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Paying for affordable housing in different market contexts

Inquiry into increasing affordable housing supply: evidence-based principles and strategies for Australian policy and practice

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Acronyms and abbreviations used in this report

ACNC	Australian Charities and Not- for-profits Commission
ACT	Australian Capital Territory
AHAT	Affordable Housing Assessment Tool
AHURI	Australian Housing and Urban Research Institute Limited
AHWG	Affordable Housing Working Group
CEO	Chief Executive Officer
CFFR	Council on Federal Financial Relations
CFO	Chief Financial Officer
CHP	Community housing provider
CRA	Commonwealth Rent Assistance
C-M-O	Context – Mechanism – Outcome (evaluation framework)
GST	Goods and Services Tax
HAF	Housing Affordability Fund
ICR	interest cover ratio
IPART	Independent Pricing and Regulatory Tribunal (NSW)
IRR	internal rate of return
MIT	Managed Investment Trust(s)
NAHA	National Affordable Housing Agreement
NDIA	National Disability Insurance Agency
NDIS	National Disability Insurance Scheme
NFP	not-for-profit
NHFAC	National Housing Finance and Investment Corporation
NHHA	National Housing and Homelessness Agreement
NRAS	National Rental Affordability Scheme
NRSCH	National Regulatory System for Community Housing
NSW	New South Wales
PBI	Public Benevolent Institution
SA	South Australia
SAHF	Social and Affordable Housing Fund (NSW)

SDA	specialist disability accommodation
SHI	Social Housing Initiative
WA	Western Australia

Glossary

A list of definitions for terms commonly used by AHURI is available on the AHURI website www.ahuri.edu.au/research/glossary.

Executive summary

In this study six recently completed affordable housing developments across Australia are analysed to ascertain how affordable housing project costs, revenues and subsidies interact to produce affordable housing.

Using the project data, an interactive modelling tool is developed. The 'Affordable Housing Assessment Tool' (AHAT) is designed to calculate the impact of different cost and subsidy parameters on housing affordability for the various types of lower income households in need of affordable housing.

The research reveals the diverse and bespoke funding arrangements adopted by providers in the study. This has resulted in affordable housing project outcomes being driven by funding opportunities rather than by defined housing needs. The AHAT uses housing needs to refocus decision-making on what housing outcomes are required and on what subsidy levers can achieve those outcomes.

The tool produced by the research is user-oriented and has substantial input flexibility. It aims to assist:

- policy-makers needing to assess the efficacy of different subsidy arrangements for affordable housing
- affordable housing practitioners wanting to know the impacts of prospective affordable housing projects under given subsidy schemes and market conditions.

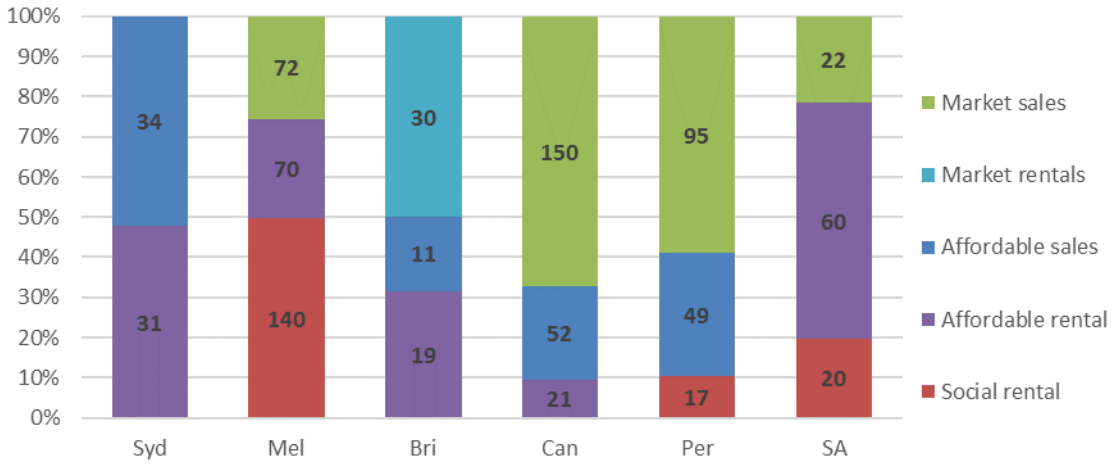
Six key lessons about financing affordable housing are drawn from the research.

1. Government facilitated access to land is central to generating development opportunities and a key means of improving long-term project viability.
2. Government equity investment offers considerable potential for delivering feasible projects and net benefit to government.
3. Reducing upfront debt loads and lowering finance costs are critical to long-term project viability.
4. Delivery across the housing needs continuum helps to meet overall social and tenure mix objectives as well as providing opportunities to improve project viability through cross subsidy.
5. Planning policies can deliver additional sources of cash or land, however, the financial benefit of planning bonuses is limited.
6. Increasing the scale of not-for-profit housing provision will offer financial benefits for the long-term delivery of affordable housing.

Key findings

The affordable housing projects studied comprised developments located in six different Australian jurisdictions that were completed between 2013 and 2016. Inner, middle and outer metropolitan areas plus a regional area were represented. Five of the projects were delivered by community housing providers (CHPs) and one by a state government in partnership with a private developer. Figure 1 below summarises the outcomes along the housing continuum for each of the projects.

Figure 1: Continuum of housing outcomes across six projects (dwellings)



Note: In addition to the outputs shown here, the Melbourne project supported approximately 228 further social and affordable rental homes off-site, through surpluses gained from the market sales and debt raised on the title and rental revenues of the retained assets. 'Affordable sales' includes below-market housing outcomes not retained by the proponent: namely sales to other NFP housing providers and investors receiving NRAS incentives, and sales to owner-occupants as part of a shared-equity scheme.

Source: Case study research.

The main funding mechanisms used in combination were:

- access to and/or discounted purchase of public land (six cases)
- public and/or NFP development capital (five cases)
- market sales (four cases)
- operating subsidies (five cases).

One project also supported affordable home ownership using government loan products.

Analysis of the cases highlighted a variety of approaches to delivering financially feasible affordable housing projects. In many respects, this variety suggests there is no universally optimal financial arrangement. However, through the development, calibration and testing of the 'Affordable Housing Assessment Tool' (AHAT), it is possible to draw some more general conclusions regarding the impact of different policy, market, organisation and tenant contextual factors on financial feasibility, and to highlight transferable lessons for policy development and project planning.

The key findings concerned with financing affordable housing projects are listed below.

The importance of government support for access to land

Market land costs and not having direct access to land pose major barriers to developers of well-located social and affordable housing. In the absence of any widespread capital subsidy

program that can assist providers to compete in the land market, the provision of public land at below-market cost offers an alternative for governments to effectively support affordable housing development. Having privileged access to public land, even when purchased at a 'market' equivalent price, is also beneficial.

Value of government-retained equity

When government retains ownership of its land and treats this as an equity stake in a development, it can both support the achievement of affordable housing and enhance the value of its investment through the improved land value that the development creates.

Need for a fit-for-purpose subsidy ('gap funding') to cover operational losses under private financing

Producing social or affordable housing with a component of private finance invariably generates a gap between the revenues recouped from sub-market rents and the recurrent costs of provision, including debt servicing. There is, therefore, a longstanding case for a 'revenue gap' subsidy to support the provision of affordable housing. The AHAT produced in this study would enable policy-makers to test different design options for such a subsidy.

Benefit of mixed tenure and development at scale

Cross-subsidy opportunities that arise from mixed tenure and mixed use developments were shown to enhance project feasibility and improve the financial position of community housing providers (CHPs) towards their mission of providing additional affordable housing. This mechanism also provides much needed flexibility to enable CHPs to better manage development risk across different market contexts and cycles.

Retaining affordable housing and social benefit

One advantage of the not-for-profit model of affordable housing provision lies in the potential for NFPs to retain the social benefit created by public investment over the long term. Providing time-limited subsidies to the private sector to produce affordable housing that is predicated on sale and realisation of future capital appreciation is less efficient over the longer term than directing such subsidies to NFP providers.

The importance of a needs-based modelling approach to investment decisions

Too often the composition of affordable housing projects has been driven more by disparate funding rules and opportunities than to meet priority housing needs. As a result, the rents of many 'affordable dwellings' may not be affordable to those on the lowest incomes or those in need of larger (higher rent) housing, or tenure pathways for households may not be operational. By using the AHAT, the financial model for a project (or program) can be explicitly designed to generate the range of housing that meets a set of defined housing needs.

Policy development options

The study findings lead to a set of policy implications for consideration by all government agencies with an interest in promoting affordable housing development at scale.

1 How governments treat valuation of their land that has the potential to be developed as affordable housing should be reviewed. Rather than seeking 'highest and best use' land value for sales of government land for affordable housing, a preferable approach would be to treat public land as a transparent subsidy input with the sale price reflecting the housing needs that the development seeks to address—that is, its residual value as an affordable housing development for a specific needs cohort.

2 Governments should assess the costs and benefits of supporting affordable housing developments over the long-term. Given that affordable housing is a 30-year plus investment, it is appropriate that its benefits are assessed over a comparable time period. The AHAT provides a tool for this.

3 Obtaining lower cost finance than is presently on offer will have a significant impact on affordability outcomes and the cost to government of funding the gap between revenues and required investor yield. The analysis, therefore, reinforces the rationale for the 'Bond Aggregator' facility—to provide CHPs with access to lower cost long-term finance—that is being developed by the Australian Government.

4 The analysis supports the case for targeting public subsidy for affordable housing to not-for-profit (NFP) developers to ensure that a long-term social benefit is retained.

5 The analysis points to the importance of CHPs developing sufficient scale to support the delivery of a diversity of housing outcomes without sacrificing their ability to serve house high needs groups. Large-scale development can generate valuable cross-subsidy opportunities, both within individual projects as well as across portfolios.

6 Fragmentation of affordable housing subsidy mechanisms adds cost and complexity to the development process and, by implication, leads to a less than optimal outcome for public investment. Australian and state/territory governments therefore need to develop a coherent and long-term policy framework and mix of strategies to support housing provision across the continuum of housing need. Subsidy levels and the quantum of public funding should be matched to needs along that continuum.

7 The results of both the case study analyses and the modelling exercise highlight that any comprehensive funding and subsidy arrangements to support social and affordable housing delivery will need to respond to the spatial variation in costs that affordable housing providers face.

8 The findings on housing outcomes highlight a gap in public policy support for a shared home ownership product. A well-designed and funded national shared ownership program would help to make the housing needs continuum work more effectively with concomitant social and financial benefits over the long term.

For practitioners, the AHAT is considered to have value as:

- a pre-feasibility modelling tool to allow providers to judge the best mix of funding and available subsidies to support the delivery of a designated set of needs for any given project
- an educational tool for the range of stakeholders involved in affordable housing delivery about the way scheme costs, revenues and gap funding can be best managed to bring projects to viability while keeping a focus on providing homes to target needs groups
- informing a discussion about trade-offs to be made in a project set up and thereby helping affordable housing developers to determine which of the available funding and subsidy mixes will optimise their social goals
- to exemplify the way policy can impact on the viability of affordable housing delivery and thereby contribute to wider advocacy for policy development and improved practice in the delivery of affordable housing projects.

The study

The study had several components.

First, it examined how recently completed affordable housing development projects located in different urban and regional markets across Australia had worked. Six carefully selected projects that met pre-set criteria were used as case studies to ascertain how affordable housing project costs, revenues and subsidies interacted to produce affordable housing.

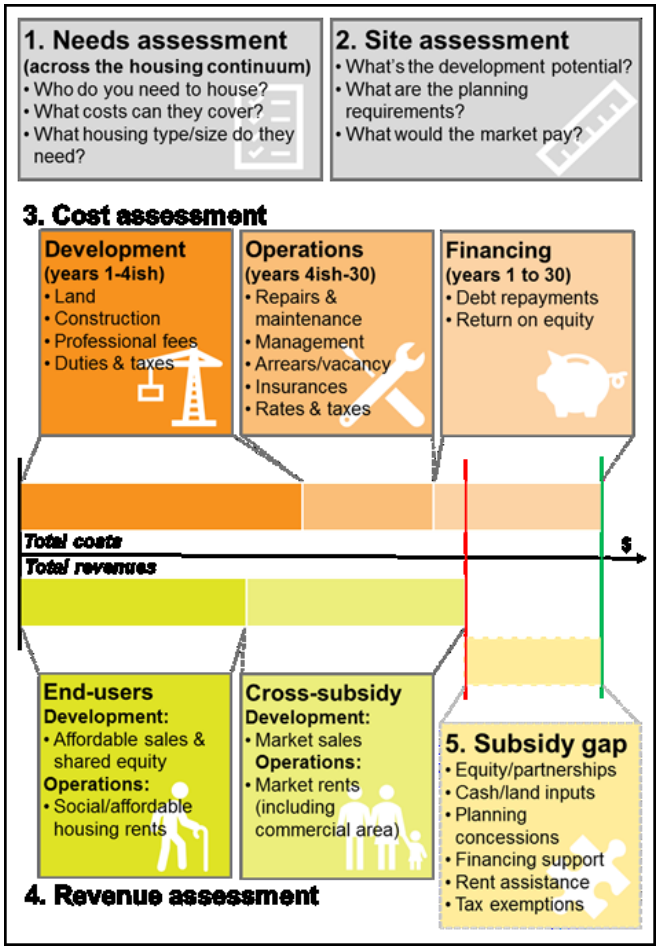
The case study research used extensive documentary evidence, interviews and site visits to determine the market and policy context shaping each project and to unpack how the project financing mechanisms interacted to deliver affordable housing outcomes along the housing continuum. This also provided real data to assist building and calibrating the AHAT, which formed the second study component.

The AHAT was conceived and designed to calculate the impact of different cost and subsidy parameters on housing affordability for the various types of lower income households in need of affordable housing. The starting point for the model is the definition of the housing need that a project seeks to address in terms of the mix (size, type, incomes, etc.) of potential residents and the dwelling mix (tenure, price or rent, size, number) that matches this need. Together, this information determines the potential revenue outcome that will underpin project feasibility. From this starting point, the model then applies a traditional project level feasibility assessment methodology—based on a range of physical and planning constraints and housing market contexts. The policy levers (or subsidy options) incorporated into the model are based on the various mechanisms used across the case studies. The aim is to use different policy levers to generate an outcome that, over a 30-year period, would generate sufficient return on levels of upfront equity investment. The workings of the model are shown in Figure 2 below.

Third, in order to generalise the findings about financing affordable housing in different market contexts, three hypothetical project scenarios representing three housing markets (high, medium and low-cost) with a corresponding development type (high, medium and low density) were tested. This produced the key lessons discussed above and shown in detail in the report.

Finally, in consultation with independent experts, policy-makers and practitioners, the tool was road tested and the research findings for policy and practice were developed.

Figure 2: The Affordable Housing Assessment Tool—summary of key components



Source: authors.

1 Introduction

Recognising the importance of affordable housing to social wellbeing and economic productivity, Australian governments are seeking innovative ways of supplying appropriately diverse forms of additional affordable housing.

To help address this policy interest, the study has two main components:

- It examines how recently-completed affordable housing development projects across Australia have worked. Six carefully selected projects located in different urban and regional markets are used as case studies to ascertain how affordable housing project costs, revenues and subsidies interact to produce affordable housing.
- Using the data collected, an interactive modelling tool is developed. The 'Affordable Housing Assessment Tool' is designed to calculate the impact of different cost and subsidy parameters on housing affordability for the various types of lower income households in need of affordable housing.

1.1 Why this research was conducted

With access to housing becoming increasingly difficult for lower income households (Hulse, Reynolds et al. 2015; Rowley, Leishman, et al. 2017; Yates 2017), identifying effective new ways of financing and delivering additional affordable housing is a mounting policy imperative. This project is one component of an AHURI-commissioned Evidence-Based Policy Inquiry (AHURI 2017: 6–8) that is investigating the impact of various government strategies and initiatives that have been applied to increasing the supply of affordable housing.

The Inquiry's empirical focus is on recent and replicable strategies and projects in Australia that can provide a basis for longer term learning and policy development. The overarching question being addressed is:

> *How have governments sought to increase the supply of affordable housing across the continuum of housing needs; and, what are the implications for transferring policy and practice to different jurisdictions and market contexts?*

The Inquiry comprised a program of three complementary research projects that were designed to build a progressive evidence base to address the above question. The analytical focus of the project reported here has been the financing of specific housing projects and the affordability outcomes achieved. Six recently completed 'exemplar' housing projects located in different market contexts across Australia were chosen for analysis. The evidence collected informed the development of an interactive Affordable Housing Assessment Tool (AHAT) that can be used to demonstrate how different mixes of policy levers impact on affordability outcomes across diverse housing markets.

The primary aims of the project are to:

- increase knowledge and understanding of the variety of ways that major completed affordable housing projects have been financed in Australia
- use the information collected to quantify affordable housing outputs that would be achievable under different policy and market scenarios

- assist industry participants to assess potential affordable housing outputs under different market conditions and financing regimes.

Two further projects in the Inquiry program focus respectively on:

1 the strategic role of governments in catalysing additional affordable housing supply—such as though leadership and institutional support, policy innovation, partnering and co-investment and tenure mix (Rowley, James et al. 2017)

2 the use of the planning system to boost the supply of affordable homes or overcome barriers to their development (Gurran, Gilbert et al. forthcoming).

The research reported here complements the outputs of these other two projects by focusing on specific project-level performance and outcomes which sit within the wider housing and planning policy contexts that form their respective foci. The findings and associated modelling have potential application at individual project, organisational portfolio, and policy and program levels.

1.2 Policy context

1.2.1 Past policies and developments

Access to social housing in Australia has steadily declined over two decades as housing need has continued to grow but successive governments have reduced their investment in this form of affordable housing provision.[1] Between 1996 and 2016, the supply of social housing increased by 4 per cent compared to a household growth rate of 30 per cent (calculated from Yates 2013; ABS 2015; SCRGSP 2016).[2]

As an alternative to the direct supply of social housing and other housing assistance, national, state and territory and some local governments have increasingly looked to new strategies and models for achieving affordable housing provision (involving innovative financing, procurement, planning, design and/or construction elements), and occupation (tenure and management initiatives). Several of recent policy and program level strategies of state governments in particular are examined in the other reports associated with this Inquiry (see Rowley, James et al. 2017; Gurran, Gilbert et al. forthcoming). However, while many innovations and demonstrations have been attempted, no comprehensive and durable response has yet been achieved (Milligan, Gurran et al. 2009; Rowley, James et al. 2016; Milligan, Pawson et al. 2017).[3]

As we explain further below, a key focus of government incentives has been on boosting private financing of affordable housing supply.

To date the most worthy national attempt to attract private finance into this field was the 2008 National Rental Affordability Scheme (NRAS). With original ambitions of delivering 50,000 additional affordable rental dwellings by 2012, this scheme was intended to create a new model of government-funded and supported, privately-owned and operated affordable housing provision. However, funding for new projects was discontinued in 2014, leaving the scheme

[1] In this report affordable housing refers to housing provided subject to access and affordability requirements set by government. Social housing is a form of affordable housing targeted to high need households on low incomes (see also Figure 3).

[2] Data on Indigenous-specific housing is excluded because of gaps in the time series.

[3] An overview of recent national and state affordable housing supply strategies can be found in Milligan, Pawson et al. (2017: Appendix 1). A 2016 officials' report on innovative financing of affordable housing also contains details of Australian, state and territory government strategies and initiatives aimed at increasing the supply of housing, including housing affordable by lower income groups (AHWG 2016b: Appendix D).

around 12,000 dwellings short of its target (Rowley, James et al. 2016). Importantly, it was envisaged that NRAS would trigger market development of a new residential asset class for institutional investors (Plibersek 2008), although this had not eventuated by the time of the scheme's termination. Implementation problems and political cycles have been blamed for NRAS's discontinuation, which disrupted the development of private-sector investor confidence in co-investing in affordable housing (Milligan, Pawson et al. 2015; Rowley, James et al. 2016).

1.2.2 Emerging and prospective public funding approaches

2017 National budget initiatives

The 2017 Australian Government budget included a suite of new measures for reducing pressure on housing affordability (Australian Government 2017c). Three core elements with direct relevance to financing additional subsidised housing were: the establishment of the National Housing Finance and Investment Corporation (NHFIC); the introduction of a new National Housing and Homelessness Agreement (NHHA); and new tax incentives for private investors in affordable housing.

The NHFIC will be set up to source lower cost and longer-term finance for registered providers of affordable housing (Australian Government 2017a).[4] The decision to establish the NHFIC arose from a policy officials' investigation of financing models that could increase the supply of affordable housing, with a focus on options that could attract more cost-effective private and institutional investment at scale (AHWG 2016a). The resultant report of the Affordable Housing Working Group (AHWG), accepted by the Council on Federal Financial Relations (comprising Australian Treasurers) in late 2016, concluded that 'the establishment of a financial intermediary to aggregate the borrowing requirements of affordable housing providers and issue bonds on their behalf ('the bond aggregator model') offers the best chance of facilitating institutional investment into affordable housing at scale, subject to the provision of additional government funding' (AHWG 2016b: 1). Following a design and consultation process, the NHFIC is scheduled to operate from July 2018.

This direction has the potential to establish the conditions that would enable lasting institutional financing of affordable housing. By offering long-tenor, fixed-rate housing bonds backed by a government guarantee, the model aims to generate a regular flow of investment into rental housing with the investor return being funded through a combination of rent revenue and a subsidy stream. In so doing, it offers a policy framework for financing affordable housing at scale that is similar to those successfully applied in several comparable countries (Lawson and Milligan 2008; Lawson, Gilmour et al. 2010; Gibb, Maclennan et al. 2013; Lawson 2013; Milligan, Pawson et al. 2015). However, as the AHWG report acknowledged 'while current [subsidy and policy] settings may be able to cover operational costs, they are not able to provide a sufficient level of return to attract institutional investors and fund the development of new social housing stock' (AHWG 2016b: 15). A subsequent AHWG report recommended (among other reforms) 'that the Commonwealth and State and Territory governments progress initiatives aimed at closing this funding gap[5], including through examining the levels of direct subsidy needed for affordable low-income rental housing, along with the use of affordable

[4] The NHFIC will also invest in housing-related infrastructure in order to reduce barriers to housing supply more broadly.

[5] The AHWG defined the funding gap as 'the difference between the costs of delivering new supply of affordable housing (such as the costs associated with acquiring new stock, managing tenancies, dwelling maintenance and depreciation) and the income received (from concessional rents and Commonwealth Rent Assistance)' (AHWG 2017: 10).

housing targets, planning mechanisms, tax settings, value-adding contributions from affordable housing providers and innovative developments to create and retain stock (AHWG 2017: 2).

One potential vehicle for achieving improved subsidy levels to support greater affordable housing supply is the NHHA, which is proposed to replace the existing intergovernmental funding agreement for social housing, housing assistance and homelessness services from July 2018. The foreshadowed NHHA is intended 'to increase the supply of new homes and improve outcomes for all Australians across the housing spectrum, particularly those most in need' (Australian Government 2017b). Accordingly, national funding provided to state and territory governments under the NHHA will be linked to individual jurisdictional agreements to achieve improved housing outcomes in the following priority areas:

- aggregate supply targets, including targets for social and affordable housing
- residential land planning and zoning reforms
- inclusionary zoning arrangements (land use planning intervention requiring or incentivising affordable housing including dedicated first home buyer stock)
- renewal of public housing stock and transfer of public housing to community housing providers (CHPs), and
- homelessness services (Australian Government (2017b).

This approach aims to promote greater transparency around housing supply conditions, the level of housing assistance being provided in each state or territory and specific outcomes. With the exception of a modest tranche of funding directed to homelessness services however, no additional Australian Government funding to states and territories to help meet the set priorities has been announced (Martin and Pawson 2017). Improved outcomes from the NHHA will, therefore, be contingent on better use of existing funding and initiatives to be adopted by the states and territories.

Under the third Australian Government initiative, an additional capital gains tax discount of 10 per cent will apply from January 2018 to resident individual investors in rental housing (to be managed by registered CHPs), who are willing to provide new or existing housing at 'below market' rents to eligible low-income households for three years.[6] From July 2017, Managed Investment Trusts (MITs) will also be encouraged to invest in affordable housing (to be defined). Resident, non-resident and institutional investors who invest in MITs will receive tax benefits where the MIT provides affordable rental housing for ten years. Operating details are being developed (Australian Government 2017d).

Other new government funding models

Two additional recently funded housing supply initiatives—the National Disability Insurance Scheme (NDIS) and the NSW Government's Social and Affordable Housing Fund (SAHF)—also herald potentially replicable privately-financed, publicly-subsidised models of affordable housing provision. Importantly, each of these schemes offer a new source of public funding for specific-purpose affordable housing.

The NDIS has a national target of supplying an additional 16,000 housing units that are purpose-designed for people with severe functional impairment and/or very high support needs. To achieve this, there will be an allocation of capital (around $700 million annually over 10 years from 2017) to subsidise the financing and upkeep of this specialist accommodation. This fund is intended as a stimulus to private investment. It aims 'to achieve additional specialist disability accommodation (SDA) from a broad range of investors and to stimulate innovation in SDA

[6] Capital gains tax discounts of 50 per cent are available to individual rental investors.

housing solutions' (NDIA 2016: 3). To guide allocation of the fund, the National Disability Insurance Agency has released a pricing strategy that calibrates cost benchmarks for developing and operating a range of supported housing types in different locations (NDIA 2016).

The NSW SAHF entails private consortia delivery of a range of social outcomes linked to social (70%) and affordable (30%) housing supply. The fund is a state government investment ($1.1 billion initially) in revenue-generating assets, with resulting returns underpinning annual operating subsidy payments to the approved operating consortia. In the government's words, the aim is 'to plug the funding gap between the rental stream that providers receive from tenants and existing subsidies, and the revenue required to sustain a commercially viable project…the operating subsidy will pay for a package of services for up to 25 years that provides access to accommodation, asset management and tenancy management services, coordination of support services tailored to each tenant, and performance and data monitoring' (Berejiklian 2016). Five successful consortia offering 2,200 dwellings, mostly on the proponents' own land, were announced in 2017 (Goward 2017). However, no details of project subsidies have been released. A second phase of the scheme, calling for bids for the delivery of 1,200 dwellings for older women and regional areas, was announced in mid-2017.[7]

1.3 Existing research

Australian researchers and policy-makers have for many years been examining how a variety of policy levers and other mechanisms could be used to produce additional affordable housing. A corpus of reports published by AHURI between 2008 and 2017 have addressed many aspects of this issue. The progressive body of AHURI-funded evidence complied over that decade includes:

- analyses of the impacts of government housing and planning policy strategies (Gurran, Milligan et al. 2008; Milligan, Gurran et al., 2009; Davison, Gurran et al. 2012; Gurran, Gilbert et al. forthcoming)
- the effectiveness of not-for-profit delivery models (Milligan, Gurran et al. 2009)
- a triple bottom line evaluation of specific affordable housing project outputs (Wiesel, Davison et al. 2012)
- the suitability and potential of different affordable housing financing mechanisms and investment options (Lawson, Milligan et al. 2012; Milligan, Yates et al. 2013; Lawson, Berry et al. 2014, Newell, Lee et al. 2015; Muir, Moran et al. 2017)
- affordable housing provider strategic positioning and business models (Milligan, Hulse et al. 2013, 2015)
- the efficacy of affordable housing subsidy models (Rowley, James et al. 2016)
- the capacity of the affordable housing industry to expand (Milligan, Martin et al. 2016; Milligan, Pawson et al. 2017).

Among the above studies, the only previous analysis concerned with the performance and outcomes of Australian affordable housing projects (Wiesel, Davison et al. 2012) was constrained by a lack of completed projects that were replicable and scalable at the time of that research. This project, therefore, provides an opportunity to explore how various funding

[7] In February 2017 the Victorian Government announced a prospectively similar initiative, although financial details are not available at the time of writing (Victorian Government 2017).

programs, like NRAS and the Social Housing Initiative (SHI)[8], have worked in practice. Thus the study focuses on projects that have benefited from the expansion and maturation of the Australian affordable housing industry under recent policy settings and in different market contexts.[9]

A 2013 international evidence review of affordable housing incentive schemes (including Australia's NRAS) considered recent trends in the way affordable housing is being developed and subsidised concluding that:

- 'Observable shifts in many countries away from new social housing provision in favour of affordable housing supply will have profound consequences for those on the lowest incomes.
- The broader structure and policy framework that constitutes a national housing system, including welfare benefits, is a critical frame within which approaches to financing innovation take place.
- Many potential approaches exist but they all have strengths and weaknesses when set against reasonable key tests, such as scalability, value for money, time to market and effective targeting.
- There needs to be a clear overarching policy vision, not just about individual policies, but the overall mix of policies and their system-level coherence, including how they are delivered and by whom' (Gibb, Maclennan et al. 2013: 56).

Referring specifically to financing challenges, a 2014 international review of the gap between incomes and housing costs in 2,400 cities worldwide identified four approaches that would have maximum impact on narrowing the affordable housing gap:

- securing land for affordable housing at the right location
- developing and building housing at lower cost
- operating and maintaining properties more efficiently, and
- improving access to financing for home purchases, development and rental assistance (Woetzel, Ram et al. 2014: 5–6).

Ultimately, there is no single funding model best suited to affordable housing in all contexts and over time. Historic policy settings and institutional factors in different countries, along with the particular characteristics of regional housing markets and market cycles, all have a strong influence on the political, financial and practical viability of different funding options. Context is therefore critical in developing affordable housing funding models.

1.4 Research methods

The research approach employed reflected three research questions that steered the research:

1. What have been the costs, financial arrangements and affordability outcomes of 'exemplar' affordable housing projects delivered in Australia in recent years?
2. What do these projects demonstrate about how procurement and operating costs, housing revenues and public subsidies interact in different markets to generate affordable housing outcomes and for which target groups?

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[8] The 2008–12 Social Housing Initiative was an economic stimulus-driven Australian Government-funded social housing supply and upgrading program—see KPMG (2012) for an account of its aims and outcomes.

[9] See Milligan, Martin et al. (2016) for the most recent profile of the affordable housing industry.

3 What are the implications for affordable housing policy-making and industry development in Australia?

To address these questions, the project comprised three main components, case study research, modelling project feasibility and consideration of the research findings for policy and practice.[10]

1.4.1 Case study research

Selection of case studies

Identification of potentially suitable affordable housing projects that displayed representative approaches to funding an affordable housing development initially drew on the existing research evidence base (see above) supplemented by advice from government policy-makers. To be considered for selection, projects had to have been completed and occupied in the last decade.

The following selection criteria were used to generate an initial list of potential projects:

- larger scale (preferably >50 dwellings, possibly mixed tenure)
- procurement via development (i.e. not market purchase)
- delivered by an established affordable housing developer
- offering a sizeable component of dwellings within a typology of affordable housing models (i.e. offering different rental and ownership products and using different public subsidy options)
- inclusive of array of policy levers (financial and non-financial)
- having replicable and scalable features.

Listed projects were also classified by market context—that is, whether they were developed in an inner or middle ring urban, urban greenfield, or regional and rural (non-metropolitan) location—and from a range of jurisdictional contexts.

Project resourcing allowed for the inclusion of six case studies, at least one to be drawn from each of the three housing market contexts (see above) and covering six Australian jurisdictions. Two other considerations influenced the final selection of case studies. The first was whether projects were within the empirical scope of the two other Inquiry research projects (see above). This was considered desirable to build knowledge and understanding of the detailed costs and impacts of 'typical' projects that had been developed under higher level government policy and planning strategies. Three projects (in Western Australia (WA), the Australian Capital Territory (ACT) and New South Wales (NSW)) met this requirement. However, all but one project was directly impacted by policy and program settings that applied at a national level between 2008 and 2016. The second consideration was the views of Inquiry panel members on suitable projects. Panel members stressed the importance of including projects that were financially self-sustaining and not reliant on particular government funding programs (such as NRAS) that were subject to change. The final determination of the six case studies was subject to developer cooperation to provide project financial and development cost details, on the basis that the selected projects would be de-identified.

[10] Ethics approval for the research was granted by the Human Research Ethics Advisory Panel (HREAP) Executive, University of NSW on 29 September 2016 (Approval no. HC16771).

Case study analysis

The Inquiry into 'Increasing affordable housing supply: evidence-based principles and strategies for Australian policy and practice' has applied a consistent conceptual framework for investigating affordable housing policies, programs and projects (Gurran, Rowley et al. forthcoming). Drawing on principles for housing evaluation research outlined by Milligan, Phibbs et al. (2007: 16–19), this is concerned with probing the relationships between 'Context', 'Mechanism', and 'Outcome' (C-M-O). Accordingly, in this study, each affordable housing project was investigated with regard to:

- the policy and market context within which the project was initiated
- the financing and funding mechanisms that were applied, and
- the affordable housing outcomes along a housing continuum that were achieved.

The central aim of the analysis was to show how procurement and operating costs, housing revenues and public subsidies interacted in different markets to generate affordable housing outcomes for particular target groups.

To initiate the case studies, a senior research team member approached the Chief Executive Officer (CEO) of affordable housing developer organisations whose projects had been shortlisted. Each of the organisations approached for information readily agreed to participate. CEOs generally considered the research to be beneficial to promotion of a wider understanding of the core logic of affordable housing projects and each agreed to provide comprehensive information on the selected project financing (costs, subsidies and revenues) for both its construction and operating phases, and the affordability products and outcomes that had been achieved.[11]

A four-step process was followed for each case study investigation:

1. Project documentation, including financial spreadsheets, project origins and purpose, and the development process were collected and analysed.
2. Interviews were held with key developer personnel, usually the CEO, Chief Financial Officer and the development or project manager. A list of interview themes is provided at Appendix 1. Relationships established at the initial interview were used to build an ongoing relationship with each developer organisation so that the case study findings and the model inputs (see below) could be validated.
3. A site visit was made to promote appreciation of the market context and presentation of each project.[12]
4. The findings from each case study were validated with the participating development organisation.

Each case study was undertaken by two team members. All case study site visits and interviews were conducted between November 2016 and February 2017. The results of the six case study investigations are documented in Chapter 2.

Modelling affordable housing feasibility and policy impacts

Drawing on the case study analysis, an interactive affordable housing model was built. By abstracting from the primary case study data, this aimed to produce a flexible, user friendly, analytical tool that would be capable of predicting how given affordable housing subsidies

[11] In one negotiation, a CEO-proposed alternative (just completed) project that better matched the research selection criteria was accepted.

[12] One site visit did not proceed due to unforeseen circumstances; photographic evidence was used instead.

perform to deliver housing to a specified mix of housing needs groups in different market contexts. As such, and unlike other feasibility tools that centre on individual project feasibility, the model was designed to enable an assessment of the interactive impact of different policy levers. Two key innovations were:

- to start with the target housing groups that a project seeks to house, estimating their capacity to generate revenue through rents or sales, and then determining project feasibility and the subsidy mix that can deliver the desired social outcome
- exploration of how key policy levers interact to produce different feasibility outcomes. This feature was aimed at improving policy-maker and industry understanding of the impacts of layering multiple policy levers.

Six steps were followed to develop the AHAT and to generate predictive outputs of the impacts of housing policy levers.

1. The conceptual approach to the modelling (see Chapter 3) was developed by the research team based on previous research (Troy, Easthope et al. 2015; Pinnegar and Randolph 2012), from data collected from the case studies, and in consultation with the Sphere Company[13] and Inquiry Panel members.
2. Specific modelling parameters were defined based on materials supplied by case study organisations and previous research on operational aspects of affordable housing organisations.
3. The model was calibrated and validated using project level financial data drawn from across the case studies and from other documentary sources. This allowed outputs to be compared with real world projects.
4. Model inputs and parameters were presented for feedback and validation in three live demonstration workshops attended by property development experts, other academics and affordable housing developers. This process resulted in a number of amendments to the model which improved its overall performance and usability.
5. A number of scenarios based on different market contexts (see Chapter 4) were input through the model to test the relative impacts of different policy levers on overall project feasibility.
6. The model was fully documented and prepared for independent use as the 'Affordable Housing Assessment Tool'.

Development of principles and guidelines

To address the final research question, the project research outcomes were used by the researchers to develop a set of draft lessons for policy and practice. These were finalised (as set out in Chapter 4) following discussion at a meeting of the Inquiry Panel held in July 2017.

[13] The Sphere Company is an advisory firm that has expertise and experience assisting affordable housing developers to undertake feasibility analysis for their business and property development activities.

2 How do affordable housing projects work in different market contexts?

This case-study analysis involved six housing projects, which together produced 893 dwellings. Of those, 524 (59%) were placed along the affordable housing continuum. The projects were led by either government or not-for profit CHPs, some in partnership with private developers.

The research focused on the market and policy context shaping each project and how their funding and financing mechanisms interacted to deliver affordable housing outcomes. This has also provided real data to assist building and calibrating the Affordable Housing Assessment Tool (see Chapter 3).

The main funding mechanisms used were:

- access to and/or discounted purchase of public land (six cases)
- public and/or NFP development capital (five cases)
- market sales (four cases)
- operating subsidies (five cases).

One project also supported affordable home ownership using government loan products.

The lessons from the cases examined centre on the importance of affordable housing developers having ready access to affordable land, the innovative role that can be played by CHP developers, and the opportunities for governments to leverage their contributions to achieve their housing policy goals.

This chapter introduces the case study projects that were selected for analysis. The central purpose of the case study research was twofold:

- learn how affordable housing policy levers have been used in recent projects, and the kinds of affordable housing outcomes that have been produced, and
- use real data to calibrate and test the Affordable Housing Assessment Tool (see Chapter 3).

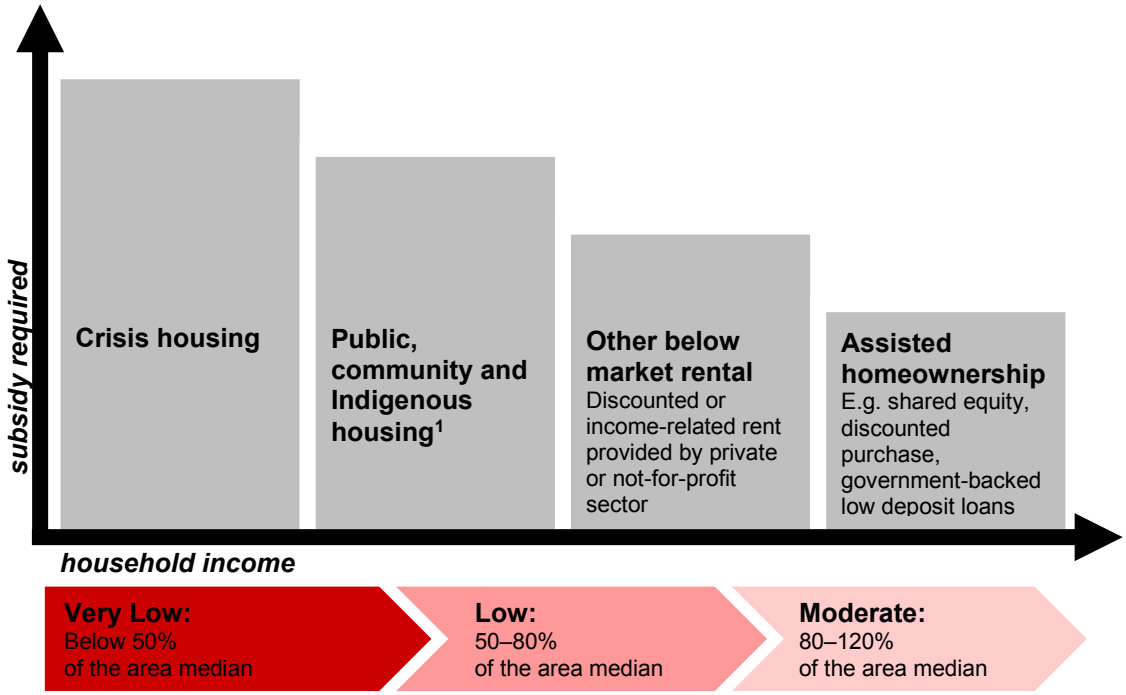
Six recently completed housing projects have been examined across six states and territories. One project was in a high-value inner city location, three were in well-located middle metropolitan areas, one was part of an outer metropolitan (greenfield) development, and one across low-growth regional areas. One project was delivered by government in an equity joint venture with the private sector, the other five were delivered by CHPs; two of those included an equity joint venture with the private sector.

Table 1 below provides an overview of each project. This is followed by a project-by-project analysis of:

- their market and policy context—describing the actors and circumstances of each project's initiation and development

- their mix of funding and financing mechanisms—assessing both construction and operating phases, how the mechanisms worked and interacted, and what contribution they made to the housing outcomes
- the quantity and quality of housing outcomes—referencing different target groups on the continuum of needs (see Figure 3 below, reproduced from other Inquiry reports).

Figure 3: Continuum of housing needs and affordable housing options



Note: [1]Public, community and Indigenous housing are forms of social housing delivered respectively by government agencies, community housing providers and Indigenous-run community organisations. The term social housing is used to encapsulate these delivery models throughout this report.

Source: Authors.

In Table 1 below and the discussion that follows the projects are referred to by their market and jurisdictional context rather than by project names and proponents. This has been done to maintain anonymity for participant organisations. All information presented on each of the case studies have been obtained from interviews with project managers and other stakeholders, and from project documentation provided by the developers, unless otherwise indicated.

Table 1: Overview of case study projects using the C-M-O framework

Market/policy context	Funding/financing mechanisms	Housing outcomes
Outer-metropolitan Sydney Part of government land release set aside for affordable housing Competitive tender for site CHP/private developer partnership Completed Nov-2016	Direct access to land CHP equity Private developer secured finance Revenue from investor-purchased NRAS dwellings CHP secured debt finance NRAS (CHP and investor) Tenant rents (including CRA)1	Total of 65 attached, small-lot homes: • 34 affordable (investor-owned NRAS) sales • 31 affordable rentals[1]
Middle-metropolitan Melbourne Surplus government land made available for affordable housing Competitive tender for site CHP developer Completed Aug-2013	Direct access to land State government capital contribution Revenue from market sales CHP secured debt finance NRAS (CHP) Tenant rents (including CRA)	Total of 282 apartments and townhouses • 140 social rentals • 70 affordable rentals • 72 market sales • (and subsequently ≈228 social/affordable rentals offsite)
Middle-metropolitan Brisbane Surplus government land made available for affordable housing Competitive grant for land CHP developer Completed Jan-2016	Land grant CHP equity Revenue from sale of affordable housing dwellings (to NFP) and commercial units Tenant rents (affordable and market dwellings, and commercial space)	Total of 60 low rise apartments • 11 social sales (to other NFPs) • 19 affordable rentals • 30 market rentals
Middle-metropolitan Canberra Government land release Directly sold to CHP CHP developer Completed Feb-2014	Direct access to land CHP equity CHP secured finance (both private and low-cost government sources) Revenue from market and NRAS sales NRAS (CHP and investor) Tenant rents	Total of 223 apartments and townhouses • 21 affordable rentals • 52 affordable (investor-owned NRAS) sales • 150 market sales
Inner-metropolitan Perth Surplus government site Government/private developer partnership Completed Jul-2014	Government land as project equity Private developer secured finance NRAS (investors) Revenue from affordable sales (shared equity, government-backed loan) Tenant rents	High-rise, mixed-use development including 161 apartments • 95 market sales • 17 affordable (investor-owned NRAS) sales • 17 social rentals • 32 affordable (shared equity + government supported low deposit) sales

Market/policy context	Funding/financing mechanisms	Housing outcomes
Regional South Australia Dispersed sites, mostly government owned, sourced by CHP CHP/Private developer partnership Completed Dec-2014	Direct access to, and reduced cost of, state and local government land Australian Government grants State government grants CHP secured debt finance NRAS (CHP) Tenant rents (including CRA)	Total of 102 houses across 11 towns • 60 affordable (discounted) rentals • 20 social rentals • 22 market sales

Note: [1]In 'social housing', rents paid comprise Commonwealth Rent Assistance (CRA) payments received by eligible Centrelink clients plus 25 per cent of their remaining income. In 'affordable housing', rents are market-related. Depending on whether the landlord is an NFP or a private investor, 74.9 per cent or 80 per cent of the market rate for a similar property typically applies.

Source: Case study research.

2.1 Outer metropolitan: Sydney

2.1.1 Project description and context

This government-initiated project demonstrates the inclusion of affordable housing in a large greenfield development approximately 40 km west of the Sydney CBD, which was the responsibility of the major government developer, Urban Growth NSW.

To contribute to its corporate target of 7.5 per cent affordable housing, Landcom (later Urban Growth) earmarked 10 'superlots'[14] in the site master plan for development as affordable housing with an indicative yield of 62 dwellings (of up to 820 dwellings planned for across the whole development). The superlots were dispersed through the development, well-integrated and located adjacent to attractive park land.

While the surrounding estate was predominantly planned for detached dwellings to be developed through the private market, the affordable component was planned as medium density housing on smaller lots (averaging 180 m^2) to be delivered by an affordable housing provider. Due to the cost and type of dwellings that were being developed within the wider estate, predominant buyers were existing owner occupiers upgrading from older or smaller housing (CHP provided documents).

Selected CHPs were invited to tender for development of the 10 superlots in 2013 after much of the development in the adjoining estate had occurred. The invitation to tender specified the requirements for affordable housing to be the provision of rental housing at 20 per cent below local market rent for a minimum of 10 years with no allowance for owner occupation during that period (CHP provided documents).

The successful tenderer was a Sydney-based CHP which entered into a joint venture agreement with an established private builder-developer to deliver the housing. Following subdivision, construction of 65 Torrens title townhouse style dwellings were completed in two stages between 2014 and 2016.

2.1.2 Funding and financing mechanisms

Project financing comprised four main mechanisms, which were applied as follows:

[14] Superlots are larger land parcels that have not been subdivided for sale as individual dwellings.

- Land was acquired for $7.44 million funded by 50 per cent equity (CHP cash reserves) and 50 per cent CHP-held debt.
- Construction of 34 dwellings ($8.5 million) in Stage 1 was financed by the private joint venture partner. These dwellings were sold on completion, with profits shared between the partners—the builder and the CHP. To facilitate the required affordable housing outcome, the CHP transferred 34 NRAS incentives to private investors purchasing the dwellings. The sales (ranging between $570,000 and $590,000 per dwelling) allowed the CHP to recover its equity from the purchase of the land; this in turn enabled Stage 2 to proceed from a neutral cash balance position.
- Stage 2 construction of 31 dwellings (cost $8.1 million) was financed through the CHP's corporate loan facility negotiated with a major lending institution. On completion, the CHP also chose to extract their initial equity in the project taking total project debt to $11.6 million.
- Thirty-one NRAS incentives allocated to the CHP are being used to help finance debt repayments on their retained stock over ten years.

From our analysis, the feasibility of this project relied on three key factors: land price, the financial position of the CHP both before and consequent to the development, and the availability of 10-year NRAS incentives.

Land price was determined through a select tender process among competing affordable housing providers. The per-lot price paid by the CHP was $114,000. The tender process established a 'market' value for the land to be developed as affordable housing in accord with precinct planning requirements. The price paid was about one-third less per square metre than that paid by private buyers for the smallest lots (around 300 m^2) in the surrounding development at the time (author analysis).[15]

The CHP initially invested significant equity in the project which was subsequently recovered through its profit share on the sale of Stage 1 dwellings. This has enabled the CHP to retain working capital for future developments.[16] It also provided the catalyst for a mutually valuable joint venture under which the private partner gained access to land ready for development at no outlay to it and the CHP was not required to finance Stage 1 construction.

The CHP has significant debt as a result of the project (about $374,000 per dwelling). Following completion of the dwellings, this was being underwritten for ten years by annual NRAS incentives along with rental surpluses across the organisation's portfolio. Utilisation of a share of the CHP's NRAS incentives also facilitated the profitable sale of all Stage 1 dwellings, as they proved to be highly attractive to rental investors at the time.

2.1.3 Housing outcomes

Completed in 2016, the project has delivered a total of 65 two and three-bedroom dwellings with single garages. Families with children make up the majority of occupants. All dwellings will be retained as affordable rentals (80% or less of market rent)[17] for 10 years; 34 are owned by

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[15] The land owner also received $20,000 per dwelling lot from the Housing Affordability Fund—a 2008–13 Australian Government Initiative to reduce the cost of developing housing affordable to low and moderate-income households.

[16] The CHP had the option of retaining ownership of all the dwellings it developed (rather than monetising its equity), but that approach would have constrained its development financing options in the near future.

[17] Where CHPs own rental properties with allocated NRAS incentives, they usually charge no more than 74.9 per cent of market rent to comply with requirements related to their status as charitable organisations. However, where they manage properties on behalf of another owner on a fee-for-service base, rents can be set by the (private) owner at 80 per cent of market and comply with the NRAS.

private investors and 31 retained in CHP ownership. The well-regarded CHP manages all tenancies to the same standards and ensures NRAS compliance for investors. Liveability and sustainability features of the dwellings meet and, in some aspects, exceed current standards.

Rent levels place the affordability of all the dwellings in a cluster at the moderate income end of the affordability continuum. The CHP experienced some challenges in initially renting the dwellings. One interviewee suggested that this was because the asking rents were comparable to other older market rentals in the area. However, these dwellings offer new, higher quality and secure renting. All dwellings were rented to NRAS-eligible tenants at the time of writing.[18]

The CHP intends to maintain the retained dwellings as affordable rentals after 10 years, subject to financial feasibility. The privately-owned dwellings could be expected to revert to market rentals or be sold by individual owners once their NRAS incentives expire.

2.1.4 Overview

Through inclusionary planning and smaller lot sizes, along with the application of a number of public subsidy elements available at the time of development, this case study project has provided a small component of good quality rental housing in an otherwise largely owner-occupied outer metropolitan suburb. Current rent levels are comparable with other older dwellings in the area but do not offer affordability for those on low incomes.

In a strong residential market context, the project leveraged significant financial and in-kind benefits through the participation of the CHP. These benefits have strengthened the CHP's balance sheet (offering potential for further investment in affordable housing), together with building the organisation's development capability and experience. 'Affordability' of 50 per cent of the project output is not preserved beyond 10 years. Replicability of the project would likely depend on whether access to other affordable housing development opportunities was available and the potential to generate cross subsidy through development for market sale.

2.2 Middle metropolitan: Melbourne

2.2.1 Project description and context

This affordable housing project, completed in 2013, is an exemplar of how CHP experience, independence and scale can leverage government funding to achieve a greater number and diversity of housing outcomes than a traditional social housing model. The project itself comprised 282 dwellings, of which 210 were retained as social and affordable housing. However, as outlined below, the project was also able to generate an asset base and revenue stream to support future growth in affordable housing supply.

Project development commenced in 2009 in the context of a policy shift in favour of NFP provision of social housing services. To facilitate this new direction, the Victorian Government offered a significant financial contribution to support CHP developers (see Milligan, Gurran et al. 2009: 42–43).

The project was subject to competitive tender; the successful bid was led by an experienced affordable housing provider with long-standing experience in in-fill housing development. One of the key aspects of the tender—and ultimately one of the contractual milestones—was the use of cash equity raised through the project to facilitate further growth in the CHP's portfolio.

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[18] Maximum household income levels for rentals using NRAS incentives are set by the Australian Government and reviewed annually. See https://www.dss.gov.au/our-responsibilities/housing-support/programs-services/national-rental-affordability-scheme/national-rental-affordability-scheme-nras-household-income-indexation.

The project involved the redevelopment of six sites across a middle-ring suburb of eastern Melbourne, about 15 km from the CBD. It comprised the site of a demolished public housing complex (of 55 dwellings), four publicly-owned vacant sites and an adjacent site that had been purchased.

2.2.2 Funding and financing mechanisms

The successful tender received a $71.3 million grant from the Victorian Government, delivered periodically as milestones were met. The CHP partner provided an additional $68.7 million (as debt equity) as part of the agreement. The early construction costs were almost exclusively funded through the government contribution, with the CHP using a relatively small bank loan as an interim measure to meet any shortfall.

At 75 per cent completion, the land title transferred to the CHP. This was used as security for a much more significant debt facility of $68.7 million, to meet the CHP's contractual contribution. This debt is serviced by the rental streams from the 210 dwellings retained in the project, as well as NRAS incentives for both these dwellings and other NRAS incentives held by the organisation.[19] Thus the loan was secured on the basis of the organisation demonstrating a sufficient income stream, including additional NRAS incentives held by the organisation.

The debt facility, along with the revenues (of around $27 million) generated by the market sale of housing included in the project, was used to develop some additional sites, anticipated to deliver another 228 dwellings to be retained by the CHP.

2.2.3 Housing outcomes

The project provided 93 social housing dwellings for seniors, 37 other social housing dwellings, and 70 affordable housing dwellings (with additional off site affordable housing dwellings). The project also included 72 private sales (with profits to help fund future development) and a small office/retail space (retained and leased by the CHP).

The housing includes a variety of dwelling types (townhouses and apartments) and dwelling sizes: two-thirds being one-bedroom and a small number of three- and four-bedroom townhouses. Private and community-managed housing is indistinguishable, although provided in separate buildings. Community building, educational and social enterprise activities are provided at the site which is managed by the CHP.

2.2.4 Overview

This case is notable for its scale: with the 282 dwellings delivered onsite and the contractually required delivery of additional dwellings funded through the debt facility, the overall development program catalysed by the government investment amounts to around 500 dwellings. The project is the largest redevelopment partnership between government and an NFP entity in Australia to date. Development has spanned eight years. The financial input averaged around $300,000 per dwelling (compared with a market value of $450,000 to $600,000 per dwelling based on 2014 apartment values in the area). The project benefited from a significant contribution from government—both in terms of initial development capital, and in terms of the source of funding to service operational debt—largely NRAS incentives. However, the extent to which a project of this scale and social benefit could be replicated would be reliant on the future availability of government funding. Importantly, the project has shown how such upfront government investment in an NFP development model can act as a catalyst for much more affordable housing supply over the longer term.

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[19] In total the organisation received 388 NRAS incentives.

2.3 Middle metropolitan: Brisbane

2.3.1 Project description and context

This project was delivered by a major and well-established CHP in a middle-ring location, approximately 6 km from the central business area. Completed in 2016, the 3-storey mixed-use development comprises 60 residential dwellings and five commercial spaces.

The trigger for the development was availability of a site under a government land allocation program designated for accommodation and support services. Following a submission process, ownership of the site was passed to the CHP at no transfer cost on condition that 50 per cent of the dwellings produced would be used for affordable housing. The CHP, an experienced mixed-tenure developer, was responsible for organising the construction and ongoing financing of the project to achieve this outcome.

The site is very well-located with close access to local services and public transport. However, its development was challenging in terms of design and scale, as the site is an elongated air space above a road tunnel and adjacent to a major road. Car parking had to be provided at ground level as excavation was not possible.

2.3.2 Funding and financing mechanisms

In the absence of other public funding, the CHP had to rely on internal financial resources to achieve development. Cash reserves were used to fund the total development cost of approximately $16 million. This investment was possible because of the strong financial position of the CHP and because it would help address other strategic considerations for the organisation. In particular, the CHP had been accumulating surpluses after a downturn in development opportunities that had followed the cessation of major government programs, the SHI and NRAS (see Chapter 1), and was keen to use these to support their mission. Lack of development opportunities was also impacting adversely on the use of their in-house development capacity.

In keeping with the CHP's business rules, however, a reasonable return on their equity investment was expected, and the project was assembled to ensure this happened. When the project was initially conceived, dwellings in excess of those required to be retained as affordable housing were intended for market sale. This would have returned a large proportion of the CHP's initial investment plus profit. However, when market conditions changed in Brisbane and the apartment market began to weaken, the CHP was able to adjust their strategy and retain ownership of the excess dwellings to offer them instead as market rentals. This was feasible because the organisation was not carrying any debt related to the project and did not have the immediate need to reduce debt load to ensure a viable project over the long term. Some of the CHP's equity was later released through the sale on completion of 15 residential dwellings to two NFP community service agencies. Three commercial spaces were also sold to community-based organisations, with the remaining two retained by the CHP.

2.3.3 Housing outcomes

The 60 residential dwellings developed comprised four specialist disability apartments, 19 studio and one-bed apartments used as affordable housing rentals, seven long-term community housing rentals, and 30 one and two-bed market rentals. This mix met the requirement for 50 per cent of dwellings to be sub-market rentals and has provided a diversity of dwelling types and tenures.

The inclusion of apartments for market renting is thought to be a first by an Australian CHP. This component enhances the company's business diversity and delivers them flexibility around the future use of those dwellings.

2.3.4 Overview

Financing of this project was less complex than for the others examined. However, a project of this type is unlikely to be replicated in the current policy context. Following a government land grant, development was made possible because the CHP had significant cash reserves following a downturn in their development opportunities. To achieve its government-required affordable housing component, the CHP has also sunk significant equity in the project.

2.4 Middle metropolitan: Canberra

2.4.1 Project description and context

This project was delivered by a well-established CHP in a middle-ring location, about 7 km from Civic. The development is a medium density residential development comprising of predominantly multi-unit dwellings, with some terrace dwellings on one edge.

The project originated with the ACT planning and land agency offering the CHP purchase of a site as part of a broader redevelopment across the suburb. Both the land release and the involvement of the NFP sector to deliver affordable dwellings—including sales below a price threshold—stem from Canberra's *Affordable Housing Action Plan* (see Rowley, James et al. 2017: Chapter 4). The CHP was in a position to take up the offer. They benefitted from a policy allowing them to pay for the land and take title after the relevant planning approvals had been secured, thereby reducing their holding costs.

The project was delivered in three stages allowing parts to be sold or to generate income prior to completion of the whole project. Procurement of the project was undertaken solely by the CHP.

2.4.2 Funding and financing mechanisms

The site was purchased directly from the ACT Government at a price based on commercial valuation of the property as a residential development site (for around $7.5 million). Though the site was purchased at an administratively-determined market valuation, it was not made available through an auction or competitive tender process. This gave the CHP access to a development opportunity which otherwise would have been difficult or impossible to secure in competition with for-profit developers.

The development was financed through a combination of CHP equity, a bank loan and a government-backed low-interest loan facility, which was available to the CHP conditional on meeting certain affordable housing outcomes. Analysis of project accounts (in particular financing costs) shows a debt similar to market developments (around 3.5% of project value) was able to be serviced through the construction period, largely through staging and sales, as described below. Private finance was obtained at comparable rates to the private sector development industry at the time, while government-backed finance was provided at a considerable discount.

The project was staged to produce, first, market housing and, later, the affordable housing components. This allowed revenue to be brought forward in the overall development timeframe and, thereby, reduced the overall cost of doing the development by lowering the debt burden and, consequently, interest payments. Staging also aimed to ameliorate housing market risks: having the entire development available for sale at the same time had the potential to impact on both prices and sales volumes, particularly if the housing market started to weaken. Finally, staging introduced flexibility by allowing for final stages that were not market-dependent to be put on hold if necessary.

As well as underpinning project financing, market sales were used to subsidise affordable housing outcomes from the development. However, from the CHP's point of view, the main aim

of undertaking this particular development was not to deliver affordable rental housing on this site but to achieve capital for the organisation as a whole to reinvest in other development opportunities with potential for affordable housing outcomes. So, in this context, cross-subsidy was operating across the organisation's development programs and not just within this development. Thus, as in the other case studies involving CHPs, funding for the project was based on whole-of-organisation considerations, as well as whether the specific development was feasible.

2.4.3 Housing outcomes

In total, the project delivered 223 dwellings and 8 commercial units. The residential dwellings were predominantly 1 and 2-bedroom apartments in 3 to 5-story buildings, as well as 15 townhouses and 8 studios. The project was originally intended to primarily contribute to a government-set target for the CHP to deliver 500 affordable sales by 2018. This was addressed through the inclusion of an estimated 100 dwellings with a market value below the 'affordable' threshold of $328,000 (in 2010$). However, the organisation's subsequent allocation of NRAS incentives meant that it was also financially feasible to retain 21 dwellings as affordable rentals, and to sell 52 dwellings to investors in affordable rental. It is not clear at this stage if the retained dwellings will be held as affordable rentals by the CHP at the expiry of the 10-year NRAS incentives.

2.4.4 Overview

This project is notable in two ways. The first is that it—and large projects generally—were not considered by the CHP to be sufficiently profitable to produce significant affordable rental outputs without direct subsidy. Three factors were relevant to this:

1. Many of the CHP's costs were broadly in line with market developers—including for land, construction and financing.
2. The housing product was broadly 'entry level' with low margins—apartments this far from the city centre were not typically being produced by market developers. This limited the potential for cross-subsidy.
3. There were only limited opportunities for other cost savings—reductions in site procurement costs (as the site was directly sourced from government), the low-interest line of credit from government, and the absence of tax impositions and profit expectations that resulted from NFP status.

The second aspect to note is that this project was formulated by the CHP within the broader objectives of the organisation. Undertaking developments of this nature produced a revenue stream to underwrite other affordable housing projects that would not be financially feasible on their own.

Without being able to pinpoint exactly which, and how many, dwellings are underwritten by the revenues of the case study project, it is not possible to assess its full social benefit. Relying on cross-subsidy as the predominant financing mechanism carried evident risks related to the CHP's exposure to the broader housing market. More broadly, though, undertaking developments of this nature meant the CHP was able to operate with a high degree of financial and organisational independence to pursue future development opportunities in line with its overriding objective of producing affordable housing.

2.5 Inner metropolitan: Perth

2.5.1 Project description and context

This 2014 completed project produced a high density mixed-use building on the site of a former public car park in close proximity to the central business area. The single building development comprises 161 dwellings, 7 ground-level commercial units, and car parking split across two levels. Nearly 90 per cent of the development was under contract prior to construction.

The project was delivered through a government-private sector partnership, with the government contributing land as equity and the private sector partner contributing equity, and obtaining private finance and undertaking the development.

The project was indicative of a fundamental shift in housing policy strategy in Western Australia at the time. This used the housing continuum model to promote a wider range of responses to low and moderate-income housing needs and adopted a more market-orientated approach to affordable housing procurement (Rowley, James et al. 2017: Chapter 2). As typified by this project, the new approach was centred on partnerships with the private (or CHP) sectors and on leveraging land assets to realise latent value rather than adopting a direct development or sale approach.

2.5.2 Funding and financing mechanisms

Central to the feasibility of including a large component of affordable housing in the development was the contribution of government land as equity. Based on its use as a car park, the site had a 'book value' of $2.1 million. As a higher density development site, a bank valuation of $5.7 million was attained. Ultimately the government sought a private sector partner to undertake the development and negotiated an equity share of $6.45 million in the overall project in return for its land contribution and the wider role it played facilitating the development. Rather than being a passive seller of the land, the government chose to be an active equity partner and to reinvest its return in retained units, which was a significant shift in the way government partnered with the private sector. In total $6.3 million partner equity and $42.1 million debt finance was leveraged from the government financial contribution.

Once pre-sale targets and other conditions were met, the private sector partner was able to obtain project level finance and undertake the development despite it being a constrained post-GFC lending environment.

2.5.3 Housing outcomes

Of all the case studies examined, this innovative mixed tenure development delivered the strongest results along the housing continuum. In total, 41 per cent of 161 dwellings in a high value, high cost CBD location were delivered as a mix of social and affordable rentals and government-backed loans to eligible purchasers, including shared equity and government supported low deposit home loan options.

Of the affordable component, 17 dwellings were retained by the government for social housing, 17 dwellings are being used as affordable rentals subsidised by NRAS incentives, 18 dwellings were allocated to eligible recipients of a government shared equity loan, 14 dwellings were sold with deposit assistance for 'essential workers', and $2.3 million in cash was returned to government. The remaining dwellings and the commercial spaces were sold, with overall project returns split in proportion with equity input.

Importantly from a value-for-money perspective, the market value of the housing retained for government social and affordable housing programs, along with the $2.3 million in cash, significantly exceeded the transaction value of the land. Social and affordable housing outputs were also generated without direct government capital outlay.

2.5.4 Overview

This project demonstrates how government can strategically leverage its own asset base to achieve both affordability outcomes and strong commercial returns. By playing a non-traditional role, the government partner made its land available to leverage private sector equity and support debt finance for the project, remained an active equity partner throughout the design and construction phase, and directed its profits into retained social and affordable housing. In so doing, it was also able to promote dwelling and tenure diversity.

The development also had wider urban development benefits as it catalysed reinvestment in a previously dormant precinct by helping to generate new economic activity and by having a ripple effect on surrounding land values.

2.6 Regional: South Australia

2.6.1 Project description and context

A 2014 completed project initiated and delivered by a large CHP in regional South Australia (SA) provides an exemplar of supplying affordable housing to meet needs in a regional (non-metropolitan) market context. The project produced 102 new homes in 14 different locations across 11 towns to address diverse local needs. Of the homes developed, 80 have been retained as affordable housing along the continuum, while 22 were sold.

Housing provided through the project is located in local markets where neither the government nor the private sector has been investing at any scale in recent years. Weak market conditions have made private development less viable and public investment has been limited by a lack of public funding for new supply.

These conditions notwithstanding, communities in the region had a range of housing needs. In consultation with local stakeholders the provider identified three core needs. First, a lack of infrastructure, including affordable housing, was identified as a constraint on local economic growth. Employers in these small towns—whether in small-scale manufacturing (e.g. farm equipment) or small-scale industry (e.g. an abattoir)—expressed a need for housing to bolster economic opportunities and to help generate local employment. Second, many regional towns were experiencing in-migration of seniors, such as former-farmers on little income, from outlying areas. Third, there was unmet need for specialist social housing suited to people with disabilities (interview CHP executive).

The project arose because, recognising these needs, a well-established NFP developer was able to harness the interests and resources of a variety of government and private stakeholders, as we explain further below.

2.6.2 Funding and financing mechanisms

Total funding of $29 million for the project was raised by the CHP developer from multiple sources, including the Australian Government (NRAS and Regional Development Australia), the South Australian Government (grant for social housing and regional development funding), three local governments in the region offering land, bank finance and a component of cross-subsidy achieved through a profit share of market sales. On completion, total equity in the project was $7.5 million and total debt was $11.6 million.

Availability of capital from the National Regional Development Fund presented the key opportunity offering the potential for a large grant commensurate with the scale of the project. However, because this fund had not generally been applied to residential development, considerable negotiation was required to enable its use for housing construction. The opportunity to build the aged and disabled components of the program arose at a later stage

when the SA Government called for bids for grants for social housing supply. Hence dwelling numbers in the project fluctuated considerably across the planning phase.

The project carries bank debt financing of $11.6 million, to be paid down over 20 years. Financing costs were reduced by securing the loan over the CHP's entire portfolio. This helped to offset the financier's risk of having to sell houses in the event of a loan default in a weak regional housing market. Thirty-five NRAS incentives held or purchased by the CHP and available over 10 years from project completion are being used to help amortise the loan. The provider will need to review their capacity to service their debt at the end of the duration of NRAS incentives, as project revenue from the homes retained will not be sufficient at that point to service outstanding debt. In addition to refinancing and/or selling down part of the project, the provider has options to adopt a portfolio approach to this issue, for example, by selling a lesser number of other higher-value or appreciating properties in their portfolio or converting affordable rentals to market rentals.

The SA Government provided both sites and grants for the social housing component of the project. The government is a passive investor in those sites it provided, holding an 'at valuation' equity share (CPI-indexed). As these were vacant sites previously and unlikely to be developed, the SA Government has not forgone any financial (balance sheet) benefit. It will receive income if the CHP sells the asset at any point.

For the construction phase, the CHP entered into a joint venture with a private building firm. This achieved mutual benefits. The builder gained access to additional residential sites (and thus a larger-scale job) along with presale commitment for 20 dwellings. In return, the CHP was able to negotiate lower cost construction across the whole project.

2.6.3 Housing outcomes

Sixty homes are being used as 'key worker' housing to support local economic activity. These homes offer affordable rentals (74.9% of market rental). Twenty homes designed for older people and people with a disability in these communities are managed as social housing tenancies offering income-related rents to their residents. A photovoltaic solar energy generation system (funded through a solar energy program) has been incorporated in the retained homes to further assist tenants by reducing their energy costs.

In total, the project achieved 59 per cent affordable rentals, 19.5 per cent social rentals, and 21.5 per cent market sales.

2.6.4 Overview

The genesis of this project was the leadership provided by the CHP. The case study is emblematic of the capacity of NFP affordable housing developers to be opportunistic—seeking out finance across different parties and brokering a deal. Nevertheless, the project was reported to have been very challenging and time consuming to pull together because the contributing parties (different spheres and entities of government, the financier, the CHP and a private firm) had little understanding of each other's business and business rules. Assembling sufficient sites suitable for development was also a major challenge in the regional context. Thus, the CHP had to maintain considerable flexibility throughout the project development phase to enable a viable funded project to be achieved. This brings into question the replicability of such an initiative in the absence of a clear strategic policy and planning framework for the development of affordable housing.

2.7 Key lessons from the case studies

It is not possible to directly compare all the case studies, and so draw conclusions about which approaches are 'best practice'. This is largely due to the different contexts—including diverse

housing markets; the government and non-governmental agencies involved and their institutional objectives; the types and amounts of funds available; and differences in the size, composition and timing of the projects. However, each offers important lessons about what makes an affordable housing project financially viable. There are also common factors, which point to policy contributions that have been critical to the success of the projects, both in financial and operational terms. These learnings are unpacked more fully in Chapter 4, but are highlighted with reference to the case studies here.

In all cases, government subsidy was provided, albeit in different amounts and diverse ways. During the development phase, the form of subsidy varied from delayed purchase of land, discounted land price, a capital grant or a low interest loan. The general benefit of such subsidies was to meet a sufficient proportion of development costs, so that any debt financing could be serviced from available revenues (rental income and subsidies) over the life of the project. During the operational phase, CRA transfers (see section 3.3.1) and NRAS incentives were also required in all but one case (which did not involve debt) to help defray the long-term cost of private finance, after other operating costs were met.

Not surprisingly, project outcomes along the affordability continuum were contingent on the amount of government subsidy available. For example, the case study with the highest proportion of social housing had access to the largest subsidy, and that with the highest proportion of market sales had the lowest level of subsidy per dwelling. This correlation was broadly consistent in the other cases. The upshot of this is that housing outcomes were not driven by needs, so much as by available funds.

Another common feature of the projects examined was that revenue from housing products with higher returns was used to cross-subsidise lower-return products. Unencumbered market sales were included in four cases and market rentals in a fifth. However, even within the affordable housing continuum, cross-subsidy from affordable sales—either through shared-equity schemes or to investors with NRAS incentives—was used in three cases to reduce debt loads at the end of the development phase to levels that could be serviced through recurrent cash flows (including public subsidies—see above). This constituted a trade-off in housing outcomes as cross-subsidising, particularly through market sales, necessarily reduced the proportion of a given development that was retained as affordable housing. However, the mixing of housing tenure types within a development was perceived by interviewees as having social, as well as financial, benefits.

In five cases, the lead delivery agency was a not-for-profit provider. These providers were able to leverage government subsidy through various other sources of finance—usually combinations of their own benevolent equity, cross-subsidy earned from market sales and/or surpluses on operational revenues across their portfolio, tax privileges and reduced developer margins.

The potential for a CHP to lead complex development projects, contribute equity and take financial risk is, however, contingent on having organisations with strong balance sheets and thus the capacity to spread risk across their wider portfolio and revenues. All of the CHPs in the study, although among the largest in Australia, faced constraints in terms of their financial capacity to expand their development role without further government support and greater scale.

3 A needs-driven model of affordable housing delivery

The 'Affordable Housing Assessment Tool' (AHAT) has been developed to assist affordable housing providers and policy-makers to assess the feasibility of affordable housing projects by starting with the mix and type of needs along the housing continuum that they aim to meet.

Present practice has often resulted in affordable housing project outputs being funding more than needs driven. Conceiving of project feasibility as being driven by housing needs aims to refocus decision-making on what housing outcomes are required and, consequentially, on what subsidy levers can achieve those outcomes.

Adopting a standard approach to assessing project feasibility and using detailed information drawn from the projects examined in Chapter 2, a conceptual model is built and its key assumptions and inputs are defined. The model is user-oriented and has substantial input flexibility.

The modelling approach promotes understanding of what package of subsidy levers is required to make an affordable housing scheme viable. It also allows for better assessment of which policy mechanisms have the greatest impact on overall project feasibility.

In this chapter, we develop the rationale for, and set out the assumptions and the design of, a new 'Affordable Housing Assessment Tool' (AHAT) that uses housing needs to inform the design of affordable housing projects and policies.

3.1 Conceptual framework for model development

This component of the research aimed to construct a project level general feasibility tool that incorporated the financial impact of a range of policy mechanisms and levers required to meet the costs of providing housing for a given mix of housing needs groups. The central purpose of the tool was to test the feasibility of any given project in a range of different market contexts.

Developing affordable housing in many respects ought to reflect the processes through which any form of housing is developed. A central problem within the housing system is that market housing has become unaffordable for an expanding group of low and moderate-income households. This implies that for housing to be affordable, it needs to be delivered at below market rates—that is, in the absence of increased income of target households, some form of subsidy needs to be introduced to improve affordability.

The two key components of the cost of producing housing are the cost of land on which the housing is located and the cost of building construction. The price of land is usually set as a residual amount that a developer calculates after the costs of the building are subtracted from the expected revenues from sales to be derived on completion. The actual price paid for any site is subject to a wide variation depending on market conditions, location and the pressures for land acquisition, including speculative pressure. The other costs in the development process are relatively fixed in the short term in part because they are embedded within a process of production. Building materials, labour, development finance, various fees and statutory charges are all types of costs where, in practice, there is little scope to systematically reduce the overall cost of delivering housing projects. There are, of course, some economies of scale that could be

generated, however fundamentally these are relatively fixed in relation to the type of housing being delivered.

How affordable housing has been delivered in Australia in the contemporary period has in many respects resulted from an uncritical application of various policy mechanisms. Many parameters that may directly affect overall costs have been assumed as the 'natural' state of how housing and land markets operate. As a result, the outcome (in terms of which households become housed) is the end product of an assemblage of policy levers, rather than being the central driver of housing delivery. Crucially then, this opens a space to examine which policies are needed and in what combination to meet housing need rather than who can be housed based on financial viability considerations.

In developing a general model of affordable housing delivery, the broad aim is to understand, first, how the different cost and revenue components interact to generate the financial parameters of a project and, second, the relative impacts of different policy mechanisms (i.e. subsidies) in different market contexts. However, in the context of this project, there is also a third consideration: to situate housing needs as the central driver of housing outcomes.

Indeed, one of the innovations of the proposed model is to take the profile of the projected needs group to be accommodated as the starting point and 'best fit' the project to meet those needs. Essentially, the income capacities of targeted residents define the revenue stream that can be expected to flow into the scheme (either through up-front sales or rents over time). This revenue stream then defines whether the proposed scheme is viable, i.e. whether the expected revenues meet expected development costs (including land and financing). Any shortfall will need to be met by a subsidy stream. The model allows an interactive assessment of how much subsidy is needed and from which policy 'bucket' it might be sourced.

The remainder of the chapter is organised according to the different components of the feasibility model and the sequence in which they form part of the modelling process. Conceptually this is about identifying the components of the project that generate value as a central driver of making projects feasible. In examining each of these components, and how they were input in the model, the chapter also highlights critical differences between market-led models and affordable housing or non-profit models and how these differences influence costs and, thereby, potential affordable housing outcomes.

3.2 Model design and assumptions

In this section, we discuss the core features and assumptions of the model.

3.2.1 Needs-driven outcomes

As noted above, the model was developed to situate housing need as the basic framework around which a housing project is developed. Housing-needs assessments reflective of geographic and social context would be required prior to using the model. From this starting frame, the model is designed to incorporate a profile of household types, which should form the basis of dwelling type needs, and household incomes, which should form the basis of payment capacities. Together, these variables establish a revenue profile (from rents or sales) for the project which is carried forward into the feasibility assessment.

Conceptually, the model is about placing people and housing needs as the core driver of housing outcomes rather than trying to fit needs within a narrow purview of possibility determined by financial considerations. Using this as the starting point, the model adopts a more traditional project level feasibility assessment based on a range of physical and planning constraints and housing market contexts.

3.2.2 Longer timeframes

A second distinction between market and affordable housing projects is the latter's longer timeframes. Many of the case studies had cash flows and feasibility assessments modelled over a 20- or 30-year period.

Unlike for-profit development, which aims to reach the required return rate at the completion of the development phases, affordable housing projects that use loan finance may carry debt for a long period of time, serviced by the rental income they can generate. This alters the relationship between levels of finance and debt that can be carried and the value of the project in sale terms. In some circumstances, this presents an opportunity in that cash flow over a 30-year period may amount to more than the capital revenue that could be generated if the project was sold as a for-profit development. Conversely, interest payments have the potential to add significant cost to any project, and therefore interest rate risk is more accentuated under affordable development models.

Longer timeframes also pose some challenges to the funding model. Despite having long-term strategies that 'balance the books' over the operational life of projects, there is an expectation that these strategies will change over the asset life. This could be in response to changing strategic goals, changing geographic demand for services, changing market conditions and opportunities for new development, and so on. The financial strategy across the life of the assets that is adopted at the time of development is therefore a default position from which to depart.

3.2.3 Different tax and corporate structures

One of the significant variables to emerge through the case studies was the role provider type played in setting some of the parameters of funding developments. First was the charitable status of not-for profit organisations, which impacted on their tax status. This is significant for development projects because of the Goods and Services Tax (GST) that is ordinarily payable by developers in the production of new units. While there are complexities in how GST is applied through different stages of a project, from land purchase through to sale of properties, the basic requirement is that 10 per cent is payable on the value of the final unit produced. Community housing providers with Public Benevolent Institution (PBI) status are exempt from this payment which potentially has the effect of reducing the total cost of producing affordable housing dwellings by up to 10 per cent. PBI status also eliminates a number of government payments related to buying and holding land (e.g. stamp duty and land tax).

Second, the central aim of affordable housing projects is to deliver on social objectives, thus generating particular profit margins is not the main objective. This allows considerable scope to reduce the return required to generate a feasible outcome. What level of return is required ultimately is up to individual organisations, but some of the case studies were clearly using the development process to generate a return on investment in order to cross-subsidise their activities.

The use of cross-subsidy also highlights a further consideration (discussed in more detail in Chapter 4) and that is how projects were conceptualised within a wider business context. Decisions about particular projects were taken within the framework of the organisation's strategic mission and portfolio level situation. This was particularly relevant in respect of funding and financing. These decisions were ultimately based around how much cash reserve the organisation thought it should carry and how much lenders were prepared to loan against the cash flow and value of the entire portfolio, not the project itself. While this did not detract from the requirement for the project itself to be viable, incorporating organisational-level decision processes into project level modelling was not possible.

Ultimately differences in corporate and tax structures do have implications for project feasibilities, and were built into the model where possible. Variable rates of interest on bank finance have also been incorporated to allow different financial arrangements to be factored in.

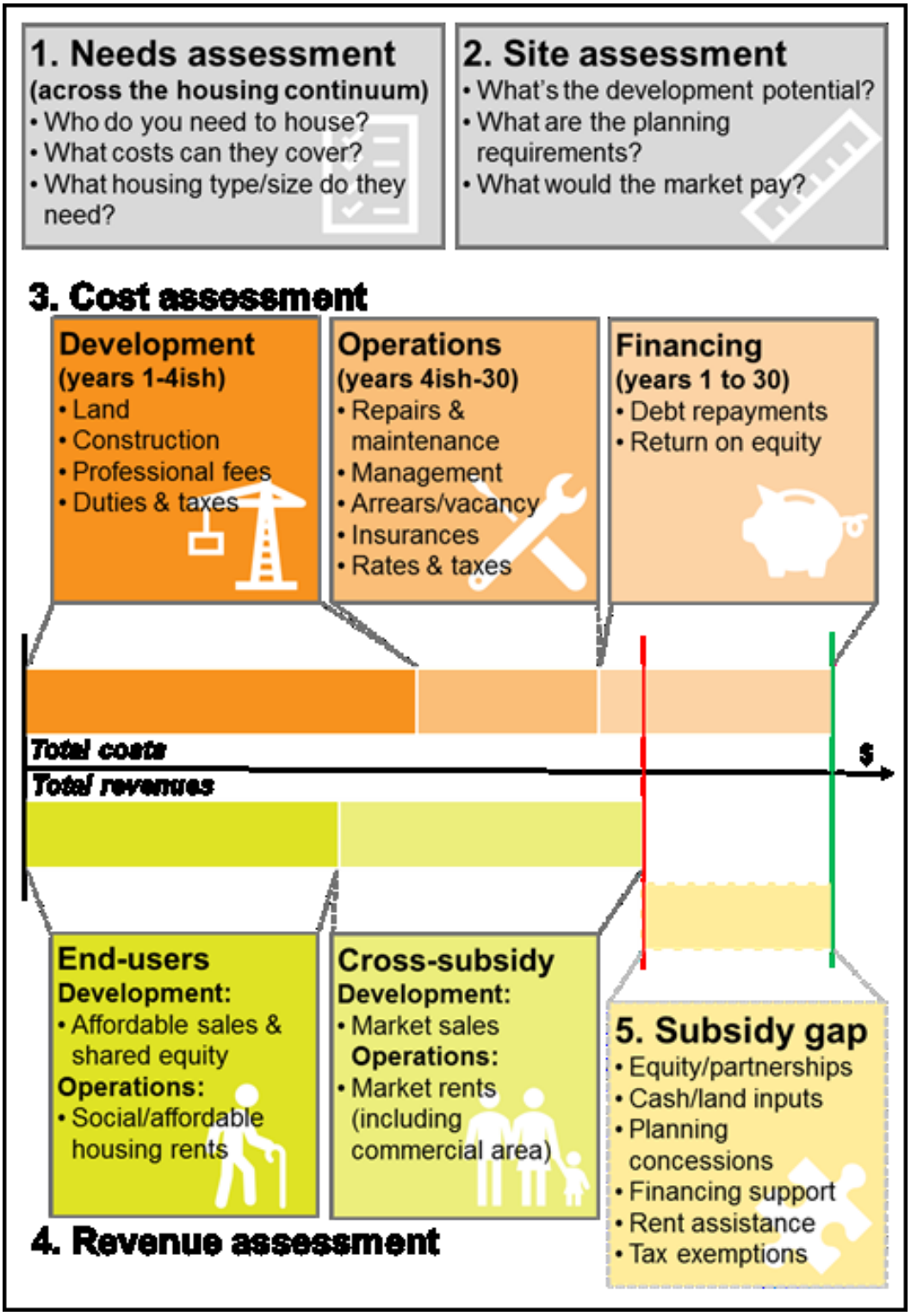
3.3 Affordable Housing Assessment Tool

The starting point for the model is the definition of the housing need that the project seeks to address in terms of the mix (size, type, incomes, etc.) of potential residents and the dwelling mix (tenure, price or rent, size, number) that matches this need. Together, this information determines the potential revenue outcome that will underpin the feasibility of the project. The former is set by the housing provider's remit and objectives. The latter is largely determined by the characteristics and planning context of the site to be developed (size, zoning, development capacity, etc.) and this in turn generates a construction cost profile for the development. A final parameter will be set by the time period over which the costs of the development are to be recouped. Cumulatively this generates a development profile of the type of building proposed, the households it will house, and the revenue potential of the occupants. The model is then assembled with a set of revenues (see 3.4 below) and costs (see 3.5 below) to generate a surplus or deficit on an annual basis over a given time period—in our case, up to 30 years.

Given that the aim is to provide at least a proportion of social and/or affordable housing in the project, a shortfall between the costs of developing the scheme and the capacity of the affordable and social housing residents to meet the full costs of their housing will be expected. The model allows the user to determine the subsidy package that will be sufficient to meet the resulting financial gap between the project costs and expected revenues (see Figure 4 below). In practice, this will be an iterative process as different mixes of households and dwelling types will be part of the calculation of the subsidy mix needed to make the project feasible.

Critically, a number of policy levers (or subsidy options) have been incorporated into the model where appropriate based on various mechanisms used across the case studies. The aim is to use different policy levers to generate an outcome that, over a 30-year period, will generate sufficient return on levels of upfront equity investment. The model does not make an assumption on what this required return should be, as ultimately this is going to depend on a variety of internal and external requirements and expectations of the proponent of any project. An overview of the various inputs in the model is given in Figure 4 below.

Figure 4: Conceptual diagram of needs-driven feasibility model



Source: Authors.

The next five sections define each of the model inputs that are used to calculate the various revenue and cost components and model outputs. Appendix 2 provides a brief instruction on how to use the AHAT. The following description of how the model was calibrated uses this broad division between revenue, costs and policy levers. However, in practice the model is

intended to be iteratively operated with subsidy options applying to both the revenue and capital sides of the feasibility equation. It should be noted that many of the inputs are variable and can be changed according to specific organisational requirements. For the purposes of developing the model, the case study projects have provided the basis for setting input values, supplemented with other research as noted below where relevant.

3.3.1 Revenue

The first major component of the model is the revenue stream generated to pay for the project. This is determined by the profile of needs groups the project seeks to house and their income capacities. Two basic revenue streams are discussed in turn below.

i) Recurrent revenue

As noted above, the central aim has been to develop a needs-driven feasibility model, which in practical terms generates a revenue matrix based on the household profile of residents in need of housing. The generation of long-term rental income streams as a mechanism for funding a development project is the key difference between affordable housing projects and for-profit projects that are currently being delivered in the Australian context.

For social housing tenancies, household types and associated assessable weekly incomes are used to generate a rental amount based on 25 per cent of household income. Under their rent setting policies, CHPs are also able to access Commonwealth Rent Assistance (CRA) payments received by eligible tenants to boost rental income streams. Accordingly, the level of CRA payment for which the household is deemed eligible is also computed and included as revenue from the project.

For affordable housing tenancies, revenue streams are set as a percentage of market rents for specific dwelling types in the local context. This rate can be variably input in the model; however, the general assumption is that the maximum level will be 74.9 per cent of market rent, to comply with rules applying to charitable NFP providers.

Finally, one of the policy levers embedded in the model is the possibility of retaining dwellings as market rental properties, as was the strategy in one of the case study projects. Those dwellings earmarked for market rental will generate a revenue stream based on market rental rates for equivalent dwellings in the local area.

ii) Capital revenue

Capital revenues were input into the model in two forms. The first was an affordable sale product based on a shared equity financing model. The user can determine the proportion of the scheme to be sold during the needs group profile stage. The amount that is paid for each dwelling (equity share) is based on the borrowing capacity of target households (variable). The total amount received for a dwelling also includes a deposit of variable amount.

The second form of capital revenue is a market-based sale, which again, can be triggered as part of the needs assessment profile. The types of dwellings sold are based on dwelling mix decisions that would likely be tied to local housing market conditions and cycles. Both market and affordable sales revenues are input into the model once relevant stages are complete.

From a feasibility point of view, capital revenue from sales has the effect of reducing debt loadings at the beginning of the project, meaning less debt is carried across the 30-year timeframe. As noted in Chapter 2, five of the study projects included market sale components as part of their funding mix. The modelling shows that reducing up-front debt loading has a big impact on the overall levels of interest paid when considering a project across such a long timeframe. The corollary is a reduction in potential ongoing revenue streams over the same period, but this may be more than offset by reducing loadings up front.

Other capital revenues derived from, for example, capital grants or other cash inputs, are dealt with as part of the policy mix—see section 3.3.4 below.

3.3.2 Costs

Project costs can be broadly split into three categories: capital costs associated with the design and build process; financing costs stemming from any funding required to finance the scheme; and recurrent costs which accrue to the longer-term provision of management and maintenance services. Details of costs included in the model, together with methodologies for estimating their value are explained below.

i) Capital costs

Capital costs have been estimated based on standard project level feasibility assessments, similar to those derived from proprietary spreadsheet-based feasibility programs. The model incorporates basic construction cost values derived from the Rawlinsons Construction Costs Guide (2017), and includes costs for different building types (detached, attached, low-rise and high-rise dwellings), demolition and landscaping. These are specific to different cities and regions across Australia, and can be indexed to account for regional variation. They are built into the model and could be updated annually. On-costs have been allowed for legal fees on land (0.5% of construction costs), consultant costs (8% of construction costs), council fees (which can be varied by the user) and infrastructure contribution rates (also variable).

Land prices can be input into the model as either a pre-determined fixed priced or based on residual land value. A calculation of residual land value assumes a 20 per cent profit margin on the total market value of the project less all capital costs and fees. Finance charges for the purpose of residual land value have been estimated based on maximum debt loading carried across the duration of the project, accounting for any staging, less any equity. This method should overestimate the financing costs (as the costs will accrue as the project draws down on funds), thereby building in a conservative outlook on scheme viability. It should also be noted that any value added to a project through some form of planning bonus has been excluded from residual land value calculations.

ii) Financing costs

Financing costs are variable inputs and allowance is made for differing rates during construction and operation stages of the project. It was noted in the case studies that finance during a construction phase, when risk may be considered higher, often attracts a higher rate of interest compared with that for debt once dwellings are generating income. Debt and interest rate modelling are based on recurrent surplus or deficit balances at the end of each year. It should be acknowledged that actual interest calculations are likely to be compounded daily and, therefore, based on balances at that time. Project balances are likely to vary considerably during the course of the year as there are costs drawdowns, however the annual balance used in the model should marginally overestimate actual costs.

The model assumes that debt servicing is being carried by a specific project and not being met from other revenue sources. As noted previously, affordable housing providers in our case studies often had financing arrangements secured across a portfolio rather than a specific project. The implication is that the decision on the level of funding that could be obtained for a particular scheme will be based on organisational considerations and cash flow across an entire organisation. The critical metric in this regard becomes the interest cover ratio that the organisation is required to maintain by their lenders, which can often impose a greater restriction on project feasibility than the loan-to-valuation ratio. However, for basic viability assessment, it is assumed that a project will in and of itself have to meet these portfolio-wide prudential standards so as not to impose wider restrictions on the operation of housing

organisations. This has no direct impact on the model itself, but rather impacts on the final assessment of viability which the model generates.

iii) Recurrent costs

Recurrent costings relate to owning and maintaining an asset and managing rental housing over time. For maintenance costs, three separate items have been included in the model: reactive maintenance; major repairs and planned maintenance; and a sinking fund contribution. The level of contribution per dwelling is based on a percentage of the overall construction costs of the project and can be variably input into the model.

Rates for vacancies and bad debts have been included as separate items and can be set as a variable percentage of dwelling rental income. Water rates, council rates and insurance have all been included as dollar figure items per dwelling (again, user specified) that is retained as rental housing. The final item included is a management cost to the administering organisation, which usually includes costs of a range of tenant and personal support services that is expected to be provided by community housing (see Pawson, Milligan et al. 2015 for further discussion on CHP management costs). It should be noted that in the case studies there was considerable variation in management cost estimates. In practice, this amount can be user-specified. One option would be to enter a percentage of estimated rental income.

3.3.3 Indexation

All costs, revenues and capital values can be variably indexed at user-specified rates. Indexation rates can significantly alter long-term revenue projections, particularly across a 30-year timeframe.

3.3.4 Policy levers

The final component of the model is the policy levers that impact on project level feasibility. Essentially this is the mix of possible subsidy options available to bring revenues and costs into line. These levers are implicated at different stages in the model, however it was considered critical from a conceptual point of view that decisions on whether they were used were taken at the end of the feasibility assessment process, not at the beginning. As noted in section 3.1 above, in the case studies reviewed for this research, policy frameworks and options were for the most part determined prior to making decisions about what kind of dwelling outcomes were achievable. In the model the approach taken is to establish what housing outcomes are desirable and then consider what levers are necessary to achieve these outcomes.

For this step, the model provides a range of adjustable policy levers that were derived from the analysis of the six exemplar projects. The user can then toggle the levers on and off to assess their impact on scheme outcomes. The list of levers included reflects the variety of mechanisms that have been used to support social and affordable housing outcomes through the exemplar projects. They include:

- land contributions
- capital grants
- delayed land payments
- discounted interest rates (at various stages of the project)
- planning bonuses
- stamp duty concessions

- NRAS-style incentives (either retained or on-sold to investors)[20]
- cross-subsidy (e.g. from market sales and rentals)
- delayed sinking fund accumulation.[21]

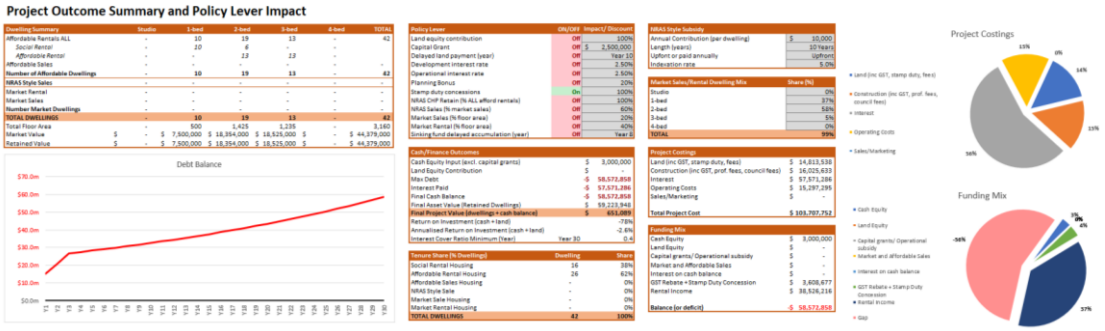
It should be noted that there may be additional policy levers that could be incorporated in future iterations of the model, however the above list is based on levers used through case studies or discussed directly by NFP organisations.

The modelling approach taken allows the desired housing mix outcomes to drive the assessment of which package of subsidy levers is required to make the scheme viable. Additionally, it allows for better assessment of which policy mechanisms have the greatest impact on overall feasibility. The model, therefore, offers scope to assess not only project level decisions, but to inform wider portfolio and policy-level decision-making. We consider the policy implications of applying the model in the remaining chapters.

3.3.5 Model outputs

The final output of the model is to indicate the dwelling and tenure outcomes and the debt balance each year over the 30-year lifecycle of the project (see Figure 5 below for illustrative reference only). The model itself does not determine if a project is feasible, as this decision will be up to the user. Instead, it displays a number of metrics which, when combined with debt balance outcomes, enables this assessment to be made. Similarly for policy- makers, it will enable an assessment of the level of 'gap' subsidy required for any given scenario.

Figure 5: Model output screen



Source: authors.

[20] NRAS, which operated between 2008 and 2014, offered private investors a refundable tax offset indexed for ten years for newly developed properties rented to eligible clients at affordable rents. Charitable not-for-profit providers of affordable housing were eligible for an equivalent indexed cash payment for ten years. Model inputs have been based on current payment rates and can be obtained at https://www.dss.gov.au/our-responsibilities/housing-support/programs-services/national-rental-affordability-scheme/national-rental-affordability-scheme-nras-incentive-indexation.

[21] Delaying sinking fund accumulation is not a housing policy lever, but is a strategy that can be employed by a long-term housing operator. New dwellings will not likely need major capital works for a period of years, so these costs can be directed towards paying down debt in initial phases, and accumulated at a higher rate in later stages. The model allows for testing this option.

4 How do different policies and subsidies affect affordable housing project feasibility?

Six key lessons can be drawn from the research on the case study exemplars, amplified and extended through using the AHAT described in Chapter 3.

- Land contributions act as a development opportunity and a key means of reducing long-term project costs.
- Government equity investment offers considerable potential for delivering feasible projects and net benefit to government.
- Appropriate financing arrangements include the importance of organisational scale and financial capacity in securing long-term, stable finance; and the importance to long-term project viability of reducing upfront debt loads and lowering finance costs.
- Delivery across the housing needs continuum helps to meet overall social and tenure mix objectives as well as providing opportunities to improve project level financial viability through cross-subsidy.
- Planning policies can deliver additional sources of cash or land, however, the financial benefit of planning bonuses is limited.
- Increasing the scale of not-for-profit housing provision will offer significant financial benefits for the long-term delivery of affordable housing.

4.1 Introduction

Analysis of the case studies in Chapter 2 highlighted the variety of approaches to delivering financially feasible affordable housing projects. In many respects, this variety suggests there is no universally optimal financial arrangement. However, through the development, calibration and testing of the financial modelling tool, described in Chapter 3, it is possible to draw some more general conclusions regarding the impact of different policy, market, organisation and tenant contextual factors on financial feasibility, and to highlight transferable lessons for policy development, organisational capacities and individual project planning. This chapter reviews the findings of the case studies and modelling to derive seven such lessons. The chapter is structured around these lessons, where appropriate illustrating the conclusions of the analysis with outputs from the AHAT.

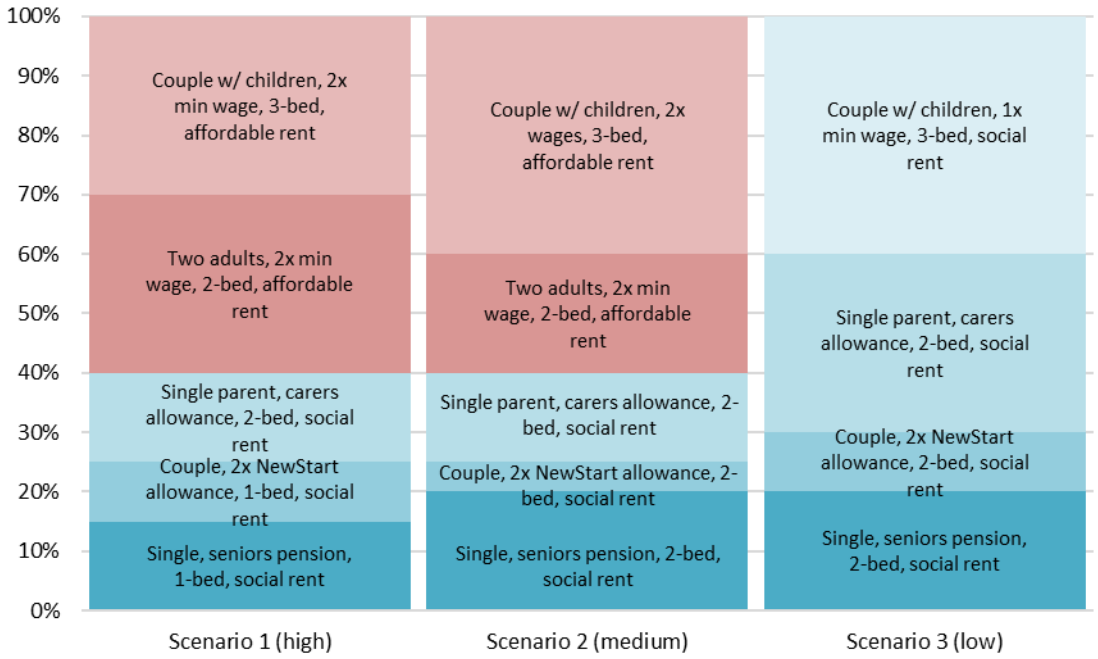
The AHAT has been tested and calibrated by inputting the case study projects, which have known financial and housing outcomes. However, to illustrate the generalisable patterns the modelling reveals for different market contexts, the analysis presented in this chapter is based on three hypothetical project scenarios using data derived from case study material. The three scenarios represent three housing markets (high, medium and low-cost) with a corresponding development type (high, medium and low density).

The assumptions included in the model to test the range of scenarios are as follows.

i) Needs assumptions

The three scenarios reflect projects with a mix of housing outcomes, including a proportion of social housing dwellings. In the high and medium-cost markets scenarios, we have assumed that 60 per cent of the outturn housing will be targeted at affordable housing clients. In the low-cost market scenario, lower overall rents mean that there is no local need to provide an affordable housing component and we focus on social housing clients. Incomes and dwelling types are calibrated for a realistic selection of these tenants as shown in Figure 6 below.

Figure 6: Housing needs mix assumptions for the scenario testing



Source: authors.

ii) Market assumptions

All projects assume the development will reflect prevailing planning controls and building typologies for their location.

All projects have the same interest and inflation/escalation rates:

- 5 per cent p.a. borrowing interest rates
- 3 per cent p.a. cost indexation
- 2.5 per cent p.a. revenue indexation
- 1 per cent p.a. capital growth (dwellings).

Market sales and rents are from http://www.realestate.com.au suburb profiles, construction costs are derived from Rawlinsons, as detailed in Chapter 3—see Table 2 below.

Table 2: Market assumptions for scenario testing

	Scenario 1 (high)	Scenario 2 (mid)	Scenario 3 (low)
Prevailing building typology	Mid-rise apartments	Multi-dwelling townhouse estates	Single detached houses
Median sale price	$940,000	$375,000	$260,000
Median weekly rent	$620	$325	$300
Construction cost basis	Sydney—mid-rise (no lift) (+15% loading to reflect high inflation since release of guide)	Perth—detached	Melbourne—detached (regional costs are comparable)
Indicative neighbourhood	Randwick, NSW	Westminster, WA	Shepparton, Vic.

Sources: Rawlinsons Construction Costs Guide (2017); http://www.realestate.com.au suburb profiles.

iii) Project assumptions

Project assumptions are based on realistic estimates, from either existing literature, the case study projects or industry standards. All project costs include demolition, landscaping and a medium quality finish. The scale of development is commensurate with development in those market contexts.

Table 3: Project assumptions for scenario testing

	Scenario 1 (high)	Scenario 2 (mid)	Scenario 3 (low)
Development description	Mid-rise apartment block of 42 units, with underground parking	Villa or townhouse complex of 20 units, with single car garages	Detached houses on 10 individual lots, with carports
Land costs	$13.8 million (market value)	$1.9 million (market value)	$0.5 million (fixed, since private development not feasible)
Development duration	3 years	2 years	1 year
Initial cash input	$3 million	$1 million	$1 million
Operating costs/dwelling[1]	$8,800	$5,100	$5,800

Note: [1]including maintenance and replacement, vacancies/bad debt, management, utilities, rates and insurances. These estimates are based on the operational expenses obtained from case study data, but are also within ranges set by other sources of indicative costs: Shelter NSW (Ferrer 2010: 4) used $4,826 ($4,253 in 2010$ with 2.1% annual inflation); Leslie (2015: 37) used $6,782 when being 'extremely optimistic', and NSW IPART (2017: 115–6) used $9,257.

Source: Authors.

iv) Base case outcomes

Based on these assumptions, none of these projects would be financially viable, highlighting the funding gap in affordable housing developments. In all three scenarios debt is yet to be paid off after 30 years. In high and medium-cost markets, debt continues to grow across the life of the project, with only the low-cost market reaching an interest cover ratio (ICR) above 1. Notwithstanding this cash flow failing, medium and low-cost markets do have a positive

annualised internal rate of return (IRR) over the 30 years, mostly due to the asset value (i.e. the market value of the dwellings, assuming they are unencumbered).

Table 4: Base case scenario outcomes

	Scenario 1 (high)	Scenario 2 (mid)	Scenario 3 (low)
Max debt (and year)	$58.5 million (year 30)	$6.4 million (year 30)	$1.3 million (year 23)
Final debt (30 years)	$58.5 million	$6.4 million	$1.3 million
Minimum ICR (and year)	0.4 (year 30)	0.6 (year 3)	0.7 (year 2)
Annualised IRR (30 years)	-2.6%	7.5%	2.1%

Source: Authors.

4.2 Lesson 1: land

The cost and availability of land were consistent themes through the case study projects as acquiring sites for development has been a challenge for housing providers. Government land—whether gifted, sold or leased—was the primary means of securing development sites. The mechanism through which government land was contributed to each project varied considerably. At one end of the spectrum land was gifted with conditions on affordable housing outcomes forming part of the transaction. In another example, land was input into the development as an equity share in the overall project. Other projects involved CHPs paying market or near market rates for land that was made available for direct sale to them by government agencies, rather than being sold on the open market. The two main ways that land provision impacted on the development of affordable housing—access and cost —are addressed in turn below.

4.2.1 Land access

Having direct access to land reduced risk for affordable housing developers compared to bidding for development sites on the open market. It also meant they were able to secure the land, whereas all CHPs in our case studies indicated that in an open competitive process this would have been unlikely. Accounting for this benefit through modelling however is difficult, since a dollar value of the reduced risks and opportunity benefits cannot be quantified. Nevertheless, it has important policy implications for the way that land is obtained for affordable housing.

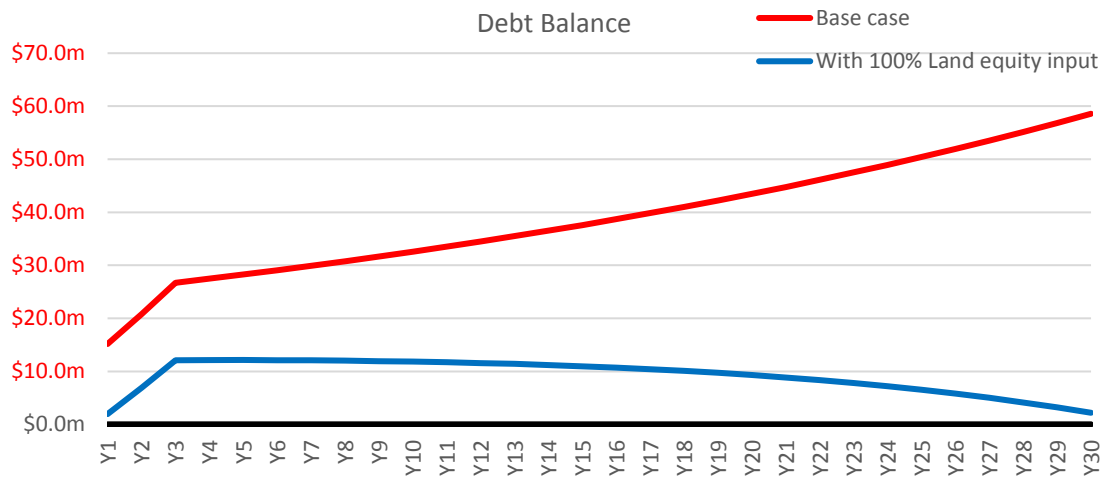
4.2.2 Land costs

The second way that land affected project feasibility was when its cost was reduced. Prevailing high land values in well-located areas, plus land holding charges, present considerable challenges to feasibility. This is especially the case under a finance-driven model for long-term rental, which necessitates carrying debt over a prolonged period. Reducing upfront debt loadings by lowering the cost of land reduces the total cost of finance. In the examples considered, this made some projects feasible and enabled others to generate a better affordable housing outcome than might otherwise have been possible.

Our analysis of modelling outputs showed that land contribution can have a significant impact on overall feasibility on any given project. By reducing upfront costs, the interest burden during a period when no revenue can be generated from the project, and subsequently long-term financing costs, can be significantly reduced. A corollary is that this reduction in cost would

allow for significantly expanded social and affordable housing outputs. To illustrate this relationship, the red line in Figure 7 below shows the modelled inner city, high cost scenario project balance over 30 years assuming no subsidies and recouping affordable rents. Under this scenario, the project would be carrying just under $30 million in debt on completion and the debt balance would continue to climb over the life of the project.

Figure 7: Projected project balance for inner city project with and without land equity

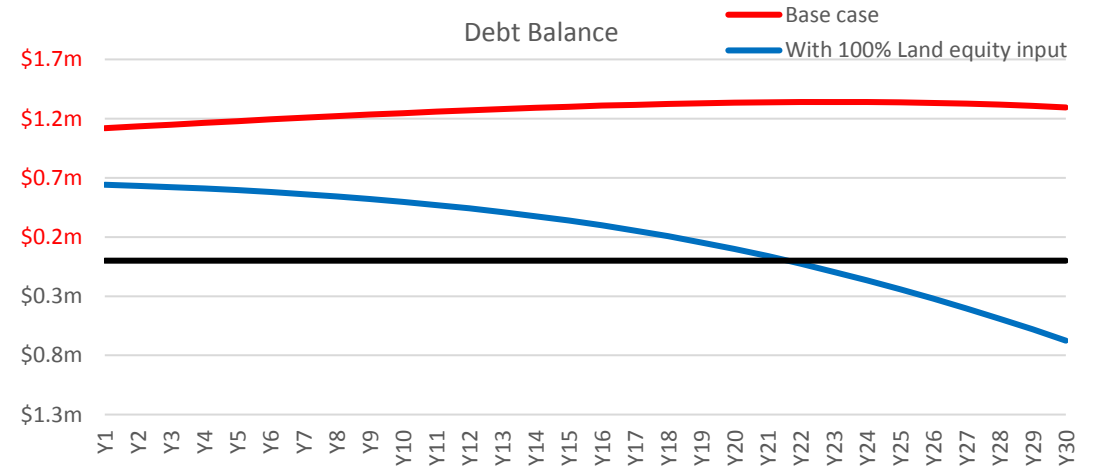


Source: Authors.

This can be contrasted with the blue line in Figure 7, which leaves all parameters the same but introduces a 100 per cent discount on the land price. This has the effect of reducing the debt to around $12 million when the project enters its operational phase, which can be paid down with rent revenues over the 30-year period. While the project is still carrying some debt at year 30, and would likely necessitate some further subsidy, the modelling demonstrates the significant impact of discounted land costs, particularly in high value locations.

This test was repeated in different market contexts, producing similar results. Figure 8 below shows the differences between no land discount and full land discount based on the modelled regional location. In this case, the reduction in both upfront debt and the long-term costs associated with holding debt enables rent revenues to pay debt more readily—in this example by year 21—without any further subsidy requirement.

Figure 8: Projected project balance for regional location with and without land equity



Source: Authors.

In this lower value market context, land values have been directly input-based on vacant land prices in that area.[22] While the per lot land value is very low compared with a high value inner city location, the revenue streams in these locations are also likely to be comparatively lower because market rents are far lower, and therefore unmet need is most likely to be for a social housing product. Cumulatively, this makes the relative impact of land significant, and reducing this as a cost in the development process has a large impact.

4.3 Lesson 2: government equity

Direct government equity inputs were a feature of all case study projects, and took a number of forms, from capital or other grants to land contributions, as noted above. As will be demonstrated with the modelling outputs, the impact on feasibility at a project level and the direct return to government itself was highly variable.

4.3.1 Retained government equity

In all projects examined, government either contributed or made available land for the purpose of delivering affordable housing. As noted above, this ranged from offering land at a deemed market rate, to providing it at no charge. Two of the case study projects used government land assets in a different manner by contributing land as an equity share in the project. The value of the land was determined by its development potential, and the equity share this represented was determined in relation to the project partner's financial contribution to the project. This approach enabled affordable housing to be developed without requiring any direct expenditure by government, and ultimately in one case delivered both affordable housing outcomes and an upfront cash return to government.

Another way of looking at this approach was that government (and ultimately the community) benefitted from the value creation that resulted from the development process. The initial land-based investment generated a return (either in assets or cash) greater than the initial value of the land or, in other words, the value of the upfront investment. This of course is the aim of investing in property development from a private sector development point of view. However, the difference here is that those benefits were retained for a social purpose over the long term.

The case study that used this approach to significant effect did so through a private sector partnership, which resulted in some 'leakage' of development-generated returns to meet the partner's profit expectations. However, if government developed directly or invested through NFP partnership arrangements, additional benefits could be captured for affordable housing.

The benefits of this approach can be demonstrated through the model. Table 5 below shows a summary of final outputs and returns for the modelled inner city, high cost scenario where a 100 per cent discount was applied to land value. Rather than conceptualising this as a cost, it has been input as equity, with returns from the project based on this as a contribution. For the purpose of demonstrating the potential, two dwellings, representing 5 per cent of output, were sold to generate cross-subsidy. This example also assumed that the capital value of retained dwellings would grow by a conservative 1 per cent per annum, which is well below the long-term average for this location.

[22] Residual land value methods produce negative outcomes, suggesting that there is very little value in undeveloped land in these locations.

Table 5: Summary of inner city modelled financial output

Cash/Finance outcomes	
Cash equity input (excl. capital grants)	$3,000,000
Land equity contribution	$13,614,640
Max. debt	-$11,890,949
Interest paid	-$10,190,678
Final cash balance	$1,631,000
Final asset value (retained dwellings)	$56,033,149
Final project value (dwellings + cash balance)	**$57,664,149**
Return on investment (cash + land)	247%
Annualised return on investment (cash + land)	**8.2%**

Source: Authors.

The final annual rate of return over a 30-year period based on cash equity input and land as an equity input is 8.2 per cent. In this scenario, rather than land being lost as a cost, it produces a net positive return based on the value of assets held for affordable housing. An important consideration for governments is that this scenario would require no cash contribution as a direct grant or subsidy.

4.3.2 Cash contributions/capital grants

Cash grants could be viewed as having similar potential to land contributions to generate the opportunities shown in section 4.3.1. Grants are, however, substantially different to a government equity model based around land contributions as set out below.

There are effectively three ways in which capital grants could be used to generate affordable housing:

1. to acquire land
2. to help secure other sources of finance, through effectively reducing the debt load required to undertake a project
3. to purchase existing dwellings.

From a project feasibility point of view, approaches 1 and 2 have the same effect on the balance sheet of a development. Capital grants in this setting represent a mechanism through which the requirement to find funding from other sources (e.g. private finance) is reduced. Assuming that this will likely reduce debt requirements, the impact is to reduce the interest costs over the long-term. As discussed further in section 4.4, this funding method may also have a related benefit of helping an NFP developer secure private finance in the first instance by helping meet lender interest cover ratio requirements. In this case, it has the benefit of ensuring that the project actually occurs rather than as a necessity to ensure a cash positive outcome in the long run. If grants are used in this manner, return could be measured as a share in the equity of a project, and over the long term produce a net positive return based on value created in the development process and any capital gain in retained asset values.

Purchasing dwellings would represent the least efficient outcome from a subsidy point of view, as buying existing market-priced dwellings means that any land value uplift that could be generated through development itself would already have been lost to the private developer or previous owner.

From a government point of view, providing capital grants, as opposed to other policy mechanisms such as land contributions, has different implications for budget outlays. Offering cash has a direct impact on expenditures, while contributing land impacts the asset base of government, but does not necessarily have an immediate budgetary implication. As noted above, particularly in respect of land and depending on how the transaction is structured, land contributions can generate a net positive return at a project level. This may offer the possibility over the longer term for government to receive some form of return benefit.

4.4 Lesson 3: financing

One of the central arguments for greater non-government involvement in the delivery of affordable housing is the potential to access private sector debt in lieu of public spending. This may well deliver affordable housing, but it comes at a cost to the overall project's viability and therefore the outcomes it will facilitate. The cost and form of private finance therefore become of central importance in the assessment of overall project viability. This section explores the impacts of private finance on the feasibility of projects under the different demonstration scenarios we modelled.

4.4.1 Obtaining finance

One of the key variables in each of the case study projects reviewed in this study was the financing mix used to undertake development. One project was financed through a combination of equity and project level finance, while another was entirely equity financed in combination with a government land contribution. The remainder obtained finance through corporate loan facilities. To meet stringent lender interest cover requirements, such loans had to be secured against cash flows of the organisation. In other words, the rental income derived from other tenancies owned or managed by the CHP was in effect used to help secure finance for new projects, thereby spreading the financing risk across the organisation.

From a policy point of view, this means that decisions to finance particular projects will not only be related to the viability of the project itself, but also the financial capacity of the CHP organisation as a whole. This has implications for the scale and financial capacity required for CHPs to operate as developers and it may pose particular problems for smaller actors in this space. Overall the issue for CHPs is less about access to finance per se, but the conditions associated with access to finance.

4.4.2 Holding debt

Three aspects of debt financing are important to project feasibility: duration of debt, and loan cost and tenor. Each is addressed below.

Chapter 3 set out a number of conceptual differences for affordable housing projects in comparison to for-profit housing models, with timeframes being of particular relevance here. Holding debt for a prolonged period increases the cost of this funding dramatically. In general terms, this means that reducing the debt burden at the beginning of a project can have substantial impact over its life. In several case studies, this consideration led to the sale of some of the newly-built dwellings in order to reduce debt loads. On-sold dwellings will, of course, not contribute to social outcomes (unless sold on a shared-equity basis); however, in these cases this strategy was necessary to ensure overall project viability.

Financing costs seemed relatively consistent across the case studies and were commensurate with those of commercial developers. One exception was a CHP that was able to secure a lower cost line of credit directly with government that in turn required certain performance outcomes of the CHP.

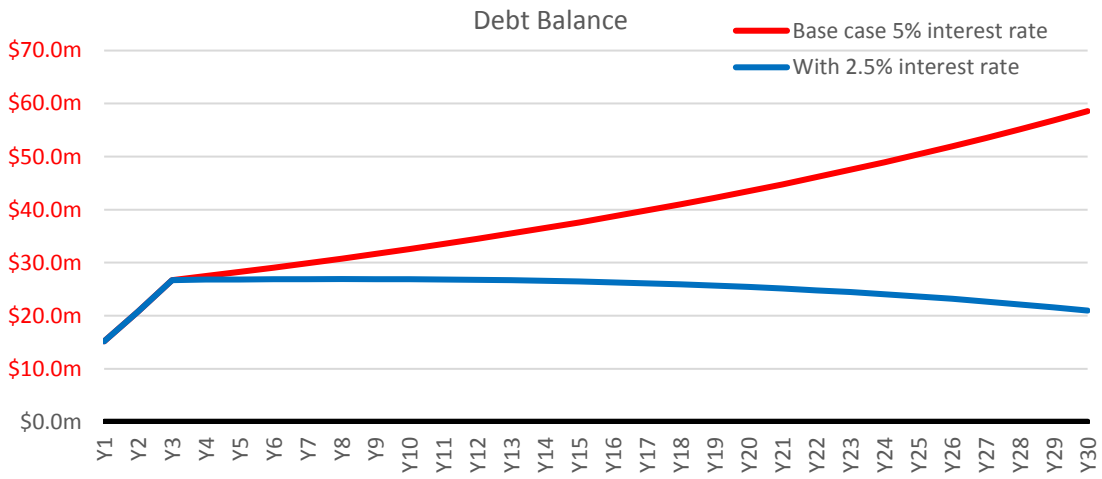
A number of CHPs noted that their finance terms were short (three to five years). This factor introduces re-financing risk into the viability assessment. It also means that there is a misalignment between the objective of holding dwellings for the long term and the key funding mechanism for a project.

When debt is analysed through the affordable housing model, its impact is seen to be contingent on two factors. The first is the length of time debt is being held over a project, and the second is the relative value of the debt (in relation to operational revenues) at the commencement of the operational phase of the project. In simple terms, the relationships are:

- the longer a debt is held, the higher the interest cost, and
- the length of time debt will be required to be held is related to the capacity to pay down debt in the initial period.

Figure 9 below demonstrates the impact of reducing interest rates from 5 per cent to 2.5 per cent during the operation phase of a project. The figure is based on the inner city scenario and assumes no other subsidies.

Figure 9: Inner city scenario, comparing 5 per cent interest rate with 2.5 per cent interest rate



Source: Authors.

In this case, reducing the interest rates alone will not make the project viable; however, it results in bringing the total interest payments down from $57 million to $20 million. It is yet to be determined what rates will be offered through the proposed Australian Government 'Bond Aggregator' scheme (see Chapter 1); however its potential impact will be to reduce the long-term rates that are payable by not-for-profit developments.[23] In all modelled scenarios, reduced interest had significant impact on long-term costs; however, this factor alone was not enough to make projects feasible. Achieving feasibility also relied on some combination of additional mechanisms that either increased rent-related revenues, or reduced upfront debt loads, such as through land contributions or project level cross-subsidy (discussed further below).

[23] A recent advisory report on the potential for the Bond Aggregator to reduce financing costs has estimated the indicative savings to be in the order of 1.4 per cent per annum for 10-year debt, depending on whether a government guarantee is provided and other factors (EY 2017).

4.4.3 Operational/revenue subsidies

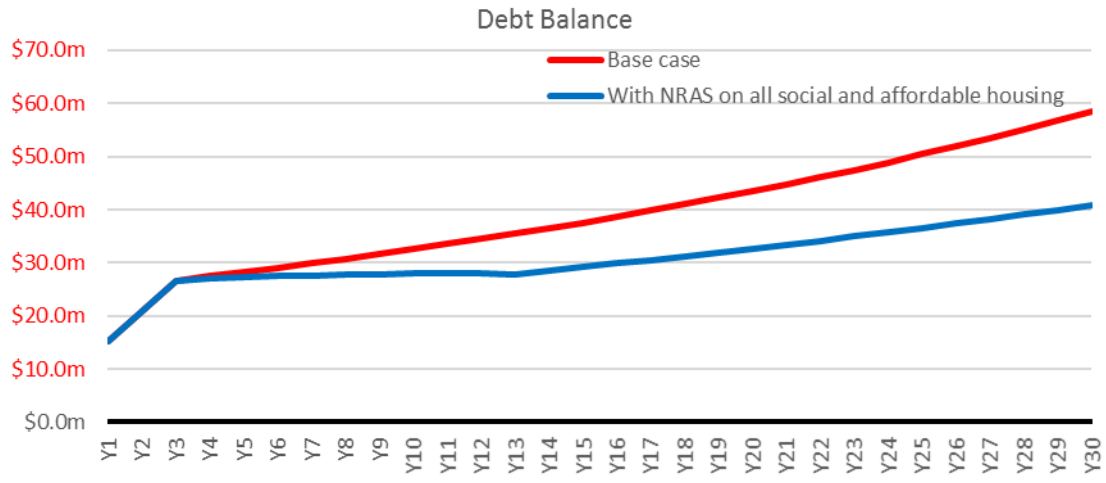
The second mechanism to reduce the costs of finance is to pay down debt at a faster rate either through operational or revenue subsidies and/or through driving efficiencies in the costs of ongoing maintenance and management of tenancies.

Several case studies incorporated NRAS into the projects directly (while still retaining ownership of the dwellings) to achieve this result. The central effect was to pay down debt faster in the early years of the project. An NRAS-style payment[24] was incorporated into the model to understand its effects in general terms across different contexts.

As NRAS payment rates were constant across market contexts, their impact varied accordingly. The key to understanding their impact therefore is the relative size of the NRAS-style contribution to the relative cost of dwellings in different contexts. In higher value locations, land cost per dwelling is far higher, and in many of these contexts construction costs will also be higher because multi-unit dwelling types are required. NRAS-style payments represent a smaller share of the costs of dwellings in these developments compared with projects in regional contexts where land and development costs are lower. Thus, in regional settings NRAS will have the effect of reducing debt loads more quickly, thereby having greater impact on overall financial feasibility. The corollary is that if the payment was positively related to costs it would improve viability in higher cost locations.

Figures 10 and 11 below demonstrate this effect in inner city high cost and middle ring moderate cost locations. While there was a notable reduction in longer term costs in the high value context, this was not enough to reduce overall debt per dwelling to a level that could be serviced with rental incomes alone. In the middle ring scenario, the debt load per dwelling is much lower and NRAS-style payments therefore have a far greater proportional impact, enabling residual debt to be paid down through rental incomes by year 21.

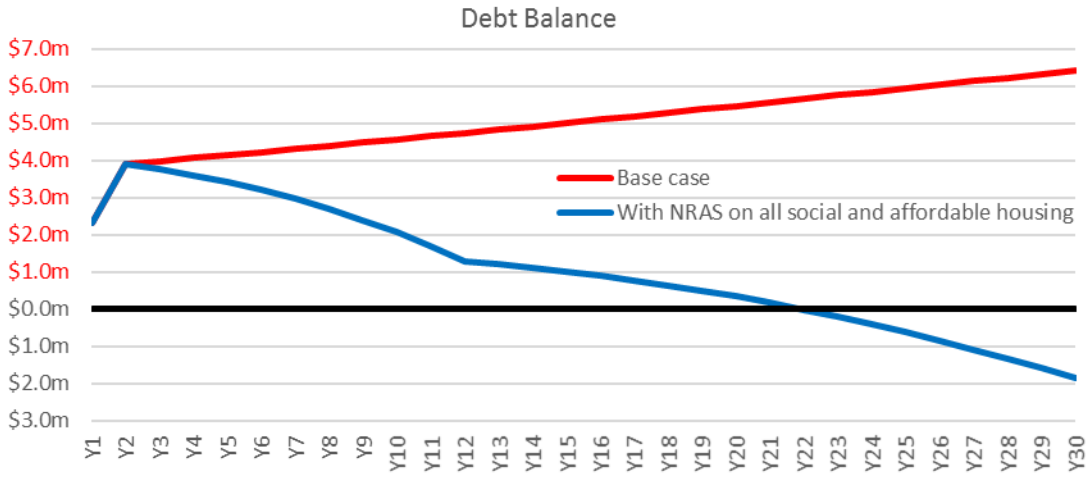
Figure 10: Inner city scenario with NRAS-style subsidy on all social and affordable housing



Source: Authors.

[24] NRAS-style payment refers to an annual subsidy of a similar value to NRAS which ceased to offer new incentives in 2014 (see also Chapter 3 for details on model inclusions).

Figure 11: Middle ring scenario with NRAS-style subsidy on all social and affordable housing



Source: Authors.

In some case studies, NRAS was used to facilitate sale of dwellings to private investors, which had the effect of delivering an affordable rental dwelling for 10 years. This yielded less social benefit than was achieved in the projects where ownership was retained by CHPs and they could service their debt from revenues over a longer time period. While NRAS held by private investors did ensure that there were affordable dwelling outcomes for a period of time, they did not directly contribute to financial viability of the projects themselves. This ought to raise questions about the effectiveness of any future NRAS-style scheme when being directed towards private investors.

Ultimately, any shortfall in revenues required to service debt on new developments would have to be funded through increased subsidy to raise rental income. In this way, operational subsidies delivered for the purpose of paying for private sector debt represent an indirect payment to cover interest expenses. Unlike other debt-funded infrastructure where users pay, the user in the case of the affordable housing cannot cover the additional expense related to private borrowing. The difference therefore would need to be funded by government through operational subsidy. In this respect, government resources would be better directed towards reducing the need to use private finance to fund affordable housing.

4.5 Lesson 4: cross-subsidy

One of the significant features to emerge through the case studies was the use of various forms of cross-subsidy. Cross-subsidy in this context means the use of revenue streams related to the sale or rent of parts of the development to help pay for some of the social and affordable housing outputs.

This had enabled the CHPs either to enhance project viability or to improve their financial position towards their long-term goal of providing additional affordable housing. Profitable activities included sale of a component of the housing development (4 cases), inclusion of market rentals in the development (1 case), undertaking fee-for-service rental management of private investor-owned dwellings (3 cases) and leasing commercial spaces within the development (2 cases).

Market-based sales in effect allowed the NFP developer to capitalise on profit margins that would be present in a market development and redirect them to help fund social outcomes. Similarly, market rents can be seen as cross-subsidising recurrent costs. In practice, it was

difficult to quantify on a unit-by-unit basis what level of subsidy had come from this source. Instead, we have highlighted the likely impacts and benefits at a project scale. In the following sub-sections, cross-subsidy deriving from market sales and cost-sharing across a mix of affordable and social housing outputs are examined in turn.

4.5.1 Market-based cross-subsidy

All exemplar projects examined made use of market- based cross-subsidy in the form of market-based sales or, in the case of one development, market-based rents. The rationale for including market-based sales in a particular project, the timing of the sale, and the proportion of dwellings sold varied across projects. For one project, the proportion was based on the terms of specific government support, while for others it was based on financial considerations alone.

The aim and effect of this approach was consistent across projects: to cover some of the development costs by capitalising on profit margins and value creation in the development process. The net effect was to either reduce debt loads to a level that could be serviced with rent revenues, or alternatively to generate a financial return earlier in the project cycle. The case studies revealed that the quantum of market housing was determined by a range of considerations, most of which had little to do with the project in isolation, but rather related to the ambitions and capacity of the organisation as a whole or policy requirements set down by government.

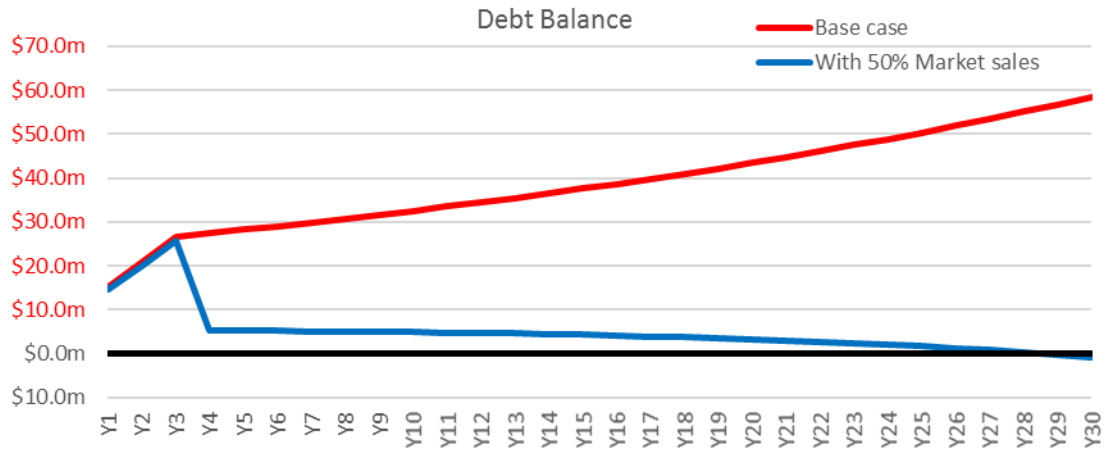
All other things being equal, incorporating a market component will reduce social and affordable housing outputs. If the aim, however, is to deliver a replicable development model that can be sustained within a specific policy framework, then the scale of development could be increased to ensure comparable affordable housing outputs.

Figures 12– 14 below show the impact of a market-based cross-subsidy across the three modelled locational scenarios. The three figures demonstrate the positive impact of cross-subsidy across different market contexts. This suggests that this approach is beneficial in a range of settings, albeit that higher rates of sales will be needed in higher cost areas to make a scheme viable over the longer term. The level of market subsidy required to generate an affordable outcome did, however, decrease as market values decreased.

It should also be noted that in the regional context, a market sale was at a price ($249,000 for 3-bed house) which is affordable (mortgage repayments less than 30% of income) to a household earning $1,000 per week.[25] This means in regional contexts there is the potential to use housing sales to low-income home buyers to cross-subsidise the delivery of projects where the remainder (in this case 70% of dwellings) consists entirely of social rentals.

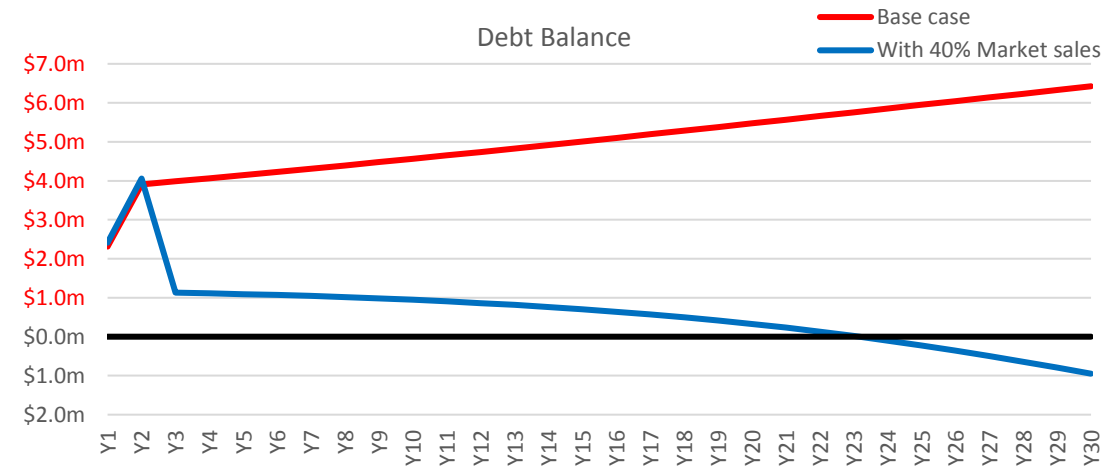
[25] This income level is below that of a household receiving two minimum wages ($1,240 per week).

Figure 12: Impact of 50 per cent market sales in inner city scenario



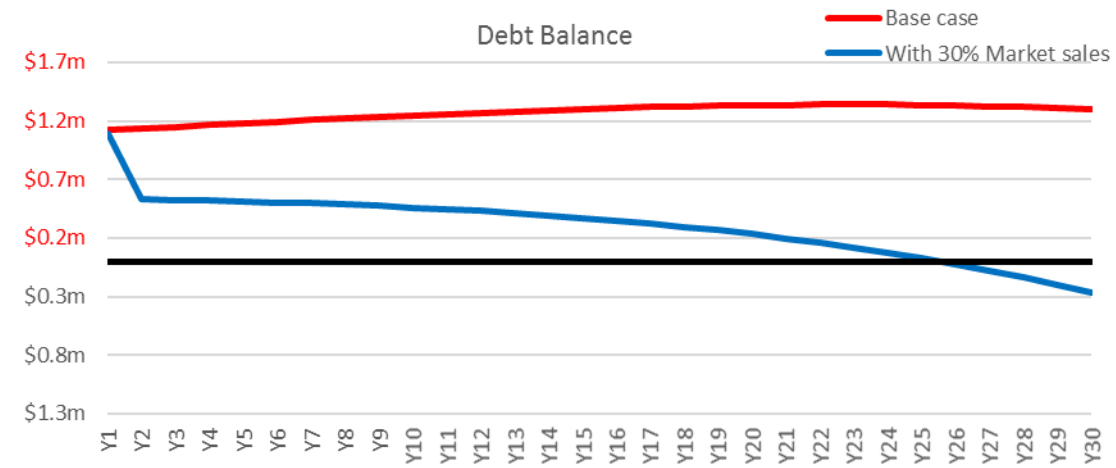
Source: Authors.

Figure 13: Impact of 40 per cent market sales in middle ring scenario



Source: Authors.

Figure 14: Impact of 30 per cent market sales in regional scenario



Source: Authors.

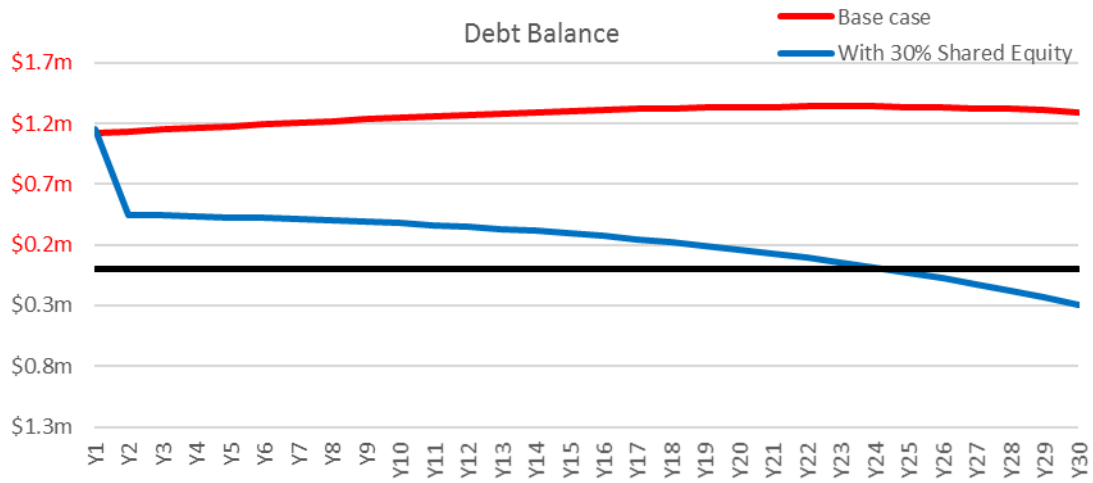
4.5.2 Affordable housing cross-subsidy

Shared equity

Affordable sales were defined as sales that meet affordable price points for home buyers. Affordable sales can generate a similar impact on feasibility outcomes as market sales. In other words, this form of subsidy can operate within a project to provide housing along the affordability continuum.

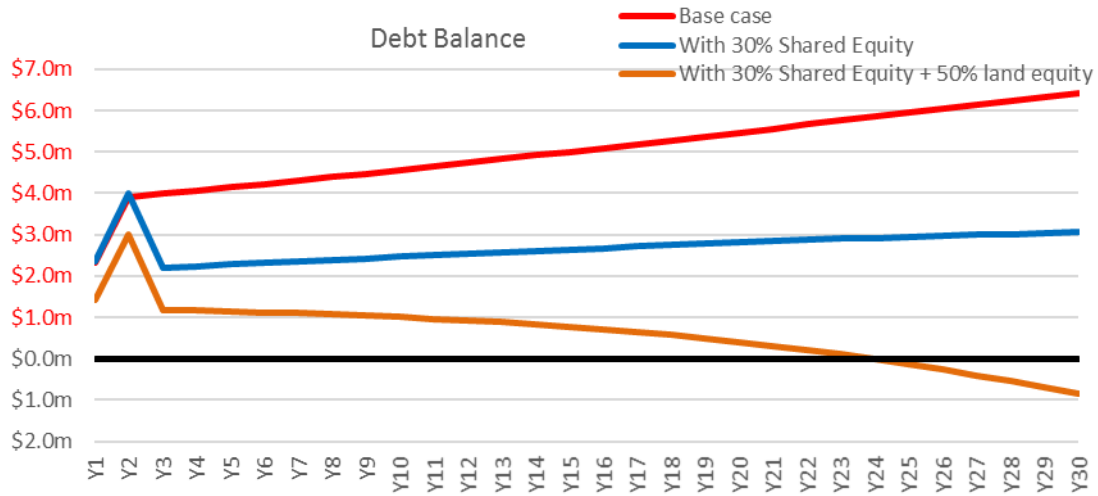
The potential for affordable housing cross-subsidy can be demonstrated through the modelled scenarios by introducing a component to affordable sales (shared equity) into the funding mix. In the case of the regional scenario (Figure 15 below), the addition of 30 per cent shared equity as an output, based on a household with two minimum wage earners, resulted in a viable project outcome. In the case of the middle ring scenario (Figure 16 below), shared equity was not enough on its own to make projects viable, but when combined with other levers, such as reduced finance costs or land contributions, this could be achieved.

Figure 15: Regional scenario with 30 per cent shared equity output



Source: Authors.

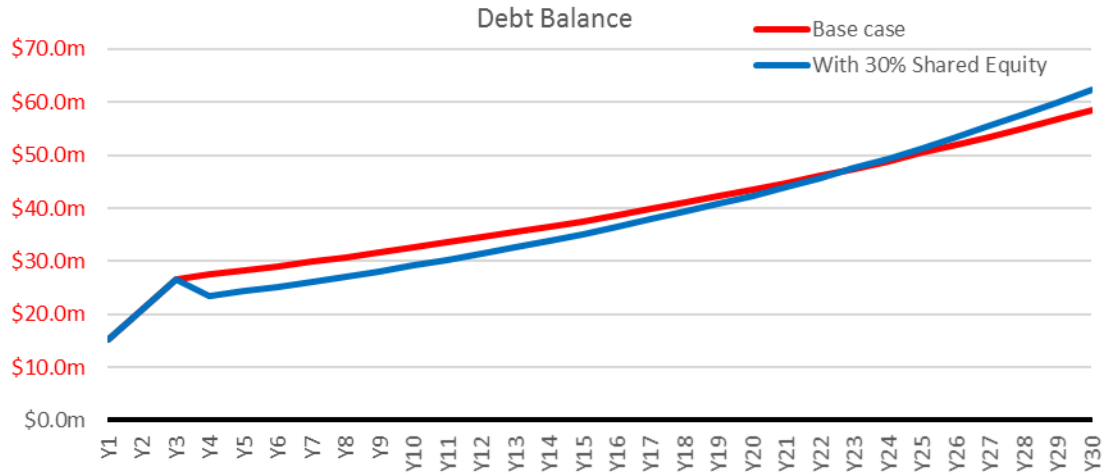
Figure 16: Middle ring scenario with 30 per cent shared equity output and 50 per cent discount on land price



Source: Authors.

In the inner city high costs scenario (Figure 17 below), 30 per cent shared equity based on two minimum wages would not be sufficient on its own to deliver a viable outcome Furthermore, using two minimum wages to set the purchase price of an affordable sale in an inner city context results in the household purchasing a very small equity share. It is more likely that target households would represent 'key workers' with considerably higher incomes than the minimum wage, although still insufficient to buy housing on the open market. Even that scenario does not deliver overall project viability, and would require other policy support.

Figure 17: Inner city scenario with 30 per cent shared equity output and 50 per cent discount on land price



Source: Authors.

Affordable rentals

The second means of achieving affordable housing-based cross-subsidy is through affordable rentals. In market contexts where affordable rental revenue exceeds costs, then these components are able to subsidise dwellings where rental income is more marginal. On a dwelling-by-dwelling basis, there is a significant gap between income-related revenue and costs of providing that dwelling, in particular for households with very low incomes. This in many ways underlies the historic decline in the viability of the public housing model as it became increasingly residualised over a long period of time.

Ultimately, the viability test for different projects is not considered on a dwelling-by-dwelling basis. Having different rent levels across a continuum of housing outcomes does provide an opportunity to deliver a benefit to the longer term viability of projects and organisations. Including affordable rentals that do not place households in rental stress, therefore, offers the possibility to offset more highly subsidised social housing outcomes.

4.6 Lesson 4: planning levers

The use of the planning system, specifically land-use planning regulations, to contribute to the supply of social and affordable housing has had limited and inconsistent application in Australia and, consequently, has not contributed to the delivery of affordable housing at scale (Gurran, Gilbert et al. forthcoming). None of the case studies analysed benefited from planning regulations in a direct way. However, as overseas experience has shown, the planning system could reduce the need for direct government expenditure. In this section, therefore, we show the potential of this policy lever using the AHAT.

While there are a number of mechanisms within the planning system that can facilitate affordable housing (see van den Nouwelant, Davison et al. 2015), two groups of mechanisms, inclusionary zoning and planning bonuses, are worth exploring.

4.6.1 Inclusionary zoning

The first group is *mandatory* contributions to the supply of affordable housing, called 'inclusionary zoning'. Such contributions are required as part of the land-use zoning, and so are provided as part of all (or, at least, some prescribed set of) private developments. The size of the contribution is usually defined relative to the scale of the development—a proportion of the floor space or of the development value. Contributions can include land, money, dwellings or a combination of these.

All of the case studies involved land benefits primarily obtained through government. As such, land contributions were the result of the government's position as landholder rather than its position as regulatory planning authority. However, it is notable that in some cases a requirement for the delivery of affordable housing as part of the precinct planning for those sites meant land was able to be purchased by the CHP from government at a lower cost than if that land did not carry the requirement of affordable housing (and so would have been able to produce higher yields, and so have a higher market value). This is an identical outcome to land values and development patterns under inclusionary zoning (or indeed any planning conditions) whereby land values are set by what development is permissible on a given site. As already outlined, access and cost of land acquisition was a major factor in the financial feasibility of the case study projects. Similar benefits could therefore be obtained from more widespread use of the inclusionary zoning mechanism.

4.6.2 Planning bonuses

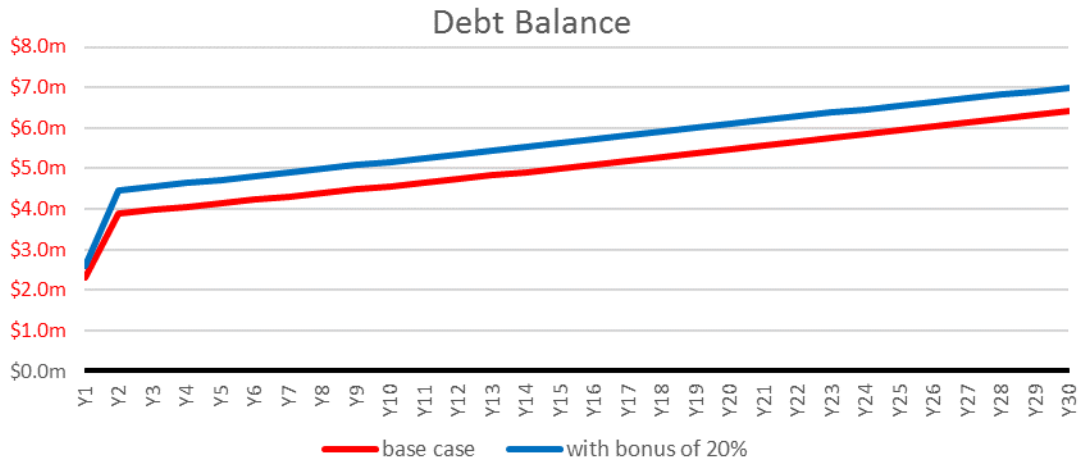
The second group of mechanisms is *optional* planning concessions made available to developments that contribute directly to the supply of affordable housing, called 'planning bonuses'. Similarly to inclusionary zoning, these contributions can take a variety of forms: such as planning controls that increase development yields (through building height or density limits); concessions on other planning requirements that are normally required and that have the effect of reducing development costs (e.g. minimum car parking space requirements); or reduced planning approval times that help to reduce holding costs.

It is often expected that the outcome of planning bonuses is to:

- set residual land value marginally higher and, therefore, allow NFPs to compete on the open market for development sites, or
- generate an increased revenue stream to service a higher debt per dwelling during operations.

Planning bonuses were not employed in our case studies. Importantly, though, our modelling shows that operational revenue for affordable and social housing is, after accounting for operational costs, only able to service a debt that is commensurate with construction costs. As such, additional yields for an affordable housing development (i.e. more social or affordable housing units) that necessitate additional construction costs or higher land costs, do not translate to a capacity to service a larger debt. This is illustrated in Figure 18 below where, in the middle-cost scenario, additional dwellings (increased from 20 to 24) do not have a bearing on the project's feasibility.

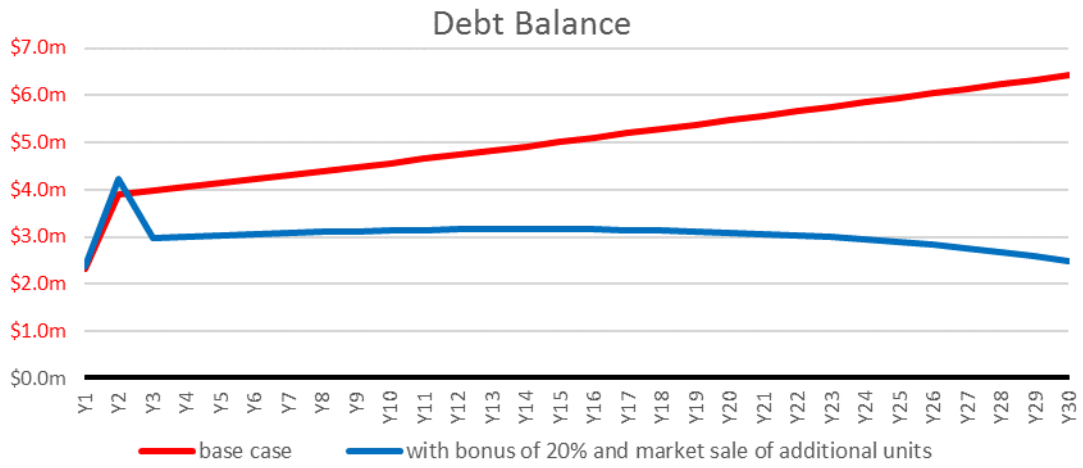
Figure 18: Effect of 20 per cent planning bonus in middle-cost scenario



Source: Authors.

Planning bonuses are, in effect, designed to increase the yield of affordable outcomes that are produced in a given development. This suggests planning bonuses are most valuable when used as part of a cross-subsidy arrangement where the 'bonus' dwellings are sold as market dwellings, while still delivering the same quantity of affordable dwellings. The effect is demonstrated in Figure 19 below, also for Scenario 2. Here, the two outcomes charted produce the same quantum of affordable housing (20 dwellings). However, the comparison shows the effect of using a planning bonus to produce market sales (four additional dwellings) to reduce the project's debt at the end of the development period. While the additional dwellings do not reduce the project's debt during operations to a level that can be paid down in 30 years, this example does show how such an arrangement has a material impact on project feasibility.

Figure 19: Effect of 20 per cent planning bonus with market sales in middle-cost scenario



Source: Authors.

4.7 Lesson 6: CHP delivery

CHPs were the delivery vehicle for five (of six) of the case study projects. In three of these, the CHP initiated the project; the remaining two projects were achieved via competitive tendering for public sector contracts. In this section we consider the implications of CHP-delivery as a suitable vehicle for the development and preservation of affordable housing.

The general purpose of the CHPs represented in our case studies is the production, management, ownership, renewal and sale of housing that is affordable to a spectrum of income-constrained households (Milligan, Hulse et al. 2015). Compared to for-profit firms and government agencies operating in a similar realm, CHPs are subject to distinctive financing, governance and accountability rules and privileges. These can include entitlement to government subsidies and grants, and to federal, state and local government tax concessions or fee-waivers. In return for such benefits, specific public accountability for performance standards[26] is required of CHPs. Under the National Regulatory System for Community Housing (NRSCH), developer CHPs are required to be registered as companies under the Corporations Act 2001. As incorporated not-for-profit organisations, CHPs are legally bound not to distribute profits to shareholders. They can, however, accrue surpluses to reinvest in pursuit of their social purpose, provided their commercial activities do not contravene the definition of charitable purpose (Blessing 2012).[27] Unlike public development corporations, CHPs are not currently subject to public financing borrowing restrictions (i.e. their business dealings are off-balance sheet).[28] This set of conditions creates the opportunity for CHPs to operate as a 'social enterprise'[29] by engaging in innovative and competitive behaviours with the aim of increasing efficiencies, generating surpluses and mobilising non-government resources to meet the affordable housing goal (Milligan, Hulse et al. 2015).

Our case studies illustrated some of the distinctive benefits and challenges of CHP delivery, which are discussed in general terms under a number of headings below.[30]

4.7.1 Leverage

All CHP-led case study projects were co-funded, involving a layered mix of public and private financing (debt and/or equity). In three cases, the availability of public land or grant-designated for affordable housing was the catalyst to project initiation. In the other two cases, the CHP created the development opportunity by harnessing internal and external (government and non-government) resources themselves (including the development sites).

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[26] Current performance standards concern tenant and housing services; housing assets; community engagement; governance; probity; management and financial viability (NRSCH 2014).

[27] Recent diversification by CHPs into new forms of housing (e.g. under NRAS) brought scrutiny of whether the provision of 'affordable housing' and the pursuit of other commercial activities fell within the definition of charitable purpose. A 2014 interpretative statement issued by the Australian Charities and Not-for-profits Commission (ACNC 2014) recognised the potential for charities to offer a range of housing schemes and services (including affordable rental housing, fee-for-service management, shared equity schemes and commercial sales) in pursuit of their charitable purpose (e.g. via cross-subsidisation). While this advice has been reassuring to the industry, individual schemes remain subject to Australian Tax Office rulings.

[28] This situation could be subject to change. In the United Kingdom housing association (CHP equivalent), debt was reclassified as public debt in 2015. The ruling was based on the perceived extent of government regulation (and therefore control) that applied to the sector. Following reductions in regulatory powers in 2017, housing associations' status as private organisations was reinstated.

[29] A social enterprise in its simplest form can be thought of as a commercial business with a social purpose (Czischke, Gruis et al. 2012).

[30] The small number of case studies and the unique make-up of each meant it was not possible to put a precise value on the benefits achieved through CHP delivery.

As set out for each case in Chapter 2, resources mobilised by the respective CHPs included various forms of funding from multiple government spheres and agencies; equity partnerships with other NFP investors; private loans; joint ventures with private firms; charitable donations, and their own equity. As discussed in section 4.5, all CHPs in our case studies had also actively engaged in various forms of cross-subsidy at project and/or portfolio levels.

A debt financing component was a feature of all but one of the CHP-led case studies. In one instance this was a leveraging requirement of government in return for the allocation of a grant. In the other instances, organisations themselves had sought private finance as a means of using their assets and revenue surpluses to make the project feasible. As discussed earlier, the tenor and cost of such finance is critical to project feasibility. However, lending into this sector in Australia so far has not been as favourable as seen for similar entities elsewhere (Milligan, Pawson et al. 2015). As discussed in Chapter 1, this is an issue that policy-makers are attempting to address.

In their efforts to obtain sufficient resources from multiple sources, several CHPs commented on the inherently complex and time-consuming nature of the project initiation process and the risks they faced that projects could not proceed. Factors external to the organisations themselves that contributed to this situation included unforeseen changes in housing market conditions, volatile policy settings, diverse funding rules and contractual requirements, and delays in government decision-making. Such challenges underscore the need for greater certainty and continuity in policy settings.

4.7.2 Cost effectiveness of CHP developers

All of the CHP-led projects had benefitted from cost savings including:

- savings from the charitable status of CHPs[31]—these took various forms and accrued to both capital investments (GST- free supply, exemptions from developer fees and charges) and operating cost savings
- no requirement for developer margins or, alternatively, the capacity to return developer margins to support the CHP's social purpose.

Two cases studies featured a partnership with a private building firm that was used to drive cost efficiencies associated with construction (e.g. through offering greater development scale and presale commitments).

CHPs also had responsibility to develop housing that was cost effective to maintain over the long term—to reduce their operating costs, to ensure tenants continued to benefit from good quality housing and to increase the longevity of the affordable housing benefits that they provide to the community (Wiesel, Davison et al. 2012). All of the CHP-owned projects investigated had whole-of-life cycle asset management plans.

4.7.3 Organisational scale and capacity

A number of organisational factors were at play with regard to the capacity of CHPs to achieve successful projects.

The complexities of project initiation and financing required CHPs to have strong in-house development know-how, and project management and financial expertise. In Australia, this capacity is only found among a small number of relatively large organisations, including those represented in the case studies. As highlighted in the findings of other recent studies of

[31] The organisations included in our research were public benevolent institutions (PBIs) and had deductible gift recipient status.

organisational capacities within the affordable housing industry, CHPs need greater policy certainty (than in the past) and a definite pipeline of projects to build such capacity and to avoid underutilisation or, indeed, loss of this capacity over time (Milligan, Pawson et al. 2017; Milligan, Hulse et al. 2015).

Also important to considerations of project feasibility are the scale and financial position of the sponsoring entity. None of the CHP-led case study projects was 'standalone' in that project risk management was reliant to some extent on using the balance sheet and revenue stream of the whole organisation. For example, CHPs that borrowed for their projects were required to hold cash contingencies to meet lender-determined interest cover ratios of 1.5 or more times project cash flows. For their part, CHPs were relying on managing downstream project risk, such as the expiry of NRAS payments after 10 years, through their ability to actively trade assets across their portfolio.

4.7.4 Managing mixed tenure

CHPs have been at the forefront of pioneering mixed tenure residential developments in Australia. As seen through our case studies, one of the benefits of such developments is that they can contribute to both project and organisational viability by generating profits from commercial activities. Important also to the longer term success of mixed tenure models, CHPs are well-suited to promoting integration of the different housing tenures and the social mix involved in such a development via their role as site managers. In addition to asset and tenancy services, this role can extend to community building and place-making, to the promotion of educational and employment activities for residents, and to enabling tenants to transition to different housing options (e.g. through staged purchase schemes). Mixed tenure developments may also offer important business flexibility to CHPs, as the tenure mix can be adjusted over time to suit unforeseen circumstances, changing needs or fluctuating market cycles—for example, by converting intended house sales to rentals in a market downturn or by re-pricing affordable rentals as market rentals if feasibilities change.

4.7.5 Preservation of affordable housing

An important difference between CHP delivery and private delivery of affordable housing lies in its preservation over the long term. Our modelling tested the feasibility of delivering affordable housing over a 30-year term, which was commensurate with the mission of CHPs. By retaining ownership of the dwellings and having a longer time period to pay down debt, CHPs are able to increase the social return on the initial investment in projects compared to a private investor. Additionally, tenants will have greater security.

4.8 Delivering the housing continuum

The overarching Inquiry, of which this study forms part, established a continuum of housing needs as a normative assessment framework and policy goal to examine housing outcomes (see Figure 3). At a project level, understanding what produces certain housing for specific income groups is critical to understanding how, in policy terms, a continuum can be implemented in different contexts This section reflects on what the research has shown in relation to how subsidy frameworks can best support a range of housing outcomes that can meet both the spectrum of housing needs in an area and support socially-mixed communities.

First, it considers broad subsidy conditions that are required to deliver along the housing continuum. Second, policy implications are discussed.

4.8.1 What produces social rental?

Not all of case studies described in Chapter 2 delivered social rental housing, targeted towards housing applicants currently on social housing wait lists. Where they did, there was significant government support through either capital or land or both. The results underline the known situation that the provision of social housing is not possible without substantial subsidy. The exact amount will vary depending on scheme location, development costs and associated policy contexts, but this strongly suggests that if governments wish to continue to build housing for this needs group, then an appropriate, geographically-variable subsidy framework of sufficient depth and scale will need to be put in place.

4.8.2 What produces 'affordable' rental?

Affordable rental housing with rents set at a discount from market made up the majority of the housing out take across the case studies. Tying rents to 75–80 per cent market levels usually produced rental levels higher than that payable by social housing tenants, thus making them appropriate for letting to somewhat higher income residents.

In one example, rents for the new housing delivered were set at 74.9 per cent of market for similar new dwellings, but this level was equivalent to older market housing rents in the area. In this case the benefit to the tenants was not in delivering cheaper housing options, but better quality housing than the market could provide at that rental level, and with more security because the housing was owned and managed by a CHP rather than an individual property investor. This makes good policy sense—especially where the household would also be eligible for CRA. It highlights the benefit of channelling a subsidy like CRA into the delivery of high quality CHP housing rather than subsidising lower quality market housing.

NRAS was used in five out of the six case studies. It was not possible, however, to establish what quantum of affordable housing would have been delivered in the absence of NRAS, as CHPs involved were simply making use of the levers available to them at the time. The analysis presented in this report indicates that other forms of subsidy directed towards reducing debt on projects were more significant in achieving project viability. NRAS directed towards CHP-retained stock may in part do this; however, where NRAS was directed to private sector investors, the efficacy was questionable. An evaluation of NRAS is well beyond the remit of this report (see also Rowley, James at al. 2016), but our analysis does suggest that a future NRAS-like scheme should be explicit in terms of the expected 'value-add' such a subsidy will contribute in addition to the range of other subsidy levers being used for affordable housing.

4.8.3 What produces low-cost home ownership

Outcomes on the home ownership part of the continuum were weak to absent in all but one project. This is likely to reflect the situation where government- supported low-cost home ownership products operate in some states but not others. Such products support the aspirations of many low to moderate-income households to become home owners and they can help to generate pathways along the continuum for renters whose incomes improve over time. Governments in all jurisdictions, therefore, need to consider ways to support low-cost home ownership as part of a commitment to deliver housing across the housing continuum. As our analysis has shown, this makes sense for individual projects, both to achieve socially-mixed developments, as well as offering CHPs another mechanism to generate cross-subsidy arrangements that can support project viability. Accompanied by appropriate provisions to ensure the subsidy component of home ownership schemes is retained for social purposes over the long term, this could become a significant component of any new policy framework for affordable housing at a national scale.

4.8.4 The housing needs continuum as a policy lever

As outlined above, all case study projects involved some level of government policy support and financial contribution. For whom the housing was produced was, however, in many respects determined through policy expediency (which package of subsidies was available at the time) or through financial necessity, rather than being predetermined and designed to meet a specified need. The housing delivered by the six case studies no doubt meets a needs gap in many contexts, however, in no project examined was a needs gap itself the driver of outcomes.

Understanding the financial feasibility at a project level, where cost and revenues are accrued across a number of dwellings, highlights the advantages of a housing continuum as a key mechanism through which these projects became viable. In other words, a continuum of housing outcomes can deliver overall benefit to the delivery model for affordable housing.

What a needs-based approach could achieve is perhaps best exemplified by the only case study in which government was the key partner delivering affordable housing. This particular case study leveraged direct government contribution to the development process, delivering a range of housing options from social housing through to assisted home ownership, and was supported by a comprehensive government housing policy program (discussed further in another Inquiry project (Rowley, James et al. 2017). The project itself showed the impact of various key lessons discussed in this chapter, but a further component was its linkage to a wider housing policy program that delivered 20,000 dwellings ahead of its target timeframe. Pursued in isolation, a continuum approach has the potential to only deliver small volumes of housing to groups in most need, but supported through policy, scale can be achieved.

In practice, there needs to be a fundamental shift in policy development to place meeting identified housing needs along the continuum as the driver of project delivery, instead of the prevailing opportunistic and bespoke approach to project funding that leaves consideration of who to house to the end of the financial equation. By reversing the logic chain to put needs first, the feasibility model developed for this project does exactly that. The implication is that an integrated and geographically flexible 'housing needs continuum' approach to the funding regime is required to deliver an adequate level and mix of social and affordable housing nationally.

4.9 Overview

This chapter has set out a series of key lessons that can be drawn from the case study research and supported by the project feasibility modelling exercise. The seven lessons relate to:

- land
- government equity
- financing
- cross subsidies
- planning levers
- CHP delivery
- delivering the housing continuum.

Our conclusions from the modelling exercise have amplified and extended those derived from the case studies alone, allowing the analysis to extend beyond these factual exemplars into hypothetical situations. The chapter therefore has provided an opportunity to show how the AHAT can be used both to understand real world examples of schemes as well as to test how housing could be delivered through application of a range of policy levers in different locational contexts. Most importantly, the modelling illustrated that, by fixing the target needs group to be

accommodated up front, the housing mix options and subsidy packages required to meet these needs can be assessed. This could be undertaken at the project level, at the level of organisational portfolio planning, or for a policy program.

5 Research findings and their implications for policy and practice

This study is one of three that together comprise the AHURI Evidence-Based Policy Inquiry, *Increasing affordable housing supply: evidence-based principles and strategies for Australian policy and practice*. Complementing the policy and program foci of the two companion research studies (Rowley, James at al. 2017; Gurran, Gilbert et al. forthcoming), this study sought to analyse a series of recently completed (2013–16) affordable housing projects in order to unpack the financial and subsidy arrangements that had underpinned their delivery of affordable housing. This information and analysis has provided the basis for developing a new tool to assess the impact of different policy levers on meeting housing needs in any given market context. As such, and unlike other tools (e.g. the widely used 'Estate Master' spreadsheet development feasibility tool: http://www.estatemaster.com/) that centres on determining individual project feasibility, the tool has been designed to enable policy-makers and practitioners to flexibly vary policy levers and assess the resultant impact on a desired set of affordable housing outcomes.

This chapter summarises the key findings of the research, reflects on their significance for the development of affordable housing policy frameworks in Australia, and provides a set of policy and practice implications for consideration in the future development of the affordable housing industry. Suggestions for further research and development of the Affordable Housing Assessment Tool are also provided. The discussion has been informed by 'road tests' demonstrating the tool to selected practitioners and policy-makers prior to finalising this report.

Before drawing our conclusions, some caveats concerning the research method and analysis should be noted. First, the research did not attempt a full cost-benefit analysis of the six selected projects. The lack of comparable policy frameworks across jurisdictions and the different ways that policy levers and financing mechanisms were used in each of the projects precluded meaningful evaluation of value-for-money considerations. The variety across the case studies reflected the unique contexts and opportunities presented to each provider during the project initiation phase. This situation gave rise to a greater degree of project diversity than comparability, again invalidating project comparison on an equivalence basis. As a consequence of these limitations, the research team focused its effort on the development of the modelling tool as the central product of the research.

5.1 Research findings

The research for this project was conceived to answer three key questions:

1. What are the costs, financial arrangements and affordability outcomes of recent Australian affordable housing projects?
2. How do procurement and operating costs, housing revenues and public subsidies interact in different markets and for different target groups?
3. What are the implications for policy-making and industry development?

The high level findings relating to the first two of these questions are summarised below. This leads into the ensuing discussion of their key implications for policy and practice (Question 3).

5.1.1 What are the costs, financial arrangements and affordability outcomes of recent Australian affordable housing projects?

The choice of the six case study projects examined was largely determined by the availability of recently completed projects of a sufficient size across a range of market contexts. The projects selected therefore cannot be considered to be 'typical', not least because it is almost impossible to say that any affordable housing project in Australia is typical, given the volatile and varied housing policy environments and operational contexts that have prevailed in recent years. That no one project was the same is highlighted in the analysis below.

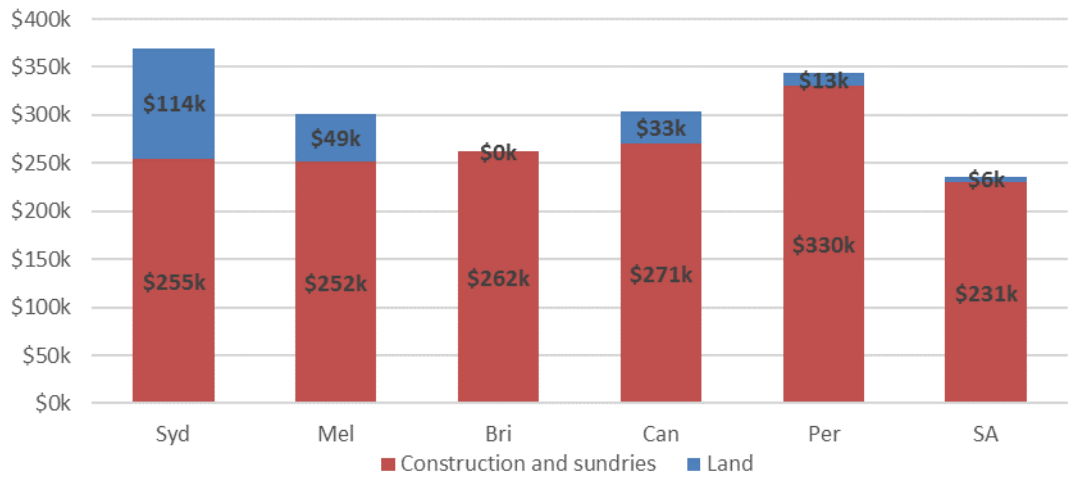
Project costs

Figure 20 below presents the average per unit project land and construction costs across the six projects.

There was a significant variation in land costs. This reflected two main factors—local land values and the way different governments contributed land for social and affordable housing. High land values and selling land as close as possible to its value as a market housing development site resulted in the biggest average land cost being borne by the Sydney, Melbourne and Canberra projects. All other projects benefitted from more deliberate reductions to land costs and, in the case of SA, by using low-value land sites. The Perth project benefitted from the government initially valuing its land contribution (in Figure 20) in line with its use as a car park, but then retaining an equity share of the project commensurate with its value as a housing development site.

Construction costs per dwelling ranged from $230,000 for the detached housing case study to $330,000 for the high rise development.

Figure 20: Project development costs (per unit)



Note: The unit development costs are a simple average, calculated from aggregate project costs, divided by the dwellings produced. As such, they will not reflect the fact that in some projects the aggregate figures include non-housing components (mostly commercial units), or the variation in actual unit costs within a project, given the variation in dwelling sizes and fit outs.

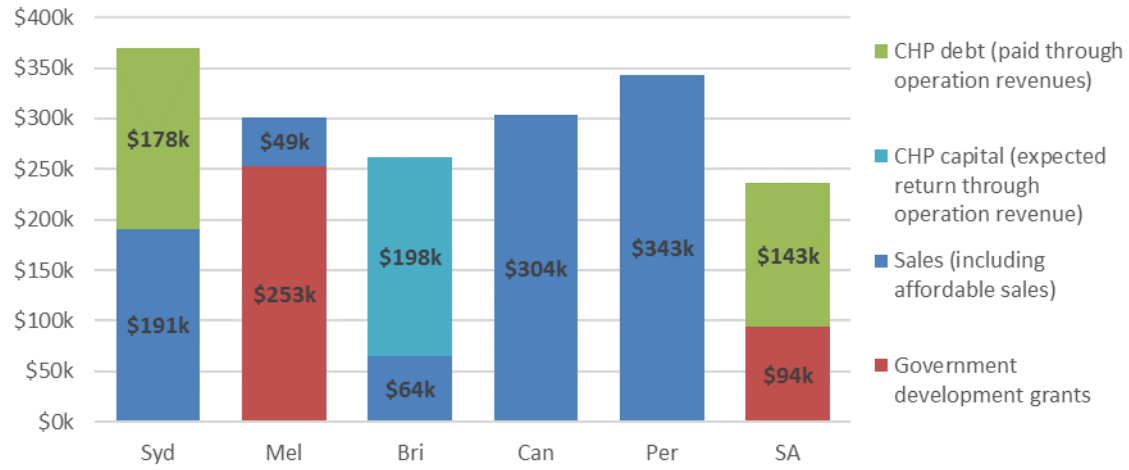
Source: Case study research.

Financial arrangements

Figure 21 below shows the components of capital that were used to support these development costs for the total homes in each project, displayed on a per unit basis.[32] Capital components fell into four broad groups—CHP debt to be met through operational revenues; CHP capital expected to generate a return through ongoing operational revenues; sales of both market and affordable homes; and various development grants or subsidies from government. Each project relied on a specific weighted combination of these which the AHAT can show for each case.

The main sources of subsidy to support affordable housing are also apparent from the modelling. Common elements of all projects were access to government land on a concessional and/or privileged basis, discussed above, and the injection of some level of cross-subsidy from market sales or market rentals. Two projects also included long-term private financing, underpinned by NRAS incentives and the boost to social housing rents through client access to CRA.

Figure 21: Sources of capital to cover development costs (per unit)



Source: Case study research.

The chart reveals the diversity in how developments were paid for. Two cases had development capital input from government. Five cases included sales to cover development costs: in two cases this source completely covered development costs, meaning the retained housing was fully cross-subsidised, but in one case this source did not generate any cross-subsidy to retained housing. Not shown in the figure is that in two cases—Melbourne and Canberra—the project generated surplus capital for future investment in affordable housing. Finally, in three cases, development was partly financed by non-governmental investment (debt or cash equity), and therefore carried a financial obligation on the retained stock into operations.

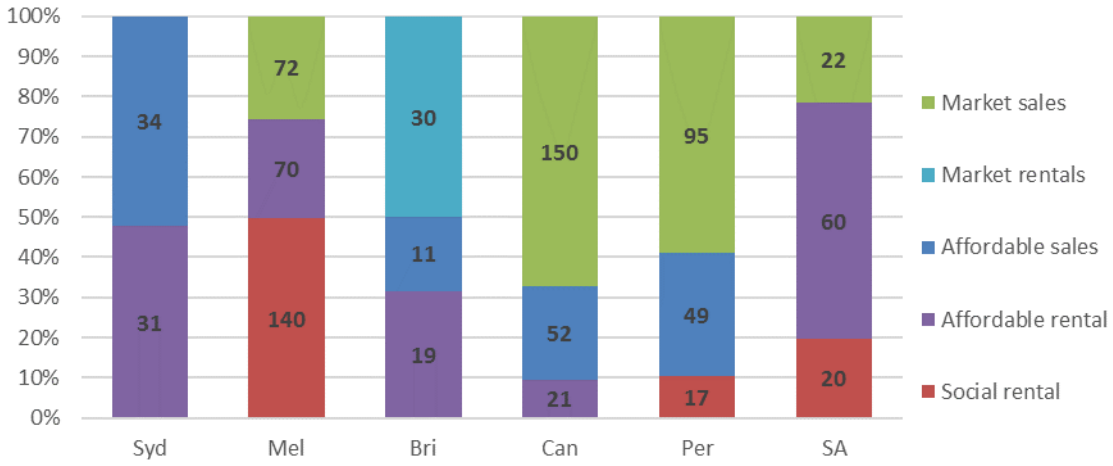
As discussed below, we also concluded that the funding mix and quality had a crucial impact on the proportion of below-market housing outcomes that were possible.

[32] As per previous footnote, per unit development capital is a simple per dwelling average. It is also the 'net' source of capital to cover development costs. So any debt/equity that was repaid/recouped by the end of development is not shown, although financing costs (i.e. interest paid) is included in Figure 20.

Project outputs

As might be expected given the variable mix of affordable housing funding arrangements, the outcomes of the six projects in terms of the housing along the continuum that each generated was also highly variable (Figure 22 below).

Figure 22: Distribution of housing outcomes (numbers refer to units delivered)



Note: In addition to the outputs shown here, the Melbourne project supported a further 228 social and affordable rental homes off-site, through surpluses gained from the market sales and debt raised on the title and rental revenues of the retained assets. 'Affordable sales' includes below-market housing outcomes not retained by the proponent: namely sales to other NFP housing providers and investors receiving NRAS incentives, and sales to owner-occupants as part of a shared-equity scheme.

Source: Case study research.

Although a wide range of housing was produced across the case study projects, there was a predominance of NRAS-supported affordable rentals. Only half the projects incorporated any (deep subsidy) social housing, and affordable home ownership products were provided in only one project. The qualitative research reported in Chapter 2 showed that this situation reflected the type and quality of subsidy that was on offer at the time of project initiation more than housing need priorities. This finding highlights the value we see in our research tool being used to help determine what funding arrangements can meet desired outputs rather than allowing given funding levels and subsidy types to drive those outputs.

What is also clear from Figure 22 is that most projects delivered a mix of homes along the housing needs continuum. In other words, the variability in funding arrangements appears to have played a positive role in stimulating mixed-tenure project outcomes. As confirmed by the qualitative interview data, this can be seen as a significant benefit as it supports socially-mixed development outcomes that have been a housing policy objective for some time.

Another key finding is the importance of market sales or market and fee-for-service rentals in generating surpluses to support the delivery of social and affordable components. This approach to creating additional social and affordable housing by undertaking complementary commercial activities has highlighted the potential of the social enterprise model of NFP provision (see Chapter 4). This being so, the one case of government becoming an equity player in a mixed tenure development shows that government could also be beneficially active in this space if it so chose. Opportunities for cross-subsidy are not simply the preserve of NFP providers.

Fragmentation of policy outcomes

One of the overall findings of the research is that fragmentation of policy frameworks and funding opportunities has meant that affordable housing providers have needed to create bespoke arrangements on a project-by-project basis. This modus operandi works against achievement of a scalable and replicable set of standard approaches for financing affordable housing projects, even within jurisdictions, and it adds complexity and, therefore, cost and risk to the delivery process. A key policy implication, therefore, is that the bespoke nature of affordable housing delivery needs to be addressed at a strategic level if larger scale, cost effective responses to housing need are to be achieved in future.

5.1.2 How do procurement and operating costs, housing revenues and public subsidies interact in different markets and for different target groups?

The analysis of the case study projects (Chapter 2) and the key lessons derived from modelling different project scenarios using the case study data (Chapter 4) have led to a set of key findings about what drives viable projects and for whom.

Government support for access to land

Market land costs and not having direct access to land pose major barriers to developers of well-located social and affordable housing. In the absence of any widespread capital subsidy program that can assist providers to compete in the land market, the provision of public land at below-market cost offers an alternative for governments (federal, state and local) to effectively support affordable housing development. Having privileged access to public land, even when purchased at a 'market' equivalent price, is also beneficial.

Value of government-retained equity

It could be argued that governments are reluctant to 'give away' land for a variety of valid reasons. However, as two case studies demonstrated, if government retains ownership of its land, but treats this as an equity stake in the development, it can both support the achievement of affordable housing and enhance the value of its investment through the improved land value that the development creates. Through this approach, therefore, an enhanced asset is retained on government's balance sheet and a desired public policy outcome is facilitated.

Need for a fit-for-purpose subsidy ('gap funding') to cover operational losses under private financing

The research reinforces the axiom that producing social or affordable housing with a component of private finance invariably generates a gap between the revenues recouped from sub-market rents and the recurrent costs of provision, including debt servicing. It therefore supports the case in Australia for a 'revenue gap' subsidy to support the provision of a growing supply of affordable housing (see Chapter 1). The most efficacious use of such a subsidy would be if it was targeted towards NFP or government-retained stock only. As flat rate subsidies (such as NRAS and CRA) are less effective in high cost locations, there is also a case for future subsidies to reflect spatial differentials in development costs. The AHAT produced in this study would enable policy-makers to test different design options for such a subsidy.

Benefit of mixed tenure and development at scale

In the context of strong housing market performance in Australia over the last decade, the case studies showed clear benefits of realising both scale and mixed tenure outcomes from affordable housing projects. Organisational scale is an important consideration in the achievement of the layered financing structure that is required for affordable housing projects. Scale not only allows CHPs to better manage their portfolios and attract private finance by spreading risk across their balance sheet, but it also enables them to produce greater diversity of housing across the housing needs continuum. Cross-subsidy opportunities that arise from

mixed tenure and mixed-use developments were also shown both to enhance project feasibility and to improve an NFP's financial position towards their long-term goal of providing additional affordable housing. This mechanism also provided much needed flexibility to enable organisations to better manage development risk across different market contexts and cycles.

Retaining affordable housing and social benefit

One advantage of the NFP model of affordable housing provision lies in the potential for NFPs to retain the social benefit created by public investment over the long term. Within the case studies, this was most clearly seen in differences in the planned retention of affordable housing that resulted from whether NRAS had been allocated to CHPs or private investors. While the latter supported the provision of affordable housing for up to 10 years, the former offered the opportunity to retain the benefit of this subsidy over the longer term—for example, by CHPs leveraging the growth in project value for refinancing purposes, or by eventually paying down debt using surplus revenue generated by the provision of operational subsidies. Providing time-limited subsidies to the private sector to produce affordable housing that is predicated on sale and realisation of future capital appreciation is, therefore, less efficient over the longer term than directing such subsidies to NFP providers.

The importance of a needs-based modelling approach to investment decisions

Too often the composition of affordable housing projects has been driven more by funding rules and conditions than to meet priority housing needs. As a result, the rents of many 'affordable dwellings' may not be affordable to those on the lowest incomes or those in need of larger (higher rent) housing, or tenure pathways for households may not be operational because some products like shared ownership are not provided. The AHAT was specifically developed from the starting point of asking who the project/program is aiming to house. Putting the needs group up front turns the project planning process on its head. Rather than fitting the client outcomes to the scheme feasibility, the AHAT reverses this process. In other words, the financial model for a project or program can be explicitly designed to generate the range of housing that meets a set of defined housing needs. This will have the benefit of changing the way both providers and policy-makers conceive of potential projects and will support a strategic approach to meeting given housing needs across a development program. In keeping with the objective of retaining affordable housing well into the future, the model also deliberately takes a long-term (30-year) perspective. This is intended to promote an understanding of the way various policy levers impact differentially on scheme viability and affordability outcomes over the expected lifetime of the project.

5.2 Implications for policy

The findings of our study (summarised above) lead to a set of policy implications for consideration as appropriate by all government agencies with an interest in promoting affordable housing development at scale.

1. How governments treat valuation of their land that has the potential to be developed as affordable housing should be reviewed. Rather than seeking 'highest and best' land value for sales of government land for affordable housing, a preferable approach would be to treat public land as a transparent subsidy input with the sale price reflecting the housing needs that the development seeks to address—that is, its residual value as an affordable housing development for a specific needs cohort. Moreover, by retaining an equity stake, government could consider their land inputs as investments that increase in value through the development of affordable housing.
2. Governments should assess the costs and benefits of supporting affordable housing developments over the long-term. Given that affordable housing is a 30-year plus

investment, it is appropriate that its benefits are assessed over a comparable time period. The AHAT is an attempt to provide a tool for achieving this.

3 Our modelling illustrated the impact of the costs of private funding on long-term debt management. Clearly obtaining lower cost finance than is presently on offer in this industry will have a significant impact on affordability outcomes and the cost to government of funding the gap between revenues and required investor yield. The analysis, therefore, reinforces the rationale for the development of the 'Bond Aggregator' facility currently being planned by the Australian Government (Chapter 1), which aims to provide CHPs with access to lower cost long-term finance and to ease onerous lender covenant requirements.

4 The impact of organisational scale and solidity is a key finding informing policy and practice. The analysis pointed to the importance of CHPs developing sufficient scale to support the delivery of a diversity of housing outcomes without sacrificing their ability to meet house high needs groups. Scaling-up CHPs therefore makes sense in order to address operational risks (i.e. by making public investment in CHPs more secure) as well as to support strategic policy goals. As the case studies showed, large-scale development can generate valuable cross-subsidy opportunities, both within individual projects as well as across portfolios. Greater scale for CHPs could therefore support a higher rate of growth in housing output across the continuum.

5 Our analysis supports the case for targeting public subsidy to NFP developers (government or non-government) to ensure that a long-term social benefit is retained. Investing in affordable housing held over the longer term provides a continuing basis for the retention of the social dividend of affordable housing into the future. Comparable subsidies are not preserved when allocated to private owners who will seek to trade out at some stage, capitalising the subsidy into privatised capital gain.

6 The fragmented nature of the affordable housing subsidy frameworks across jurisdictions (and even within them) illustrated by our analysis is an evident constraint on the development of affordable housing at scale. In one respect, the variety of outcomes achieved across the case study projects can be seen as an unintended positive outcome of the bespoke nature of affordable housing provision under prevailing policy frameworks—it's a necessary requirement given the need to 'stitch together' gap funding on a project-by-project basis. However, this lack of policy coherence adds cost and complexity to the development process and, by implication, leads to a less than optimal outcome for public investment. This study therefore reiterates the common finding of the large body of preceding research on affordable housing in Australia over the last decade (and elsewhere) that the Australian Government and state/territory governments need to develop a coherent and long-term policy framework to support housing provision across the continuum of housing need. This should form a central focus of any negotiation for the 2018 National Housing and Homelessness Agreement and associated housing policy reforms being pursued concurrently (see Chapter 1). Matching both per unit subsidy levels and the quantum of public funding to needs along the housing continuum are core requirements.

7 The results of both the case study analyses and the modelling exercise highlight that any comprehensive funding and subsidy arrangements that are developed nationally to support social and affordable housing delivery will need to incorporate a flexible policy framework which responds to the spatial variation in costs that affordable housing providers face. National subsidy and regulatory arrangements need to ensure that geographic cost differentials are accounted for and, thereby, do not work against affordable housing production in all market contexts where such housing is needed.

8 The findings on housing outcomes highlight a gap in public policy support for a shared home ownership product. In most jurisdictions, this is the 'missing middle' of the framework for

addressing housing needs along the continuum, with only one case study project including a shared ownership element. A well-designed and funded national shared ownership program would help to make the housing needs continuum work more effectively with concomitant social and financial benefits over the long term. A scaled-up shared ownership program with appropriate subsidy arrangements would also help to reduce the debt load on CHPs, improving their liquidity and viability, as well as promoting tenure choice and a pathway to home ownership for their tenants.

5.3 Implications for practice

As noted in Chapter 1, the AHAT has been discussed with the Inquiry Panel as well as with independent experts and two groups of potential users—finance and development staff of affordable housing organisations and local government planners. The comments received from these stakeholders have helped to inform a number of practice implications that we have drawn from the research as set out below.

1. The AHAT has considerable value as a pre-feasibility modelling tool to allow providers to judge the best mix of subsidies to support the delivery of a designated set of needs for any given project. In effect, the model provides a test bed to assess how project parameters can be manipulated to get a desired outcome. It provides a method to identify the package of policy levers that will be needed to achieve the desired development outcome before more detailed specialised financial and feasibility assessments take place.
2. The AHAT could play a strong role in educating the range of stakeholders involved in affordable housing delivery about the way scheme costs, revenues and gap funding can be best managed to bring projects to viability while keeping a focus on providing homes to target needs groups. This was seen as a major benefit by users. In particular, the model offers a 'hands on' means of working through options in discussions with potential partners during negotiations. Potential beneficiaries include policy-makers and planners in a variety of government agencies and Directors and staff of affordable housing organisations.
3. Even in the absence of a more fully developed fit-for-purpose policy and subsidy regime, the AHAT will allow practitioners to test the impact of different financing levers over the life of the project to facilitate a robust discussion about trade-offs to be made in the project set up and thereby help them determine which of the available funding and subsidy mixes will optimise their social goals.
4. Adopting a needs-based approach provides an opportunity for providers to use the tool as part of wider advocacy for policy change and to exemplify the way policy can impact on the viability of affordable housing delivery.

5.4 Reflection and further development of the Affordable Housing Assessment Tool

Backed and informed by a large body of existing research on the efficacy of various affordable housing policies, strategies and models (see Chapter 1), this study has focused on using a case study and model-building approach to explore the relationship between the multi-layered financing and subsidy arrangements that characterise larger scale affordable housing projects and the outcomes along the housing continuum they can produce.

The research was limited to the analysis of a handful of affordable housing projects which, while carefully chosen to exemplify current Australian practice, may not be typical or optimal. Nevertheless, they have yielded valuable new information that has enabled qualitative documentation of their attributes and performance (Chapter 2). They have also provided the

empirical basis for the development, testing and demonstration of our main intended research product, the Affordable Housing Assessment Tool (Chapters 3 and 4). This tool aims to refocus decision-making about the feasibility of affordable housing projects on what housing outcomes are required and, consequentially, what mix of financing and subsidy levers can best achieve those outcomes. The tool can be used normatively to improve policy-making or practically to guide and improve project design and investment decisions. It also has implications for the way that subsidies for affordable housing are made available to ensure affordable housing developers can implement their best project plans.[33]

Consultations so far on the AHAT have highlighted its potential to inform policy and practice around affordable housing in Australia. However, it will need continuous updating and further development which is beyond the scope of this study. Next steps include:

- identifying a suitable host for the tool so that it can be readily used within the industry
- obtaining resources to enable the model to be maintained and updated as policy and market parameters change
- improving the model's functionality and calibration of key inputs
- testing sensitivity of the model's assumptions and developing further scenarios
- assessing the model's capacity to assist in analysing policy program interventions, and
- extending the model to support the development of local level affordable housing strategies.

[33] One of the beneficial aspects of the now concluded NRAS scheme (see Chapter 1) in this regard was that providers were awarded NRAS incentives for use for an identified need in a locality rather than for a specific project. This gave them more flexibility in the choice of sites and the design of projects.

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Appendix 1: Interview themes

1. The organisation: identify and understand the strategic positioning, charter, remit, and structure
2. The interviewee: identify and understand the role in the project, position in the organisation, professional background, relationship with other stakeholders
3. The project: identify and understand the history, timing, market context, project partners, objectives and scale
4. The project financials: identify and understand the initial project appraisal approach, factors outside typical feasibility analysis considered, policy levers anticipated
5. The policies and subsidies leveraged: identify and understand the role of
    a. government land (e.g. off market/discounted)
    b. planning gains/concessions
    c. cross subsidy
    d. direct subsidy (e.g. HAF; NRAS)
    e. indirect subsidy (e.g. CRA)
    f. tax concessions
    g. Financing costs/discounts.
6. The project implementation: identify challenges over the development period, changes to housing outcomes, costs or capital.

Appendix 2: Housing affordability model user guide

The model is based in Microsoft Excel and should be run using versions 2007 or later. Grey shaded cells are variable inputs and should be set by the user. The model has three input pages and two output pages.

Step 1: Define housing needs matrix

The dwelling need matrix establishes the basic revenue profile based on the households that are needed to be housed within a project.

Figure A 1: Dwelling needs matrix input tab

Dwelling Need Matrix

Household Type	Assessable Weekly Household Income	Dwelling type	Tenure	Proportion of Dwellings
Single, no children	$ 400	1-bed	Social	15%
Couple, no children	$ 480	1-bed	Social	10%
Couple, no children	$ 1,240	2-bed	Affordable Rental	30%
Single, 1 or 2 children	$ 374	2-bed	Social	15%
Couple, 1 or 2 children	$ 1,240	3-bed	Affordable Rental	30%
Couple, 1 or 2 children	$ 2,200	2-bed	Affordable Rental	0%
Total				100%

Rental Rates	
Affordable Rental Rate (% of MARKET RENT)	74.90%
Social Rental Max Rental Rate (% of INCOME)	25%

Affordable Sales Resident Loan Details	
Interest Rate (%)	5.3
Deposit (% of loan value)	10%
Max Repayment Rate (% of INCOME)	30%
Loan Period (Years)	30

Users are required to input housing needs based on the following variables:

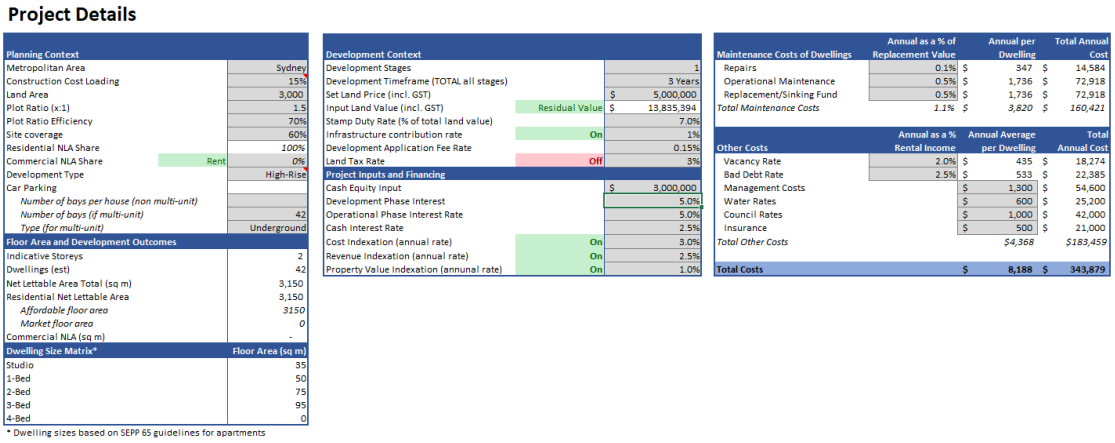
- housing type (generic family composition)
- assessable weekly household income (variable dollar figure)
- dwelling type (number of bedrooms)
- tenure (social rental or affordable rental or affordable sale)
- proportion of project.

The final two boxes set the social and affordable rental rates, and define the parameters for affordable housing sales.

Step 2: Define project details

The project details tab is separated into three components, addressing the planning context, the development context and ongoing management and maintenance costs for rental dwellings.

Figure A 2: Overview of project details tab



Project Details

Planning Context		
Metropolitan Area		Sydney
Construction Cost Loading		15%
Land Area		3,000
Plot Ratio (x:1)		1.5
Plot Ratio Efficiency		70%
Site coverage		60%
Residential NLA Share		*100%*
Commercial NLA Share	Rent	*0%*
Development Type		High-Rise
Car Parking		
Number of bays per house (non multi-unit)		
Number of bays (if multi-unit)		42
Type (for multi-unit)		Underground
Floor Area and Development Outcomes		
Indicative Storeys		2
Dwellings (est)		42
Net Lettable Area Total (sq m)		3,150
Residential Net Lettable Area		3,150
Affordable floor area		*3150*
Market floor area		*0*
Commercial NLA (sq m)		-
Dwelling Size Matrix*		**Floor Area (sq m)**
Studio		35
1-Bed		50
2-Bed		75
3-Bed		95
4-Bed		0

* Dwelling sizes based on SEPP 65 guidelines for apartments

Development Context		
Development Stages		1
Development Timeframe (TOTAL all stages)		3 Years
Set Land Price (incl. GST)		$ 5,000,000
Input Land Value (incl. GST)	Residual Value	$ 13,835,394
Stamp Duty Rate (% of total land value)		7.0%
Infrastructure contribution rate	On	1%
Development Application Fee Rate		0.15%
Land Tax Rate	Off	3%
Project Inputs and Financing		
Cash Equity Input		$ 3,000,000
Development Phase Interest		5.0%
Operational Phase Interest Rate		5.0%
Cash Interest Rate		2.5%
Cost Indexation (annual rate)	On	3.0%
Revenue Indexation (annual rate)	On	2.5%
Property Value Indexation (annual rate)	On	1.0%

Maintenance Costs of Dwellings	Annual as a % of Replacement Value	Annual per Dwelling	Total Annual Cost
Repairs	0.1%	$ 347	$ 14,584
Operational Maintenance	0.5%	$ 1,736	$ 72,918
Replacement/Sinking Fund	0.5%	$ 1,736	$ 72,918
Total Maintenance Costs	*1.1%*	*$ 3,820*	*$ 160,421*

Other Costs	Annual as a % Rental Income	Annual Average per Dwelling	Total Annual Cost
Vacancy Rate	2.0%	$ 435	$ 18,274
Bad Debt Rate	2.5%	$ 533	$ 22,385
Management Costs		$ 1,300	$ 54,600
Water Rates		$ 600	$ 25,200
Council Rates		$ 1,000	$ 42,000
Insurance		$ 500	$ 21,000
Total Other Costs		*$4,368*	*$183,459*
Total Costs		**$ 8,188**	**$ 343,879**

Planning context establishes building types, scale and number of dwellings that will ultimately be produced.

Figure A 3: Planning and site context for development project

Planning Context		
Metropolitan Area		Sydney
Construction Cost Loading		15%
Land Area		3,000
Plot Ratio (x:1)		1.5
Plot Ratio Efficiency		70%
Site coverage		60%
Residential NLA Share		*100%*
Commercial NLA Share	Rent	*0%*
Development Type		High-Rise
Car Parking		
Number of bays per house (non multi-unit)		
Number of bays (if multi-unit)		42
Type (for multi-unit)		Underground
Floor Area and Development Outcomes		
Indicative Storeys		2
Dwellings (est)		42
Net Lettable Area Total (sq m)		3,150
Residential Net Lettable Area		3,150
Affordable floor area		*3150*
Market floor area		*0*
Commercial NLA (sq m)		-
Dwelling Size Matrix*		**Floor Area (sq m)**
Studio		35
1-Bed		50
2-Bed		75
3-Bed		95
4-Bed		0

* Dwelling sizes based on SEPP 65 guidelines for apartments

Specific planning context input variables are described below:

- metropolitan area (select state/territory capital for relevant state)
- construction cost loading (development costs are increased by input % to account for regional variation)
- land area (of development site square metres)
- plot ratio (based on local planning controls)
- plot ration efficiency (efficiency of construction being converted to actual dwelling areas)
- site coverage (% of site area covered by new buildings)
- commercial NLA share (% of developed area used for commercial space)
- development type (detached, attached, low-rise, high-rise)
- number of car bays per house (if development type is detached or attached)
- number of car bays (total, for low-rise and high-rise)
- car bay type (underground or undercroft, for low-rise and high-rise).

Development context sets out the parameters that affect costs of the overall development.

Figure A 4: Development and project context for development project

Development Context		
Development Stages		1
Development Timeframe (TOTAL all stages)		3 Years
Set Land Price (incl. GST)		$ 5,000,000
Input Land Value (incl. GST)	Residual Value	$ 13,835,394
Stamp Duty Rate (% of total land value)		7.0%
Infrastructure contribution rate	On	1%
Development Application Fee Rate		0.15%
Land Tax Rate	Off	3%
Project Inputs and Financing		
Cash Equity Input		$ 3,000,000
Development Phase Interest		5.0%
Operational Phase Interest Rate		5.0%
Cash Interest Rate		2.5%
Cost Indexation (annual rate)	On	3.0%
Revenue Indexation (annual rate)	On	2.5%
Property Value Indexation (annunal rate)	On	1.0%

Specific development context input variables are described below:

- development stages (maximum of 4)
- development timeframe (for all stages combined)
- set land price (dollar value, if land price is an administratively agreed value)
- input land value (toggle between using set price, or residual land value calculated by the tool based on full market development)
- stamp duty rates (as % of land value)
- infrastructure contribution rate (toggle on or off and set % of total construction costs, including consultant fees)
- development application fee (% of total construction costs, including consultant fees)

- land tax rate (toggle on or off and set % of land value)
- cash equity (dollar value of cash equity used in the project).
- interest rates for:
  - development phase debt
  - operational phase debt
  - cash balance held (when in surplus).
- indexation rates and on/off toggles for:
  - costs (related to maintaining and managing tenancies)
  - revenues (rental income)
  - property (of retained assets).

Operation context sets out the various costs associated with managing assets and rental tenancies.

Figure A 5: Operational parameters for retained dwellings

Maintenance Costs of Dwellings	Annual as a % of Replacement Value		Annual per Dwelling		Total Annual Cost
Repairs	0.1%	$	347	$	14,584
Operational Maintenance	0.5%	$	1,736	$	72,918
Replacement/Sinking Fund	0.5%	$	1,736	$	72,918
Total Maintenance Costs	*1.1%*	*$*	*3,820*	*$*	*160,421*

Other Costs	Annual as a % Rental Income		Annual Average per Dwelling		Total Annual Cost
Vacancy Rate	2.0%	$	435	$	18,274
Bad Debt Rate	2.5%	$	533	$	22,385
Management Costs		$	1,300	$	54,600
Water Rates		$	600	$	25,200
Council Rates		$	1,000	$	42,000
Insurance		$	500	$	21,000
Total Other Costs			*$4,368*		*$183,459*
Total Costs		**$**	**8,188**	**$**	**343,879**

All maintenance costs are based on a percentage of capital costs. Specific input variables are described below:

- repairs (for minor repairs dwellings)
- operation maintenance (for larger responsive maintenance costs that periodically arise)
- replacement/sinking fund (costs for larger building based costs, such as lift repairs, external painting)
- other costs related to managing a tenancy. Specific input variables are described below:
- vacancy rate (% of rental income lost due to periods of un-occupation)
- bad debt rate (% of rental income lost due to unpaid rent)
- management costs (NFP-based service costs)
- water rates, council rates and insurance (annual dollar amount per dwelling)

Step 3: Define market context

Establish the market dwelling values and rents based on dwelling size. Users should input values relevant to type of dwellings being developed.

Figure A 6: Market context for project

Market Context

Market Context	Sale	Rent	Dwelling Size	Sale ($/sqm)	Rent ($/sqm)
Dwelling Type	$/dwelling	$/dwelling/week	sqm	$/sqm	$/sqm
Studio	$ 500,000	$ 400	35	$ 14,286	$ 11.43
1-bed	$ 750,000	$ 520	50	$ 15,000	$ 10.40
2-bed	$ 966,000	$ 640	75	$ 12,880	$ 8.53
3-bed	$ 1,425,000	$ 895	95	$ 15,000	$ 9.42
4-bed			0	$ -	$ -
Commercial Area	$/sq m	$/sq m/week			
General commercial	$ 4,000	$ 20			

Step 4: Revue output and adjust policy levers

The combined finances tab shows an annual break down of costs and revenues over a 30-year period.

Figure A 7: Summary of finances from years 1 to 30

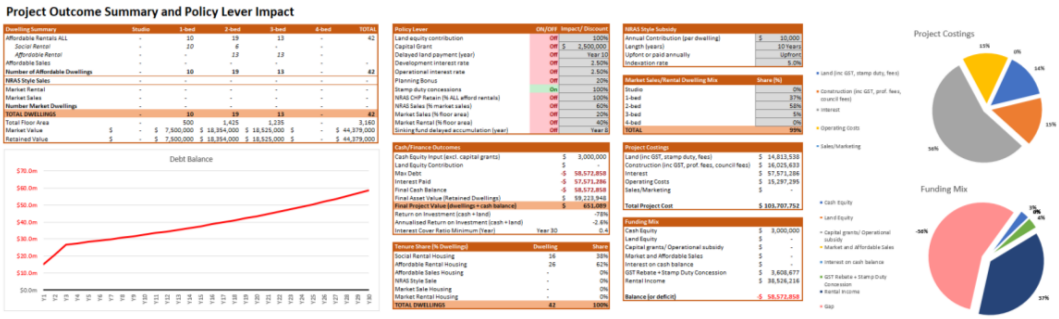
Financial Summary Years 1-30

Index		Total	Y1	Y2	Y3	Y4	Y5
	Capital Cost						
	Construction Cost	-$ 14,583,686	-$ 4,861,229	-$ 4,861,229	-$ 4,861,229	$ -	$ -
	Land Cost (incl. legals)	-$ 12,646,808	-$ 12,646,808	$ -	$ -	$ -	$ -
		$ -					
	Total	***-$ 27,230,494***	*-$ 17,508,037*	*-$ 4,861,229*	*-$ 4,861,229*	*$ -*	*$ -*
	Recurrent Cost						
3.0%	Repairs	-$ 648,748	$ -	$ -	$ -	-$ 15,936	-$ 16,414
3.0%	Operational Maintenance	-$ 3,243,741	$ -	$ -	$ -	-$ 79,680	-$ 82,070
3.0%	Replacement/Sinking Fund	-$ 3,243,741	$ -	$ -	$ -	-$ 79,680	-$ 82,070
3.0%	Vacancy	-$ 812,888	$ -	$ -	$ -	-$ 19,968	-$ 20,567
3.0%	Bad Debt	-$ 995,788	$ -	$ -	$ -	-$ 24,461	-$ 25,195
3.0%	Management Costs	-$ 2,428,855	$ -	$ -	$ -	-$ 59,663	-$ 61,453
3.0%	Water Rates	-$ 1,121,010	$ -	$ -	$ -	-$ 27,537	-$ 28,363
3.0%	Council Rates	-$ 1,868,350	$ -	$ -	$ -	-$ 45,895	-$ 47,271
3.0%	Insurance	-$ 934,175	$ -	$ -	$ -	-$ 22,947	-$ 23,636
	Total	***-$ 15,297,295***	*$ -*	*$ -*	*$ -*	*-$ 375,766*	*-$ 387,039*
	Sales & Marketting Cost						
	Legal & marketing	$ -	$ -	$ -	$ -	$ -	$ -
	Sales commisions	$ -	$ -	$ -	$ -	$ -	$ -
	Total	$ -	$ -	$ -	$ -	$ -	$ -
	Recurrent Revenue						
2.5%	Affordable Dwelling Rental Income	$ 37,302,682	$ -	$ -	$ -	$ 983,928	$ 1,008,526
	Cash interest (sinking fund)	$ 1,223,534		$ -	$ -	$ 1,992	$ 4,094
2.5%	Market Dwelling Rental Income	$ -	$ -	$ -	$ -	$ -	$ -
2.5%	Commercial Space Rental Income		$ -	$ -	$ -	$ -	$ -
	Total	***$ 38,526,216***	*$ -*	*$ -*	*$ -*	*$ 985,920*	*$ 1,012,620*

Dwelling_Need | Project_Details | Market_Context | Combined_Finances | Project Outcome

The final tab summarises the project outcome and allows users to adjust policy levers to generate a financially feasible project.

Figure A 8: Overview of project outcomes tab



Policy levers can be adjusted by switching the On/Off toggles to enable them, and setting the parameters in adjacent grey boxes (see Figure 9 below).

Figure A 9: Policy lever switches and input variables

Policy Lever	ON/OFF	Impact/ Discount
Land equity contribution	Off	100%
Capital Grant	Off	$ 2,500,000
Delayed land payment (year)	Off	Year 10
Development interest rate	Off	2.50%
Operational interest rate	Off	2.50%
Planning Bonus	Off	20%
Stamp duty concessions	On	100%
NRAS CHP Retain (% ALL afford rentals)	Off	100%
NRAS Sales (% market sales)	Off	60%
Market Sales (% floor area)	Off	20%
Market Rental (% floor area)	Off	40%
Sinking fund delayed accumulation (year)	Off	Year 8

NRAS Style Subsidy	
Annual Contribution (per dwelling)	$ 10,000
Length (years)	10 Years
Upfont or paid annually	Upfront
Indexation rate	5.0%

Market Sales/Rental Dwelling Mix	Share (%)
Studio	0%
1-bed	37%
2-bed	58%
3-bed	5%
4-bed	0%
TOTAL	99%

Specific levers and input variables are described below:

- land equity contributions (discount the input land price by the set %)
- capital grant (dollar value of capital grant, used in the project in year 1)
- delayed land payment (year at which payment will be made for the land based on input land value, less any discount on land price)
- development interest rate (new interest rate for development phase of the project)
- operational interest rate (new interest rate for operational phase of the project)
- planning bonus (% increase in net lettable floor area of development)
- stamp duty concession (discount on the stamp duties applicable to land purchases)
- NRAS CHP retain (% of all affordable rentals that have NRAS-style payments attached)
- NRAS sales (% of market sales with NRAS-style payments attached)
- market sales (% of net lettable floor area used for market dwellings sold in the first year of operation)
- market rentals (% of net lettable floor area retained by NFP but used as market-based rental)
- sinking fund delayed accumulation (year at which accumulation of sinking fund amount begins where total sinking fund amounts are equal at year 30).

The two remaining boxes contain the parameters to define NRAS-style payments for the NRAS style levers, and the mix of dwelling sizes that are applicable to market-based outputs.

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