund, at least partly, some types of public infrastructure (particularly when it is impractical to exclude users who do not pay direct charges, where the transaction costs exceed the benefits of charging or the wider beneficiaries are difficult to identify or are diffuse) (PC, 2014).

A case study of public infrastructure funded through user charges is provided in Box 6.1.

BOX 6.1 CASE STUDY: USER CHARGES AS A FUNDING SOURCE — ADELAIDE DESALINATION PLANT

The Adelaide Desalination Plant is a seawater desalination plant at Lonsdale, South Australia which uses a technique known as reverse osmosis. The plant was built to provide long-term water security for South Australia (SA) and has been delivering drinking water since 2011. In full operation, the plant has the capacity to provide the city of Adelaide with about 50 per cent of its drinking water needs.

The project was delivered through a design-build-operate-maintain contract awarded to AdelaideAqua (a consortium comprising McConnell Dowell Constructors, Abigroup Contractors, ACCIONA Aqua and TRILITY).

Construction of the plant commenced in 2009 and was completed in 2011. AdelaideAqua will be responsible for the operation of the desalination plant for up to 20 years. The plant remains owned by SA Water.

The desalination plant is being funded through user charges and government funds (through availability payments[11]). The environmental impact assessment published by the SA Government stated:

> *The cost of the proposed development [the desalination plant] will result in increases in water prices to customers. In December 2007, the Government announced that a new water pricing structure would be introduced. In addition, the new structure includes a new, third-tier targeting residential customers who use in excess of 520 kilolitres per annum. The new pricing structure is designed both to raise sufficient revenue to meet the costs of the water security initiatives discussed above [including the desalination plant] and also to provide an incentive for residential customers to minimise their discretionary use of water.*
>
> *SA Government, cited in PC 2014 p.666.*

The Productivity Commission reported that, on average, water prices in SA increased 26 per cent from July 2011 (PC 2014).

The plant was built at a cost of $1.83 billion (PC 2011b), financed from a combination of SA Government and Australian Government contributions, as follows (PC 2014):

- the SA Government made $1274 million in contributions, and agreed to cover any additional costs incurred to complete the project
- the Australian Government provided a grant of $328 million through the National Urban Water and Desalination Plan, most of which was on the condition that the plant's capacity be expanded from 50 to 100 GL per year.

Notably, in its inquiry into urban water (PC 2011b), the Productivity Commission concluded that purchasing equivalent capacity from the Murray-Darling Basin would have been a cheaper option than building the desalination plant. Furthermore, the plant has been frequently criticised for being expensive to maintain at low output when not needed.

SOURCE: PC 2011B, PC 2014, SA WATER 2017.

[11] Availability payments are a funding mechanism which transfers demand risk from the financier to the government, and which can be used to subsidise additional private sector finance. The use of availability payments to fund infrastructure Public-Private Partnerships (PPPs)

6.2 Value capture

Value capture is an approach that seeks to fund infrastructure from a wider range of beneficiaries than just users by capturing some of the increased value of land that results from building new infrastructure.

There are a few different methods for value capture, including:

- betterment levies/ value capture levies
- tax increment financing (TIF)/ growth area bonds (GABs)
- special assessment districts / business improvement districts
- development rights / air rights (property development)
- joint development.

6.2.1 Betterment levies

There are various ways to implement betterment levies (sometimes referred to as value capture levies). They can take the form of a supplement on property taxes or payroll taxes or a fee levied on land that has gained in value because of public infrastructure investments.

Betterment levies have been used to fund infrastructure in Australia for a long time (in the 1920s the Sydney Harbour Bridge was partly funded by a levy on landholders; Melbourne introduced a levy to contribute to the construction of the City Loop in the 1970's; and the Gold Coast Light Rail project is being partially funded through a City Transport Improvement Charge). They have also been used extensively in other countries, including the United States (US), the United Kingdom (UK), Denmark, Japan, Spain and Colombia (PC 2014, The World Bank 2017).

While betterment levies can be an efficient means of recovering the cost of infrastructure that provides benefits across a wider number of local residents and businesses, they have the following limitations (PC 2014, IV 2016a).

- It can be difficult to demonstrate a clear and strong link between the new infrastructure and the value beneficiaries receive. Mechanisms need to be developed to differentiate between increases in land value driven by new infrastructure and other factors.
- The benefits generated for local property owners and business by new infrastructure can be difficult to quantify.
- Unlike user charges, a betterment levy does not provide a clear market signal about whether the infrastructure is warranted because it is compulsorily levied even if there are few, if any, benefits.
- The area subject to the levy may not match the geographic distribution of benefits if, for administrative simplicity, it is based on a boundary already used for another purpose (for example, to levy general rates).
- Within the levies area, benefits could vary markedly between properties and not be reflected in the levy.
- Betterment levies can come under political pressure from local land owners and business, causing them to be removed before the intended contribution to infrastructure costs has been made (this was the experience with levies meant to partly fund the Sydney Harbour Bridge and Melbourne's City Loop).

A case study of public infrastructure funded through betterment levies is provided in Box 6.2.

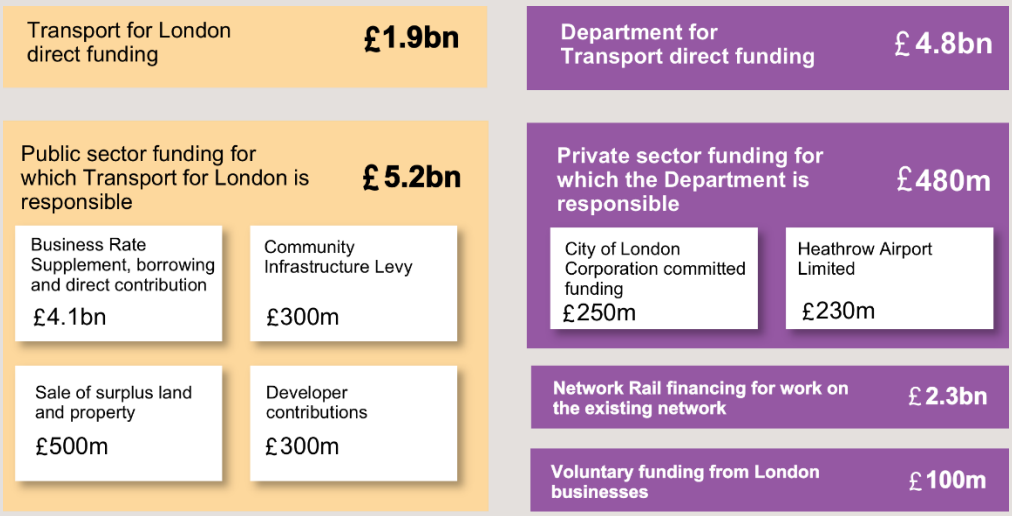
involves the government making payments to a private provider which are not linked to service utilisation or patronage levels, but some other 'service based' metrics determined by government. Availability payments made by Government are funded by taxation.

BOX 6.2 CASE STUDY: BETTERMENT LEVIES AS A FUNDING SOURCE — LONDON CROSSRAIL

Crossrail is one of the most costly and complex public transport projects undertaken by Transport for London (and currently Europe's largest infrastructure project). It is a 118km rail route, including 42km of rail tunnel through London. The project is building 10 new stations and upgrading 30 more, while integrating new and existing infrastructure.

The project will significantly increase capacity in the existing London Underground rail network with central London's rail capacity increasing by 10 per cent. Construction began in 2009 at Canary Wharf, and is over 80 per cent complete.

The project will cost £14.8 billion and is being funded through a variety of sources, including general government revenue, user charges, betterment levies and sale of existing government assets. The UK Audit Office summarised the funding structure in the following figure (UK National Audit Office 2014).



- The Business Rate Supplement (BRS) is an example of a betterment levy used to (partially) fund new infrastructure. It targets businesses and other non-domestic properties in London with a rateable value of over £55,000 at 2 pence per £1 (equating to an annual contribution of £2,000 for premises valued at £100,000). The levy is collected on the same bills as general business rates and will remain in place until a £4.1 billion loan is repaid, ultimately funding around one third of Crossrail costs.
- The Community Infrastructure Levy (CIL) is a planning charge that the Greater London Authority has chosen to charge new developments in the Greater London Authority area. Charges are based on the size and type of development and are calculated once a planning application is submitted to the local authority.
- Developer contributions relate to those agreed in planning applications for office space above 465 square metres in central London and the northern Isle of Dogs.
- The voluntary funding from London businesses was to be raised by the City of London Corporation working with the Mayor of London and the government.

SOURCE: IV 2016B, IV 2016C, CROSSRAIL 2017, UK NATIONAL AUDIT OFFICE 2014.

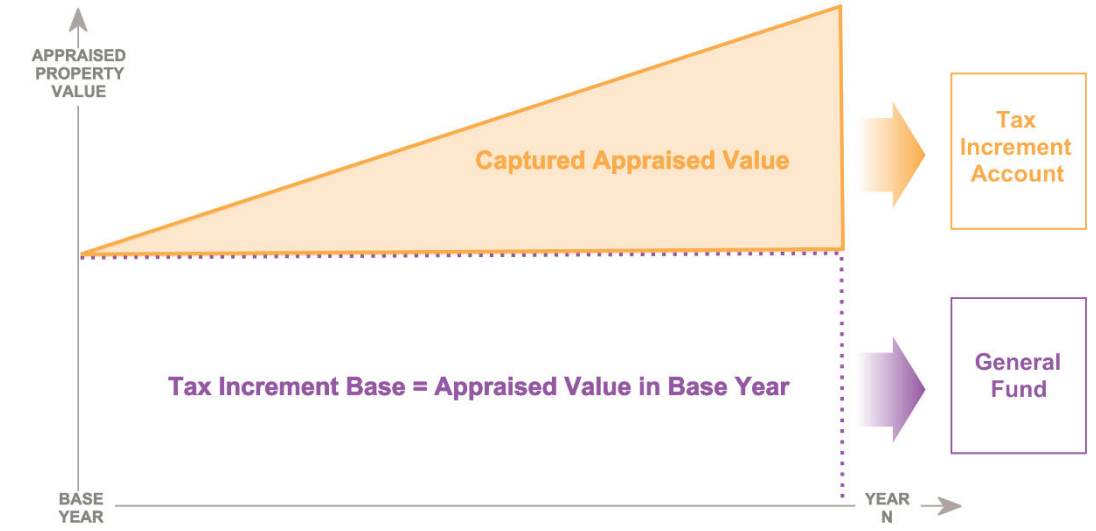
6.2.2 Tax increment financing / growth area bonds

Tax increment financing (TIF) or growth area bonds (GABs) are essentially a securitisation of a future taxation revenue base that will flow from the development of new infrastructure in an area (PCA n.d.).

The principle behind this approach is that revenue collected from existing property taxes will increase when new infrastructure raises the value of properties and hence, a hypothecated portion of the future increased revenue from property taxes can be used as a security to underwrite loans and/or bonds to finance the required infrastructure. The hypothecation usually ends after a fixed period (e.g. 25 years).

As noted by Kim (2016), using TIF 'cities can capture value by earmarking any increase in property tax revenues over the "base" attributable to new developments into an escrow account separate from general fund revenues' (Kim 2016, p. 65) (see Figure 6.1).

FIGURE 6.1 TAX INCREMENT FINANCING VALUE CAPTURE MECHANISM



SOURCE: KIM, 2016.

TIF has mainly been used in the US, but is also in use in Canada and the UK.

The most commonly cited strengths of TIF programs are that they (PwC 2008, Langley 2011):

- provide a market test and added rigour around infrastructure selection (TIF administrators have a strong incentive and accountability to invest in infrastructure that generates 'value' to the community)
- provide an upfront and sustained commitment to specified infrastructure provision — that is, TIF programs ensure that long-term funding and planning is not eroded by competing priorities or short-term distractions
- ensure that provision of infrastructure is appropriately timed — as infrastructure provision (or at least its effects) is tied to revenue, there is an incentive to ensure that delivery is not delayed
- provide a transparent and equitable approach to the distribution/sharing of infrastructure (as a result of less reliance on upfront levies and impact fees on homeowners)
- provide a needed locally controlled alternative funding source for urban renewal.

Despite the strong support for TIF programs by many stakeholders, there are a number of issues and risks associated with this approach that have made governments cautious about their use. These include the following (PC 2014, PCA n.d.).

- There is a risk that the infrastructure project generates a smaller increase in tax revenue than expected, such that it is below what is required to service the associated debt.
- The timing of the base setting can materially affect the size of the tax increment. Unless an infrastructure project is a surprise to the market, then the property value (and hence property rates base) will already incorporate much of the increased value of the new infrastructure prior to the actual announcement or commencement of construction.
- Unless a government guarantees a return on the project's finance, the price of borrowing may be higher than for standard government debt.
- Hypothecating part of future tax revenue to a specific project can add complexity and may not be more efficient than relying on consolidated revenue.
- Changes may be required to existing arrangements for public borrowing before local governments can hypothecate part of their expected future revenue to underwrite debt for specific infrastructure projects.

A case study of public infrastructure funded through TIF is provided in Box 6.3.

BOX 6.3 CASE STUDY: TAX INCREMENT FINANCING AS A FUNDING SOURCE — EAST POINT, GEORGIA AND HUDSON YARDS, NEW YORK

East Point Georgia

The City of East Point, Georgia created the $22 million Camp Creek Tax Allocation Fund (TAD) in 2001 to extend infrastructure into an area that had not been previously developed due to difficult topography. These improvements sparked the development of the Camp Creek Trade Centre (a business park), Camp Creek Market Place (a 123,000m^2 regional shopping centre) and 1,400 housing units in the area in 5 years. The additional tax revenue from these developments generates the income stream to repay the TIF bonds that funded the initial improvements.

This initial TIF was so successful that in 2006, the City created its second TIF (the East Point Corridors TAD) to encourage private investment in the City's major corridors and Central Business District. The East Point Corridors TAD is a $98 million TIF that was expected to generate $164 million in appreciation of existing properties and $191 million in new development over 25 years, thereby providing the new tax revenue needed to retire the TIF bonds. Public infrastructure to be funded by the TAD includes:

- new parks, open spaces and pathways and trails, linking to the area's parks
- roadway improvements and sidewalk and pedestrian friendly streetscape improvements
- land assemblages and/or on-site preparation for private commercial and residential development
- construction of new public facilities, including a community recreation centre
- improvements to the area's basic water, sewer and transportation infrastructure.

Through the provision of this infrastructure, the East Point Corridors TAD was also expected to provide incentives for significant commercial, industrial and residential private development.

Hudson Yards, New York

Another example of a TIF is the Hudson Yards redevelopment financing in Manhattan, New York. The former industrial/rail logistics site was the least developed part of Manhattan, which is (more generally) one of the densest office space areas in the US. A key part of unlocking the site's wider commercial and residential development potential was connecting it to the metro system.

As a result, the City of New York decided to extend the number 7 line westward by 2.4km to a new terminal in the Hudson Yards district (which opened in fall 2015).

To support the financing and limit the public subsidy, the City opted for a TIF structure on the 150-hectare site. TIF investors required dedication of certain local property taxes via payments in lieu of tax. Essentially, these payments are equal to (or for a limited period less than) the property taxes that would otherwise have been paid in the normal course of events, except they were pledged to service the TIF financing rather than count towards the city's corporate cash flow. In addition, the City of New York agreed to cover interest on the TIF bonds in the event that dedicated TIF-related revenue flows were insufficient to do so (which the City had to do during the project's early years due to a slower than expected pace of development, and thus slower growth of land-based revenues).

SOURCE: PWC 2008, PWC 2014, LINCOLN INSTITUTE 2017.

6.2.3 Special assessment districts / business improvement districts

Special assessment districts are based on creating special tax districts where a targeted property tax or fee is imposed to fund new infrastructure within the district's boundaries. Special assessment districts are also known as business improvement districts, local improvement districts, special levies and charges districts, business revitalisation zones, community improvement districts, special services areas or special improvement districts (ACG 2011, PCA n.d.).

Depending on the type and value of the infrastructure, special assessment districts can impose a flat surcharge per property or a tax surcharge based on property value or on proximity to the infrastructure.

A case study of public infrastructure funded through special assessment districts is provided in Box 6.4.

BOX 6.4 CASE STUDY: SPECIAL ASSESSMENT DISTRICTS AS A FUNDING SOURCE — PORTLAND STREETCAR, OREGON

The Portland Streetcar project is a 13km tram loop in Portland, Oregon in the US connecting regional activity centres, including the city's Pearl District, Legacy Good Samaritan Hospital, Portland State University, South Waterfront, and the Oregon Museum of Science and Industry in Downtown Portland.

The initial tram segment commenced operating in 2001 and subsequent extensions opened in 2005, 2006, 2007, and 2012.

The streetcar network's USD$251.4 million project cost was funded through a variety of methods, including land sales, contributions from government, TIF and also through implementing a special assessment district. The special assessment district (referred to as a Local Improvement District, LID) funded around 14 per cent of the project costs.

The land forming the LID was agreed to by property owners in the area. In this case, the fee was based on a formula that considered proximity to the line and property size and will be collected over 20 years and exempted owner-occupiers.

SOURCE: PCA N.D, US FHWA 2017.

6.2.4 Development rights / air rights

The lease or sale of development rights or air rights (the right to develop the space above a property) around or as part of public infrastructure when upgrading or building new infrastructure is another way to capture value and fund new infrastructure (also referred to as property development).

Under this approach, the government grants the private sector developer land rights (whether freehold or leasehold) in return for the private developer investing in public infrastructure directly, or providing funds for the public sector to pay for the infrastructure development (PCA n.d.). Alternatively, a government infrastructure operator could develop and manage an adjacent property development to provide a revenue stream for funding its infrastructure (PC 2014).

This mechanism has been most frequently used on transport-related property development (e.g. railway stations). Australian examples of this type of developments include the Chatswood railway station in Sydney and Melbourne Central railway station, where air rights were used to build major retail and residential complexes in exchange for building station precincts (PC 2014).

Some of the noted advantages and limitations of property development are highlighted in the points below (IV 2016a).

- Advantages:
  - development may improve amenity, access to service and offer more choice in services and land use
  - underutilised government owned land and air space could be put to a higher and better use
  - development could increase economic activity, property values and rents in surrounding areas
  - significant revenue could be raised without incurring significant additional transaction costs.
- Limitations:
  - there is potential for mismatch between the type of new facilities developed and the businesses and community requirements
  - existing services may be displaced
  - public open space may be reduced by residential and commercial developments on previous vacant government owned land or air space
  - existing planning regulations (such as height limits) can restrict the extent of commercial and residential development.

A case study of public infrastructure funded through property development is provided in Box 6.5.

BOX 6.5 CASE STUDY: PROPERTY DEVELOPMENT AS A FUNDING SOURCE — MASS TRANSIT RAILWAY, HONG KONG

The Mass Transit Railway (MTR) is the rapid transit railway system in Hong Kong. Opened in 1979, the system covers 218.2 km of rail with 155 stations, including 87 railway stations and 68 light rail stops. As of 2012, the MTR had a 46.4 per cent share of the public transport market. The MTR system is operated by MTR Corporation Limited (MTRC).

In addition to farebox revenue, the MTR uses value capture mechanisms to fund railway development and operations. In particular, the MTRC undertakes property development to generate revenue. Under the MRTC model (known as 'Rail + Property'), the corporation concurrently develops property with the growth of the MTR system.

For new rail lines, the Hong Kong Government provides MTR with development rights at stations or depots along the route. To convert these development rights to land, MTR pays the government a land premium based on the land's market value without the railway. MTR then builds the new rail line and partners with private developers (chosen through a competitive tender process) to build properties. MTR receives a share of the profits that developers make from these properties. This share could be a percentage of total development profits, a fixed lump sum, or a portion of commercial properties built on the site. By capturing part of the value of the land and property around railway lines, MTR generates funds for new projects as well as for operations and maintenance.

The MRTC uses the following real estate models:

- retains full ownership of new developments leasing properties
- takes co-ownership of new developments splitting profits
- receives a proportion of property development proceeds.

Notably, two major skyscrapers in Hong Kong are MTRC properties. It also retains commercial, retail and residential properties adjacent to every station. All rail inside stations is leased from MTRC.

SOURCE: SGS 2015, LEONG 2016.

6.2.5 Joint development

A joint development approach is a form of public-private partnership where the government enters into an agreement with a private sector developer to share the cost of new infrastructure and both parties benefit from property value increases. For example, the government could capture value by requiring the private development partner to build a portion of a station's amenity as part of their project, thereby reducing capital costs.

Under this approach, the government and the private sector developer could enter into an agreement to create a Joint Development Company ('JDC') where the private sector could develop the whole or a part of the project. The government would usually be able to retain an interest in the JDC without contributing further funds, with its investment in the JDC taking the form of an in-kind contribution of land and the private sector developer contributing capital. The government's share of profits from the JDC can then be used to fund nearby or related infrastructure requirements (PCA n.d.).

JDCs can benefit from having private sector involvement in a field in which the government may have little expertise, through making better capital allocation decisions, and sharing risk (PCA n.d.).

A case study of public infrastructure funded through joint development is provided in Box 6.6.

BOX 6.6 CASE STUDY: JOINT DEVELOPMENT AS A FUNDING SOURCE — SHEFFIELD HOUSING COMPANY, UK

Sheffield in South Yorkshire, UK has a significant unmet demand for affordable housing, with 90,000 people on the council house waiting list, and expectations that the population will grow from 550,000 to 600,000 by 2020.

To begin addressing the housing shortfall, in 2011 the Sheffield City Council created a 50:50 joint venture, the Sheffield Housing Company (SHC), with housebuilder Keepmoat and Great Places Housing Group, which will manage the affordable rented homes. The SHC is building low-cost homes for first-time buyers and families alongside houses and flats to rent at affordable prices, and with tenants better protected.

The SHC wanted to restore publicly funded housing to areas that thrived during the 1950s public-sector housing boom but suffered when the steel and coal industries went into decline and unemployment rose in the 1970s and 80s. The private sector did not want to come to these areas because the land value was low and because of the risk (no one else was building or selling in these areas) and the council did not want to do it alone either because it lacked the expertise to build and sell homes on the open market, and was wary of taking on all the risk. The joint venture suited both parties.

The Council is contributing land from its existing stock (largely vacant sites around existing council house estates), with the private entities contributing cash amounts to match the value of the land. SHC can borrow additional money if needed to fund housing construction. It is expected that the 60 hectares of land will take 15 years to develop. The houses are a mixture of homes available for sale, shared ownership and rentals, including affordable rental schemes / social housing. The SHC plans to construct 2,300 homes across the city by 2025.

SOURCE: PCA N.D., KOLLEWE 2017.

6.3 Government funds

Infrastructure can be also funded through general budget appropriations. These funds can be sourced from a variety of areas, including (ACG 2011):

- taxation revenue from a wide range of state and local taxes
- intergovernmental transfers such as federal or provisional grants (e.g. GST allocation)
- proceeds from asset sales
- user charges
- general purpose public borrowing (i.e. the raising of funds via debt securities issued on domestic or international markets).

However, general government infrastructure investment should meet stringent tests, especially if it is to involve any debt funding. These include the following (FitzGerald 2011, PC 2014):

- the infrastructure project is not able or appropriate to be done on a commercial basis
- the costs of the infrastructure project cannot be recovered through direct user charges (without significantly detracting from provision or undermining equity objectives)
- the infrastructure project has a high social benefit-cost ratio
- debt and other whole of life costs are able to be funded out of an operating budget with competitive tax rates and which meets other needs
- the project is at least partly funded by surpluses and debt is never used to fund expenses.

A case study of public infrastructure funded through government funds is provided in Box 6.7.

BOX 6.7 CASE STUDY: GOVERNMENT FUNDS AS A FUNDING SOURCE — WIRI PRISON, NEW ZEALAND

The Auckland South Correctional Facility, known as Wiri, is a 960 bed men's prison facility at Wiri, Auckland, New Zealand that was opened in 2015.

The project was delivered through a design-build-finance-operate-maintain contract awarded in 2012 to SecureFuture (a consortium comprising Serco Group, John Laing, InfraRed, and the Accident Compensation Corporation). The maximum potential cost of the project was capped at $900 million and SecureFuture will be responsible for the operation of the prison for 25 years.

The project will be funded by an availability payment of $67.6 million in 2015-16, and $51.3 million in 2016-17, and subsequent years. These payments are linked to outcomes (under a payment-by-results model). The prison operator receives a financial incentive if it performs better than public sector run facilities at reducing the recidivism rate (the proportion of prisoners who return to prison within 24 months) and better outcomes for inmates who are Maori (a group that is overrepresented in New Zealand's prisons). Conversely, payments are cut if the prison fails to achieve specified targets for the effectiveness of rehabilitation and reintegration programmes. The New Zealand Government estimates that this payment structure will save NZD $170 million over the 25-year life of the contract (Rani 2017).

SOURCE: PC 2014, RANI 2017

6.4 Brownfield recycling

Brownfield recycling (also referred to as capital, or asset, recycling) has been discussed as an 'alternative' mechanism to fund infrastructure. As noted by the Productivity Commission:

> *…capital recycling involves government privatising mature assets and explicitly hypothecating the proceeds to the financing of new infrastructure projects (or into a dedicated infrastructure fund for a series of projects), which can in turn be privatised themselves once they become mature.*
>
> *PC 2014, p. 258.*

Some of the advantages of capital recycling are the following.

- It can allow capital-constrained governments to fund more infrastructure investments.
- Once the funds are raised and while they are being recycled they do not introduce any further liability to the government balance sheet (PCA n.d.).
- It can result in efficiency gains from private sector ownerships of recycled assets.
- Recycling may be a useful way to build community support for efficient privatisation and the use of taxpayer resources to fund new infrastructure (PC 2014).

However, in its inquiry into public infrastructure, the Productivity Commission noted a number of issues and risks related to this model (PC 2014).

- Capital recycling could act to encourage privatisation in circumstances that are not fully justified and encourage the selection of new projects that do not have demonstrable net benefits.
- The availability of funds from privatisation may mute the incentives for state governments to properly consider the extent to which user charges can be used to fund the new infrastructure and/or prevent funds from being directed to higher value uses, which may not necessarily be new infrastructure investment.
- Capital recycling might cement in the public a view that the only time an asset should be privatised is if there is some new infrastructure project in which to invest — that is, that privatisation is not of benefit in and of itself.

In addition, privatising assets and investing in new ones may pose additional risks to government as it is effectively swapping ownership of a mature asset (with known demand and cost characteristics), with ownership of a new unknown asset (which may offer more risk due to unknown demand and cost characteristics) (IV 2016a).

Given these risks, the Commission provided the following recommendations regarding capital recycling (PC 2014).

— Privatisation should only occur following a scoping study that demonstrates there are net benefits in the form of efficiency gains from doing so.

— The proceeds from privatisation should only be invested in new public infrastructure if rigorous and transparent cost–benefit analysis demonstrates there are substantial net social benefits to the community. Otherwise, the proceeds from privatisation may not be wisely invested, leading to suboptimal outcomes.

Some case studies of public infrastructure funded through brownfield recycling are provided in Box 6.8.

BOX 6.8 CASE STUDY: BROWNFIELD RECYCLING AS A FUNDING SOURCE- PORT BOTANY, PORT KEMBLA AND PORT OF NEWCASTLE, NSW AND QUEENSLAND MOTORWAYS

Sale of Port Botany and Port Kembla, NSW

The sale of 99-year leases for Port Botany and Port Kembla in 2013 generated $5.1 billion in funds that the NSW Government earmarked to fund new infrastructure (through the NSW Government's dedicated infrastructure fund — Restart NSW), including the West Connex motorway and upgrades to the Pacific Highway. The state retained responsibility for publicly sensitive functions such as maritime safety and security and will continue to have regulatory oversight.

Sale of Queensland Motorways, QLD

The Queensland Government sold Queensland Motorways to a private consortium in 2014 for $7.1 billion. Earlier in 2011, the government provided in-kind ownership transfer of the motorway to Queensland Investment Corporation (QIC), a government-owned enterprise and Australia's second largest pension fund manager responsible for the state's Defined Benefit Fund (DBF). The proceeds from the 2014 sale are to remain in the DBF to meet the public pension liabilities to existing members.

Sale of Port of Newcastle, NSW

In 2014 the NSW Government sold a 98-year lease of the Port of Newcastle for $1.75 billion. The proceeds of the lease will be invested into infrastructure. This included an amount of $340 for a revitalisation of the Newcastle CBD (in addition to the $120 million the NSW Government had already allocated to the project), which includes a new light rail service. The remainder of the sale proceeds were re-invested in Restart NSW to fund other infrastructure.

SOURCE: PCA N.D., PC 2014, KIM 2016.

6.5 Drawing the threads together

It is clear from the discussion above that there is no single funding source that governments can use to pay for the infrastructure that is vital to Australia's continued economic development and growth. Instead, there will continue to be a need for a mix of mechanisms to raise the necessary infrastructure funds (general government revenue will always be a major funding source, but government should use a mix of funding mechanisms).

While no funding approach is perfect, sound governance and getting the best value for the community requires that any funding option for urban public infrastructure incorporates best-practice economic and taxation principles. As noted by Infrastructure Victoria:

When looking at different ways to fund infrastructure, government needs to strike a balance between raising revenue, using infrastructure efficiently and encouraging a productive economy and inclusive communities. Continuing to increase or levying multiple taxes and charges on selected groups in the community can create disproportionate or unfair financial burdens.

IV 2016b, p.38

The following chapter outlines a series of principles that are suggested to be followed when designing infrastructure charges / developer contributions to fund urban infrastructure. These principles highlight that equity, fairness, efficiency and effectiveness play a key role in designing infrastructure funding mechanisms. While these principles have been designed with developer contributions in mind, most of them apply to different funding mechanisms.

7 BEST PRACTICE PRINCIPLES FOR INFRASTRUCTURE CHARGING

This chapter presents a series of core principles to guide the design of infrastructure charges / developer contributions to fund urban infrastructure. These principles represent sound economic and taxation practices and incorporate the findings from previous chapters with regards to the issues associated with the current infrastructure charging regime and best practice.

It is recommended that the principles outlined in the sections below are applied when charging for urban infrastructure to promote more efficient and equitable outcomes.

TABLE 7.1 PRINCIPLES FOR INFRASTRUCTURE CHARGING

Principle	Description
1. Need	Infrastructure charges should only be imposed on a development if it is clearly demonstrated that the development is likely to create a need for the infrastructure concerned.
2. Nexus	Infrastructure charges should only be imposed on a development if a clear link between the expected development in the area and the demand for additional public facilities created by that development can be demonstrated.
3. Equity	The amount of infrastructure charges imposed on particular developments must be a fair and reasonable apportionment of the infrastructure cost (based on their relative contribution to need).
4. Transparency	Both the method for calculating the infrastructure charges and the manner in which they are applied should be clear and transparent.
5. Certainty	All infrastructure charges should be clearly identified and methods of accounting for escalation agreed and disclosed to developers so that the feasibility of projects can be appropriately assessed.
6. Efficiency	Infrastructure charges should be justified on a whole of life capital cost basis consistent with maintaining financial discipline on service providers by precluding over recovery of costs.
7. Consistency	Infrastructure charges and contributions should be applied uniformly across a 'Development Contribution Area' and the methodology for applying these charges contributions should be consistent.
8. Simplicity	The basis for, and application of, infrastructure charges should be simple, practical and enforceable, with minimum administration and compliance costs.
9. Accountability	Revenues raised through infrastructure charges and contributions should be spent on the infrastructure for which they were collected and authorities imposing the charges should be accountable for the manner in which these charges were determined and how the money raised is spent.
10. No double charging	Assessment of a contribution having regard to any previous contributions (monetary, land dedication and works in kind).

Principle	Description
11. Appropriate apportionment of infrastructure costs	Infrastructure charges should represent a reasonable apportionment of the cost of delivering infrastructure. Only the incremental infrastructure costs attributable to a new development should be included in the infrastructure contributions and charges. – Costs of 'private' infrastructure items that benefit individual owners should be borne by the households concerned (e.g. home buyers should pay for the minor infrastructure works on their own properties or those linking their properties to local networks). – Costs of major (shared) economic infrastructure should be allocated to particular developments where the incremental costs associated with these developments can be well established. – Investment for infill development, where it is required to upgrade or augment system-wide components that provide comparable benefits to users in well-established areas should be funded out of borrowings and recovered through rates or taxes (or the fixed element in periodic utility charges). – For social infrastructure: – where this infrastructure satisfies an identifiable demand related to a particular development (such as a neighbourhood park), allocating the costs to that development through upfront developer charges is appropriate – where it provides broadly-based benefits to the community as a whole (for which accurate cost allocation is difficult, if not impossible) this infrastructure is more efficiently and equitably funded from general government revenue.
12. Flexibility	The infrastructure charging regime should be flexible to accommodate different development scenarios.
13. Reasonableness	Reasonableness in terms of the manner and timing of provision of the infrastructure (i.e. contributions should be hold only for a reasonable time).
14. Stakeholder support	Land owners and developers should be given the opportunity to comment and make submissions on the manner in which infrastructure charges and contributions are determined.

SOURCE: ACIL ALLEN CONSULTING, PC 2004, PC 2011A, PC 2014.

8 CONCLUSIONS

The analysis in this report has sought to provide clarity about:

- the current scope and reach of property taxes and charges borne by new housing
- the use and relative weight of infrastructure charges in new housing developments and the issues related to these charges
- alternative mechanisms to fund urban infrastructure
- best practice principles for infrastructure charging.

The key findings from this analysis are summarised below.

8.1 Magnitude of taxes and charges imposed on new housing

- Taxes and charges are a significant proportion of the cost of a new home, across Australian capital cities these represent:
  - between 17 per cent and 25 per cent of the acquisition costs of greenfield dwellings
  - between 17 per cent and 22 per cent of infill dwelling acquisition costs.
- To put the amount of government taxes and charges paid for new developments in perspective:
  - in greenfield developments, government taxes and charges are:
    - more than three times the cost of land in Brisbane and Melbourne, more than double the cost of land in Perth and Darwin, and nearly $85,0000 more than the cost of land in Sydney
    - 3.9 - 7.3 times the maximum concessions available to first home owners in capital cities if the eligibility requirements and relevant price thresholds are met
  - in infill developments, government taxes and charges are:
    - higher than the cost of land in each capital city in Australia, except in Sydney where taxes and charges are broadly the same as the costs of land
    - 2.5 – 6.4 times the maximum concessions available to first home owners in capital cities if the eligibility requirements and relevant price thresholds are met.

8.2 The use of infrastructure charges to fund infrastructure

- Infrastructure charges are fees levied on developers to compensate governments for providing the infrastructure necessary for land development.
- There is a wide range of variation in infrastructure charges across Australia's capital cities and these charges represent a significant proportion of the total costs of government taxes and charges in some capital cities.
  - Greenfield developments in Sydney, Darwin, Brisbane and Melbourne required contributions of greater than $29,000 per housing lot sold in 2017, while other four capital cities require less than

that. Hobart and Adelaide have the lowest infrastructure charges in the sample at around $5,000 and $6,600 per lot, respectively.

- Infill developments in Brisbane and Sydney required contributions of greater than $22,000 per apartment, while the rest of the capital cities required much less than that (between $1,200 and $8,400). Darwin and Adelaide have the lowest infrastructure charges in the sample at around $1,200 and $2,500 per apartment, respectively.
- While the widespread use of infrastructure charges has been justified on the grounds of their role in encouraging efficient use and provision of infrastructure, in practice, infrastructure charges have a number of problems.
  - These charges can be *sometimes used to raise tax revenue*, rather than focusing on providing efficient user charging (Henry 2009).
  - Infrastructure charges *not always reflect the efficient cost of infrastructure provision*. Funding infrastructure through developer contributions can result in councils and utilities requesting developers to fund more expensive infrastructure that what is required.
  - Infrastructure charges *not always allocate costs in an efficient and equitable way*, as these charges can recover the costs of infrastructure that benefits a wider number of people than just those in the particular development.
  - These types of charges can be *complex and costly to levy*, and there is a trade-off between the accuracy of these charges and their administrative feasibility (Henry 2009).
  - Where infrastructure charges are *implemented poorly* or are designed to operate as taxes (i.e. where the charge effectively exceeds the cost of providing infrastructure), they *can discourage housing supply and contribute to higher house prices*.
  - When infrastructure charges are set in an ad hoc fashion (something common in various jurisdictions across Australia) or are subject to unexpected changes (for instance, the removal of the cap in NSW from 2019-20 onwards), *they create uncertainty* around new developments and discourage development activity, reducing overall housing supply and increasing the price of housing.
  - There are concerns that *councils are stockpiling the funds* collected through infrastructure charges to developers instead of investing them in the infrastructure required.
  - Developer Contributions Plans once approved are relatively *difficult to change to adapt to changing need, priorities and other circumstances*.

8.3 Alternative funding mechanisms

- Infrastructure charges are not the only (nor the best, as they are currently applied) way to fund the infrastructure necessary for the development of new housing. There are a number of proven mechanisms to fund infrastructure. However, there is no silver bullet, and there will continue to be a need for a mix of mechanisms to raise the necessary infrastructure funds (including general government revenue, which will always be a major funding source).
- Alternative mechanisms to fund public infrastructure include:
  - user charges
  - value-capture approaches (including betterment levies/ value capture levies; tax increment financing (TIF)/ growth area bonds (GABs); special assessment districts / business improvement districts; development rights / air rights; and joint development)
  - government funds
  - brownfield recycling (also referred to as capital or asset recycling).
- Any addition of new/more sophisticated mechanisms to the infrastructure funding mix needs to first acknowledge the myriad of existing taxes already levied on landholders.
- When looking at different ways to fund infrastructure, government needs to strike a balance between raising revenue, using infrastructure efficiently and encouraging a productive economy and inclusive communities. Continuing to increase or levying multiple taxes and charges on selected groups in the community can create disproportionate or unfair financial burdens (IV 2016b, p.38).
- While no funding approach is perfect, sound governance and getting the best value for the community requires that any funding option for urban public infrastructure incorporates best-practice economic and taxation principles.

8.4 Best practice principles for infrastructure charging

— This report suggests a number of principles to follow when designing infrastructure charges / developer contributions to fund urban infrastructure. These are summarised in Table 8.1.

— These principles represent sound economic and taxation practices and highlight that equity, fairness, efficiency and effectiveness play a key role in designing infrastructure funding mechanisms. While these principles have been designed with developer contributions in mind, most of them apply to different funding mechanisms.

TABLE 8.1 PRINCIPLES FOR INFRASTRUCTURE CHARGING

1. Need	8. Simplicity
2. Nexus	9. Accountability
3. Equity	10. No double charging
4. Transparency	11. Appropriate apportionment of infrastructure costs
5. Certainty	12. Flexibility
6. Efficiency	13. Reasonableness
7. Consistency	14. Stakeholder support

SOURCE: ACIL ALLEN CONSULTING, PC 2004, PC 2011A, PC 2014.

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A MEASUREMENT APPROACH

This appendix provides details about the approach used in this report to measure the costs of developing new housing (including taxes and charges) across Australia.

A.1 Methodology

The analysis in Chapters 4 and 5 is based on a number of case studies that illustrate the issues that different property developments are currently facing.

Different asset types and qualities involve different development costs and face different issues. As such, to allow for a fair comparison of development costs across different cities, an illustrative 'typical' development for greenfield and infill projects was agreed with the Residential Development Council that was then 'built' in different cities. The characteristics of these 'typical' properties are outlined in the sections below.

A cost template was developed for a 'typical' greenfield and infill development in each of the capital cities. The template included data on land costs, construction costs, compliance costs, government taxes and charges and other costs (such as sales and marketing and developer's returns). Project development costs were calculated on a full project basis and also separated to average per lot / apartment costs.

Cost templates were completed with data collected from actual projects provided by property developers. Data was obtained from a number of actual projects in the key 'development fronts' or urban growth areas in each capital city. These data sets were used to produce an illustrative 'typical' development cost template for each capital city (where data for more than one development in a given capital city was provided, the costs were averaged).

A.2 Limitations

The metrics presented in this report provide valuable evidence of the magnitude of the taxes and charges paid by infill and greenfield developments in different Australian cities. Nonetheless, as with any modelling exercise, there are some limitations in this analysis. These are outlined below.

— Different building types, qualities and locations will involve different development costs. The metrics provided in this report are for a series of illustrative dwellings of certain characteristics (outlined in the sections below) and are not meant to reflect the 'average' house across Australia. Instead, as mentioned above, to allow for a fair comparison of development costs across different cities, an illustrative 'typical' housing development was agreed with the Residential Development Council and then 'built' in different cities.

— The findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever

using this information. This report only considers information available to ACIL Allen up to the date of this report and the findings may be affected by new information.

A.3 Specifications and assumptions

The following sections outline the specifications and assumptions used to gather the data used to assess the taxes and charges paid during housing development.

A.3.1 Building characteristics

As noted before, there is not such a single 'average' house across Australia. Different building types, qualities and locations will involve different development costs. For the purposes of this report, the analysis of the level of taxes and charges on housing is based on a series of illustrative buildings of certain characteristics. To allow for fair comparisons across jurisdictions, this analysis was based on an illustrative 'typical' housing development that was 'built' in different cities. The characteristics of the illustrative 'typical' housing developments agreed with the Residential Development Council are outlined in Table A.1.

Notably, some of the assumptions used in the analysis were made to maintain some consistency with previous analysis of development costs undertaken for the Property Council of Australia (in particular the analysis in the report Modernising Australia's Tax System and the Property Taxes Dashboard).

TABLE A.1 CHARACTERISTICS OF BUILDINGS INCLUDED IN THE ANALYSIS

	Infill	Greenfield
Location	CBD fringe	Growth areas in each capital city
Site area	2,000 m2	375 m2 per house (gross development area 15 lots per hectare)
Gross Floor Area (GFA) (m2)	17,000	220 per house
Net lettable area (NLA) (m2)	13,600 (on average 68 m2 per apartment – assumes a ratio of GFA to NLA of 80%)	n.a.
Building characteristics	Apartment block comprising a mix of 1, 2 and 3-bedroom apartments, mid-level finishes.	Four-bedroom project home of medium quality

Note: GFA = fully enclosed covered area plus unenclosed covered area.

SOURCE: ACIL ALLEN CONSULTING.

A.3.2 Key assumptions used in the analysis

The key assumptions for key cost components included in the analysis are outlined in the following table.

TABLE A.2 KEY ASSUMPTIONS USED IN THE ANALYSIS

Item	Key assumptions
Development timing	For all developments except greenfield development in Melbourne: – land bought in 2013 – construction starts 2015 – construction finishes 2017. For Melbourne greenfield: – land bought in 2011 – construction starts 2015 – construction finishes 2017.

Item	Key assumptions
Land	Land value for period 2013-2017 increases in line with land valuation data from Valuer Generals in each state. When land value data was unavailable, land values were assumed to increase 2.5 per cent per year during the development period.
Stamp duty	It is assumed that there are no stamp duty concessions available to the developer and that developers do not pay any foreign investors surcharges.
Consultant fees and development management costs	Consultant fees are assumed to be 8 per cent of construction costs and development management costs are assumed to be 4 per cent of construction costs.
Council rates	Costed throughout the development period.
Land tax	Calculated on the parent site throughout the development period. Based on the estimated land value each year during development and historical land tax rates. It is assumed that developers do not pay any foreign investors surcharges.
Marketing and sales costs	Calculated at 4.5 per cent of sales value.
Holding costs	Assumes that developer provides 40 per cent equity to purchase the land and gets a loan for 60 per cent of the land value. Interest on land is calculated for the whole of the development period based on the following loan assumptions: – interest only loan – interest rate of 6.25 per cent per annum.
Developer margin	Assumed to be 15 per cent on development costs.
GST liability	Calculated as 10 per cent of sale price.
Ownership	It is assumed that land is acquired, developed and sold by a corporate.

SOURCE: ACIL ALLEN CONSULTING.

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