PROPERTY COUNCIL of Australia

Residential Zone Uplift

2 APRIL 2024

PURDON

Acknowledgement

The authors and organisations involved express our respect for the Elders past, present, and emerging, from the Aboriginal and Torres Strait Islander people in the lands from which we meet and work—the Ngunnawal and Ngambari, and from the lands of the places we work with our partners.

We acknowledge and respect their enduring ownership of the countries on which we work, including the land, water, and communities. We also acknowledge and respect the continuing culture of the Aboriginal and Torres Strait Island people, and the contribution they make to the stories, knowledge, and life in our region.

We value the opportunity to work with these Elders, and other Aboriginal and Torres Strait Islander people, on this and all projects that improve community outcomes.

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1.1 Recommendations for action

The research highlights five recommendations:

- The criteria for upzoning land from RZ1 to RZ2 can reasonably be set by size only (>700sqm), for moving from RZ1 to RZ3 should be size and a quality score above 70%, and moving land from RZ2 to RZ3 should be limited to land >950sqm with a quality score greater than 50%. This will lead to a retention of low-density zoning in RZ1, more land upzoned than a strict town/group/local centre control, but fewer than a blanket volumetric uplift (Recommendation 3).
- To implement upzoning encourage the ACT Government to allow affected land holders to 'opt in' based on a simple application process, with a low nominal fee, based on a simple set of criteria. This will not alleviate LVC, but will allow landholders the option of investigating potential returns to improvements in rights without a significant LVC penalty prior to project feasibility assessment (Recommendation 4).
- For the new Territory Plan, as well as the proposed changes to development rights, engage with the ACT Government to implement and publicly report on a monitoring and evaluation framework to demonstrate actual additional development caused by policy changes (for example actual increase in additional RZ1 dwellings, and RZ1 and RZ2 development uplift). These reports must include measures of additional dwellings created, their location and scale, and be reported at least annually as part of the ACT Land and Property Report released by EPSDD (Recommendation 5).
- With an unusual confluence of local political agreement, national agreement to reform and a baseline of community support for densification, the Property Council should advocate for additional development rights, at least in the RZ1, 2 and 3 zones, within the ACT planning system during the 2024 election campaign. The time has rarely been better to pursue these reforms (Recommendation 1).
- While increasing urban density is a preferred outcome, the Property Council policy position should support the idea of preserving the broad character of urban Canberra. However Division Council should adopt a form of words about the meaning of urban character for land in the RZ1-3 zones which they are comfortable represent stakeholder views (Recommendation 2).

1.2 Executive Summary

The ACT faces a significant policy problem: a near doubling of its population by 2060 which requires a proportionate dwelling response, with limited 'new land' for greenfield development.

The ACT has relatively low dwelling and population density. Existing dwelling production rates will not meet expected demand, which will put further long-term pressure on affordability, and have significant social, economic, and environmental costs.

The ACT Division of the Property Council has commissioned research to assess the potential contribution of zoning reform to meet these policy challenges and improve land use in the ACT.

Official forecasts show the ACT population will increase by more than 330,000 by 2060. Household formation trends suggest nearly 150,000 new dwellings will be needed to house that growth.

Policy settings require 70% of new dwellings to be in-fill, as opposed to greenfield development. This means existing suburbs need to accommodate around 105,000 of the dwellings needed by 2060.

The new Territory Plan (new TP) included additional development rights in residential zoned (RZ) land. Generally, the changes include a conditional right to add a unit titled dual occupancy in RZ1, a relative increase in site ratios, and clarity on height and storey limits in RZ 2-5.

While these reforms took a step in the right direction of improving land utilisation, they will not meaningfully increase supply. We estimate the RZ1 part of the reforms are likely to affect around 42,174 blocks. However, market and location constraints will limit adoption of the reform. We estimate a more likely outcome from the RZ1 reform is an increase of 15,173 dwellings. This would meet around 14% of the in-fill goal.

The proposal in this project is to improve density, and meet dwelling demand, by changing residential zoning rules to increase development rights on underutilised land. This would lift development rights for RZ1 land towards RZ2 and RZ3 rights, and RZ2 rights towards RZ3 rights.

All ACT political parties include aspects of what the Property Council in proposing as part of ACT election policy settings.

We have modelled potential consequences of the proposal using a volumetric constraint (quantity model) and land quality constraints. The quantity model determines the quantum of land that might be upzoned based on the area of a block, while 10 quality metrics are estimated and applied to blocks to exclude land that does not fit with good zoning outcomes.

Of a sample of 123,000 ACT blocks, this reform would affect around 65,161 blocks. We estimate that RZ2 zoned land will increase from 15,061 blocks to 50,417, and RZ3 will increase from 8,169 blocks to 14,744. RZ1 will reduce from 99,894 to 34,733.

Increased development rights do not automatically translate to additional dwellings. Based on conservative development assumptions for upzoned land we estimate the reform could deliver nearly 60,000 new dwellings on around upzoned 21,000 blocks. This is 3.9x the estimated impact of new TP RZ1 reform, would meet 57% of the 2060 in-fill target, and exceeds Government estimates of additional dwellings from 'potential urban renewal areas' by 14-32%.

The additional dwellings will mostly be missing middle style development, with approximately 22,000 houses, 29,000 two- and three-bedroom townhouses, and nearly 10,000 apartments. All of these will have a maximum of 2 storeys, and be within existing block boundaries.

This reform complements densification already underway in town, group, and local centres that already have RZ4-5, CZ and mix-used higher density zoning addressing demand for high density development. The reform adds to these in-fill models rather than detracting from them.

Improving development rights in RZ1-3 will lower greenfield development pressure, deliver improved dwelling diversity, and will not impinge on well establish protections such as public open spaces, and the 'Hills Ridges and Buffers' protections in the National Capital Plan.

If these dwellings are delivered as modelled it would prevent the need to use 2,400 to 3,000 hectares in greenfield settings, assuming 'good density' of 20 to 25 dwellings per hectare.

Much of the unlocked land will be in suburbs that are not projected to see increased populations in official forecasts. This suggests if in-fill is to be a reality, a community conversation about where people want to live will be as important as how they want to live.

High level estimates of the wider impacts from this reform suggest over the years to 2060 the reform could prime $26.5 billion in construction activity, and deliver private gains of around $6 billion that may otherwise be unavailable. These are discounted cash flows in 2024 dollars.

For the ACT Government budget the reforms would prime a substantial revenue gain. The present value of modelled returns is around $4.2 billion, comprised of $1.9 billion in rates, $245 million in conveyance duty, $1.6 billion in lease variation, and $500 million in fees. These estimates are conservative, and exclude land taxes that would accrue if any new dwellings were rented. It also excludes GST revenue grants and tied Commonwealth payments if the dwellings induce additional population into the ACT.

Infrastructure is a major challenge associated with population growth. The nature of the RZ reforms will distribute dwelling growth across existing established ACT suburbs, which is most likely require on-site infrastructure augmentation. The distribution of development means existing social infrastructure could experience improved utilisation.

Further, there is clear evidence that if additional trunk infrastructure is required, on a cost per dwelling basis, in-fill infrastructure is between 25 and 50% cheaper than greenfield.

Wider benefits are difficult to quantify, however there is a broad consensus there are positive economic, social, and environmental benefits to increased densification. The benefits include enhanced utilisation of existing social and economic infrastructure, enhanced local business activity, improved access to services, enhanced labour mobility, improved urban movement, accelerated climate change adaptation, improved amenity values, and improved productivity.

The proposed changes have been carefully considered to avoid major disruption to the character of Canberra, while improving the utilisation of existing commercial, community, and government assets. Importantly, the approach means development and population growth are shared across the entire ACT, rather than concentrated in a limited number of locations.

We understand the property industry has the capability to deliver the reforms. The ACT Government can accelerate the adoption of reform by ensuring the right incentives exist—this may be simplified processes, fee holidays, or lowering or removing heavy initial costs like LVC.

This is a unique moment in time for the ACT community to lock in a reform that delivers private, government and community benefits that will be shared across many generations.

This research is based on data and information compiled with best endeavours. There are quality issues which must be considered. See *Annex 1: Information quality statement* (page 95) for more details.

1.3 Research observations

Drawing on the research we have made several observations:

Observation 3-1: There is an unusual consensus between the ACT Labor, Canberra Liberals and ACT Greens political parties to increase the development rights of residential zoned land in the ACT, generally to see better utilisation of larger blocks that are currently low to very low density.

Observation 3-2: In the event development right improvements are not agreed, or are slow to be made, there are some reviews scheduled within the ACT public sector which may need to be expedited to enable faster dwelling growth.

Observation 3-3: The unique position of the ACT as a city-state means it can lead the national debate on planning reform in National Cabinet, and lead by example.

Observation 4-1: The interim new TP on the one hand provides additional rights for land holders in RZ1, RZ2 and RZ3, however it also constrained the ability to access those rights with settings that are costly and create a disincentive for individual land holders to act.

Observation 4-2: Compared with other Australian jurisdictions the ACT generally has more residential zone categories, and could simplify the system moving towards a three zone system—low, medium and high density—similar to Victoria, Tasmania, South Australia and the Northern Territory.

Observation 6-1: If population forecasts and household formation are the basis for expected dwelling demand, we estimate the ACT will need between 138,000 and 166,000 additional dwellings by 2060, we adopt a target around 150,000. This is approximately 3,850 per annum, of which 70% are required from in-fill, around 2,700 per annum. This level of production would be affordability neutral as it does not meet any current supply gap.

Observation 6-2: When considering zoning reform, whether under the new TP, or those within this project, there are two quantity issues. First, the likely number of blocks utilised will be less than a simple count of eligible blocks. Second, the number of blocks will not equate to the number of dwellings. Any estimation of reform impact must account for these issues.

Observation 6-3: A more likely estimate of uptake for the new TP RZ1 reforms is around 15,000-16,000 dwellings which is around 14% of our estimated demand for in-fill blocks in 2060, and around 29-33% of the new TP estimate of development from potential urban regeneration areas.

Observation 8-1: While our quantity model has used existing land size adjusted by location qualities to determine inclusion or exclusion from reform, a universal ability to consolidate or subdivide blocks, based on the potential outcomes from the land would be more equitable in the long term. That is, excluding blocks below a quality adjusted volumetric threshold still prevents the possibility for all land use to achieve a higher valued use in practice.

Observation 9-1: There is a mismatch between technical population forecasts, and the location of in-fill suitable land, that suggests a community conversation is needed about where people want to live, in additional to how they want to live.

Observation 9-2: An important aspect of the impacts we estimate is that they do not push the boundaries of existing planning settings. That is, land switches zones, but the zone constraints remain. In this way any new development on land in this project is constrained to 2 storeys, and the site area ratios in the new TP. Relaxing this approach would yield more potential development.

Observation 9-3: The expected increase in dwellings from the reform is 59,924 by 2060. This is 3.9x the increase estimated for the new TP RZ1 estimate. It would meet 57% of expected in-fill demand by 2060. It would also achieve between 114% and 132% of the target set for potential urban renewal areas in the new TP—confirming the reforms would achieve a net increase in supply compared to ACT Government estimates.

Observation 9-4: Changing zoning will have less valuation impact in RZ2 and RZ3 than in RZ1 as we expect those blocks have shadow prices linked to perceived development potential. RZ1 blocks might have some shadow pricing where holders gamble on a change, but will not systematically reflect the development uplift potential from rezoning. Rezoning RZ1 would lead to some bidding up of values regardless of actual development.

Observation 9-5: There is no clear evidence about the potential valuation gains from upzoning where rights are not accessed. In the ACT there are many related factors driving land valuations, including a unique public monopoly on greenfield supply. Intuitively, all regulations are consistent across the ACT, there is no clear time series of 'upzoned' blocks to estimate potential unimproved value uplifts or base value differences, new dwellings are typically developed at the suburban fringe on differential zoning rules to in-fill sites, and each suburb has differential hedonic factors. Estimating unrealised value uplift is fraught. What we can say is that there may be paper gains, and that any gains made will favour the ACT Government through land taxes linked to valuations.

Observation 9-6: The scale and scope of development from a reform to RZ1-3 zoned land would be distributed in a way that minimises infrastructure coordination challenges, and could enhance existing infrastructure utilisation. Where there is a cost to government, in-fill infrastructure has been demonstrated to cost one quarter to one half that of greenfield infrastructure, making this reform superior to increasing greenfield development at scale.

2.0 About this project

The Australian Capital Territory (ACT) Division of the Property Council of Australia (Property Council) has commissioned Purdon Strategy and Economics (Purdon) to deliver a research project that estimates the development potential from an uplift to development rights in the residential zones (RZ) in the ACT Territory Plan (TP).

2.1 Project objective

The ACT faces a distinct policy problem, population growth that is both rapid locally and higher on average than across Australia, and insufficient dwelling production to meet the future needs of the growing population. While there are plans to increase high density development in targeted areas, and some reflection of increased densification, this project seeks to assess the dwelling potential from residential zoned land.

This project has aimed to develop practical policy analysis and tools to assist the Property Council assess reforms to residential zoning which shifts land use towards higher and better valued uses. This research will support Property Council policy advocacy work.

Secondary objectives include determining the potential to meet 'missing middle' housing needs, providing practical options for the ACT Government to deliver on its housing objectives and budget needs, provide Property Council stakeholders with a voice in zoning reform, and support a range of community objectives around affordability, sustainability, and liveability.

2.2 Project scope

The project is framed around key questions, drawn from different perspectives, set out in Table 1. There are undoubtedly many other questions, however those are beyond scope.

Table 1: Key project questions

For the Property Council	• What are the current development rights in the RZ categories, and how has the new territory plan changed those rights? • What would an alternative scheme look like, considering ACT political commitments, 'Missing Middle' concepts, and 'good' planning? • If a policy was implemented that uplifts RZ development rights, how would this potentially impact on the economy and property industry?
From the Government perspective	• What is required to provide affordable housing to the ACT population over the medium to longer term? • How much of the future housing need could be met from uplifting RZ development rights? • If RZ development rights reforms were adopted how would this impact the community, economy, and budget?
For the impacted ACT community	• How can the government facilitate new housing over time to meet the needs of Canberra? • What will happen if we do not reform RZ (in-fill v greenfield)? • If there are changes in RZ, how will they impact on my home |costs |taxes |location?

To address these questions, the project has drawn on an extensive array of research and data. Much of the research input is reported in *Section 11.0 Resources* (page 90). The key ACT spatial and economic data used includes:

- ACT 'block' records for RZ 1, 2 and 3, and related spatial files (Units, Addresses, building footprint, and TRANSITION,) as well as Purdon geocoded spatial files.
- Australian Bureau of Statistics demographic, regional and Census data.
- Official ACT government data (e.g. demographics, budget, and land release).
- Extracts from the Purdon Regional Analysis Model (subscription data, and extracted and analysed industry, Commonwealth, ACT, and local government administrative datasets).

Where feasible the data and analytics are analysed and presented visually and spatially using QGIS, as well as typical analytics platforms (Excel and PowerBI). To deliver the analyses Purdon have had to link components of these data sets. This requires assumptions and will deliver results that others may not have available to them. It is important to understand the information set out at part *2.3 Limitations* (page 12), and *Annex 1: Information quality statement* (page 95).

By agreement, the project scope is limited to policy positions advocated publicly, relevant to the ACT, expressed by the following broad groups:

- The Property Council and Members.
- National cabinet and related national policy statements.
- Major ACT political parties.
- Key local stakeholder groups.

2.2.1.1 Specific exclusions

In delivering this project, it is beyond the scope for Purdon to deliver:

- Broad community engagement.
- Engagement with government agencies, other advocacy groups, or with stakeholders not identified by the Property Council.
- Public commentary on the project or findings.
- Detailed research on related or tangential topics to improved residential land use planning, or any broad-based changes to the Territory Plan already announced.
- Highly resolved design solutions or marketing and material to support advocacy work.

Where Purdon have used data, information or commercially sensitive methodology owned by Purdon, the information is shared with the Property Council, but not detailed in this report.

To tailor this project, it has been assumed that only existing urban zoned land is in scope, which excludes all rural zoned land.

2.3 Limitations and assumptions

This research combines geospatial, survey, census, and other data and research. To make observations and prepare recommendations we have had to rely on information that has limitations, and make assumptions. The dominant issues are the availability, quality, and comparability of information. Key limitations and data quality issues are set out in in *Annex 1: Information quality statement* (page 95). It is important to reflect on this when considering the contents of this report.

3.0 Context

In research informing the interim new Territory Plan (new TP) the ACT Government has expressed a clear policy challenge for land utilisation in the Territory:

> *The ACT has only a limited amount of available land left for new suburbs and there must be gradual transformation in the current suburbs to support future growth. If these changes are not made, housing will be more unaffordable and services will be harder to access, which will be detrimental to the ACT economy and way of life. Actions must start now to build a Canberra that provides a good foundation for its current and future residents.*[1]

There are many ways to meet these challenges. Zoning is one potential solution to improve the capacity of existing land to increase dwelling stock, by uplifting development rights.

3.1 Planning settings

The concept of enhanced development rights has emerged in the ACT in part due to recent changes in the planning environment.

The ACT Government took steps towards better planning outcomes in the Territory in the new TP. Debated over the years 2019 to 2023, and coming into force 27 November 2023, the new TP has made a range of administrative, governance and development right changes. A full review of the changes is not in scope for this report.

However, a key change was that land use in residential zones (RZ) was adjusted to prime additional development. Discussed further, later, the new TP adjusted rights in the RZ1, RZ2 and RZ3 categories with a declared intention to increase dwelling numbers on defined land types. This supply side intervention is argued by some to support better housing affordability, but is challenged by others as being too little to yield genuine outcomes.

3.2 Local policy positions

While the new TP has taken steps towards uplifting development rights for ACT RZ land, there are calls for more.

A review of declared political party positions reveals there is a consensus to uplift RZ land more broadly than the new TP settings. These positions are summarised in Table 2. The consensus points, relevant for this project, in the current policy positions include:

- Increasing development rights in RZ1 to be more like RZ2.
- Increasing development rights in RZ2 to be more like RZ3.
- Allowing for consolidation and subdivision of blocks in residential zones.
- Achieve additional development density while maintaining the broad character of Canberra.

There are areas that are contested, like minimum sizes, in-fill ratios, and parking requirements.

[1] ACT Government, "District Strategies 2023: Volume One, Metropolitan Context and Big Drivers." p. 5.

Table 2: Residential zoning policy positions

Party	Policy positions
ACT Labor	**'Suburban Zoning Reform**[2] 201. The ACT Labor Government will introduce amendments to the Territory Plan to: a. Reform the RZ1 Suburban Zone to legalise low impact medium density housing in all RZ1 areas, similar to the current RZ2 policy settings. b. Reform the RZ1 Suburban Zone to legalise the consolidation, subdivision and unit titling of blocks to better enable this low impact medium density housing. c. Reform the RZ2 Suburban Core Zone to higher density housing, similar to the current RZ3 policy settings. d. Reform the CZ4 Local Centre zone to more easily allow residential uses above local shops ('shop-top apartments') of at least four stories. e. Reduce minimum parking requirements for all residential dwellings.'
ACT Greens	In their vision for Canberra's Future[3], the ACT Greens have expressed support for: • '...80% infill and 20% greenfield development to provide sufficient housing for Canberra's growing population while protecting our wild places'. • 'Universal upzoning of RZ1 to RZ2. This will reform the RZ1 Suburban Zone to legalise low impact medium density housing in all RZ1 areas, similar to the current RZ2 policy settings.' • 'Support for the expansion and upzoning of the current RZ2 Suburban Zone to higher density housing, similar to the current RZ3 policy settings.' • 'Implement changes that enable consolidation, subdivision and unit titling of blocks, ensuring the policy intent of well designed, medium density housing is facilitated through these changes and we do not miss opportunities for better designed more consolidated density particularly in areas currently nominated as RZ2.' • 'Prohibiting single residential redevelopment in RZ2 and RZ3 zones as they fail to meet the objects for those zones and forfeit ongoing opportunities for block amalgamation.' • 'Reduction of mandatory parking requirements to 1 car space per home across all residential zones.'

[2] ACT Labor Party, "ACT Labor Platform: 2023-24." p. 61.
[3] ACT Greens, "Our Vision for Canberra's Future."

Party	Policy positions
Canberra Liberals	While having no policy on the public record at the time of writing, sitting Liberals have observed their policy will: • '…allow the owner of such larger parcels to separately title, or unit title, the land and construct a second dwelling' and '…allow separate titling of secondary dwellings and allow the construction of standard-sized houses.' [4] • 'not…restrict the size of a second dwelling but to leave that in the hands of the owner', and 'allow the owner the opportunity to surrender their single lease with this large parcel for the issue of two leases, to allow the second dwelling to be treated as being on a separate parcel of land'[5] • '…[allow] separately titled dual occupancies on RZ1 blocks over 800m^2', while also '…preserving the Bush Capital and Garden City characteristics of our city'. [6]

It is important to observe that these do not represent the entire position of each party in relation to land use or planning in the ACT, just those which affect RZ land. Also, there is a chance these positions may change, or be finessed, in the political process leading up to the October 2024 ACT election. Regardless, at this point, for this project we observe:

Observation 3-1: There is an unusual consensus between the ACT Labor, Canberra Liberals and ACT Greens political parties to increase the development rights of residential zoned land in the ACT, generally to see better utilisation of larger blocks that are currently low to very low density.

3.2.1.1 Preliminary steps underway

As noted, the new TP increased some rights for RZ1, 2 and 3 land, which is discussed further later. However, the clearly expressed party positions are not currently part of the new TP implementation option. There is some commitment to action to understand existing problems. Some examples of these commitments include:

- 'Three types of future housing opportunities are identified: expected development under existing controls; selected key sites and change areas; and potential capacity in potential urban regeneration areas. The government will work with the community in determining this future development'. [7]
- Action 2.3 'Investigate the RZ2 Suburban Core Zone to determine why the existing built form does not demonstrate the intended variation of housing typologies between RZ1 and RZ2 zone' with no due date. [8]
- Action 2.5 'Investigate potential urban regeneration areas by undertaking further detailed analysis of the potential suitability of different parts of Canberra for increased housing density and diversity including consideration of the transect, and other approaches to inform urban character' with no due date. [9]

[4] Cain, "Solve the Housing Crisis with Respectful Practical Infill, Says Cain."
[5] "Hansard."
[6] Cain, "Canberra Liberals Label Barr's Zoning Changes an 'Unambitious Copy.'"
[7] ACT Government, "District Strategies 2023: Volume Three, Indicative Implementation Plan." p. 5
[8] ACT Government. p. 17
[9] ACT Government. p. 17

- Action 7.1 'Undertake a detailed investigation of ACT local centres and retail planning. This study is related to the above ACT RZ2 Suburban Core Zone Study, since many of the RZ2 zones surround local centres and may benefit from their intensification' with no due date. [10]
- Action 8.1 'Facilitate significant redevelopment and urban improvement' with no due date. [11]
- Development control incentives schemes—such as changes in crown lease and lease variation charge—are discussed, but seen as a significant departure from norms and '…should be investigated further prior to introduction'.[12]

District strategies also call out 'potential urban regeneration areas' (PURA). The government describe these as '…areas located mostly within the existing urban footprint and which make the best use of opportunities associated with existing land, buildings and infrastructure.'[13] Despite running population projection scenarios to 2060, the new TP seems to contemplate the possibility of reforms in change areas to a maximum time frame of 15 years. Despite the political positions, any analysis of PURA, or incentives, are put off until an undefined time in the future. [14]

The Environment, Planning and Sustainable Development Directorate (EPSDD) have earmarked a select procurement valued at $250,000 to deliver a study on the 'missing middle' issue, including some zoning questions we address in this project.[15] This may inform ACT Government in a similar way this report will inform Property Council stakeholders.

In the event there is a change in political consensus or significant delays in achieving change, such that no reforms are agreed or implemented, and noting a seemingly urgent need for new dwelling growth, we observe there may be an opportunity to generate some changes from accelerating new TP implementation actions:

Observation 3-2: In the event development right improvements are not agreed, or are slow to be made, there are some reviews scheduled within the ACT public sector which may need to be expedited to enable faster dwelling growth.

3.3 Other relevant policy positions

The ACT is not unique in reporting housing pressures, nor in a desire to improve planning outcomes. Investigating Australian Government and other states' and territory's positions suggests there is a national movement towards planning and zoning reform, and a clear position to increase dwelling stock across the board.

The mapping of relevant high-level settings is set out in Table 3. These are all quite detailed settings, so this table is necessarily restricted to key points. While this is far from a census of views, there is clear action in National Cabinet, the Australian Government, and major east coast States to improve the utilisation of land, as a supply side approach to improving housing affordability. Even in the international sphere the desire for reform in Australia is clear, with the

[10] ACT Government. p. 18
[11] ACT Government. p. 18
[12] ACT Government, "ACT Planning System Review and Reform: Development Controls." p. 21.
[13] ACT Government, "District Strategies 2023: Volume One, Metropolitan Context and Big Drivers." p. 16.
[14] ACT Government, "District Strategies 2023: Volume Three, Indicative Implementation Plan." p. 5.
[15] ACT EPSDD, "EPSDD FOI 23/110921: RZ1 Reform, Upzoning and Territory Plan Changes." See: Brief titled 'Missing middle and increased residential density close to commercial centres. Exemption from public tender requirements (purchases over $200,000) under Government Procurement Regulation 2007'.

International Monetary Fund observing in the context of increasing housing stock to support improved housing affordability 'supportive planning and land-use policies are critical'.[16]

Table 3: High level policy settings on zoning and urban density

Jurisdiction	Policy positions
National Cabinet	• **National Housing Accord** (2022): a consensus action plan on addressing housing affordability, • **National Housing Target** (baseline, plus incentive): a goal to increase dwelling supply by 1.2 million over 5 years from July 2024. • **New Home Bonus** to incentivise development above baseline growth. • **National Planning Reform**, announced as a blueprint to address perceived shortfalls in statutory planning systems.
Australian Government	• **National Urban Plan** (expected late 2023-24) expected to bolster cities and urban environment engagement by the Australian Government. • Housing Australia reforms (especially targeting social housing). These aim at boosting social and • Engagement on, and potentially new Housing and Homelessness Agreement, to resource states in delivery of housing outcomes.
NSW Government	• NSW **permissibility reforms** (28 Nov 23) to increase development in targeted locations.
Victorian Government	• Victorian **Future Homes**, within the context of state planning reform, to simplify and incentivise higher density developments

Observation 3-3: The unique position of the ACT as a city-state means it can lead the national debate on planning reform in National Cabinet, and lead by example.

3.4 Stakeholder positions

The scale and scope of reforms proposed in the ACT political positions will impact the broader community. It is not feasible for this project to take a pulse of the broader community, however there are some solid supporting signposts.

Community feedback provided to the ACT Government during the Territory Plan review suggests there is support for sensible densification. Table 4 extracts key observations from the feedback, as they relate to densification and development generally—this is not the compete feedback, just relevant to this project.

[16] International Monetary Fund, "Australia." p. 30.

Table 4: District views about densification and uplift[17]

District	Community positions
Belconnen	'Focus more dense urban areas near commercial centres' 'Rejuvenate local shopping centres including surrounding amenity'
Gungahlin	'Maintain and protect undeveloped land'.
Inner North	'Design efficient housing, smaller footprints with increased greenery' 'Create a mix of housing density with a focus on medium and low-density dwellings'
Inner South:	'Focus higher density housing close to the shops, Parliament House and along corridors such as Canberra Avenue' 'Balance urban infill with existing character and amenity'
Molonglo	'Spread out medium- and high-density housing' 'Provide housing typology choice' 'Plan low density housing near nature reserves and open areas' 'Limit medium and high-density housing.'
Tuggeranong	'Enhance local shops and commercial precincts' 'Build efficient and smaller housing'
Weston Creek	'Cater for downsizing' 'Limit and vary building heights and density' 'Maintain village feel by controlling building size and scale' 'Maintain low density planning'
Woden	'Deliver diversity of style in building developments' 'Design efficient homes and make them smaller' 'Revitalise local shopping centres'

Some key points in these positions are that:

- Different districts have differing opinions, but there is a generally shared view about appropriate development being acceptable.
- Most stakeholders in most locations see value in retaining the broad character of Canberra, in particular preserving green, and open spaces.
- There is a relatively consistent view to locate urban density nearer to commercial centres, including (potentially preferentially) local centres.
- A mix of housing typologies is preferred.

There is no clear expression of a view for wholesale medium to higher density, nor is there an expressed view about zoning.

A recently formed, vocal, advocacy group that is '…on a mission to make our city more affordable, liveable, and sustainable', Greater Canberra, has influenced policy and community

[17] ACT Government, "District Strategies 2023: Volume Four, Background Material." pp. 14-22.

views on the missing middle concept. The group have expressed the view 'embracing density will allow more Canberrans to live within the existing urban footprint, in close proximity to workplaces and amenities, allowing a lower-carbon and less car-dependent lifestyle.' [18] Having advocated for reforms to RZ1 and RZ2, among other policy adjustments, they have expressed frustration at the new TP adjustments as being too little.[19]

Finally, the property industry organisation most complementary to the Property Council, the Master Builders Association, has advocated for denser developments, and has criticised some new TP settings. In one statement, the MBA noted 'unless the ACT intends to continuously sprawl to the NSW boundary, the RZ1 zone must be unlocked to accommodate housing for key workers, our aging population and natural population growth'. [20] In the same story, they are cited as seeking a lift of RZ1 to RZ2 zoning, RZ2 to be lifted to RZ3, and reforming the CZ4 zone to allow housing in some commercial settings. Like many commentators on the RZ1 reforms the MBA have expressed that additional dwelling size restrictions were '...illogical and unnecessary given the other provisions in the Territory Plan, such as the design guidelines and technical specifications,' and seeking a reduction in block size for dual occupancy to 600 m^2'.[21]

Based on these settings we are compelled to recommend:

Recommendation 1: With an unusual confluence of local political agreement, national agreement to reform and a baseline of community support for densification, the Property Council should advocate for additional development rights, at least in the RZ1, 2 and 3 zones, within the ACT planning system during the 2024 election campaign. The time has rarely been better to pursue these reforms.

[18] Greater Canberra, "ACT Planning System Review and Reform Project: Submission on Draft Planning Bill 2022." p. 3
[19] Greater Canberra, "Media Release."
[20] Bushnell, "Unlock the RZ1 Suburbs for Medium Density to Meet Housing Crisis, Says Master Builders ACT."
[21] Bushnell, "Scrap Dual Occupancy Limits, MBA Will Tell Territory Plan Hearing."

4.0 A proposal to meet dwelling needs

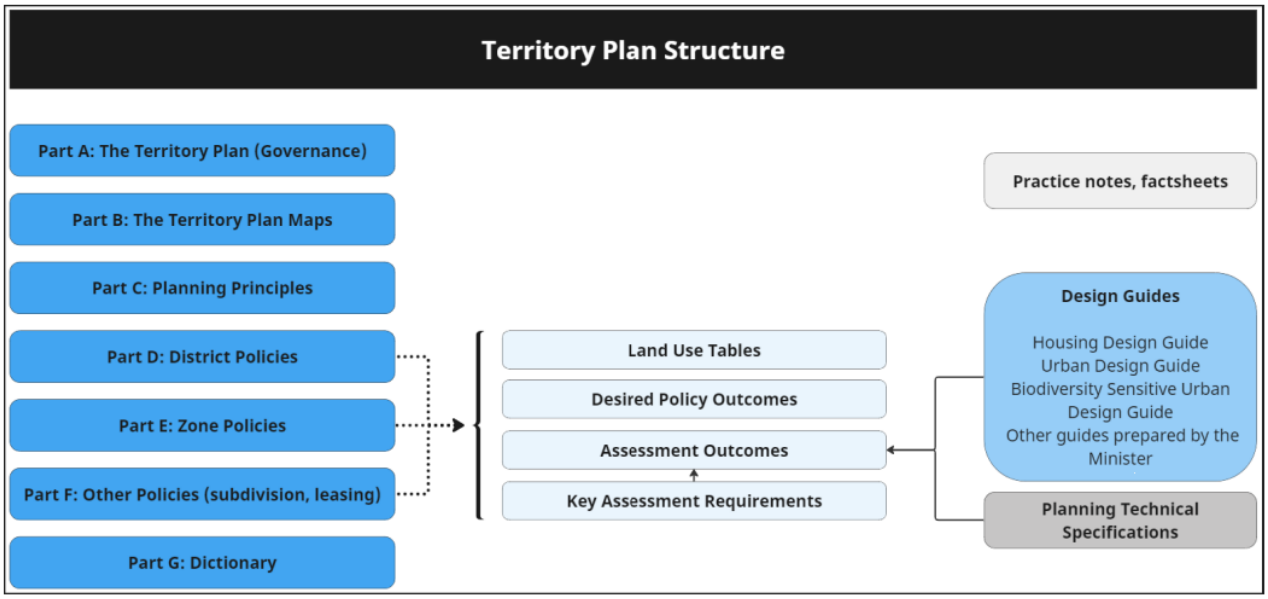
> *[Low density zoning] is not problematic because it allows detached single-family homes. It is problematic because it does not allow anything else. In places where housing demand is low and everyone wants a detached single-family home surrounded by detached single-family homes, most structures will be single-family homes, regardless of regulation. The zoning in this case does not bind.*[22]

This project aims to set out an option to meet dwelling demand, by increasing the stock of dwellings in the ACT within the urban footprint. With the new TP, this is slightly more complicated, as there are two baselines—moving from the 'old' to the 'new' TP, and then moving from the 'new' TP to the scenario in this project. This section sets out these baselines and proposed changes.

4.1 Baseline ACT planning settings

The ACT Government has taken steps towards outcome focussed planning in the ACT. The interim new TP was debated over the years 2019 to 2023, and came into force from 27 November 2023. This TP made a range of administrative, regulatory, governance and development right changes. A full review of the changes is not in scope. Nevertheless Figure 1 illustrates the ACT Government view of the new TP structure. The key issue for this report is changes implemented for residential zoning.

Figure 1: ACT New Territory Plan Structure



Source: ACT Government, Territory Plan 2023: Part A Administration and Governance, NI2023-540, 5 Dec 2023, p. 4.

The new TP retains a broad structure of five residential zones. These zones are summarised in Table 5. Essentially the step between each zone is accompanied by increased density potential, based on a range of parameters set out in the TP and supporting policies and regulations.

[22] Manville, Monkkonen, and Lens, "It's Time to End Single-Family Zoning." p. 108.

Table 5: ACT Residential zones in force

Zone	Title	Zone Character
RZ1	Suburban	Housing is low rise and predominantly single dwelling and low density.
RZ2	Suburban Core	Housing is low rise and consists of a mix of single dwellings and multi-unit development that is low to medium density.
RZ3	Urban Residential	Housing is low rise and predominantly medium density, particularly in areas that have good access to facilities and services and/or frequent public transport services.
RZ4	Medium Density Residential	Housing is medium rise and predominantly medium density, particularly in areas that have very good access to facilities and services and/or frequent public transport services.
RZ5	High Density Residential	Housing is generally high density, particularly in areas that have very good access to facilities and services and/or frequent public transport services.

Sources: for Character ACT Government, Territory Plan 2023: Part A Administration and Governance, NI2023-540, 5 December 2023, p. 32.

4.1.1.1 New territory plan changes

Despite retaining five zones, rights within those zones did change. Table 6 summarises the general changes, by setting out settings no longer in force, new settings, and consistent settings between the plans for zones RZ 1-3 (the project scope). Like most regulations there is significantly more complexity in the underpinning laws and codes.

It is clear the new TP has increased development rights in the RZ1, RZ2 and RZ3 zones, however these changes are not provided without costs or conditions. For example, secondary residents and dual occupancies require a lease variation triggering a lease variation charge (LVC) payment. The leasing policy also requires any additional uses to achieve sufficient car parking, manage additional traffic flows and provide adequate waste management. [23] Unit titling also imposes significant costs including building surveying, certification, and creating the unit title management mechanisms. Other technical constraints that impact subdivision are set out in additional policies.[24]

The ACT Government has, to a limited extent, recognised part of this constraint. After announcing the reforms it was widely reported the government will provide a limited exemption from stamp duty. The Chief Minister is cited as saying "this incentive provides a discount of up to $25,150 on the final sale price, removing a barrier to home ownership and will bring an incentive for the delivery of more well-located and affordable homes."[25] This provides limited relief against the LVC of either 75% of any valuation uplift, or codified fees between $47,500 and $236,250[26] for an additional dwelling.

[23] ACT Government, Territory Plan 2023: Part F Other Policies F2-Leasing Policy. pp. 4-5.
[24] ACT Government, Territory Plan 2023: Part F Other Policies F1-Subdivision Policy.
[25] Fenwicke, "Three-Year Stamp Duty Exemption to Boost Take-up of Dual Occupancies on RZ1 Blocks."
[26] ACT CMTEDD, "CMTEDD FOI 2023-354: Documents on Missing Middle Canberra Campaign, Including Plans." p. 11.

Table 6: Key changes in residential zones 1-3 in 2023 Territory Plan

Zone	Old	New	Consistent
RZ1	• Plot ratio (standard large block) 50% GFA • Plot ratio (non-standard) 65% GFA • 500—700 sqm secondary with no unit titling (90 sqm max) • Height limit: 8.5m	• Site coverage, multi-unit housing: 45% of land area (40% if single dwelling) • >800 sqm dual occupancy with *Unit Titling* (UT) **[RZ1n]** • 120 sqm max size for additional dwelling (ex-garage)	• No subdivision • Difficult consolidation • Limited to 2 storeys • <500 sqm no secondary dwelling **[RZ1a]** • 700—800m^2 and 'surrendered', additional dwelling with UT **[RZ1f]** • 500—800 sqm and not 'surrendered', secondary (90 sqm max ex-garage), but no dual occupancy **[RZ1b]** • >800 sqm dual occupancy no unit titling
RZ2	• Plot ratio (standard large blocks): 50% GFA • Plot ratio (non-standard) 65% GFA • Height limit: 8.5m • Excludes apartments as a use • No subdivision without development	• Site coverage, multi-unit housing: 45% of land area • Adds apartments as a use • RZ2 to RZ5 are now able to be subdivided without a development having to be constructed	• Dual occupancy with *subdivision* • Can consolidate with rights • Limited to 2 storeys • Density limits: 1 if land is 0-699 sqm, +1 for each additional 250 sqm • Constraint of max 3 dwellings if street front is less than 20m wide
RZ3	• Plot ratio (large standard, and non-standard): 65% • Height limit: 8.5m • Limited to 2 Storeys	• Site coverage, multi-unit housing: 50% of land area • Height Limit: 9.5m	• Like RZ4 and RZ5 (denser zones) • More height than RZ2 • Less setback than RZ2

Note: Excludes RZ4-5 as they are out of scope. This table excludes special provisions for 'supportive housing and community housing' which typically has more development rights. In RZ2 multi-unit adaptable housing also gains additional development rights which are not reported. Redevelopment rights are also excluded. Sources: ACT Government, Territory Plan 2008: Single Dwelling Housing Development code, NI2008-27, 27 November 2023; ACT Government, Territory Plan 2008: Multi Unit Dwelling Housing Development code, NI2008-27, 27 November 2023

On balance, noting that in these zones land holders would typically be individuals and families rather than developers or land bankers, we join commentators observing the new TP reforms will not automatically create incentives to enable an in-fill lead development boom.

Observation 4-1: The interim new TP on the one hand provides additional rights for land holders in RZ1, RZ2 and RZ3, however it also constrained the ability to access those rights with settings that are costly and create a disincentive for individual land holders to act.

Also, in practice, there are zones within zones, which creates a more complex development rights matrix than is perhaps intended. These are drawn out a little more in Table 7. For example, in the old plan there were effectively three RZ1 zones (total 7 zones), while the new TP has increased the RZ1 category to 4 (with a total of 8). This is in part complicated by different rights for 'surrendered'—or 'Mr Fluffy'—blocks. An objective for the reforms assessed in this project is to slightly simplify zones.

Table 7: ACT residential zoning in practice

TPZ: Old		Description	TPZ: new		Description
RZ1	***a***	Suburban, 0-500 sqm	**RZ1**	***a***	0-500 sqm
	b	—, >500 sqm [not RZ1f]		***b***	—, 500-800 sqm [not RZ1f]
	f	—, >700 sqm [surrendered]		***f***	—, 700-800 sqm [surrendered]
				n	—, >800 sqm [not RZ1f]
RZ2		Suburban Core	**RZ2**		Suburban Core
RZ3		Urban Residential	**RZ3**		Urban Residential
RZ4		Medium Density Residential	**RZ4**		Medium Density Residential
RZ5		High Density Residential	**RZ5**		High Density Residential

4.2 Comparable residential zoning regimes

As noted earlier, planning reform is squarely on the national agenda. Simplifying residential zoning in the ACT would be consistent with that agenda. It would also bring ACT zones closer to comparable Australian jurisdictions. A high-level scan of legislative settings, summarised in Table 8, reveals there are at least 32 residential zones in Australia. The ACT is unique in the sense that the state legislation is not further interpreted through 543 local government layers of localised implementation.

More importantly, in smaller jurisdictions like South Australia, the Northern Territory and Tasmania, there are typically only three residential zones—typically a low, medium, and high-density setting. Of the larger states, Victoria has three main zones, while NSW has 5 (at least prior to current reforms). It seems sensible to shift towards a more streamlined residential zoning system that simply layers three zones:

Observation 4-2: Compared with other Australian jurisdictions the ACT generally has more residential zone categories, and could simplify the system moving towards a three zone system—low, medium and high density—similar to Victoria, Tasmania, South Australia and the Northern Territory.

Table 8: Jurisdictional residential zoning comparison

Jurisdiction	Residential zones	Year of Act	LGAs
ACT	5	2023	1(equivalent)
NSW	5	1979	129
Vic.	3	1987	80
Qld	4	2016	78
Tas.	3	1993	29
SA	3	1993	71
WA	6	2005	137
NT	3	1999	19
Aus	32	na	543

Note: Date of legislation is based on states' legislation registers and may not reflect the latest amendment dates, instead the formation date of the latest Act. LGAs count is based on Purdon analysis of LGA 2023 codes in the ABS ASGS.

In Table 9 a more detailed comparison is presented for the two larger east coast states near to the ACT, and the only other Territory in the federation, while Table 10 provides a little more detail for the residual jurisdiction. We note, of course, that:

- Each of the states' Acts establishes the legal framework for land use planning and development controls in the jurisdiction, and that these are accompanied by significant volumes of associated regulations, policies, and guidelines which provide more detailed requirements for planning authorities, developers, and the community.
- The number of local government areas, and the subset of policies, is an estimate not allowing for the possibility of amalgamations or other administrative changes.
- Implementation of state laws is not homogenous, which may lead to many more combinations of policy settings.

On the balance of probability, the ACT actual zoning is more excessive than most jurisdictions, and could be simplified into a simpler system that had a low, medium, and high-density style zoning for urban residential land parcels.

Table 9: Residential zoning regimes—nearby and similar jurisdictions

State	Zone	Title	Basic characteristics	Other factors
NSW	R1	General Residential	• Primarily residential purposes with some allowable non-residential uses. • Lot sizes vary, with intention to support a mix of housing types. • Plot ratios are determined by local planning controls and can vary between councils.	• *Environmental Planning and Assessment Act 1979* • 128 LGAs • Local Environmental Plans • Regional Plans • Development Control Plans
	R2	Low-Density Residential	• Detached dwellings with minimal impact on the character of the area. • Generally larger lots. • Plot Ratios are low reflecting the preference for detached dwellings with more open space.	
	R3	Medium-Density Residential	• Focused on providing for medium-density housing. • Smaller lots than R2, designed for compact development. • Plot ratios are moderate allowing for a mix of housing types like townhouses and villa homes, with greater intensity than low-density zones.	
	R4	High-Density Residential	• Designed for high-density residential development. • Generally smaller lots suitable for higher-density housing. • Higher plot ratios reflecting the intent for vertical development such as apartment buildings.	
	R5	Large Lot Residential	• For residential use on larger lots. • Lots sizes accommodate larger, more spacious properties. • Plot ratios vary but are generally lower than high-density zones.	

State	Zone	Title	Basic characteristics	Other factors
Vic	RGZ	Residential Growth Zone	• Encourages residential growth in designated areas. • Higher density compared to other zones. • Generally smaller lots compared to other zones. • Plot ratios determined by local planning controls and may allow for increased intensity.	• *Planning and Environment Act 1987* • 79 LGAs • Planning Schemes • Municipal Strategic Statements • Local Planning Policies • Design and Development Overlays
	GRZ	General Residential Zone	• Provides for a range of housing types in established areas. • Moderate density, allowing for a mix of housing types. • Local planning controls determining lot sizes. • Plot ratios determined by local planning controls and may allow for moderate intensity	
	NRZ	Neighbourhood Residential Zone	• Preserves the character of established residential areas. • Lower density focusing on protecting neighbourhood character. • Generally larger lots to maintain a spacious feel. • Plot Ratios lower compared to other zones, reflecting a preference for detached dwellings and open space.	
NT	LR	Low-Density Residential	• Intended for low-density residential development. • Density emphasises spacious development with larger lots. • Generally larger lots to maintain a low-density character. • Lower plot ratios reflecting a preference for detached dwellings and open space	• *Planning Act 1999* • 17 LGAs • Planning Schemes
	MD	Medium-Density Residential	• Allows for a mix of housing types, including townhouses. • Higher than low-density zones, suitable for medium-density housing. • Lot sizes supporting a more compact development. • Moderate plot ratios allowing for a mix of housing types.	
	HD	High-Density Residential	• Designed for high-density residential development. • Allows for apartment buildings and other high-density housing forms. • Generally smaller lots suitable for higher-density housing. • Plot ratios reflect intent for vertical development.	

Table 10: Residential zoning general information—remaining jurisdictions

State	Zone	Title	Other factors
Qld	LDR	Low-Density Residential Zone	• *Planning Act 2016* • 77 LGAs • Planning Schemes • Local Plans • Priority Development Areas
	MDR	Medium-Density Residential Zone	
	HDR	High-Density Residential Zone	
	ECZ	Emerging Community Zone	
SA	RGZ	Residential (General) Zone	• *Development Act 1993* • 68 LGAs • Development Plans
	RLDZ	Residential (Low Density) Zone	
	RMDZ	Residential (Medium Density) Zone.	
Tas	LDRZ	Low-Density Residential Zone	• *Land Use Planning and Approvals Act 1993* • 29 LGAs • Local Provisions Schedules • Planning Schemes
	GRZ	General Residential Zone	
	IRZ	Inner Residential Zone	
WA	R5	Rural Residential	• *Planning and Development Act 2005* • 138 LGAs • Local Planning Schemes • Local Planning Strategies • Development Contribution Plans • Zoning may vary between regional and metropolitan areas
	R20, R30, R40	Low-Density Residential	
	R60,R80	Medium-Density Residential	

4.3 Proposed changes

To set the ACT on a successful pathway within a national planning reform system, achieve zoning simplification, enhance incentives for individuals to participate in achieving in-fill development, to support the shift to 'missing middle' style development in the ACT, and to support meetings the needs of the future ACT population, the proposed changes modelled in this project include:

- Simplifying RZ1 from four parts to two, with no additional development rights.
- Lifting development rights by upzoning select RZ1 zoned land to RZ2.
- Further lifting some RZ1 development rights by upzoning selected RZ1 to RZ3.
- Lifting development rights by upzoning select RZ2 zoned land to RZ3.

In proposing these changes, some preconditions are that:

- The upzoning occurs where there are more than just private development benefits.
- Incentives are maximised to support achieving the 70% or greater in-fill targets.
- The broad character of urban Canberra is maintained.

These are the concepts underpinning the modelling approach, and the outcomes are covered in the potential reform impacts section.

5.0 Insights informing the project

According to the ACT Government:

> *...the ABS released Census data and, in response, in 2023 ACT Treasury released population projections indicating a need for 100,000 new homes by 2050* [27]

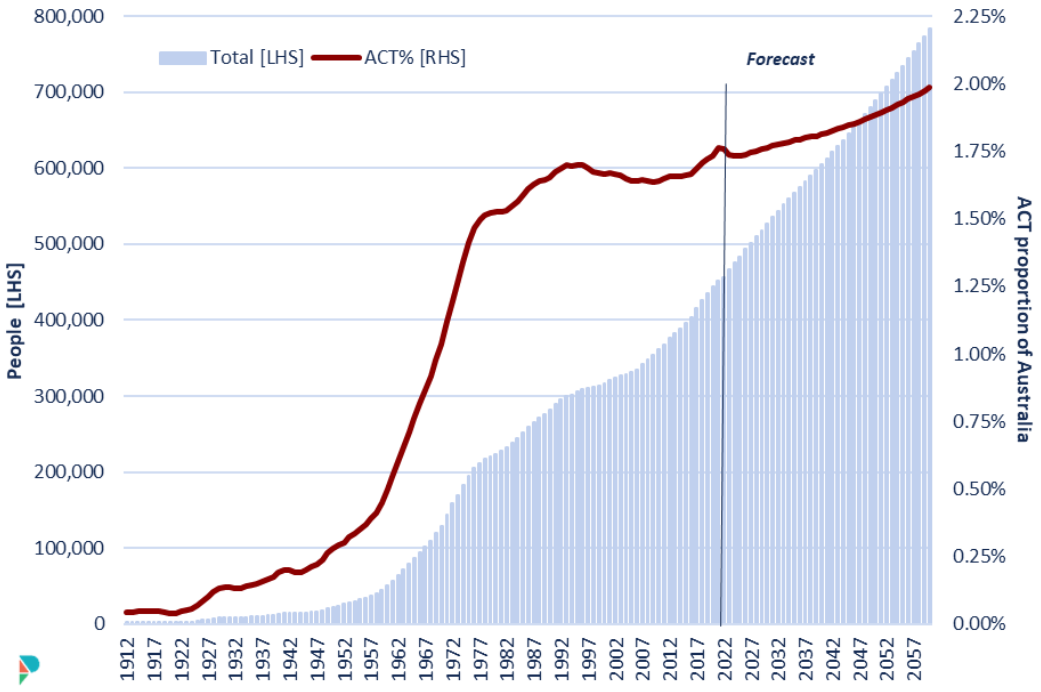
They subsequently set out a range of projections for housing need, including the locations by district, as part of the new TP. These scenarios provide little insight into the potential for upzoned residential blocks, and projections are not based on the political positions set out in the context section.

To inform the potential impact of reforms to RZ land, this section reports insights from ACT population and land use data and information to provide that have informed modelling on how the proposed reforms will contribute to address long term demand challenges, and any potential impacts that an upzoning policy may deliver.

5.1 People

There is no question the ACT population has grown rapidly. There is a consensus that the population is likely to continue growing more rapidly than Australia in years to come. Figure 2 combines historical, contemporary, and forecast population sources to illustrate the rapid growth of the ACT population, and how that population compares to the total Australian population.

Figure 2: The ACT population over the long run



Source: Purdon analysis of the sources in section 11.0 Resources of this report, especially Demographics (page 93)

[27] ACT Government, "District Strategies 2023: Volume One, Metropolitan Context and Big Drivers." p. 26

What we observe is that:

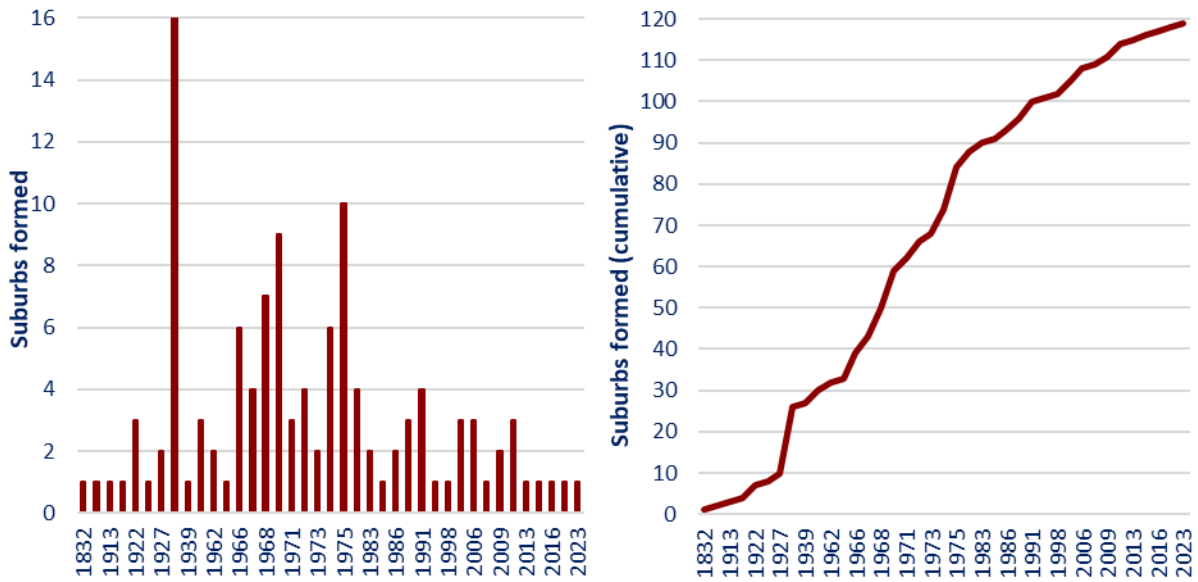
- From 1912 (our earliest measure) to self-government (1989) the population grew from 1,924 to 276,432, from 0.04% to 1.64% of Australia.
- From self-government to 2023, the ACT added an additional 190,381 people to reach 466,813, increasing to 1.74% of Australia.
- The most aggressive growth in the ACT compared to the nation was between 1958 and 1976, where the proportionate growth differential was at or above 0.05% pa.
- The ACT Treasury forecast for 2060 is 784,043, which is an additional 317,230 people, and close to 2% of the intergenerational report forecast for the Australian population.

Importantly, the continued uptick in the red line demonstrates the ACT population is expected to continue to grow faster than Australia, assuming forecasts materialise.

5.1.1.1 Regional population change

The ACT is not a homogenous polity. In November 2023 ACT spatial data count 121 divisions ('suburbs'), across 19 districts.[28] These suburbs have been formed over many years, profiled in Figure 3. The bulk of ACT suburbs were established between the mid-1960s and late-1980s. This distribution is meaningful for this project, as the timeframe of suburb establishment sets the timeline for initial dwelling creation, as well as a pointer to the era the baseline stock was initially zoned.

Figure 3: Age distribution of suburbs



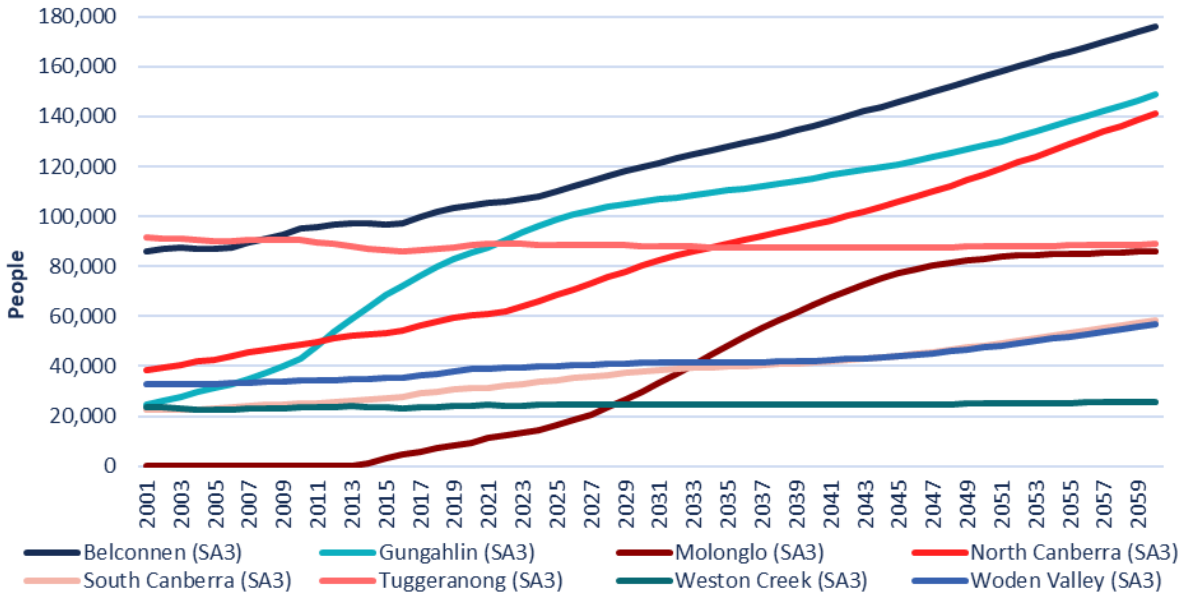
Source: Purdon analysis of approximate gazette dates of ACT divisions.

ACT district level population growth since the early 2000s, and forecasts to 2060, are illustrated in Figure 4. These are based on Australian Bureau of Statistics (ABS) statistical area (SA) geography, consistent with ACT Treasury population projections. What this illustrates is the

[28] At the time of writing the geospatial records had not been updated to reflect the districts established in the new TP. Our analysis has created a concordance for the 9 districts with strategies, but we note there remain several districts without strategies generically called 'non-urban' districts.

diversity of regional population dynamics, which consequently underpins what we assume the ACT Government sees as the driver for dwelling demand.

Figure 4: District population changes



Source: Purdon analysis of the sources set out in section 11.0 Resources of this report, especially Demographics (page 93)

According to the broad trends, relative to 2023:

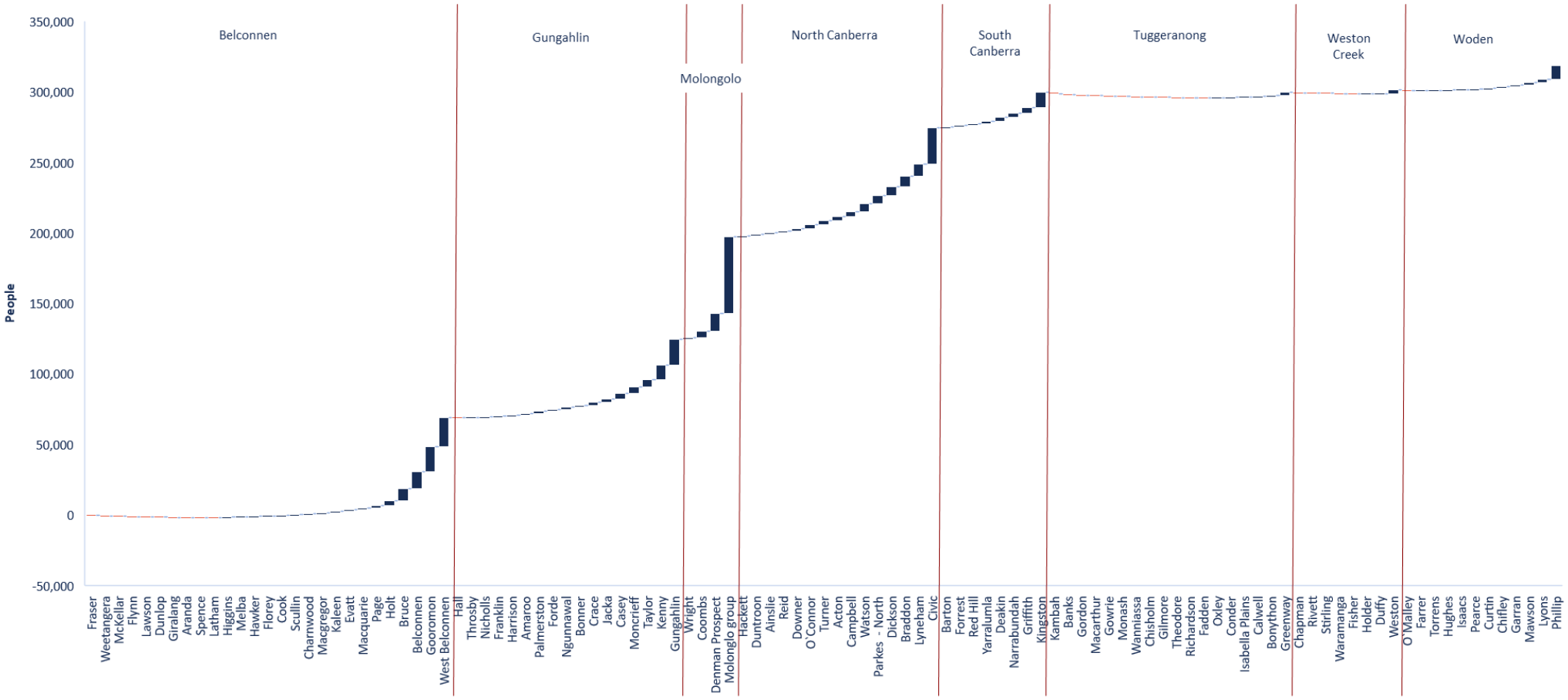
- Molonglo, starting from a low base, will grow by a factor of 6x, but stabilise around 2048.
- North Canberra is expected to double in size.
- Belconnen, Gungahlin, and South Canberra will grow by more than 60%, with Woden growing more than 40%.
- South Canberra and Woden Valley are expected to see relatively flat, to modestly increasing, populations.
- Tuggeranong and Weston Creek are expected to see less than 5% aggregate growth.

ACT forecasts are also available at an approximate suburb scale too. The district totals mask a much more complicated set of expected population increases and decreases. In Figure 5 we have measured the contribution of total population change in different suburbs to illustrate the locations growing (blue bars) or declining (orange bars).

The forecasts in this sample suggest 29 locations are expecting to experience population decline, compared to 80 seeing an increase. In terms of population gains and losses:

- West Belconnen, 'Molonglo group', and Civic are forecast to grow by more than 20,000 each.
- Belconnen, Gooromon (former CSIRO site), Kenny, Gungahlin, and Denman Prospect are forecast to grow by more than 10,000, but less than 20,000 people. Lyneham and Phillip are just shy of 10,000.
- The largest expected declines are in Kambah, Chapman, Banks, Gordon, Fraser, Weetangera, McKellar, Flynn, Macarthur, and Gowrie (>300 people).

Figure 5: Suburb level forecast contributions to change in ACT population 2023 to 2060



Source: Purdon analysis of ACT Treasury, Latest ACT Population Projections, 2022.

No doubt there are standard errors that increase the ranges in these forecasts, however they reflect what the ACT Government has communicated as its expectations. It appears these are based on net birth and migration patterns, and perhaps do not account for potential urban in-fill based on extant land supply.

5.2 Housing

Counting dwellings is complicated due to the multitude of sources which provide conflicting information. In a perfect world, the ACT Government would present a dataset that provides a precise historical and forecast time-series of dwellings by location and type based on administrative data, however this is not the case. To estimate dwellings, in total and the baseline by suburb and district, this section draws on ABS census and survey products.

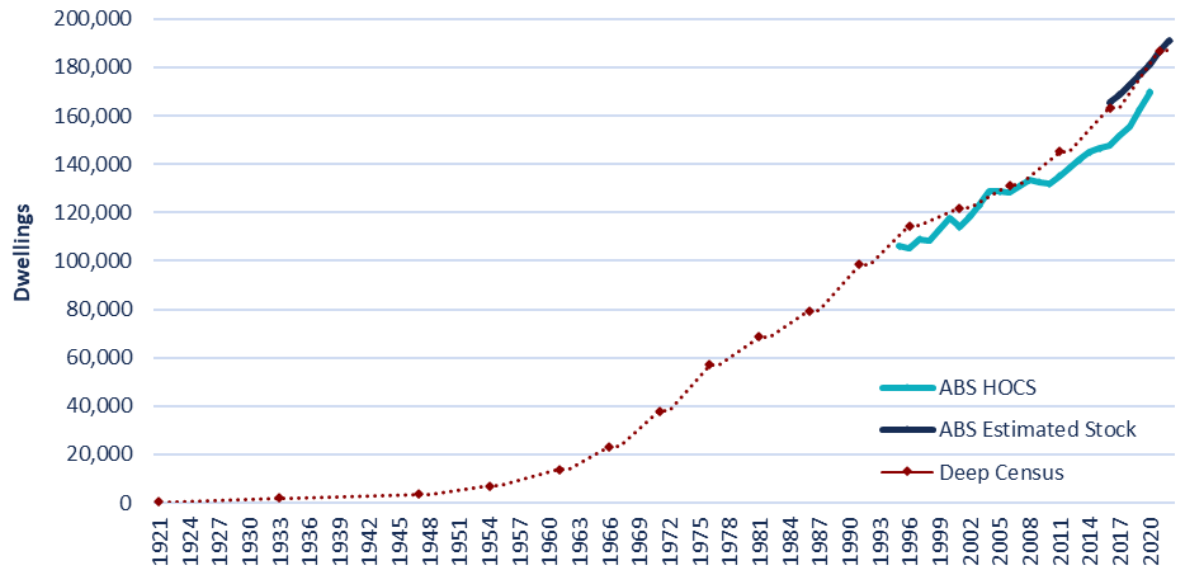
5.2.1.1 Dwelling counts

Three key ABS sources provide insights about dwelling volume.

Probably the most reliable count of dwellings is the Census. One of the metrics reported, relatively consistently over many decades, is the count of occupied and unoccupied private dwellings. The *Housing Occupancy and Costs* (HOCS) survey is a regular and comparable series that estimates total households. More recently, the ABS has commenced publishing estimated dwelling stock starting from a suburb level.

Our analysis of the broad trends in these sources is presented Figure 6—a deep dive into ACT Census data, the complete ACT HOCS series, and the complete series of estimated stock at 30 June each year. The first observation is that the three series have different levels. For example, the measure for 2021 is 186,212 in the stock dataset, 186,963 occupied dwellings in the Census, and, for 2020 (last measure) in HOCS it is 169,800.

Figure 6: Occupied private dwelling estimates at the ACT level



Note: HOCS data for years 1999, 2002, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019 are interpolated. Source: Purdon analysis of ABS Census 1912 to 2021, ABS, "Housing Occupancy and Costs, 2017-18, Cat. No. 4130.0," July 17, 2019, and ABS Estimated Dwelling Stock, June Quarter 2022, October 31, 2022

To make estimates about dwelling demand, and potential reform impacts, this project requires a baseline suburb level dwelling stock. The best suburban and up to date source is the ABS estimated dwelling stock reported at June 2022, which is adopted as the dwelling baseline in this project.

Regardless of the source issue, what the data demonstrates, unsurprisingly, is dwelling stock has increased in line with the change in population, with similar growth episodes. The growth is not symmetric between population and dwellings. For example, the change in population between 1995 and 2020 was nearly 41%, whereas households increased by 60% (HOCS basis). This reflects two related factors, a change in household formation, and dwelling structures.

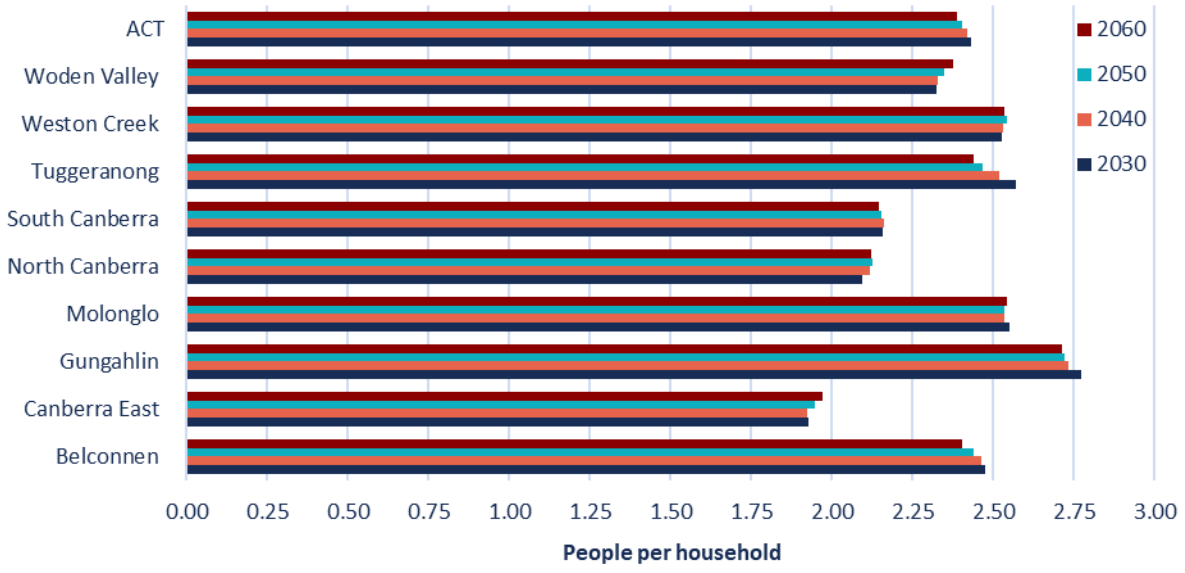
5.2.1.2 Dwelling occupancy

Occupancy data provides insights into the median number of people live in a dwelling. While many other factors are meaningful for policy and estimating demand, such as bedrooms per dwelling and their utilisation, we mostly need to understand the level and change in dwelling occupancy.

ACT level occupancy has been remarkably similar over the 26 years reported in HOCS. In 2019-20 the level was around 2.46 people per household (p/hh). In 1994-95, the level was 2.8 p/hh. The median value has been 2.58 p/hh. Across suburbs the range is much wider. Census data for 2021 suggests the ACT suburban range extended from 1 to 6 p/hh, with a mean of 2.62 and a median of 2.6 (n=124).

We believe the average will mostly like reduce incrementally over time. This reflects our expectations that families are becoming more compact, the population is aging (leading to more empty nester households), and there are complex household issues around household breakdown. The formation levels we expect by district, based on the dwelling estimation discussed in section *6.0 Supply challenge* are summarised in Figure 7. In general, we are assuming the median p/hh will decline, except where there is likely a majority of detached dwellings will be maintained. At the ACT scale this will see occupancy trend downwards from 2.6 towards 2.4 by 2060.

Figure 7: Household formation estimated for forecast years



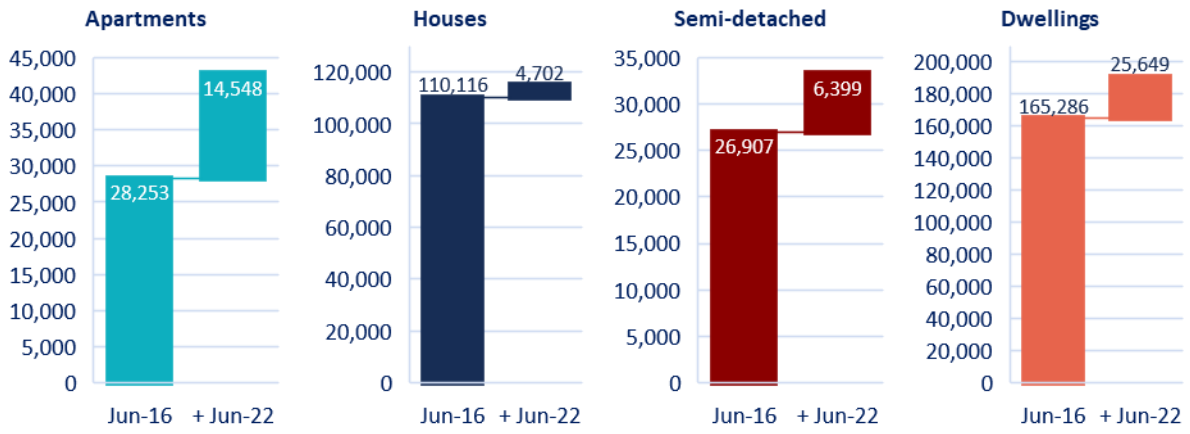
5.2.1.3 *Dwelling Structures*

The type of dwelling has also shifted dramatically over the history of the ACT. While there are many potential definitions most broad-based data sets define three categories—houses (detached dwellings), 'flats, units, and apartments' or just 'apartments' (attached high density), or semi-detached, row or terrace houses, townhouses' (attached medium density, 'semis'). The latter category is statistically closest to the 'missing middle'. The distribution of stock by structure is important to understanding the potential uplift in dwellings from changes in zoning.

Our deep census analysis suggests the proportion of occupied private dwellings classified as houses has fallen significantly over time. Since the 1986 census the ratio has fallen from 82.3% to 63.2% by 2023. Comparatively the proportion of flats units or apartments (FUA) has increased from 7.8% in 1991 (closest measure) to 19.4% in the 2021 census. Semis have increased proportionately too, from 9.9% in 1991 to 17.2% in 2021.

The change is accelerating in recent years. Figure 8 breaks down growth in stock by type from the earliest to latest measurement in the stock measure. The ABS estimate a net 25,649 dwellings were added comparing June quarter (JQ) 2016 and JQ2022. Of this change nearly 15,000 was in FUA, and around 6,400 in semis. Houses accounted for just 18%.

Figure 8: Change in stock levels of dwelling types (JQ 2016-JQ2022)



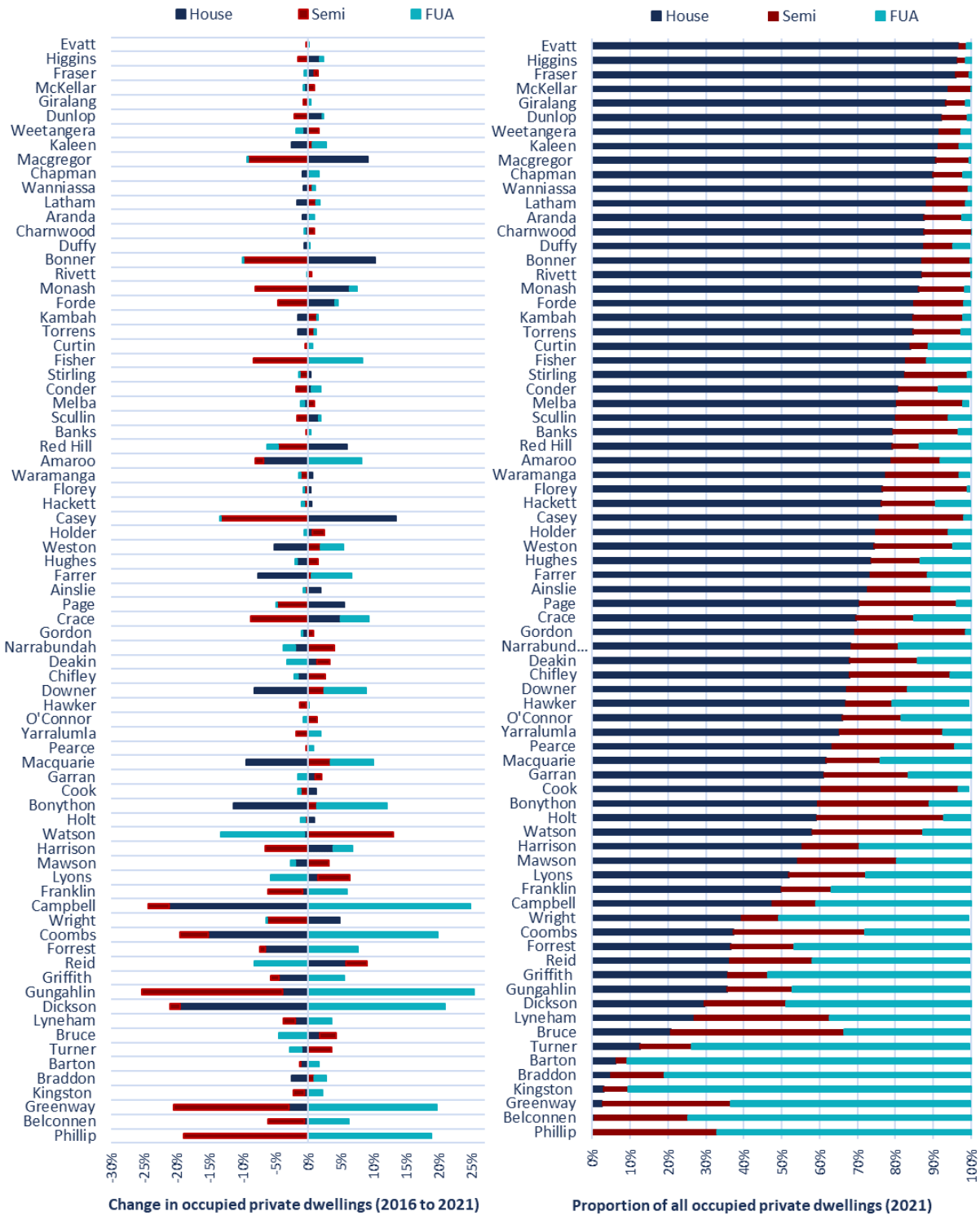
Source: Purdon analysis of Australian Bureau of Statistics, Estimated Dwelling Stock, June Quarter 2022, October 31, 2022.

Again, ACT suburbs are not homogenous, and to make realistic estimates in this project it is important to understand dynamics at a suburb scale. Looking at similar ABS sources, it is possible to estimate the relative change of dwellings by suburb between 2016 and 2021, and the resulting distribution in 2021. This is reported in Figure 9, noting that the count of suburbs is smaller than all suburbs because of data quality issues.

Proportionately, it is reasonable to conclude that houses still dominate as a form of stock in 2021 with an average proportion of 64.6% (65.3% 2016), compared to 16.7% for semis (18.2% 2016) and 18.7% for FUA (16.2% 2016).

Comparing relative proportions (2016% to 2021%) reveals complex, and interesting patterns. The most significant shifts have been towards FUA, mostly away from houses, but also away from semis in some locations. Overall, the average proportionate change has been 0.7% away from houses, 1.5% away from semis, and 2.4% towards FUA. This is consistent with a broad notion of aggregate density increase across ACT areas that permit higher density land uses.

Figure 9: Change and proportion of dwelling types by ACT SA2 (n=77)



Source: Purdon analysis of ABS, Data by region methodology, 2011-2023, November 2023, tables 'Population and people', 'Family and community', and 'Land and environment'.

While it is not a straightforward story, the data suggest a persistence of detached stock—houses— across most suburbs, albeit marginally declining, but it also supports some of the argument that the missing middle is declining in relative terms. This may be a matter of limited appropriate land, compared to the significant FUA opportunities which have been available.

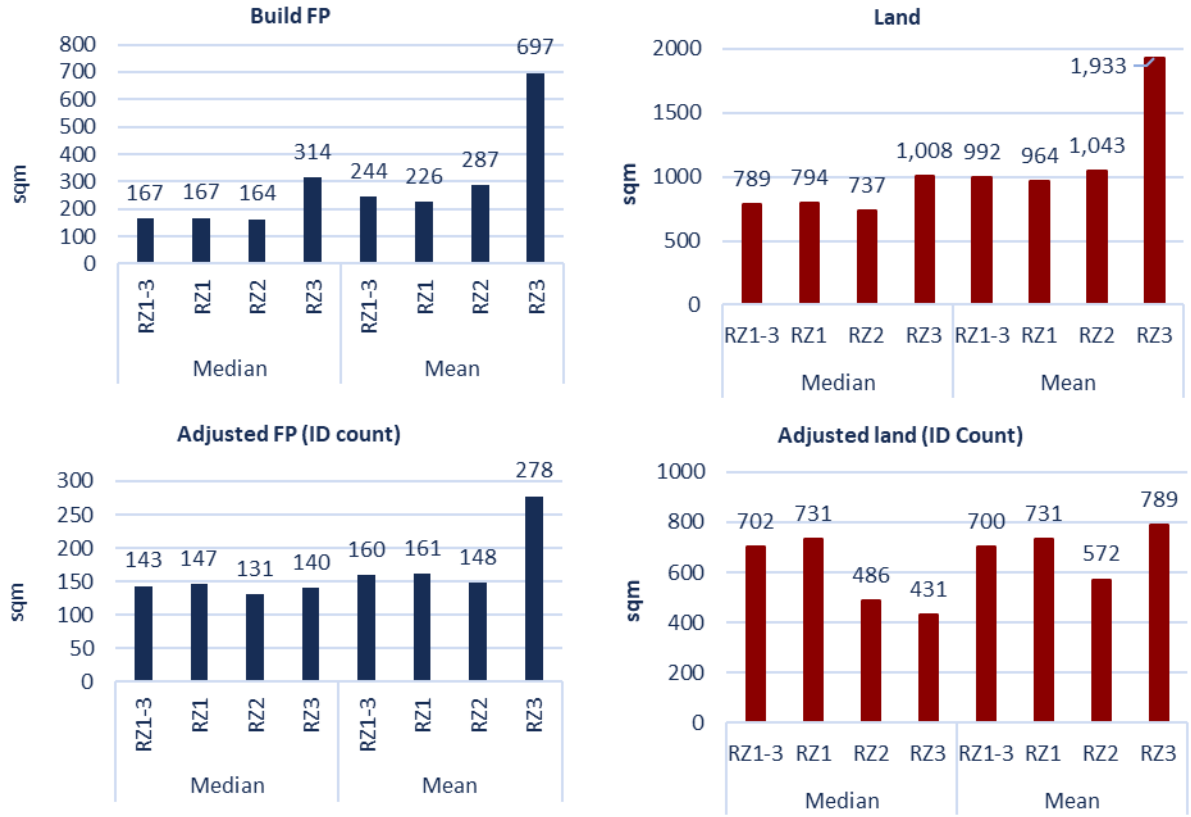
The project modelling does not seek to achieve a 'target' distribution; however, the consequence of the proposed changes will be an increase in semis at the expense of houses, or more simply, extra land for missing middle style development. This will not be at a cost to FUA, which would typically be on RZ4-5, or commercial and mixed-use zoned land.

5.2.1.4 Dwelling sizes

Some debate has occurred since the announcement of the new TP around the appropriate size of additional dwellings. On current settings, policy limits secondary dwellings to 90 sqm and additional dwellings to 120sqm. The size of dwellings is an important consideration for this project, as the expected build size will impact on the potential net benefits from upzoning, as well as the potential utilisation of newly upzoned land.

The ACT geospatial catalogue includes a 'building footprint' file, which includes polygons that measure 'areas which are covered by buildings' (last update 12 September 2022). There is a limited sample compared to the total count of blocks which reduces the quality of the data; however, we can use it as an inferential source. The mean and median estimates for building footprints and land sizes based on a sample of 26,692 blocks in RZ1-3 zones is summarised in Figure 10. Generally, the median footprint is 167 sqm on a median land size of 789 sqm, with a gross floor ratio of around 23.6%. Adjusting the absolutes for the estimated number of dwellings per block, the median falls to 143 sqm per building on 703 sqm of land (ratio of 20%).

Figure 10: Estimated building footprints and land sizes by zone

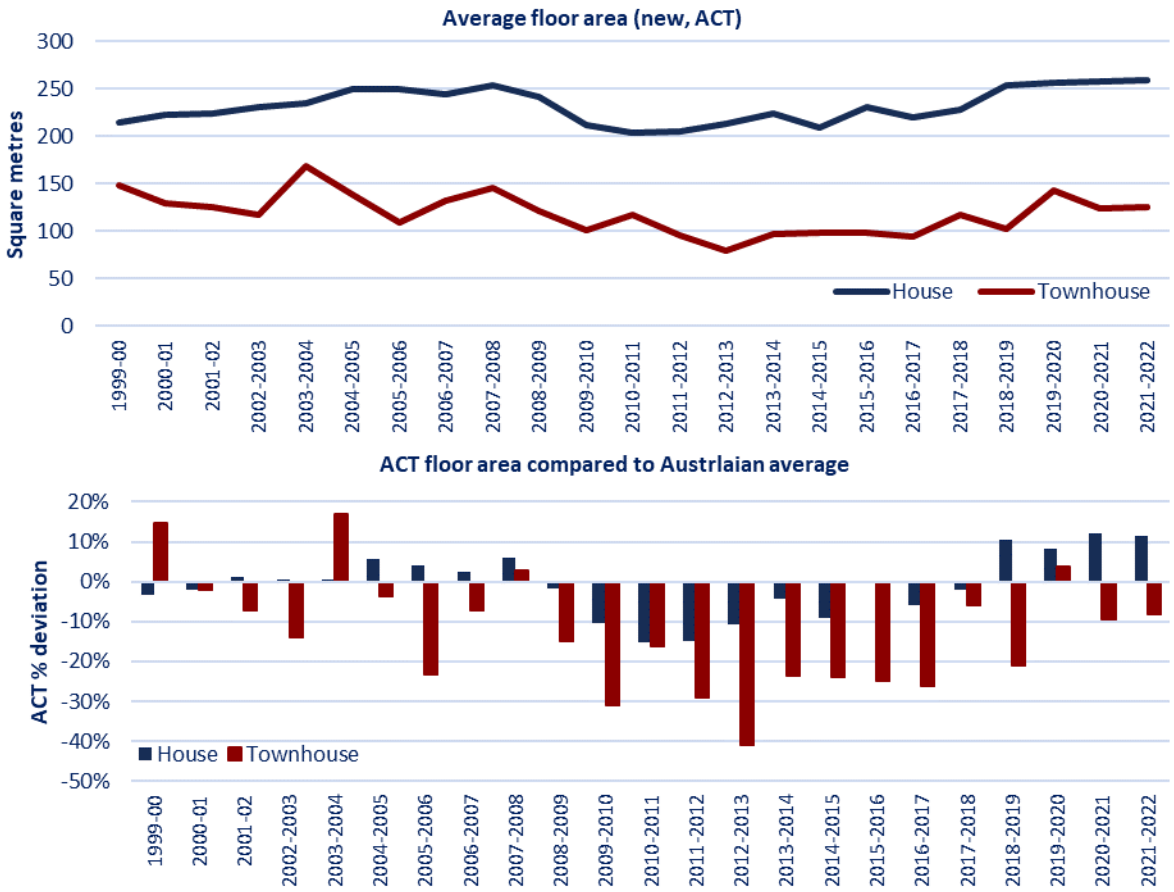


Source: Purdon analysis of the ACT Geospatial file 'Building Footprints'.

Comparing these results to ABS data yields different results. Over several years the ABS have published average floor areas for new house and unit builds. The ACT totals, and comparisons to Australian values are illustrated in Figure 11. Over the years from 2000 to 2022 ACT house

builds have sat between 200 and 250 sqm (mean 225), while units have ranged between 90 and 160 sqm (mean 135). Compared to Australia, houses in the ACT have oscillated between larger and smaller with more recent trends above the Australian average, while units are typically smaller than the Australian average. These data do not extend back to the timeframes for ACT suburb roll outs, which likely explains the lower averages in the geospatial data compared to more recent construction data.

Figure 11: New building sizes over time, ACT and Australia



Source: Purdon analysis of ABS Feature articles typically called 'Average Floor Area of New Residential Dwellings', or 'Characteristics of New Residential Dwellings', published as part of the Building Approvals series.

Reflecting on these data, and market intelligence, for the purposes of this project any new builds will be assumed to be around:

- 250sqm for new houses (including double garage).
- 130 sqm for a two-bedroom townhouse, and 170 sqm for 3-bedroom townhouses (including double garage).
- 90 sqm for a 2-bedroom unit, and 110 sqm for 3-bedroom units (with a 25% circulation allowance, and 35 sqm per car space).

These sizes are not constraints but are used as modelling assumptions. We do not argue for, or generally agree with, size constraints in policy, especially when planning regulations have clear site ratio, height/storey, set back and locational character limits already defined.

5.3 Prices

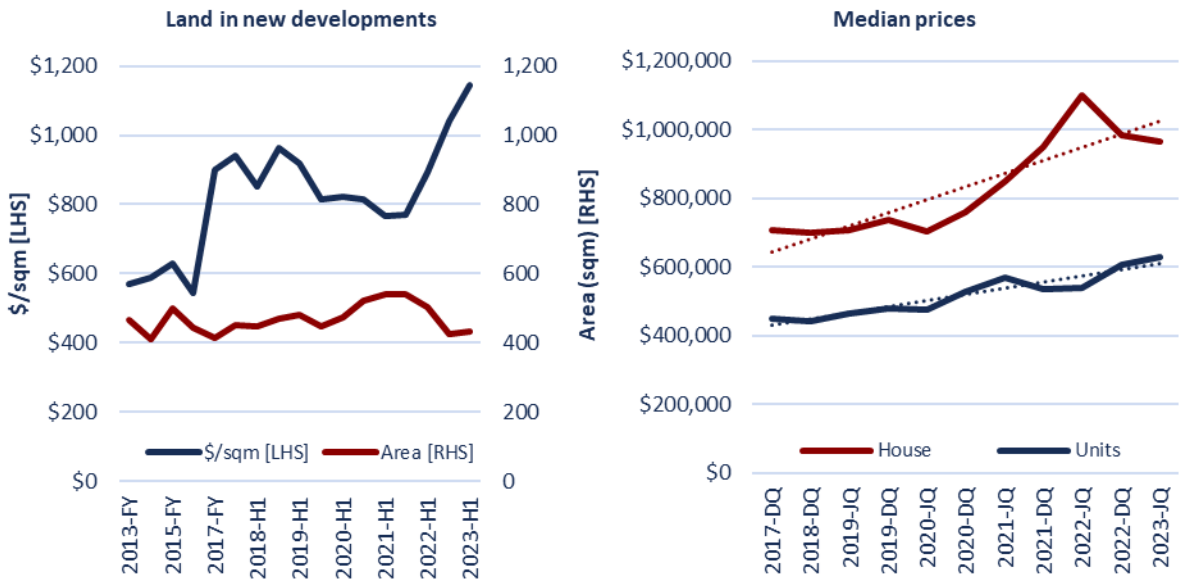
Prices, and valuations, are a fundamental issue for affordability, economic impacts, and government revenues. A range of prices are potentially relevant including purchase prices, unimproved values, and producer prices (costs). Rents are important too, but are not included separately in this analysis (in theory property values are a function of potential rents, but for this project the final usage of the land is a secondary out of scope consideration).

5.3.1.1 Purchase prices

A vast universe of data exists to measure housing prices, each with its own quality constraint. For example, the ACT Government publish average settled prices, the ABS have sales price levels and indices, and private data aggregators provide proprietary averages and indices. For modelling purposes, which requires reliable and comparable data over locations and time, this project relies more on ACT and ABS sources.

Figure 12 presents ACT data on settlements in new developments (left) and the broader ACT market (right).[29]. Houses in the ACT settlement set have grown in nominal prices, between 2017 and 2023, from $705,00 to $966,000, about 37% (in a wider range), while units have grown from $450,000 to $629,000 (around 40%). Hoses have seemingly had a slightly steeper trend. For new developments, in nominal terms, the median price/sqm of land has increased from $571 in 2012-13 to $1,146 in H1 2023 (median $822), whereas the new block size has ranged from 409 to 540 sqm, settling around 432 sqm in H1 2023. What is clear in the time series is that prices per sqm are growing, while the median land size is relatively flat.

Figure 12: ACT Government new developments and aggregate market settlements

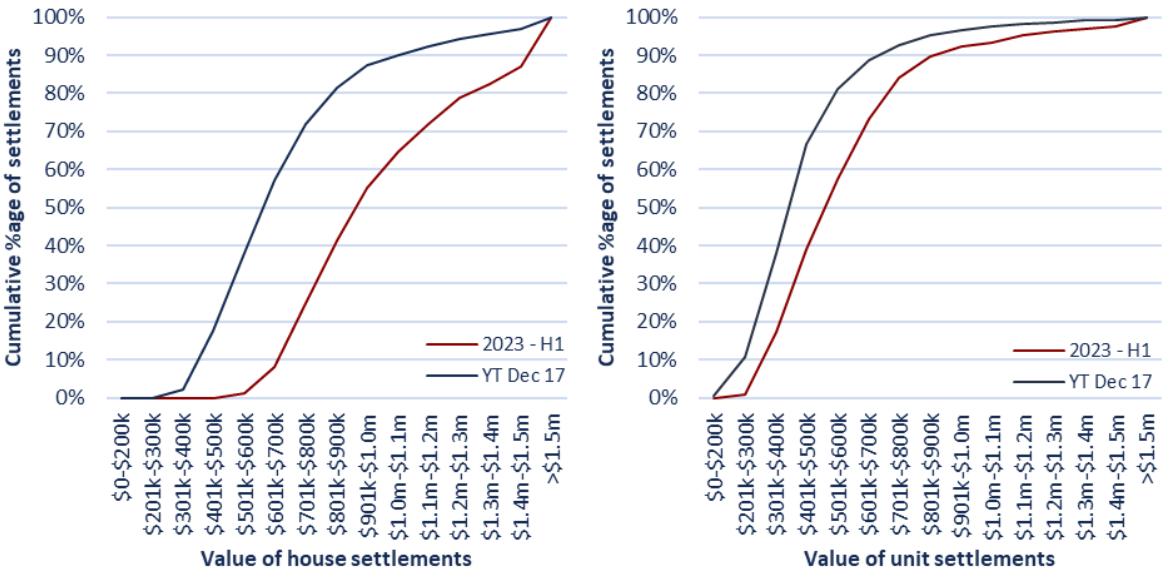


Source: Purdon analysis of ACT Government, ACT Land and Property Report: An analysis of land and property indicators in the ACT, typically published twice yearly, covered September Quarter 2017 to December 2022 half yearly report.

[29] New development sample includes >300 data points on suburbs including Bonner, Casey, Coombs, Crace, Denman Prospect, Forde, Ginninderry, Harrison, Jacka, Lawson, Macgregor, Moncrieff, Ngunnawal, Strathnairn, Taylor, Throsby, Whitlam, and Wright.

ACT settlements data also shows that the distribution of pricing supports the general narrative that all housing is getting more expensive. Figure 13 demonstrates that between 2017 and the H1 2023 the approximate 50th percentile house price range shifted from $601-700,000, to $901,000-$1m, while the 80th percentile shifted from $801-900,000 to $1.2-1.3 million. The pattern for units is similar, but there are many more settlements at lower price brackets, for example in 2017 nearly two thirds of unit settlements achieved the $501-600,000 range, which shifted upwards to the $601-$700,000 bracket by H1 2023. Housing prices have generally shifted into higher price categories more so than for units (a bigger rightwards shift in the distributions).

Figure 13: House and unit settlement price distributions 2017 to 2023-H1



Source: Purdon analysis of ACT Government, ACT Land and Property Report: An analysis of land and property indicators in the ACT, typically published twice yearly, covered September Quarter 2017 to December 2022 half yearly report.

Suburb price distributions are complicated, in part due to the changing dwelling structure of the ACT (historical and forecast), data quality issues, and, in part, due to different hedonic settings. To account for some of these differences, this project does not assume a price for each block or location, rather we estimate a relative scaling of suburban prices to median ACT prices, based on suburb median prices in 2021. While genuine market data would be preferred, to check price relativities and growth patterns, the project has relied on a combination of approaches:

- Recorded ACT level settlement medians for units and houses to set historical levels and trends.
- Suburb relative proportions from data by region median price data at an SA2 level, to measure relative suburban prices compared to the ACT median price.
- Assumed long-term real price growth of 1% pa for houses and 0.7% pa for attached dwellings.

In effect, the model develops long term expected ACT median prices, from which estimated suburban price are generated based on a relativity to the ACT median.

One other necessary adjustment is between houses, and types of attached dwellings. Houses need no adjustment. However, to differentiate between FUA and semis it is assumed that semis are 1.2x the estimated attached median prices, while FUA are 0.9x the median. Further

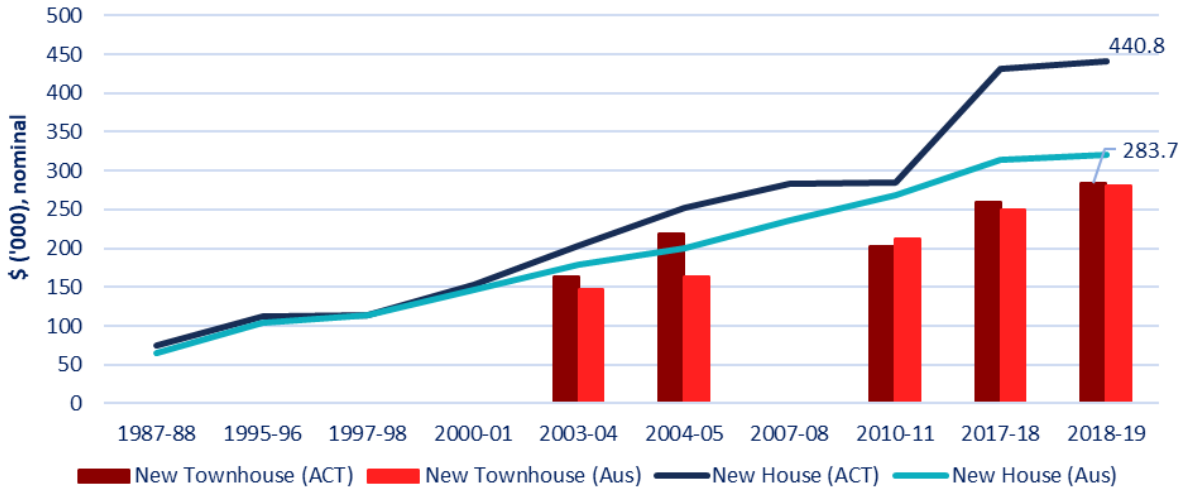
disaggregation of these into storeys, or bedrooms are not undertaken to limit the volume of assumptions.

5.3.1.2 Build costs and input prices

The costs of building will determine the potential impact of any development uplift. Generally, construction costs are increasing much faster than general inflation.

The average cost for new building approvals for houses and units have trended upwards. Figure 14 shows that for 2018-19 (latest) the average cost for a new house was $441,000, while a 'townhouse' was $283,700. Respectively, compound growth since 2003-04 was 5.3% (3.9% Australia), and 3.7% (4.4% Australia). Comparing the build size and cost data suggests an average cost per sqm, in 2018-19, of $1,737 for houses and $2,781 for townhouses. The average per sqm trend growth for houses was 4.8%, compared to townhouses of 7.3% (smaller sizes and higher prices).

Figure 14: ABS estimated building costs



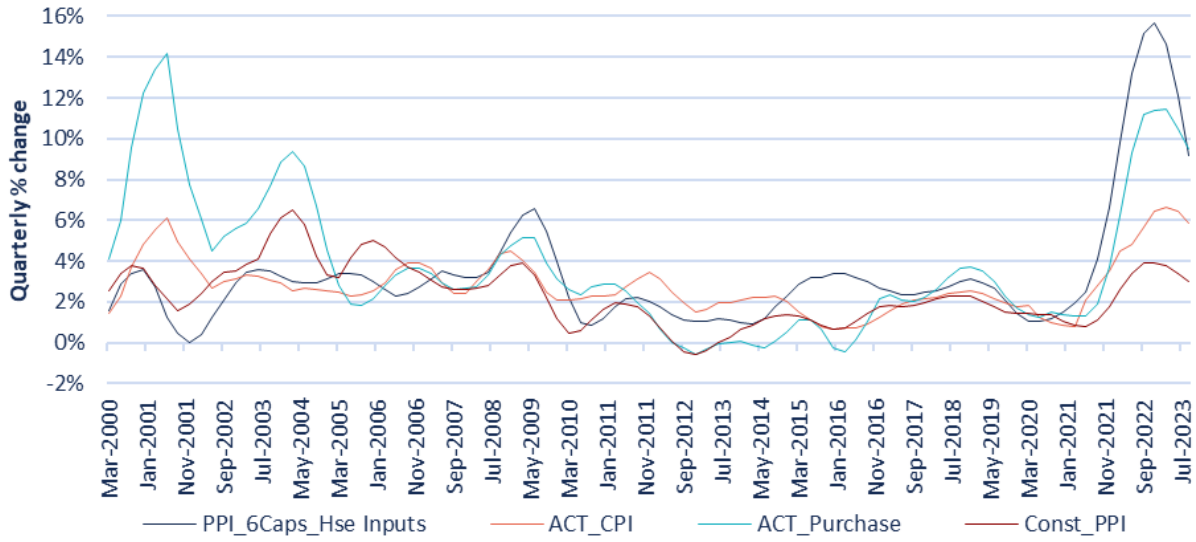
Source: Purdon analysis of ABS Feature articles typically called 'Average Floor Area of New Residential Dwellings', or 'Characteristics of New Residential Dwellings', published as part of the Building Approvals series.

Analysing more recent sources of quarterly building completions, between June 2002 and June 2023, suggests these costs have increased further. We have estimated a 20-quarter average of the annualised cost per completion at a median for house at $452,163, semis at around $300,000, and units between $298,000 and $336,000 depending on the number of storeys. These data do not provide construction sizes.

Whether this will increase further over time is a complicated question. Quarterly construction market cost price changes since 2000 are set out in Figure 15. From these we estimate a 10-year average annual trend growth of 2.5% for ACT CPI, 2.4% for all output of the construction industry, 3.8% for housing construction outputs, and 4.3% for the price of input to the housing construction industry. These data are volatile, and more recently the apparent COVID supply chain disruptions can be seen in the peak Nov-21 and Sept 22, especially for housing construction input costs (Hse Inputs).

The consequence of these insights is that we have assumed that we expect baseline 2023-24 building costs to grow by 1.5% per annum above inflation. This may prove to be optimistic, but it is more realistic than assuming no real growth.

Figure 15: Development market price drivers



Source: Purdon analysis of CPI, HPI and PPI.

6.0 Supply challenge

The insights inform estimated demographic and dwelling dynamics over time, which underpin the expected demand for housing. The key question is how many new dwellings will be required to meet population growth, and to what degree can upzoning support this target?

6.1.1.1 How many dwellings are needed to meet population forecasts?

To determine the dwelling requirements this project has adopted a relatively simple approach. Household formation assumptions are applied to expected population levels, from which estimated housing requirements are derived. Three estimates are made, from which an average scenario is generated:

- District population forecasts are compared to district level formation assumptions. Formation assumptions are derived based on a maximum formation of 2.65 p/hh, but lower where appropriate to account for type change or trends from 2001 to 2021 (aggregated).
- Division (suburb) level forecasts compared to suburb level formation where future formation is the 2021 measured level multiplied by the compound growth rate for the period between 2001 and 2021 (low).
- Division (suburb) level forecasts compared to assumed suburb level formation where future formation is the 20-year average experienced between 2001 and 2021 (high).

The outcomes from our estimates are in Table 11.

While population forecasts are notoriously unreliable, our best estimate of additional housing needed to fulfill the current ACT Treasury population forecast is around 149,622 dwellings by 2060, but in a range between 138,197 and 166,208. The 2018 Planning Strategy adopted a clear target that 'up to 70% of new housing should be accommodated within the ACT's existing urban footprint'.[30] Assuming the target holds over the whole period, this means nearly 105,000 dwellings need to be produced within existing land use boundaries (in a range between 96,740 and 116,350).

Like the population dynamics upon which the demographics estimates are based, housing demand would be lowest in Weston Creek, Tuggeranong, and smaller districts. North Canberra and Belconnen would need the most dwellings (more than 20,000 each).

In a pragmatic sense this translates to a total average annual production rate of around ,3,850 dwellings, of which in-fill needs to cover around 2,700. Over the last 20 years the annual average building activity level according to ABS records has been around 3,809 dwellings (not including demolitions). Achieving this annual production rate will be 'affordability neutral' in the sense it meets new demand but does not address any baseline supply gap.

Observation 6-1: If population forecasts and household formation are the basis for expected dwelling demand, we estimate the ACT will need between 138,000 and 166,000 additional dwellings by 2060, we adopt a target around 150,000. This is approximately 3,850 per annum, of which 70% are required from in-fill, around 2,700 per annum. This level of production would be affordability neutral as it does not meet any current supply gap.

[30] ACT Government, "ACT Planning Strategy 2018."

Table 11: Population forecast and estimated dwelling demand

Measure	Year	Belconnen	Canberra East	Gungahlin	Molonglo	North Canberra	South Canberra	Tuggeranong	Weston Creek	Woden Valley	ACT
Population	*2021*	104,898	1,905	87,645	11,402	61,160	31,435	89,004	24,487	39,079	451,637
	2030	119,058	2,205	105,149	29,466	79,805	37,656	87,717	24,352	41,004	526,900
	2040	134,889	2,240	114,142	64,031	95,717	41,180	86,376	24,342	41,790	605,139
	2050	154,599	2,219	127,118	82,321	115,660	47,804	86,992	24,686	46,985	688,807
	2060	175,826	2,232	148,799	86,148	140,999	58,342	88,914	25,671	56,643	784,043
Households	*2021*	40,457	890	30,549	4,134	29,022	14,548	33,323	9,725	15,913	178,939
	2030	48,445	1,148	38,284	11,605	38,281	17,500	34,319	9,684	17,740	217,739
	2040	55,260	1,174	42,209	25,455	45,605	19,190	34,697	9,691	18,135	252,242
	2050	63,937	1,149	47,142	32,702	54,883	22,358	35,768	9,783	20,265	288,670
	2060	73,294	1,138	55,031	33,906	66,628	27,184	36,854	10,127	24,060	328,560
Changes to baseline											
Households	*2030*	7,988	258	7,735	7,471	9,259	2,951	996	-42	1,827	38,800
	2040	14,804	284	11,660	21,321	16,583	4,642	1,374	-34	2,223	73,303
	2050	23,480	259	16,593	28,568	25,861	7,810	2,445	58	4,352	109,731
	2060	32,837	248	24,482	29,772	37,606	12,635	3,532	402	8,148	149,622
In-Fill requirement @70%	*2030*	5,592	181	5,414	5,230	6,481	2,066	697	-29	1,279	27,160
	2040	10,363	199	8,162	14,924	11,608	3,249	962	-24	1,556	51,312
	2050	16,436	182	11,615	19,998	18,103	5,467	1,712	40	3,047	76,812
	2060	22,986	174	17,138	20,840	26,324	8,845	2,472	282	5,703	104,735

6.1.1.2 Programmed land supply

The ACT Government view on the supply capacity of the Territory—including the land release program, 'category 1-3' identified future urban areas, and 'potential urban regeneration areas' (PURA)— is set out in Figure 16. This suggests the current thinking allows for up to 148,500 dwellings. A few key observations about this are that the total is slightly lower than we estimate is required by 2060, 'expected development' already planned accounts for only 41% (at the higher number), and 36% is required from PURA, which are not well defined in the research.

Figure 16: ACT Planning assumptions on current settings

Table 2: Opportunities for future housing: Indicative potential pipeline of supply and capacity (dwellings)

District	Expected development under existing plans	Potential capacity in Category 1–3 change areas and selected key sites	Potential capacity in potential urban regeneration areas (based on urban character)	Total	District % share of total
Belconnen	12,500-14,000	1,500-2,000	14,000-15,500	**28,000-31,500**	21–24%
Gungahlin	3,500-4,000	N/A	2,000-2,500	**5,500-6,500**	4–5%
Inner North and City	7,000-7,500	1,500-11,000	6,000-7,000	**14,500-25,500**	12–17%
Inner South	3,500-4,000	1,000-5,500	3,500-4,000	**8,000-13,500**	7–9%
Molonglo Valley	20,000-24,000	N/A	N/A	**20,000-24,000**	16–17%
Tuggeranong	300-500	3,500-4,000	12,500-14,000	**16,350-18,500**	12–14%
Weston Creek	1,000-1,500	N/A	3,500-4,000	**4,500-5,500**	3–4%
Woden	4,000-5,000	12,000-13,000	5,000-5,500	**21,000-23,500**	15–17%
Total	**51,800-60,500**	**19,500-35,500**	**45,500-52,500**	**117,800-148,500**	**100%**

Note: Estimates were rounded and are indicative only. Housing analysis was not undertaken for East Canberra.

Source: ACT Government, District Strategies 2023: Volume One, Metropolitan Context and Big Drivers, 11 Sep 23, p. 31.

The current forecasts do not match with the expected population growth, either in quantum or location. Part of this challenge was noted by Greater Canberra, who note 'current land release and planning decisions are entirely informed by population growth projections, and do not involve direct modelling of infill housing supply. This strongly suggests such planning decisions are being made without adequate modelling of the impacts on housing affordability, or detailed modelling of the potential housing supply impacts of potential new planning reforms.'[31]

Nevertheless, there is some prediction of PURA, similar to what is modelled in this project, albeit over an unclear time frame. While not explicitly referencing residential zone changes, Figure 16 suggests PURA could deliver is 45,500 to 52,500 dwellings. We assume anything above this would be genuine net unexpected development compared to existing policy.

[31] Greater Canberra, "Greater Canberra 2022-23 ACT Budget Submission." p. 8.

6.1.1.3 *Existing RZ1 reform will not fulfil the ACT in-fill target*

The Ministerial release supporting the new TP was careful not to nominate a specific volume of land or dwellings RZ1 changes could bring into production.[32] The Canberra Times started reporting potential uplift at 45,000 dwellings on the same day as the ministerial release. [33] They backed this up with commissioned modelling suggesting that the number was closer to 40,245 (also observing the government has identified the number at 42,733).[34] Analysis by Greater Canberra arrived at a number 'around 44,000' RZ1 blocks above 800 sqm.[35]

We have used a spatial intelligence model of zoned land to determine a baseline gross count for blocks in scope for the RZ1 reform at 44,656 blocks. However, this count includes land with features that ought to be excluded. For example, 'Mr Fluffy' scheme blocks, and those that appear to already have more than a single dwelling are less likely, in the short to medium term, to be in-scope. By excluding these blocks, we estimate the likely number of blocks at 42,174.

Practically, many factors work against people participating in the reform, and the likely outcome will be lower than 100% of the block count. Some factors are summarised in Table 12.

Table 12: Factors impinging on residential zone development

Factor	Description
Public ownership	With a policy intention of having public housing 'salt and peppered' (around 10% of suburbs) housing, and different development rights for those house types in residential zones, they would be subject to different drivers which impacts on broad based zoning uplift.
Existing developments	Some blocks are already developed (eg dual occupancy, subdivided, developments exceeding existing rights). This limits new development potential, where it could be more expensive to knock down and re-develop compared to detached lower valued and older dwellings.
Development costs	Concepts, design, materials, trades, climate/season, environmental standards, developer licencing, and building surveying and certifying (differentiated between NCC structures) for example all add costs that will factor into the feasibility of increased development outcomes.
Site constraints	Size, shape, slope (>15 degrees), street frontage, ineffective on-site utility infrastructure, on-site tree canopy constraints, zoning overlays, and similar site-specific issues limit the development potential.
Holding costs	Opportunity cost of unrealised shadow prices, interest on borrowings, government fees and charges, and planning timeframes adjust the potential returns to a development.
Government taxes and fees	Development application, holding charges, lease variation charge, unit titling or subdivision costs, and major territory plan amendments, for example, all lower the incentive to act on marginal developments.
Community culture	The age of a suburb (average stock age), the demographics of an area, potential heritage values, and the motivation of community leaders all create potential negative externalities to pursuing land change.

[32] Andrew Barr (Chief Minister), "More Housing Supply for Canberra."
[33] Lindell, "Dual Occupancy Rules to Expand across Larger RZ1 Canberra Blocks."
[34] Lindell, "See How Your Street Could Change with New RZ1 Dual Occupancy Rules."
[35] Greater Canberra, "Greater Canberra 2022-23 ACT Budget Submission." p. 9.

The direct impact on the incentives to develop for each individual land parcel cannot be easily estimated. However, the likelihood they will impact is supported by a range of research. Australian experts note:

> *...separating regulation (eg. land use zones) from the geographic constraints which underpin such zoning designations (eg. steep slope, wetland areas, waterways and foreshores) is very difficult, with many studies misunderstanding that a primary function of land use controls is to disseminate clear information about development potential and limits.*[36]

Experience in NSW suggests moderation in the assumed uptake from reforms is required. Reflecting on the impact of the Low-Rise Housing Diversity Code, aimed at facilitating missing middle development, the NSW Productivity Commission noted issues such as 'feasibility challenges', 'site restrictions', and 'councils undermining medium density' created a perception that the policy failed to deliver desired dwelling outcomes.[37]

To handle these issues, given they cannot be objectively measured at scale, we have developed a development probability matrix. For land, the smaller the block size the lower the relative chance it will be developed. Also, location likelihoods (districts) are estimated based on our perceived relative development acceptance in certain areas. The values in the matrix are summarised in Table 13. The matrix assumptions are not objective, however they can be varied to test scenarios. Importantly, we observe this approach is better than any simple stock count method which—for the RZ1 new TP change, or in our models—will overstate any reform benefits:

Observation 6-2: When considering zoning reform, whether under the new TP, or those within this project, there are two quantity issues. First, the likely number of blocks utilised will be less than a simple count of eligible blocks. Second, the number of blocks will not equate to the number of dwellings. Any estimation of reform impact must account for these issues.

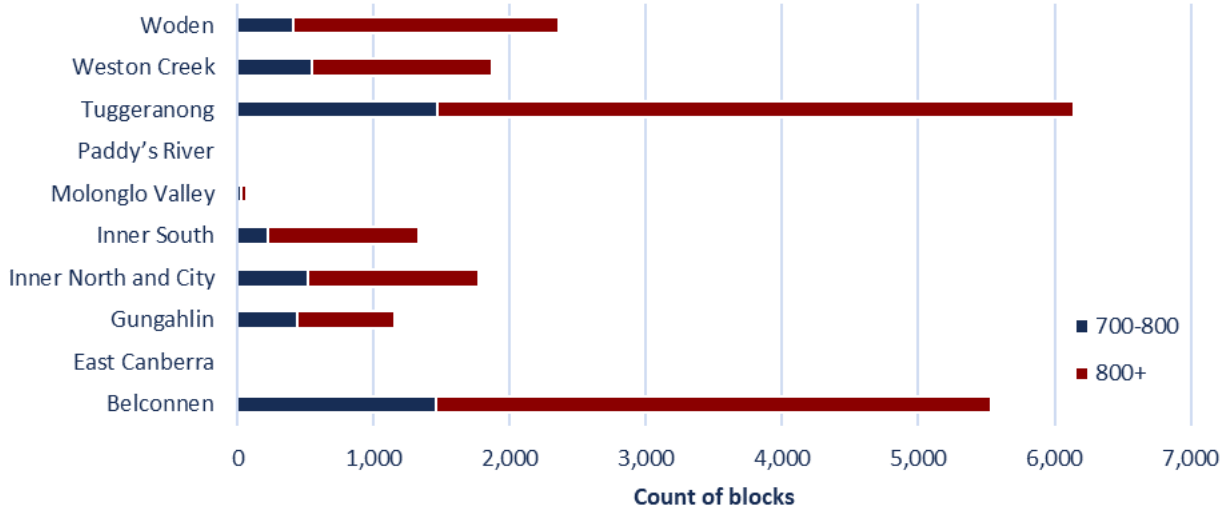
Table 13: District and land size development probability matrix

District (new TP)	**700-950**		**950-1,200**	**1,200-1,450**	**1450+**
	Prob	*30%*	*50%*	*70%*	*90%*
Belconnen	*85%*	26%	43%	60%	77%
Tuggeranong	*85%*	26%	43%	60%	77%
Gungahlin	*95%*	29%	48%	67%	86%
Inner North and City	*75%*	23%	38%	53%	68%
Woden	*85%*	26%	43%	60%	77%
Weston Creek	*85%*	26%	43%	60%	77%
Inner South	*75%*	23%	38%	53%	68%
Molonglo Valley	*95%*	29%	48%	67%	86%
East Canberra / Paddy's River	*25%*	8%	13%	18%	23%

[36] Phibbs and Gurran, "The Role and Significance of Planning in the Determination of House Prices in Australia." p. 3.
[37] NSW Productivity Commission, "Building More Homes Where People Want to Live." p. 30.

Applying this matrix to the estimated potential RZ1 block count of 42,174 suggests a more likely utilisations from the new TP at approximately 15,173. On RZ1 land the block count will be the same as the count of additional RZ1 dwellings. Of course, if the size constraint was equalised to Mr Fluffy blocks, bringing in land between 700 and 800sqm, an additional 5,068 blocks could be in scope (after applying the probability matrix). The estimated distribution by district is reported in Figure 17.

Figure 17: Distribution of blocks likely to take up new TP RZ1 reforms



What we observe is that the location distribution is broadly consistent with the new TP PURA estimates, albeit significantly lower, and that the distribution is very different to the population forecasts for districts especially in middle and southern Canberra. The new RZ1 policy will contribute very little towards even the lower estimated PURA requirement of the ACT government, and in different areas to where the population forecasts currently suggest.

Observation 6-3: A more likely estimate of uptake for the new TP RZ1 reforms is around 15,000-16,000 dwellings which is around 14% of our estimated demand for in-fill blocks in 2060, and around 29-33% of the new TP estimate of development from potential urban regeneration areas.

6.1.1.4 Greenfield, future urban areas, and transition blocks

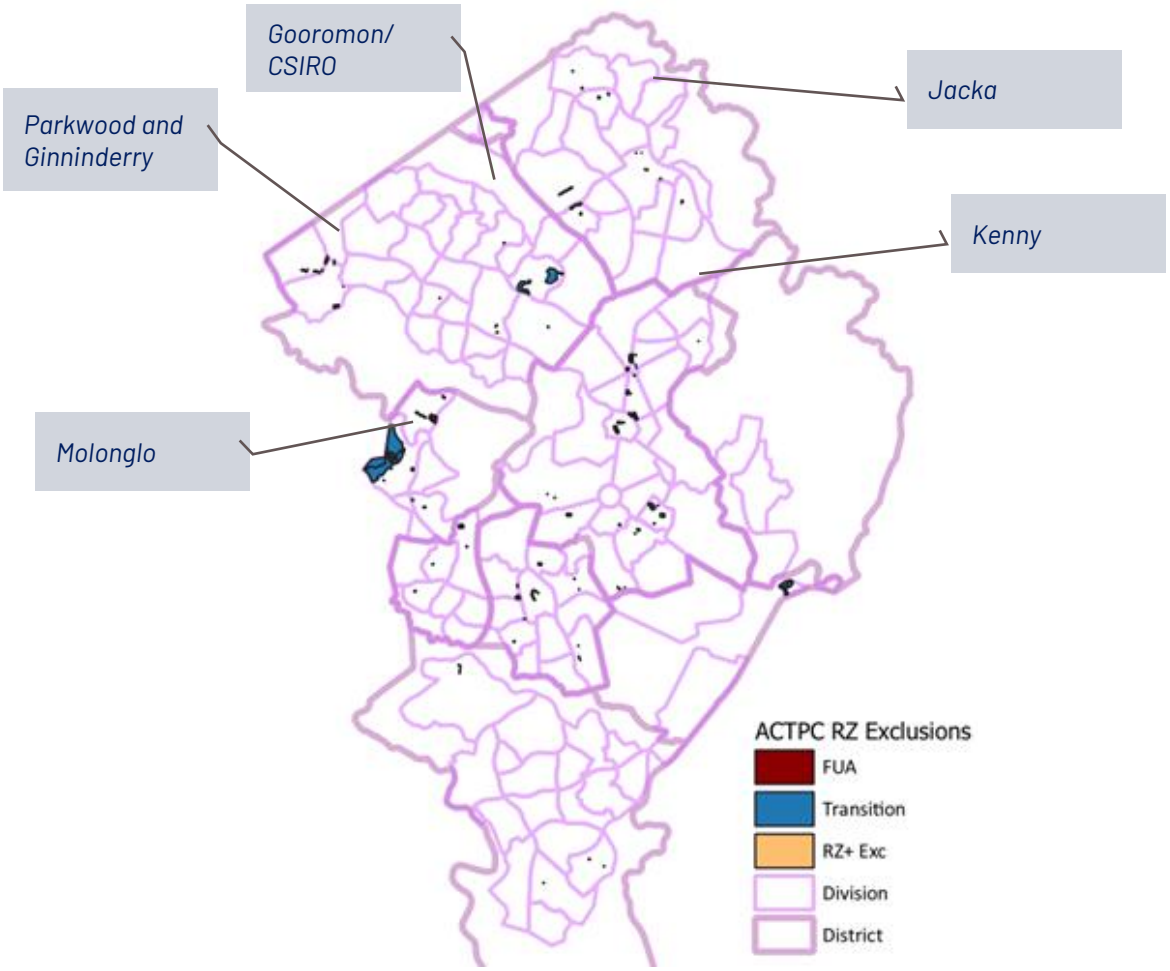
Greenfield analysis is beyond the scope of this project. In general, ACT Government expectations for greenfield site releases are updated as part of the annual budget, with forward estimates published for about five years in the *Indicative Land Release Program (ILRP).* The program for 2023-24 to 2027-28 suggests there are around 16,935 residential dwelling sites on the agenda, of which 1,200 are in 'urban intensification areas'. At an average of 3,387 releases per annum, the target is below the required production rate to meet population demand.

Some observers note the annual targets are not reflective of actual delivery. For example, a recent analysis suggests 'over the last five years, there has been a 16 per cent shortfall in the delivery of residential dwelling sites, and a 41 per cent shortfall in the release of mixed-use land – that is against the government's stated targets.' [38]

[38] Stanhope and Ahmed, "Barr's 'abject Failure' to Meet Land-Supply Targets."

Over a longer time frame there are the category 1-3 'change areas' in the new TP, existing or emerging estate developments, and individual blocks which are already recorded as 'future urban areas', or in 'transition' in geospatial files. Figure 18 presents existing geospatial data identifying some of these development fronts. By way of example, 88.33 hectares are residentially zoned in the existing 'future urban area' and 'transition' data, of which 80% are in Belconnen and Molonglo.

Figure 18: Future urban areas, transition blocks, and RZ exclusions (urban districts)



These sites will inform future short term ILRP settings, and assuming the countable hectares are required to deliver modern densities—around 20-25 dwellings per hectare—they should yield 1,770 to 2,200 new RZ dwellings.

It is too early to determine long term greenfield supply, suffice to say, the Property Council should continue to advocate for optimal density in new releases to avoid the zoning challenges that have created relatively poor land utilisation in older suburbs.

Without question, additional reform, akin to the PURA in the district plans, and the proposed reforms in this project, will be needed to meet longer term dwelling stock targets, and put pressure on housing affordability challenges in the ACT.

7.0 Can reform support more development?

In general, the direct outcome of the proposed approach should be an increase in dwelling density, underpinned by an increase land utilisation. This should improve urban movement and may impact on prices. This section discussed some of the evidence for how this may work.

7.1.1.1 Does the ACT have a density problem?

Much of the research around zoning reform assumes success comes from increased urban density. The ACT is reputed as being relatively low density, however, there is little publicly available research explaining actual density. This project has developed two sets of metrics on density—population and urban dwellings—to compare the ACT to other jurisdictions, and set a baseline for modelling.

7.1.1.2 Population density

Across global capital cities population density sits between 814 (San Juan) and 33,244 (Mogadishu) people per sq km (p/sk), with a median, including Canberra, of 5,697 p/sqkm (n=142). [39] The population range is between 456,844 (Canberra) and 37.8 million (Tokyo-Yokohama), with a median of 2.4 million. Land size ranges from 26 sqkm (Macau) to 8,775 sqkm (Tokyo-Yokohama), with a median size of 426 sqkm. Compared to 'modern' capitals that were created later than Canberra, for which we have data, densities are generally much higher. Compared to Canberra:

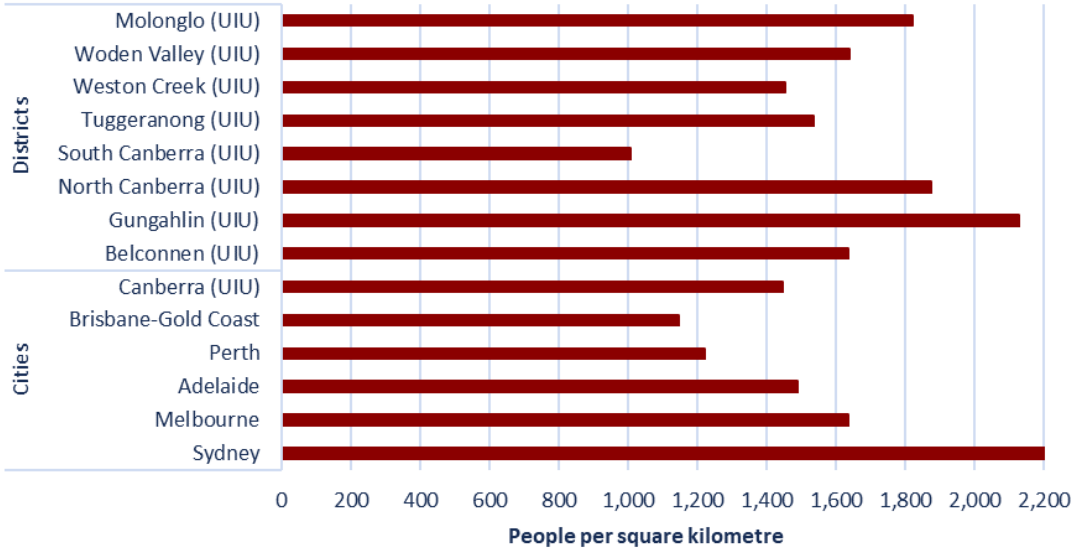
- Nouakchott (1958) has 3.2 times the population, with 55% comparable land (5.8x denser).
- Rawalpindi-Islamabad (1960) carries a population 10.8 times, on a land mass 2.5 times Canberra (4.5x more density).
- The population of Brasilia (1960) is 7.5 times larger on a land mass 3 times larger (2.5x more density)
- Astana (1991) has 2.3 times the Canberra population on 58% of the ACT land mass (4 times the density).
- Abuja (1991) has 5.3 times the relative population, triple the land mass, and is 1.8 times denser.

Clearly, all these urban areas are in more populated countries. However, it is reasonable to conclude, on a global cities scale and certainly for national capitals, Canberra has relatively low population density, and much more population carrying capacity.

Compared to other cities in Australia, based on ABS land classified as 'urban intensive uses' (UIU), Canberra has less density than Sydney, Melbourne, and Adelaide, and more density than Brisbane-Gold Coast and Perth. These measures, plus comparisons of ACT districts, are reported in Figure 19. Within ACT Districts only South Canberra is less than the total Canberra population density.

[39] Purdon analysis of Demographia, *Demographia World Urban Areas*, 31 August 2023, and Australian Bureau of Statistics, 'Data by Region Methodology, 2011-23', 2023. ABS specific sources include Population and people, ASGS, LGA, and RA, 2011, 2016-2023, Family and community, ASGS and LGA, 2011, 2016-2021, and Land and environment, ASGS, LGA, ILOC, IARE, IREG and RA, 2015-2022.

Figure 19: ACT population density compared to Australian cities



Source: Purdon analysis of Demographia, World Urban Areas, 31 August 2023 and Australian Bureau of Statistics, Data by Region Methodology, 2011-23, 2023 tables 'population and people, and 'Land and environment'.

7.1.1.3 Urban dwelling density

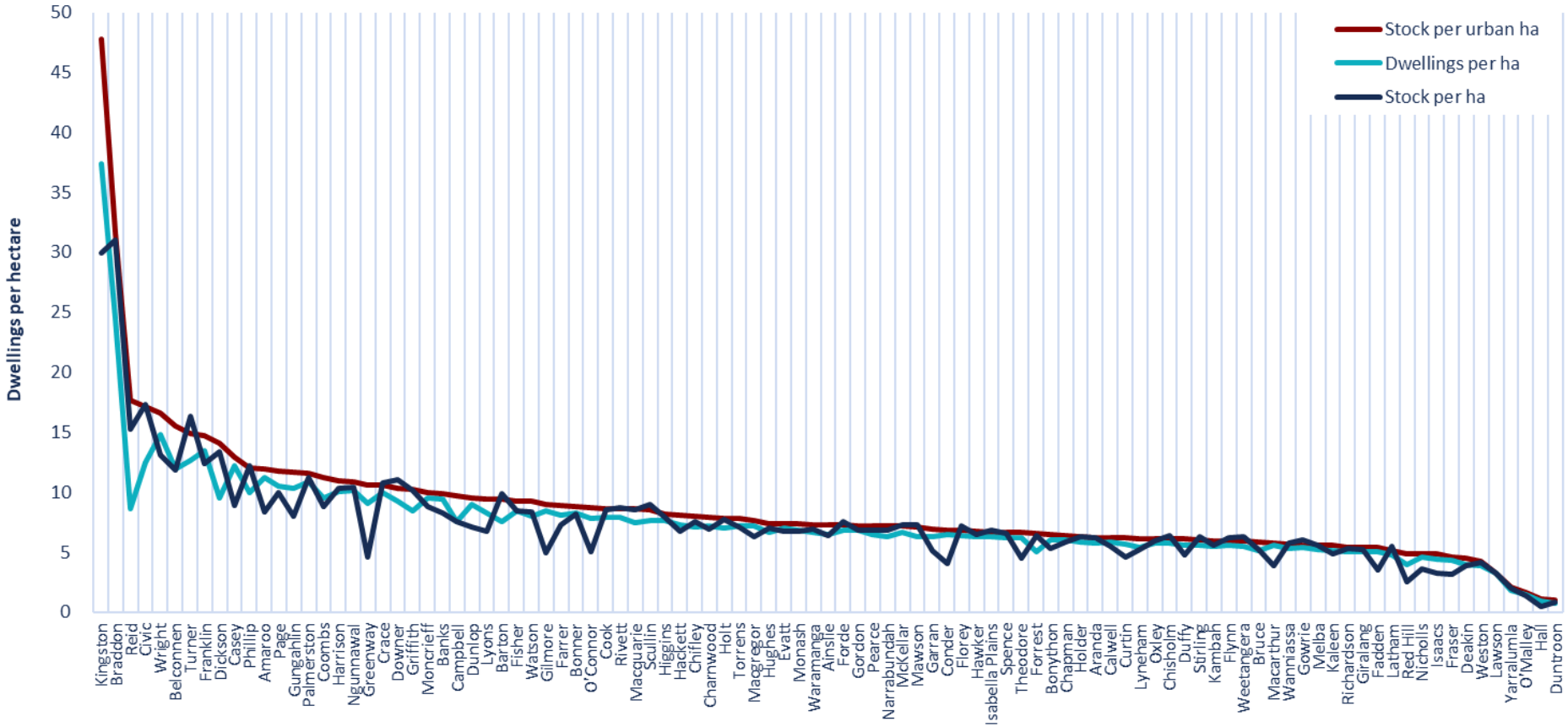
While population density is important, dwelling density is often used as a metric to determine the productivity of land. There are limited recent formal or peer reviewed studies of ACT dwelling density. Research informing the new TP research observed in 2017 'metropolitan Canberra achieved a gross density of 10.48 dwellings per hectare, significantly below the recommended minimum of 25.'[40]

To establish baseline dwelling density for this project, we developed metrics using an available sample of 2,042 Australian locations (ABS SA2). From this, we estimate the median dwelling density for 'urban intense' land use across Australia was 4.35 dwellings per hectare (dw/ha), with an average 5.86, or conversely, a median land mass of 0.23 ha per dwelling.[41] Comparable results for the ACT are presented in Figure 20 (99/134 possible SA2). The highest ACT density, excluding unrealistic outliers, was Kingston (37.4 dw/ha), with the lowest being Duntroon and Hall (~1 dw/ha). Clearly there is a broad spread. To check the workings, we estimated several other metrics that are also reported in the figure. While the precise level of density can be questioned, the distribution and broad magnitudes are consistent no matter which method we apply.

Within the national set, there are very few locations coming close to 25 dw/ha—a threshold for walkable density. For both NSW, and urban Australia, 'Bilpin-Colo-St Albans' had the highest density (83.58 dw/ha), for VIC the highest is Docklands (43.12 dw/ha), for QLD it was Kangaroo Point (44.43 dw/ha), for SA it was Norwood (12.36 dw/ha), for TAS it was Cygnet (30.87 dw/ha), for WA it was 'Tuart Hill–Joondanna' (16.11 dw/ha), and for the NT it was Humpty Doo (11.02 dw/ha). According to the full analysis set just 35 of the locations achieve an urban dwelling density of 25 dw/ha, increasing to 55 locations if the density is lowered to 20 dw/ha.

[40] HATCH | RobertsDay, "Estate Development Measures and Framework: ACT Planning System Review and Reform." p. 16.
[41] This estimation applied a 2021 dwelling count to 2016 UIU reported in ABS land account data.

Figure 20: Estimated suburb dwelling densities



If we lower the threshold further, to 15 dw/ha, then there are only six areas of Canberra with 'good' density—Kingston, Braddon, Reid, Civic, Wright, and Belconnen—however there are 16 locations between 10 and 15 that are catching up fast. There are 77 locations between 1 and 10 dw/ha.

For the ACT, across the range of methods, we argue that density is much lower on average than earlier estimates, and sits around 5-9 dwellings per ha. A benchmark of 6 dw/ha is used later as a benchmark for upzoning.

7.1.1.4 Is low density a bad thing, and can zoning help?

Over time, there have been many vocalised iterations of a desire to have an increased utilisation of brown and grey field land—increased urban density. Starting in the 1960-70s, these concepts include 'inclusionary zoning', 'mixed-use development', 'transit-oriented development', 'new urbanism', 'smart growth', 'complete streets', 'incremental development', and, more recently, 'the missing middle'. The ACT has adopted a mantra of 'gentle urbanism'. Generally, the argument is that low density is bad because it lowers dwelling diversity, increases negative externalities, and has poor societal outcomes. There is little consensus on how much density is enough.

The *OECD Principles on Urban Policy* support better land utilisation, with principle 6 (among others) seeking 'improving access for all urban residents and users—regardless of their gender, age, ethnic background, or health status–to drivers of social inclusion, such as local public services, affordable quality housing, transport, education, health, employment and economic opportunities, cultural heritage and amenities, leisure and safe public spaces'. [42]

Observing US cities, researchers have observed '…in many cities, R1 [low density zoning] prevents housing development where development would be most beneficial and instead pushes development—and conflict over it—into denser, lower income neighborhoods, onto polluted commercial corridors, and into the undeveloped land outside city boundaries'. [43]

In a more extreme analysis, others have argued, again in the US, '…regulation can lead to household sorting by income, race, and other characteristics. Whether intended or not, it is important for policymakers to consider these effects because the makeup of the community can affect many other outcomes including the demand for local public services and the size of the local tax base. Regulation can also affect local labor markets by constraining the response of the labor supply to changes in labor demand'. [44] A broader, Australian, perspectives notes that 'increased dwelling density is vital because it ensures that there are sufficient people to make shops, services, and public transport economically viable'. [45]

Professor Peter Newton, from Swinburne University of Technology, in evidence to the Australian Parliament observed new zoning schemes are required to 'more accurately target where intensified redevelopment should take place within our existing established cities, akin to what I would ascribe to precision surgery within medicine'. He noted that 'at the moment, zoning schemes are locking up a massive amount of property with high redevelopment potential that needs to be regenerated.'[46]

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[42] OECD Centre for Entrepreneurship, SMEs, Regions and Cities, "OECD Principles on Urban Policy." p. 20.
[43] Manville, Monkkonen, and Lens, "It's Time to End Single-Family Zoning." p. 106
[44] Gyourko and Molloy, "Regulation and Housing Supply." p. 58.
[45] Jafari, Singh, and Giles-Corti, "Residential Density and 20-Minute Neighbourhoods." p. 9.
[46] House of Representatives Standing Committee on Infrastructure, Transport and Cities, "Building Up & Moving Out: Inquiry into the Australian Government's Role in the Development of Cities." p. 38.

There are limited alternative views that more density is a good thing. Some are opinion based, those who see density as the end of the 'Aussie backyard', and so-called NIMByism. Others note the costs of increased compact development '…include reduced worker productivity, less affordable housing, increased traffic congestion, higher taxes or reduced urban services, and higher consumer costs'.[47] These views appear to rely on density being the latest fad among biased research groups.

Character, including subdivision patterns, is often seen as sacred even within arguments for increased densification. It is thought that character is crucial to good planning outcomes. For the ACT, one consultant noted in the extreme:

> *…the absence of character, and resultant removal of a 'contextual framework' for design, can lead to discordant environments at best, where private investment determines the preferred visual character based on marketing aspirations, or at worst can cause trauma to its residents whose attachment to place is severed by the disfigured environment. The risk is that an undifferentiated environment, which responds only to market forces and lacks a distinctive identity, can result in a diminished attractiveness, liveability and subsequent global competitiveness.*[48]

Character In the ACT, at least in its early development settings, has a unique underpinning. According to Greater Canberra, planning decisions in the 1920s saw the creation of socially stratified suburbs (citing Fischer) "…at the back of the planners' minds was a suburban middle-class ideal community with residential areas neatly graded according to salary and public service rank".[49] Socio-economic and cultural stratification is like the impact of early zoning decisions reported in the United States. This is less likely the case for the ACT now, but will have impacted subdivision patterns in older districts and suburbs.

Density targets or goals are heavily contested. The most referenced idea is increasing dwellings per hectare, whereas others include gross floor area ratio (total floor area built divided by site area). For the new TP the ACT Government was advised,[50] in the context of estate developments, minimum conditions should be:

- *Residential density*: A minimum residential density of between 25-45 dw/ha (gross).
- *Design and Urban Structure*: Intersection density of between 45-67 intersections/sqkm, 80% of dwellings less than 400m to more than 1.5ha open space, 1km proximity to cycling infrastructure, 80% of dwellings less than 800m from government Primary School, and street block perimeter less than 620m.
- *Diversity of House and Uses*: no greater than 30% detached housing stock within a precinct/activity centre, residents no further than 1.6km (street network distance) from seven discrete housing typologies, and a 0.8 land use diversity ratio.
- *Commercial Destinations*: a minimum of 9-10 community or commercial destinations per neighbourhood, no dwelling further than 1km from a supermarket, neighbourhood activity centre with main street layout and 80% of dwellings, and 100% of dwellings within 400m of a corner store/local centre.

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[47] O'Toole, "The Myth of the Compact City. Why Compact Development Is Not the Way to Reduce Carbon Dioxide Emmissions." p. 1

[48] Hodyl & Co, "ACT Planning Reform - Delivering Best-Practice Urban Design Through Planning." p. 50.

[49] Greater Canberra, "ACT Planning System Review and Reform Project: Submission on Draft Planning Bill 2022." p. 9

[50] Refers to HATCH | RobertsDay, "Estate Development Measures and Framework: ACT Planning System Review and Reform." p. 5.

- *Distance to Transit*: 80% of residents should be no further than 400m from a bus stop with a scheduled service every 30 minutes 7am-7pm; or 800m from a train stop, and at least 15 bus stops within 1.6km of home.

We note on the issue of access to open space others cite World Health Organisation recommendations seeking about 50sqm per person, and a minimum of nine sqm per person to activate health outcomes.[51]

There is no objective setting for how much density is 'good'. We observe there is a general view that any reform proposal ought to increase dwelling supply on existing land, while maintaining some of the character of the in-filled areas. Character, however, is even more contestable, and we recommend Division Council determine a meaning for this to support broader advocacy about increased densification, consistent with Property Council stakeholder views:

Recommendation 2: While increasing urban density is a preferred outcome, the Property Council policy position should support the idea of preserving the broad character of urban Canberra. However Division Council should adopt a form of words about the meaning of urban character for land in the RZ1-3 zones which they are comfortable represent stakeholder views.

7.1.1.5 Density and urban movement

A consequence of increased density is likely to be improved urban movement, which could be argued as an end in itself. However, targeted density is likely to have better movement impacts. The optimal distance from homes to services is contested, but there is some convergence. Some of the broad ideas include—'walkability', the 10-or 20-minute city, transit-oriented design/development—which seem to be well supported intuitively and with research, and have guidance around desirable density parameters.

Some research says '…living in neighbourhoods where densities exceeded 20 dwellings per hectare increased walking, cycling and public transport use, and decreased driving'.[52] Testing this theory in a Victorian context, these researchers found '…at least 25 dph [dwellings per hectare] (assuming 2.6 persons/dwelling) is needed so that catchment distances of destinations for a 20-min neighbourhood is within a distance 1.2 km, while densities of 35 dph is needed to achieve the population catchment distance of most destinations within 1 km.'[53] RMIT Professor Giles-Corti told the Australian Parliament that '…if you get up to 25 or 35 dwellings per hectare, that's enough to encourage people to walk, cycle or use public transport and be less likely to drive.'[54] Some go further, noting that 'a systemic global review of urban design research found that a housing density above 40 dph doubles the likelihood of walking.'[55]

This project has drawn on these conditions to inform quality modelling (discussed later). Specifically, spatial analysis of ACT land locations has been undertaken at distances of 1.5km from town centres, 1.2km from group centres, 800m from local centres, 400m from bus stops, and 1km from government schools, while density below 25 dw/h contributes to our rationale for upzoning.

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[51] NSW Productivity Commission, "What We Gain by Building More Homes in the Right Places." p. 41.
[52] Citing Boulange, Jafari, Singh, and Giles-Corti, "Residential Density and 20-Minute Neighbourhoods." p. 2
[53] Jafari, Singh, and Giles-Corti. p. 9.
[54] House of Representatives Standing Committee on Infrastructure, Transport and Cities, "Building Up & Moving Out: Inquiry into the Australian Government's Role in the Development of Cities." p. 54.
[55] HATCH | RobertsDay, "Estate Development Measures and Framework: ACT Planning System Review and Reform." p. 19

7.1.1.6 Will upzoning increase land supply?

Changing zoning would be an outcome from implementing the proposed reforms. Changing zoning does not axiomatically lead to an increase in available land for development. People need to act on the upzoning, and these actions are a function of the incentives to participate.

To achieve an increase in land may require dramatic commercial scale investment. Looking especially at high density markets, one Australian researcher notes 'the first consequence of the expansion of higher density housing will be the much greater role of the investment market in driving the rate, scale, and location of new urban residential development. An investor driven market responds to different stimuli than the homeowner market, and may deliver outcomes in a very different way'.[56] Commercial participants will have the acumen to determine feasibility much faster than sophisticated participants.

This is highly relevant for this proposal, as the vast majority of RZ1-3 land is likely to be in hands of individual owners, rather than more sophisticated market participants like developers or land bankers. Anecdotally, going from a single family owning a block of land, to having that block of land carry multiple units is a different style of market.

One observation about zoning restrictions is that they may impact market responsiveness. Citing a range of research, Reserve Bank of Australia (RBA) researchers note development restrictions may '…reduce the responsiveness of the housing stock to changes in preferences and relative prices', '…lock in' an increasingly obsolete urban structure, lead to a substantial misallocation of housing resources, and prevent labour from being allocated to where it is most productive…'.[57] This is consistent with density patterns we found, where newer and highly commercial centres are seeing development, rather than in older suburbs.

One analysis of reforms made in New Zealand—the Auckland Unitary Plan—suggests there is a high chance of increased development because of re-zoning.[58] Research suggested re-zoning increased dwelling stock by as much as 4% of total stock within a matter of years.[59] There are some commentators who dispute the quality of the analysis.[60]

We take a view that up-zoning will lead to increased development, largely due to a change in the incentives. This won't be immediate, and it will not consume the complete stock of potentially developable land. While we cannot make precise forecasts of what will happen, we combine the same probabilistic model set out earlier (page 46) to estimate land uplift, and then estimate potential adoption using 's-curves' to spread the timing of potential dwelling increases over the population forecast horizon.

We reiterate that, as set out in Table 12 (*Factors impinging on residential zone development*, p. 45), there are a range of factors that could lower the incentive to participate in zoning reform, not the least of which is a large initial payment ot the ACT Government under the existing lease variation taxation regime.

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[56] Randolph, "Delivering the Compact City in Australia." p. 22.
[57] Kendall and Tulip, "RDP 2018-03." p. 23.
[58] Greenaway-McGrevy and Jones, "Can Zoning Reform Change Urban Development Patterns? Evidence from Auckland."
[59] NSW Productivity Commission, "What We Gain by Building More Homes in the Right Places." pp. 10-11
[60] Murray, "The Auckland Myth."

8.0 Modelling approach

> *We have to respect the hierarchy that renowned global architect and urbanist Jan Gehl spoke of many years ago: "First life, then spaces, then buildings—the other way around never works".*[61]

To estimate the potential impact of the proposed reforms a set of models have been used. This includes a two-step 'quantity' and 'quality' approach, and then a range of financial, economic, and wider impact estimates. The models interact to determine potential development uplift and then consequences.

A key challenge for any modelling is determining what has changed—specifying a baseline and then a counterfactual. The second challenge is determining a reasonable basis upon which to measure the impact of change. In this case the baseline is the current land footprint with new TP zoning settings, and the counterfactual is the consequence of the proposal set out under section 4.3 *Proposed changes* (page 27). Wider impact assessment is discussed in the results section.

8.1 The 'quantity' model

Generally, the quantity method looks to uplift development rights based on the initial size of land parcels (blocks). There is no objective way to determine an optimum block size at which certain zones should apply.

The quantity model we have developed is the most straight forward. It uses ACT geospatial files to create block size stratum at 250sqm increments and adopts coding for base zoning (codes highlighted in Table 7). The inputs are the individual block records, using a set of data keys as unique identifiers.

For simplicity, the quantity model borrows from existing density limits in ACT RZ2 zoning. As set out earlier, as RZ2 block sizes increase, so too do dwelling rights—a single dwelling on land below 700 sqm, and then an additional dwelling for each extra 250 sqm (subject to many other rules). The way in which the data are modelled are summarised in Figure 21.

In essence:

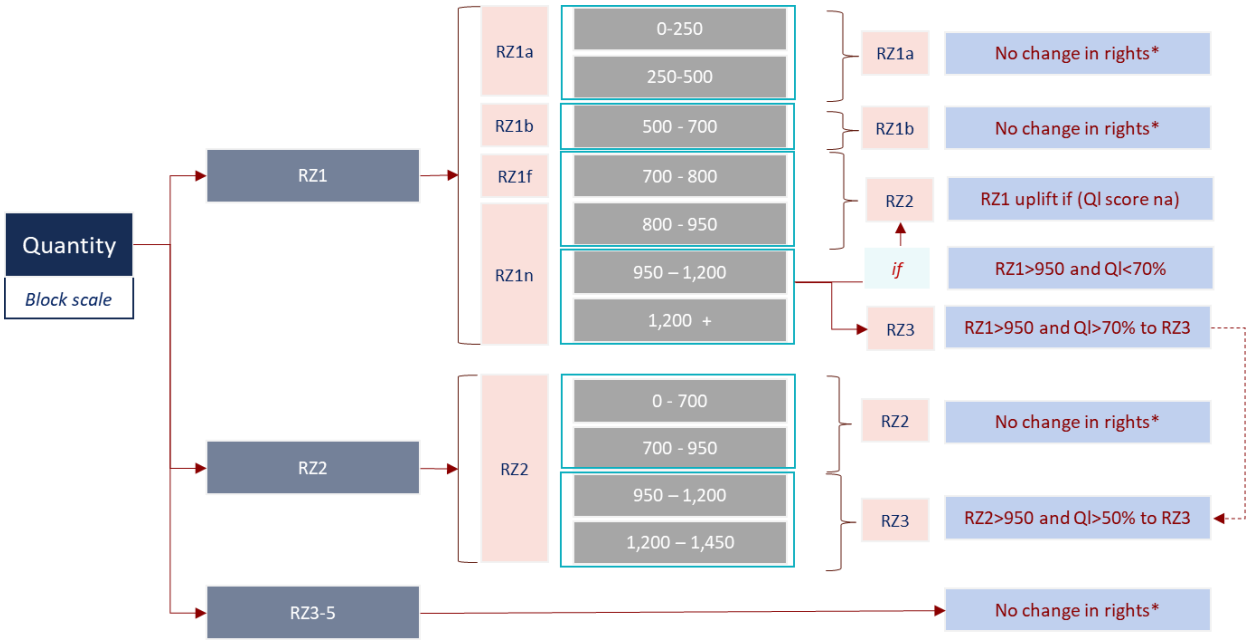
- RZ1 blocks: at or below 500 sqm would remain RZ1a, between 500 and 700 sqm land remain RZ1b, and between 700 and 950sqm could be upzoned to RZ2.
- RZ2 blocks: at or below 950 sqm remain RZ2. Where they are above 950sqm, and above 'moderate quality', they are upzoned to RZ3.
- RZ1 blocks: above 950sqm becomes RZ2 if they are 'lower quality', or RZ3 if they are 'higher quality'. The latter is a second-round effect from RZ2 upzoning, and connects the quantity and quality models.
- RZ3 blocks remain RZ3, however the stock of RZ3 increases based on the RZ1 and RZ2 changes.

For modelling purposes, the quantity model becomes dependent on specific quality criterion. In reality, land quality is important, however a key observation is that the extant size of a block is

[61] King (Minister for Infrastructure, Transport, Regional Development and Local Government), "Bradfield Oration."

less important than what could be achieved with land at any size at its highest and best value use.

Figure 21: Basic quantity model



*Notes: * The model does not account for the possibility of subsequent block consolidation or subdivision which may induce additional rights.*

Observation 8-1: While our quantity model has used existing land size adjusted by location qualities to determine inclusion or exclusion from reform, a universal ability to consolidate or subdivide blocks, based on the potential outcomes from the land would be more equitable in the long term. That is, excluding blocks below a quality adjusted volumetric threshold still prevents the possibility for all land use to achieve a higher valued use in practice.

Data which we do not have access to on the public record, which would improve the quantity model, include street frontages, existing dwelling footprints, and block orientation. The estimation of a probability matrix is used to partially control for this lack.

8.1.1.1 Baseline quantity settings

The primary sources for the quantity model are described in more detail in *Annex 1: Information quality statement* (page 95). There are many anomalies we cannot reconcile. Despite the data challenge, the model baselines are summarised in Table 14.

This shows urban zoned land accounts for 12.7% of all zoned ACT land. Of the 136,273 urban zoned blocks at the time of analysis 125,349 (92%) have a primary residential zoning (RZ1-5), and these account for 35.6% of all urban zoned hectares. Of these, 320 are excluded from analysis as they are 'Future Urban Areas', and it is assumed they will be optimally developed (see section *6.1.1.4 Greenfield, future urban areas, and transition blocks*).

RZ1 alone accounts for around 73% of ACT urban blocks, and about 8,210 hectares (28.2% of urban zoned land). RZ2 accounts for a further 1,357 ha (4.7% % of urban land, and 11.1% of urban blocks). RZ3 adds a further 441 ha and 6% of urban zoned blocks.

In theory, if the all the RZ1-3 zoned urban land shifted to 'better' density—around 20-25 dw/ha current zoned land could accommodate between 200,000 and 250,000 dwellings with no new greenfield additions. This outcome would deliver between 135% and 168% of the target set out in the total indicative pipeline capacity set out in the new TP (see Figure 16, p. 44).

Table 14: High level baseline quantities

Type	Count			Area		
	no	*% total*	*% Urban*	*hectares*	*%of Total*	*%of Urban*
Block file						
Total	137,543	100.0%	100.9%	229,477.8	100.0%	787.0%
Urban zoned	136,273	99.1%	100.0%	29,159.0	12.7%	100.0%
RZ Total	125,349	91.1%	92.0%	10,370.4	4.5%	35.6%
RZ sample	125,029	90.9%	91.7%	10,333.5	4.5%	35.4%
RZ only						
RZ1	99,894	72.6%	73.3%	8,210.2	3.6%	28.2%
RZ2	15,061	11.0%	11.1%	1,357.3	0.6%	4.7%
RZ3	8,169	5.9%	6.0%	440.5	0.2%	1.5%
RZ4	1,418	1.0%	1.0%	205.7	0.1%	0.7%
RZ5	362	0.3%	0.3%	95.9	0.0%	0.3%
RZ only	124,904	90.8%	91.7%	10,309.5	4.5%	35.4%
RZ+	*125*	*0.1%*	*0.1%*	*24.0*	*0.0%*	*0.1%*

Source: Purdon analysis of ACT Government, Geospatial Data Catalogue: Land Administration— 'ACTGOV BLOCK CURRENT' as at November 2023.

For the purposes of modelling, we have removed blocks with multiple zoning records even where they have some RZ rights. There is no clear right for this land based on the cadastral record. These are summarised in the line 'RZ+' in Table 14. There are other potential blocks where the combination of zoning includes some RZ categorisation, which are not estimated but are captured in the difference between RZ and total urban blocks.

After these adjustments, our RZ sample is 123,124 blocks, summarised by district in Table 15.

It will come as no surprise that RZ1 has the highest block count by a large margin. The distribution of these blocks is not symmetric between locations, reflecting both the roll out of suburbs over time, and the waxing and waning Territory Plan rules over the life of the ACT.

Interesting observations from this data are that:

- There is no RZ2 in Gungahlin, Molonglo Valley (to date), or in smaller districts.
- There is no RZ3 in Tuggeranong, Woden, the Inner South, or in smaller districts.
- Gungahlin alone accounts for nearly 80% of RZ3.

- Two-thirds of RZ1 is in the top three districts—Belconnen, Tuggeranong, and Gungahlin.

Table 15: Baseline block count (all land sizes)

District (new TP)	RZ1	RZ2	RZ3	Total
Belconnen	24,769	5,837	1,216	31,822
Tuggeranong	24,408	3,591		27,999
Gungahlin	17,020		6,420	23,440
Inner North and City	9,236	939	441	10,616
Woden	7,709	2,731		10,440
Weston Creek	7,115	1,323	3	8,441
Inner South	5,698	640		6,338
Molonglo Valley	3,644		89	3,733
East Canberra	274			274
Paddy's River	21			21
Total	**99,894**	**15,061**	**8,169**	**123,124**

Inputs to the quantity model distinguishes land sizes, and Table 16 sets out the block size distribution across all zones. More than 44% of RZ1 is greater than 800sqm, and nearly 7% exceeds 1,200 sqm. In RZ2, more than 20% of land is greater than 950sqm, and nearly 5% is greater than 1,450 sqm. The RZ3 sample is relatively small, and just 4% exceed 950sqm.

Table 16: Base land size distribution by zone

	0-250	250-500	500-800	800-950	950-1200	1200-1450	1450+	Total
RZ1a	3,304	15,034						18,338
RZ1b			36,620					36,620
RZ1f		1	295	299	176	58	37	866
RZ1n				23,119	14,248	3,637	3,104	44,108
All RZ1	***3,304***	***15,035***	***36,915***	***23,418***	***14,424***	***3,695***	***3,141***	***99,932***
%	*3.3%*	*15.0%*	*36.9%*	*23.4%*	*14.4%*	*3.7%*	*3.1%*	*100.0%*
RZ2	778	2,204	5,384	3,613	1,959	421	702	15,061
RZ3	1,071	3,904	2,759	171	102	38	185	8,230
RZ4	427	321	237	48	57	31	300	1,421
RZ5	146	20	24	14	17	10	154	385
All	**5,726**	**21,484**	**45,319**	**27,264**	**16,559**	**4,195**	**4,482**	**125,029**
%	*4.6%*	*17.2%*	*36.2%*	*21.8%*	*13.2%*	*3.4%*	*3.6%*	*100.0%*

To support these data the spatial distribution of RZ land is illustrated in Figure 22. Further, the spatial distribution of different sized RZ1 blocks in the baseline, to understand where impact land is across the ACT, are illustrated in Figure 23.

Figure 22: Baseline block distributions RZ1-3

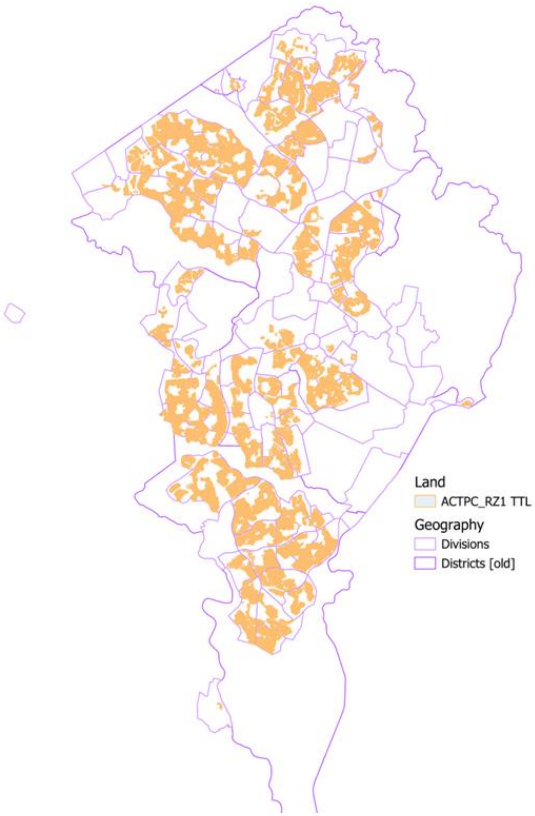
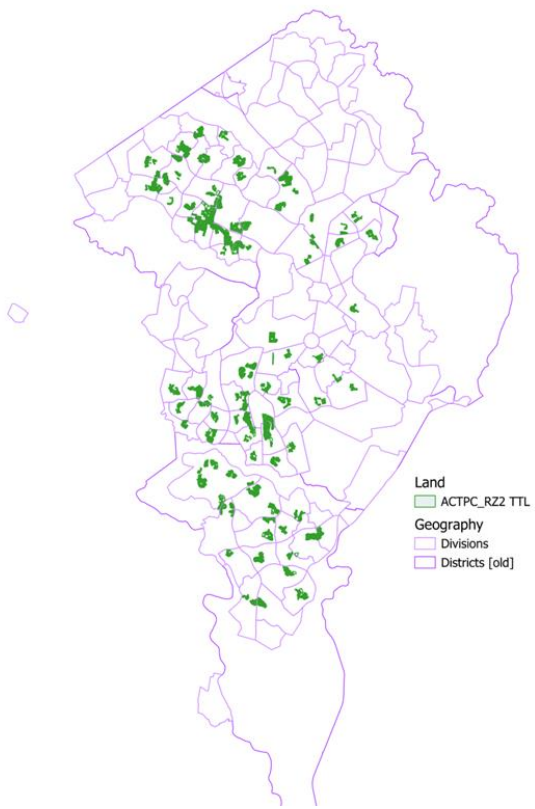
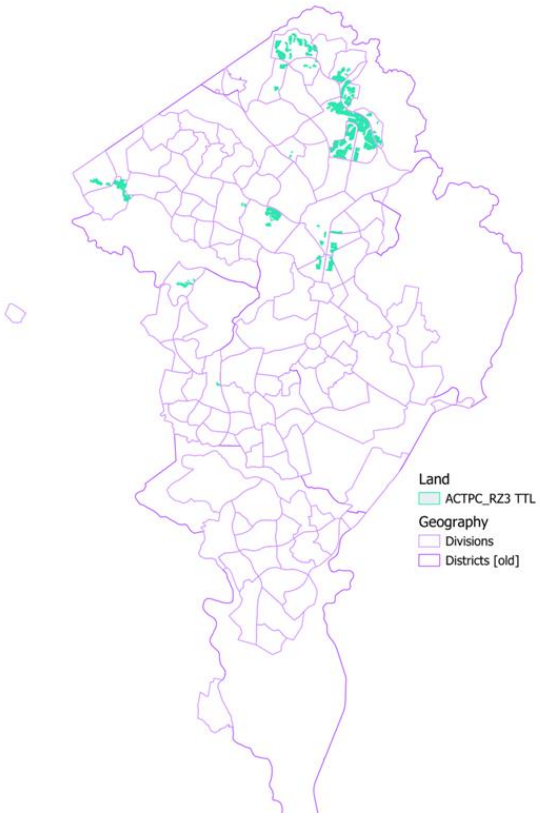
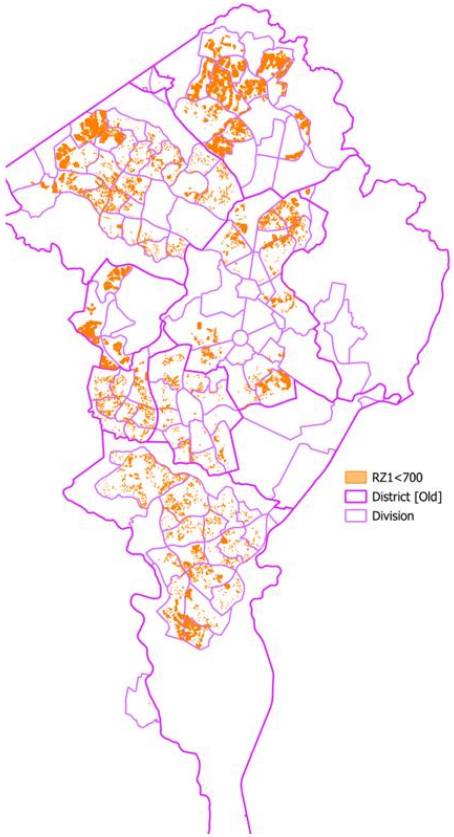
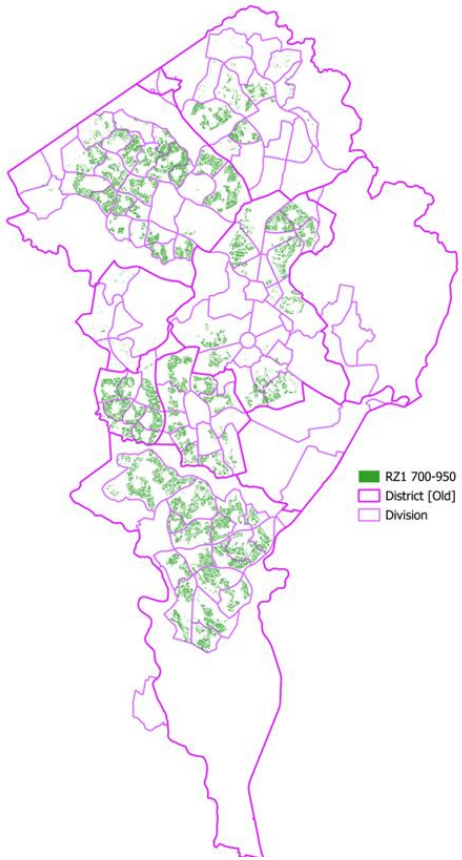
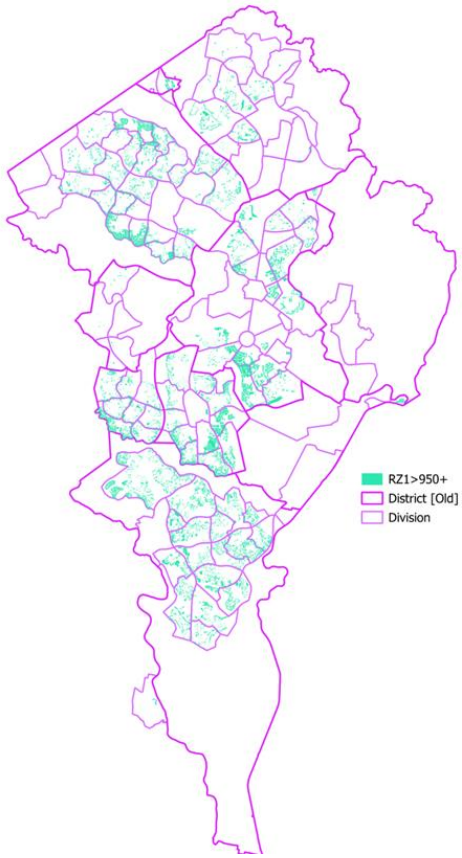
a. All RZ1	b. All RZ2	c. All RZ3
		

Figure 23: Baseline RZ1 block distributions by size

a. RZ1<700 sqm	b. RZ1 700-950 sqm	c. RZ1 >950sqm
		

8.2 The 'quality' model

Based on feedback from the Property Council residential and planning subcommittee and Division Council, the 'quality' model assesses factors associated with blocks that can be used to constrain uplift to land where additional development makes most community sense. The quality modelling is underpinned by a view that zoning choices are subjective, and best zoning practice is contested. The quality modelling aims to apply reasonably well established, and where possible evidence based, criterion to limit a purely volumetric uplift approach.

8.2.1.1 The quality evidence base

Many of the underlying reasons, and consequences, of increasing density are covered earlier. However, additional theory helps to specify how quality metrics can be created and applied.

Starting in the ACT, the new TP sets out planning principles that define planning expectations in the ACT. Specific elements of the ACT policy guiding our quality modelling, drawn from the policy, are summarised in Table 17. [62]

Table 17: Guiding principles from the new TP impacting modelling assumptions

Principle	Component
Activation and liveability	(b) Urban areas should include a range of high-quality housing options with an emphasis on living affordability
	(c) Urban areas should be designed to promote active travel and convenient and efficient use of public transport
High-quality design	(a) Development should be focussed on people and designed to: (i) reflect local setting and context; and (iii) effectively integrate built form, infrastructure and public spaces
Housing affordability	(a) planning strategies, plans and policies should support the delivery of reforms that improve housing access, affordability and choice
	(b) planning strategies, plans and policies should support more housing options for people who have a low income
	(c) planning strategies, plans and policies should ensure affordable housing is close to essential services, amenities and affordable transport options, including public and active transport
Integrated delivery	(b) Planning, design and development should promote integrated transport connections and equitable access to services and amenities
	(c) Infrastructure, public spaces and facilities should be planned to meet future needs and designed to be integrated with related development.
	(d) Built form should be … compatible with surrounding public spaces

[62] ACT Government, Territory Plan 2023: Part Planning and Strategic Links.

Principle	Component
Investment facilitation	(a) Planning and design should be undertaken with a view to strengthening the economic prosperity of the Territory and contributing to diversification of the economy, economic security and growth
	(b) Planning outcomes should be achieved by facilitating coordinated approaches that promote public and private investment towards common goals
Long-term focus	Policy frameworks should be able to respond to emerging challenges and cumulative impacts identified by monitoring, benchmarking and evaluation programs
Natural environmental conservation	(b) Planning outcomes should support the operation of environmental laws applying in the ACT
Sustainability and resilience	(a) Places should be planned, designed and developed to be sustainable and resilient
	(c) Policies and practices should promote the use, reuse and renewal of sustainable resources, and minimise use of resources
Urban regeneration	(a) Growth should be mostly within the existing urban footprint, or in areas close to the existing urban footprint, while maintaining environmental values
	(b) Urban regeneration should seek to make the best use (as appropriate) of underlying or latent potential associated with land, buildings and infrastructure.

Also, in the new District Strategies the ACT Government has committed to 'sustainable neighbourhoods', with a metric 'greater housing choice and affordability to meet community needs', which has the measure:

> *Increase the share of all dwellings particularly, missing middle and affordable housing options, that are within a walkable catchment to a town centre (1,000m), group centre (800m) or local centre (400m).*[63]

Prior to the new TP, the 2018 planning strategy set out desirable characterises to increase densification. Reflecting on land required to house a population at densities from 22 up to 300 persons per hectare, the three typologies referred to as practically increasing density include 'urban intensification areas', 'areas within the existing residential footprint' including 'large blocks in accessible locations with the potential for dual occupancy development', and 'areas close to local centres' being around 400 metres or average 5-minute walk.[64]

Bolstering these ACT positions, a key Australian resource which assesses multiple dimensions of urban liveability set the benchmark for most of the quality assessment in this project. The Centre for Urban Research set out seven 'urban liveability domains': walkability, public transport, public open space, housing affordability, employment, food environment, and alcohol environment.[65] The theory is being tested in a *Healthy Liveable Cities Lab*, and with a *National*

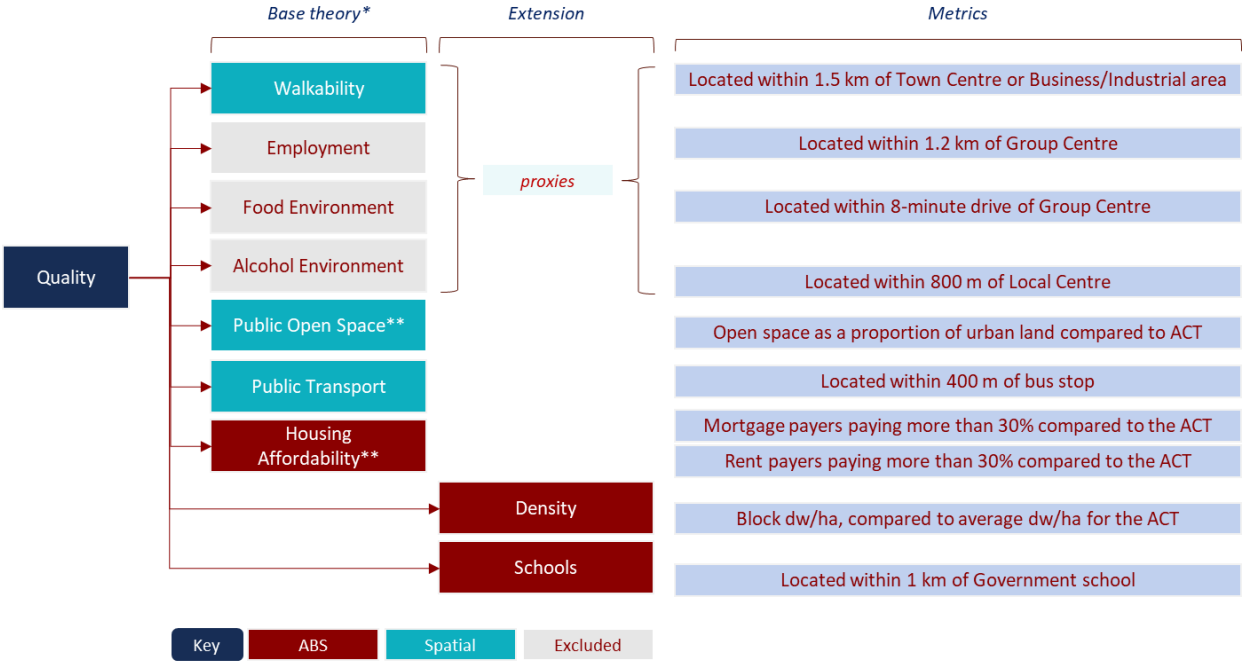
[63] ACT Government, "District Strategies 2023: Volume One, Metropolitan Context and Big Drivers." p. 67.
[64] ACT Government, "ACT Planning Strategy 2018." p. 39.
[65] Arundel et al., "Creating Liveable Cities in Australia."

Liveability study.[66] This report does not replicate the RMIT studies, but applies some of the general principles to underpin our quality framework, and scoring, to achieve a practical quality constraint.

8.2.1.2 Quality scoring

The project adopts a set of measurable quality metrics which can be used to limit quantity upzoning decisions. These metrics are based on block or suburb level parameters, a ranking score, and a relative quality score. In effect, the higher the overall quality score, the more desirable a block is to develop, and the score confirms the quantity model. The quality model is illustrated in Figure 24.

Figure 24: Quality model



*Notes: * Based on Jonathan Arundel and others, Creating Liveable Cities in Australia (Centre for Urban Research), 12 October 2017, ** Based on suburb averages data, not block data.*

Regrettably, there is not great data for the food environment (positive quality indictor) or alcohol environment (negative quality indicator). Also, employment, as used in the source, is less relevant in the ACT due to the natural diversified structure of locations. To deal with the four locational metrics, including walkability, we have created a range of distance buffers and isochrones in the spatial profiles that provide reasonable proxies for localities, accessing services and walkability.

The scoring method is set out in Table 18. Each of the criterion has a set of possible scores. These scores are applied at a block scale, either based on information about the block, or based on the suburbs in which they exist. The scores are totalled, and then compared to the theoretical maximum score. The resulting important outcome is then used as a filter for land potentially upzoned through the quantity model.

[66] See https://cur.org.au/research-programs/healthy-liveable-cities-group/ and https://cur.org.au/project/national-liveability-study/ respectively.

The key point is that the higher the quality score received, the more likely the location is to be included as a desirable location to upzone.

In the mapping which follows, blocks have been limited to zones RZ1, RZ2, and RZ3, where the derived block size exceeds 800 sqm. No other filters are applied, and this can be thought of as the maximum quantity uplift constraint.

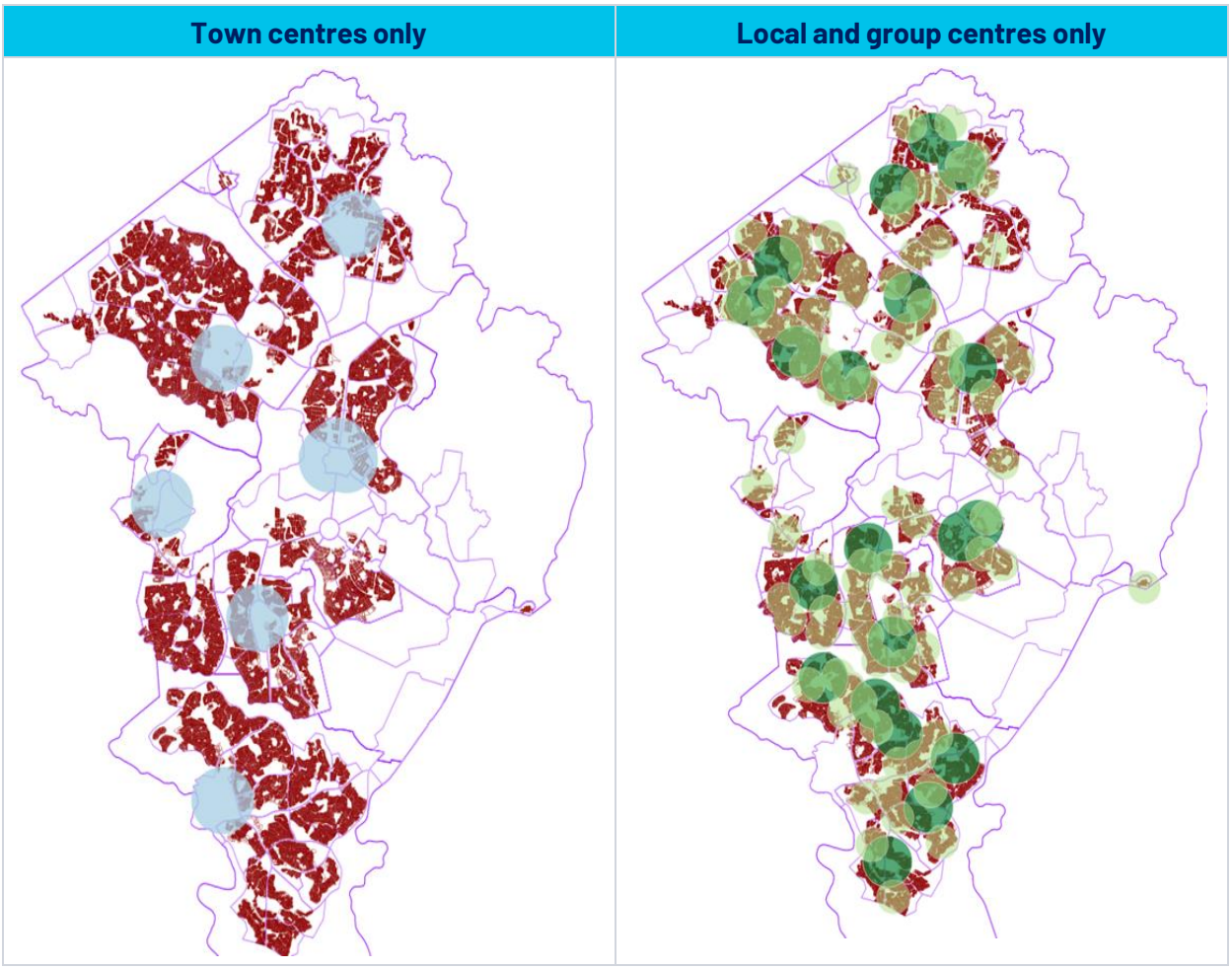
Table 18: Quality scoring approach

Factor	**Components**	**Scoring**	
		Value	*Condition*
Location (block scale)	Local: located inside buffers for local, group and town centres only; or Complete: located inside buffers and isochrones for local, group, town centres, business and industrial centres, schools, and public transport stops	1	Zoned RZ4-5
		2	Zoned RZ2-3 and in neither location (quantity sufficient)
		3	In the complete location, but not within localised areas
		4	In localised areas
Open space ratio (Division scale)	A location quotient comparing the proportion of open space zoned land area to total urban zoned land area in the division to the ACT proportion	1	Less than half the ACT proportion
		2	Half to equal the ACT proportion
		3	Equal to 1.5x the ACT proportion
		4	More than 1.5x the ACT proportion
Housing affordability (Suburb scale)	The relative degree of mortgage and rent 'unaffordability' compared to the ACT, based on ABS data reporting those paying more than 30% of income	1	Neither rent nor mortgages are unaffordable
		2	Only rent is unaffordable
		3	Only mortgages are unaffordable
		4	Both housing and rent are unaffordable
Density (block scale)	Derived density based on apparent dwelling count, compared to block size	1	Apparent density >= 25 dw/ha
		2	Apparent density 15-25 dw/ha
		3	Apparent density 6-15 dw/ha
		4	Apparent density <6 dw/ha (assumed ACT average)
Maximum score		16	

We have applied two other minor quality dimensions on land too, a corner block receives a higher score, and where development is limited to a detached dwelling receives a higher score too. This means land generally easier to proceed quickly is preferred.

Typical constraints around location to existing commercial centres, are illustrated in Figure 25. In the left panel are buffers of 1.5 km from ACT town centres, and the right panel includes buffers for 1.2km from group centres (darker shade) and 800m from local centres (lighter shade). These reflect approximate walking and cycling boundaries.

Figure 25: Common quality layers



Note: Town centres include Molonglo announced early 2024. Source: ACT Government, Territory Plan 2023, Part E, E2—Commercial Zones Policy, November 2023. Local Centres are estimated from CZ4 and common local shopping areas.

Transport options and social infrastructure also have differential effects. In Figure 26 the layer for bus stops within 400m (orange), and government schools (blue) within 1km, are included in the left panel. This opens many more blocks. In the right panel, we have estimated eight-minute drives to the town and group centres, and this leaves very few blocks excluded.

Finally, in Figure 27 the combination of the quality layers is illustrated. The left panel merges the town, group, and local centre layers, while the right panel merges all layers.

What is clear is that the number of blocks excluded by different quality decisions rapidly increases as the number of layers are removed. In this sense, a policy which just selects town or group centres will achieve the least development potential. To make the quality model sensible we recommend:

Recommendation 3: The criteria for upzoning land from RZ1 to RZ2 can reasonably be set by size only (>700sqm), for moving from RZ1 to RZ3 should be size and a quality score above 70%, and moving land from RZ2 to RZ3 should be limited to land >950sqm with a quality score greater than 50%. This will lead to a retention of low-density zoning in RZ1, more land upzoned than a strict town/group/local centre control, but fewer than a blanket volumetric uplift.

Figure 26: Transport and school infrastructure layers

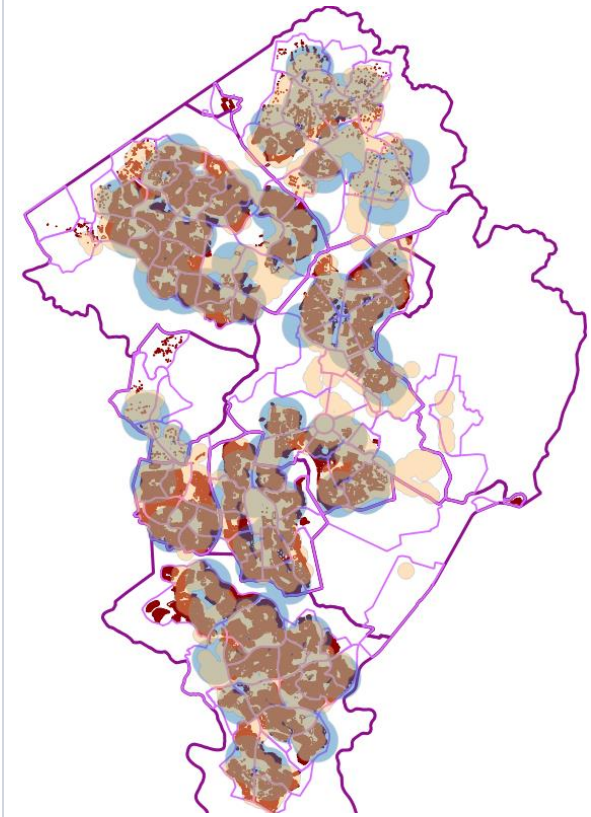
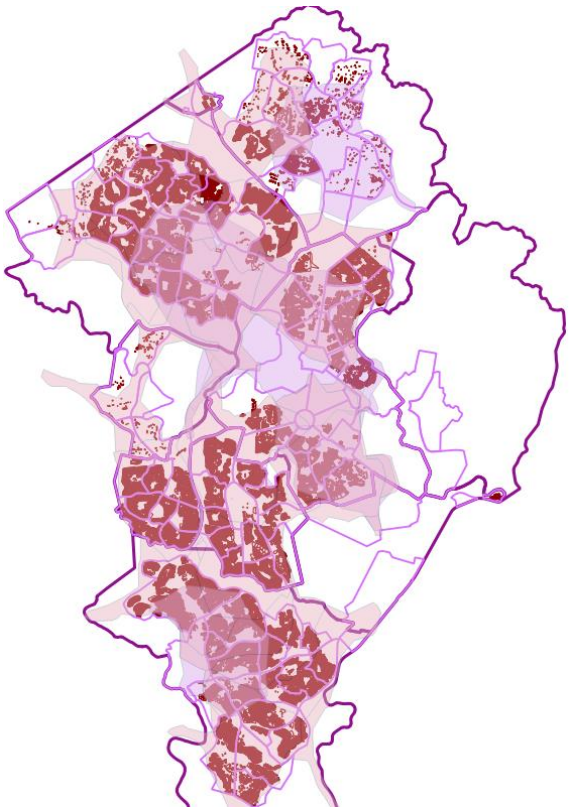
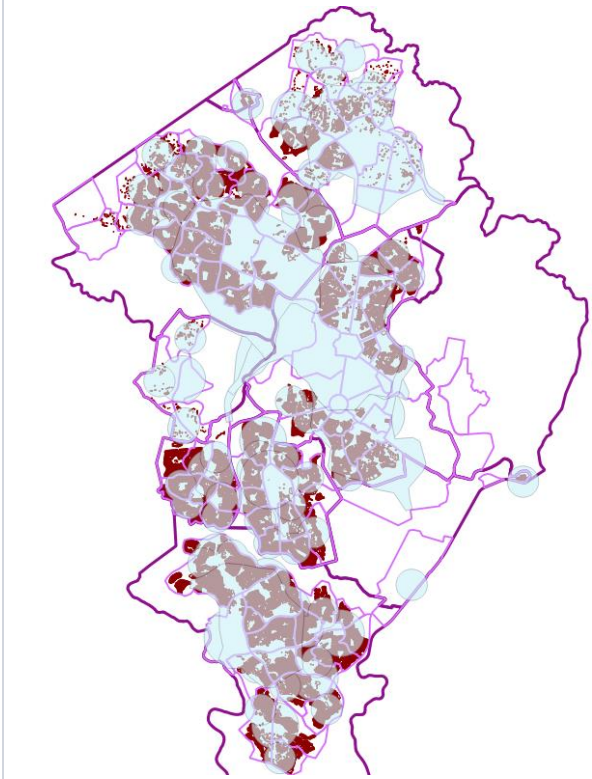
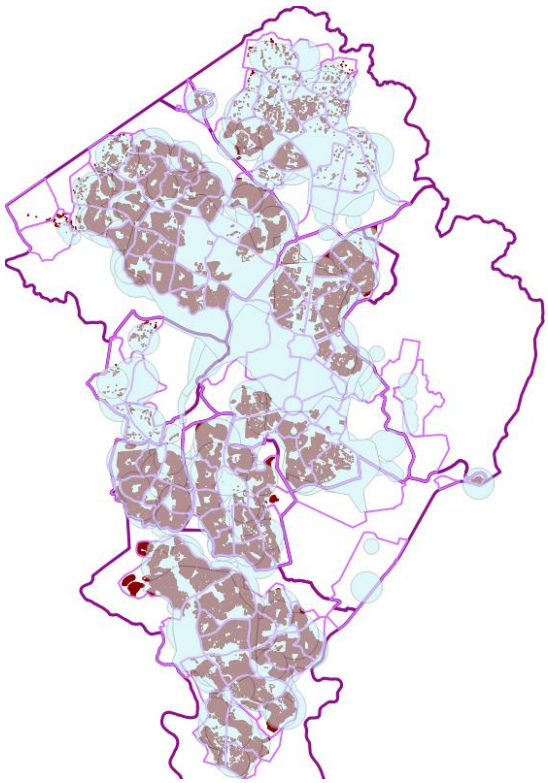
Bus Stops and Government Schools	8 mins drive from town and group centres
	

Figure 27: All layers combined

Group, town, and local centre layers only	All quality layers
	

9.0 Potential reform impacts

The reforms are expected to impact on development rights, the ACT economy, the ACT government budget, and on a range of community outcomes. We emphasise the project has assessed only high-level impacts based on how the reforms change zoning, and the estimates provide a magnitude and direction of the potential impact from that reform.

9.1 Increased development rights

The outcome from applying the quality and quantity model is an uplift in development rights across more than 50% of blocks in the RZ1-3 baseline zones. The quantum of changed rights, by district and zone, are summarised in Table 19. Data within the impact model is analysed at the suburb level, but the district summaries are easier to report. Of the 123, 124 blocks modelled, 65,161 are substituted from their current zone to a higher zone.

The effect of the proposal is that:

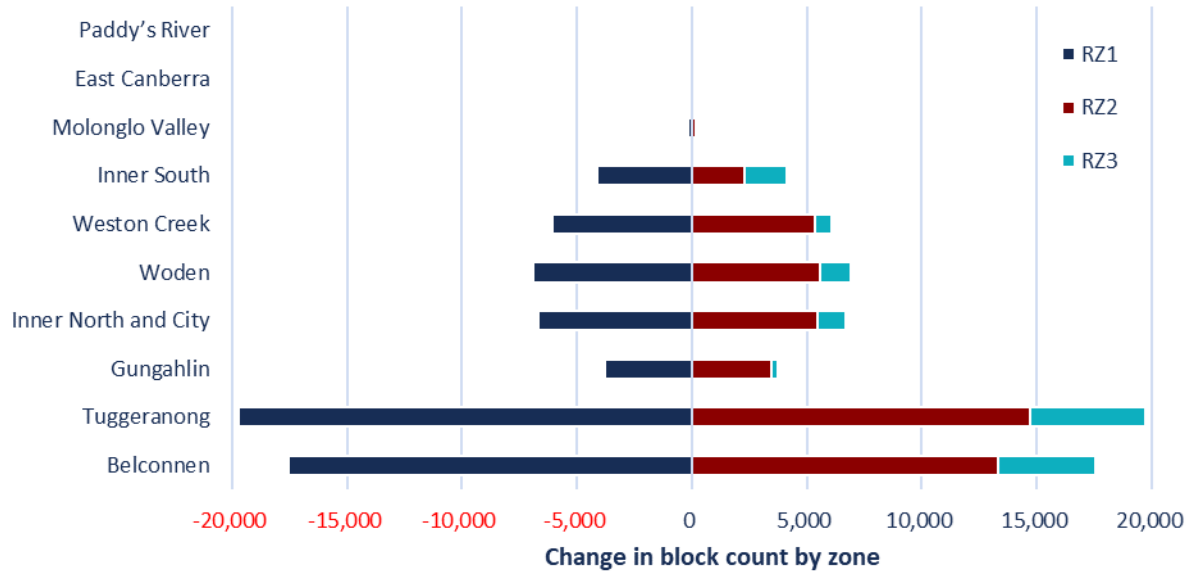
- RZ2 increases by 50,417 blocks, and RZ3 increases by 14,744 blocks. All ACT districts, using the new TP district names, have RZ2 and RZ3 land.
- Of the 65,478 zoned RZ2 11,979 were already in the RZ2 baseline, while 53,499 were upzoned from RZ1 (>700 sqm).
- Of the 22,913 in RZ3, 8,169 were in the baseline, 11,662 were upzoned from RZ1 (>950 sqm, and 70% quality), and 3,082 were upzoned from RZ2.

The district relativities can be visualised in Figure 28. It is clear that most of the gains will be in Tuggeranong and Belconnen in RZ2 and RZ3 zoned land.

Table 19: Output from the quality and quantity model: blocks potentially upzoned

District (new TP)	RZ1	RZ2	RZ3	Total
Belconnen	7,201	19,174	5,447	31,822
Tuggeranong	4,669	18,329	5,001	27,999
Gungahlin	13,261	3,475	6,704	23,440
Inner North and City	2,563	6,414	1,639	10,616
Woden	812	8,296	1,332	10,440
Weston Creek	1,032	6,683	726	8,441
Inner South	1,560	2,921	1,857	6,338
Molonglo Valley	3,461	167	105	3,733
East Canberra	173	19	82	274
Paddy's River	1		20	21
Total	**34,733**	**65,478**	**22,913**	**123,124**
Baseline	**99,894**	**15,061**	**8,169**	**123,124**
Change	*-65,161*	*50,417*	*14,744*	*0*

Figure 28: Block count impact from modelled zoning change



Apart from the development potential from this upzoning, a key observation in relation to dwelling growth being met by in-fill, is that the location of land with in-fill potential is partly at odds with where current forecasts suggest the future ACT population will live. By sheer weight of numbers Tuggeranong, Woden, Weston Creek, and Belconnen account for 77% of potential uplift, while accounting for just 27% of expected population increase to 2060.

Observation 9-1: There is a mismatch between technical population forecasts, and the location of in-fill suitable land, that suggests a community conversation is needed about where people want to live, in additional to how they want to live.

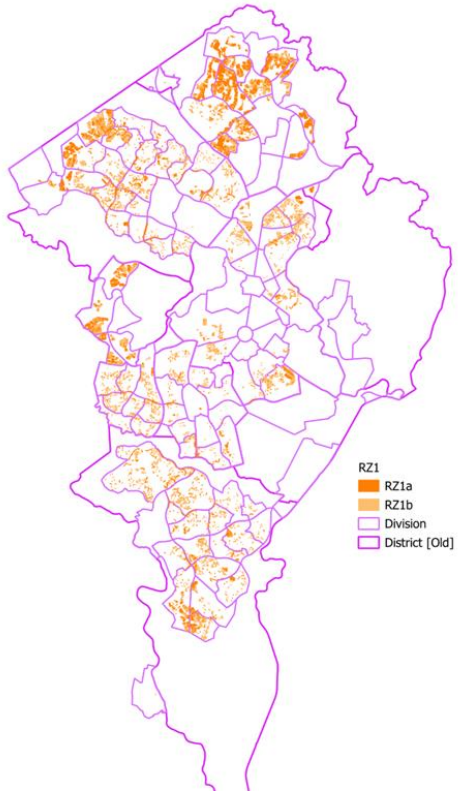
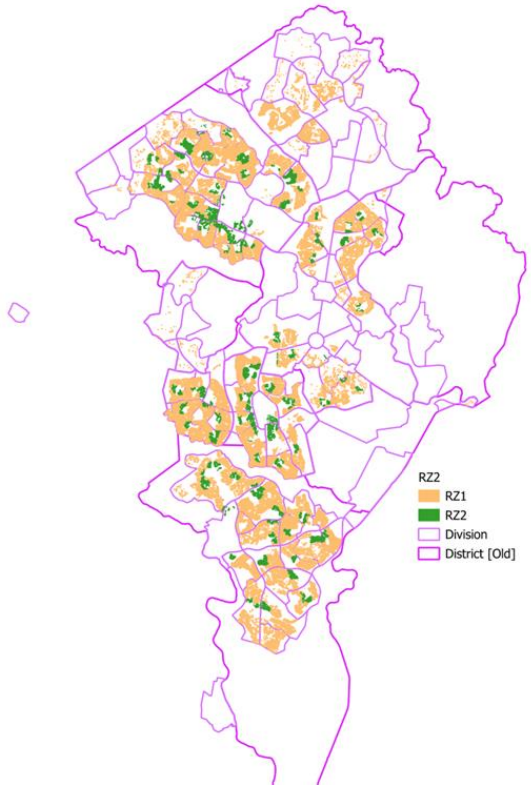
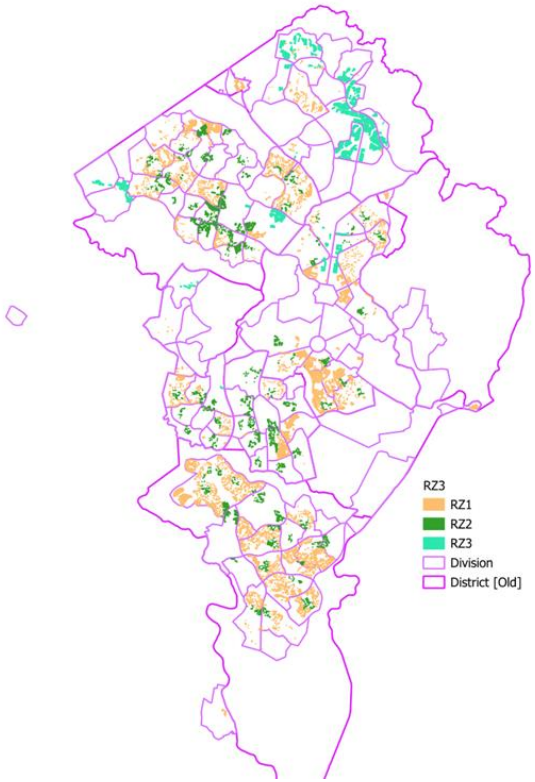
To understand the spatial distribution of the upzoned blocks Figure 29 illustrates the locations of RZ1-3 blocks after the reforms. The maps include the base zoning, to understand how zoning has contributed to the quantum of blocks in different zones. What is clear is that, like RZ1 in the baseline, after the change RZ2 and RZ3 are distributed across the Territory. This is important, as it shows that the in-fill load becomes more equitably spread across the ACT.

9.1.1.1 Dwelling gains

Additional blocks do not automatically translate to additional dwellings—owners must adopt the change and act. It is necessary to make several assumptions to estimate how these new rights may translate into new dwellings. This is an imprecise process but allows for a general understanding of the magnitude and direction of the changes.

In the first instance, we can conclude immediately that compared to the RZ1 changes in the new TP, the Property Council approach will have a more significant impact on housing outcomes. If just 30% of the upzoned RZ2 blocks chose to add one extra dwelling, this will exceed the probable outcome of the new TP. Even accepting the new TP change could lead to 44,656 additional dwellings, only 89% of RZ2 uplift would need to be utilised with one extra dwelling to exceed the new TP RZ1 changes.

Figure 29: Spatial context for upzoned blocks

RZ1 after reform	RZ2 after reform	RZ3 after reform
		

Note: The total blocks in these maps represent the final blocks after the upzoning estimation, while the colours indicate the zone the blocks were in prior to the upzoning estimation.

9.1.1.1.1 Dwelling assumptions

New development rights are assumed to be constrained first by the probability matrix set out in Table 13 (page 46), the same way we estimated the constraint for new TP RZ1 reforms. We also assume development will occur on land we have approximated is 'detached' only. Limiting to detached blocks lowers the potential blocks to 63,404 (-1,757), while the probability matrix lowers the block count to 20,726, of which 15,054 are in RZ2, and 5,672 are in RZ3.

All former RZ1 blocks in zone for the modelling exceed 500sqm. If they have a single dwelling they will have a maximum 40% site ratio, if they are multi-unit, the site ratio grows to 45%. RZ2 and RZ3 have a site ratio of 50%. These are assumed based on new TP settings, and inform our estimate of the potential maximum floor area. In all zones there is a 2-storey limit, which can be applied to the floor area to estimate gross floor area (GFA).

Observation 9-2: An important aspect of the impacts we estimate is that they do not push the boundaries of existing planning settings. That is, land switches zones, but the zone constraints remain. In this way any new development on land in this project is constrained to 2 storeys, and the site area ratios in the new TP. Relaxing this approach would yield more potential development.

Land size stratum dictate what scale and type of development are assumed in our estimates. For RZ2, the primary assumption is that the change in rights translates to additional detached dwellings at a rate of one for 700-950 sqm, 2 for 950-1,200 sqm, 3 for 1,200 -1,450, and 4 for 1,450+ sqm. These are conservative assumptions at the larger land scale, and it is assumed semis or FUA will not be built, meaning the approach will underestimate development potential. For example, using the assumptions for RZ3, it is feasible to see between 6-9 dwellings on RZ2 greater than 1,450sqm, as opposed ot our assumption of 5 (base dwelling plus 4).

For land zoned RZ3, it is assumed all development will be structured as semis and FUA, to achieve better returns and planning outcomes. The specific combination of complexes modelled by block size are in Table 20.

Table 20: Upzoned RZ3 density assumptions

Land area	2B Semi	3B Semi	2B FUA	3B FUA	Complex	sqm/ Storey	RZ3 Land
950-1200	4	2	0	0	6	430	860
1200-1450	5	2	0	0	7	495	990
1450+	0	0	6	3	9	861	1,722

While these combinations achieve missing middle style developments, they are relatively conservative, especially in large sized blocks. In most cases the develop would leave the land parcel underutilised, compared to meeting the maximum potential development envelope. In practice there may be additional dwellings, of smaller scale, or in different combinations. Alternatively, other regulations like tree canopy requirements may constraint the actual envelope. Regardless, the method aims to provide a feasible, and conservative estimates of potential uplift.

To simulate development outcomes, in terms of dwellings and the potential impacts, it is necessary to adopt assumptions to inform the scale of the potential developments. Key assumptions are outlined in Table 21. Compared to some of the results set out in the insights section, these may be relatively smaller than current market settings. However, we are confident they are marketable, and meet some basic conditions like circulation and parking.

Table 21: Additional development assumptions

Impacts	Units	Value	Note
House	sqm	250	A moderate reduction on average, includes garage
Semi-2b	sqm	130	Industry best guess, includes double garage
Semi-3b	sqm	170	Industry best guess, includes double garage
FUA-2b-internal	sqm	90	Industry best guess, internal space only
FUA-3b-internal	sqm	110	Industry best guess, internal space only
FUA-car space	sqm	35	Industry best guess, assume 1/2br, and 2/3br
FUA-circ	%	25%	Allowance for common internal spaces in FUA
FUA-2b-additional	sqm	167	Marginal size of internal, parking and circulation
FUA-3b-additional	sqm	240	Marginal size of internal, parking and circulation

9.1.1.1.2 Blocks and land supply

Modelling these results suggests the creation of 59,924 dwellings in the ACT.

The district distribution of these dwellings is presented in Table 22. The first main conclusion is that most new dwellings will be in suburbs in Belconnen and Tuggeranong. Of the dwelling types, the majority will be attached dwellings (64%), and of those the majority will be 2- and 3-bedroom semi-detached townhouse style dwellings.

The results suggest the largest gain is in missing middle style dwelling stock. There would also be a 3.9x increase on the likely number of new TP RZ1 dwellings estimated earlier. Of course, there are an extra 42,678 blocks that were excluded via the probability matrix which may prove to be too many, and which may come into production certainly over the years to 2060 if the dwelling demand is towards the higher end of our projection.

We think it is fair to say the results are conservative, and are more akin to minimum potential development outcome.

Table 22: Dwelling diversity

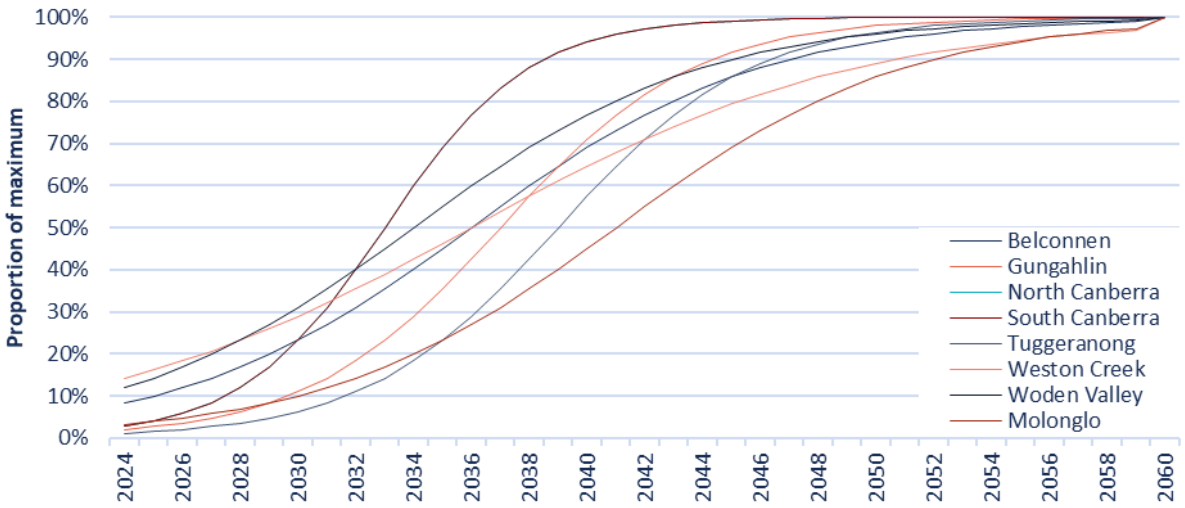
Zone	Type	Belconnen	Gungahlin	Molonglo	North Canberra	South Canberra	Tuggeranong	Weston Creek	Woden Valley	ACT
RZ2	700-800	1,462	433	29	522	220	1,471	549	419	5,105
	800-950	1,601	388	13	463	261	1,901	555	575	5,757
	950-1200	1,256	342	8	632	78	1,190	608	1,114	5,228
	1200-1450	879	75	9	162	96	477	336	696	2,730
	1450+	800	48	32	88	172	232	532	768	2,672
	Houses	***5,998***	***1,286***	***91***	***1,867***	***827***	***5,271***	***2,580***	***3,572***	***21,492***
RZ3	2Bd Semi	5,627	307	9	1,415	2,075	8,104	834	1,170	19,577
	3Bd Semi	2,670	142	4	642	950	3,834	396	542	9,198
	Semi	8,297	449	13	2,057	3,025	11,938	1,230	1,712	28,775
	2Bd FUA	1,272	366	30	582	1,746	966	312	1,140	6,438
	3Bd FUA	636	183	15	291	873	483	156	570	3,219
	FUA	***1,908***	***549***	***45***	***873***	***2,619***	***1,449***	***468***	***1,710***	***9,657***
	Attached	10,205	998	58	2,930	5,644	13,387	1,698	3,422	38,432
Total	All	16,203	2,284	149	4,797	6,471	18,658	4,278	6,994	59,924
	House ratio	*37%*	*56%*	*61%*	*39%*	*13%*	*28%*	*60%*	*51%*	*36%*

9.1.1.2 *Implementation prioritisation*

Not all these new dwellings will be delivered at once, and the behaviours in different suburbs will not be the same. As noted by some '…changing town planning controls to allow dwellings—either more densely, or in more locations—does not automatically lead to these housing development opportunities being taken up faster across the market as a whole'.[67] It is impossible to know how development will roll out, but essential to allow for different timing.

The modelling deals with this by setting potential dwelling uplift by 2060 as the total volume estimated, and then applying growth curves to derive annual volumes that achieve the 2060 target. The 's-curves' we use to achieve this, for each of the districts, are illustrated in Figure 30. For example, Weston Creek starts with the highest first year uptake at 14%, compared to Tuggeranong which has the lowest initial uptake at 1.1%, however Weston Creek has a lower acceleration than Tuggeranong (by 2042 both locations are the same total roll out of 71%).

Figure 30: Adoption timing by district



We note these are subjective assumptions. Also, a change in the assumed profile will not increase or decrease the impacts but distribute them to different time periods.

9.1.1.2.1 Meeting demand

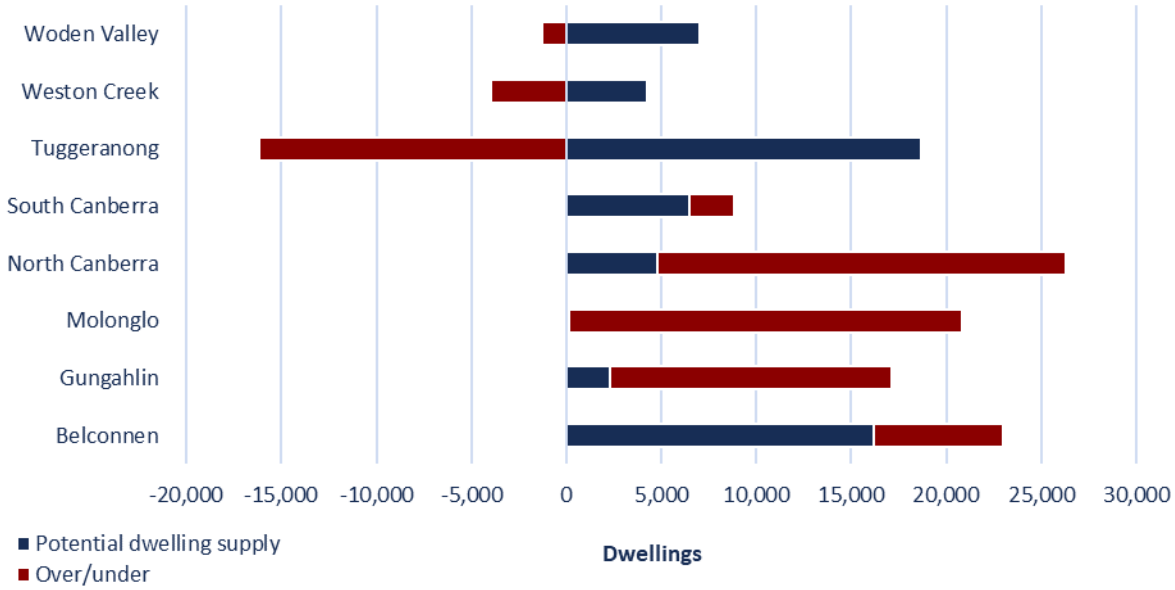
The estimated dwelling uplift has the potential to meet 57% of the in-fill required to accommodate 2060 population growth expectations.

Observation 9-3: The expected increase in dwellings from the reform is 59,924 by 2060. This is 3.9x the increase estimated for the new TP RZ1 estimate. It would meet 57% of expected in-fill demand by 2060. It would also achieve between 114% and 132% of the target set for potential urban renewal areas in the new TP—confirming the reforms would achieve a net increase in supply compared to ACT Government estimates.

As noted earlier, the increases are not geographically aligned to population expectations. Figure 31 illustrated the degree to which the new dwellings accommodate the expected demand summarised at a district level, based on the population-based supply assessment.

[67] Murray, "The Australian Housing Supply Myth." p. 10.

Figure 31: Dwelling supply in 2060 relative to population forecasts



The upzoning will oversupply the apparent needs in Woden Valley by 23%, Weston Creek by a factor of 15x, and Tuggeranong by a factor of 8x. Not all the demand in other districts will be met, proportionately North Canberra and Gungahlin will need alternative in-fill sources. South Canberra and Belconnen will have a majority fulfilled but need more in-fill sources. These latter suburbs are likely to see in-fill from higher density zones like RZ4-5, and mixed-used zones.

Another interpretation of this result is that perhaps the population forecasts need to be adjusted to a more realistic profile of where land is available for in-fill. For example, putting more emphasis of zoning and development uplift in middle and Southern Canberra may take some pressure of group and local centres, and share the distribution of population growth more broadly across the territory.

9.2 General economic impacts

Research focussed on increased densification—synonymous with the reform in this project—suggests a wide range of potential economic consequences. The research, and intuition, suggests the reforms will increase economic activity compared to not pursuing the reforms.

The real consequence will depend on the decisions of tens of thousands of individual land holders in the ACT who will face different resource constraints, have various levels of understanding of the development potential from land, and who will be facing quite different locational advantages and disadvantages. While there may be many and long-term direct consequences, we have put together estimates for the two most obvious—increased construction, and potential private gains from land profits. Additional taxes are dealt with as part of returns to government.

9.2.1 CONSTRUCTION

The upzoning unlocks land which might otherwise not have been developed. It is straightforward to estimate the aggregate economic value of construction, by applying the dwelling assumptions in Table 20 and Table 21, with the estimated costs of development set out in Table 23.

Table 23: Construction assumptions

Impacts	Units	Value	Note
House	$/sqm	$3,700	Medium to high quality best guess at start of model
Semis	$/sqm	$3,500	Medium to high quality best guess at start of model
FUA	$/sqm	$3,000	Medium to high quality best guess at start of model
Construction PPI	%pa	1.5%	Real price growth (above inflation)

Based on the timing and dwelling structures assumed, we estimate the construction impact will be $48.5 billion up to 2060. This is in 2024 dollars. Discounting the cash flows at 5% (real), suggests a present value of $26.5 billion.

While an analysis is not performed of how this lifts economic growth, it is often assumed that an additional million dollars in construction expenditure supports 1.6-1.9 full time equivalent employees. If we use that benchmark, the reforms support up to 1,400 FTE, with a median across all years of 620 FTE.

What is not as clear is how much of this construction might already have occurred, given there is some policy around potential urban regeneration areas. Not all the construction benefit can be claimed by the reforms proposed, and the value is much lower than if all new rights are realised. For example, we observed that the estimated dwelling increase would exceed the ACT expectations by between 14% and 32%, suggesting $4.4-11.8 billion would be additional activity. Nevertheless, it would be fair to conclude that total gain cannot be attributed to the policy.

9.2.2 PRIVATE GAINS

Potential private wealth gains may come from two sources. The first is potential realised gains from utilising development rights after land is upzoned, and the second is the potential increase in underlying land values for land held without pursuing development rights.

9.2.2.1 Realised gains

To estimate realised gains, our estimates assume individuals will bear all financing, operational and capital costs, and risks from pursuing the additional development rights, including taxes (see for example *Table 12: Factors impinging on residential zone development*). The gross income is derived from selling a final development package of dwellings at market prices. The base dwelling needs to be excluded as any gains, including shadow prices, would be achieved by those individuals with or without the reform. A rudimentary back of the envelope suggests a potential gross margin (gross income less all costs) around 40% across the range of developments we have modelled.

Once a return is made, it is highly likely Australian Government taxes will offset the gains. If they are considered simple capital gains, under certain conditions, half of the gain will be taxed at the individuals marginal tax rate. Intuitively, if the gross return is 40%, then 20% is taxable, at an average income tax rate of 25%, then the net return would be around 15%. We have assumed 15% of total return as the proxy for the realised individual wealth gain from upzoning.

Based on this set of assumptions, we estimate private gains would be around $10.2 billion dollars ($6.1 billion discounted at 5%). These gains would be available for consumption or further investment, however secondary impacts are not included in this project. Similarly to the construction gains, some of this development may have already occurred because of ACT

Government potential urban renewal areas reforms, however we have no insights into how those reforms are expected to be implemented.

9.2.2.1.1 Potential unrealised gains

It may be that land holders gain more development rights, but do not exercise those rights. In this case, there may be a 'paper' valuation gain, which would accrue to individual balance sheets, and potentially increase taxes based on unimproved land values. The degree to which upzoning impacts land values is probably the most contested aspect of zoning reform.

In assessing the consequence of the RZ1 reforms in the new TP, modelling performed by EPSDD suggests the Government is assuming an uplift in unimproved values for RZ1 zoned land in the ACT of around 23% across the board (between 10% and 37% by suburb).[68]

Looking at the inverse of the question, many researchers have attempted to assess the impact of extant zoning on prices. Many refer to the impact of a 'zoning tax'. Citing Gyourko and Molloy (2015), Australian researchers note '…regulation appears to raise house prices, reduce construction, reduce the elasticity of housing supply, and alter urban form. … The available research suggests [the zoning] tax is quite large for many markets.'[69]

The most often cited research from Australia is from the Reserve Bank of Australia (RBA) which notes, '…zoning restrictions raised the average price of detached houses, relative to supply costs, by 69 per cent in Melbourne, 42 per cent in Brisbane and 54 per cent in Perth,' and that '…zoning restrictions raised average apartment prices, relative to marginal cost, by 85 per cent in Sydney, 30 per cent in Melbourne and 26 per cent in Brisbane.'[70] The researchers make clear these cannot be reversed as estimates of the 'counterfactual of no zoning restrictions', rather they are a guide to a specific version of the zoning tax question. Citing this research, the Greater Canberra group observed '…in aggregate, every 1% increase in the housing supply leads to a 2.5% reduction in housing costs'.[71] The method and results are contested.[72]

Also, some excess valuation may already be factored into properties with desirable land regardless of zoning. As part of estimating the zoning tax, RBA researchers noted 'if scarcity of government permission to develop apartments in desirable locations is pushing up their price, then we would expect the value or 'shadow price' of development rights to be capitalised into the prices of sites with such permissions'.[73] We cannot determine if this is the case in the ACT, however, shadow prices will impact any assessment of value uplift for tax purposes, and we assume some shadow pricing will be present in particular in existing RZ2 and 3.

Observation 9-4: Changing zoning will have less valuation impact in RZ2 and RZ3 than in RZ1 as we expect those blocks have shadow prices linked to perceived development potential. RZ1 blocks might have some shadow pricing where holders gamble on a change, but will not systematically reflect the development uplift potential from rezoning. Rezoning RZ1 would lead to some bidding up of values regardless of actual development.

Other factors clearly impact on prices and consequently valuations. Some of these factors are driven by preferences, Australian researchers observe 'locating a dwelling on a piece of land provides both a dwelling to live in, as well as access to a bundle of goods and services in the

[68] ACT EPSDD, "EPSDD FOI 23/110921: RZ1 Reform, Upzoning and Territory Plan Changes."
[69] Tulip, "Misunderstandings about Planning Restrictions." p. 5.
[70] Kendall and Tulip, "RDP 2018-03." p. 2.
[71] Greater Canberra, "Greater Canberra 2022-23 ACT Budget Submission."
[72] Murray, "The Australian Housing Supply Myth."
[73] Kendall and Tulip, "RDP 2018-03." p. 21.

locality. These might include access to a train station, beaches, cultural facilities, a short commute to work, status, sea breezes, shops, a view from the front room, a park and good schools. Such amenities are typically understood to impact on the locational value of land.'[74] More formally, '…individuals maximize utility when choosing neighborhoods as a function of prices, location features, access to employment opportunities, and commuting time, allowing for residents to value both the positive and negative aspects of more densification.'[75] These hedonic factors are probably more powerful than zoning, and will be reflected in locational value relativities to the ACT median price.

Another factor unique to the ACT may be the land supply system, and how it informs potential new land sales values. One critic observed, in discussing research from those who disagree with the impact of zone taxes, models:

> *…omit the strongest evidence of monopolistic land restrictions: government land authorities. One of the worst is the Suburban Land Agency of the Australian Capital Territory which limited sales sufficiently to raise the median price of its vacant blocks to $406,000 in 2020, many multiples the cost of supply. As a result, Canberra has the second most expensive housing of any major city despite abundant vacant land.*[76]

Finally, the degree to which value changes are unearned windfalls is contested. Land value is not controlled by individuals. Looking at low density zoning a researcher expressed 'homeowners will still receive windfalls from the upzoning, and this may seem unfair, but remember that homeowners also receive windfalls from not upzoning. When land is not upzoned, values rise because housing cannot be built. When land is upzoned, in contrast, values rises because housing can be built, and homeowners can only access that value when they sell to someone planning to build it.'[77] In effect, land valuation is a lottery rooted in the time land was acquired, underpinned by the idiosyncrasies of the planning settings at an historical time. The ACT Government has also participated in all these gains through taxes linked to property values (rates, land tax, lease variation, fees attached to land ownership, and stamp duty).

Observation 9-5: There is no clear evidence about the potential valuation gains from upzoning where rights are not accessed. In the ACT there are many related factors driving land valuations, including a unique public monopoly on greenfield supply. Intuitively, all regulations are consistent across the ACT, there is no clear time series of 'upzoned' blocks to estimate potential unimproved value uplifts or base value differences, new dwellings are typically developed at the suburban fringe on differential zoning rules to in-fill sites, and each suburb has differential hedonic factors. Estimating unrealised value uplift is fraught. What we can say is that there may be paper gains, and that any gains made will favour the ACT Government through land taxes linked to valuations.

9.3 Returns to government

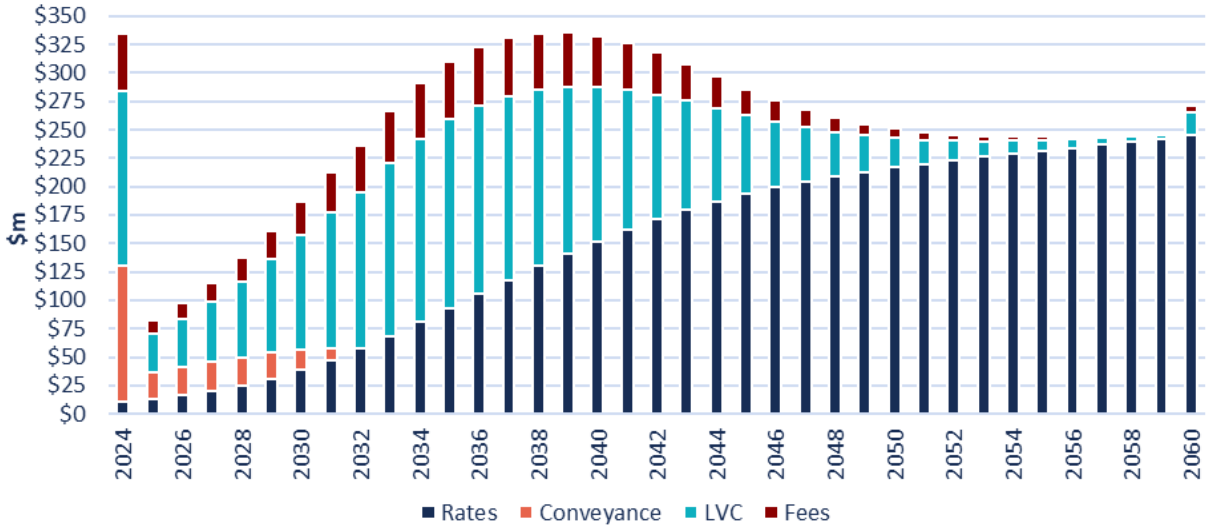
While the scale and scope of the reforms will have myriad potential economic, social and environmental impacts that will directly and indirectly impact on the operations of government two direct impacts can be investigated relatively easily—potential revenue gains (benefits to government), and the marginal cost to infrastructure from the changes (costs to government).

[74] Phibbs and Gurran, "The Role and Significance of Planning in the Determination of House Prices in Australia." p. 12.
[75] Anagol, Ferreira, and Rexer, "Estimating the Economic Value of Zoning Reform." p. 5.
[76] Tulip, "Misunderstandings about Planning Restrictions." p. 12.
[77] Manville, Monkkonen, and Lens, "It's Time to End Single-Family Zoning." p. 110

9.3.1 REVENUES

The ACT government financially participates in all stages of the land cycle—lease creation, land sales, regulatory fees and fines, transfer duty on sale and resale, rates, land tax, other land-based levies, and on lease variation. Some taxes are land linked poll-style taxes or levies, others are valuation based (improved or unimproved). The modelled increase in dwellings will *invariably* improve ACT Government gross revenues. In this project we estimate some but not all potential revenue gains. Included are rates, conveyance duty, lease variation, and fees and charges. The summary of total estimated revenues is in Figure 32.

Figure 32: Estimated ACT Government revenue from upzoning reform



Across all years the peak revenue is expected to be around $325 million per annum (2024 values). Initially LVC, conveyance and fees dominate, however rates progressively pick up as more sites are realised into rateable dwellings. We note, rates are a perpetuity for government, so the present value estimates in this model are underestimated. Nevertheless, the total revenue to 2060, based on the model settings, is estimated at $9.4 billion ($4.2 billion when discounted at 5%). These reforms would present a substantial tax gain, with minimal initial cost. We cannot reliably estimate revenue settings based on existing policy to estimate the degree to which this is a windfall to the ACT Government. Again, our estimate is that the reform would deliver 14 to 32% more dwellings that the existing PURA expectations, on a proportionate basis all else constant this suggests $1.3-$2.3 billion is policy windfall.

9.3.1.1 Rates and land tax

An increase in dwelling stock will increase the aggregate number of rateable properties, and total rates revenue. The model simulates rates revenue by applying revenue assumptions to annual completions estimated in the *'Increased development rights'* section. We have not reduced this number to account for other dwelling increases, in part because there is no reliable dwelling forecast the ACT Government are expecting, and in part because this policy would not be factored into existing revenue forecasts.

Simulating rates at the Territory scale has two complications. First, rates are a function of unimproved land values, progressive thresholds, marginal threshold tax rates, a fixed charge, and other fees attached to land. Second, the rates system is changing to adapt to tax reforms commenced in 2012, with unpredictable changes in thresholds and rates.

Rather than try model these various components at a block, suburb or district scale, the project has adopted an approach based on a fixed proportion of the median price projections. The proportion is based on the estimated ratio of rates to improved capital values for 2023, which is then assumed to hold constant over the forecast horizon. The ACT ratio for houses was 0.27%, and 0.29% for attached dwellings. At a district scale the house range is from 0.23% to 0.31%, while for attached dwellings the range is from 0.27% to 0.33%. Across suburbs, the lowest house ratio measured is 0.22% and the maximum is 0.35%, while for attached dwellings the range is 0.19% to 0.6%. By adopting the suburb ratios, our impact assessment simulates rates to grow in line with projected real median price growth.

Why not use unimproved values?

Rates and land tax in the ACT are linked to the unimproved value (UV) of land.

ACT Revenue define this as '…what the block of land is worth subject to its highest and best use in accordance with the Crown Lease purpose clause. It does not include any improvements on the land, such as buildings, landscape gardening, paths and fences'.[78] *Typically, these values will be derived by subtracting the depreciated value of improvements from the estimate improved values at a point in time. There is a direct relationship between capital improved values (CIV) an UVs.*

Based on current data sources we cannot reliably link UVs to blocks, and we cannot know what UVs will be in the future. There is a public register of valuations data, but there is no way to efficiently access the data at scale.

We researched data released under of freedom of information, and annual post-budget updates, through which there is some useful information. We trialled a method to estimate rates. What we found was that for houses the UV to improved ratio is around 60%, while for attached dwellings, which in the data are generically called 'units', the range if broad but more likely around 50%.

The use of UV was dropped in favour of a CIV ratio, as the UV method would require multi-layered assumptions that would not necessarily improve the modelling result.

Applying these assumptions yields an estimated gross additional rates revenue of $5.4 billion to 2060 ($1.9 billion discounted at 5%). The annual return progressively increases from about $10m per annum to $245 million per annum in real 2024 terms. This total is less than the full present value of the revenue as it is unlikely rates will ever be removed as a tax—they are a perpetuity for the ACT Government.

Also, a land tax will apply if any of the new dwellings are rented, based on current settings. We have not estimated the proportion of properties expected to be leased as opposed to sold for owner occupation. In the event a property is leased, on current settings, the government will raise an average additional revenue per property around 1.5—2 times average land rates, depending on the suburb, and unimproved values. If rentals run at around 30% of new dwelling stock, using the real NPV from rates, this might add an additional $830-1,100 million over the years to 2060. Again, this would be much higher in total, as these taxes are annual and unlikely to be removed.

[78] https://www.revenue.act.gov.au/rates/land-valuations

9.3.1.2 *Lease variation and incentives*

Changes in rights under the TP typically incur a lease variation charge (LVC). The tax is complicated, and unique to the ACT within Australia.

When announcing the shift from a change of use charge to an LVC the Government observed 'a Change of Use Charge is payable on the increased value of a lease for a block of land arising from a change in the lease conditions granted. It is determined as part of the development application process. The Charge has been in place since 1971, and is commonly referred to as the betterment levy'.[79] Adjustments have been made to codify LVC, adjust the values over time, and there is a general remission within current policy settings.

However, the ACT Government has adamantly implemented and defended the LVC which means we feel it must be factored into the return to government, while also noting the tax will be a strong disincentive to development adoption.

Table 24 sets out the estimated average codified LVC per additional dwelling adjusted by a 25% remission. The method we use is consistent with advice provided to the ACT Government.[80] The average district costs are variable, and the marginal cost per dwelling declines with each additional dwelling, almost halving by the time there are more than ten dwellings in a complex. We assume that all marginal dwellings from the reform will incur an LVC. We also note a comparative valuation option is available, however we have not linked dwelling valuation increases to specific blocks, meaning the codified rates are simpler to model.

Table 24: Real LVC cost estimates

	LVC per extra dwelling				
District	*1*	*2*	*3*	*4-9*	*10+*
Belconnen	$61,042	$56,286	$50,299	$40,987	$37,292
Gungahlin	$55,990	$50,755	$44,792	$40,000	$35,885
Molonglo	$0	$0	$0	$0	$0
North Canberra	$139,394	$90,919	$81,099	$69,811	$58,845
South Canberra	$183,945	$125,430	$104,219	$86,133	$69,805
Tuggeranong	$50,573	$48,465	$43,003	$38,837	$35,052
Weston Creek	$58,672	$54,245	$47,760	$42,969	$39,036
Woden Valley	$121,319	$93,056	$78,672	$64,505	$55,078
ACT	$85,777	$68,672	$59,900	$50,941	$44,468

Source: Purdon analysis of ACT Government, Planning (Lease Variation Charges) Determination 2023, DI2023-278, 27 November 2023.

Our estimation of LVC, based on the expected additional dwellings, is a gain to the ACT Government of $2.8 billion ($1.6 billion discounted at 5%). This will peak at $166 million in 2035, and range between $5 million and $166 million, with an average of $77 million per annum.

[79] ACT Government, "Budget Paper No. 3, ACT Budget 2011-12." pp. 44-46
[80] ACT EPSDD, "EPSDD FOI 23/110921: RZ1 Reform, Upzoning and Territory Plan Changes."

9.3.1.2.1 Should LVC apply to this reform?

Many have observed that LVC for smaller residential projects will be a significant disincentive for the new TP RZ1 policy. The disincentive is manifestly larger when individuals may seek to realised development from an RZ1 to RZ3 rezoning, which would require significant capital and skill to deliver outcomes.

While many debates have occurred over the efficacy and impact of the LVC, an interesting challenge emerges in a policy where additional rights may be granted by government fiat. For example, if the ACT Government were to universally uplift development rights, this would not form part of a development application *per se*. This suggests the development rights are not an 'event' for the purposes of LVC. Alternatively, if the Government required an application in order to achieve upzoning, an LVC may apply despite any attempt to realise the additional development rights.

While there is no resiling from the negative incentives created by the LVC, it seems sensible to allow for a two step process for the propsed reform. First, it may be more effective to adopt a policy where individual land holders can pay a nominal application fee to opt-in to a simplified zoning change, based on 'check box' crierion established by the ACT Government, which delivers an increased right. Then, if those rights are exercised, they would be assessed through the typical lease variation process, which may include incurring an LVC.

Recommendation 4: To implement upzoning encourage the ACT Government to allow affected land holders to 'opt in' based on a simple application process, with a low nominal fee, based on a simple set of criteria. This will not alleviate LVC, but will allow landholders the option of investigating potential returns to improvements in rights without a significant LVC penalty prior to project feasibility assessment.

9.3.1.3 Conveyance duty

When land is transferred between owners there is typically a conveyancing duty paid to the ACT Government. Since tax reforms in 2012, the scope of taxable properties has decreased, and the thresholds and progressive tax rates have changed dramatically, generally in favour of taxpayers.

A key assumption within the model is that some conveyance duty will apply up to 20 years after tax reform commenced (2032) after which it will be zero to meet announced commitments. The tax currently has progressive value thresholds and tax rates. For simplicity we have assumed an average base rate of 3.5% of improved capital value in 2023. To achieve zero, the average rate declines in equal 1/9th shares.

Applying only one incidence of duty, on the first sale of new dwellings, we estimate the total return at $269 million. The present value of the cash flows at a 5% discount rate is $245 million. Should tax reforms progress more slowly, or not eventuate, this figure will be conservative.

9.3.1.4 Other revenue impacts

The government collects a range of fees and changes for development applications, major TP amendment, unit titling and related administrative activities. We have assumed a cost of $15,000 per dwelling, with no expectation of real growth in this cost. This has the potential to generate gross revenue of $898 million (or $507 million discounted at 5%). Some, maybe most, of this will be applied to offset government costs.

GST revenue grants, generally, are based on an adjusted population relativity—ACT population share adjusted by an equalisation factor reflecting the relative capacity of the ACT compared to the stronger of NSW or Victoria. While the calculation is complicated, and the GST pool varies based on taxable activity and pool adjustments, it is the case that each additional person in the population will increase the number of payments the ACT receives. The estimated 2023-24 payment to the ACT is around $3,952 per capita, based on Australian Government Budget papers. We have not attempted to estimate how much of the new dwelling stock would draw in additional population into the ACT. However, it would be reasonable to assume a GST windfall of at least $3,900 per capita, or up to $10,000 for a new ACT household with median occupancy if dwellings are acquired by new residents.

Apart from any new population induced into the ACT, the combined revenues come with minimal additional expenditures, and may increase the utilisation of underutilised assets.

9.3.2 INFRASTRUCTURE

The availability, adequacy, and maintenance of infrastructure—physical and social—is often the responsibility of Government within Australia. The impact of increased population on infrastructure is a regular concern raised in development literature. Infrastructure funding has been raised as a key issue for ACT finances going forward.[81] Funding is a complex maze of programs administered at the federation level, and within and between ACT agencies. In reviewing development controls, the ACT Government observed about infrastructure that 're-zoning (from suburban residential zone to high-density residential zone, for example), at the request of landowners, is considered but is an approach that does not always enable effective coordination of development with infrastructure provision.' [82]

There are two dimensions of interest to infrastructure for this project, the expected issues around coordination and location of infrastructure, and the relative costs of greenfield versus brownfield, which will affect the costs to the ACT Government of population growth.

9.3.2.1 Coordination and adequacy

The coordination challenge within the reforms in the project arises from the need to connect on-site infrastructure from additional dwellings to trunk infrastructure which may not have been provisioned historically. With greenfield development, there is an opportunity to ensure trunk and intersecting infrastructure is adequate to meet estate planning assumptions, which is not the case for brown or grey field in-fill.

With the type of upzoning assessed in this project negative infrastructure impacts are less likely than in genuine high-density settings. That is, in established suburbs, where all upzoned developments would occur, significant trunk infrastructure is in place. We assume that larger scale trunk infrastructure for the Territory is planned at a population scale, so shifts from one area to another ought to be accommodated in existing infrastructure planning expectations based on population forecasts. Where this may be more difficult is when land goes from RZ1 to RZ3, however, much of the significant infrastructure will be on-site works, with perhaps moderate infrastructure impacts for trunk networks.

The relative population bump, re-distributed across all ACT suburbs, would also support increased utilisation of existing social infrastructure (schools, roads, sports facilities, community facilities, and hospitals). Conversely, it may reduce growing pressures in other

[81] Lindell, "Federal Infrastructure Spend 'essential' for Revenue-Restrained ACT."
[82] ACT Government, "ACT Planning System Review and Reform: Development Controls." P. 12.

areas. For example, evidence to the ACT Legislative Assembly suggests there are school capacity issues already emerging in Gungahlin, and in inner north schools.[83]

This conceptual position is supported by evidence provided to a Parliamentary committee on the development of cities. The committee cited CSIRO research that 'there is strong evidence that compact urban growth not only delivers better environmental and social outcomes than low density development', it also 'makes good economic sense through reduced infrastructure costs and increased efficiencies'.[84] The NSW Productivity Commissions suggests higher densities in existing suburbs '...can take advantage of infrastructure capacity already in place, while posing fewer coordination and fiscal challenges for local and state governments'.[85]

The benefits were also recognised in the ACT Taxation Review, with the panel concluding that 'urban densification in the ACT can maximise the environmental and economic benefits of using existing infrastructure'.[86] The taxation review panel reflected the financial gains to government to offset infrastructure costs, observing 'with the Government's policy of urban densification, LVC will be an important instrument to capture land value enhancements arising from public investments in infrastructure and urban densification.'[87] Even without LVC, we have demonstrated increases on several heads of revenue that are consequent on improved density—the gains to the ACT should easily offset any marginal infrastructure costs from up-zoning. More importantly, distributing population to where social infrastructure is increasingly underutilised will prolong the life of existing investments.

9.3.2.2 Greenfield versus in-fill

Regardless of delivery mechanism, dwellings in any location will need some form of infrastructure. The differential between greenfield and in-fill is a matter of extent and cost.

In greenfield estates there are myriad new trunk and connecting infrastructure requirements. These span water and wastewater connections, stormwater facilities, electricity another utilities, local roads, upgraded arterial roads, public transport facilities, public spaces and, in some cases, community facilities. Alternatively, in-fill development can connect to existing water and waste water assets, respond to open spaces, increase utilisation of existing road and public transport assets, and generally lower the marginal cost of operating other social assets.

In an extensive literature review SGS estimated that infrastructure for greenfield housing typically costs two to four times what it does in infill sites. While greenfield costs were broadly consistent across different sites, the costs of infill development depended largely on the amount of existing infrastructure capacity in the specific locations.[88] Indeed, the NSW PC, taking a strict economic view of estimated infrastructure costs, combined congestion time saving, train overcrowding, school upgrades, water infrastructure and open space, to estimate the relative cost of in-fill. They found that compared to greenfield costs of $50,000 to $350,000, infill infrastructure would be around $40,000/dw in the Sydney CBD, towards $75,000/dw higher than the CBD in Sutherland, Hills and Northern Beaches.[89] These metrics are unlike what CBR would experience, as the PC note congestion is a key driver, and Canberra

[83] Standing Committee on Education and Community Inclusion, "Managing ACT School Infrastructure." p. 8.
[84] House of Representatives Standing Committee on Infrastructure, Transport and Cities, "Building Up & Moving Out: Inquiry into the Australian Government's Role in the Development of Cities." p. 52
[85] NSW Productivity Commission, "Building More Homes Where People Want to Live." p. 21
[86] ACT Taxation Review Panel, "ACT Taxation Review." p. 49.
[87] ACT Taxation Review Panel. p. 100.
[88] NSW Productivity Commission, "Building More Homes Where Infrastructure Costs Less." p. 10.
[89] NSW Productivity Commission. pp. 12-14.

generally does not have heavy rail and has different experiences with network congestion compared to broader Sydney.

One study investigated the relative costs of infrastructure in the ACT. It found that for a range of projects, the weighted average cost for greenfield was around $65,500 compared to $16,123 for in-fill.[90] Comparing this to other areas they observed in Adeliade a similar relativity exists ($20,000 in-fill/$80,500 greenfield) as well as in Sydney ($15,300 in-fill/$79,800 greenfield).[91] The study noted that there is a threshold at which increased density may increase the average cost of development, where the development may require significant infrastructure augmentation. We reiterate, this project is looking at small-scale developments in detached, semi-detached and smaller apartment settings which are unlikely to trigger such a threshold.

It seems clear there is a significant cost and infrastructure productivity differential, in favour of government, between green and in-fill development, and that the reforms to RZ are least likely to create coordination problems for the ACT.

Observation 9-6: The scale and scope of development from a reform to RZ1-3 zoned land would be distributed in a way that minimises infrastructure coordination challenges, and could enhance existing infrastructure utilisation. Where there is a cost to government, in-fill infrastructure has been demonstrated to cost one quarter to one half that of greenfield infrastructure, making this reform superior to increasing greenfield development at scale.

9.4 Wider community impacts

The broad evidence base suggests densification, in this case from improved utilisation of low-density land, can yield a range of potential benefits, in areas such as active transport, reduced pressure on environmental services, and improved utilisation of existing infrastructure. These primary impacts would have secondary consequences too, for example, lower pollution, increased private health and wellbeing, and improved community networks. It is difficult to prove or evaluate these benefits *ex-ante*. However, there is strong qualitative evidence for several wider impacts.

9.4.1.1 Affordability

Housing affordability is a complex challenge that requires multiple approaches from all layers of government, and the private and community sectors.[92] Research about the impacts of zoning on affordability is highly contested. This project does not aim to resolve the contest, or test the affordability impacts from the proposed reforms. However, affordability is incorporated into our quality modelling—the relative baseline affordability of a suburb is included to select desirable suburbs for additional densification from this proposal.

The longer-term consequence from the reforms depends on the long-term interaction of household incomes, household structure and dwelling and rental prices. We have not estimated these interactions.

However, our goal in estimating potential dwelling demand was to determine the minimum dwelling growth required to house the official forecasts for population. This is an 'affordability neutral' approach, where we have not simulated an increased annual production rate to attempt

[90] AECOM, "Greenfield and Infill Developments in the ACT: Comparative Cost Study." pp. 40-41.
[91] AECOM. p. 73.
[92] See for example Australian Housing and Urban Research Institute, "Understanding the Housing Policy Levers of Commonwealth, State and Territory, and Local Government | AHURI."

to reduce a perceived supply side challenge. In that sense, all else constant, the reform modelling will be affordability neutral. If the reforms do increase supply to a relatively higher level than population growth requires or lead population growth at a faster pace than has occurred historically, supply may run ahead of demand and put downward pressure on prices on rents. The ACT Government may induce this behaviour through greater incentives to develop currently underutilised blocks.

In a review of zoning undertaken by the NSW Productivity Commission, the general conclusion was unsurprising that increased supply led to lower prices. Reviewing a range of literature they observe:

> *available estimates suggest that a 10 per cent increase in the housing stock lowers costs by between 15 and 30 per cent at a national or sub-national level (Tulip & Saunders, 2019; Labour, Erhlich & Lui, 2016; Finlay & Williams, 2022; Oxford Economics, 2016). The few available Australian estimates suggest that a 10 per cent increase in national supply cuts the cost of housing by 25 per cent (Saunders & Tulip, 2019). Li (2019) finds that a 10 per cent increase in the housing stock lowers rents by one per cent within 500 feet of the location of new dwellings.*[93]

On the issue of the impact of upzoning on housing affordability we defer to the RBA, who note quite clearly that 'if housing demand continues to grow, as seems likely, then existing zoning restrictions will bind more tightly and place continuing upward pressure on housing prices'.[94] The ACT Government also observed that issues such as tax settings, planning and land release, design, tenancy laws, social and public housing, and homelessness support services need to be in the policy mix to improve local affordability outcomes.[95]

9.4.1.2 Wider impacts

There is a wide literature on other wider impacts—economic, social, and environmental—from the potential increased utilisation of underutilised land. Several of the potential impacts are discussed earlier, in relation to densification. This section reflects further evidence where the impacts have been evaluated more broadly, but not necessarily within the ACT.

One stream of these impacts are 'agglomeration' benefits—which accrue to enhanced colocation of population, and businesses, and are expressed generally in terms of improved productivity. AHURI observed in relation to employment density and urbanisation that while uneven, 'there is evidence of agglomeration economies relating to density of employment, localisation economies (specialisation) and urban economies (diversity). This creates an economic rationale for concentration of economic activity.'[96]

The Productivity Commission (PC) note that land planning contributes to the broader productivity outcomes of a location. In preparation for a 2017 productivity review they noted research that suggests'…the better utilisation of land in established areas can realise additional agglomeration benefits, reduce the costs of public infrastructure, which is more costly to deliver the further they are from urban centres, and prevent the creation of distant, socially isolated communities.'[97] In the context of NSW, the NSW Productivity Commission stated

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[93] NSW Productivity Commission, "Building More Homes Where People Want to Live." P. 16.
[94] Kendall and Tulip, "RDP 2018-03." p. 23.
[95] ACT Government, "ACT Housing Strategy." p. 8.
[96] A. Nygaard, Parkinson, and Reynolds, "Agglomeration Effects and Housing Market Dynamics." p. 48.
[97] Productivity Commission, "Realising the Productive Potential of Land, Shifting the Dial: 5 Year Productivity Review Supporting Paper." p. 5.

'…constrained residential construction also drags on the state's overall productivity and economic growth'.[98]

More recently, in the 2023 productivity update, the PC observe that:

> *Further liberalisation of residential planning controls, including greater allowance for mixed land use, stands to support productivity growth through several channels, including an increase in dwelling services for each unit of scarce urban land, an increase in agglomeration benefits, and a reduction in transport times between households and businesses. It may also better position Australia's housing market to respond to increases in demand associated with Australian population growth, which stands to be an important channel for productivity growth over the years ahead This will likely include ensuring a diversity of housing stock, which could further support potential changes in the composition of Australia's migration program over time, and support increased geographical mobility of labour more generally.*[99]

To this general improvement in productivity, we would add that densification as proposed could lower the need to deliver more greenfield land. For example, the aggregate dwelling uplift from RZ1-3 could prevent between 2,400 and 3,000 ha (assuming 20-25 dw/ha). Noting the ACT Government expects 45,500-52,500 dwellings from their PURA estimate, the dwelling uplift from this project can prevent 296 to 712 ha of land programmed into greenfield to achieve the same outcome in new TP.

More broadly we observe many instances of research illustrating wider economic benefits from increased densification.

From a meta-analysis of 473 conceptually distinct analyses, and re-modelling elasticity parameters, research suggests, of relevance to the ACT, a 1% increase in density can lead to increased wages, lower vehicle kilometres travelled, improved consumption variety, preservation of green spaces, as well as lower energy consumption, crime, and costs of local service delivery. On the negative side, the same density increases can lead to higher rents, higher construction costs, higher pollution concentration, and lower self-reported wellbeing.[100] In high income countries, the research suggests a 1% increase in density is associated with a 0.05% increase in quality of life.

In evidence to a Parliamentary committee on the development of cities RMIT claim 'higher density, mixed use development, pedestrian and cycling friendly development well connected to employment with good public transport, is likely to produce a range of co-benefits including lower levels of driving, reduced traffic congestion, improved air quality and lower greenhouse gas emissions'.[101]

Across several reports, the factors that the PC specifically observe as outcomes from better land utilisation include improved mobility, improved safety, 'thriving' businesses, access to services, improved complementary land use, matching labour to firms and enhancing labour mobility, improved outcomes for online services and 'work from home', supporting climate change adaptation, simplifying bureaucracy, improved amenity values, and potentially reducing the individual tax burden from regressive taxes like stamp duty.

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[98] NSW Productivity Commission, "What We Gain by Building More Homes in the Right Places." p. 19.
[99] Productivity Commission, "5-Year Productivity Inquiry: Advancing Prosperity." p. 32.
[100] Purdon synthesis of Ahlfeldt and Pietrostefani, "The Economic Effects of Density: A Synthesis." pp. 22-30.
[101] House of Representatives Standing Committee on Infrastructure, Transport and Cities, "Building Up & Moving Out: Inquiry into the Australian Government's Role in the Development of Cities." p. 53

Based on the evidence, noting a lack of ACT specific research, this project leans towards the view expressed on the impact on reforms in New Zeeland, that zoning reform that increases density would have typically positive impacts including '... increasing housing supply and reducing housing costs', '...reducing spatial inequities', and '... enabling a more compact and environmentally sustainable form of urban development.'[102]

[102] Greenaway-McGrevy and Jones, "Can Zoning Reform Change Urban Development Patterns? Evidence from Auckland." p. 2.

10.0 Next steps

An Executive Summary provides the key points and messages from this research.

The report includes a range of observations and recommendations.

Observations are provided throughout the document and summarised in the Executive Summary. These are set out as issues that the Property Council should consider while forming messaging about the reform concept, and its potential impacts on the ACT community.

We also propose recommendations. These are issues that we think the Division Council of the ACT Property Council should consider and endorse to enable the changes presented.

Subsequent actions based on the research are subject to what is agreed at Division Council, but some next steps we see include:

- Sharing the results with the National Executive, to use as a case study informing National Cabinet consideration of planning reforms.
- Extending the findings publicly, and to each of the major political parties and stakeholder groups in the ACT, with a goal of broad-based adoption of the proposed reforms.
- Pursuing further work with the ACT Government on shaping the reforms within the bureaucracy, including an implementation strategy which would be within the remit of the ACT Government.
- Negotiating with ACT government representative to establish a mechanism to monitor success, of changes in the new TP, as well as any reforms agreed to consistent with the proposal presented in this research.

Recommendation 5: For the new Territory Plan, as well as the proposed changes to development rights, engage with the ACT Government to implement and publicly report on a monitoring and evaluation framework to demonstrate actual additional development caused by policy changes (for example actual increase in additional RZ1 dwellings, and RZ1 and RZ2 development uplift). These reports must include measures of additional dwellings created, their location and scale, and be reported at least annually as part of the ACT Land and Property Report released by EPSDD.

11.0 Resources

11.1 Bibliography

ACT CMTEDD. "CMTEDD FOI 2023-354: Documents on Missing Middle Canberra Campaign, Including Plans.," December 1, 2023. https://www.cmtedd.act.gov.au/__data/assets/pdf_file/0008/2336786/2023-354.pdf.

ACT EPSDD. "EPSDD FOI 23/110921: RZ1 Reform, Upzoning and Territory Plan Changes." Environment, Planning and Sustainable Development Directorate, December 11, 2023. https://www.environment.act.gov.au/about-us/access-government-information/disclosure-log/disclosure-logs/epsdd-23110921.

ACT Government. "ACT Housing Strategy," October 2018. https://www.act.gov.au/__data/assets/pdf_file/0004/1265638/ACT-Housing-Strategy-2018.pdf.

———. "ACT Planning Strategy 2018." Strategic Plan. Environment, Planning and Sustainable Development Directorate, 2018. https://www.planning.act.gov.au/__data/assets/pdf_file/0007/1285972/2018-ACT-Planning-Strategy.pdf.

———. "ACT Planning System Review and Reform: Development Controls." ACT Planning System Review and Reform, November 2020. https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.act-yoursay.files/9016/0644/3593/Planning_System_Review_Paper3.pdf.

———. "Budget Paper No. 3, ACT Budget 2011-12," May 3, 2011.

———. "District Strategies 2023: Volume Four, Background Material," September 11, 2023. https://www.planning.act.gov.au/__data/assets/pdf_file/0020/2280800/district-strategies-2023-volume-4-background-material.pdf.

———. "District Strategies 2023: Volume One, Metropolitan Context and Big Drivers," September 11, 2023. https://www.planning.act.gov.au/__data/assets/pdf_file/0005/2280794/district-strategies-2023-volume-1-metropolitan-context-and-big-drivers.pdf.

———. "District Strategies 2023: Volume Three, Indicative Implementation Plan," 2023. https://www.planning.act.gov.au/__data/assets/pdf_file/0010/2324692/district-strategies-2023-volume-3-implementation.pdf.

———. Territory Plan 2023: Part F Other Policies F1-Subdivision Policy, NI2023-540 § (n.d.). https://www.legislation.act.gov.au/DownloadFile/ni/2023-540/copy/162689/PDF/2023-540.PDF.

———. Territory Plan 2023: Part F Other Policies F2-Leasing Policy, NI2023-540 § (2023). https://www.legislation.act.gov.au/DownloadFile/ni/2023-540/copy/162690/PDF/2023-540.PDF.

———. Territory Plan 2023: Part C Planning and Strategic Links, NI2023 § (2023). https://www.legislation.act.gov.au/DownloadFile/ni/2023-540/copy/162671/PDF/2023-540.PDF.

ACT Greens. "Our Vision for Canberra's Future: ACT Greens Planning Policy." The ACT Greens (blog), August 24, 2023. https://greens.org.au/act/news/media-release/our-vision-canberras-future-act-greens-planning-policy.

ACT Labor Party. "ACT Labor Platform: 2023-24," July 22, 2023. https://www.actlabor.org.au/our-party/policy-platform/.

ACT Taxation Review Panel. "ACT Taxation Review," May 2012. https://www.treasury.act.gov.au/__data/assets/pdf_file/0004/423409/tax-review-may2012.pdf.

Anagol, Santosh, Fernando V. Ferreira, and Jonah M. Rexer. "Estimating the Economic Value of Zoning Reform." Working Paper. National Bureau of Economic Research, October 2021. https://doi.org/10.3386/w29440.

Andrew Barr (Chief Minister), Mick Gentleman (Minister for Planning and Land Management). "More Housing Supply for Canberra." Chief Minister, Treasury and Economic Development Directorate, September 11, 2023. https://www.cmtedd.act.gov.au/open_government/inform/act_government_media_releases/gentleman/2023/more-housing-supply-for-canberra.

Arundel, Jonathan, Melanie Lowe, Paula Hooper, Rebecca Roberts, Julianna Rozek, Carl Higgs, and Billie Giles-Corti. "Creating Liveable Cities in Australia." Report. Centre for Urban Research, October 12, 2017. Australia. https://apo.org.au/node/113921.

Bushnell, Ian. "Scrap Dual Occupancy Limits, MBA Will Tell Territory Plan Hearing." Riotact, December 7, 2023. https://the-riotact.com/scrap-dual-occupancy-limits-mba-will-tell-territory-plan-hearing/728703.

———. "Unlock the RZ1 Suburbs for Medium Density to Meet Housing Crisis, Says Master Builders ACT." Riotact, March 6, 2023. https://the-riotact.com/unlock-the-rz1-suburbs-for-medium-density-to-meet-housing-crisis-says-master-builders-act/641101.

Cain, Peter. "Canberra Liberals Label Barr's Zoning Changes an 'Unambitious Copy.'" Canberra Liberals (blog), September 11, 2023. https://www.elizabethlee.com.au/media/j9wpessy98djccteo6ej7c2lshdigl.

———. "Solve the Housing Crisis with Respectful Practical Infill, Says Cain." Riotact, December 29, 2023. https://the-riotact.com/solve-the-housing-crisis-with-respectful-practical-infill-says-cain/732282.

Fenwicke, Claire. "Three-Year Stamp Duty Exemption to Boost Take-up of Dual Occupancies on RZ1 Blocks." Riotact, October 27, 2023. https://the-riotact.com/three-year-stamp-duty-exemption-to-boost-take-up-of-dual-occupancies-on-rz1-blocks/715397.

Greater Canberra. "ACT Planning System Review and Reform Project: Submission on Draft Planning Bill 2022," June 15, 2022. https://www.greatercanberra.org/blog/our-submission-on-the-new-planning-bill#user-content-fnref-3.

———. "Greater Canberra 2022-23 ACT Budget Submission." Budget Submission, May 2022. https://www.greatercanberra.org/blog/greater-canberra-2022-23-act-budget-submission.

———. "Media Release: New Territory Plan - One Half-Step Forward, Two Steps Back." Greater Canberra (blog). Accessed October 20, 2023. https://www.greatercanberra.org/blog/media-release-new-territory-plan-one-half-step-forward-two-steps-back.

Greenaway-McGrevy, Ryan, and James Jones. "Can Zoning Reform Change Urban Development Patterns? Evidence from Auckland." Working Paper. The University of Auckland Economic Policy Centre, September 2023. https://cdn.auckland.ac.nz/assets/business/about/our-research/research-institutes-and-centres/Economic-Policy-Centre--EPC-/012WP.pdf.

Gyourko, Joseph, and Raven Molloy. "Regulation and Housing Supply." Working Paper. Working Paper Series. National Bureau of Economic Research, October 2014. https://doi.org/10.3386/w20536.

HATCH | RobertsDay. "Estate Development Measures and Framework: ACT Planning System Review and Reform," February 2022. https://www.planning.act.gov.au/__data/assets/pdf_file/0012/1977078/Estate-Development-Measures-and-Framework-.pdf.

Hodyl & Co. "ACT Planning Reform - Delivering Best-Practice Urban Design Through Planning," November 2021. https://www.planning.act.gov.au/__data/assets/pdf_file/0010/1977085/delivering-best-practice-urban-design-through-planning-2021.pdf.

House of Representatives Standing Committee on Infrastructure, Transport and Cities. "Building Up & Moving Out: Inquiry into the Australian Government's Role in the Development of Cities." Inquiry Report, September 2018. Australia. https://www.aph.gov.au/Parliamentary_Business/Committees/House/Former_Committees/ITC/DevelopmentofCities/Report.

International Monetary Fund. "Australia: 2023 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Australia," January 18, 2024. https://www.imf.org/en/Publications/CR/Issues/2024/01/18/Australia-2023-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-543738.

Jafari, Afshin, Dhirendra Singh, and Billie Giles-Corti. "Residential Density and 20-Minute Neighbourhoods: A Multi-Neighbourhood Destination Location Optimisation Approach." Health & Place 83 (September 1, 2023): 103070. https://doi.org/10.1016/j.healthplace.2023.103070.

Kendall, Ross, and Peter Tulip. "The Effect of Zoning on Housing Prices." RBA Research Paper. Reserve Bank of Australia, March 2018. Australia. https://www.rba.gov.au/publications/rdp/2018/2018-03/full.html.

King (Minister for Infrastructure, Transport, Regional Development and Local Government), C. "Bradfield Oration," December 6, 2022. https://www.pm.gov.au/media/bradfield-oration.

Lindell, Jasper. "Dual Occupancy Rules to Expand across Larger RZ1 Canberra Blocks," September 11, 2023. https://www.canberratimes.com.au/story/8342346/dual-occupancy-rules-to-expand-across-larger-rz1-canberra-blocks/.

———. "See How Your Street Could Change with New RZ1 Dual Occupancy Rules." The Canberra Times, September 17, 2023. https://www.canberratimes.com.au/story/8352012/see-how-your-street-could-change-with-new-rz1-dual-occupancy-rules/.

Manville, Michael, Paavo Monkkonen, and Michael Lens. "It's Time to End Single-Family Zoning." Journal of the American Planning Association 86, no. 1 (January 2, 2020): 106–12. https://doi.org/10.1080/01944363.2019.1651216.

"Motion: Planning-RZ1 Changes." Debates of the Legislative Assembly for the ACT, Daily Hansard, November 29, 2023, 4005–17.

Murray, Cameron. "The Auckland Myth: There Is No Evidence That Upzoning Increased Housing Construction." Fresh Economic Thinking (blog), June 4, 2023. https://www.fresheconomicthinking.com/p/the-auckland-myth-there-is-no-evidence.

Murray, Cameron K. "The Australian Housing Supply Myth." Australian Planner 57, no. 1 (January 2, 2021): 1–12. https://doi.org/10.1080/07293682.2021.1920991.

OECD Centre for Entrepreneurship, SMEs, Regions and Cities. "OECD Principles on Urban Policy." OECD, 2019. https://www.oecd.org/cfe/Brochure-OECD-Principles-Urban-Policy.pdf.

O'Toole, Randal. "The Myth of the Compact City. Why Compact Development Is Not the Way to Reduce Carbon Dioxide Emissions." Policy Analysis. Cato Institute, November 18, 2009. http://americandreamcoalition.org/2013PAD/Randal%20Toole/pa653compactcities.pdf.

Phibbs, Peter, and Nicole Gurran. "The Role and Significance of Planning in the Determination of House Prices in Australia: Recent Policy Debates." Environment and Planning A: Economy and Space 53 (January 21, 2021): 0308518X2198894. https://doi.org/10.1177/0308518X21988942.

Productivity Commission. "5-Year Productivity Inquiry: Advancing Prosperity." Productivity Commission, March 17, 2023. https://www.pc.gov.au/inquiries/completed/productivity/report/productivity-advancing-prosperity-all-volumes.pdf.

———. "Realising the Productive Potential of Land, Shifting the Dial: 5 Year Productivity Review Supporting Paper." Inquiry Supporting Paper. Productivity Commission, August 3, 2017. https://www.pc.gov.au/inquiries/completed/productivity-review/report/productivity-review-supporting10.pdf.

Randolph, Bill. "Delivering the Compact City in Australia: Current Trends and Future Implications." Urban Policy and Research 24, no. 4 (December 2006): 473–90. https://doi.org/10.1080/08111140601035259.

Stanhope, Jon, and Khalid Ahmed. "Barr's 'abject Failure' to Meet Land-Supply Targets." Canberra CityNews, December 12, 2023, sec. Political Commentary. https://citynews.com.au/2023/barrs-abject-failure-to-meet-land-supply-targets/.

Tulip, Peter. "Misunderstandings about Planning Restrictions." Centre for Independent Studies, December 2021. http://petertulip.com/misunderstandings.pdf.

11.2 Data

Data quality issues are discussed in *Annex 1: Information quality statement* (page 95).

11.2.1.1 Demographics

ABS, Australian Historical Population Statistics, 2019.

ABS, Census, 1912 to 2021.

ABS, Population estimates by age and sex, by Statistical Area Level 2 (ASGS2021), 2001 to 2021.

ACT Treasury, Latest ACT Population Projections, 2022.

Australian Government (Centre for Population), Budget 2023-24: population projections, states and territories, 2022-23 to 2026-27, May 2023.

https://population.gov.au/sites/population.gov.au/files/2023-05/budget_2023-24_state_and_territory_1.xlsx

Australian Government (Centre for Population), Capital city and rest-of-state projections, 2021-22 to 2032-33, 6 Jan 2023.

Australian Government (The Treasury), 2023 Intergenerational Report, 24 August 2023.

ABS, Data by Region, various components

ABS, Estimated Dwelling Stock, June Quarter 2022, October 31, 2022

ABS, Housing Occupancy and Costs, 2017-18, July 17, 2019.

ABS, National, state and territory population, December 2022.

11.2.1.2 Other

ACT Government, ACT Land and Property Report: An analysis of land and property indicators in the ACT, September Quarter 2017 to December 2022 half yearly report.

Australian Bureau of Statistics. "Data by Region Methodology, 2011-23," November 22, 2023. https://www.abs.gov.au/methodologies/data-region-methodology/2011-23.

Demographia. "Demographia World Urban Areas." Annual Update, August 31, 2023. http://demographia.com/db-worldua.pdf.

11.3 Geospatial

The primary sources used for the analysis are drawn from the ACT Geospatial Catalogue, https://actmapi-actgov.opendata.arcgis.com/, and include:

- Blocks Current
- Address
- Unit
- Major boundaries (District, Division, Section)
- Transitions
- Building Footprints

The datasets relied upon were last extracted on 27 November:

Purdon owned geocoded and spatial files used in the analysis include:

- Surrendered blocks based on the Affected Residential Premises Register, Affected Residential Premises Register - Loose Fill Asbestos Coordination (act.gov.au)
- Point vectors for ACT town centre, group centres, town centres and 'business and industrial' districts.

Annex 1: Information quality statement

11.3.1.1 Availability of relevant information

Information available and used are spelled out in the Resources section and in footnotes through the report. Information not readily available for this project has included:

- Reliable and linked publicly available data that sets out dwelling counts on ACT land data.
- Spatial and commercial block level details that impact development feasibility (for example unimproved values, slope, existing development, street frontages).
- Formal concordance between ACT and ABS geographic definitions.
- Published and peer reviewed research on the ACT zoning system, and reform to that system.

The primary sources used for the spatial analysis of land are drawn from the ACT Geospatial Catalogue, and include the files:

- Blocks
- Address
- Unit
- Major boundaries (District, Division, Section)
- Transition
- Building Footprints

These data sources are dynamic, and change daily. Our observation of the underlying data is that they also change differentially, that is, the updates are not aligned so different datasets may not be comparable day-to-day.

Our work has not accounted for the status of blocks (registered, approved, proposed). The primary file is the 'Current' block file.

The analysis in this report is static, records from a single point in time. The last update to the data in our model was 27 November 2023. This may mean repeating the analyses with a more recent update will result in different outcomes.

Availability challenges mean the project could not deal with all feasible issues for the policy change suggested. It also leads to the need for certain assumptions being made in modelling, which are discussed in relevant sections.

11.3.1.2 The quality of available information

The information available, and used, is generally high quality, however there are limitations that must be considered, including:

- Anomalies in the geospatial data which we cannot reconcile that may impact the reliability of the numbers used in the modelling.
- Where surveys, and to some extent census, data are used the ACT has relatively high sampling errors, and small samples which may be excluded from reporting or 're-sampled' at source. We can only rely on what is published.

- There are gaps in geographical links for the analyses we have performed linking unit records (blocks) to suburbs/districts, and then to districts. In addition to further 'small scale' issues, these challenges mean there are several metrics which do not apply across all ACT locations.

Some of this is dealt with through data cleansing, but ultimately, the reported results are conditional in these quality constraints.

11.3.1.3 Data cleanse

To generate 'clean' data for analysis several adjustments have been made to source files.

The first step in our cleanse is separating blocks with a large 'well-known text' (wkt) geometry coding. These blocks are part of the ACT land structure, they are not relevant to the analysis as they are out of zone, and the records cause data storage issues.

Of the remaining 'normal' urban wkt, additional cleansing involved:

- Matching unit titles to BLOCKS
- Matching addresses to BLOCKS
- Matching cleansed surrendered blocks data to BLOCKS
- Matching cleansed building footprint data to cleansed BLOCKS
- Creating analytical stratum of block sizes, corner blocks and determining the most likely current use of the land based on the spatial record.
- Filtering records to identify corner blocks, and counts of addresses and block keys, to nuance the definitions of the land in use (eg detached, unit titled, dual occupancy, corner block)
- Updating location fields to accommodate the new Territory Plan, and link to ABS geographies.
- Creating additional analytical coding keys to measure the change in block allocation from the reforms.

ACT geospatial records can reasonably be linked using 'block keys' or a combination of fields that define the 'district, division, section and block' for a land parcel. To understand anomalies in the different data sets we have compared block key counts to identify unique counts and their combinations within different files.

In an ideal world, cleansed data ought to lead to a single conclusion around the scale and scope of land use, however they do not. For example Data in the Transition file, measures:

> *... a subset of and derived from ACTGOV BLOCK dataset with TRANSITION_FLAG equals 1. This flag indicating whether the Block is a head lease (transition block). That is, the block has been created in order to be further subdivided for development purposes, is not intended to have a permanent status, has special planning significance and indicates the transition from Territory Land to private leasehold.*[103]

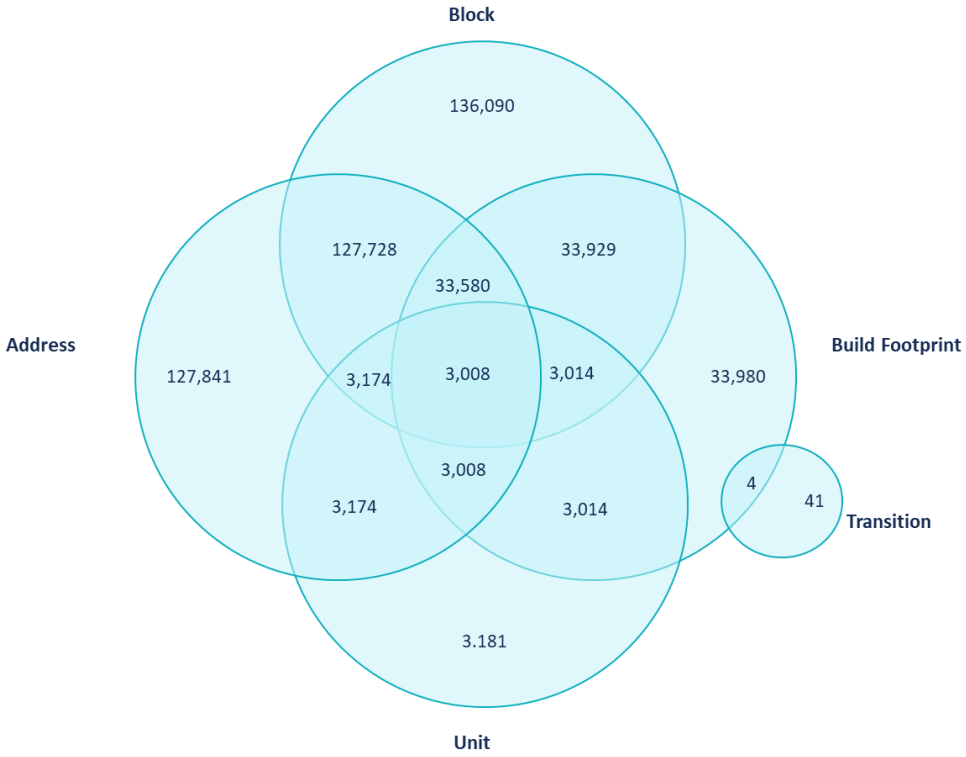
[103] ACT Government, ACTGOV TRANSITION BLOCK, https://actmapi-actgov.opendata.arcgis.com/datasets/ACTGOV::actgov-transition-block/about

In addition, data in the BLOCK file includes an overlay for 'Future Urban Area'. The Territory Planning Authorly refers to these as:

> *A future urban area is land that will be developed in the future to make room for growth. This usually makes space for a growing population, like creating a new suburb. These areas are chosen using spatial planning and structure planning.*[104]

However, when linked, land in these files are not mutually exclusive data, which complicates assessing what is already in-scope for development, and that should be excluded from our analysis. For example, blocks can be identified as FUA in the BLOCK file, and be covered by polygons in the Transition file, but the linking fields (block key, block, section, mkt) cannot be matched automatically.

To understand the quality challenge the following Venn diagram illustrates how many records are related in each of the files, based on a count of matched blockkeys.



Note: Excludes old TP Districts Stromlo, Coree, Cotter River, Mount Clear, Kowen, Rendezvous Creek, Paddy's River, Tennent, and Booth. Also excludes Sections in the selection that are zero or blank.

Unfortunately, we cannot say with confidence our estimate of units in unit plans, implied dwellings (count of addresses), land subject to existing development expectations (FUA and transition), or land use in practice are reliable based on the gaps between the files. A sample size exceeding 1232,000 in the RZ1-3 file is reasonable, and analysing the aggregated results at the district level should resolve some of the small-scale issues.

Where any adjustments to information, or assumptions to improve quality, have been made, these are discussed in the context of where the information is used.

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[104] ACT Government (EPSDD), Land release, https://www.planning.act.gov.au/professionals/land-release-sales/land-release#:~:text=Future%20urban%20areas,Territory%20Plan%20maps

11.3.1.4 The comparability of available and quality information

Even where information is available, and is of sufficient quality to utilise with cleansing, the methods used at source to generate the information may be different compromising the ability to combine sources to draw reliable conclusions.

For this project, the two major comparability issues include:

- Generally very little ACT specific research. When comparing outcomes from other areas, domestic or international, we need to draw inferences that may not in fact be relevant to the ACT. We have tried to control for this by specifying inferences are assumptions, or we have dropped analysis which confirms the logic but may not be relevant in an ACT context.
- Geographic boundaries are set under different frameworks, and we have had to make concordance assumptions to link blocks to suburbs, and then blocks and suburbs to ABS statistical geography.

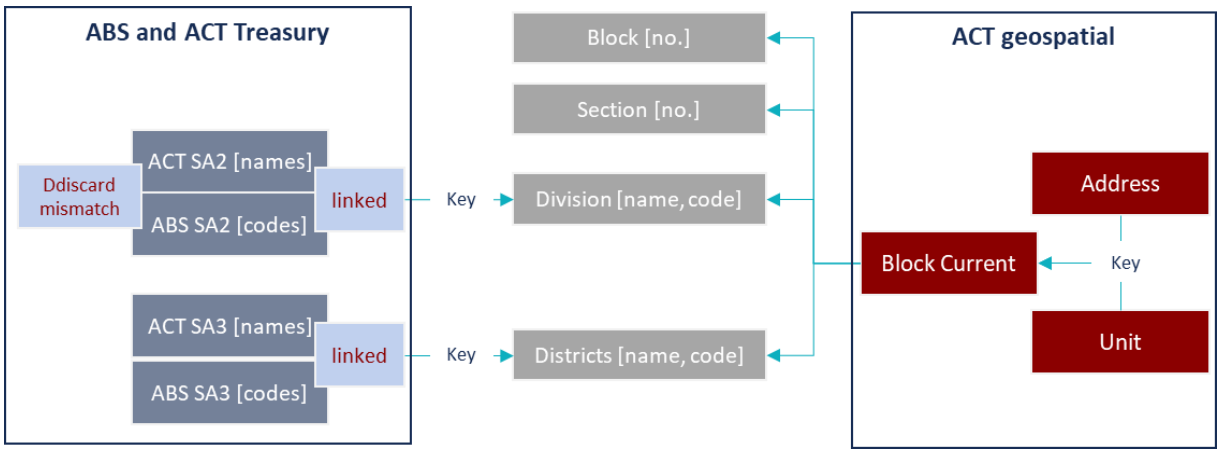
Where any adjustments to information, or assumptions to improve quality, have been made, these are discussed in the context the information is used.

11.3.1.4.1 Geography exclusion and inclusion

The ACT, like most jurisdictions, contains several 'geographies'. ACT government planning data is available at a 'block and section' (blocks), 'division' and 'district' level which are defined and controlled by the ACT.

Many commentators, including the ACT Government, also use ABS concepts, in particular 'statistical areas' (SA), which gradually increase in scale from mesh blocks, through to SA 1 to 4. There is no official concordance to link these geographies. This impacts how the information is organised and reported.

This project has aimed to develop analytics from the lowest geography feasible (blocks), aggregated at approximately SA2—roughly comparable to suburbs or 'divisions'. A visualisation of the concordance we have developed is set out below.



The challenge of geography is the reconciliation of lower level (block, SA2 and Division) and higher level (SA3 and districts).

The clearest expression of this challenge is set out in Table 25. Using ABS coding, there are 130 unique SA2 locations (count of 137 to accommodate extra reporting from other sources), of which the ACT Government population forecasts report 126 results, and to which 119 districts can be matched from the ACT block files. Within a sample of 137 records, there are 33

independently different records. We were able to match all ABS SA3 and new TP Districts, albeit noting they have slightly different actual shapes in the different geographies.

The project has controlled for geography challenges by:

- Assessing as much about land as possible at a block scale, with block records adjusted to include ABS geography information.
- Doing localised analysis only where there is alignment between SA2, ACT SA2 forecasts and cadastral divisions.
- Uplifting localised analysis to a district or SA3 level where there is too little comparability at a block scale.

This is a challenge for any analyst, and until there is alignment between the records it will not be possible to accurately determine the localised impacts of any policy reforms that combine the ACT and ABS sources.

Table 25: Geography reconciliation

Lower layer			**Higher level**	
ABS SA 2 (2021)	*ACT Population Forecast SA2*	*Division*	*ABS SA3 (2021)*	*District (new TP)*
Acton	Acton	Acton	North Canberra	Inner North and City
Ainslie	Ainslie	Ainslie	North Canberra	Inner North and City
Amaroo	Amaroo	Amaroo	Gungahlin	Gungahlin
Aranda	Aranda	Aranda	Belconnen	Belconnen
Arboretum	Arboretum		Molonglo	Molonglo Valley
Banks	Banks	Banks	Tuggeranong	Tuggeranong
Barton	Barton	Barton	South Canberra	Inner South
Belconnen	Belconnen	Belconnen	Belconnen	Belconnen
Black Mountain	Black Mountain		North Canberra	Inner North and City
Bonner	Bonner	Bonner	Gungahlin	Gungahlin
Bonython	Bonython	Bonython	Tuggeranong	Tuggeranong
Braddon	Braddon	Braddon	North Canberra	Inner North and City
Bruce	Bruce	Bruce	Belconnen	Belconnen
Calwell	Calwell	Calwell	Tuggeranong	Tuggeranong
Campbell	Campbell	Campbell	North Canberra	Inner North and City
Canberra Airport		Canberra Airport	Canberra East	East Canberra
Canberra Airport	Canberra East (incl Airport)		Canberra East	East Canberra
Canberra East		Symonston	Canberra East	East Canberra
Canberra East		Beard	Canberra East	East Canberra
Canberra East		Oaks Estate	Canberra East	East Canberra
Casey	Casey	Casey	Gungahlin	Gungahlin
Chapman	Chapman	Chapman	Weston Creek	Weston Creek
Charnwood	Charnwood	Charnwood	Belconnen	Belconnen
Chifley	Chifley	Chifley	Woden Valley	Woden
Chisholm	Chisholm	Chisholm	Tuggeranong	Tuggeranong
Civic	Civic	City	North Canberra	Inner North and City

Lower layer			Higher level	
ABS SA 2 (2021)	*ACT Population Forecast SA2*	*Division*	*ABS SA3 (2021)*	*District (new TP)*
Conder	Conder	Conder	Tuggeranong	Tuggeranong
Cook	Cook	Cook	Belconnen	Belconnen
Coombs	Coombs	Coombs	Molonglo	Molonglo Valley
Crace	Crace	Crace	Gungahlin	Gungahlin
Curtin	Curtin	Curtin	Woden Valley	Woden
Deakin	Deakin	Deakin	South Canberra	Inner South
Denman Prospect	Denman Prospect	Denman Prospect	Molonglo	Molonglo Valley
Dickson	Dickson	Dickson	North Canberra	Inner North and City
Downer	Downer	Downer	North Canberra	Inner North and City
Duffy	Duffy	Duffy	Weston Creek	Weston Creek
Dunlop	Dunlop	Dunlop	Belconnen	Belconnen
Duntroon	Duntroon		North Canberra	Inner North and City
Evatt	Evatt	Evatt	Belconnen	Belconnen
Fadden	Fadden	Fadden	Tuggeranong	Tuggeranong
Farrer	Farrer	Farrer	Woden Valley	Woden
Fisher	Fisher	Fisher	Weston Creek	Weston Creek
Florey	Florey	Florey	Belconnen	Belconnen
Flynn (ACT)	Flynn (ACT)	Flynn	Belconnen	Belconnen
Forde	Forde	Forde	Gungahlin	Gungahlin
Forrest	Forrest	Forrest	South Canberra	Inner South
Franklin	Franklin	Franklin	Gungahlin	Gungahlin
Fraser	Fraser	Fraser	Belconnen	Belconnen
Fyshwick	Fyshwick	Fyshwick	South Canberra	Inner South
Garran	Garran	Garran	Woden Valley	Woden
Gilmore	Gilmore	Gilmore	Tuggeranong	Tuggeranong
Giralang	Giralang	Giralang	Belconnen	Belconnen
Gooromon	Gooromon		Belconnen	Belconnen
Gordon (ACT)	Gordon (ACT)	Gordon	Tuggeranong	Tuggeranong
Gowrie (ACT)	Gowrie (ACT)	Gowrie	Tuggeranong	Tuggeranong
Greenway	Greenway	Greenway	Tuggeranong	Tuggeranong
Griffith (ACT)	Griffith (ACT)	Griffith	South Canberra	Inner South
Gungahlin	Gungahlin	Gungahlin	Gungahlin	Gungahlin
Gungahlin-East	Gungahlin-East		Gungahlin	Gungahlin
Gungahlin-West	Gungahlin-West		Gungahlin	Gungahlin
Hackett	Hackett	Hackett	North Canberra	Inner North and City
Hall	Hall	Hall	Gungahlin	Gungahlin
Harrison	Harrison	Harrison	Gungahlin	Gungahlin
Hawker	Hawker	Hawker	Belconnen	Belconnen
Higgins	Higgins	Higgins	Belconnen	Belconnen
Holder	Holder	Holder	Weston Creek	Weston Creek
Holt	Holt	Holt	Belconnen	Belconnen

Lower layer			Higher level	
ABS SA 2 (2021)	*ACT Population Forecast SA2*	*Division*	*ABS SA3 (2021)*	*District (new TP)*
Hughes	Hughes	Hughes	Woden Valley	Woden
Hume	Hume	Hume	Canberra East	East Canberra
Isaacs	Isaacs	Isaacs	Woden Valley	Woden
Isabella Plains	Isabella Plains	Isabella Plains	Tuggeranong	Tuggeranong
Jacka	Jacka	Jacka	Gungahlin	Gungahlin
Kaleen	Kaleen	Kaleen	Belconnen	Belconnen
Kambah	Kambah	Kambah	Tuggeranong	Tuggeranong
Kenny	Kenny	Kenny	Gungahlin	Gungahlin
Kingston (ACT)	Kingston (ACT)	Kingston	South Canberra	Inner South
Lake Burley Griffin	Lake Burley Griffin		South Canberra	Inner South
Latham	Latham	Latham	Belconnen	Belconnen
Lawson	Lawson	Lawson	Belconnen	Belconnen
Lyneham	Lyneham	Lyneham	North Canberra	Inner North and City
Lyons (ACT)	Lyons (ACT)	Lyons	Woden Valley	Woden
Macarthur	Macarthur	Macarthur	Tuggeranong	Tuggeranong
Macgregor (ACT)	Macgregor (ACT)	Macgregor	Belconnen	Belconnen
Macnamara		Macnamara	Belconnen	Belconnen
Macquarie	Macquarie	Macquarie	Belconnen	Belconnen
Majura	Majura	Pialligo	Canberra East	East Canberra
Mawson	Mawson	Mawson	Woden Valley	Woden
McKellar	McKellar	McKellar	Belconnen	Belconnen
Melba	Melba	Melba	Belconnen	Belconnen
Mitchell	Mitchell	Mitchell	Gungahlin	Gungahlin
Molonglo	Molonglo	Molonglo	Molonglo	Molonglo Valley
Molonglo-East			Molonglo	Molonglo Valley
Molonglo Corridor	Molonglo Corridor		Belconnen	Belconnen
Monash	Monash	Monash	Tuggeranong	Tuggeranong
Moncrieff	Moncrieff	Moncrieff	Gungahlin	Gungahlin
Narrabundah	Narrabundah	Narrabundah	South Canberra	Inner South
Ngunnawal	Ngunnawal	Ngunnawal	Gungahlin	Gungahlin
Nicholls	Nicholls	Nicholls	Gungahlin	Gungahlin
O'Connor (ACT)	O'Connor (ACT)	O'Connor	North Canberra	Inner North and City
O'Malley	O'Malley	O'Malley	Woden Valley	Woden
Oxley (ACT)	Oxley (ACT)	Oxley	Tuggeranong	Tuggeranong
Page	Page	Page	Belconnen	Belconnen
Palmerston	Palmerston	Palmerston	Gungahlin	Gungahlin
Parkes (ACT)-North		Parkes	North Canberra	Inner North and City
Parkes (ACT)-North	Parkes (ACT)-North		North Canberra	Inner North and City
Parkes (ACT)-South		Capital Hill	South Canberra	Inner South
Parkes (ACT)-South	Parkes (ACT)-South		South Canberra	Inner South
Pearce	Pearce	Pearce	Woden Valley	Woden

Lower layer			Higher level	
ABS SA 2 (2021)	*ACT Population Forecast SA2*	*Division*	*ABS SA3 (2021)*	*District (new TP)*
Phillip	Phillip	Phillip	Woden Valley	Woden
Red Hill (ACT)	Red Hill (ACT)	Red Hill	South Canberra	Inner South
Reid	Reid	Reid	North Canberra	Inner North and City
Richardson	Richardson	Richardson	Tuggeranong	Tuggeranong
Rivett	Rivett	Rivett	Weston Creek	Weston Creek
Russell	Russell	Russell	North Canberra	Inner North and City
Scrivener	Scrivener		Weston Creek	Weston Creek
Scullin	Scullin	Scullin	Belconnen	Belconnen
Spence	Spence	Spence	Belconnen	Belconnen
Stirling	Stirling	Stirling	Weston Creek	Weston Creek
Strathnairn		Strathnairn	Belconnen	Belconnen
Taylor	Taylor	Taylor	Gungahlin	Gungahlin
Theodore	Theodore	Theodore	Tuggeranong	Tuggeranong
Throsby	Throsby	Throsby	Gungahlin	Gungahlin
Torrens	Torrens	Torrens	Woden Valley	Woden
Tuggeranong	Tuggeranong		Tuggeranong	Tuggeranong
Tuggeranong-West	Tuggeranong-West		Tuggeranong	Tuggeranong
Turner	Turner	Turner	North Canberra	Inner North and City
Wanniassa	Wanniassa	Wanniassa	Tuggeranong	Tuggeranong
Waramanga	Waramanga	Waramanga	Weston Creek	Weston Creek
Watson	Watson	Watson	North Canberra	Inner North and City
Weetangera	Weetangera	Weetangera	Belconnen	Belconnen
West Belconnen	West Belconnen		Belconnen	Belconnen
Weston	Weston	Weston	Weston Creek	Weston Creek
Whitlam	Molonglo-North	Whitlam	Molonglo	Molonglo Valley
Wright	Wright	Wright	Molonglo	Molonglo Valley
Yarralumla	Yarralumla	Yarralumla	South Canberra	Inner South

Source : Purdon analysais of ACT Gouvernement geospatial catalogue files, and ABS, Australian Statistical Geography Standard (ASGS), edition 3.

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Warranty

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