



PROJECT 30,000:

PRODUCING SOCIAL AND AFFORDABLE
HOUSING ON GOVERNMENT LAND

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TRANSFORMING HOUSING
MELBOURNE SCHOOL OF DESIGN



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EXECUTIVE SUMMARY

Plan Melbourne, the latest 30-year plan for Greater Melbourne, commits the state government to exploring a series of policy responses to the housing crisis, including utilising government land to host social and affordable housing. This report responds to this commitment by identifying over 195 hectares of government owned land that can host over 30,000 social and affordable homes. Use of lazy government land for affordable and social housing offers three simultaneous benefits: it can minimise the impact of spatial dislocation of low income households, it can reduce social housing development costs, and it can make more efficient use of existing government assets.

The report also finds that Victoria faces a **shortage of at least 164,000 housing units that are affordable and available to very low and low-income households**. Using public land to provide social and affordable housing is one mechanism to address this critical deficit that can reduce social housing development costs by up to 30%. This report contends that government land can assist the state in achieving a target of **30,000 new social and affordable housing units over the next 10 years (2019-2029)**, with an emphasis on meeting the needs of those most at risk of homelessness. Pairing government land with other support from a range of stakeholders could assist the state in meeting this target. This would serve as a significant step change that could support Victoria's nascent community housing sector in scaling up to meet the broader need in future decades.

This report begins by outlining the current understanding of affordable rents for households across the state. It then utilises these definitions of affordable rents to specify a state-wide **affordable housing deficit of 164,000 units**. While some of this gap can be met through existing mechanisms like voluntary agreements with private developers to provide below market housing, other housing will need deeper forms of subsidy, such as land leased or donated by government to provide housing affordable to lower income households.

The **location of social and affordable housing matters** in terms of access to services, transport and amenity. The report introduces the **Housing Access Rating Tool (HART)**, a 20 point scoring system applied to every parcel in Greater Melbourne and Geelong to identify sites suitable for social and affordable housing from a service and transport accessibility standpoint. The tool draws on current Victorian research and policy with a deepened emphasis on the needs of lower income households.

The report provides an **inventory of over 250 sites owned by federal, state and local governments deemed** suitable for housing based on HART and other local data. The inventory identifies and maps **195 hectares of publicly owned land and air rights that can host 30,000 social and affordable housing units**. Most of these sites are community use sites that host community centres, parking, retail, libraries and vacant military installations. The inventory includes surplus, vacant and underutilised parcels. We call these parcels 'lazy land' as government could provide more public benefit from land ownership by blending social housing with existing uses on the sites.

The report then discusses how the identified land can be developed into social and affordable housing by layering other forms of subsidy into housing hosted on government land. It also draws on emerging practice in Victoria and abroad to highlight how innovative partnerships, funding models and design can yield additional housing on government sites while ensuring occupants have access to amenities, employment and transport options.

TOP FIVE STATE SITES TO FAST TRACK FOR SOCIAL AND AFFORDABLE HOUSING

Transforming Housing is currently working with the Lord Mayor's Charitable Foundation and the City of Darebin on an Affordable Housing Challenge: transforming the air rights above a council parking lot into at least 60 social housing homes, as well as additional affordable rental homes. We have selected five state government sites that could host scalable models of social and affordable housing provision, based on three criteria used in the Affordable Housing Challenge: access to transport and services, appropriate size to make a difference in meeting affordable housing targets and suitability to be developed as a residential site (e.g., proximity to pollution emitters).

#1

3 WARDE STREET FOOTSCRAY 3011

Housing Access Rating Tool (HART) Score: **15 points**

AREA: **553 square metres**

Within 500 metres of nationally registered toxic emitter? **No**

Overlays? **None**

Notes: Currently vacant, located at the end of a rapidly developing street.



Street View



Location

#2

64 ALEXANDRA PARADE, CLIFTON HILL 3068

Housing Access Rating Tool (HART) Score: **16 points**

AREA: **2,988 square metres**

Within 500 metres of nationally registered toxic emitter? **No**

Overlays? **Yes, Heritage and Design**

Notes: Most amenities are on the opposite side of Alexandra Parade. This is an optimal site for higher density housing for singles and couples.



Street View



Location

#3

1136-1138 NEPEAN HIGHWAY, HIGHETT 3190

Housing Access Rating Tool (HART) Score: **14 points**

AREA: **48,931 square metres**

Within 500 metres of nationally registered toxic emitter? **No, but the site was historically a gasworks and may need testing.**

Overlays? **Yes, Heritage and Design**

Notes: Large enough for a mixed income/cross-subsidisation approach while still producing a large quantity of social housing. It is along the Neapean Highway but contains opportunities for ingress and egress along View Street, which would enable quicker pedestrian access to Highett rail station and a grocery store.



Street View



Location

#4

92 –596 SMITH STREET, CLIFTON HILL 3068

Housing Access Rating Tool (HART) Score: **16 points**

AREA: **529 square metres**

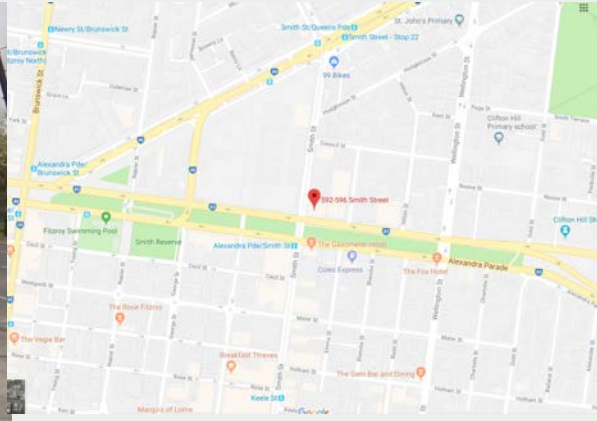
Within 500 metres of nationally registered toxic emitter? **No**

Overlays? **Yes, Design**

Notes: Would be affected by a revival of the East–West Link. It is on the 86 Tram line and would be optimal as high-density infill for singles and couples.



Street View



Location

#5

70–90 CHELMSFORD STREET, KENSINGTON 3031

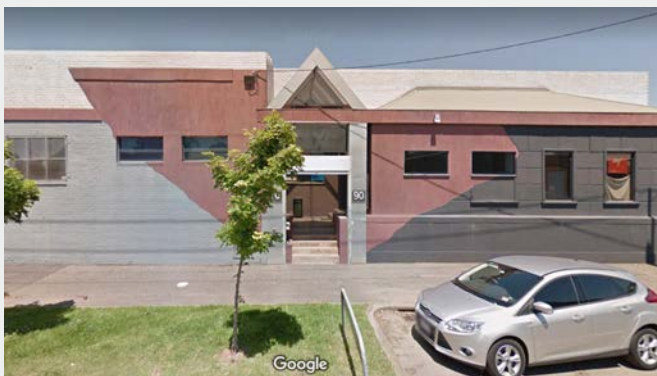
HART Score: **15 points**

AREA: **3,650 square metres**

Within 500 metres of nationally registered toxic emitter? **No**

Overlays? **Yes, Other not specified**

Notes: On the edge of residential and industrial areas.



Street View



Location

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DEFINITIONS

This report uses the concept of ‘lazy’ land. For the purposes of identifying lazy land for affordable and social housing, we offer the following definitions of surplus land, lazy land, lazy air and other relevant terminology. These definitions and our data, which was used to identify land based on these definitions, are detailed in the section entitled Data and Methods For Identifying Well-Located, Surplus and ‘Lazy’ Land and Air for Housing. We define very low, low and moderate Income with respect to housing based on definitions provided by the Department of the Environment, Land, Water and Planning (DEWLP), detailed in the section entitled The Case for Using Government Land For Social and Affordable Housing.

AFFORDABILITY DEFINITIONS

Social Housing: Social housing is short- and long-term rental housing that is owned and run by the government or qualified not-for-profit agencies that are regulated by the Housing Act of 1983. To learn more about the state definition of social housing, please see: <http://www.housing.vic.gov.au/social-housing>.

Affordable Housing: Affordable housing is housing (including social housing) that is appropriate for the housing needs of very low-, low- and moderate-income households. The 2018 state government definitions for these terms are available from: <https://www.planning.vic.gov.au/policy-and-strategy/affordable-housing/resources>.

Very Low Income: A household is considered very low income if it earns 50% or less of the area median income for its household type. For example, a single person in Melbourne who makes 45% of the area median income for singles in Greater Melbourne, for example, would be classified as very low income.

Low Income: A household is considered low income if it earns between 50% and 80% of the area median income for its household type. For example, a Geelong couple who makes 60% of the area median income for singles in Regional Victoria would be classified as low income.

Moderate Income: A household is considered moderate income if it earns between 80% and 120% of the area median income for its household type. For example, a family in Melbourne who makes 100% of the area median income for families in Greater Melbourne would be classified as moderate income.

LAND DEFINITIONS

Surplus Government Land: Government land becomes surplus when a government entity determines that its ownership of a piece of land is no longer necessary for that entity to meet its current or future obligations or objectives. State agencies and local councils maintain their own policies for determining whether land is surplus to their mission. Land Use Victoria oversees these processes.

Vacant Government Land: This is land deemed vacant or unused by a state agency, local council or the Valuer-General of Victoria. Land may or may not be deemed surplus by its government owner, as some vacant land may be held in reserve for future use. For example, VicRoads may hold a piece of land between two growth areas in anticipation of using it to provide a new road connecting those areas at some point in the future.

Lazy Government Land: We define this as any government site currently occupied by a land use that could be mixed with affordable and social housing but is currently not and where existing buildings are currently under four storeys. Our definition of compatible uses includes: libraries, community and neighbourhood centres, ground level car parking, shopping and offices, some healthcare facilities, social services and childcare facilities. The Making It Happen section discusses how social housing can be blended into such sites when they are proposed for redevelopment, or when developers use modular design to add social housing above existing public facilities.

Lazy Government Air: This refers to the space above government-owned land that can host affordable and social housing. For example, the air up to four storeys above a ground level car park can host several storeys of affordable and social housing. Land owners typically also own the air rights above their property but, increasingly, sell these rights to other entities.

Right of First Refusal: In the context of land, this is a contractual right that gives its holder the opportunity to acquire land from a current owner before that current owner is entitled to sell that land to another party. Currently, state agencies have a Right of First Refusal to land deemed surplus by another state agency. For example, if the Department of Education and Training declares a piece of land as surplus, councils and other agencies like VicRoads have 60 days to make an offer to acquire the land before it can be sold at market through a Department of Treasurer and Finance-led sales process. Internationally, in places like California, qualified non-profit housing providers also have right of first refusal over public land before it can be sold to market-rate developers.

ABOUT THIS REPORT

Victoria faces a major housing crisis. The crisis concerns the critical and increasing shortfall in affordable housing: stable rental or ownership accommodation options that cost less than 30% of the incomes of households on very low, low and moderate incomes. This shortfall of affordable housing contributes to growing homelessness. For example, residents on Centrelink incomes can afford virtually no private rental listings in Melbourne (Anglicare Victoria 2018; SGS Economics 2018). Additionally, a growing segment of the working population cannot afford to purchase homes when the average home price is over nine times Melbourne's annual median income (Cox and Pavletich 2018).

Plan Melbourne, the latest 30-year plan for Greater Melbourne, commits the state government to exploring a series of policy responses to this housing crisis, including utilising government land to host social and affordable housing (State Government of Victoria 2017a, 55–56). However, it does not provide figures for affordable housing need or locational housing targets. A recent report by the Victorian Auditor-General's Office concludes that state agencies often prioritise the sale of surplus government land over alternatives that may better serve society, such as leasing the land or retaining it for other community uses (Victorian Auditor-General 2018, 8). Land Use Victoria, the state's key agency for land administration, provides a definition of 'public value' of government land that encompasses four broad benefit categories (Land Use Victoria 2017). The provision of social and affordable housing on government land creates public benefit in three of these four categories, reprinted from Land Use Victoria (2017):

- » Intergenerational; considering how current land use decisions benefit present and future generations, including Traditional Owners who use the land to pass down their culture to younger generations.
- » Social; equity of access to health, housing, education and recreational space as well as improved local amenity and social inclusion. For Traditional Owner groups, access to land is an integral part of their future sustainability, self-reliance and community prosperity.
- » Economic; access to employment and benefits for business and industry.

This report contends that producing social and affordable housing on government land creates intergenerational, social and economic value for society by providing lower-income households with access to safe, adequate and affordable housing. The lack of stable, affordable, healthy housing is associated with increased healthcare and criminal justice costs for government, poorer health outcomes in individuals and poor educational and developmental outcomes in children (Wood et al. 2016; Mackenzie et al. 2016; Raynor et al. 2018; Leventhal and Newman 2010). This report also contends that the provision of such housing on well-located land can counteract spatial segregation and mismatches between population growth and service provision, offering additional long-term social and economic value to society.

The first half of this report makes the case for providing affordable and social housing on government land. It begins by measuring the shortfall of affordable housing in Melbourne, which surplus government land can assist in solving. It concludes with a call for the construction of 30,000 new social and affordable housing homes over 10 years to ameliorate these problems. This case for social and affordable housing on government land concludes by exploring how land costs stymie affordable development and discusses how under-utilised land, particularly surplus government land, can assist housing providers to overcome this barrier to deliver affordable housing.

The middle section of this report outlines how data on government land was gathered. It introduces our tool for identifying well-located land for housing—the Housing Access Rating Tool (HART)—and presents the results.

The final sections of the paper explore innovative ways to deliver affordable and social housing on the land identified. This includes pairing government land sites with Social Housing Growth Fund subsidies, social and philanthropic investments, temporary use of government land, inclusive redevelopment of social infrastructure, incremental and modular development, inclusionary zoning and community land trusts.

THE CASE FOR USING GOVERNMENT LAND FOR SOCIAL AND AFFORDABLE HOUSING

Our case for using government land for social and affordable rests on two points. First, Victoria faces a large deficit of social and affordable housing for low- and very low-income households. Second, the state government and housing providers cannot meet this need, partly due to the effect of high land costs on the feasibility of social and affordable housing projects. The following two sections detail these arguments.

A lack of clear and consistent guidance from government on the definitions of low- and very low-income households have impeded us from providing estimates of Victoria's affordable housing need until now. Amendments to the Planning and Environment Act 1987, passed in 2017, make the provision of affordable housing an explicit planning goal in Victoria and thereby, task the government with defining very low, low and moderate incomes with respect to housing need. To that end, the government produced a document called a Governor-In-Council (GIC) order, which defines affordable housing in terms of income eligibility, as reprinted in Table 1. The state government will update these income limits annually.

TABLE 1: STATE OF VICTORIA INCOME RANGES FOR AFFORDABLE HOUSING, 2018*

Greater Melbourne			
	Very Low Income	Low Income	Moderate Income
Single adult	Up to \$25,220	\$24,221 to \$40,340	\$40,321 to \$60,510
Couple, no dependant	Up to \$37,820	\$37,821 to \$60,520	\$60,521 to \$90,770
Family, any configuration	Up to \$52,940	\$52,941 to \$84,720	\$84,721 to \$127,080
Rest of Victoria			
	Very Low Income	Low Income	Moderate Income
Single adult	Up to \$18,380	\$18,381 to \$29,400	\$29,401 to \$44,100
Couple, no dependant	Up to \$27,560	\$27,561 to \$44,100	\$44,101 to \$66,160
Family, any configuration	Up to \$38,590	\$38,590 to \$61,750	\$61,751 to \$92,610

*available online at: https://www.planning.vic.gov.au/_data/assets/pdf_file/0020/214823/Final_Order-in-Council_for-Gazette.pdf

It is possible to estimate what tenants will pay for their housing, based on government guidance on rental limits. This guidance states that residents housed in affordable housing created through the planning system should spend no more than 30% of their incomes on rent. These are presented these in Table 2. With median asking rent for a house in Greater Melbourne set at \$440 per week (REIV 2018), housing for very low- and low-income people delivered through the planning system can provide significant financial relief to tenants.

TABLE 2: TENANTS' WEEKLY HOUSING COST UNDER AFFORDABLE HOUSING DEFINITIONS*

Greater Melbourne			
	Very Low Income	Low Income	Moderate Income
Single adult	Up to \$146	\$147 to \$233	\$234 to \$349
Couple, no dependant	Up to \$218	\$219 to 349	\$349 to \$524
Family, any configuration	Up to \$305	\$305 to \$489	\$489 to \$733
Rest of Victoria			
	Very Low Income	Low Income	Moderate Income
Single adult	Up to \$106	\$107 to \$170	\$171 to \$254
Couple, no dependant	Up to \$159	\$160 to \$253	\$254 to \$382
Family, any configuration	Up to \$223	\$224 to \$356	\$357 to \$534

*Contract rents sometimes appear high because social housing providers include Commonwealth Rental Assistance in their formulation of affordable rents.

The total statewide need is estimated at roughly 164,000 homes for very low- and low-income people when applying the income limits listed in Table 1 to census data. The next section documents how this figure was determined. The section thereafter discusses the financial obstacles facing providers in meeting this need: previous Transforming Housing research notes that revenue generated by affordable rents (such as those in Table 2) cannot finance housing development costs without significant additional support (Sheko, Martel and Spencer 2015). Thus, we explore how hosting social and affordable housing on government land can assist provider to overcome this barrier to financial feasibility.

ESTIMATING VICTORIA'S DEFICIT IN AFFORDABLE AND SOCIAL HOUSING

To determine the statewide housing need for very low- and low-income housing, we calculated the number of households in each income band from the state government's current definition of income (2018 figures reproduced in Table 1) and then selected incomes by household type from the 2016 Census using the Australian Bureau of Statistic's TableBuilder Pro. We used TableBuilder due to the unavailability of our preferred data source, census extended Confidentialised Unit Record Files (CURFs) for 2016. Some census income ranges in TableBuilder Pro crossed income band thresholds. For example, this meant that a census table range of \$52,000 to \$64,999 of income per year straddled the \$60,520 low-income limit for couples. In these cases, we used Pareto interpolation to proportionally allocate these households into income bands. This approach is detailed in the Technical Report that supplements this document. Households with incomplete information, roughly 9% of the total, were removed; this biased our estimate of rental housing need downward and the implications of this are fully discussed in the Technical Report.

However, approximately 20% of Victorian households do not fit neatly into the three household types in the GIC Order: singles, couples and families with children. Examples of these outliers include households with multiple families and group households of unrelated individuals. As an increasing number of families and individuals are sharing tenancies to reduce housing costs, we opted to include families and individuals within these households in two ways. First, we extracted the incomes of individuals in group households and assigned them to income bands based on the GIC Order's definitions for singles. Second, we extracted families within multi-family household arrangements and applied the relevant income ranges to each of those families before adding them to our total household counts. We also extracted individuals in shared accommodation and applied the relevant income ranges to each of those individual's incomes before adding them to our total household counts. These individuals and families were included as 'latent' households—potentially in need because a significant number of people in such arrangements would acquire separate housing if they could afford it (Ruming and Dowling 2017). We recognise that this is not universally the case.

Based on this approach, approximately 399,000 households in Greater Melbourne qualify as very low income under the GIC Order and a further 295,000 qualify as low income. Roughly 77,000 households in the rest of Victoria qualify as very low income and another 123,111 qualify as low income. These groups account for 44% and 39% of the total household count in Greater Melbourne and the rest of Victoria, respectively. The total distributions of households and 'latent' households by the GIC's income bands are illustrated in Figure 1.

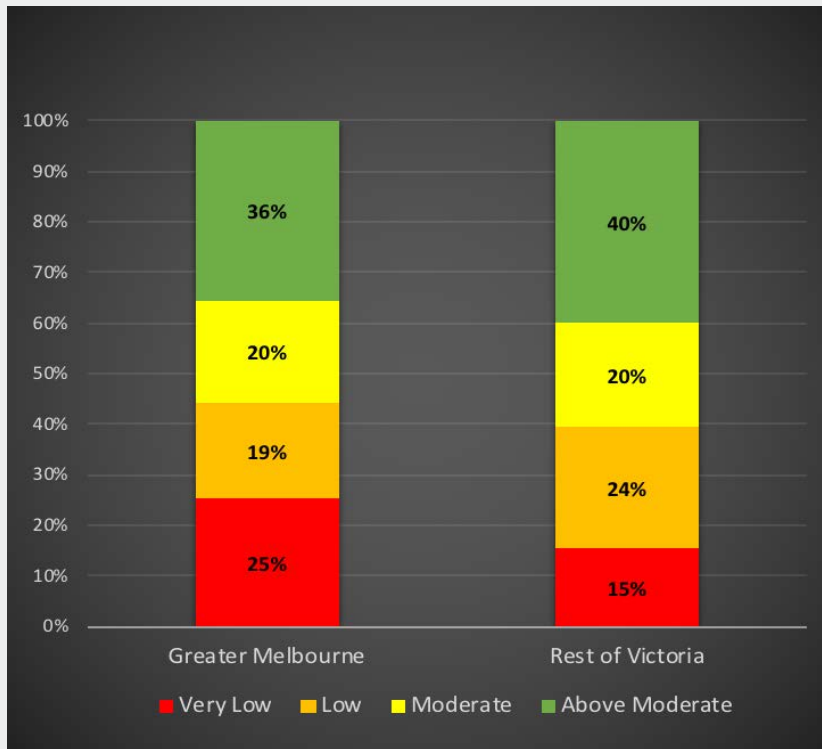


FIGURE 1: INCOME DISTRIBUTION OF ALL HOUSEHOLDS USING PLANNING ACT INCOME BANDS

However, these numbers mask how incomes vary significantly by tenure. This is plotted in Figure 2, which focuses on renters, home owners with a mortgage and home owners who own their homes outright.

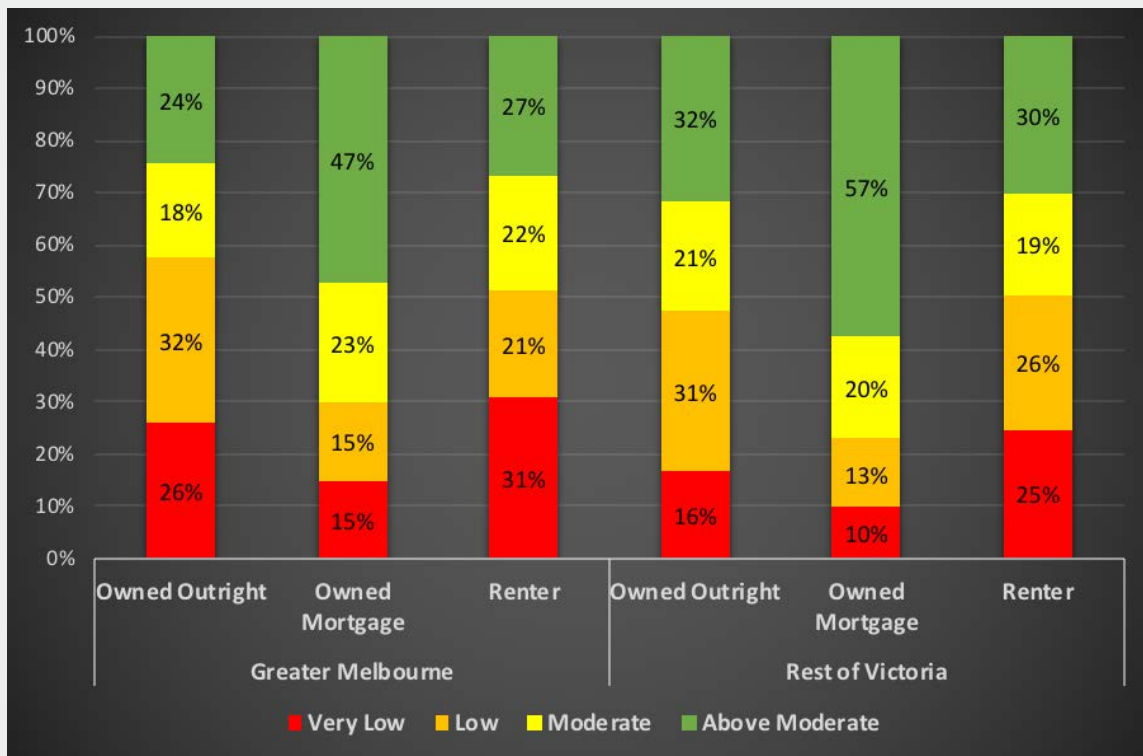


FIGURE 2: INCOME BAND DISTRIBUTION BY TENURE

Roughly 178,000 very low-income households rent in Greater Melbourne, with another 27,000 renting in the rest of Victoria. Smaller numbers of very low-income households own their homes outright in Greater Melbourne (151,000) and the rest of Victoria (33,000). These groups likely include older individuals on fixed incomes who have paid off their homes. Over 121,000 low-income households rent in Greater Melbourne, with another 35,000 renting in the rest of Victoria. Similar to the pattern among very low-income households, a smaller share of low-income earners own their homes outright: 88,000 and 24,000 in Greater Melbourne and the rest of Victoria, respectively. Moderate- and above-moderate income households are over-represented among households currently paying off mortgages and constitute 70% and 77% of households with mortgages in Greater Melbourne and Victoria, respectively.

We utilise our counts of very low- and low-income households in rentals as a basis for calculating rental need. Due to data constraints (discussed in the Technical Report), these numbers exclude families in multi-family households who rent part of a dwelling from another family that owns and occupies the dwelling. Thus, we consider the following estimate of need conservative and lower than actual need.

Existing methodologies for calculating shortfalls benefit from several factors that make their analysis less complex. Previous Australian gap needs studies use a single income limit to define very low- and low-income households regardless of household composition (Hulse, Reynolds and Yates 2014), while international examples rely on definitions of very low and low that vary incrementally based on household size, which enables a straightforward analysis (Aurand et al. 2017). In contrast, GIC Order income band definitions vary by household type: singles, couples and families. The family category includes a diverse set of households, from a single mum and her child to two parents with any number of children.

To develop a defensible gap needs methodology, we drew several steps and concepts from existing work (Aurand et al. 2017; Hulse, Reynolds and Yates 2014). We classified every rental unit as affordable to a very low- or low-income household by assigning each dwelling size to a demographic group—studios and one-bedroom homes were categorised based on the income bands for singles; two-bedroom homes were categorised based on the income bands for couples and any larger homes were categorised based on the income bands for families. The resulting affordable rent ranges, for the purpose of modelling housing supply needs, are presented in Table 3. This provided a preliminary list of homes affordable homes for each household type by income band.

TABLE 3: ASSUMPTIONS USED TO TRANSLATE INCOME BANDS INTO UNIT AFFORDABILITY LEVELS OF EXISTING RENTALS

Area	Bedrooms	Incomes Band Used to Classify Unit Affordability	Weekly Rent to Qualify as Very Low-Income Affordable Unit	Weekly Rent to Qualify as Low-Income Affordable Unit
Greater Melbourne	0-1	Singles	\$1-\$146	\$146-\$233
	2	Couples	\$1-\$218	\$218-\$349
	3+	Families	\$1-305	\$305-\$489
Rest of Victoria	0-1	Singles	\$1-\$106	\$106-\$170
	2	Couples	\$1-\$159	\$159-\$254
	3+	Families	\$1-\$222	\$222-\$356

We then estimated the number of homes affordable by income band but unavailable to households in those bands because they are occupied by higher-income earners (Hulse, Reynolds and Yates 2014). These must be removed from the available supply as households cannot be evicted from private rentals for having incomes too high relative to their rent—an outcome we would not support. We then compared the differences in the remaining affordable and available homes against need to estimate supply gaps. We identified an estimated gap of roughly 145,000 rentals that are both affordable and available to very low- and low-income households in Greater Melbourne. The bulk of these (125,000) come from the shortfall of rentals affordable to very low-income households. These calculations are provided in Table 4.

TABLE 4: OVERVIEW OF CALCULATION OF AFFORDABLE RENTAL HOUSING NEED IN GREATER MELBOURNE

Income Band	Rental Households by Income Band	Rentals Affordable to Income Band	Preliminary Shortfall	Unavailable Affordable Rentals (Occupied by Wealthier Households)	Shortfall of Affordable and Available Rentals
Very Low	178,354	78,744	99,610	25,356	124,966
Low	121,750	170,568	-48,818	69,751	20,933
Total Shortfall					145,899

We identified a smaller gap in need for the rest of Victoria: roughly 18,000 homes. This deficit comes entirely from the very low-income group, as we estimate that regional Victoria contains a surplus of roughly 8,000 homes affordable to low-income earners. We do not subtract this 8,000 surplus from the 18,000-unit deficit among very low-income people as the surplus low-income homes are unaffordable for those very low-income households facing a deficit.

TABLE 5: OVERVIEW OF CALCULATION OF AFFORDABLE RENTAL HOUSING NEED IN THE REST OF VICTORIA

Income Band	Rental Households by Income Band	Rental Homes Affordable by Income Band	Preliminary Shortfall	Unavailable Affordable Rentals (Occupied by Wealthier Households)	Shortfall of Affordable and Available Rentals
Very Low	37,745	35,748	1,997	16,215	18,212
Low	38,085	59,213	-21,128	12,894	-8,234
Total Shortfall					18,212

We estimate a combined total shortfall of just above 164,000 homes affordable to low- and very low-income earners across Victoria. Most of this deficit comes from Greater Melbourne. The bulk of the deficit in both Greater Melbourne and all of the deficit in the rest of Victoria stems from a shortage of homes for very low-income households, the lowest income group. State policies should prioritise meeting the needs of this group and should also acknowledge that this figure represents current housing need. Population growth will exacerbate affordable housing shortfalls, driving even greater need for affordable housing policies.

STATE AND FEDERAL RESPONSES TO DATE

At present, two major state-led policy documents have begun addressing the problem: Plan Melbourne and Homes for Victorians. Plan Melbourne outlines the need for 1.6 million new homes in Melbourne over the next 30 years (State Government of Victoria 2017a, 44). To ensure that a significant proportion of these new homes meet Melbourne’s increasing housing affordability problem, Plan Melbourne makes several commitments. The state commits to strengthening the role of planning in facilitating new affordable housing, streamlining decision-making processes for social housing, utilising government land for social housing and utilising rezoning uplifts for affordable housing (State Government of Victoria 2017a, 55–56).

Homes for Victorians also introduced programs to reduce the shortfall in housing affordable to low- and very low-income households (State Government of Victoria, 2017b). These actions by the state government included:

- » allocating a billion dollars to fund a Victorian Social Housing Growth Fund.
- » providing \$109 million to increase stable housing opportunities for homeless Victorians.
- » issuing a billion-dollar loan guarantee for the community housing sector.
- » investing \$140 million in social housing production over four years.
- » launching a pilot inclusionary housing program on government-owned lands.
- » abolishing stamp duty for first home purchasers buying properties below \$600,000.
- » investing \$50 million in shared equity opportunities for first home buyers.
- » providing \$152 million for housing victims of domestic violence.

Homes for Victorians does not offer a single set of production targets for these combined programs; rather, it estimates that the Social Housing Growth Fund, loan guarantee and investments into social housing production will lead to the development of at least 6,000 new homes over six years (State of Victoria 2017, 31). These commitments do not meet the present need in Victoria. **To meet estimated need over 10 years (not five), there would need to be approximately 16,000 homes produced annually from 2019 to 2029.**

The federal government's response to the shortage of affordable housing includes the introduction of a bond aggregator, the National Housing Finance and Investment Corporation (NHFIC). The NHFIC will be required to provide low cost finance to community housing providers by aggregating their lending requirements and issuing bonds to institutional investors (Government of Australia 2018b). Advisors to the federal government contend that a bond aggregator like the NHFIC will meaningfully reduce financing costs for Australia's nascent community housing sector (Affordable Housing Working Group 2016). Several Australian housing researchers have noted that the bond aggregator is not enough: this finance must be paired with capital (e.g., construction) subsidy for it to significantly increase the supply of social housing in Australia (ABC News 2017; Lawson 2018). The head of the United Kingdom's bond aggregator, which inspired the Australian government's current approach, has also publicly emphasised the need for ongoing capital subsidy for the model to work (Burke 2017). The federal government does allow social housing providers to collect rent from Commonwealth Rental Assistance, but this support has not matched rising rents and development costs. Unfortunately, the government's latest budget does not provide any new capital subsidy and makes no effort to expand the Commonwealth Rental Assistance program (Government of Australia 2018a). Thus, the Victorian housing sector lacks a large, permanent and dedicated federal source of subsidy to fund an expansion of the social and affordable housing supply. This constraint makes delivering new affordable and social housing through the state planning system a critical component of a successful strategy to alleviate the housing crisis.

This study explores the supply uplift potential of one major promise of Plan Melbourne: utilising government land to deliver additional social housing. Currently, the Victorian Government has committed to an inclusionary housing pilot on select sites with the goal of producing 100 homes of social housing. By itself, this approach is too small-scale to make a large difference in responding to affordable housing needs in Melbourne. Thus, this study explores whether there is enough publicly owned surplus and vacant land to alleviate a significant share of the current affordable housing shortage. We also examine the extent to which publicly-owned 'lazy land' and 'lazy air' can also host social and affordable housing.

We settle on a target of identifying sufficient land to supply 30,000 homes that are affordable to very low-income households over the next 10 years. Provisioning 30,000 homes that are prioritised for those most in need would enable the government to end homelessness in Victoria—an approach that would likely provide the greatest immediate cost savings in other areas of state expenditure (Witte 2017). This level of production would not meet the total need measured in this report, but would provide a clear target around which the state's social housing sector could scale up. Meeting this target would position the sector to fully meet the state's needs in subsequent years. An initial increase of the social housing supply of this size would likely assist in 'cooling off' rents at the lower end of the private rental market, as researchers have linked an increased supply of social and affordable housing with slower private market rental price growth (Zuk and Chapple 2016).

REMOVING THE LAND COST BARRIER

Simply put: affordable and social housing developers face significantly higher land costs today than in the last three decades. Land typically constitutes between 10% and 30% of development costs (Urbis 2011). These numbers also apply to social and affordable housing in cities like Melbourne and Sydney (Randolph et al. 2018). To illustrate the importance of land costs, we gathered detailed budgetary information from Greater Melbourne social housing projects that applied for the last round of funding from the Victorian Property Fund. Two providers shared information on two projects in outer suburbs of Melbourne. From these, we present a breakdown of project costs, averaged between the projects to preserve anonymity. We note that these results represent land costs as a share of construction in outer-suburban Melbourne, where land costs are lower.

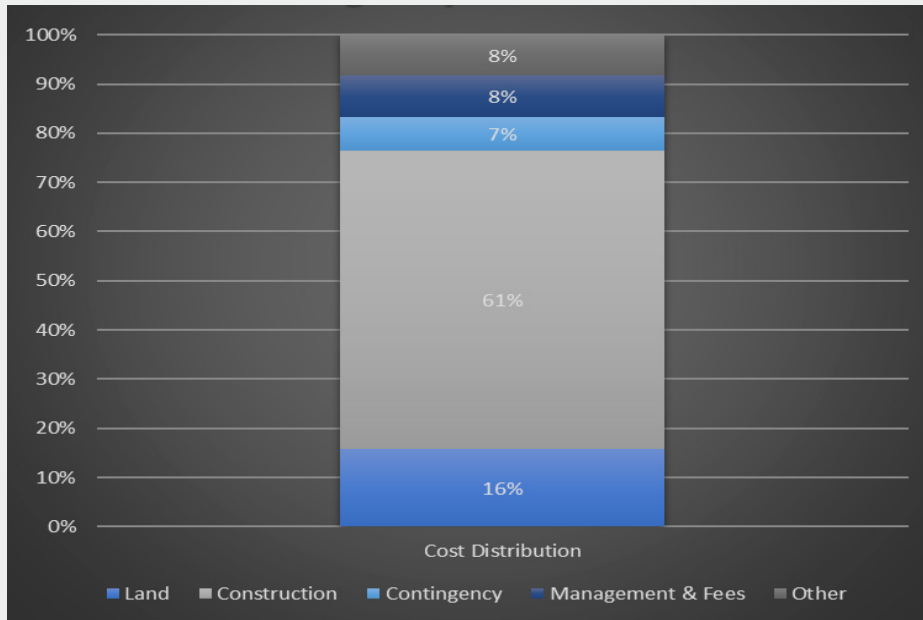


FIGURE 3: COST COMPONENTS OF TWO OUTER-SUBURBAN SOCIAL HOUSING PROJECTS APPLYING FOR STATE SUPPORT IN VICTORIA IN 2017

Land costs averaged \$67,000 per unit between these outer-suburban projects, roughly 16% of average per-unit development costs. Recent upward trends in Melbourne land prices will push these land cost numbers higher, making the allocation of surplus public land to housing critical to ensuring the land market does not sink desperately needed affordable and social housing initiatives. These data present only the land costs incurred by social housing projects where land costs have not already priced social housing providers out of the market. To present a clearer comparison of these projects' costs with the broader private land market of Melbourne, we have aggregated land sales across 11 inner and middle Melbourne local government areas to compare to the outer-suburban Victorian Property Fund (VPF) project's land costs. These results are based on over 250 transactions since July 2016 and are presented in Figure 4.

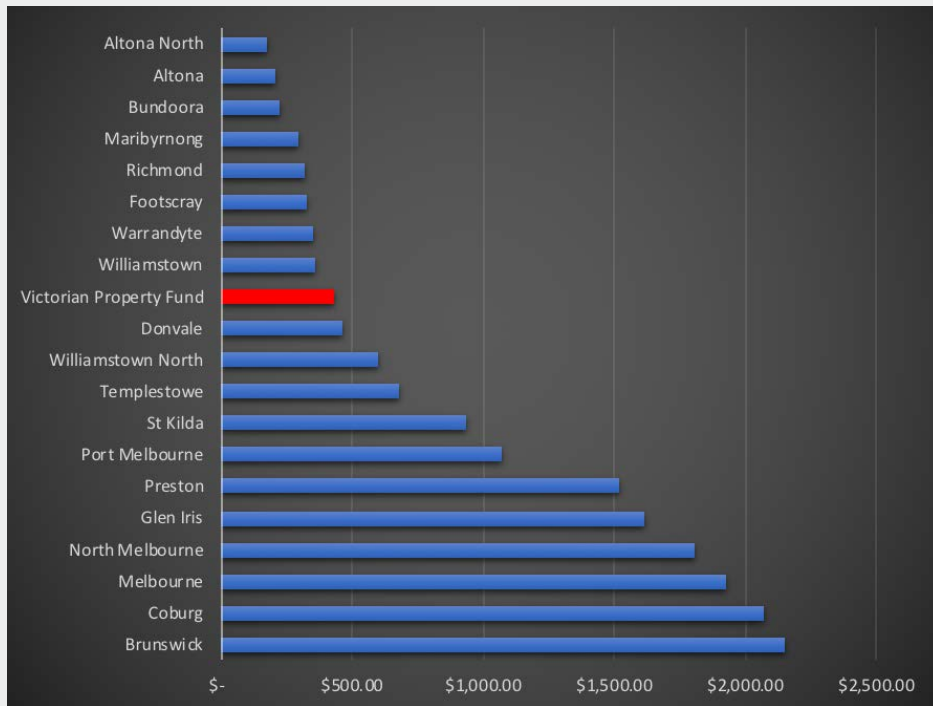


FIGURE 4: A COMPARISON OF VPF PROJECT LAND COSTS WITH RECENT MARKET-RATE SALES (CORE LOGIC)

The significantly higher cost of land in inner Melbourne suburbs may explain, in part, why we only received VPF project information from sites in outer suburbs. The spatial distribution of new social housing produced by Homes for Victorians programs—like the Social Housing Growth Fund—may be linked to the ability of providers to use government land in inner and middle suburbs, a point we detail further in a later section, Making It Happen.

Rapid population growth shifts land prices higher, a process well underway in Greater Melbourne and widely discussed in popular media (Hughes 2017). Distance from the city centre does not completely immunise a community against this trend, with growth area land prices also rising quickly throughout Melbourne’s periphery (Carbines 2018). These trends manifest in land valuations, which can be used to visualise this dramatic trend quantitatively. We plot the Australian Bureau of Statistics’ (ABS) estimated total value of all residential land in Victoria on a per-capita basis in Figure 5 below. Measuring Victoria’s total residential land value changes on a per-capita basis allows us to control for land value increases that come exclusively from residential population growth. The data illustrate a dramatic rise in land values, reflecting rising land costs, especially over the last 10 years. The data suggest that aggregate residential land values in Victoria rose over 33% between 2014 and 2017.

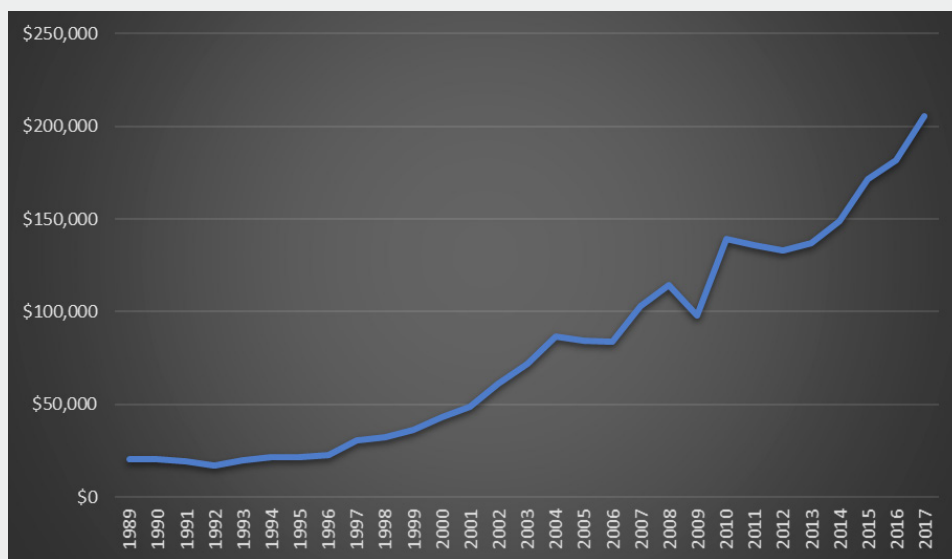


FIGURE 5: ABS-BASED PER-CAPITA VALUE OF ALL RESIDENTIAL LAND IN VICTORIA, 1989–2017

Economists have long theorised that growing populations positively affect land values (Capozza and Helsley 1989). These effects may not be felt evenly in a given city. Recent National Bureau of Economics Research finds that as a metropolitan area's size increases, the gap between central and peripheral land prices increases (Albouy and Ehrlich 2017). Similar work in Europe also provides strong evidence of this pattern (Combes, Duranton and Gobillon 2013). These findings suggest that as a city like Melbourne grows, and particularly as it expands into formerly agricultural areas, central city land values will become significantly more expensive, both in absolute terms and relative to outer and peripheral land values.

This land market phenomenon presents a significant challenge to policymakers attempting to preserve income diversity in inner and middle suburbs. Central city jurisdictions across the English-speaking world have responded to similar land market dynamics by committing to preserving diversity in their communities. Their commitments to this end include provisioning more affordable and social housing on both government and private land via inclusionary zoning (City of Vancouver 2017; Civil Grand Jury 2014; City and County of San Francisco 2015; Mayor of London 2017). Residents in inner and middle suburbs enjoy greater levels of service in public transport (Curtis and Scheurer 2016) and other amenities including public space, schools and healthcare (Arundel et al. 2017). A failure of government to ensure that lower-income families can access these communities, coupled with slow government response to unmet service needs in growth areas, threatens to increase spatial polarisation in Australia.

Policymakers must appreciate the dramatic and relatively fast change in spatial inequality underway in Melbourne. Randolph and Tice (2017) mapped clusters of disadvantaged households between 1986 and 2011 (reprinted in Figure 6). They found that across all capital cities in Australia, the number of disadvantaged households living within 10 km of their respective cities' central business districts (CBDs) declined 67% in the period studied. In contrast, the number living between 20 and 29 km from their cities' respective CBDs rose 174% (Randolph and Tice 2017, 108). This roughly equates to an average annual loss of 3% of disadvantaged households from inner-urban suburbs relative to the base year, a rapid rate of urban change.

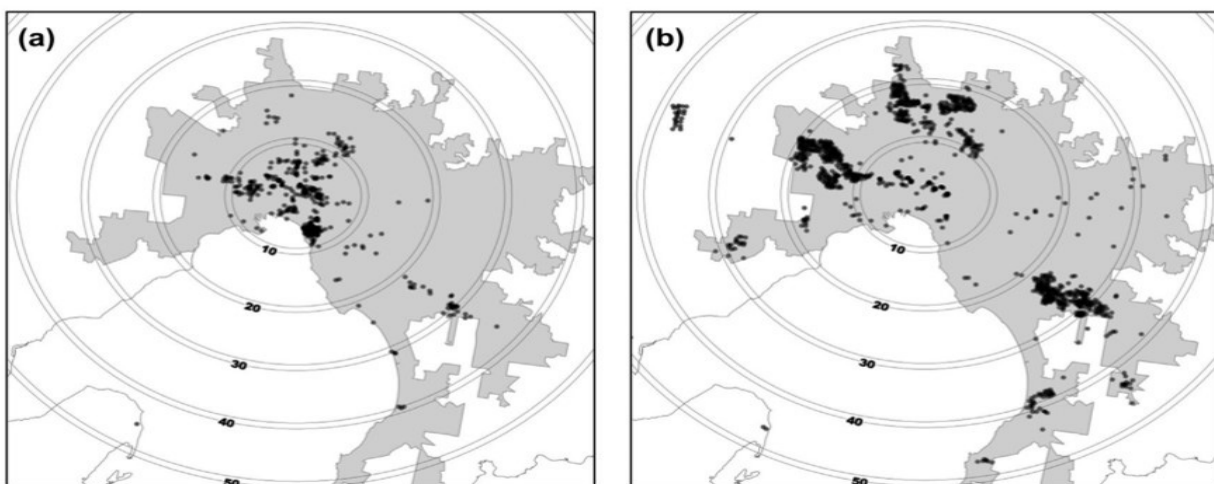


Figure 11. Spatial distribution of disadvantage, (a) 1986 and (b) 2011 – Melbourne.

FIGURE 6: CHANGE IN LOCATIONS OF DISADVANTAGED HOUSEHOLDS IN MELBOURNE FROM (A) 1986 TO (B) 2011 (RANDOLPH AND TICE 2017)

Producing social and affordable housing on surplus and 'lazy' government land and air rights in inner and middle Melbourne can meaningfully counteract this trend, creating both social and economic value for society as defined by Land Use Victoria (2017) and discussed earlier. Creating affordable housing on lazy government land in growth areas can also minimise the problem of spatial polarisation if the land is proximate to public transport infrastructure and emerging suburban employment centres. These responses would also reduce between 10% and 30% of the financing costs of the housing built on those sites while utilising existing government assets more efficiently. Thus, the use of lazy government land for affordable and social housing offers three simultaneous benefits: it can minimise the effect of spatial dislocation of low-income households; it can reduce social housing development costs and it can make more efficient use of existing government assets. This makes surplus government land for social and affordable housing a sound strategy for addressing Melbourne's housing crisis. The next section discusses our method for identifying surplus, vacant and lazy government land that can be repurposed to meet low-income housing needs.

DATA AND METHODS TO IDENTIFY WELL-LOCATED, SURPLUS AND ‘LAZY’ LAND AND AIR FOR HOUSING

We identified 255 surplus, vacant and lazy government sites using the methodologies described in this section. These sites come from a broader dataset of over 11,000 properties identified as publicly owned in Greater Melbourne. Table 6 provides an overview of the steps taken to reduce the number of sample of sites to those most appropriate for housing. This section describes each of the data inputs and methodological assumptions made in each step in detail. The Inventory Appendix at the end of this report also features an additional 93 sites that may become optimal for housing in the future.

TABLE 6: STEPS TO IDENTIFY GOVERNMENT LAND APPROPRIATE FOR AFFORDABLE AND SOCIAL HOUSING

Step	Description	Resulting Site Count
1	Initial number of properties identified as publicly owned in Greater Melbourne from Freedom of Information and Title Searches	11,989
2	Limit data to properties deemed vacant or those that the host uses and that are compatible with housing	587
3	Limit data to properties with existing uses at three or fewer floors and that are not existing housing or open space	447
4	Limit data to properties with a HART score of 10 or higher	313
5	Remove sites within 500 m of a federally monitored pollution emitter	279
6	Remove sites under 300 square metres in area	257

The first subsection of this section describes our process for identifying government ownership of land. It also details how we linked these data to Department of the Environment, Land, Water and Planning (DELWP) data on land and property parcels for Victoria. We acquired information on historic, present and pending government land sales to overlay with our HART parcel database. We also solicited data on local council land holdings from the majority of local governments in close proximity to the central city.

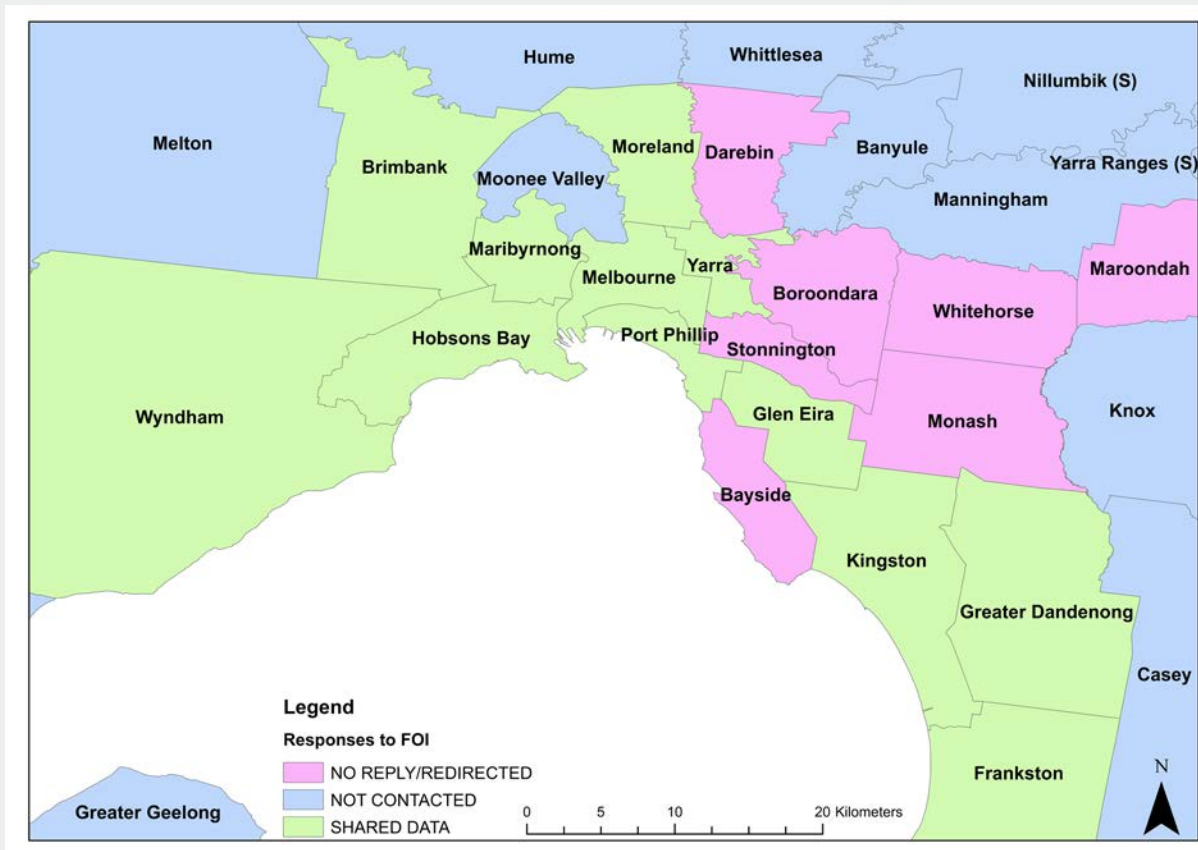
The second subsection describes how we identified ‘lazy land’ and ‘lazy air’, as defined in the opening of this report and used in Steps 2 and 3. This also includes a description of how we defined uses compatible with social and affordable housing and how they were identified using valuation classifications from the Valuer-General of the State of Victoria.

The third subsection introduces the Lord Mayor’s Charitable Foundation’s (LMCF’s) tool, the Housing Access Rating Tool (HART), which is described in Step 4. Transforming Housing created HART to assist the LMCF in evaluating site proposals for future LMCF-supported affordable and social housing. We used the HART to score every parcel in Greater Melbourne for its suitability for affordable and social housing with respect to access to critical services such a healthcare and public transport.

Our prospective site inventory includes information on locations that may be unsafe for housing or are likely unfeasible due to high mitigation costs for issues like flooding or proximity to hazardous industrial waste. The ability to evaluate each of these sites for housing in detail is beyond the scope of this analysis and Transforming Housing’s mission. Instead, the final subsection documents the data gathered to weigh the relative suitability of sites, such as flood overlays and proximity to pollution emitters.

STEP 1: IDENTIFYING GOVERNMENT LAND

We acquired data on government ownership of land from multiple sources. First, we pulled data on surplus government land that is currently for sale or being prepared for sale from the state government’s website (Department of Treasury and Finance 2018). This source only includes state government land. We then submitted Freedom of Information Act (FOI) requests for 19 inner and middle Melbourne local governments to add their land holdings to the dataset. We also submitted FOI requests to a select set of outer Melbourne councils that oversee major growth areas. Finally, we submitted FOI requests to state agencies. We provide a template of our FOI request to all councils in the Technical Report. Many councils and state agencies refused to provide data, directing us instead to the Property and Titles Office. Those who provided information and their responses are shown in Map 1.



MAP 1: COUNCILS’ RESPONSES TO FREEDOM OF INFORMATION REQUESTS

To complete our dataset, we registered for access to state titling information and performed an owner search, utilising 31 names of local councils and state agencies. We linked each of these properties to DELWP’s property shapefile by matching titling information with lot and plan numbers (frequently listed in DEWLP databases as the PLANNO, LOTTNO, TOWNC, etc.). We identified 11,989 properties owned by public entities through these methods. We then refined our search down to the most appropriate sites among these 11,989 properties as detailed in the next subsection.

STEPS 2 AND 3: IDENTIFYING VACANT OR HOUSING-COMPATIBLE SITES

Completion of these steps required parcel-level information on current property uses and use intensity. The Valuer-General classifies every property’s land use for taxation purposes according to the Australian Valuation Property Classification Code (AVPCC). We requested a copy of the Valuer-General’s AVPCC codes for every property in Victoria because the AVPCC delineates by both land use and intensity of use. The AVPCC differentiates between property that is planned for a given use but vacant, property currently in active use and property that previously hosted a given use but is now abandoned or unused.

We joined AVPCC codes to the DEWLP property database (MP_PROPERTY) in R. We joined them based on local government area code (PR_LGAC) and council parcel identification number (PR_PROPNO). This successfully linked AVPCC codes to two-

thirds of properties in the DEWLP's dataset. We used addresses to match the remaining third of properties and successfully matched 80% of DEWLP property listings to AVPCC codes across Greater Melbourne. Unfortunately, this match rate could not be increased due to a lack of AVPCC codes for a significant number of parcels.

Our preliminary dataset included a broad range of AVPCC uses that would be compatible with housing or could be replaced with housing if they were abandoned or vacant. First, we included all properties coded as vacant or disused under the residential, commercial, industrial, infrastructure, community and cultural categories. We then included likely government-owned uses that have been successfully mixed with affordable housing in Australia and internationally, such as car parks, civic spaces, libraries and council offices. We included all residential and commercial air space that could host future housing in mixed-use developments. The descriptions from the AVPCC for each included use are given in Table 7. If the Valuer-General listed a site under any of the codes in this table, then it was included in our tentative database of vacant, abandoned or lazy land.

TABLE 7: AUSTRALIAN VALUATION PROPERTY CLASSIFICATION CODES INCLUDED IN PROJECT SCOPE

Code	Short Description	Description
100	Vacant Residential Dwelling Site/ Surveyed Lot	Vacant land suitable for the erection of a detached or semi-detached dwelling
101	Residential Development Site	Vacant land with a permit approved or capable of being developed for high-density residential purposes
102	Vacant <i>In globo</i> Residential Subdivisional Land	Vacant land zoned for future residential subdivision
109	Residential Airspace	Airspace capable of being developed for residential purposes, usually above a rooftop, roadway or railway
129	Common Land associated with a residential development	Designated common space (e.g., driveway, gardens or common parking)
200	Commercial Development Site	Vacant land with a permit approved or capable of being developed for commercial or mixed-use purposes
201	Vacant <i>In globo</i> Commercial Land	Land that is zoned for future commercial subdivision/development
202	Commercial Land (with buildings that add no value)	Commercial land where the benefit of works (structures erected) upon it are exhausted
209	Commercial Airspace	Airspace capable of being developed for commercial purposes, usually above a rooftop, roadway, railway
280	Ground Level Parking	Land used for ground level parking
281	Multi-Storey Car Park	Land developed as a multi-storey car parking facility
282	Individual Car Park Site	A subdivided car park within a commercial property; can be leased individually or as part of a single complex by a car park operator
300	Industrial Development Site	Vacant land with a permit approved or capable of being developed for industrial use
301	Vacant Industrial <i>In globo</i> Land	Land that is zoned for future industrial subdivision/development
302	Industrial Airspace	Airspace capable of being developed for industrial purposes, usually above a rooftop, roadway, railway
303	Industrial Land (with buildings which add no value)	Industrial land where the benefit of works (structures erected) upon it are exhausted
600	Vacant Land	Vacant land reserved or capable of being developed for infrastructure purposes
601	Unspecified: Transport, Storage, Utilities and Communication	Vacant land reserved (or capable of being developed) for transportation, storage, utilities and communications

Code	Short Description	Description
700	Vacant Health Services Development Site	Vacant land with a permit approved (or capable of being developed) for health purposes (e.g., hospital)
701	Vacant Education and Research Development Site	Vacant land with a permit approved (or capable of being developed) for education purposes (e.g., school/university)
702	Vacant Justice and Community Protection Development Site	Vacant land with a permit approved (or capable of being developed) for justice and community protection purposes (e.g., police station/court house)
703	Vacant Religious Purposes Development Site	Vacant land with a permit approved (or capable of being developed) for religious purposes (e.g., church/temple/synagogue)
704	Vacant Community Services Development Site	Vacant land with a permit approved (or capable of being developed) for community services (e.g., clubrooms)
705	Vacant Government Administration Development Site	Vacant land with a permit approved (or capable of being developed) for government administration purposes (e.g., civic purposes)
706	Vacant Defence Services Development Site	Vacant land with a permit approved (or capable of being developed) for defence uses (e.g., barracks)
750	Halls and Service Clubrooms	Land developed and used as an occasional meeting place by community-based groups or clubs
752	Community Facility	Land developed and used as a meeting place by groups involved in community interests (e.g., neighbour centre)
762	Local Government	Land developed and used for the administration of local government
763	Civic Buildings	Land developed and used by local government for civic purposes
840	Library/Archives	Land developed and used as a library or archival facility with local significance

This analysis provided a dataset of 567 sites that were identified as publicly owned (Step 1) and were vacant or hosted compatible uses, as described (Step 2). Using R Markdown and the R packages ggmap and googleway, we compiled street view images of each of these sites (Cooley, Barcelos and Rstudio 2018; Kahle and Wickham 2016). The authors and an intern manually reviewed these images to identify the following:

1. The height of the tallest existing facility
2. The height of the lowest existing facility
3. Whether the site had already been repurposed despite being vacant (e.g., community gardens)

We then removed sites with existing facilities greater than three storeys. Sites that appeared to be repurposed, including two pairs of community gardens were also excluded. In addition, we removed several sites hosting infrastructure—such as pedestrian bridges, greenskeeper sheds or parking—that formed part of a larger community park or natural reserve but which the AVPCC classified as something else. A summary of the steps for declaring a council parcel vacant or lazy is presented in Figure 7.

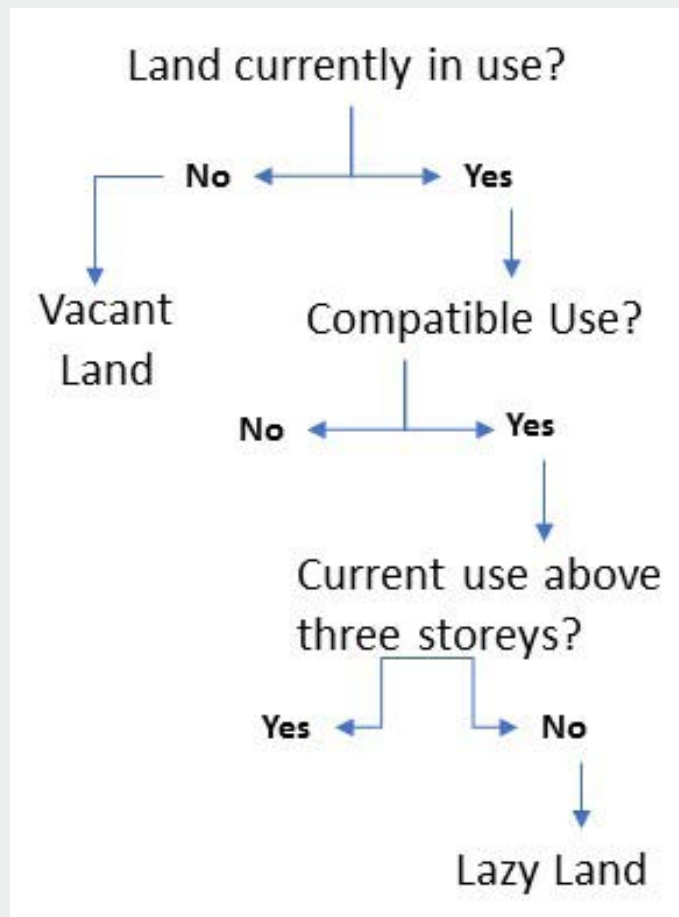


FIGURE 7: DECISION TREE FOR INCLUDING AND CLASSIFYING GOVERNMENT-OWNED LAND

Preliminary searches identified over 11,989 government-owned properties in Victoria. Of these, 447 met the criteria of being vacant land or lazy land according to the classification diagrammed in Figure 7. We then further limited our list of sites to those deemed accessible from a transport and services standpoint, which we detail in the following subsection.

STEP 4: IDENTIFYING WELL-LOCATED SITES USING THE LORD MAYOR’S CHARITABLE FOUNDATION’S HOUSING ACCESS RATING TOOL

The government’s commitment to promoting ‘20-minute neighbourhoods’ inspired us to develop the HART and apply it to this project (State Government of Victoria 2017a). The 20-minute neighbourhood concept originates from work by the City of Portland in the United States (City of Portland 2010). The City of Portland and other proponents conceptualise a 20-minute neighbourhood as one where a resident can access all the amenities needed on a regular basis within a 20-minute travel distance, preferably on foot, by public transport or by bicycle. We built the HART for the LMCF, which requested a tool to identify optimal sites for social and affordable housing. We developed HART by first selecting a basket of key amenities and then defining maximum street network distance thresholds to those amenities using the 20-minute concept. Through the Affordable Housing Challenge program, the LMCF will award one million dollars in funds to support the development of an innovative social housing site in Greater Melbourne and used HART to score prospective sites for the challenge. You can view HART scores across Greater Melbourne and Geelong at our [website](#).

Our amenity basket draws inspiration from Australian and international research (Lowe et al. 2015), with a focus on needs of very low- and low-income households. The State of Victoria strives towards standards for access to parks and public transport stops (Arundel et al. 2017), which we include. We only counted access to parks greater than 1.5 hectares in area to ensure they provided adequate space for physical activity such as walking, cycling or jogging. We only included public transport stops that met a minimum public transport level of service used in the Spatial Network Analysis for Multimodal Urban Transport Systems accessibility model (Curtis and Scheurer 2016). We included childcare facilities and public schools, inspired by Vancouver’s ‘child-friendly’ development guidelines (City of Vancouver 1992).

American agencies that allocate that country's generous affordable housing tax credits often competitively score subsidy applicants using walkability criteria (Ellen et al. 2015). Thus, we adopted full-service grocery stores, libraries, pools or public recreational facilities, bulk billing healthcare facilities open at least 40 hours a week and pharmacies into the HART, based on the success of the American experience. Recent research suggests that the use of points-based incentive systems to target affordable housing development in the USA successfully pushed its production into higher opportunity areas (Ellen and Horn 2018).

The scoring tool excludes several amenities that proprietary and general use accessibility tools frequently include. These consist of typically expensive or boutique amenities such as restaurants, bars, performance venues, coffee shops and movie theatres. We excluded these based on a desire to keep our tool focused on a household's essential needs and to keep the tool comprehensible from a data input standpoint. The tool does not score for employment accessibility, as proximity to employment does not always translate into job opportunities for low-income individuals. We included public transport access as a proxy for employment access, as many low-income households have insecure and rapidly changing employment circumstances.

Table 8 provides a comparison of the amenities and services included in HART to those of other similar tools used internationally. We also compare the scoring tool to the tax credit housing locational score from California, the largest state allocation program for housing tax credits (California Tax Credit Allocation Committee 2017).

TABLE 8: COMPARISON OF AMENITIES INCLUDED IN THE HOUSING ACCESS RATING TOOL AND SIMILAR INTERNATIONAL TOOLS

	Walk Score	Vancouver Child-friendly	California LIHTC	Portland 20-Minute City	State Government of Victoria	LMCF (AHC)
Groceries	X	X	X	X	X	X
Public transport	X	X	X	X	X	X
Coffee shops	X			*		
Bars & restaurants	X			*		
Movie theatres	X			*		
Primary school	X	X**	X**	X**		X**
Secondary schools	X		X**			X**
Libraries	X	X	X			X
Parks/open space	X	X	X	X	X	X
Book stores	X			*		
Pools/rec. centres	X			*		X**
Healthcare			X	*		X*
Pharmacies	X		X	*		X*
Hardware stores	X			*		
Boutique stores	X			*		
Childcare		X	X			X*
Social services						X

X independently scored criteria, *in bundle of services with one score, **public facilities only

We selected an explicitly walkability-based approach for defining distances to the HART amenities in light of strong evidence that walkable neighbourhoods significantly benefit public health (Badland et al. 2015; Yu et al. 2017). We considered 1500 metres to represent a roughly 20-minute walk, based on average walk speeds (Knoblauch, Pietrucha and Nitzburg 1996) and adjusted distances to amenities for children to 500 m. This included parks and open space, childcare and primary schools. We also reduced grocery stores to a distance of 1000 metres and set distances to public transport stops based on empirical evidence on walkable catchments to public transport in the literature (Renne and Ewing 2013). We present an overview of the Affordable Housing Scoring Tool that includes both amenities and distance thresholds in Table 9.

TABLE 9: HOUSING ACCESS RATING TOOL: OVERVIEW OF POINTS AND THRESHOLDS

	Points	LMCF
Groceries	3	1000 m
Public transport	4	500 m minimum bus, 1000 m tram, 1500 m rail—minimum service threshold; partial points possible
Childcare, primary & secondary schools	3	500 m childcare & primary, 1500 m secondary
Libraries	1	1500 m
Parks & open space	3	500 m
Pools/recreation	1	1500 m
Healthcare & pharmacy	3	1500 m
Social services	2	1500 m
Total	20	

We scored every land parcel in Greater Melbourne and Greater Geelong using ArcGIS and loaded a centroid for every parcel in Greater Melbourne onto a full street network that included pedestrian and cycling infrastructure. Our street network did not include road classes 1 and 2, which represent unwalkable major highways. Every parcel was scored on its distance from the nearest amenities in each category (except for parks and buses) using the OD Matrix tool in ArcGIS. To estimate park and bus proximity, we calculated a service area buffer of 400 metres from each point bus stop or park edge and counted every parcel falling within that service area as receiving points in those categories.

We limited our analysis to sites with a HART score of ten or more. We established this threshold based on an analysis of the distribution of HART scores across Greater Melbourne. We find that a HART score of 10 or greater would limit our sample to most parcels less than 20 km from the CBD, the top quartile of parcels from 11 to 20 km from the CBD and the top 10% of parcels more than 20 km from the CBD. The distribution of HART scores by distance to the CBD for every Greater Melbourne parcel is shown in Figure 8. Limiting our analysis to sites with a HART score of 10 or more shrunk our selection of sites from 447 (Step 3) to 313.

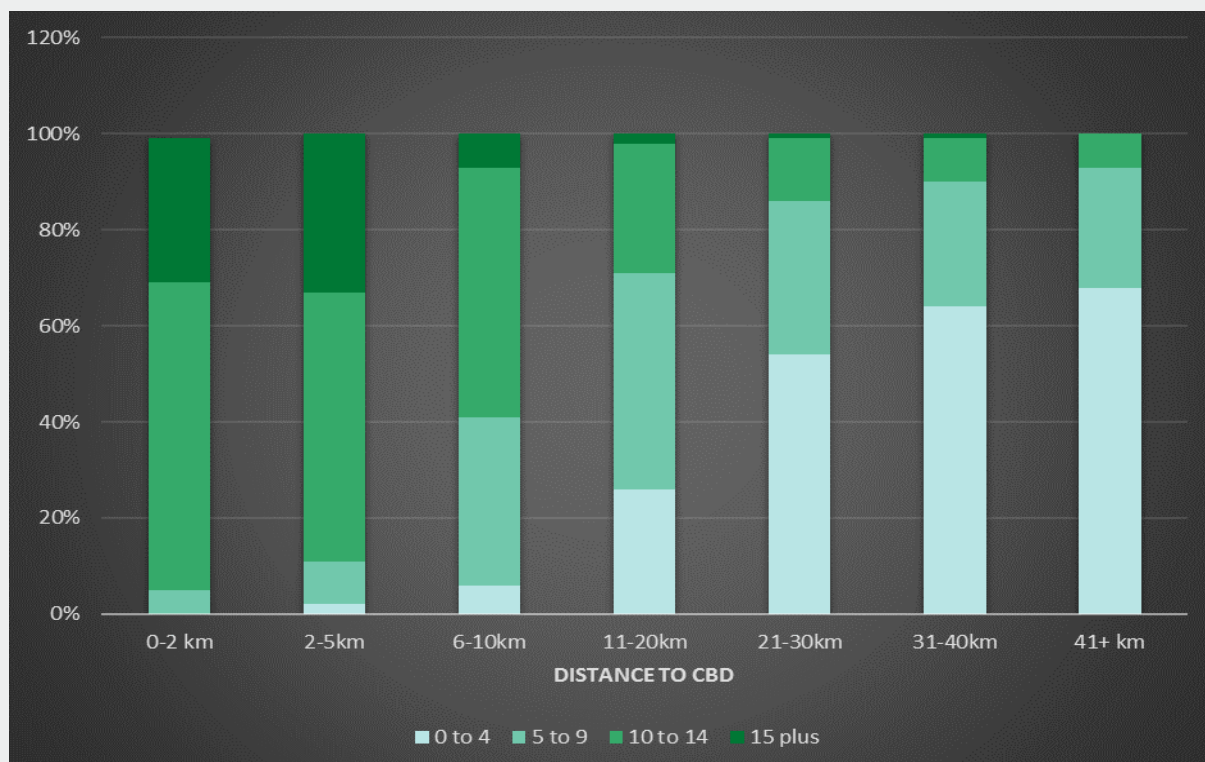


FIGURE 8: DISTRIBUTION OF PARCEL HART SCORES BY DISTANCE TO CENTRAL BUSINESS DISTRICT

STEP 5: FLAGGING SITE LIMITATIONS

Our data gathering approach provides the broadest possible concept of surplus and lazy government land. However, the Auditor-General's study on public land detailed that many state owned parcels remain under-utilised due to site problems, such as proximity to dangerous or hazardous waste or location in a flood zone. Any site advanced for housing must be appropriate for residential use from a public health standpoint; thus, we appended our dataset with relevant information on these problems.

We drew from a wealth of state and federal environmental data to identify inappropriate sites. Every parcel within 500 metres of a major toxic emitter monitored by the federal government was identified and removed. We included these flagged sites in our Inventory Appendix, as future changes to the local economy may render them optimal for housing in the future. Finally, we identified in our data any sites likely to be flooded during a 100-year flood, according to data provided by DELWP. We limited our assumed use of sites that coincided with flood boundaries to those areas that did not overlap with the DELWP's flood layer. For example, a 1,000-square metre site that is 50% covered by the DELWP's flood layer is assumed to have 500 square metres of remaining land available for housing.

Other non-health and safety related planning overlays exist and may complicate immediate use of public land for social and affordable housing. Thus, these were gathered from the DEWLP and appended to our database of public parcels. We sorted the broad range of planning overlays in Victoria into eight overarching categories:

- » Heritage (all Heritage overlays)
- » Bushfire (all Bushfire Management overlays)
- » Building/Landscaping (all special building overlays and significant landscape overlays)
- » Vegetation (all vegetation overlays)
- » Design (any design and development overlays)
- » Environmental (both Environmental Significance overlays and Environmental Audit overlays)
- » Inundation (all Land Subject to Inundation Overlays)
- » Other (Development Contributions and Development overlays, Erosion overlays, Neighbourhood Character overlays and overlays for Melbourne Airport, Restructure, Salinity Management and Public Acquisition and Parking)

Removing sites near pollution emitters reduced our inventory from 313 sites to 279. The sites removed in this step constituted 29.6 hectares of land otherwise well-suited for social and affordable housing. Many of these parcels would quickly become optimal sites for social housing were the proximate pollution emitters closed. We include a separate inventory of these sites in the Inventory Appendix as governments may consider revisiting these sites if local conditions change in future.

STEP 6: ESTIMATING SITE CAPACITY

The final step involved estimating unit yields on sites. The ability to exactly identify optimal unit yield for each site is outside the scope of this analysis. We selected a density range linked to site size, as smaller sites constrain developers in increasing density while meeting planning standards. We drew these assumptions from housing supply reports produced by SGS Economics (CGD 2015; Szafraniec 2016). Our density assumptions by parcel size are:

- » 700–1500 sqm: 171 homes per hectare for three-storey walk-up apartments.
- » Above 1,500 sqm: 267 homes per hectare for five-storey apartment buildings.

Unlike SGS, we included smaller parcels between 300 and 700 sqm, on which we assume 100 homes per hectare. We removed sites of less than 300 sqm to account for the effect of such small parcels on development constraints. This change reduced our parcel count from 279 to 255.

THE INVENTORY

We identified approximately 155 hectares of well-located government land with the potential to host up to 30,000 homes across 255 sites. The bulk of this land, roughly 88 hectares, is from vacant and lazy parcels hosting one-storey community spaces such as neighbourhood centres, town halls and civic meeting spaces above which the state or non-profit providers could deliver social and affordable housing. The second-largest source of government land (29.5 hectare) is parking lots, owned almost entirely by local governments and with the potential for housing development. Lazy council-owned retail and state surplus land provided the fourth and fifth largest sources of government land: 20.9 and 15.2 hectares, respectively. We provide these distributions, disaggregated by HART score, in Figure 9. As the figure demonstrates, most sites scored between 11 and 15 points through HART, reflecting relatively high accessibility to important amenities and services.

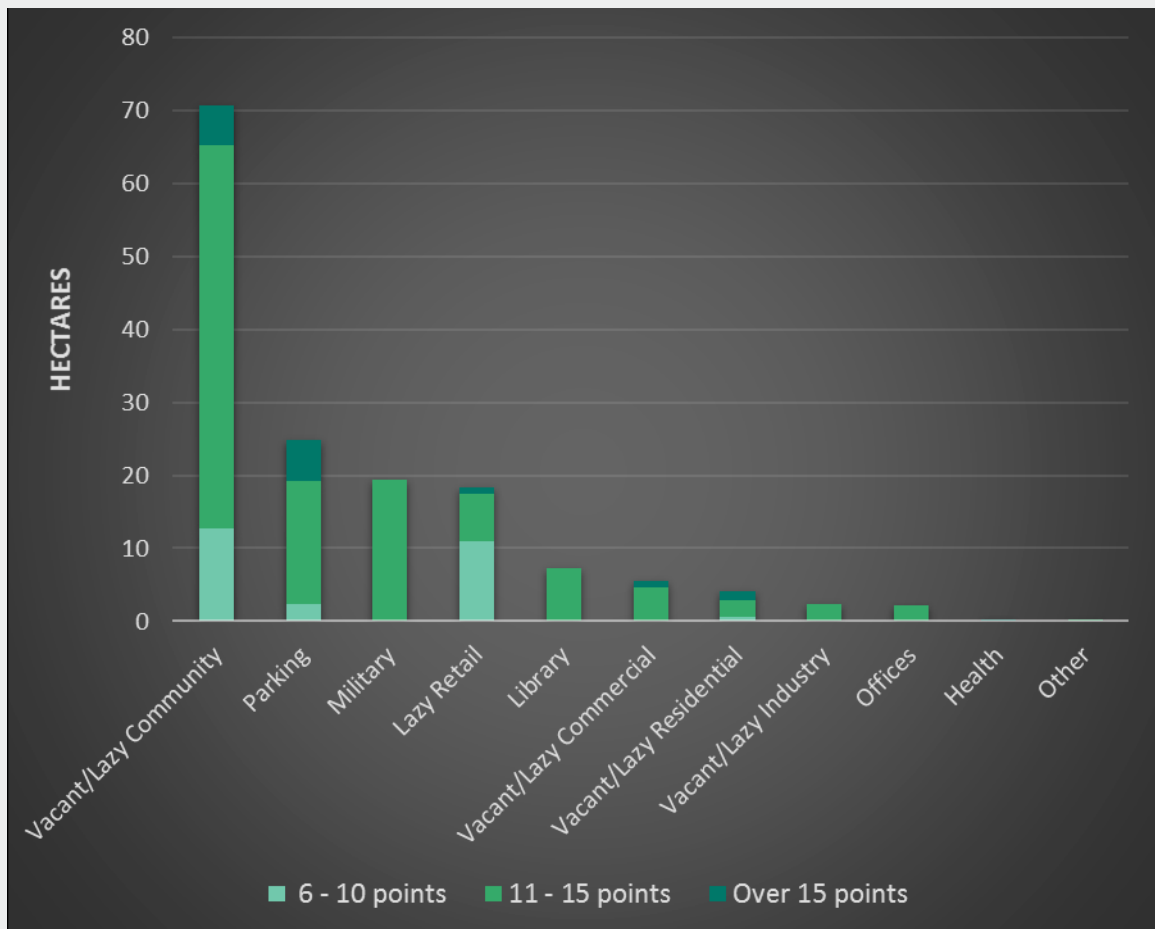


FIGURE 9: DISTRIBUTION OF IDENTIFIED GOVERNMENT LAND BY SOURCE AND HART SCORE

Our inventory contains a healthy balance of data from different regions of Melbourne. Figure 10 shows the distribution of land in the inventory by local government area (LGA). The LGAs with the greatest volume of land in our inventory are spread across the region: Maribyrnong in the west, Maroondah in the east, Greater Dandenong in the south, Whittlesea in the north and Port Phillip near the centre. It is important to remember that not all LGAs in Melbourne provided land data; the figure below does not reflect all land supply in Greater Melbourne.

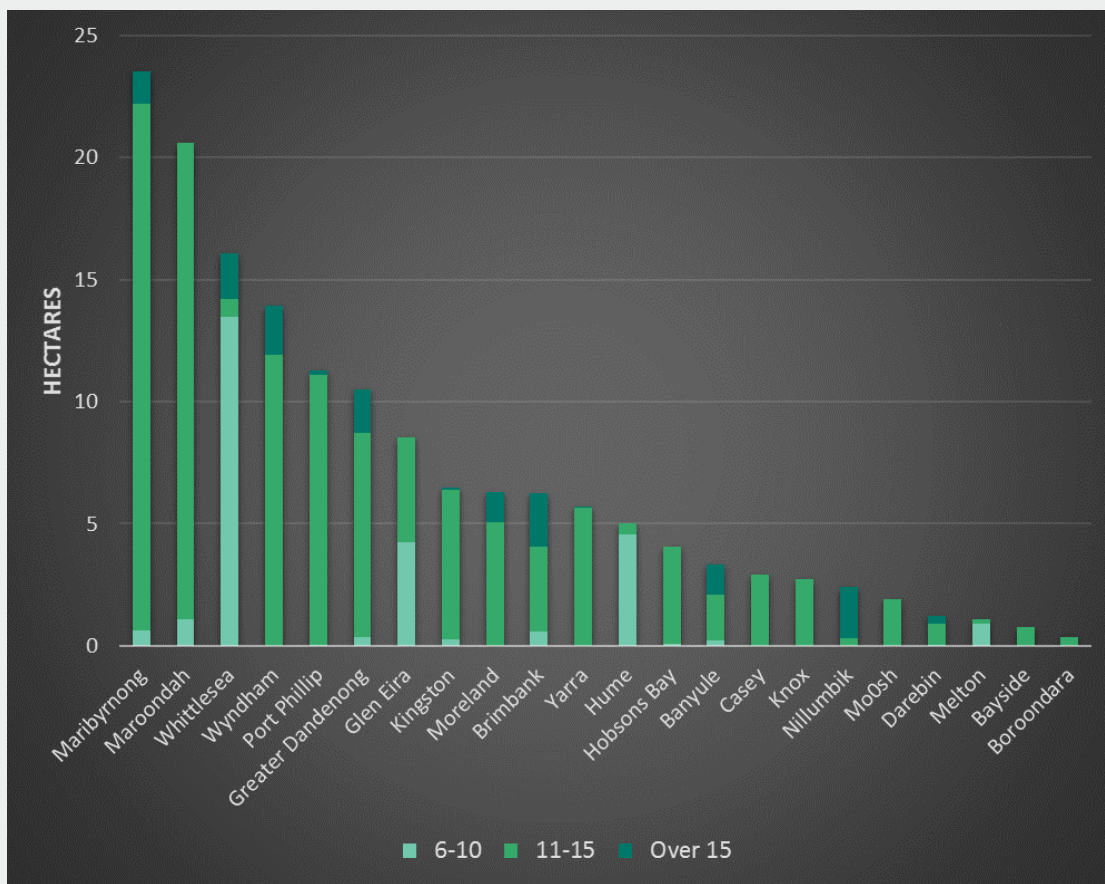
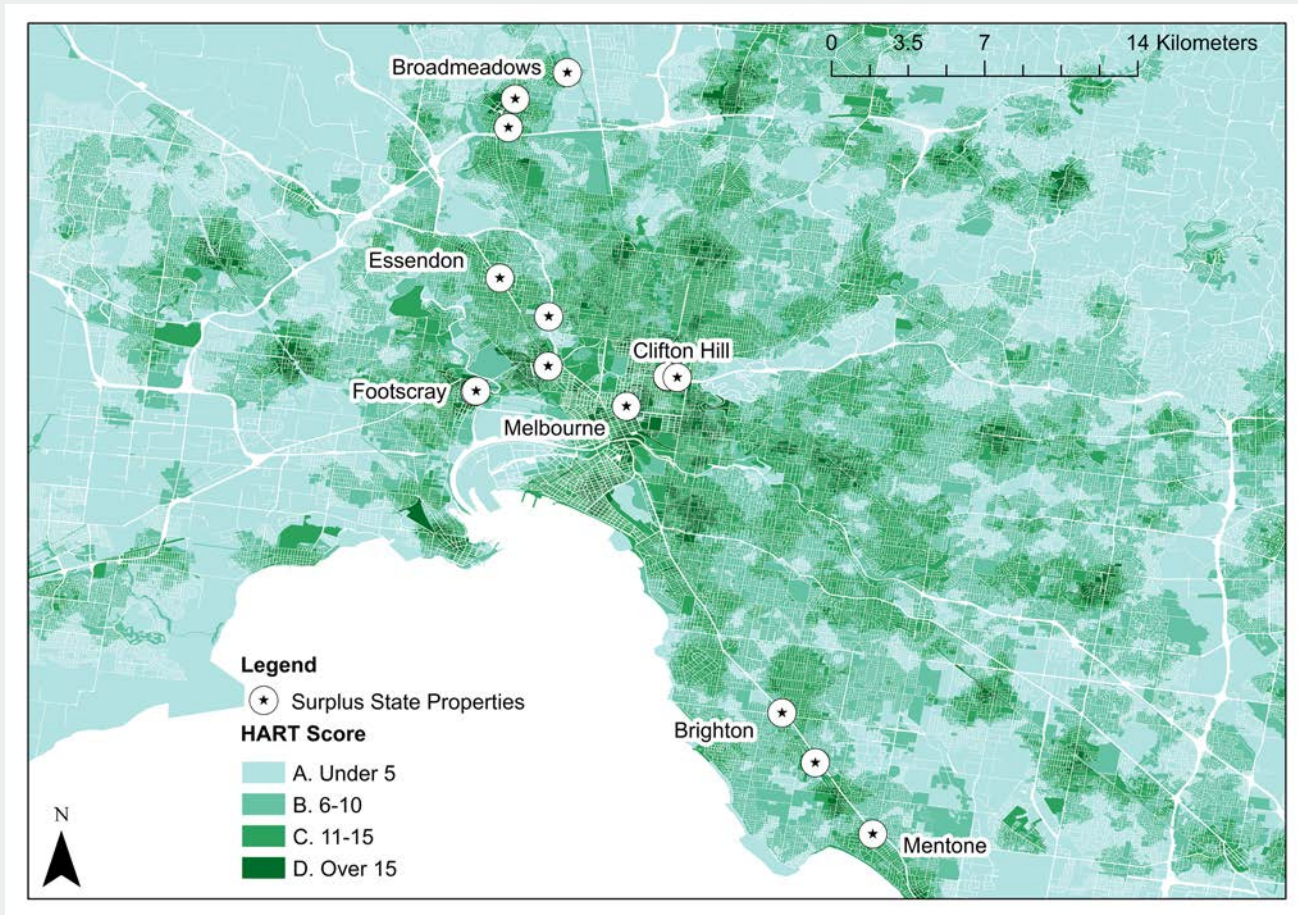


FIGURE 10: DISTRIBUTION OF IDENTIFIED GOVERNMENT LAND BY LOCAL GOVERNMENT AREA AND HART SCORE

This inventory began with a review of surplus state land currently for sale or soon to be put to sale by the state government. We separated these sites out from other state and local land because their status as surplus parcels may enable the government to quickly redeploy them as housing. The inventory then explored vacant and lazy land by region. We defined regions based on DELWP’s characterisations for Suburban Development and infrastructure provision (DELWP 2018).

CURRENT SURPLUS STATE LAND

Current surplus state land constitutes over 90 hectares of Greater Melbourne, of which just under one-third meets the HART criteria for inclusion in this inventory (HART score ≥ 10). This land could support approximately 2,167 homes. These sites are not particularly concentrated in any region or neighbourhood, except for a cluster of three properties in Clifton Hill and Fitzroy, as evidenced in Map 2. Table 10 presents detailed site information and rankings for these sites, which were ranked based on their suitability for housing development. Sites with high HART scores and larger developable areas were ranked highly.



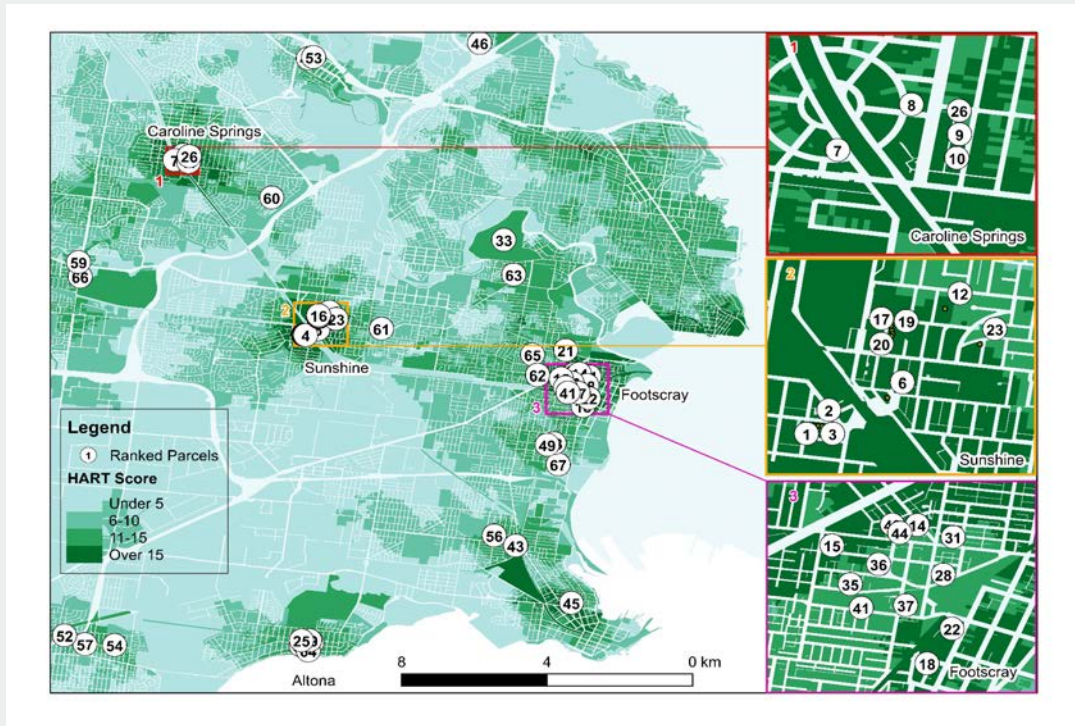
MAP 2: RANKING OF STATE SURPLUS LAND BY HART SCORE

TABLE 10: RANKING OF STATE SURPLUS SITES

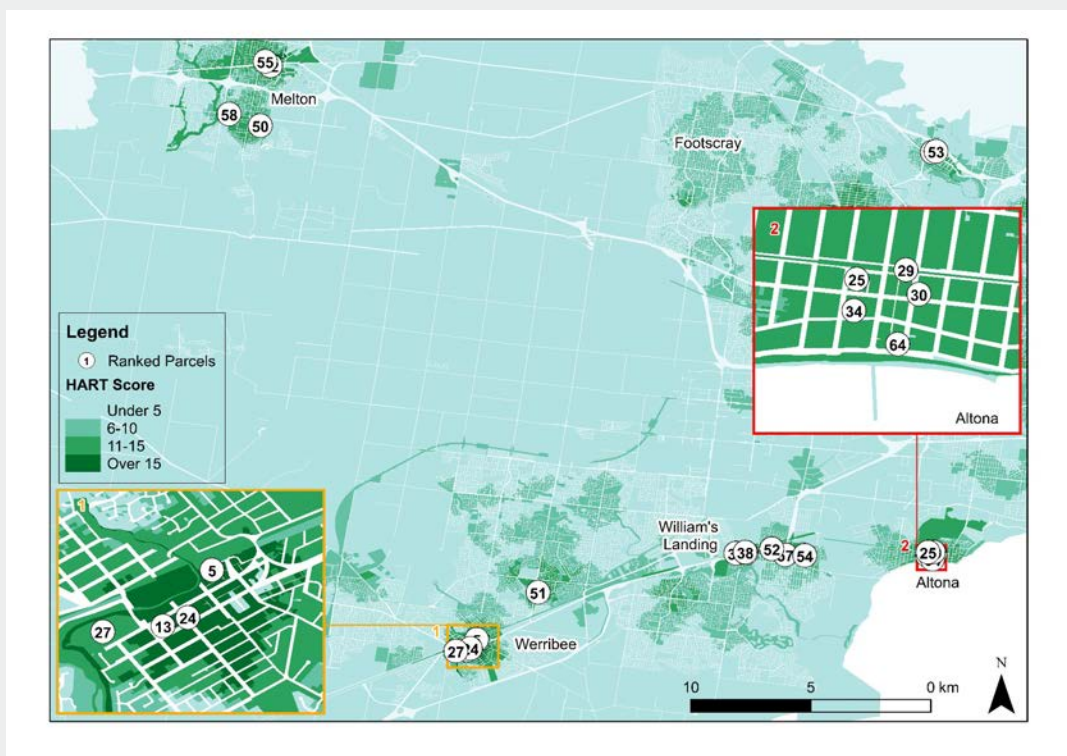
Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100-Year Flood	Planning Overlays								Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	Other	
1	3 WARDE ST, FOOTSCRAY	Maribyrnong	553	15									Yes	6	
2	64 ALEXANDRA PARADE, CLIFTON HILL	Yarra	2989	16			Yes				Yes			80	
3	1136-1138 NEPEAN HWAY, HIGHETT	Kingston	48981	14			Yes				Yes		Yes	1308	
4	592-596 SMITH ST, CLIFTON HILL	Yarra	529	16							Yes			5	
5	70-90 CHELMSFORD ST, KENSINGTON	Melbourne	3650	15							Yes		Yes	97	
6	15/49-67 RATHDOWNE ST, CARLTON	Melbourne	2778	16			Yes				Yes		Yes	74	
7	2-8 BALCOMBE RD, MENTONE	Kingston	481	16					Yes		Yes			5	
8	598-600 SMITH ST, CLIFTON HILL	Yarra	323	16							Yes			3	
9	135-157 RACECOURSE RD, KENSINGTON	Melbourne	4113	15			Yes				Yes		Yes	110	
10	141 GRAHAM ST, BRDMEADOWS	Hume	612	15										6	
11	6 WHITEHALL ST, FOOTSCRAY	Maribyrnong	439	15									Yes	4	
12	22-48 AMBROSE ST, DALLAS	Hume	18771	12									Yes	501	
13	2 GRICE CRES, ESSENDON	Moonee Valley	557	12							Yes			6	
14	1-7 DICKSON CRES, RINGWOOD NORTH	Maroondah	5315	10								Yes		142	
15	2-8 THE MALL CROYDON SOUTH	Maroondah	3002	10								Yes		80	
16	112 BAYSWATER RD, CROYDON SOUTH	Maroondah	909	10								Yes		16	
17	3-5 LOUISA ST, CROYDON	Maroondah	1827	10								Yes		49	
													Total	2,492	

WESTERN MELBOURNE

The western region of Greater Melbourne encompasses the councils of Wyndham, Melton, Brimbank, Hobsons Bay, Moonee Valley and Maribyrnong. We identified a total of 67 government-owned sites that could host 8,107 homes of social and affordable housing. The area includes the Maribyrnong Defence Site, which we include under a scenario in which 15% of the total land area of that site would be set aside for social and affordable housing. We map sites in Western Melbourne in Maps 3 and 4. Most top-ranked sites in Western Melbourne clustered in Sunshine and Caroline Springs, both under the jurisdiction of the Brimbank City Council. Town centres such as those in Werribee, Footscray and Altona also contained adequately sized parcels with high HART scores.



MAP 3: INNER-WEST SITES



MAP 4: OUTER-WEST SITES

TABLE 11: WESTERN MELBOURNE SITE RANKS

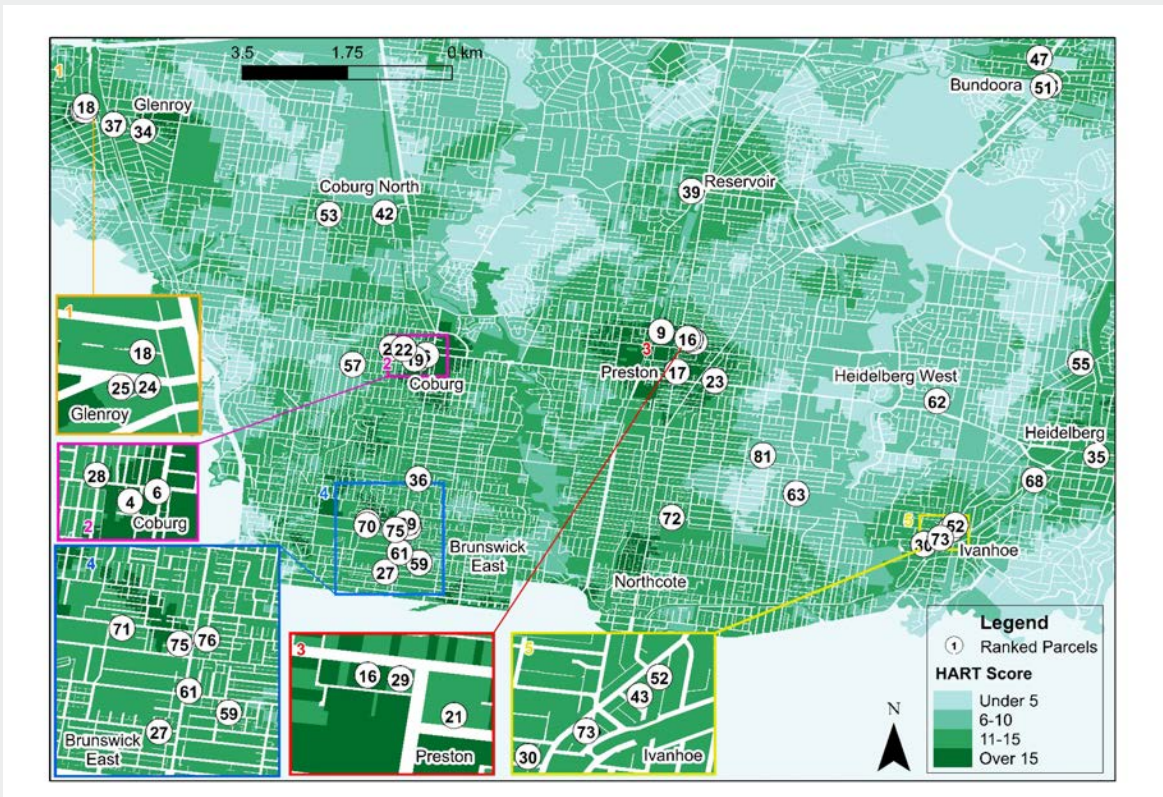
Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100-Year Flood	Planning Overlays								Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	Other	
1	121 DURHAM RD, SUNSHINE	Brimbank	780	20									Yes	13	
2	125 DURHAM RD, SUNSHINE	Brimbank	695	20									Yes	7	
3	123 DURHAM RD, SUNSHINE	Brimbank	694	20									Yes	7	
4	119 DURHAM RD, SUNSHINE	Brimbank	584	20									Yes	6	
5	37 COMBEN DRIVE, WERRIBEE	Wyndham	5398	17									Yes	144	
6	40 DICKSON ST, SUNSHINE	Brimbank	874	17									Yes	15	
7	2 ALBERT CRES, ST ALBANS	Brimbank	810	17						Yes			Yes	14	
8	16 VICTORIA CRES, ST ALBANS	Brimbank	642	17						Yes			Yes	6	
9	17 COLLINS ST, ST ALBANS	Brimbank	615	17						Yes			Yes	6	
10	11 COLLINS ST, ST ALBANS	Brimbank	610	17						Yes			Yes	6	
11	3 COLLINS ST, ST ALBANS	Brimbank	609	17						Yes			Yes	6	
12	20 NEIL ST, SUNSHINE	Brimbank	11988	16									Yes	320	
13	197-199 WATTON ST, WERRIBEE	Wyndham	4068	16			Yes						Yes	109	
14	15-27 DROOP ST, FOOTSCRAY	Maribyrnong	2578	16									Yes	69	
15	94-96 PAISLEY ST, FOOTSCRAY	Maribyrnong	1021	16									Yes	17	
16	16-18 DAWSON ST, SUNSHINE	Brimbank	726	16					Yes				Yes	12	
17	12 DAWSON ST, SUNSHINE	Brimbank	723	16					Yes				Yes	12	
18	7 BRISTOW ST, SEDDON	Maribyrnong	709	16					Yes				Yes	12	
19	10 DAWSON ST, SUNSHINE	Brimbank	582	16					Yes				Yes	6	
20	14 DAWSON ST, SUNSHINE	Brimbank	561	16					Yes				Yes	6	
21	118 BALLARAT RD, FOOTSCRAY	Maribyrnong	305	16									Yes	3	
22	61 NAPIER ST, FOOTSCRAY	Maribyrnong	8654	16			Yes						Yes	231	
23	29 WILKINSON RD, SUNSHINE	Brimbank	598	16									Yes	6	
24	177 WATTON ST, WERRIBEE	Wyndham	4047	16									Yes	108	

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100-Year Flood	Planning Overlays							Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
25	22-26 SARGOOD ST, ALTONA	Hobsons Bay	1121	15											19
26	23 MCIVOR RD ST, ALBANS	Brimbank	920	15						Yes			Yes		16
27	150 WATTON ST, WERRIBEE	Wyndham	77952	15	66%	Yes					Yes		Yes		703
28	40-54 IRVING ST, FOOTSCRAY	Maribyrnong	2452	14			Yes						Yes		65
29	19 BENT ST, ALTONA	Hobsons Bay	1522	14											41
30	18 BENT ST, ALTONA	Hobsons Bay	504	14											5
31	5 UNITY LN, FOOTSCRAY	Maribyrnong	1603	14									Yes		43
32	49 PALMERSTON ST, MELTON	Melton	1008	14											17
33	2 CORDITE AVE, MARIBYRNONG (15% set aside for social/affordable housing)	Maribyrnong	194653	14	17%								Yes		4340
34	123-133 QUEEN ST, ALTONA	Hobsons Bay	3239	14						Yes					86
35	38 RALEIGH ST, FOOTSCRAY	Maribyrnong	5753	13									Yes		154
36	71-73 PAISLEY ST, FOOTSCRAY	Maribyrnong	3153	13									Yes		84
37	41-55 ALBERT ST, FOOTSCRAY	Maribyrnong	2382	13									Yes		64
38	2 NEVILLE AVE, LAVERTON	Hobsons Bay	2116	13											56
39	22 AVIATION RD, LAVERTON	Hobsons Bay	358	13											4
40	20 AVIATION RD, LAVERTON	Hobsons Bay	355	13											4
41	72 BUCKLEY ST, FOOTSCRAY	Maribyrnong	2537	13			Yes						Yes		68
42	220 BARKLY ST, FOOTSCRAY	Maribyrnong	945	13									Yes		16
43	5 MASON ST, NEW-PORT	Hobsons Bay	534	13			Yes								5
44	11 BLACKSTON ST, FOOTSCRAY	Maribyrnong	436	13									Yes		4
45	13 BATH PL, WIL-LIAMSTOWN	Hobsons Bay	7917	13			Yes								211
46	79 SHARPS RD, TULLAMARINE	Brimbank	22820	12									Yes		609
47	704B OLD CALDER HWAY, KEILOR	Brimbank	11011	12			Yes	Yes					Yes		294

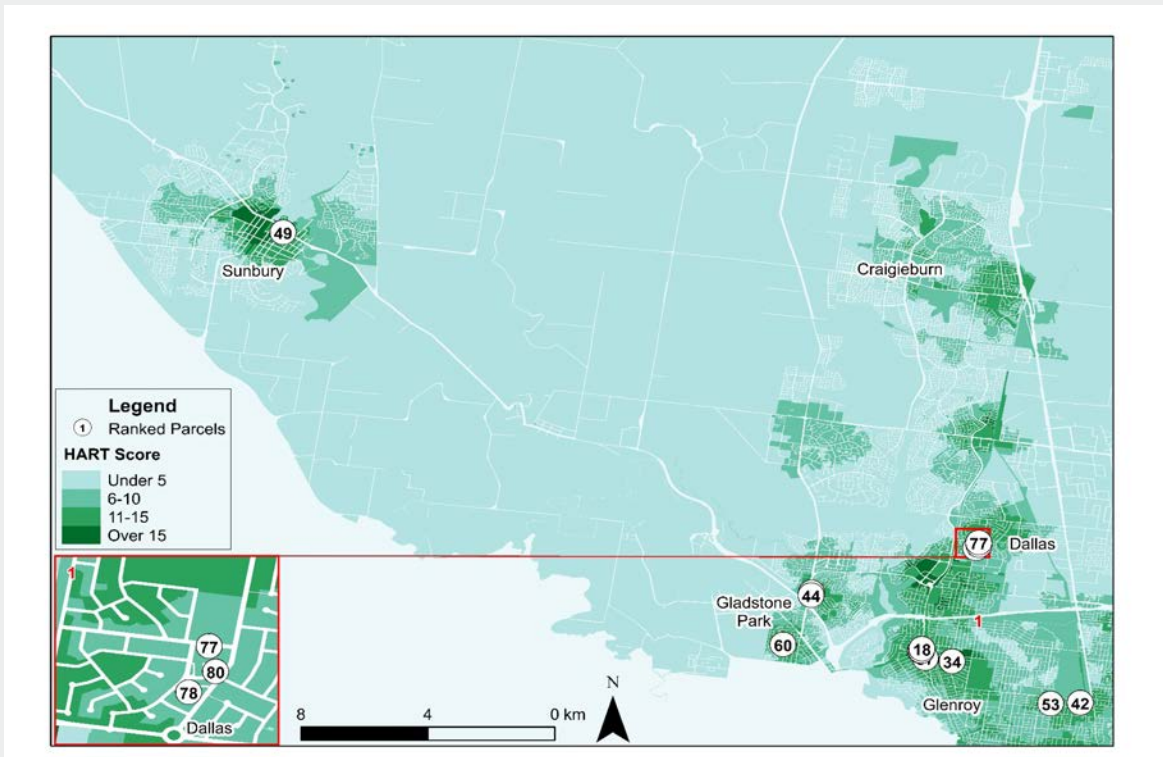
Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100-Year Flood	Planning Overlays							Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	
48	2 ANDERSON ST, YARRAVILLE	Maribyrnong	1016	12			Yes						Yes	17
49	52-56 SIMPSON ST, YARRAVILLE	Maribyrnong	766	12			Yes						Yes	13
50	29 CLOWES ST, MELTON SOUTH	Melton	578	12										6
51	86 DERRIMUT RD, HOPPERS CROSS- ING	Wyndham	41368	12		15%								938
52	5 EPSOM ST, LAVER- TON	Hobsons Bay	19415	11										518
53	2A MERCEDES ST, KEILOR	Brimbank	2274	11									Yes	61
54	42-46 ALMA AVE, ALTONA MEADOWS	Hobsons Bay	941	11										16
55	370C HIGH ST, MELTON	Melton	347	11										3
56	16 OXFORD ST, NEWPORT	Hobsons Bay	1990	11										53
57	43 KIORA ST, ALTONA MEADOWS	Hobsons Bay	483	11			Yes							5
58	93-99 BROOKLYN RD, MELTON SOUTH	Melton	8816	10										235
59	812 BALLARAT RD, DEER PARK	Brimbank	3130	10			Yes						Yes	84
60	67 GRANTHAM PA- RADE ST, ALBANS	Brimbank	500	10					Yes				Yes	5
61	1 RAVENHALL ST, BRAYBROOK	Maribyrnong	6368	10										170
													Total	10,173

NORTHERN MELBOURNE

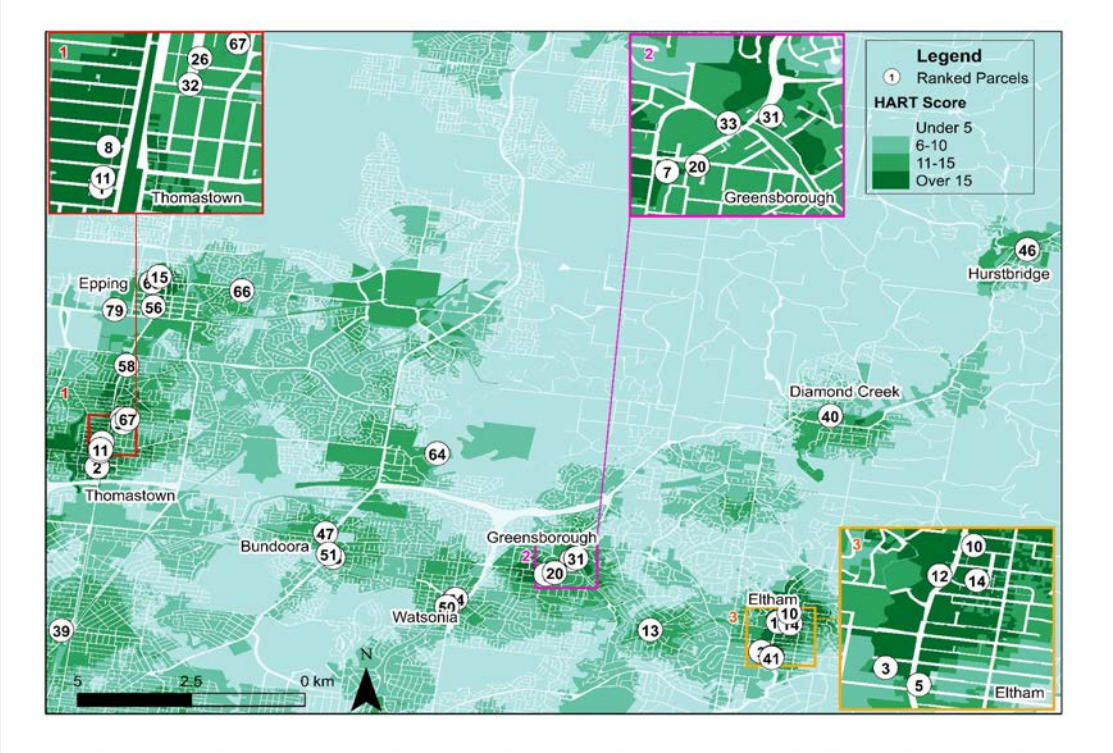
Melbourne's North contained the greatest share of lazy or vacant government land with 66 sites that can host 5,706 homes. The northern region of Greater Melbourne encompasses the councils of Hume, Whittlesea, Nillumbik, Banyule, Darebin and Moreland. The inner-North is mapped in Map 5 while the results for the outer North are shown in Maps 6 and 7. Table 12 provides the complete inventory of identified sites in Northern Melbourne.



MAP 5: INNER-NORTH SITES



MAP 6: NORTHERN MELBOURNE, OUTER-WEST SITES



MAP 7: NORTHERN MELBOURNE, OUTER-EAST SITES

TABLE 12: NORTHERN MELBOURNE SITE RANKS

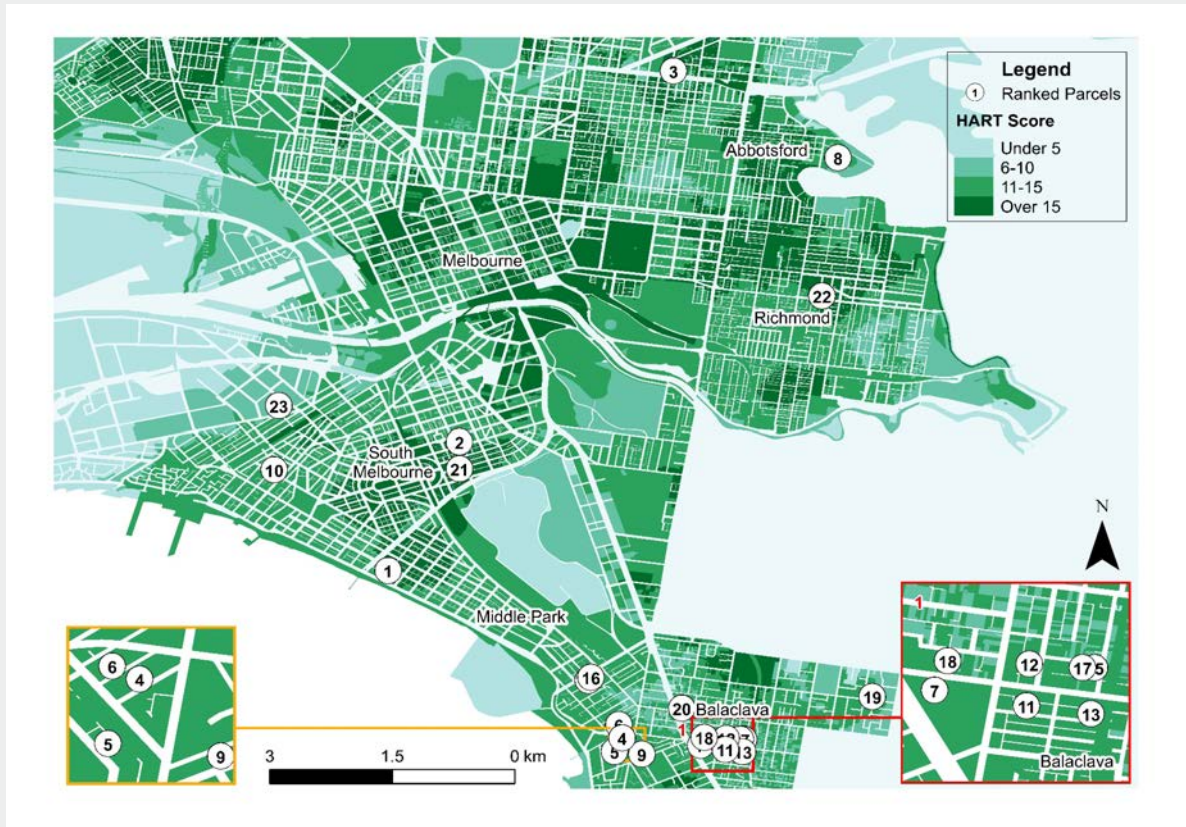
Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	
1	2 MAIN ST, THOMASTOWN	Whittlesea	726	20									Yes	12
2	1 SPRING ST, THOMASTOWN	Whittlesea	695	20									Yes	7
3	739 MAIN RD, ELTHAM	Nillumbik	13422	19		39%	Yes				Yes	Yes	Yes	218
4	33-49 WATERFIELD ST, COBURG	Moreland	10656	18									Yes	285
5	730 MAIN RD, ELTHAM	Nillumbik	920	18			Yes	Yes		Yes				16
6	93 BELL ST, COBURG	Moreland	1672	18									Yes	45
7	212 HENRY ST, GREENSBOROUGH	Banyule	10333	17									Yes	276
8	2-4 CENTRAL AVE, THOMASTOWN	Whittlesea	1821	17									Yes	49
9	253 MURRAY RD, PRESTON	Darebin	801	17									Yes	14
10	1A PRYOR ST, ELTHAM	Nillumbik	700	17				Yes					Yes	7
11	1 HIGHLANDS RD, THOMASTOWN	Whittlesea	543	17									Yes	5
12	907 MAIN RD, ELTHAM	Nillumbik	4185	17			Yes	Yes			Yes		Yes	112
13	3-5 WELLINGTON ST, MONTMORENCY	Banyule	1995	16			Yes		Yes	Yes				53
14	17 DUDLEY ST, ELTHAM	Nillumbik	1849	16				Yes					Yes	49
15	827-835 HIGH ST, EPPING	Whittlesea	15112	16									Yes	403
16	59B ROSEBERRY AVE, PRESTON	Darebin	1508	16			Yes						Yes	40
17	220 HIGH ST, PRESTON	Darebin	708	16									Yes	12
18	26 BELAIR AVE, GLENROY	Moreland	6181	15									Yes	165
19	28 VICTORIA ST, COBURG	Moreland	5745	15									Yes	153
20	30 HOWARD ST, GREENSBOROUGH	Banyule	2161	15					Yes				Yes	58
21	52-60 TOWNHALL AVE, PRESTON	Darebin	1465	15									Yes	25
22	160-162 BELL ST, COBURG	Moreland	990	15									Yes	17

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	
23	2A SOUTH ST, PRESTON	Darebin	892	15									Yes	15
24	5 BELAIR AVE, GLENROY	Moreland	871	15									Yes	15
25	7 BELAIR AVE, GLENROY	Moreland	696	15									Yes	7
26	1 CYPRUS ST, LALOR	Whittlesea	641	15									Yes	6
27	9-11 UNION ST, BRUNSWICK	Moreland	623	15						Yes			Yes	6
28	1A MAIN ST, COBURG	Moreland	408	15			Yes						Yes	4
29	59A ROSEBERRY AVE, PRESTON	Darebin	990	15			Yes						Yes	17
30	4 ABBOTSFORD GROVE, IVANHOE	Banyule	1020	14					Yes	Yes				17
31	6 JOYCE AVE, GREENSBOROUGH	Banyule	795	14					Yes	Yes			Yes	14
32	3 CYPRUS ST, LALOR	Whittlesea	655	14									Yes	7
33	6 HAILES ST E, GREENSBOROUGH	Banyule	497	14									Yes	5
34	2/50 WHEATSHEAF RD, GLENROY	Moreland	20020	14			Yes						Yes	535
35	125 BURGUNDY ST, HEIDELBERG	Banyule	3174	14					Yes	Yes			Yes	85
36	43A DE CARLE ST, BRUNSWICK	Moreland	5818	14			Yes						Yes	155
37	366-370 WATERLOO RD, GLENROY	Moreland	3332	14									Yes	89
38	24 JAMES ST, WHITTLESEA	Whittlesea	1396	13										24
39	4 CLEELAND ST, RESERVOIR	Darebin	5213	13									Yes	139
40	32-34 ELIZABETH ST, DIAMOND CREEK	Nillumbik	1001	13					Yes				Yes	17
41	728 MAIN RD, ELTHAM	Nillumbik	910	13			Yes	Yes		Yes				16
42	1 NOVIAN ST, COBURG NORTH	Moreland	728	13			Yes						Yes	12
43	6 IVANHOE PDE, IVANHOE	Banyule	2223	12						Yes	Yes			59
44	184 MICKLEHAM RD, GLADSTONE PARK	Hume	1902	12										51
45	204-208 MICKLEHAM RD, GLADSTONE PARK	Hume	1842	12										49
46	20 ANZAC AVE, HURSTBRIDGE	Nillumbik	1285	12			Yes	Yes	Yes					22
47	8 NICKSON ST, BUNDOORA	Whittlesea	1053	12					Yes				Yes	18

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
48	7 ALMA RD, BUNDOORA	Banyule	786	12						Yes					13
49	3 BARKLY ST, SUNBURY	Hume	749	12			Yes								13
50	4 LAMBOURN RD, WATSONIA	Banyule	747	12						Yes					13
51	1266 PLENTY RD, BUNDOORA	Banyule	594	12						Yes					6
52	21 IVANHOE PDE, IVANHOE	Banyule	575	12						Yes	Yes				6
53	235-237 SUSSEX ST, PASCOE VALE	Moreland	454	12			Yes	Yes			Yes		Yes		5
54	4-8 IBBOTSON ST, WATSONIA	Banyule	2556	12						Yes					68
55	101 LOWER PLENTY RD, ROSANNA	Banyule	3357	11						Yes					90
56	69C COULSTOCK ST, EPPING	Whittlesea	1347	11									Yes		23
57	6-8 BELLEVUE ST, COBURG	Moreland	3273	11				Yes						Yes	87
58	430 HIGH ST, LALOR	Whittlesea	2078	11									Yes		55
59	18 GARDEN ST, BRUNSWICK	Moreland	326	11									Yes		3
60	SPRING ST, TULLAMARINE	Hume	45751	11					Yes						1222
61	270 SYDNEY RD, BRUNSWICK	Moreland	1100	11			Yes			Yes			Yes		19
62	1 TOBRUK AVE, HEIDELBERG WEST	Banyule	2368	10									Yes		63
63	347 STATION ST, THORNBURY	Darebin	525	10									Yes		5
64	6 SCARTREE CT, BUNDOORA	Whittlesea	107857	10				Yes							2880
65	94 HOUSTON ST, EPPING	Whittlesea	26329	10									Yes		703
66	40 MCFARLANE CRES, EPPING	Whittlesea	609	10									Yes		6
													Total	8,685	

INNER MELBOURNE

The inner region of Greater Melbourne encompasses the councils of Melbourne, Yarra and Port Phillip. We identified a total of 20 government-owned sites that could host approximately 1,479 homes of social and affordable housing. The area includes the Abbotsford Convent, which contains, on its far-northern end, a large, vacant paved parcel that could provide social and affordable housing proximate to the convent's unique services and facilities. However, most sites identified in this region are in St. Kilda, South Melbourne and other suburbs under the jurisdiction of the City of Port Phillip. Details of these sites are provided in Map 8 and Table 13.



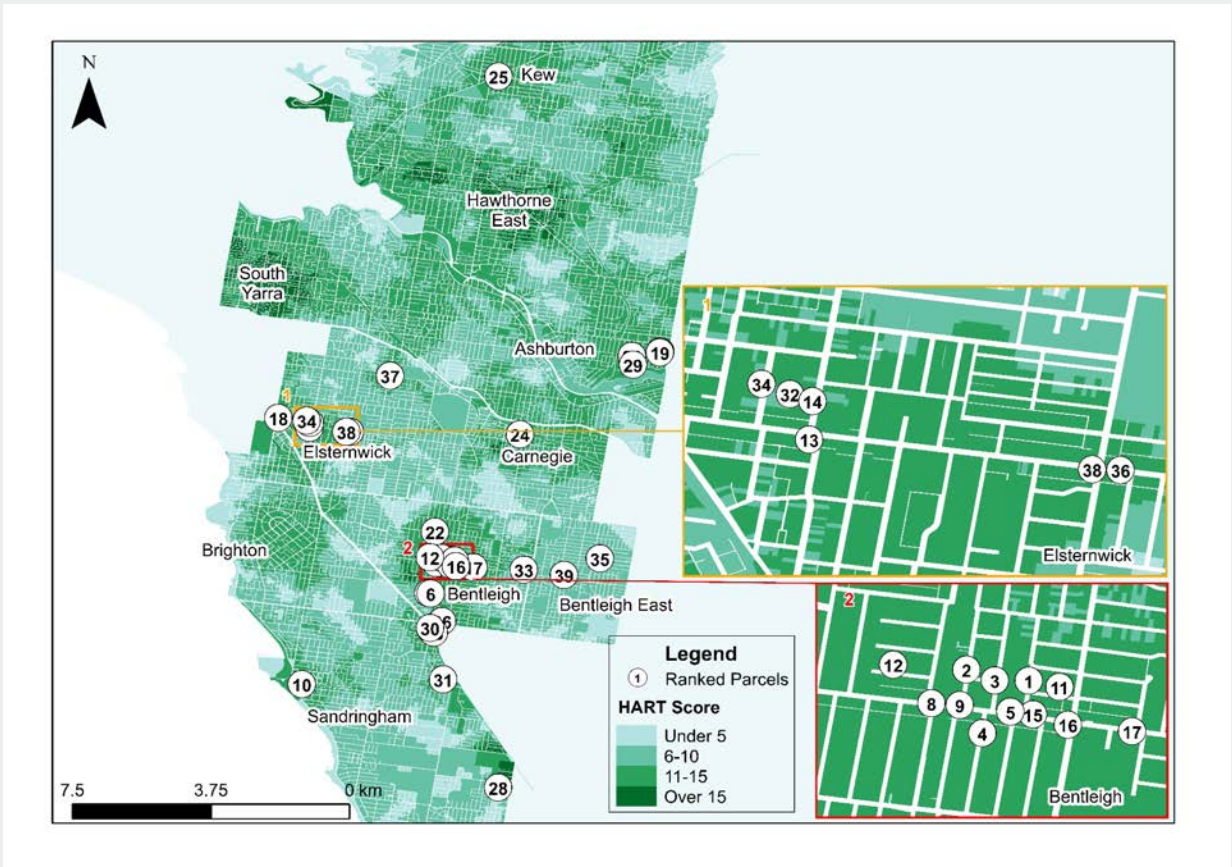
MAP 8: INNER MELBOURNE SITES

TABLE 13: INNER MELBOURNE SITES RANKS

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
1	224 DANKS ST, ALBERT PARK	Port Phillip	1128	17			Yes								19
2	228-234 PARK ST, SOUTH MELBOURNE	Port Phillip	687	16						Yes					7
3	598-600 SMITH ST, CLIFTON HILL	Yarra	323	16						Yes					3
4	2-4 BELFORD ST, ST KILDA	Port Phillip	2728	14					Yes	Yes					73
5	24 CHAUCER ST, ST KILDA	Port Phillip	711	14					Yes	Yes					12
6	2 IRWELL ST, ST KILDA	Port Phillip	545	14			Yes	Yes		Yes					5
7	99A CARLISLE ST, ST KILDA	Port Phillip	12712	14			Yes	Yes							339
8	216/3 ST HELIERS ST, ABBOTSFORD (only cement lot across the street from Abbey)	Yarra	2700	13			Yes	Yes					Yes		76
9	38-40 BLESSINGTON ST, ST KILDA	Port Phillip	556	13			Yes	Yes							6
10	154 LIARDET ST, PORT MELBOURNE	Port Phillip	587	13			Yes								6
11	4-20 MARLBOROUGH ST, BALACLAVA	Port Phillip	2362	12					Yes	Yes					63
12	39-47 CAMDEN ST, BALACLAVA	Port Phillip	1831	12					Yes	Yes					49
13	50-58 MARLBOROUGH ST, BALACLAVA	Port Phillip	1349	12					Yes	Yes					23
14	30-32 JACKSON ST, ST KILDA	Port Phillip	624	12			Yes	Yes		Yes					6
15	49-53 NELSON ST, BALACLAVA	Port Phillip	617	12					Yes	Yes					6
16	3/77 FITZROY ST, ST KILDA	Port Phillip	566	12					Yes	Yes					6
17	2-8 ALFRED ST, BALACLAVA	Port Phillip	1065	11					Yes	Yes					18
18	150 CARLISLE ST, ST KILDA	Port Phillip	4105	11			Yes	Yes							110
19	200 ALMA RD, ST KILDA EAST	Port Phillip	562	11			Yes								6
20	98 INKERMEN ST, ST KILDA	Port Phillip	379	10			Yes	Yes		Yes					4
													Total	837	

INNER SOUTHEAST MELBOURNE

The Inner Southeast includes the councils of Bayside, Glen Eira, Boroondara and Stonnington. We identified a total of 35 government-owned sites that could host 1,552 homes of social and affordable housing. The bulk of parcels identified in this area are in the suburbs of Bentleigh and Elsterwick. These sites are mapped in Map 9 and detailed in Table 14.



MAP 9: INNER SOUTHEAST MELBOURNE SITES

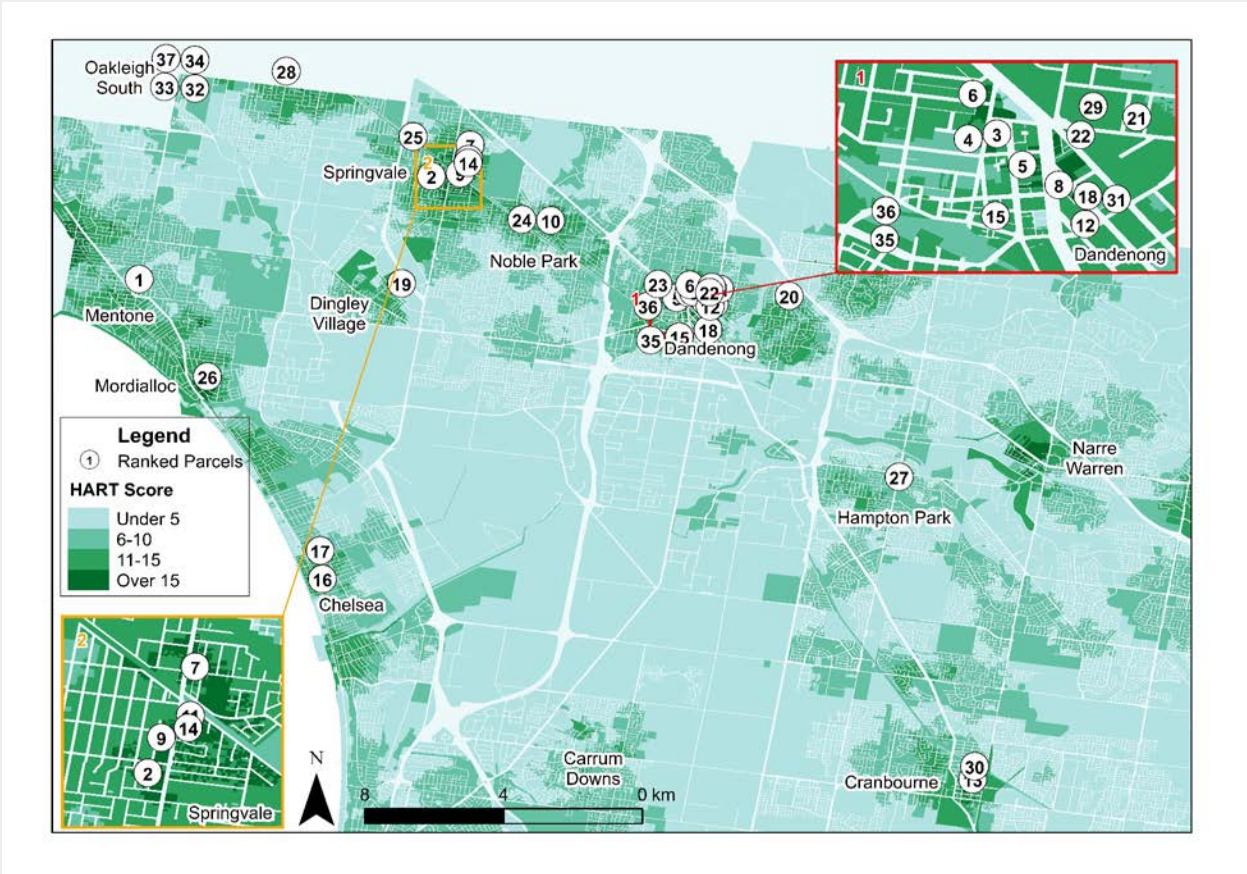
TABLE 14: INNER SOUTHEAST MELBOURNE SITE RANKS

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
1	1-7 GODFREY ST, BENTLEIGH	Glen Eira	3939	15		NA							Yes		105
2	1-5 BENT ST, BENTLEIGH	Glen Eira	3278	15									Yes		88
3	2 BENT ST, BENTLEIGH	Glen Eira	2506	15									Yes		67
4	78 BENDIGO AVE, BENTLEIGH	Glen Eira	1456	15					Yes					Yes	25
5	94 DALEY ST, BENTLEIGH	Glen Eira	1322	15					Yes					Yes	23
6	43 NORTH AVE, BENTLEIGH	Glen Eira	747	15											13
7	38 COATES ST, BENTLEIGH	Glen Eira	731	15											12
8	45 BURGESS ST, BENTLEIGH	Glen Eira	686	15		24%			Yes					Yes	7
9	85 BENDIGO AVE, BENTLEIGH	Glen Eira	583	15					Yes					Yes	6
10	23 ABBOTT ST, SANDRINGHAM	Bayside	969	15			Yes			Yes				Yes	17
11	2-14 HORSLEY ST, BENTLEIGH	Glen Eira	4869	14										Yes	130
12	2 OAK ST, BENTLEIGH	Glen Eira	4768	14					Yes					Yes	127
13	4-8 STANLEY ST, ELSTERNWICK	Glen Eira	4053	14			Yes							Yes	108
14	53 ORRONG RD, ELSTERNWICK	Glen Eira	939	14			Yes							Yes	16
15	92 MITCHELL ST, BENTLEIGH	Glen Eira	550	14					Yes					Yes	5
16	161 JASPER RD, BENTLEIGH	Glen Eira	4986	14					Yes					Yes	133
17	2-4 ARTHUR ST, BENTLEIGH	Glen Eira	1646	14										Yes	44
18	2 MILLER ST, ELSTERNWICK	Glen Eira	377	14										Yes	4
19	6 HUDSON CT, ASHBURTON	Boroondara	869	13											15
20	10 BENGHAZI AVE, ASHBURTON	Boroondara	670	13											7
21	7 HUDSON CT, ASHBURTON	Boroondara	667	13											7
22	118-122 MCKINNON RD, MCKINNON	Glen Eira	1143	13					Yes					Yes	20
23	18-20 KEILLER ST, HAMPTON EAST	Bayside	2595	12										Yes	69

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	
24	5-9 KOKARIBB RD, CARNEGIE	Glen Eira	2115	12									Yes	56
25	22-24 HARP RD, KEW	Boroondara	629	12										6
26	2-4 RAILWAY CRES, BENTLEIGH	Glen Eira	1201	12									Yes	21
27	12 KATOOMBA ST, HAMPTON EAST	Bayside	825	12						Yes			Yes	14
28	19 GORDON ST, BEAUMARIS	Bayside	592	12					Yes	Yes			Yes	6
29	8 WEWAK RD, ASHBURTON	Boroondara	608	11										6
30	18 KATOOMBA ST, HAMPTON EAST	Bayside	601	11									Yes	6
31	3 LIVINGSTON ST, HIGHETT	Bayside	2061	11				Yes		Yes			Yes	55
32	4 STANILAND GROVE, ELSTERNWICK	Glen Eira	933	11			Yes						Yes	16
33	2-8 HEATHER ST, BENTLEIGH EAST	Glen Eira	3078	10									Yes	82
34	6-12 STANILAND GROVE, ELSTERNWICK	Glen Eira	2505	10			Yes						Yes	67
35	58-60 MACKIE RD, BENTLEIGH EAST	Glen Eira	37073	10										990
													Total	2,372

SOUTHERN MELBOURNE

The inner region of Greater Melbourne encompasses the councils of Mornington Peninsula, Frankston, Kingston, Greater Dandenong, Casey and Cardinia. We identified a total of 34 government-owned sites that could host 3,308 homes of social and affordable housing. These sites are mostly clustered in the suburbs of Oakleigh South, Dandenong and Springvale. Sites in Southern Melbourne are mapped in Map 10 and detailed in Table 15.



MAP 10: SOUTHERN MELBOURNE SITES

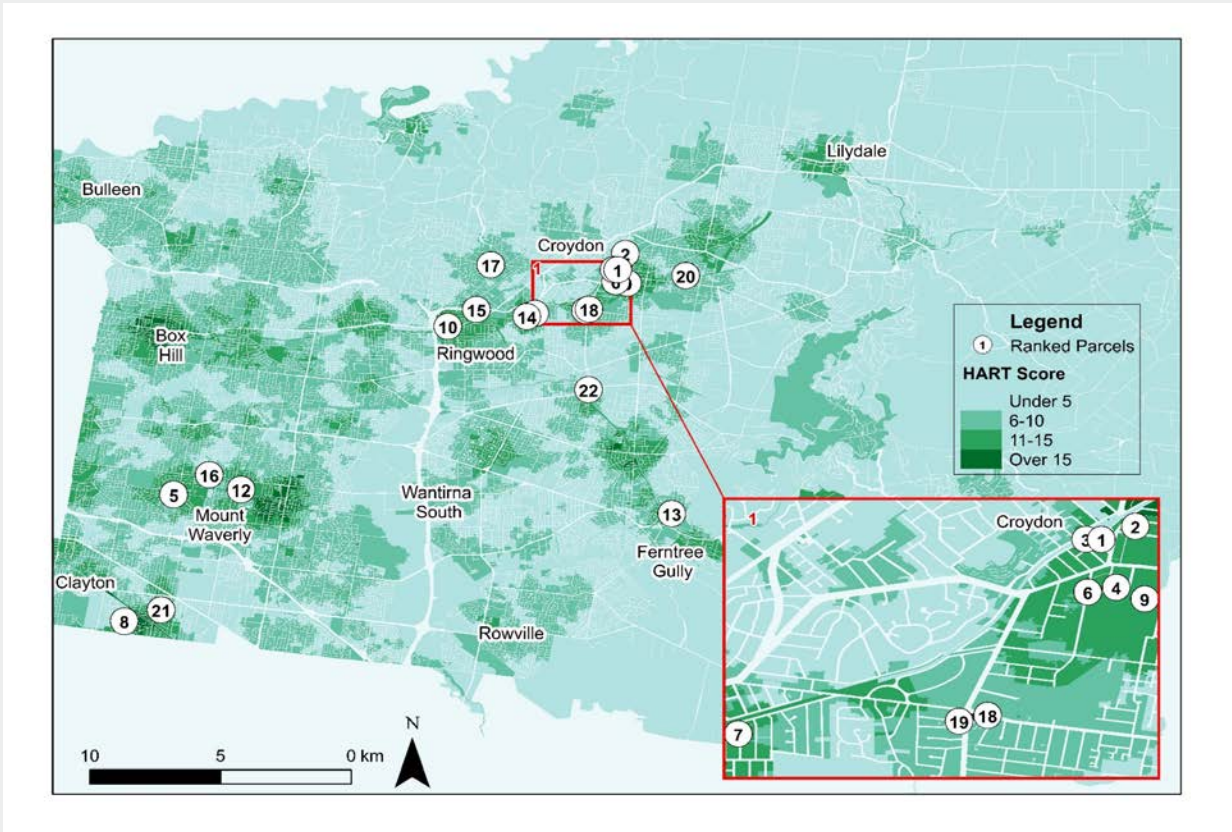
TABLE 15: SOUTHERN MELBOURNE SITE RANKS

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays								Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	Other	
1	33 BALCOMBE RD, MENTONE	Kingston	723	17					Yes						12
2	1A THE CRES, SPRINGVALE	G. Dandenong	7383	16											197
3	38-42 ROBINSON ST, DANDENONG	G. Dandenong	2400	16		39%									39
4	1-7 RODD ST, DANDENONG	G. Dandenong	2271	16											61
5	THOMAS ST, DANDENONG	G. Dandenong	2127	16						Yes					57
6	2-4 HEMMINGS ST, DANDENONG	G. Dandenong	1769	16											47
7	1 VIRGINIA ST, SPRINGVALE	G. Dandenong	443	16						Yes			Yes		4
8	226 LONSDALE ST, DANDENONG	G. Dandenong	1457	16			Yes	Yes		Yes					25
9	49 BUCKINGHAM AVE, SPRINGVALE	G. Dandenong	715	15						Yes			Yes		12
10	7A BUCKLEY ST, NOBLE PARK	G. Dandenong	513	15						Yes					5
11	4-16 WARWICK AVE, SPRINGVALE	G. Dandenong	2956	14						Yes					79
12	26-28 LANGHORNE ST, DANDENONG	G. Dandenong	2619	13						Yes					70
13	14 CHILDERS ST, CRANBOURNE	Casey	2051	13											55
14	32-34 WARWICK AVE, SPRINGVALE	G. Dandenong	1279	13						Yes					22
15	2 MASON ST, DANDENONG	G. Dandenong	936	13						Yes			Yes		16
16	23 BATH ST, CHELSEA	Kingston	693	13						Yes					7
17	6 THE STRAND, CHELSEA	Kingston	616	13			Yes			Yes					6
18	10 LANGHORNE ST, DANDENONG	G. Dandenong	412	13					Yes	Yes					4

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays						Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental		Inundation
19	31 MARCUS RD, DINGLEY VILLAGE	Kingston	56712	12										1514
20	148-154 KIDDS RD, DOVETON	Casey	13281	12							Yes			355
21	4-10 STUART ST, DANDENONG	G. Dandenong	9920	12										265
22	22-28 CLOW ST, DANDENONG	G. Dandenong	7118	12				Yes		Yes				190
23	1-3 MARION ST, DANDENONG	G. Dandenong	2100	12										56
24	3-5 FRANK ST, NOBLE PARK	G. Dandenong	1591	12										42
25	43-45 WESTALL RD, CLAYTON SOUTH	Kingston	1545	12										41
26	11 CENTREWAY, MORDIALLOC	Kingston	591	12						Yes				6
27	16-20 STUART AVE, HAMPTON PARK	Casey	11104	12				Yes			Yes		Yes	296
28	31 MELALEUCA DR, CLARINDA	Kingston	1373	12										23
29	16P/16-46 CLEELAND ST, DANDENONG	G. Dandenong	51814	12				Yes		Yes				1383
30	1-3 LYALL ST, CRANBOURNE	Casey	2970	11							Yes			79
31	56-60 MCCRAE ST, DANDENONG	G. Dandenong	3504	10						Yes				94
32	662 WARRIGAL RD, OAKLEIGH SOUTH	Kingston	710	10										12
33	660 WARRIGAL RD, OAKLEIGH SOUTH	Kingston	709	10										12
34	664-670 WARRIGAL RD, OAKLEIGH SOUTH	Kingston	1109	10										19
													Total potential homes	5,107

EASTERN MELBOURNE

The Eastern region of Greater Melbourne encompasses the councils of Monash, Knox, Whitehorse, Manningham, Yarra Ranges and Maroondah. We identified just 22 government-owned sites that could host 5,667 homes of social and affordable housing because the region contains larger parcels than Greater Melbourne as a whole. These sites are mostly clustered in Croydon, Ringwood and Mount Waverley. Eastern Melbourne sites are shown in Map 11 and details of each ranked site are given in Table 16.



MAP 11: EASTERN MELBOURNE SITES

TABLE 16: EASTERN MELBOURNE SITE RANKS

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays								Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	Other	
1	4-16 DEVON ST, CROYDON	Maroondah	5708	15			Yes				Yes				152
2	7-9 HEWISH RD, CROYDON	Maroondah	3484	15							Yes				93
3	19-21 DEVON ST, CROYDON	Maroondah	2616	15					Yes						70
4	222 MT DANDENONG RD, CROYDON	Maroondah	55684	14			Yes				Yes				1487
5	64-74 VIRGINIA ST, MOUNT WAVERLEY	Monash	15531	14										Yes	415
6	15 LUSHER RD, CROYDON	Maroondah	1126	14											19
7	3 STANLEY AVEE RINGWOOD EAST	Maroondah	2304	13					Yes						62
8	52 VIEW ST, CLAYTON	Monash	799	13											14
9	254-260 MT DANDENONG RD, CROYDON	Maroondah	99661	13					Yes	Yes	Yes				2661
10	6A MURRAY PL, RINGWOOD	Maroondah	4260	13							Yes			Yes	114
11	129B BEACONSFIELD PDE, ALBERT PARK	Port Phillip	79796	13			Yes								2131
12	2 JOHN ST, GLEN WAVERLEY	Monash	866	12											15
13	6 ALPINE ST, FERNTREE GULLY	Knox	27370	12				Yes	Yes	Yes	Yes	Yes			731
14	2-8 LAURENCE GROVE, RINGWOOD EAST	Maroondah	15459	12					Yes						413
15	28A WARRANDYTE RD, RINGWOOD	Maroondah	4737	12					Yes	Yes	Yes			Yes	126
16	535-537 HIGH ST, MOUNT WAVERLEY	Monash	2082	11						Yes					56
17	1-7 DICKSON CRES, RINGWOOD NORTH	Maroondah	5315	10					Yes						142
18	2-8 THE MALL, CROYDON SOUTH	Maroondah	3002	10					Yes						80
19	112 BAYSWATER RD, CROYDON SOUTH	Maroondah	909	10					Yes						16
20	3-5 LOUISA ST, CROYDON	Maroondah	1827	10					Yes						49
													Total	8,834	

MAKING IT HAPPEN

Producing affordable and social housing on many of the sites in this report will require further coordination and support across a range of stakeholders, including local councils, developers, non-profit providers and philanthropic organisations. Here, we showcase several strategies for producing affordable and social housing on public land based on existing case studies underway in Melbourne, across Australia and internationally. We include initiatives introduced in previous Transforming Housing reports that are now underway or completed and organise these strategies into seven categories:

- » Leveraging Public Land to Support Other State Housing Initiatives
- » Social Investment and Philanthropic Initiatives
- » Cross-Sectoral Partnerships for Housing
- » Inclusive Redevelopment of Infrastructure
- » Incremental, Modular and Mobile Design
- » Inclusionary Zoning
- » Community Land Trusts

LEVERAGING PUBLIC LAND TO SUPPORT OTHER GOVERNMENT HOUSING INITIATIVES

The Social Housing Growth Fund constitutes the largest capital investment in social housing announced by the state government in Homes for Victorians (State Government of Victoria 2017b). Similar government support has been used in North America, where non-profit developers leverage such support by ‘stacking’ it on top of smaller subsidies from multiple other sources. This ‘cobbling’ of a variety of funds enables many affordable housing projects to make financing ‘stack up’, a finding detailed in previous [Transforming Housing research](#) (Whitzman, Newton and Sheko 2015b). Victoria can learn from that experience by strategically pairing Social Housing Growth Fund capital subsidy with government land donated to enhance the benefits of the Fund.

Figure 3 presents the average costs of two projects that applied for VPF subsidies in 2017. Figure 11 plots those data against the breakdown of financing sources averaged across the same projects.

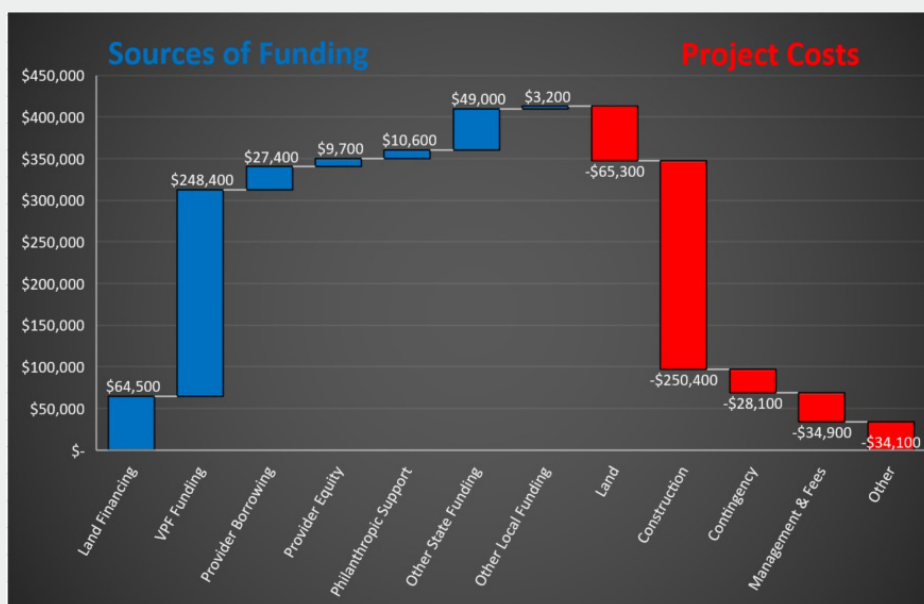


FIGURE 11: FUNDING SOURCES AND COSTS AVERAGED BETWEEN TWO PROPOSED SOCIAL HOUSING PROJECTS IN VICTORIA, 2017

The VPF applicants that shared these data—both non-profit providers—financed land acquisition by obtaining loans or withdrawing cash from their own financial reserves. Some of these efforts required the state’s nascent non-profit providers to leverage against their existing portfolio, using the land and property they currently own as collateral. Providers without capital or assets to leverage are severely constrained when competing with well-financed private developers to acquire land (Milligan et al. 2017). While these data only draw on two projects, they illustrate the stacking of financial inputs and cost distribution that is typical in social housing projects and documented across the sector in Australia (Randolph et al. 2018). This also highlights the land costs that non-profit providers must cover as they compete for other state subsidy.

Any land contribution by government towards affordable and social housing can be understood as the equivalent of a capital contribution towards the project that is equal to the cost of the land. Removing the financial obstacle of land acquisition by pairing public land with Social Housing Growth Fund subsidy will increase the range of providers able to compete for funds and ensure a more robust programmatic outcome. Pairing well-located government land with the Social Housing Growth Fund will allow Fund dollars to support a greater number of projects and deepen its beneficial effect on the sector.

One recent project that exemplifies the stacking of subsidies and financial inputs required to deliver social housing is Drill Hall. Drill Hall is a historic building constructed in 1937 and used by the Australian military to hold drill training for officers before the Second World War. The site is across the street from Queen Victoria Market in Melbourne and scores very high on HART. It required significant refurbishment by the turn of the century. Housing Choices Australia (HCA), a non-profit social housing provider, worked with the City of Melbourne to refurbish the historic building to enable the site to host social housing and community services. The project received \$19.3 million in federal support through the National Building Economic Stimulus Program (Social Housing Initiative) and \$2 million from the philanthropic Sidney Myer Centenary Fund (Lennon 2015). The federal Social Housing Initiative was the single largest commitment to the funding of social housing in Australia’s history and contributed to the construction of 19,700 new homes, including the Drill Hall (KPMG 2012). HCA also contributed \$2 million from their own reserves; thus, the City of Melbourne transferred the land to HCA for no cost and then leased back the original Drill Hall for 99 years to ensure the community space was maintained. The site (see Figure 12) retained 90% of its original heritage fabric and now additionally contains 59 affordable homes, an employment centre and a community hub that hosts events and community organisations (Lennon 2015).



FIGURE 12: THE DRILL HALL (LENNON 2015)

Drill Hall demonstrates how social housing projects can benefit from contributions from multiple levels of government, philanthropy and not-for-profit providers. Land transfers, leases or subsidised sales by local, state or federal governments have the potential to support existing funding streams in delivering well-located and affordable housing.

SOCIAL INVESTMENT AND PHILANTHROPIC INITIATIVES

Social investors and philanthropic organisations can catalyse the provision of new housing on government land. Previously, Transforming Housing has documented the role of philanthropic organisations in piloting social and affordable housing in Australia and abroad (Whitzman, Newton and Sheko 2015a). Since then, social investors and philanthropic organisations have continued to expand the supply of social and affordable housing by generating competitive grant opportunities for innovative projects.

As discussed previously, the Lord Mayor Charitable Foundation's \$1 million [Affordable Housing Challenge](#) (AHC) inspired the creation of the HART scoring tool. By our estimation, the AHC will leverage up to \$14 million in funding from other sources to produce an innovative new social housing project on government land. Applicants to the AHC will also be eligible for up to \$2 million in funding from Social Enterprise Finance Australia, an organisation dedicated to investing in social enterprises.

Several other case studies, discussed under Making It Happen, received some philanthropic aid; however, this support often amounted to a small share of the projects' overall costs, demonstrating how even small commitments from philanthropic organisations can make social and affordable housing projects financially feasible. Drill Hall received \$2 million from the Sidney Myer Centenary Fund for a project costing just over \$24.6 million in total. The Fund's contribution amounts to roughly 8% of the cost of Drill Hall and yet, supported social providers to deliver new housing. Fire Hall No. 5, discussed in a subsequent section, provides social housing on a redeveloped fire hall site. The Streethome Foundation contributed \$900,000 to the redevelopment of the site, which cost roughly [\\$26 million](#). Social and philanthropic funding can support innovative projects on government land achieve financial viability.

CROSS-SECTORAL PARTNERSHIPS FOR HOUSING

This section highlights innovative collaborations between government entities in education and health with affordable housing providers that have yielded housing on government land while improving health and educational services. We begin with an exceptional example that Victorian organisations have adapted across multiple sites—Youth Foyers—and then discuss international examples of government healthcare providers finding value in providing affordable and social housing on their land to chronically-ill people at risk of homelessness.

Service providers The Brotherhood of St. Laurence and Launch Housing partnered with several of Victoria's TAFE institutions to create Youth Foyers on TAFE campuses in Waverly, Broadmeadows and Shepparton. The foyers (see Figure 14) provide studio accommodation with shared common areas and are supervised by trained staff. They prevent lifetime homelessness and support educational attainment by providing people aged 16–24 with two years of on-campus housing while they complete their education.



FIGURE 13: SHARED KITCHEN SPACE IN THE EDUCATION FIRST YOUTH FOYER ON THE HOLMESGLEN INSTITUTE'S WAVERLY CAMPUS (BROTHERHOOD OF ST. LAURENCE, 2017)

These sites illustrate how the co-location of affordable and social housing on government land intended for other social services can simultaneously provide a multitude of benefits to residents and have a 'circuit breaker' effect in the lives of chronically homeless individuals. For example, early analysis of Australian Youth Foyers found that roughly 81% of youth who stay in a Foyer find permanent housing after leaving, with more than half continuing their education or training (Steen and Mackenzie 2013).

International experience provides examples of similar collaborations that simultaneously built social housing while achieving other social objectives. Government and non-profit hospitals and healthcare systems in the United States are now providing affordable housing as part of a strategy to reduce emergency services costs (Bamberger et al. 2017). A public hospital in New York City, Kings County Medical Centre, donated some of its land to enable the development of CAMBA Gardens (see Figure 15), a 209-unit development serving low-income families, the chronically homeless and low-income individuals with special needs (Novogradac & Company 2014). CAMBA Gardens also contains on-site health services affiliated with the New York City Department of Public Health. CAMBA Gardens II, a second phase of the project completed in 2016, adds an additional 293 affordable homes to the community.



FIGURE 14: AN IMAGE OF CAMBA GARDENS HOUSING (CAMBA HOUSING VENTURES 2018)

Land affiliated with public hospitals offers enormous potential to increase social and affordable housing while providing additional savings to government in healthcare. American hospitals providing housing on their own land will steer homeless, heavy users of their emergency services into the on-site housing. These efforts deliver significant cost savings to those hospitals (Health Research & Educational Trust 2017).

Primary and secondary school officials have also begun hosting social and affordable housing on lazy school land in expensive North American cities to reduce high staff turnover caused by rising living costs. The Los Angeles Unified School District, the second-largest primary and secondary public school system in the United States, has provided hundreds of homes of housing on its under-utilised land, including building housing above a primary school parking lot (Phillips 2016). The homes provide affordable housing to school district staff on low incomes, including cafeteria staff, janitors, bus drivers and teaching assistants. These efforts support school district employee retention while increasing the supply of social and affordable housing.

Cause We Care Housing in Vancouver (see Figures 16 and 17) is another example of the benefits of cross-sectoral partnerships. The project is the outcome of a partnership between the City of Vancouver and YWCA Metro Vancouver. The project resulted in 21 homes of long-term, supported social housing and substantial community and family program space across four floors above a Vancouver Public Library. The model includes support services in addition to housing and is strongly linked to an affiliated YWCA Community Resource Centre (Shaw 2018). The City of Vancouver provided the land value, design and construction of the new library and the remaining funds were derived from YWCA and a range of donors (Kwan 2017). The project targets single mothers and their children.



FIGURE 15: CAUSE WE CARE HOUSE IN VANCOUVER (SHAW, 2018)



FIGURE 16: COMMUNAL CHILDREN'S AREA, CAUSE WE CARE HOUSE (KWAN 2017)

Partnerships between government entities and housing providers are already increasing the supply of social and affordable housing on government land in Victoria while assisting governments to meet other policy goals. The emerging practices documented here from international case studies demonstrate additional opportunities for such partnerships to increase the supply of social and affordable housing in Victoria.

INCLUSIVE DEVELOPMENT, RENEWAL AND REFURBISHMENT OF PUBLIC ASSETS

The results section documented many instances of lazy government land hosting social infrastructure that could also support social housing. The development, renewal and refurbishment of such sites can present opportunities to place social housing on government land without detracting from existing land uses. Indeed, hundreds of Victorians already call such places home.

In Melbourne, the most common example of this approach is the use of air space above council-owned car parks as a location for social housing. The housing provider, Housing First, has used this strategy for several housing projects in Melbourne. On Woodstock Street in Balaclava, they delivered 31 homes in the air space above a 22-space council car park (see Figure 18). The City of Port Phillip leased the air rights to Housing First (then called the Port Phillip Housing Association) and continued to operate the car park. The project received funds from both the City of Port Phillip and the Victorian Department of Housing. A similar model was applied in the Kyme Place development in Port Melbourne, which delivered 27 homes above a 22-space car park with homes targeted at long-term residents of Port Phillip at risk of homelessness.



FIGURE 17: WOODSTOCK PLACE, BALACLAVA (HOUSING FIRST 2018)

Vancouver, Canada, also offers examples of the repurposing of government assets to deliver affordable housing. In collaboration with the Vancouver Fire and Rescue Services and the not-for-profit organisation YWCA, the City of Vancouver redeveloped an ageing fire hall to incorporate affordable housing. The project comprised a new fire hall on the lower two floors of the building and affordable housing on the top four floors (see Figure 19). The City of Vancouver owns the land and leases it to YWCA (City of Vancouver 2018). The project created 31 two- and three-bedroom homes for low-income, woman-led households in a well-located area close to services, schools and bus routes. It was funded through a range of contributions from philanthropic organisations, provincial and federal governments and a non-profit housing provider. Significantly, the project is one of 20 sites contributed by the City of Vancouver to encourage affordable housing (YWCA Metro Vancouver 2016).



FIGURE 18: ARTIST RENDERING OF FIRE HALL NO. 5 (CITY OF VANCOUVER 2018)

From libraries to community centres and historic sites, public assets can be renewed in an inclusive manner that increases the supply of affordable housing on existing government land. Thus, councils and state agencies' asset management planning efforts should include exploring renewal opportunities that could yield new social and affordable housing in this way.

Incremental, Modular, Pop-Up and Temporary Design in Future Social Infrastructure Temporary land uses are another option available to government, private sector and not-for-profit actors with an interest in addressing homelessness and a lack of affordable housing. While temporary land uses alone will not solve the housing crisis, they represent an important contribution to protecting vulnerable individuals and households in the short term. In particular, they may allow for more agile or opportunistic responses to housing needs.

The Ballarat Road Project, currently being delivered by Launch Housing in partnership with the Victorian Government, is a recent example of temporary land use in Melbourne. The project involves the construction of 57 transportable, modular homes that will be placed on nine lots along Ballarat Road in Melbourne's inner-west. These homes will be occupied by people at risk of homelessness in Melbourne, providing them with a safe home and support from Launch Housing. The project uses land owned by the Victorian road department, VicRoads. These sites have been vacant for decades, reserved by VicRoads for future road-widening plans. The benefit of the transportable housing design is that the homes may be relocated to a new site when VicRoads eventually requires the sites for road-widening works. This project represents an efficient use of government land and supports the needs of vulnerable Victorians without adversely affecting future transport needs (Raynor 2017). The \$5 million project received a substantial financial contribution of \$4 million from the Harris Family, a philanthropic family trust. This donation was instrumental in supporting the Ballarat Road Project. However, the project has the capacity to be replicated on multiple sites owned by government departments, not-for-profit organisations or religious groups across Victoria. Government funding, continued philanthropic contributions or cross-subsidisation of the social housing with market housing may finance similar initiatives.

Vancouver also provides a case-study of how the use of temporary modular housing may be replicated and scaled-up to deliver a larger volume of homes (see Figure 20). In 2015, the Government of British Columbia committed \$66 million towards building 600 homes of temporary modular housing, which will be located on underused or vacant sites across Vancouver (City of Vancouver 2018). The initiative is intended to deliver transitional housing to people experiencing homelessness in the city and is an immediate response to homelessness within a broader strategy to create affordable, long-term housing options. The 600 homes will occupy sites supplied by the City of Vancouver for up to five years and, in many cases, will be replaced by permanent social, affordable or market housing in the same location (Chan 2017). The modular buildings will differ in size and design, with each building including about 50 self-contained homes. The modular homes will be moved or reconfigured as necessary as needs at the different sites evolve. The homes will be managed by a range of not-for-profit housing organisations that provide tenancy services and support for occupants.



FIGURE 19: A MODULAR HOUSING STRUCTURE BUILT AT THE CORNER OF MAIN STREET AND TERMINAL AVENUE IN VANCOUVER (KENNETH CHAN/DAILY HIVE)

There are thousands buildings vacant in Australia on any one night and buildings often lie vacant for years while awaiting planning approval for development. The notion of ‘pop-up’ housing, which temporarily uses these buildings to provide secure housing and associated services, presents a significant opportunity to access an under-utilised asset. In 2017, Sydney’s Addison Hotel opened its building to youth either experiencing or at risk of homelessness for a year while awaiting planning approval for redevelopment. My Foundations Youth Housing now manage this housing, which includes 42 fully-contained homes. In addition to emergency and transitional housing, residents also have free access to food, clothes and laundry services through a variety of social enterprises and not-for-profit organisations that service the building (Cockburn 2017).

A recent ‘pop-up’ housing project in Melbourne uses a similar mechanism. The Lake House is a partnership between the nursing home provider CaSPA Care and YWCA to provide supported housing for women over 55 years old who are at risk of homelessness in South Melbourne. The project is located in a building that previously hosted a CaSPA Care aged care facility and sat idle, awaiting planning approvals for a redevelopment proposal. With support from the City of Port Phillip and a prominent affordable housing advocate, Robert Pradolin, CaSPA Care decided to lease their facility to a not-for-profit organisation to manage it as a social housing facility. The project benefited from significant contributions from private sector partners who refurbished the building and prepared it for new occupants. The Lake House now has the capacity to house 38 women at any time and is supporting one of the fastest-growing groups of people experiencing homelessness: women over 55 years old (Australian Institute of Health and Welfare 2017).

INCLUSIONARY ZONING

In multiple previous [reports](#), Transforming Housing has highlighted the potential for inclusionary zoning to increase the supply of affordable and social housing without requiring major government subsidy (Whitzman, Newton and Sheko 2015b; Raynor 2017). Local councils can leverage Section 173 agreements to require the developers of large sites to set aside some of their site land for affordable and social housing. The council can then retain ownership of that donated land to host future social and affordable housing. Victoria can also mandate inclusionary homes on any government land sold for private residential development—a strategy recently adopted by the state of California (NPHNC 2017), where inclusionary zoning has been the most extensively used and studied.

Davis, California, has applied a land dedication approach to inclusionary zoning to facilitate the delivery of affordable and accessible housing. Within the program, a developer will transfer to the city a parcel of land suitable for affordable housing development in lieu of providing homes on the site of their own development (City of Davis 2014). A not-for-profit developer will then deliver housing on the donated site. To date, the program has resulted in the delivery of a domestic violence shelter, senior housing, family housing, housing for individuals leaving homelessness, transitional housing and housing for those with developmental disabilities.

COMMUNITY LAND TRUSTS

Councils and state agencies that are considering selling land could also establish it as a community land trust. These are non-profit organisations that steward and develop land to achieve community objectives such as affordable housing and community gardens. [Previous Transforming Housing research](#) discussed the role of these organisations in successfully producing affordable housing in the United States and United Kingdom (Whitzman, Newton and Sheko 2015b). Here we highlight a successful and award-winning international example of this practice that is built on surplus government land: Troy Gardens in Madison, Wisconsin, USA (see Figure 21). Troy Gardens illustrates how the land deemed surplus or disposable by a government entity can be successfully repurposed to meet local community needs through the community land trust model.



FIGURE 20: AREAL VIEW OF TROY GARDENS COHOUSING, BUILT ON SURPLUS GOVERNMENT LAND THROUGH A COMMUNITY LAND TRUST MODEL (MACLT AND COMMUNITY GROUNDWORKS 2018)

In 1995 the U.S. state of Wisconsin placed a 6-hectare site on its surplus land list, making it likely the site would be sold to a private developer to produce market-rate housing (Campbell and Salus 2003). Local citizens and non-profit organisations feared the loss of the open space provided by the site—Troy Gardens—and lobbied to acquire it. The state responded by providing a 50-year lease of the site to a local non-profit organisation called the Madison Area Community Land Trust (MACLT) with an understanding that MACLT would produce affordable housing on the land. MACLT collaborated with another organisation, the Urban Open Space Foundation to eventually purchase the land outright. Today, Troy Gardens hosts 36 homes of award-winning, energy-efficient cohousing, 26 of which are affordable to low- and very low-income earners (MACLT and Community GroundWorks 2008). The remainder of the site now consists of 10 hectares of open space managed by another local non-profit.

Troy Gardens typifies how land trusts can empower communities to reshape surplus government land to better meet multiple local needs simultaneously. Local government councils interested in providing social and affordable housing on council land but lacking the expertise and resources to manage site development could donate sites to a community land trust and allow a non-profit to manage the land on their behalf with the goal of serving community housing needs.

CONCLUSION: THE COST OF INACTION

This study identified 255 parcels of publicly owned land that could support up to 30,000 new homes for very low- and low-income families. Roughly 38% of those homes would be located in areas with a HART score above 14 points, with the remainder in locations with a score of 10 to 14. These sites offer the best possibility of developing social and affordable housing on government land within close proximity to key services and amenities.

This report opened with the contention that allocating surplus and lazy government land for social and affordable housing creates public value through intergenerational, social and economic benefits, which Land Use Victoria states should guide government land decisions (2017). The report demonstrated that Melbourne faces both an acute shortage of housing that is affordable to low- and very low-income households as well as a crisis of low-income and disadvantaged households being priced out to the geographic periphery. It demonstrated that building affordable housing on surplus government land proximate to existing services and public transport access could ameliorate both of these problems simultaneously.

Failure to act on these problems means that governments will miss opportunities to maximise public value from their land holdings. A Melbourne Sustainable Society Institute cost-benefit analysis reveals that every dollar invested in last-resort housing yields \$2.7 in savings to government. Further, a recent Transforming Housing **report** notes that every government dollar invested in home ownership opportunities for public housing tenants yields \$2.19 in government savings by creating urgently needed vacancies in public housing (Raynor et al. 2018). Several rigorous interventions inform this cost-benefit analysis (Wood et al. 2016; Mackenzie, Flatau, Steen, & Thielking 2016). While persuasive in and of themselves, these studies still do not include the intergenerational benefits of social and affordable housing; housing affordability and adequacy are associated with better educational and developmental outcomes in children (Leventhal and Newman 2010). A government interested in maximising public value produced on government land must consider these extensive benefits before selling public land assets that are appropriately located for social and affordable housing.

REFERENCES

- ABC News. 2017. 'Housing Affordability: Federal Government Plan to Use Bond Aggregator 'Not a Game Changer.' *ABC News*, April 11, 2017. <http://www.abc.net.au/news/2017-04-11/bond-aggregator-not-game-changer-for-housing-affordability/8432328>.
- Affordable Housing Working Group. 2016. 'Innovative Financing Models to Improve the Supply of Affordable Housing'. Canberra. [http://www.treasury.gov.au/~media/Treasury/Consultations and Reviews/Consultations/2016/CFFR Affordable Housing Working Group/Key Documents/P DF/Final_report.ashx](http://www.treasury.gov.au/~media/Treasury/Consultations%20and%20Reviews/Consultations/2016/CFFR%20Affordable%20Housing%20Working%20Group/Key%20Documents/PDF/Final_report.ashx).
- Albouy, David and Gabriel Ehrlich. 2017. 'Metropolitan Land Values'. *Review of Economics and Statistics* 100, no. 3: 454–466. doi:10.1162/REST_a_00710.
- Anglicare Victoria. 2018. '2018 Rental Affordability Snapshot'. Melbourne, Australia. <https://www.anglicarevic.org.au/news/zero-rental-affordability-leaves-vulnerable-victorians-cold/>.
- Arundel, Jonathan, Melanie Lowe, Rebecca Roberts, Julianna Rozek, Carl Higgs and Billie Giles-corti. 2017. 'Creating Liveable Cities in Australia'. Melbourne, Australia. <https://cloudstor.aarnet.edu.au/plus/index.php/s/CJ4t5N3SFCOZTWP#pdfviewer>.
- Aurand, Andrew, Dan Emmanuel, Diane Yentel and Ellen Errico. 2017. *The Gap: A Shortage of Affordable Homes* (Washington D.C.:National Low Income Housing Commission), http://nlihc.org/sites/default/files/Gap-Report_2017.pdf.
- Badland, Hannah, Suzanne Mavoa, Karen Villanueva, Rebecca Roberts, Melanie Davern and Billie Giles-Corti. 2015. 'The Development of Policy-Relevant Transport Indicators to Monitor Health Behaviours and Outcomes'. *Journal of Transport and Health* 2, no. 2: 103–110. doi:10.1016/j.jth.2014.07.005.
- Bamberger, Joshua, Rachel Bluestein, Kim Latimer-Nelligan, Richard Samson and Douglas Shoemaker. 2017. 'Innovative Models In Health And Housing Acknowledgements'. <http://www.liifund.org/wp-content/uploads/2017/08/Health-and-Housing-LIIF-Mercy-Report-2017.pdf>.
- Burke, Kate. 2017. 'Government's Bond Aggregator Will Fail without More Key Funding, Says Head of UK Version'. *Domain.com.au*. <https://www.domain.com.au/news/governments-bond-aggregator-will-fail-without-more-key-funding-says-head-of-uk-version-20171201-gzwww7r/>.
- California Tax Credit Allocation Committee. 2017. *California Tax Credit Allocation Committee Regulates Implementing The Federal and State Low Income Housing Tax Credit Laws*. United States. <http://www.treasurer.ca.gov/ctcac/programreg/2017/20170517/clean.pdf>.
- CAMBA Housing Ventures. 2003. <https://www.cambahousingventures.org/>
- Campbell, Marcia Caton and Danielle A. Salus. 2003. 'Community and Conservation Land Trusts as Unlikely Partners? The Case of Troy Gardens, Madison, Wisconsin'. *Land Use Policy* 20, no. 2: 169–180. doi:10.1016/S0264-8377(03)00002-4.
- Capozza, David and Robert Helsley. 1989. 'The Fundamentals of Land Prices and Urban Growth'. *Journal of Urban Economics* 26, no. 3: 295–306. doi:https://doi.org/10.1016/0094-1190(89)90003-X.
- Carbines, Scott. 2018. 'Land Prices Skyrocket on Melbourne Fringes'. *Herald Sun*, March 23. <https://www.realestate.com.au/news/land-prices-skyrocket-on-melbourne-fringes/>.
- Cockburn. 2017. 'Sydney's Addison Hotel opens its doors to homeless youth in Australian first'. ABC News. Sydney, Australia. <http://www.abc.net.au/news/2017-04-03/opening-an-empty-sydney-building-to-the-homeless/8405196>
- CGD. 2015. 'Housing Analysis Final Report'. Melbourne, Australia. <http://www.greaterdandenong.com/document/29422/c182-housing-analysis-final-report-march-2015-sgs>
- City of Davis. 2014. 'THE CITY OF DAVIS AFFORDABLE HOUSING PROGRAM'. Davis, CA. <https://cityofdavis.org/residents/affordable-housing-program>
- City and County of San Francisco. 2015. '2014 Housing Element'. San Francisco, CA. http://generalplan.sfplanning.org/2014HousingElement-AllParts_ADOPTED_web.pdf.
- City of Portland. 2010. '20-Minute Neighborhood Concept Analysis'. Portland, Oregon. <http://www.portlandonline.com/portlandplan/index.cfm?c=52256&a=288547>.

- City of Vancouver. 1992. 'High Density Housing for Families with Children Guidelines'. Vancouver. <http://guidelines.vancouver.ca/H004.pdf>.
- . 2018. 'Replacing Fire Hall No. 5'. Vancouver, Canada. <https://vancouver.ca/your-government/replacing-fire-hall-5.aspx>.
- . 2017. 'Housing Vancouver Strategy'. Vancouver, Canada. <http://vancouver.ca/files/cov/2016-census-housing-data-release.pdf>.
- Civil Grand Jury. 2014. 'The Mayor's Office of Housing: Under Pressure and Challenged To Preserve Diversity'. San Francisco, CA. http://civilgrandjury.sfgov.org/2013_2014/2014_CGJ_Report_Housing_Under_Pressure_Challenged_Preserve_Diversity_7_7_14.pdf.
- Chan. 2018. 'Temporary modular homeless housing approved for site of new Vancouver Art Gallery.' <http://dailyhive.com/vancouver/larwill-park-modular-housing-homeless-approved-2018>
- Combes, Pierre-philippe, Gilles Duranton and Laurent Gobillon. 2013. 'The Costs of Agglomeration: Land Prices in French Cities'. halshs-00793632. *HAL*. HAL. https://halshs.archives-ouvertes.fr/file/index/docid/793632/filename/WP_2012_-_Nr_35.pdf.
- Cooley, David, Paulo Barcelos and Rstudio. 2018. 'Package 'Googleway.''. <https://cran.r-project.org/web/packages/googleway/googleway.pdf>.
- Cox, Wendell and Hugh Pavletich. 2018. '14th Annual Demographia International Housing Affordability Survey: 2018'. St. Louis, MI. http://demographia.com/media_rls_2018.pdf.
- Curtis, Carey and Jan Scheurer. 2016. *Planning for Public Transport Accessibility An International Sourcebook*. London and New York: Routledge.
- DELWP. 2018. 'Suburban Development'. *State Government of Victoria*. <https://www.suburbandedevelopment.vic.gov.au/>.
- Department of Treasury and Finance. 2018. 'Land Being Prepared For Future Sale'. *State Government of Victoria*. <https://www.dtf.vic.gov.au/government-land-sales/land-being-prepared-future-sale>.
- Ellen, I, K Horn, Y Kuai, R Pazuniak and MD Williams. 2015. 'Effect of QAP Incentives on the Location of LIHTC Properties'. Falls Church, VA.
- Ellen, Ingrid Gould and Keren Mertens Horn. 2018. 'Points for Place: Can State Governments Shape Siting Patterns of Low-Income Housing Tax Credit Developments?' *Housing Policy Debate*, April: 1–19. doi:10.1080/10511482.2018.1443487.
- Government of Australia. 2018a. 'Budget 2018-19'. *Budget.gov.au*. <https://www.budget.gov.au/2018-19/content/documents.html>.
- . 2018b. 'National Housing Finance and Investment Corporation Investment Mandate Direction 2018'. Canberra. <https://static.treasury.gov.au/uploads/sites/1/2018/02/NHFIC-Investment-Mandate-Exposure-Draft-2.pdf>.
- Health Research & Educational Trust. 2017. 'Housing and the Role of Hospitals'. Chicago, IL. <http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf>.
- Hughes, Duncan. 2017. 'Booming Population Drives Melbourne Land Prices Surge'. *Australian Financial Review*, November 4. <http://www.afr.com/personal-finance/booming-population-drives-melbourne-land-price-surge-20171114-gzl151>.
- Hulse, Kath, Margaret Reynolds and Judith Yates. 2014. *Changes in the Supply of Affordable Housing in the Private Rental Sector for Lower Income Households, 2006-11. AHURI Final Report*. Melbourne: Australian Housing and Urban Research Institute. <http://www.ahuri.edu.au/publications/projects/51018>.
- Housing First. 2018. 'Developments.' <https://housingfirst.org.au/portfolio/developments>.
- Kahle, David and Hadley Wickham. 2016. 'Package Ggmap.' <https://cran.r-project.org/web/packages/ggmap/ggmap.pdf>.
- Knoblauch, Richard, Martin Pietrucha and Marsha Nitzburg. 1996. 'Field Studies of Pedestrian Walking Speed and Start-Up Time'. *Transportation Research Record: Journal of the Transportation Research Board* 1538: 27–38. doi:10.3141/1538-04.
- KPMG. 2012. *Social Housing Initiative Review*. Housing Minister's Advisory Committee: Canberra. http://www.nwhn.net.au/admin/file/content101/c6/social_housing_initiative_review.pdf.
- Kwan. 2018. 'Grand Opening: YWCA Cause We Care House and VPL Branch.' Vancouver: British Columbia. <https://ywcavan.org/blog/2017/04/grand-opening-ywca-cause-we-care-house-and-vpl-strathcona-branch>.

- Land Use Victoria. 2017. *Victoria Government Land Use Policy and Guidelines*. Melbourne: Victoria State Government.
- Lawson, Julie. 2018. 'Bond Aggregator Helps Build a More Virtuous Circle of Housing Investment'. *The Conversation*. <https://theconversation.com/bond-aggregator-helps-build-a-more-virtuous-circle-of-housing-investment-76793>.
- Lennon, Michael. 2015. 'Innovation in Affordable Housing Supply : Heritage Redevelopment – Drill Hall'. In *AHURI Natoinal Housing Conference*. Perth, Australia: Australian Housing and Urban Research Institute. <http://www.nhc.edu.au/wp-content/uploads/2015/11/TW2-Michael-Lennon.pdf>.
- Leventhal, Tama and Sandra Newman. 2010. 'Housing and Child Development'. *Children and Youth Services Review* 32, no. 9: 1165–1174. doi:10.1016/j.childyouth.2010.03.008.
- Lowe, Melanie, Carolyn Whitzman, Hannah Badland, Melanie Davern, Lu Aye, Dominique Hes, Iain Butterworth and Billie Giles-Corti. 2015. 'Planning Healthy, Liveable and Sustainable Cities: How Can Indicators Inform Policy?' *Urban Policy and Research* 33, no. 2: 131–144. doi:10.1080/08111146.2014.1002606.
- Mackenzie, David, Paul Flatau, Adam Steen and Monica Thielking. 2016. 'The Cost of Youth Homelessness in Australia: Research Briefing'. Melbourne, Australia. <http://apo.org.au/system/files/63479/apo-nid63479-40456.pdf>.
- MACLT and Community GroundWorks. 2008. 'Case Study 2008 Awards of Excellence Affordable Housing Built Responsibly'. http://www.affordablehome.org/news/index_assets/Troy_Gardens-Madison_CLT_-_Final.pdf.
- Mayor of London. 2017. 'The Mayor's Vision for a Diverse and Inclusive City'. London. https://www.london.gov.uk/sites/default/files/microsoft_word_-_final_diversity_and_inclusion_vision_for_publication_lo.pdf.
- Milligan, Vivienne, Hal Pawson, Rhonda Phillips, Chris Martin and Elton Consulting. 2017. 'Developing the Scale and Capacity of Australia's Affordable Housing Industry Inquiry into Affordable Housing Industry Capacity'. Melbourne, Australia. doi:10.18408/ahuri-7108402.
- Novogradac & Company. 2014. 'Brooklyn Hospital Property Becomes Affordable Housing'. https://www.novoco.com/sites/default/files/atoms/files/lihtc_showcase_52_-_camba_gardens.pdf.
- NPHNC. 2017. 'SURPLUS LAND – AB 2135 FACT SHEET'. Sacramento, CA. <http://nonprofithousing.org/wp-content/uploads/NPH-AB-2135-Surplus-Land-Fact-Sheet.pdf>.
- Phillips, Anna M. 2016. 'LAUSD Teachers Earn Too Much to Live in the Affordable Housing Apartments Built for Them'. *Los Angeles Times*, October 19. <http://www.latimes.com/local/education/la-me-edu-teacher-housing-20161019-snap-story.html>.
- Randolph, Bill and Andrew Tice. 2017. 'Relocating Disadvantage in Five Australian Cities: Socio-Spatial Polarisation under Neo-Liberalism'. *Urban Policy and Research* 1146 (November): 1–19. doi:10.1080/08111146.2016.1221337.
- Randolph, Bill, Laurence Troy, Vivienne Milligan and Ryan Van Den Nouwelant. 2018. 'Paying for Affordable Housing in Different Market Contexts'. Melbourne, Australia. doi:10.18408/ahuri-7113301.
- Raynor, Kate. 2017. 'Delivering Affordable Housing In Melbourne'. Melbourne, Australia. https://msd.unimelb.edu.au/___data/assets/pdf_file/0008/2603546/Delivering-Affordable-Housing-in-Melbourne_0.pdf.
- Raynor, Kate, Matthew Palm, Melanie O'Neil and Carolyn Whitzman. 2018. 'Investigating The Costs And Benefits Of The Melbourne Apartments Project'. Melbourne, Australia. https://msd.unimelb.edu.au/___data/assets/pdf_file/0006/2800599/Investigating-the-costs-and-benefits-of-the-Melbourne-Apartments-Project.pdf.
- REIV. 2018. 'Rental Market Snapshot - May 2018 (Trend)'. *REIV.com.au*. <https://reiv.com.au/property-data/rental-data/vacancy-rates>.
- Raynor, Kate. 2017, November 13. "Portable units and temporary leases free up vacant land for urgent housing needs" *The Conversation*. Melbourne, Australia. <https://theconversation.com/portable-units-and-temporary-leases-free-up-vacant-land-for-urgent-housing-needs-86753>.
- Renne, John L and Reid Ewing. 2013. 'Transit-Oriented Development: An Examination of America's Transit Precincts in 2000 & 2010'. *UNOTI Publications*. https://scholarworks.uno.edu/unoti_pubs/17
- Ruming, Kristian, Robyn Dowling. 2017. PhD students' housing experiences in suburban Sydney, Australia. *Journal of Housing and the Built Environment*. 32(4): 805-825.
- SGS Economics. 2018. 'May 2018 Release Rental Affordability Index'. Melbourne, Australia. https://www.sgsep.com.au/application/files/2215/2661/5595/RAI_May_2018_-_Press_Quality.pdf.
- Shaw, Melissa. 2018, March 27. "YWCA oving forward with affordable housing projects for single mothers. Vancouver Courier. Vancouver, Canada. <http://www.vancourier.com/real-estate/ywca-moving-forward-with-affordable-housing-projects-for-single-mothers-1.23213844>.

- Sheko, Alexander, Andrew Martel and Andrew Spencer. 2015. 'Leveraging Investment for Affordable Housing: Policy, Planning and Financing Options for Increasing the Supply of Affordable Housing in Melbourne'. Melbourne. [https://msd.unimelb.edu.au/sites/default/files/docs/Policy planning and financing mechanisms paper.pdf](https://msd.unimelb.edu.au/sites/default/files/docs/Policy%20planning%20and%20financing%20mechanisms%20paper.pdf).
- State Government of Victoria. 2017a. 'Plan Melbourne 2017-2050'. Melbourne. <http://www.planmelbourne.vic.gov.au/>.
- . 2017b. 'Social Housing Growth Fund'. *Homes For Victorians*. <https://www.vic.gov.au/affordablehousing/social-housing/social-housing-growth-fund.html>.
- Steen, Adam and David Mackenzie. 2013. 'Financial Analysis of Foyer and Foyer-like Youth Housing Models'. Melbourne, Australia. [https://researchbank.swinburne.edu.au/file/e40b429d-b5d0-477d-9eaf-2653a41f5ee8/1/PDF %28Published version%29.pdf](https://researchbank.swinburne.edu.au/file/e40b429d-b5d0-477d-9eaf-2653a41f5ee8/1/PDF%20Published%20version%29.pdf).
- Szafraniec, Julian. 2016. 'Boroondara Housing Capacity Analysis'. Melbourne, Australia. https://www.planning.vic.gov.au/___data/assets/pdf_file/0018/9414/City-of-Boroondara-Expert-Evidence-Boroondara-Housing-Capacity-Analysis.pdf.
- Urbis. 2011. 'National Dwelling Cost Study'. Sydney, Australia. <https://static.treasury.gov.au/uploads/sites/1/2017/06/nhsc-residential-cost-analysis-urbis.pdf>.
- Whitzman, Carolyn, Clare Newton and Alexander Sheko. 2015a. 'Transforming Housing: Affordable Housing for All'. Melbourne, Australia. [https://msd.unimelb.edu.au/sites/default/files/docs/Affordable Housing Summit Options Paper_for_web.pdf](https://msd.unimelb.edu.au/sites/default/files/docs/Affordable%20Housing%20Summit%20Options%20Paper_for_web.pdf).
- . 2015b. 'Transforming Housing: Affordable Housing for All Partnership Options for Policy, Investment and Demonstration Projects'. Melbourne, Australia. https://msd.unimelb.edu.au/___data/assets/pdf_file/0018/2603700/Affordable-Housing-Summit-Options-Paper_for_web.pdf.
- Witte, Ellen. 2017. 'The Case for Investing in Last Resort Housing'. Melbourne, Australia. http://apo.org.au/sites/all/modules/pubdnt/pubdnt.php?nid=74459&file=http://d2hqr0jocqnenz.cloudfront.net/cdn/farfuture/GnZJcuel-3XLfNb_j9BBjaMfGMyxFvS7UyUyglclaBe7VU/mtime:1489622590/sites/default/files/docs/MSSI-IssuesPaper-10_Last-Resort-Housing_2017_.
- Wood, Lisa, Paul Flatau, Kaylene Zaretsky, Sarah Foster, Shannen Vallesi and Darja Miscenko. 2016. *What Are the Health, Social and Economic Benefits of Providing Public Housing and Support to Formerly Homeless People?* Melbourne: Australian Housing and Urban Research Institute. doi:10.18408/ahuri-8202801.
- Yu, Yan, Rachel Davey, Tom Cochrane, Vincent Learnihan, Ivan C Hanigan and Nasser Bagheri. 2017. 'Neighborhood Walkability and Hospital Treatment Costs: A First Assessment'. *Preventive Medicine* 99: 134–139. doi:10.1016/j.ypmed.2017.02.008.
- Zuk, Miriam and Karen Chapple. 2016. 'Housing Production, Filtering and Displacement: Untangling the Relationships'. Berkeley, CA. http://www.urbandisplacement.org/sites/default/files/images/udp_research_brief_052316.pdf.

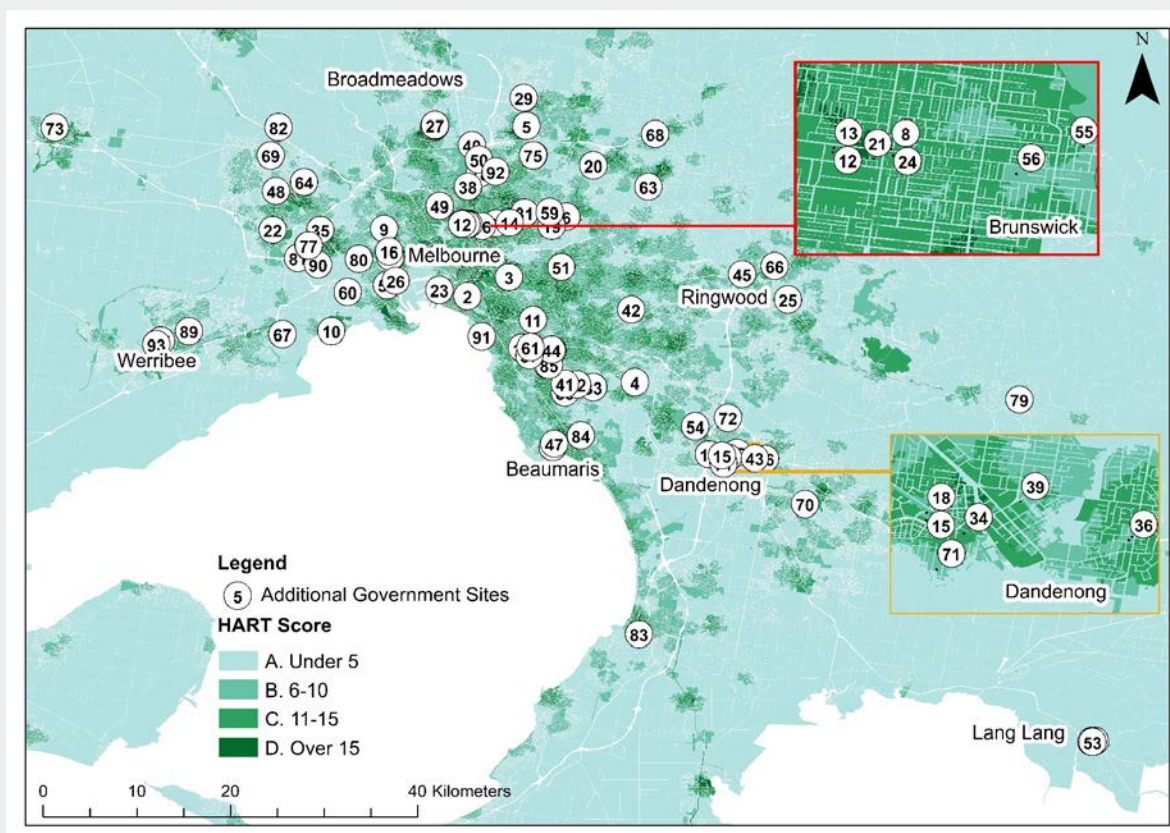
INVENTORY APPENDIX

This appendix to the inventory provides results for two additional sets of sites that may become optimal for housing in the future, or which could be considered for hosting housing. These sites fall into two categories:

- » Parcels with HART Scores over 10 that are currently proximate to a nationally monitored pollution emitter
- » Parcels with HART Scores of 7, 8 or 9 that are not located proximate to a nationally monitored pollution emitter

The first group contains many sites with very high HART scores that might become optimal for housing were the nearby pollution emitters to close. The latter group contains sites that may see their HART scores increase pending the provision of new infrastructure.

Roughly 93 sites fall into our list of additional or contender sites. These sites could hold an additional 18,000 units. We map these units in Map 12 and provide the inventory of additional sites in Table 17.



MAP 12: MAP OF ADDITIONAL SITES CONSIDERED FOR THE INVENTORY

TABLE 17: ADDITIONAL SITES INVENTORY

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation	
1	395 BARKLY ST FOOTSCRAY	Maribyrnong	1,855	19	Y		Y						Y	50
2	400 CLARENDON ST SOUTH MELBOURNE	Port Phillip	2,363	16	Y		Y	Y	Y	Y	Y		Y	63
3	31 GLEADELL ST RICHMOND	Yarra	1,345	16	Y									23
4	18 DIXON ST CLAYTON	Monash	693	16	Y					Y				7
5	2A MAY RD LALOR	Whittlesea	12,625	15	Y		Y	Y	Y	Y	Y		Y	337
6	33-75 ALANDALE RD EAGLEMONT	Banyule	18,506	14	Y				Y		Y			494
7	324 KOOYONG RD CAULFIELD SOUTH	Glen Eira	563	14	Y									6
8	275 VICTORIA ST BRUNSWICK	Moreland	455	14	Y		Y				Y		Y	5
9	6 WESTS RD MARIBYRNONG	Maribyrnong	3,161	14	Y					Y			Y	84
10	139 ESPLANADE ALTONA	Hobsons Bay==	13,046	14	Y		Y	Y	Y	Y	Y		Y	348
11	53 HAWTHORN RD CAULFIELD RTH	Glen Eira	1,544	14	Y		Y	Y	Y	Y	Y		Y	41
12	6 GARDINER ST BRUNSWICK	Moreland	1,497	14	Y		Y	Y	Y	Y	Y		Y	26
13	406 VICTORIA ST BRUNSWICK	Moreland	6,279	14	Y								Y	168
14	DENNIS ST RTHCOTE	Darebin	2,289	14	Y		Y	Y	Y	Y	Y		Y	61
15	67 CHELTENHAM RD DANDENONG	G. Dandenong	47,559	13	Y					Y			Y	1,270
16	2-4 SWAN ST FOOTSCRAY	Maribyrnong	15,461	13	Y								Y	413
17	329 KOOYONG RD ELSTERNWICK	Glen Eira	1,276	13	Y									22
18	40A FOSTER ST DANDENONG	G. Dandenong	47,559	13	Y					Y			Y	1,270
19	109 WATERDALE RD IVANHOE	Banyule	2,494	12	Y		Y	Y	Y	Y	Y		Y	67
20	70 WATSONIA RD WATSONIA	Banyule	2,494	12	Y		Y	Y	Y	Y	Y		Y	67
21	2-12 WILKINSON ST BRUNSWICK	Moreland	1,800	12	Y		Y			Y			Y	48
22	50 STATION RD DEER PARK	Brimbank	2,024	12	Y		Y	Y					Y	54
23	523 WILLIAMSTOWN RD PORT MELBOURNE	Port Phillip	34,391	11	Y		Y							918
24	23-27 FRITH ST BRUNSWICK	Moreland	1,020	11	Y		Y			Y			Y	17

Rank	ADDRESS	LGA	Area (sqm)	HART Score	Near Pollution	100 Year Flood	Planning Overlays							Number of Homes	
							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
25	2A SCORESBY RD BAYSWATER	Knox	23,759	11	Y				Y	Y					634
26	208/200 STEPHEN ST YARRAVILLE	Maribyrnong	13,176	10	Y					Y	Y		Y		352
27	139-157 BLAIR ST DALLAS	Hume	9,458	10	Y								Y		253
28	113-125 BLAIR ST DALLAS	Hume	9,019	10	Y										241
29	132-140 COOPER ST EPPING	Whittlesea	8,133	10	Y								Y		217
30	127-137 BLAIR ST DALLAS	Hume	2,358	10	Y								Y		63
31	2/12 HARRY ST THORNBURY	Darebin	2,289	10	Y	Y		Y	Y	Y	Y	Y	Y		61
32	1-3 DERRY ST BENTLEIGH EAST	Glen Eira	1,333	10	Y										23
33	682 WARRIGAL RD OAKLEIGH SOUTH	Kingston	4,807	10	Y	Y		Y	Y	Y	Y		Y		128
34	9 CARROLL LANE DANDENONG	G. Dandenong	47,559	9	Y					Y			Y		1,270
35	528B BALLARAT RD ALBION	Brimbank	15,327	9	Y								Y		409
36	2A CATALPA ST DOVETON	Casey	12,809	9	Y	Y		Y	Y	Y	Y		Y		342
37	ROSELLA AVE WERRIBEE	Wyndham	3,455	9											92
38	10 CHARLES ST COBURG RTH	Moreland	2,891	9	Y								Y		77
39	184-186 FOSTER ST E DANDENONG	G. Dandenong	2,790	9											74
40	115 JUKES RD FAWKNER	Moreland	1,953	9						Y			Y		52
41	668 CENTRE RD BENTLEIGH EAST	Glen Eira	1,432	9									Y		24
42	8-10 BARRY RD BURWOOD	Whitehorse	1,245	9				Y							21
43	78 POWER RD DOVETON	Casey	1,212	9											21
44	12-14 STATION PLACE GLEN HUNTLY	Glen Eira	789	9									Y		13
45	13 SEYMOUR ST RINGWOOD	Maroondah	673	9						Y			Y		7
46	5 WATSON GROVE GLEN HUNTLY	Glen Eira	662	9									Y		7
47	352 BALCOMBE RD BEAUMARIS	Bayside	623	9					Y	Y			Y		6

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							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
48	19 ANDREW RD ST ALBANS	Brimbank	597	9									Y	6	
49	20-24 COONANS RD PASCOE VALE SOUTH	Moreland	565	9				Y					Y	6	
50	20 VICTORY ST FAWKNER	Moreland	6,490	9									Y	173	
51	253 COTHAM RD KEW	Boroondara	4,520	9										121	
52	135 MCDONALDS TRACK LANG LANG	Cardinia	3,209	9									Y	86	
53	9 WESTERNPORT RD LANG LANG	Cardinia	2,423	9			Y							65	
54	24 MONS PARADE BLE PARK	G. Dandenong	1,790	9										48	
55	2-4 LEE ST BRUNSWICK EAST	Moreland	1,073	9									Y	Y	18
56	16-22 CROSS ST BRUNSWICK EAST	Moreland	44,194	9									Y	1180	
57	6 MAPLE ST CAULFIELD SOUTH	Glen Eira	1,585	9				Y						42	
58	CREEK ST SPOTSWOOD	Hobsons Bay	89,362	8	Y			Y		Y			Y	2386	
59	PERKINS AVE BELLFIELD (G. MELBOURNE)	Banyule	55,367	8				Y						1478	
60	180 MILLERS RD ALTONA RTH	Hobsons Bay	6,229	8	Y			Y						166	
61	353 HAWTHORN RD CAULFIELD	Glen Eira	1,544	8	Y		Y	Y	Y	Y	Y	Y	Y	41	
62	39 WESTERNPORT RD LANG LANG	Cardinia	1,072	8										18	
63	4 WALSH ST ELTHAM	Nillumbik	1,018	8				Y						17	
64	90 TAYLORS RD KEILOR DOWNS	Brimbank	59,452	8									Y	1587	
65	7 WHITSTABLE ST LANG LANG	Cardinia	1,933	8									Y	52	
66	19 GREY ST RINGWOOD EAST	Maroondah	666	8	Y			Y		Y				7	
67	330-340 QUEEN ST ALTONA MEADOWS	Hobsons Bay	403	8										4	
68	405 RYANS RD DIAMOND CREEK	Nillumbik	81,560	7									Y	2178	
69	362 SYDENHAM RD SYDENHAM	Brimbank	26,521	7									Y	708	
70	385-399 POUND RD NARRE WARREN SOUTH	Casey	8,573	7									Y	229	

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							Heritage	Bushfire	Building/ Landscaping	Vegetation	Design	Environmental	Inundation		Other
71	66 HAMMOND RD DANDENONG	G. Dandenong	2,151	7	Y										57
72	39-43 BRADY RD DANDENONG RTH	G. Dandenong	1,958	7											52
73	1 BALMORAL PLACE MELTON WEST	Melton	1,232	7											21
74	20 DUMBARTON ST RESERVOIR	Darebin	847	7									Y		14
75	16 DUMBARTON ST RESERVOIR	Darebin	830	7									Y		14
76	166 GLENGALA RD SUNSHINE WEST	Brimbank	723	7									Y		12
77	162 GLENGALA RD SUNSHINE WEST	Brimbank	704	7									Y		12
78	8 MARLBOROUGH ST FAWKNER	Moreland	643	7									Y		6
79	46-48 MCBRIDE ST COCKATOO	Cardinia	601	7				Y	Y						6
80	18 DEMPSTER ST WEST FOOTSCRAY	Maribyrnong	548	7	Y								Y		5
81	15 GRESHAM WAY SUNSHINE WEST	Brimbank	525	7									Y		5
82	10A FITZGERALD COURT TAYLORS LAKES	Brimbank	518	7									Y		5
83	55R TOWERHILL RD FRANKSTON SOUTH	Frankston	60,866	7					Y						1625
84	39-41 FOLLETT RD CHELTENHAM	Kingston	4,807	7	Y		Y	Y	Y	Y	Y	Y	Y		128
85	12-14 KATANDRA RD ORMOND	Glen Eira	1,544	7	Y		Y	Y	Y	Y	Y	Y	Y		41
86	36-38 BONANZA RD BEAUMARIS	Bayside	1,113	7					Y	Y			Y		19
87	2 NEWHAM GROVE ORMOND	Glen Eira	800	7			Y						Y		14
88	82 BRADY RD BENTLEIGH EAST	Glen Eira	769	7											13
89	95 PANNAM DRIVE HOPPERS CROSSING	Wyndham	16,208	7											433
90	125B FAIRBAIRN RD SUNSHINE WEST	Brimbank	501	7									Y		5
91	23P MARINE PARADE ST KILDA	Port Phillip	197,363	7			Y	Y		Y					5270
92	HENTY ST RESERVOIR	Darebin	2,289	7	Y		Y	Y	Y	Y	Y	Y	Y		61
93	TARNEIT RD WERRIBEE	Wyndham	964	7											16

