



AINSLIE PRECINCT – URBAN PLANNING REPORT

URBAN RENEWAL

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EXECUTIVE SUMMARY

Purpose

This report has been prepared by Purdon Planning as preliminary planning advice on the opportunities and constraints associated with possible redevelopment of a series of properties managed by Housing ACT.

As part of the ACT Government's Growing and Renewing Public Housing 2019-2024 program, Urban Renewal within the Environment, Planning and Sustainable Development Directorate (EPSDD) is undertaking early planning and due diligence investigations for a number of Housing ACT's multi-unit properties (MUPS) with high concentrations of public housing, and/ or strategically located sites across the Territory.

The primary focus of the study is to understand the possible development potential of the five sites, including information on the infrastructure requirements to accommodate an increase in units and the impact of increased traffic numbers on the road network. The assessment of sites is to be undertaken in the context of a broader analysis of the local area considering neighbourhood character, movement corridors, open space provision, public realm including street trees heritage significance and nearby services and facilities. This study considers five sites located within the inner north suburbs of Ainslie, Braddon and Reid.

The Sites

The five sites the subject of this report are:

- **Ainslie Flats** (Block 22 Section 14 Ainslie) bounded by Hayley, Quick and Chisholm Streets and Howe Crescent. Two storey units built in 1951 and refurbished as aged persons flats in 1980. Development comprises a total of 88 units, being 32 one bedroom units and 56 two bedroom units.
- **Reid Court** (Block 1 Section 10 Reid) bounded by Ainslie Avenue, Allambee, Elimatta and Gooreen Streets. Two storey units constructed in 1951 and converted into Aged Persons Flats in 1980. Development comprises a total of 48 units being 20 one bedroom and 28 two bedroom units.
- **Braddon Court** (Block 1 Section 55 Braddon) bounded by Ainslie Avenue, Batman, Elimatta and Gooreen Streets. Two storey units built in 1952. Development comprises 48 two-bedroom units.
- **Kanangra Court** (Block 1 Section 11 Reid) bounded by Ainslie and Limestone Avenues and Allambee and Gooreen Streets. Constructed in 1964 and comprising 78 units being 36 bed-sit units, 1 one bedroom unit and 41 two bedroom units in a series of buildings up to 4 storeys.
- **Jerilderie Court** (Block 1 Section 9 Reid) bounded by Ainslie Avenue, Allambee, Doonkuna and Elimatta Streets. Two storey units designed by Phillip Cox and built in 1978. Development comprises a total of 62 units being 18 one bedroom, 36 two bedroom and 8 three bedroom units.

The Precinct

Four of the five sites that are the subject of this report are sited along Ainslie Avenue, a 'main approach route' under the National Capital Plan and are between 400m and 800m of the entry to the Canberra Centre in a straight line distance along Ainslie Avenue. The precinct is also between 850 - 1,050m from the dining and entertainment areas of Braddon. There are a range of community and recreation facilities within walking distance of the precinct.

The precinct approach is considered for four of the five sites, being the sites that front Ainslie Avenue. The Ainslie Flats site is considered separate from the sites along Ainslie Avenue, being physically separated but also being set within a different character of low density (RZ1) housing.

The Ainslie Avenue precinct is characterised by the strong landscape element within the median of Ainslie Avenue. The mature Atlas Cedar trees (*Cedrus atlantica*) dominate the landscape with Red Spotted Gum (*Eucalyptus mannifera maculosa*) along the verges. The median landscape character and the significant separation of buildings across Ainslie Avenue results in independent development on either side of Ainslie Avenue with no strong relationship across the Avenue.

Notwithstanding the strong landscape setting in the Ainslie Avenue road reserve and the generous setbacks from the road edge of the existing buildings, the built form still establishes a strong presence along each street.

The Ainslie Flats neighbourhood is characterised by large 1-2 storey detached dwellings. The existing development contrasts with the surrounding area being a series of large two-storey apartments with minimal landscaping forward of the building line. The plantings on the Ainslie flats site is dominated by intermittent mature trees with high canopies close to buildings plus a separate row of smaller street trees. This results in the Ainslie Flats being a more dominant built form along the street than other dwellings. A number of dwellings have either hedges or mature heavy landscaping along the street frontage.

Although the Ainslie Flats were the first development in the area and are likely to be an accepted development, the built form contrasts with the general character of the neighbourhood. The extensive lengths of buildings and the sparse landscaping contradicts the surrounding low density neighbourhood character.

Rationale

The 2018 ACT Planning Strategy identifies infill development, or urban renewal, as a key option to manage urban growth. To achieve this, specific urban intensification areas are identified in the Strategy where development can be focussed. These areas, much of which is near the city centre, are earmarked to increase the capacity of the existing urban areas. Achievement of infill development aligns with other social, environmental and economic policies of the ACT Government to achieve a carbon neutral future and greater housing choice.

The sites present an opportunity to assist in the implementation of the ACT Government's infill development policies through achieving a higher density than that existing on each site.

The rationale for higher density residential development and inclusion of some taller buildings is based on the potential of the sites to collectively achieve sustainable development outcomes integrating best practice social, environment and economic development goals to respond to changing demographic and housing trends within inner North Canberra.

While the sites are close to the city centre, it is considered that the separation from other retail and commercial activity leaves any potential commercial activity somewhat 'isolated' from other commercial activity resulting in customers/clients using cars to visit the commercial use and thereby increasing demand for parking in the area.

Character

The landscape setting in the Ainslie Avenue establishes a strong presence along this street. In a similar manner, the mature trees along Allambee and Batman Streets contributes to a distinct streetscape character creating a transition from the single detached dwellings to the higher density built form of each of the subject sites.

The wide verges along each street presents an opportunity for improvements to the public realm to 'tie' the sites and establish some consistency in the precinct at the human scale. The consistent mature street planting establishes the local character but this is viewed from a distance with the canopy of the trees covering the verges and defining the direct line of sight along the streets, rather than peripheral views into each site.

At the micro-level, if redevelopment of the sites proceeds, there is an opportunity to include improvements to the public realm through provisions to reconfigure the narrow footpaths to establish wider shared paths promoting off-road active travel together with low-level landscaping creating an under-storey to the mature trees and enhanced pedestrian experience. This low-level landscaping in the road verge could transition into landscaping within the sites.

Public housing has played a significant role in the social character of the local area. Each of the sites identified in this report are occupied by public housing tenants and have been since early development of these suburbs. In addition, the former Allawah Flats, Bega Flats and Currong Apartments that were located at the City-centre end of Ainslie Avenue, some 300-600m from the precinct, were also significant public housing complexes. Together all these unit development resulted in the majority of housing along Ainslie Avenue being allocated to public housing. The specific architectural design of each of the public housing complexes helped establish a design language of the whole Avenue. The current redevelopment activity on the former Allawah, Bega and Currong sites has resulted in a higher density of residential accommodation combined with some commercial development, consistent with the ACT Planning Strategy.

While this report has a focus on opportunities and constraints to redevelopment and identifying optimum yields, development form and planning outcome, it is appropriate to consider the potential to incorporate public housing within future redevelopment of the sites. Replacement of the current extent of public housing is not necessarily limited to replacement of the same number and unit type on each site as part of future redevelopment schemes. It is considered appropriate to consider the precinct as a whole and potentially increase public housing provision on one site and reduce public housing numbers on another site to achieve the most appropriate urban design, urban amenity and social outcome for the overall precinct.

The sites have been occupied as public housing complexes for 40-50 years and they, together with their residents, have been an integral part of the urban fabric and contribute to a socially inclusive Canberra. The sites sit within a neighbourhood of mixed tenure where the proportion of rental properties throughout Reid and Braddon are much higher than the ACT average (at the 2016 Census, 58% of properties in Reid and 68% in Braddon are rented, compared to 32% across the ACT).

Quality Outcomes

The primary objectives for urban renewal are to achieve quality design, sustainable development, improved public spaces and connections to local centres promoting active travel modes. These objectives can be best achieved through a mix of tenure where public housing is integrated with private ownership and are indistinguishable through the provision of diverse building and unit types.

On the basis that an overall precinct approach to planning is implemented, it would be appropriate that specific design controls are imposed on future development to achieve quality design outcomes.

The key principles that are considered relevant, include:

- Urban design
- Site Planning and Urban Design
- Site Permeability
- Landscape
- Movement
- Parking
- Pedestrians and Bicycles
- ESD Principles and Targets
- Public spaces
- Place planning

It is considered appropriate that a precinct-specific design guide be prepared as part of any future land release of these sites or that key design elements are incorporated into the Braddon and Reid Precinct Codes.

It is not intended that such specific area guidelines be used as a total control on the architectural outcome of each site, but to set a broad framework as to how the line of buildings along Ainslie Avenue can achieve a

consistent architectural language while allowing for further refinement of the architectural expression. This may include differentiation between building uses through form, expression and materiality.

Strategic Planning Context

The precinct is close to the City centre and is subject to a range of strategic planning policies of the ACT and Commonwealth Government, including:

- National Capital Plan (NCP)
- ACT Planning Strategy
- Statement of Planning Intent
- Statement of Strategic Directions
- EPBC Act
- Territory Plan

Key Challenges

Each of the five sites have distinct similarities in regard to the challenges needing to be addressed for any future redevelopment project. The key issues include:

- Existing character
- Landscape setting
- Built form
- Building heights
- Traffic
- Services
- Public spaces

In addition, part of the Ainslie Flats site is identified as being bushfire prone and the Jerilderie Court site, while not heritage listed has certain elements which may have some heritage importance. Future development on the Kanangra Court site may need to address traffic noise impacts on residential units fronting Limestone Avenue.

Opportunities – Ainslie Flats site

The current RZ1 zoning allows for a range of residential-type land uses, however, the uses considered most relevant for this site are as follows:

- multi-unit housing
- residential care accommodation
- retirement village
- single dwelling housing
- supportive housing

It should be noted that the existing planning controls will allow a multi-unit residential development of an appropriate scale to be redeveloped on-site, without the need for a rezoning. It is also considered that were a rezoning process to be pursued for a greater density on-site, it may not achieve an appropriate outcome for the location and is likely to represent a considerable challenge.

It should also be noted that rezoning to an RZ2 zone would not achieve any different development outcome, including yield, than the current RZ1 zoning and associated planning controls. In addition, rezoning to RZ3 or RZ4 would not achieve increases in yield as the respective plot ratio limits would apply. Rezoning to RZ5 would achieve an increased yield, however, this is not considered a good outcome for the site.

Key Precinct Elements

The sites along Ainslie Avenue present the opportunity to consider redevelopment of each of the sites in a collective manner to achieve a quality urban design outcome through a precinct planning approach. While it would be possible to develop each site individually with no regard to other sites, the consideration of the

inter-relationship of the sites and future development options allows for a holistic design response that has a higher likelihood of achieving a high quality precinct.

The precinct approach would encourage a variety of built forms and independent development of each site but facilitate a consistent architectural and urban design language across all Ainslie Avenue sites. This can be achieved by introducing a range of additional planning controls into the Territory Plan that adopt the following key precinct principles:

- Building heights should vary across the sites
- Retain low scale development adjacent to existing residential dwellings.
- Enhanced provision for pedestrian and bicycle movement.
- Set a benchmark for sustainability and include a range of targets for future development projects

These key principles should be supported by the following detailed principles, as outlined in Section 20.1:

- Urban design
- Site Planning
- Site Permeability
- Landscape
- Movement
- Parking
- Pedestrians and Bicycles
- Sustainability Targets
- Public spaces

Potential Development Scenarios (Ainslie Avenue Sites)

Summary Potential Yields - Low Density Outcome

Based on current land zoning and Territory Plan Code limitations where height limits are a maximum of 3 storeys across the Ainslie Avenue sites and 2 storeys for the Ainslie flats site, together with plot ratio controls of 80% for the Ainslie Avenue sites and 65% for the Ainslie Flats site, it is likely that redevelopment across all sites would yield a total of around 405 units as shown in the table below:

Table A: Potential Yields – Low Density Outcome

Site	Current Zoning	Site Area (m ²)	Plot Ratio *	Possible GFA (m ²)	Likely Yield
Ainslie Flats	RZ1	19,553	65%	12,709	53
Reid Court	RZ4	9,272	80%	7,418	80
Braddon Court	RZ4	9,272	80%	7,418	80
Jerilderie Court	RZ4	9,290	80%	7,432	80
Kanangra Court	RZ4	12,773	80%	10,218	112
TOTAL		60,160		45,195	405

The above figures are based on compliance with current planning controls, retention of most regulated trees (through increased setbacks) and a ratio of 87% 2-bedroom units and 13% 3-bedroom units, with no 1-bedroom units. The resulting built form of the Ainslie Avenue sites provide 3-storey apartments fronting Ainslie Avenue aligned with the street geometry, with 2-storey townhouse/terraces fronting Allambee and Batman Streets along the interface with adjacent detached residential dwellings.

The Ainslie Flats site is proposed as a large townhouse development site with private courtyards and internal driveways and adjacent spaces as common property.

Under this scenario, replacement of all public housing units across the sites would represent about 80 percent of total achievable yield. However, if the primary objective is to upgrade all sites for increased provision of public housing, then this outcome represents a 25% increase from 324 to 405 public housing units.

Summary Potential Yields - Medium Density Outcome

An alternative development outcome is to retain the current zonings but introduce new provisions in the Precinct Codes that would remove the 80% plot ratio limits for the Ainslie Avenue sites and allow an increase of 1 storey in height, to 4-storeys, for that part of the sites fronting Ainslie Avenue. It is noted that most buildings on the Kanangra Court site are already 4-storeys and as such, this site could be redeveloped to 4-storeys without the need for any change in height controls. This is because the *Residential Zones Code* allows for redevelopment up to the level of existing buildings providing there are no additional adverse impacts to adjacent properties. This results in a built form outcome of a series of 3 and 4 storey apartments across each site.

The Ainslie Flats site is proposed as a 2-storey townhouse/terrace housing development but with a reduced site area per dwelling than the low density option described at Section 19.1.1 above.

This medium density outcome results in a total yield across all 5 sites of about 1,100 – 1,200 units. This would be achievable if the Ainslie Avenue sites were rezoned to RZ5 and the plot ratio limit for the RZ1 site (Ainslie Flats) did not apply.

Table B: Potential yields – Medium Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	18,000	64%	77
Reid Court	9,272	14,200	153%	182
Braddon Court	9,272	14,200	153%	182
Jerilderie Court	9,290	14,200	153%	182
Kanangra Court	12,773	19,700	154%	252
TOTAL	60,160	80,300		875

The above figures are based on a ratio of 35% x 1-bedroom units, 51% x 2-bedroom units and 14% x 3-bedroom units. Under this scenario, replacement of all 324 public housing units would represent about 37 percent of total achievable yield.

Summary Potential Yields - High Density Outcome

As outlined in Section 3.1.3, the Ainslie Avenue sites are within the urban intensification areas identified in the 2018 ACT Planning Strategy. As such, it is appropriate to consider opportunities for higher density development on each of these sites. Noting that the Ainslie Flats site is the only site not within the urban intensification area.

A rezoning to a Residential RZ5 zone with no plot ratio controls would enable development up to 6 storeys. However, the current RZ5 planning controls limit heights to 3-storeys where the part of the site is within 50m of a block within an RZ1 zone. The existing dwellings to the south across Allambee St in Reid are heritage listed (including the roads) as are the dwellings to the north-west of Braddon Court and therefore are unlikely to ever be rezoned for higher density development. In this regard the first 20m of the sites are limited to a height of 3 storeys.

The Ainslie Flats site is proposed as a high-density 2-storey townhouse/terrace housing development with a plot ratio slightly over the 'standard' 65% for RZ1 zones but noting that this plot ratio control does not apply to the Ainslie Flats site.

This high density outcome results in a total yield across all 5 sites of about 1,135 units.

Table C: Potential yields – High Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	13,080	67%	109
Reid Court	9,272	18,250	197%	234
Braddon Court	9,272	18,250	197%	234
Jerilderie Court	9,290	18,250	197%	234
Kanangra Court	12,773	25,300	198%	324
TOTAL	60,160	80,300		1,135

The above figures are based on a ratio of 35% x 1-bedroom units, 48% x 2-bedroom units and 18% x 3-bedroom units. Under this scenario, replacement of all public housing units would represent about 29 percent of total achievable yield.

Summary Potential Yields – Higher Density Outcome

A rezoning to a Commercial CZ5 zone allowing for even higher density development could also be considered to be consistent with the ACT Planning Strategy. A CZ5 zone generally involves no height limits and no plot ratio controls. However, any building taller than the RL617m height limit that applies across the City Centre would be unlikely to be supported by either the NCA or ACT Government. The Ainslie Avenue sites are between RL 570 (at Jerilderie Court) and RL 580 (at the Limestone Avenue frontage of Kanangra Court). This would potentially allow a building up to 37m on the Kanangra Court site, or possibly 11-12 storeys, allowing for the fall of the land or a building of up to 47m on the Jerilderie Court site, or possibly 14-15 storeys.

There is no logical urban planning outcome that would justify a building on the Jerilderie Court site that is taller than the buildings on other sites. As such, it is considered that a rezoning to CZ5 would result in a maximum height limit of 12 storeys for these sites. However, due to significant shadow impacts where a building taller than 6 storeys fronting Allambee St will shadow adjacent existing dwellings for much of the day during mid winter, it is considered that a 6-storey limit for those buildings adjacent to single dwellings would be more appropriate.

The Ainslie Flats site is proposed as a high-density 2-storey terrace housing development.

This higher density outcome results in a total yield across all 5 sites of about 2,173.

Table D: Potential yields – Higher Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	14,520	75%	121
Reid Court	9,272	36,500	393%	468
Braddon Court	9,272	36,500	393%	468
Jerilderie Court	9,290	36,500	393%	468
Kanangra Court	12,773	50,600	396%	648
TOTAL	60,160	174,620		2,173

The above figures are based on a ratio of 36% x 1-bedroom units, 50% x 2-bedroom units and 14% x 3-bedroom units. Under this scenario, replacement of all public housing units would represent about 15 percent of total achievable yield.

Preferred Outcome – Ainslie Avenue Sites

Assessment of the various options confirms that the preferred planning/urban design outcome for the sites along Ainslie Avenue is rezoning to achieve a high density residential outcome. This is based on an assessment of key attributes of the sites, considered in a collective manner, together with consideration of how redevelopment could achieve ACT Government planning strategies as well as the potential impacts to

surrounding residential areas and existing services. The assessment of 'pros and cons' for each option for the sites along Ainslie Avenue is detailed below and summarised in a matrix format at Table E. Assessment of the preferred outcome for the Ainslie Flats site is separately considered below.

Low Density Option:

This option is consistent with current Territory Plan requirements, based on the existing RZ4 zoning in relation to building height limits and key Code provisions. While redevelopment in accordance with current zoning would result in an acceptable urban outcome, the resulting low density is not considered the optimum outcome for sites so close to the city centre and within the urban intensification area identified under the ACT Planning Strategy.

Medium Density Option:

The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as currently applies, to 4 storeys. The current height limit of 3 storeys could be retained for that part of the sites facing existing residential areas. It is considered that redevelopment for a medium density yield would result in an acceptable urban outcome, however, similar to the low density option, the resulting density is not considered the optimum outcome for sites so close to the city centre and within the urban intensification area identified under the ACT Planning Strategy.

High Density Option:

This option represents a significant increase in density from that possible under the current Territory Plan. The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as currently applies, to 6 storeys. The current height limit of 3 storeys could be retained for that part of the sites facing existing residential areas.

It is considered that redevelopment for a high density yield would result in an acceptable urban outcome with the resulting density is considered to be the optimum outcome for these sites close to the city centre and within the urban intensification area identified under the ACT Planning Strategy.

Higher Density Option:

This option represents a significant increase in density from that possible under the current Territory Plan. The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as currently applies, to 10 storeys and 6 storeys for that part of the sites facing existing residential areas. This interface adjacent to single residential areas is a greater change (and impact) than that generally applied across the city where the Territory Plan requirements usually prescribe a 3 storey maximum interface with adjacent single storey residential dwellings.

It is considered that redevelopment for this higher density yield would not result in an acceptable urban outcome with the resulting density and building heights being too great an impact on surrounding existing residential dwellings.

Table E: Assessment of Density Options

Attribute	Low Density	Medium Density	High Density	Higher Density
Social Outcomes (% Public Housing)	Red	Yellow	Green	Green
ACT Planning Strategy	Yellow	Yellow	Green	Green
Compact/Walkable City	Yellow	Yellow	Green	Green
Neighbourhood Character	Green	Green	Green	Red
Desired character (Cohesive Precinct Outcome)	Red	Yellow	Green	Yellow
Return to Government (yield/economic)	Red	Yellow	Green	Green
Overshadowing Impact (adjacent)	Green	Green	Green	Red
Overshadowing Impact (internal)	Green	Green	Yellow	Red
Services capacity	Green	Yellow	Yellow	Yellow
Traffic capacity	Yellow	Yellow	Yellow	Red
Territory Plan Variation	Green	Yellow	Red	Red
Expected Community Support	Green	Yellow	Yellow	Red
Red = 0, Yellow = 1, Green =2	15	15	18	10

Preferred Outcome (Ainslie Flats Site)

It is considered that a rezoning to achieve a higher density and/or taller buildings is not appropriate for this site. The current RZ1 zoning allows for a range of residential-type land uses including residential dwellings (either as multi-unit housing or subdivided as detached dwellings or terrace houses) and retirement village and/or residential care accommodation. Further market research may be appropriate prior to pursuing the options associated with retirement village and/or residential care accommodation. The site is about 1½km from both the Canberra Centre and Ainslie local shops and is not near any significant community or recreation facilities.

A high quality low density multi-unit development is considered to be most appropriate. Although the RZ1 zone is intended predominantly for low density single dwelling housing, the redevelopment for multi-unit housing is possible. A low density option allowing for about 53 large townhouses each with private courtyards and surface level garages would retain most of the mature vegetation. Higher yields may be achievable while retaining the townhouse character of development, however, as density increases so does the need to remove existing regulated trees.

The low density townhouse option does not require any changes to the Territory Plan and is considered consistent with the surrounding residential character which comprises a mix of detached dwellings and low density town houses.

Implementation

To implement the preferred outcome of allowing for a higher density of units, potentially resulting in a yield of 1,135 units, it will be necessary to undertake a Territory Plan Variation. This should be undertaken in two forms, being:

1. Rezoning of the Ainslie Avenue sites to RZ5 – High Density Residential
2. Amendments to the Braddon and Reid Precinct Codes to introduce site specific planning controls.

The process for a rezoning (referred to as a Territory Plan Variation is outlined in Section 20.2 Section 20.1 below.

Proposed Planning Controls

The need for a Territory Plan variation provides an opportunity to ensure that key urban design, sustainability and planning principles are entrenched in the future redevelopment of the sites. The key principles are listed as follows:

- Site Planning
- Urban design
- Site Permeability
- Landscape & public spaces
- Movement
- Parking
- Pedestrians and Bicycles
- Energy Targets
- Water Targets
- Waste Management
- Land Targets
- WSUD
- Construction Materials Targets
- Transport Targets
- Passive Design Targets
- Adaptability Targets
- Community and Social Targets
- Natural Environment Targets

Conclusions and Recommendations

Preferred Outcome – Ainslie Avenue Sites

Assessment of the various options confirms that the preferred planning/urban design outcome for the sites along Ainslie Avenue is rezoning to achieve a high density residential outcome. This is based on an assessment of key attributes of the sites, considered in a collective manner, together with consideration of how redevelopment could achieve ACT Government planning strategies as well as the potential impacts to surrounding residential areas and existing services. The assessment of ‘pros and cons’ for each option for the sites along Ainslie Avenue is detailed below and summarised in a matrix format at Table E. Assessment of the preferred outcome for the Ainslie Flats site is separately considered below.

Preferred Outcome (Ainslie Flats Site)

A high quality low density multi-unit development is considered to be most appropriate. A low density option allows for about 53 large townhouses each with private courtyards and surface level garages would retain most of the mature vegetation. Higher yields may be achievable while retaining the townhouse character of development, however, as density increases so does the need to remove existing regulated trees.

The low density townhouse option does not require any changes to the Territory Plan and is considered to be consistent with the surrounding residential character which comprises a mix of detached dwellings and low density town houses.

To implement the preferred outcome of allowing for a higher density of units, potentially resulting in a yield of 1,135 units, it will be necessary to undertake a Territory Plan Variation for the 4 Ainslie Avenue sites. This should be undertaken in two forms, being:

1. Rezoning of the Ainslie Avenue sites to RZ5 – High Density Residential
2. Amendments to the Braddon and Reid Precinct Codes to introduce site specific planning controls.

The process for a rezoning (referred to as a Territory Plan Variation is outlined in Section 20.2 Section 20.1 below.

The need for a Territory Plan variation provides an opportunity to ensure that key urban design, sustainability and planning principles are entrenched in the future redevelopment of the sites.

Part 1: The Precinct

1.0 Introduction

1.1 Purpose

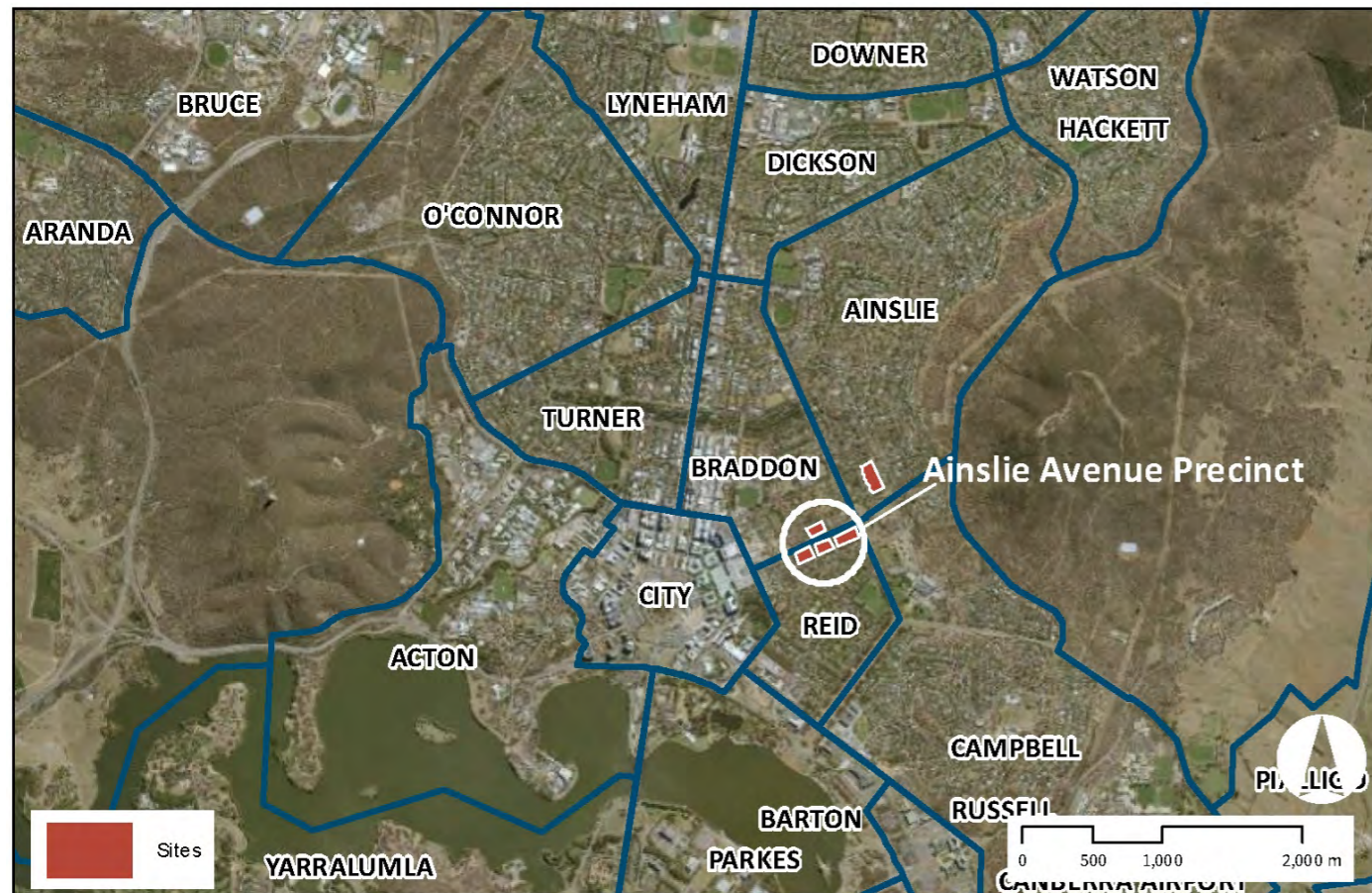
This report has been prepared by Purdon Planning as preliminary planning advice on the opportunities and constraints associated with possible redevelopment of a series of properties managed by Housing ACT.

The primary focus of the study is to understand the possible development potential of the five sites, including information on the infrastructure requirements to accommodate an increase in units and the impact of increased traffic numbers on the road network. The assessment of sites is to be undertaken in the context of a broader analysis of the local area considering neighbourhood character, movement corridors, open space provision, public realm including street trees, heritage significance and nearby services and facilities.

The Brief requires advice regarding the statutory planning context, likely development opportunities, constraints and development potential with consideration of future development achieving a place-based precinct outcome. This will inform decisions on potential future built form, such as building scale, heights, siting and setbacks.

Preparation of this advice has been based on publicly available information sources, consultant reports provided by the client and Purdon Planning assessment. There have not been any physical site inspections nor any contact with other government agencies, tenants or other parties about the subject sites.

Figure 1: Metropolitan Context



Source: Purdon Planning 2020 (aerial imagery – ACTmap 2018)

1.2 Background

As part of the ACT Government’s Growing and Renewing Public Housing 2019-2024 program, Urban Renewal within the Environment, Planning and Sustainable Development Directorate (EPSDD) is undertaking early planning and due diligence investigations for a number of Housing ACT’s multi-unit properties (MUPS) with high concentrations of public housing, and/ or strategically located sites across the Territory.

Preliminary desktop analysis investigations are required to determine the likely yield and costs associated with the development of the sites, while also considering high quality urban amenity and public space outcomes. This information will be used to carry out an analysis of the costs and benefits (Feasibility Study) which, together with other environmental planning and social considerations, will inform whether a change to the zoning for the sites should be pursued. Housing ACT has engaged a financial consultant to undertake a preliminary financial/viability analysis of potential development delivery models.

1.3 The sites

The five sites the subject of this report are:

- **Ainslie Flats** (Block 22 Section 14 Ainslie) bounded by Hayley, Quick and Chisholm Streets and Howe Crescent. Two storey units built in 1951 and refurbished as aged persons flats in 1980. Development comprises a total of 88 units, being 32 one bedroom units and 56 two bedroom units.
- **Reid Court** (Block 1 Section 10 Reid) bounded by Ainslie Avenue, Allambee, Elimatta and Gooreen Streets. Two storey units constructed in 1951 and converted into Aged Persons Flats in 1980. Development comprises a total of 48 units being 20 one bedroom and 28 two bedroom units.
- **Braddon Court** (Block 1 Section 55 Braddon) bounded by Ainslie Avenue, Batman, Elimatta and Gooreen Streets. Two storey units built in 1952. Development comprises 48 two-bedroom units.
- **Kanangra Court** (Block 1 Section 11 Reid) bounded by Ainslie and Limestone Avenues and Allambee and Gooreen Streets. Constructed in 1964 and comprising 78 units being 36 bed-sits, 1 x 1 bedroom unit and 41 two bedroom units in a series of buildings up to 4 storeys.
- **Jerilderie Court** (Block 1 Section 9 Reid) bounded by Ainslie Avenue, Allambee, Doonkuna and Elimatta Streets. Two storey units designed by Phillip Cox and built in 1978. Development comprises a total of 62 units being 18 one bedroom, 36 two bedroom and 8 three bedroom units.

Figure 2: Locality of the Sites



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

2.0 The Precinct

Four of the five sites that are the subject of this report are sited along Ainslie Avenue, a ‘main approach route’ under the National Capital Plan and are between 400m and 800m of the entry to the Canberra Centre in a straight line distance along Ainslie Avenue. The precinct is also between 850 - 1,050m from the dining and entertainment areas of Braddon.

There are a range of community and recreation facilities within walking distance of the precinct, including:

▪ Gorman House Arts Centre	100m	▪ Ainslie Arts Centre	550m
▪ Sulman/Gilchrist Gardens	200m	▪ Campbell High School	600m
▪ Reid Park / Reid Oval	250m	▪ O’Donnell Youth Centre	1,100m
▪ Ainslie Primary School	350m	▪ Merici College	1,300m
▪ Glebe Park	450m	▪ Mt Ainslie (summit)	1,500m

This area is identified in the 2018 ACT Planning Strategy as an area suitable for urban intensification. The sites along Ainslie Avenue are adjacent to each other divided by local streets and Ainslie Avenue. This presents the opportunity to consider redevelopment of each of the sites in a collective manner to achieve a quality urban design outcome through a precinct planning approach.

This approach enables consideration of the inter-relationship of the sites and future development options in the context of other current and likely development in the area (such as ‘The Foothills’ development on the former CSIRO site and ‘Founders Lane and ‘Metropol’ developments at the City Centre end of Ainslie Avenue, together with the Gorman House Arts Centre).

A holistic design response is desirable that contributes to:

- creation of high quality places and precinct development, taking a people-focussed and design-led approach
- building on the character of Ainslie Avenue through high-quality design
- application of social and environmental sustainability principles that underpin renewal.
- facilitation of private investment into the area

The precinct approach is considered for four of the five sites, being the sites that front Ainslie Avenue. The Ainslie Flats site is considered separate from the sites along Ainslie Avenue, being physically separated but also being set within a different character of low density (RZ1) housing. The neighbourhood setting of the Ainslie Flats site is described in detail in Section 2.1.1 below.

2.1 Existing Character

The Ainslie Avenue precinct is characterised by the strong landscape element within the median of Ainslie Avenue. The mature Atlas Cedar trees (*Cedrus atlantica*) dominate the landscape with Red Spotted Gum (*Eucalyptus mannifera maculosa*) along the verges. The median landscape character and the significant separation of buildings across Ainslie Avenue results in independent development on either side of Ainslie Avenue with no strong relationship across the Avenue.

The 2011 Leeson Heritage Assessment (refer Sections 6.2.2 and 5.2.2) states that the sites contribute to the streetscape by way of the architectural composition on the eastern and western sides of Ainslie Avenue. The Leeson report suggests this creates a point of interest along Ainslie Avenue and aligns with the NCA intent for symmetry and balance in design. However, it is notable that there is no point along Ainslie Avenue where the

consistency of design is noticeable and the 70+m separation of the developments results in each site being observed independently.

Notwithstanding the strong landscape setting in the Ainslie Avenue road reserve and the generous setbacks from the road edge of the existing buildings, the built form still establishes a strong presence along each street.

The basic architectural forms of the buildings mostly aligned with the street geometry and with no direct interaction of individual units to the public realm nor any defined front landscape spaces results in a very ‘inactive’ streetscape. Development on each site has been internalised resulting in any on-site activity by residents (e.g. use of open spaces, and movement between parking areas and private units) occurring in the central courtyards of each development with no strong relationship to the street. The deciduous trees (Oaks and Elms) along the side streets result in a stronger dominance of the existing buildings, with the angled buildings of Jerilderie Court and the 3-4-storey Kanangra Court buildings increasing the built environment over the landscape setting.

The public realm is characterised by narrow pedestrian paths across all frontages interspersed with minor public utility items (bus shelters, phone booths, electrical substations etc). The generous verges, which are mostly about 10m wide on each side of the road, allow for significant mature street trees plus significant separation between development on each of the sites and the adjacent single residential development. Allowing for typical building setbacks there is commonly a 40-45m separation between buildings on each of the sites and existing dwellings. In addition, many of the single dwellings have hedges along their front boundaries creating additional visual separation. As such, there is not a strong interaction between the existing development on each of the sites and the adjacent single dwelling areas.

Figure 3: The Ainslie Avenue Precinct



Source: Nearmaps (2020)

2.1.1 Ainslie Flats Neighbourhood

The Ainslie Flats neighbourhood is characterised by large 1-2 storey detached dwellings. The existing development contrasts with the surrounding area being a series of large two-storey apartments with minimal landscaping forward of the building line. The plantings on the Ainslie flats site is dominated by intermittent mature trees with high canopies close to buildings plus a separate row of smaller street trees. This results in the Ainslie Flats being a more dominant built form along the street than other dwellings. A number of dwellings have either hedges or mature heavy landscaping along the street frontage.

There are some multi-unit residential developments in the neighbourhood, but most are dual occupancy development or low-density 1-2 storey townhouses. As such, the Ainslie Flats present a development density and scale considerably higher than surrounding developments.

Although the Ainslie Flats were the first development in the area (refer Figure 4) and are likely to be an accepted development, the built form contrasts with the general character of the neighbourhood. The extensive lengths of buildings and the sparse landscaping contradicts the surrounding low density neighbourhood character.

Figure 4: Ainslie Flats Under Construction 1951



Source: From *Heritage Assessments of Housing Act Properties* by Philip Leeson Architects 2012 (NAA A7973/1)

2.2 Urban Renewal

The ACT population is predicted to grow to over 510,000 by 2030 and almost 650,000 by 2050. It is fundamental that the growth of the city be managed appropriately to reduce urban sprawl and retain amenity close to centres.

The 2018 ACT Planning Strategy identifies infill development, or urban renewal, as a key option to manage urban growth. To achieve this, specific urban intensification areas are identified in the Strategy where development can be focussed (refer Figure 5). These areas, much of which is near the city centre, are earmarked to increase the capacity of the existing urban areas. Achievement of infill development aligns with other social, environmental and economic policies of the ACT Government to achieve a carbon neutral future and greater housing choice.

Urban renewal involves the coordinated redevelopment of urban areas to achieve increased population density and in a more compact and sustainable city. The ACT Government's public housing renewal program is a key part of Canberra's urban renewal. The current approach is to provide new public housing in established areas and new suburbs to add to the housing choices.

The ACT Housing Strategy has a goal of an equitable, diverse and sustainable supply of housing for the ACT community. Under this goal the government is committed to monitoring and understanding housing supply and demand pressures, and building a pipeline of development opportunities with a land release and urban renewal program that enables housing diversity, affordable housing choices, stimulates urban renewal and activates key gateways to the city centre and commercial centres.

The sites present an opportunity to assist in the implementation of the ACT Government's infill development policies through achieving a higher density than that existing on each site.

The rationale for higher density residential development and inclusion of some taller buildings is based on the potential of the sites to collectively achieve sustainable development outcomes integrating best practice social, environment and economic development goals to respond to changing demographic and housing trends within inner North Canberra.

The achievement of such goals, as detailed in Sections 2.3.1 and 20.2, will ensure a high quality planning and design outcome that contributes to the implementation of the ACT Strategic Planning Policies (refer Section 3.1). At the same time, the building form needs to respond to the environment in which the sites sit, including the adjacent heritage land uses in Braddon and Reid.

2.2.1 Densification

The four sites along Ainslie Avenue collectively have 236 units across a combined land area of 40,607m² (over 4ha). This represents a density of about 60 dwellings per hectare. Typical yields in an RZ4 zone are closer to 90 dwellings per hectare. Rezoning to a higher density residential zone (i.e. RZ5) or a mixed use commercial zone (CZ5) would achieve a higher density. Future redevelopment within an RZ5 zone is considered to be reasonably compatible with the surrounding development. While it will increase heights fronting Ainslie Avenue, the Territory Plan Codes require consideration of the interface with adjacent lower density development and this usually requires buildings adjacent to single dwelling development to be a maximum of 3 storeys. A CZ5 mixed use zone for the Kanangra Court site would facilitate a taller development on this landmark site potentially to reflect development at the City Centre end of Ainslie Avenue and also proposed development across Limestone Avenue on the former CSIRO site.

2.2.2 Development Form

The National Capital Plan promotes development along Main Avenues (Ainslie and Limestone Avenues) to be “constructed to the street boundary to define and enclose streets and create continuous street frontage while allowing variations in individual buildings and uses”. This is not considered appropriate for the four sites along Ainslie Avenue identified in this report and is inconsistent with the existing character of the area. The width of Ainslie Avenue and Limestone Avenue will not result in any level of ‘enclosure’ if future buildings are built to the street boundary. However, this planning approach could result in the loss of numerous trees and a decline in the overall landscape character of the area. Buildings constructed to the street boundary would be appropriate if ground level commercial uses were proposed to maximise interaction between commercial activity and the public realm. However, it is proposed that redevelopment be predominately residential uses and that building setbacks and landscape setting should prevail over continuous building frontages.

While the sites are close to the city centre, it is considered that the separation from other retail and commercial activity leaves any potential commercial activity somewhat ‘isolated’ from other commercial activity.

The Kanangra Court site accommodates a small-scale community use (Rec-Link) that provides support services to residents. This use, together with other small-scale community uses could easily be incorporated into future development schemes for this site. However, it is not considered that a community facility or any commercial activity is appropriate for the sites, other than supportive housing that would take the same form as private residential unit development.

Existing development across the precinct varies between 2 and 3 storey ‘walk-up’ apartments with surface parking with some 4 storey elements in Kanangra Court. Redevelopment would most likely result in basement parking, allowing for increased surface level private and communal open spaces.

The site planning arrangement of existing buildings associated with mature tree plantings allows certain elements to inform future development. This includes building setbacks, variable building heights, particularly taller elements fronting Ainslie Avenue. Future development will need to respect adjacent residential development which is predominately single storey detached dwellings many of which are located within heritage precincts. The retention of the mature street trees between the sites and the single dwellings, together with potential overshadowing impacts and privacy will need to be addressed as part of any redevelopment scheme for the precinct.

2.2.3 Contextual Links

The future residents will have the opportunity to participate in a range of ‘suburban’ style community facilities and services including Ainslie Primary School, Campbell High, Merici College, Gorman House, Ainslie Arts Centre, public open space and local churches as well as taking advantage of the city centre facilities including shopping, entertainment and dining facilities.

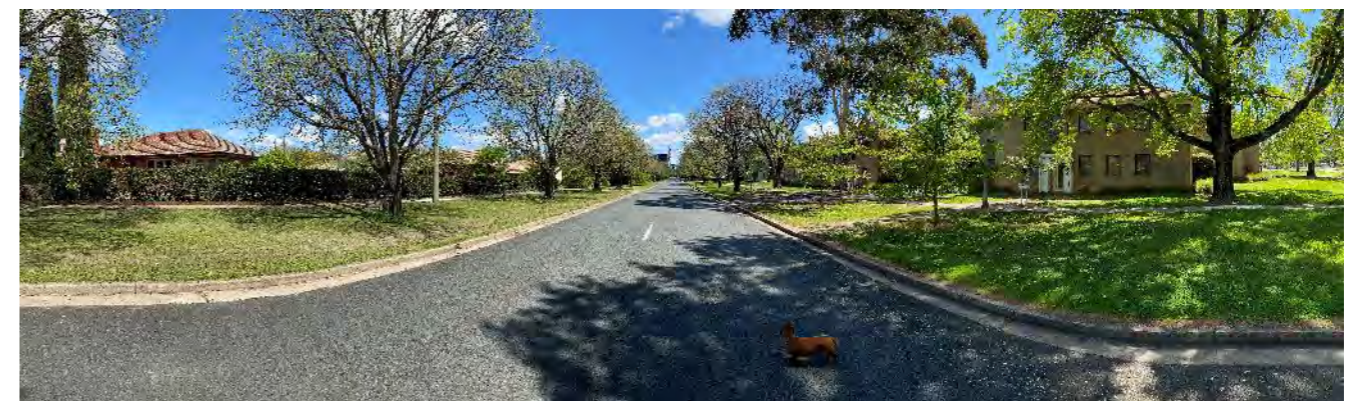
To facilitate this, improved physical connections including pedestrian and cycle paths will enhance opportunities for connecting new inner city residents with the range of services and facilities available to them.

2.2.4 Streetscape

As outlined in Section 2.1 above the landscape setting in the Ainslie Avenue establishes a strong presence along this street. In a similar manner, the mature trees along Allambee and Batman Streets contributes to a distinct streetscape character creating a transition from the single detached dwellings to the higher density built form of each of the subject sites.

The wide verges along each street presents an opportunity for improvements to the public realm to ‘tie’ the sites and establish some consistency in the precinct at the human scale. The consistent mature street planting establishes the local character but this is viewed from a distance with the canopy of the trees covering the verges and defining the direct line of sight along the streets, rather than peripheral views into each site.

At the micro-level, there is opportunity to include improvements to the public realm as part of redevelopment through provisions to reconfigure the narrow footpaths to establish wider shared paths promoting off-road active travel together with low-level landscaping creating an under-storey to the mature trees and enhanced pedestrian experience. This low-level landscaping in the road verge could transition into landscaping within the sites, softening the effects of courtyard walls and enclosed private open space areas.



2.3 Public Housing Outcomes

Public housing has played a significant role in the social character of the local area. Each of the sites identified in this report are occupied by public housing tenants and have played a role since early development of these suburbs. In addition, the former Allawah Flats, Bega Flats and Currong Apartments that were located at the City-centre- end of Ainslie Avenue, some 600m from the precinct, were also significant public housing complexes. Together all these unit development resulted in the majority of housing along Ainslie Avenue being allocated to public housing. The specific architectural design of each of the public housing complexes helped establish a design language of the whole Avenue. The current redevelopment activity on the former Allawah, Bega and Currong sites has resulted in a higher density of residential accommodation combined with some commercial development, consistent with the ACT Planning Strategy.

While this report has a focus on opportunities and constraints to redevelopment and identifying optimum yields, development form and planning outcome, it is appropriate to consider the potential to incorporate public housing within future redevelopment of the sites. Replacement of the current extent of public housing is not necessarily limited to replacement of the same number and unit type on each site as part of future redevelopment schemes. The opportunity exists to potentially increase public housing provision on one site and reduce public housing numbers on another site to achieve the most appropriate urban design and social outcome for the overall precinct consistent with the ACT Government's 'salt and pepper' approach. This approach is subject to a range of planning and financial considerations.

Notwithstanding, the overall goal is to achieve provision of public housing at the same level as currently exists, while providing opportunity for private redevelopment. There are currently 324 units across all of the 5 sites, as follows:

- Ainslie Flats (88 units)
- Reid Court (48 units)
- Braddon Court (48 units)
- Kanangra Court (78 units)
- Jerilderie Court (62 units)

There is significant Social Housing policy research available which discusses the 'optimum' extent and type of social housing incorporated into private development schemes. It is not the purpose of this report to initiate new research, review previous research or recite the detail and findings. However, it is necessary for this Planning Report to advise on what we consider the optimum outcome from a social planning perspective combined with the need to achieve a development outcome that is acceptable to the private sector for future redevelopment of the sites. In this regard we have specifically drawn on the following documents:

- ACT Government: ACT Housing Strategy, October 2018
- Australian Housing and Urban Research Institute (AHURI): Housing policies, social mix and community outcomes, Rowland Atkinson (Southern Research Centre), October 2008, AHURI Final Report No. 122
- Productivity Commission Inquiry Report: Reforms to Human Services (Chapter 5 Social housing in Australia), 26 March 2018
- Unison Housing Research Lab: Does tenure mix work? Juliet Watson and Guy Johnson, March 2018 RMIT
- IZA (Institute of Labour Studies): Social Mixing as a Cure for Negative Neighbourhood Effects: Evidence Based Policy or Urban Myth? David Manley, Maarten van Ham, Joe Doherty April 2011 IZA DP No. 5634

The ACT Housing Strategy has a key objective to dedicate 15% of all new land release sites to new public, community and affordable housing, noting that social and affordable housing is not necessarily the same as public housing.

While somewhat dated, the AHURI data confirms that:

A number of mechanisms have been used through planning systems to encourage greater social diversity. Some systems are quite prescriptive in their use of these measures. In Holland, VINEX areas are locations earmarked for new housing, 30 per cent of which must be affordable. In Ireland new 'set aside' policies stipulate that 20 per cent of all new development must be set aside for affordable housing while 'inclusionary zoning'. In the UK the system is known as planning gain and the thresholds for affordable housing are normally set at around 25 per cent, with the exception of London where the percentage is being raised to between 30 per cent to 50 per cent. In March 2005 the South Australian Government adopted a target for all new significant development to include 15 per cent affordable housing.

Notwithstanding the considerable extent of social policy research, there is no 'magic' number or percentage of public housing units that represents an acceptable investment for the private sector, noting that the references to affordable housing, social housing and public housing are not inter-changeable and present different social outcomes.

The sites have been occupied as public housing complexes for 40-50 years and they, together with their residents, have been an integral part of the urban fabric and contribute to a socially inclusive Canberra. The sites sit within a neighbourhood of mix tenure where the proportion of rental properties throughout Reid and Braddon are much higher than the ACT average (at the 2016 Census, 58% of properties in Reid and 68% in Braddon are rented, compared to 32% across the ACT).

The primary objectives for urban renewal are to achieve quality design, sustainable development, inclusive communities, improved public spaces and connections to local centres promoting active travel modes. These objectives can be best achieved through a mix of tenure where public housing is integrated with private ownership and are largely indistinguishable through the provision of diverse building and unit types in keeping with the ACT Government's 'salt and pepper' approach.

Further discussion and calculations for various yield scenarios are provided in Sections 10.0, 14.0, 12.0, 16.0 and 18.0 below for each of the sites within the precinct.

2.3.1 Quality Design Outcomes

On the basis that an overall precinct approach to planning is implemented, it would be appropriate that specific design controls are imposed on future development to achieve quality design outcomes.

The key principles that are considered relevant, include:

- | | | |
|----------------------------------|----------------------------|------------------------------|
| ▪ Urban design | ▪ Movement | ▪ ESD Principles and Targets |
| ▪ Site Planning and Urban Design | ▪ Parking | ▪ Public spaces |
| ▪ Site Permeability | ▪ Pedestrians and Bicycles | ▪ Place planning |
| ▪ Landscape | | |

It is considered appropriate that a precinct-specific design guide be prepared as part of any future land release of these sites or that key design elements are incorporated into the Braddon and Reid Precinct Codes.

It is not intended that such specific area guidelines be used as a total control on the architectural outcome of each site, but to set a broad framework as to how the line of buildings along Ainslie Avenue can achieve a consistent architectural language while allowing for further refinement of the architectural expression. This may include differentiation between building uses through form, expression and materiality.

These principles and targets are outlined in detail in Section 20.2.2.

3.0 Planning Framework

This section of the Planning Report highlights the relevant statutory documents and approval process applicable to the study area.

3.1 Strategic Planning Context

3.1.1 National Capital Plan (NCP)

The NCP is administered by the National Capital Authority (NCA) and has a single objective for Canberra:

“...to ensure that Canberra and the Territory are planned and developed in accordance with their national significance”.

The NCP identifies the sites as being within the urban area under the Metropolitan Policy Plan.

The full length of Ainslie Avenue and Limestone Avenue (for that part fronting Kanangra Court) are identified in the NCP as ‘Main Avenues’. The statutory planning controls under the NCP are summarised in Section 3.2.1.

Future redevelopment of the sites along Ainslie Avenue will need to be consistent with the National Capital Plan, particularly requirements for development along Main Avenues.

3.1.2 Statement of Planning Intent

The Statement of Planning Intent (2015) by the Minister of Planning sets out the main principles that govern planning and land development in the ACT. The document establishes key planning priorities, and associated actions, that reflect the key messages heard from the community and stakeholders.

The Statement of Planning Intent aims to:

- Focus higher-density development with diverse housing types in the city centre, town and group centres, along major transport corridors and in other locations with good public transport and amenity.
- Locate infill development and affordable housing close to public transport routes and adjacent to parks, open space and other areas of high amenity.
- Encourage mixed-use developments at major centres and along public transport corridors to ensure active, vibrant community spaces and places.
- Review the role and function of precincts to deliver flexible and innovative planning to create liveable and sustainable communities.
- Foster the development of prosperous economic and employment hubs in the city’s centres.

The Statement builds on the strategic framework set out in the *ACT Planning Strategy, Transport for Canberra* and the ACT Government’s *Climate Change Strategy and Action Plan*.

The redevelopment of the sites is considered to be directly consistent with the Minister’s Statement of Planning Intent.

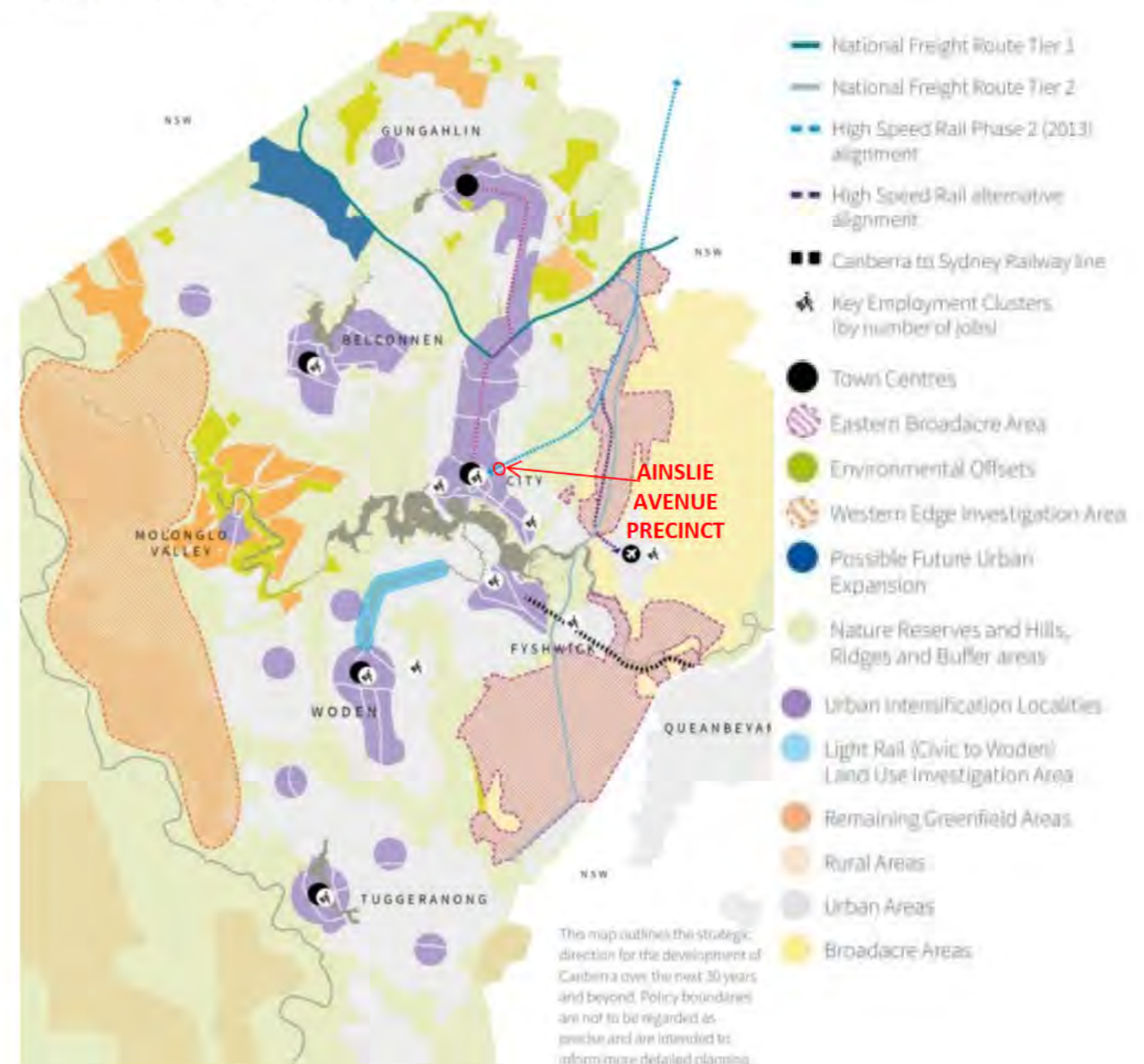
3.1.3 ACT Planning Strategy

The ACT Planning Strategy was initially prepared in 2012 and was subject to a review in 2018 which updated the goals of the original strategy and extended and expanded the scope of the strategy beyond the original 2030 end date. The purpose of the *ACT Planning Strategy* is to set the direction for future development of Canberra towards 2030.

The vision of the strategy is for Canberra to be a sustainable, competitive and equitable city that respects Canberra as a city in the landscape and the national capital, while being responsive to the future and resilient to change.

The sites along Ainslie Avenue are within the area identified in the Planning Strategy as ‘Urban Intensification Localities’ (refer Figure 5). As such, redevelopment of the sites for a higher density residential development is considered to be directly consistent with the intentions of the 2018 Planning Strategy.

Figure 5: 2018 ACT Planning Strategy – Policy Plan



Source: 2018 ACT Planning Strategy

There are a variety of objectives and principles identified in the strategy to which all future development on the subject sites would need to acknowledge and address.

Some of the key strategic directions applicable to the sites are:

- Support sustainable urban growth by working towards delivering up to 70% of new housing within our existing urban footprint, and by concentrating development in areas located close to the city centre, town and group centres and along key transit corridors.
- Deliver housing that is diverse and affordable to support a liveable city.
- Encourage high quality design, built form and places for a changing climate.
- Use infrastructure efficiently to support our growing community
- Integrate living infrastructure and sustainable design to make Canberra a resilient city within the landscape
- Deliver social infrastructure that meets community needs and supports strong communities.
- Deliver well designed, safe and sustainable streets and public spaces to create walkable neighbourhoods that are inclusive and fair.
- Create a better experience for walking and cycling into and within the city centre and our town centres.

The strategic directions are supported by a number of actions under the Strategy. The relevant actions include:

- Investigate the opportunities for higher density development within future urban intensification locations in order to inform prioritisation and staging of future development, land release and infrastructure (social and physical) investment options. Investigate locations that meet the following criteria (inter alia):
 - frequent bus network corridor (800 metres/ average 10 minute walk)
 - city centre (1000 metres/average 15 minute walk).

The investigations include:

- planning and design considerations including the existing character and amenity of areas, heritage, built form, landscaping and other factors
- preliminary investigations of infrastructure capacity for urban intensification locations to forecast infrastructure demands for different growth scenarios, and to identify potential stress points for existing infrastructure networks
- preliminary investigation of social infrastructure capacity and the existing natural and open space network for servicing urban intensification locations including an indication of where intensification could occur by adapting and maximising use of existing social infrastructure
- an urban form assessment of urban intensification locations to allocate diversity of urban intensification throughout the city and to understand the prioritisation of land release
- key findings to inform prioritisation and staging of future development, zoning and policy changes and infrastructure investment options.
- Take a district-level approach to planning for our diverse community to investigate the implications on:
 - local infrastructure to support diverse needs
 - housing diversity to meet changing household composition, age and cultural diversity and universal access principles
 - place-making approaches tailored to increase participation and capitalise on community strengths.
 - access for people with a disability or disadvantage.
- Establish an approach to the urban design of the city centre that focusses on interconnected precincts, and considers matters relevant to the city centre location including:

- Support and plan for the growth of commercial and residential development within the city centre to meet a diverse range of business investment and lifestyle choices that effectively use existing infrastructure.
- Investigate appropriate planning policy and statutory mechanisms to encourage the development of net zero emissions buildings, precincts and suburbs
- Investigate social infrastructure in infill and urban expansion (greenfield) areas to meet community needs, including consideration of the following:
 - capacity of, and potential to optimise, existing social infrastructure
 - co-location or clustering to create activity nodes where viable
 - inclusive and accessible—appropriate supporting infrastructure that facilitates use and participation by people from culturally and linguistically diverse backgrounds, building social networks
 - flexible and multi-use in nature
 - central to catchment it serves and accessible by public transport and active travel
 - supports a network of facilities at a variety of scales including local, district or regional to avoid duplication and develop complementary opportunities
 - complementary to adjoining land uses
 - investigate planning mechanisms to facilitate timely delivery of key social infrastructure
- Continue to support local community and business capacity by developing place-making approaches to support vital neighbourhoods.
- Plan for a range of higher density development in appropriate and clearly defined locations with a mix of apartment and dwelling types to improve diversity and access, and to support:
 - ageing in place
 - changing family housing preferences
 - range of affordability
 - adaptable apartments.
- Investigate planning provisions to facilitate the delivery of affordable housing across the spectrum of community needs
- Investigate a range of processes to improve the design and quality of our buildings and public places, including:
 - establish guidelines for the ACT to improve the quality of design in development outcomes for buildings and public places on public and private land while encouraging new design approaches and innovative, climate-wise sustainable design
 - support the implementation of design guidelines in government policy and statutory planning provisions to improve design quality outcomes
 - support the development of place-making guidelines to encourage place-experience and deliver high quality public places and streets
 - encourage place-making initiatives and public place improvements to guide planning and design for better public places and streets across the city and as part of urban renewal projects such as grants or community programs
 - conserve heritage buildings and places and value their contribution to the character of our city.
- Support the integrated transport network by focussing urban intensification in town centres and around group centres and along the major public transport routes and balancing where greenfield expansion occurs.
- Support the delivery of the government’s transport strategy to expand movement options (particularly active travel) and the delivery of the government’s Climate change strategy to reduce greenhouse gas emissions from transport.
- Investigate parking provision requirements to support broader government accessibility and transport policy

3.1.4 Statement of Strategic Directions

The Statement of Strategic Directions form part of the Territory Plan and outline principles to achieve the main object of the Territory Plan.

The Statement recognises that the ACT be planned as both the setting for the National Capital and as a community in its own right. It includes the principles for sustainable development as well as the spatial planning and urban design principles that are intended to guide the more specific policy content of the Territory Plan.

The principles for sustainable development follow a ‘triple bottom line’ approach with specific principles relating to environmental, economic and social sustainability. The spatial planning and urban design principles are divided into specific principles relating to urban areas, non-urban areas, and urban design.

Any future rezoning of the sites would need to consider the details provided under the Statement of Strategic Directions of the Territory Plan.

3.2 Statutory Planning Context

Planning and development in the ACT is governed by two separate but related planning jurisdictions and statutory controls, being the National Capital Plan administered by the National Capital Authority (NCA) and the Territory Plan administered by the ACT Planning and Land Authority (ACTPLA).

The NCA is a Commonwealth Agency within the Department of Infrastructure and Regional Development. ACTPLA sits within the ACT Government directorate incorporating Environment, Planning and Sustainable Development Directorate (EPSDD).

3.2.1 National Capital Plan

The subject sites are not within ‘Designated Areas and are not ‘National Land’. However, four of the sites front Ainslie Avenue which is a main avenue identified in the NCP. Developments along main avenues must respond to ‘Main Avenues and Approach Routes’ objectives and conditions under the National Capital Plan.

The objectives for **Main Avenues and Approach Routes** are as follows:

1. *Establish and enhance the identity of the approaches to the Central National Area as roads of national significance and, where relevant, as frontage roads for buildings which enhance the National Capital function and as corridors for a possible future inter-town public transport system.*
2. *Ensure that works within the road reservations are carried out to the highest standards, by maintaining and enhancing landscaping, and by facilitating the flow of traffic as far as possible.*
3. *Reinforce and, where possible, express the integrity of the Griffin Plan’s visual structure by strengthening the geometry and form of main avenues, vistas and public spaces.*
4. *Improve the urban design and streetscape qualities of the Main Avenues as approaches to the Central National Area.*

The NCP also requires that Main Avenues and Approach Routes be developed and maintained as high quality landscaped corridors. The established design theme of verges and medians and formal tree plantings are to be maintained. In areas of intensive pedestrian use, high quality paving is to be used. A streetscape hierarchy that gives primacy to main avenues, emphasises continuity along their length through avenues of appropriately scaled trees, consistent pedestrian pavement materials, street furniture and lighting.

Development should generally be constructed to the street boundary to define and enclose streets and create continuous street frontage while allowing variations in individual buildings and uses. Pavement and landscape design should have an elegant, simple and bold design emphasising the geometry and formality of the main avenues. Streetscapes are to be well lit for pedestrians and optimise security and safety for night-time use.

3.2.2 EPBC Act

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places. These places are described in the Act as matters of national environmental significance. It is necessary to undertake (initially) a self-assessment to determine whether there is likely to be an impact on matters of national environmental significance. A review of data from ACTMapi (ecological and heritage) and the EPBC Protected Matters Search Tool indicates that while threatened species occur in the general area, they are not listed species under the EPBC Act.

Mount Ainslie is identified as a ‘protected area’ and the War Memorial and Anzac Parade are commonwealth listed heritage items. These areas are some distance from the Ainslie precinct, and it is unlikely that any future development on any of the sites within this precinct will impact on those EPBC listed areas.

3.2.3 Territory Plan

Each of the five sites within the precinct are classified as ‘Territory Land’ and are therefore subject to the planning controls under the Territory Plan, and development approvals issued by the ACT Planning and Land Authority (ACTPLA).

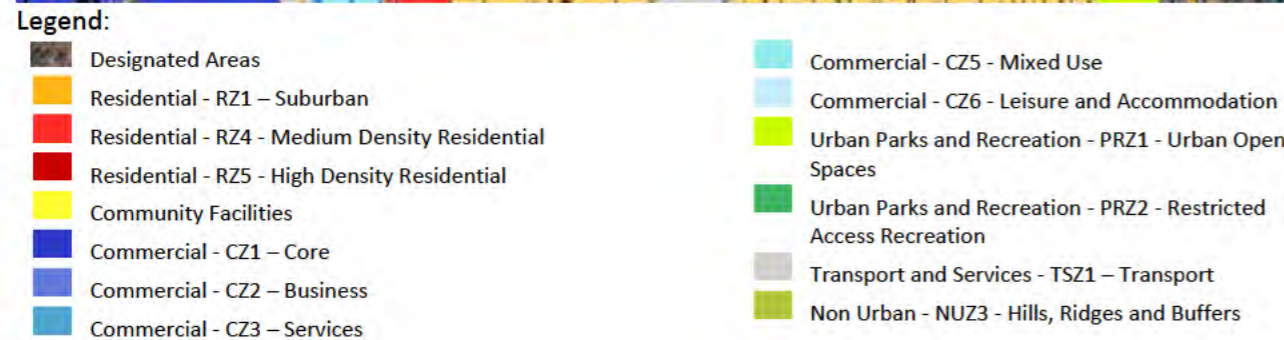
Land Use Zones

The five sites are zoned as follows:

- | | |
|--|----------------------------------|
| ▪ Ainslie Flats (Block 22 Section 14 Ainslie) | Residential RZ1 - Suburban |
| ▪ Reid Court (Block 1 Section 10 Reid) | Residential RZ4 – Medium Density |
| ▪ Braddon Court (Block 1 Section 55 Braddon) | Residential RZ4 – Medium Density |
| ▪ Kanangra Court (Block 1 Section 11 Reid) | Residential RZ4 – Medium Density |
| ▪ Jerilderie Court (Block 1 Section 9 Reid) | Residential RZ4 – Medium Density |

The Territory Plan zoning map is at Figure 6.

Figure 6: Territory Plan



Source: ACTMAPi 2020

Zone Objectives

The Zone objectives for the RZ1 – Suburban zone are:

- a) Provide for the establishment and maintenance of residential areas where the housing is low rise and predominantly single dwelling and low density in character
- b) Protect the character of established single dwelling housing areas by limiting the extent of change that can occur particularly with regard to the original pattern of subdivision and the density of dwellings
- c) Provide for a wide range of affordable and sustainable housing choices that meet changing household and community needs
- d) Ensure development respects valued features of the neighbourhood and landscape character of the area and does not have unreasonable negative impacts on neighbouring properties
- e) Provide opportunities for home based employment consistent with residential amenity

- f) Provide for a limited range of small-scale facilities to meet local needs consistent with residential amenity
- g) Promote good solar access
- h) Promote energy efficiency and conservation
- i) Promote sustainable water use
- j) Promote active living and active travel

The Zone objectives for the RZ4 – Medium density residential zone are:

- a) Provide for the establishment and maintenance of residential areas where the housing is medium rise and predominantly medium density in character and particularly in areas that have very good access to facilities and services and/ or frequent public transport services
- b) Provide opportunities for redevelopment by enabling changes to the original pattern of subdivision and the density of dwellings
- c) Provide for a wide range of affordable and sustainable housing choices that meet changing household and community needs
- d) Ensure development and redevelopment is carefully managed so that it achieves a high standard of residential amenity, makes a positive contribution to the neighbourhood and landscape character of the area and does not have unreasonable negative impacts on neighbouring properties
- e) Provide opportunities for home based employment consistent with residential amenity
- f) Provide for a limited range of small-scale facilities to meet local needs consistent with residential amenity
- g) Promote good solar access
- h) Promote energy efficiency and conservation
- i) Promote sustainable water use
- j) Promote active living and active travel
- k) Encourage an attractive, safe, well-lit and connected pedestrian environment with convenient access to public transport

Permissible Uses

The RZ1 and RZ4 zoning allows for a range of residential-type land uses. It is notable that the range of uses permitted and prohibited are exactly the same for each zone. The permissible uses are listed in Table 1 below. Territory Plan definitions for the relevant land uses are provided at Attachment A.

Table 1: Permissible Uses – RZ1 and RZ4 Zones

<ul style="list-style-type: none"> ▪ multi-unit housing ▪ single dwelling housing ▪ retirement village ▪ supportive housing ▪ residential care accommodation ▪ special dwelling ▪ guest house ▪ secondary residence ▪ boarding house ▪ demolition ▪ subdivision ▪ consolidation 	<ul style="list-style-type: none"> ▪ development specified in a precinct code ▪ childcare centre ▪ health facility ▪ home business ▪ community activity centre ▪ sign ▪ minor road ▪ varying a lease ▪ temporary use ▪ minor use ▪ ancillary use ▪ parkland
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Planning Codes

The Territory Plan includes a range of Planning Codes that outline development controls. The Codes form a hierarchy of controls and relate to geographic areas, as well as type of development. There are also a range of general Codes that apply to the site.

The relevant Codes are listed below:

- Ainslie, Braddon and Reid Precinct Codes
- Residential Zones Development Code
- Multi-Unit Housing Development Code

Compliance with the provisions of the above Codes could also draw on the requirements of General Codes, such as:

- Parking and Vehicular Access General Code
- Bicycle Parking General Code
- Access and Mobility General Code
- Crime Prevention through Environmental Design General Code
- Water Use and Catchment General Code
- Waterways: Water Sensitive Urban Design General Code

The provisions of these Codes are usually addressed as part of a detailed design process required for a development application.

Each Code's controls are expressed as either **Rules**, which are generally quantitative, or as qualitative **Criteria**. Proposals have the option to comply with the Rules or Criteria, **unless the rule is mandatory**. Where it is proposed to meet the criteria, the onus is on the applicant to demonstrate, by supporting plans and written documentation, that the proposed development satisfies the criteria. Where the rule is a mandatory rule, there is no merit-based assessment of any performance criteria, if the specific requirements of the rule are not met the development application must be refused.

Under the *Planning and Development Act 2007*, where more than one type of code applies to a development and there is inconsistency between provisions, the order of precedence is:

1. Precinct code
2. Development code
3. General code

There are no provisions of the Ainslie, Braddon or Reid Precinct Codes that have any influence on development of any of the sites.

The Residential Zones Development Code will have an influence if specific land uses are proposed such as retirement village, residential care accommodation and/or supportive housing. The Multi-Unit Housing Development Code will strongly influence the scale, height, built form and overall yield for residential redevelopment. This is further detailed in the various sections detailing development potential for each site.

Detailed design of future development leading up to a Development Application will need to address a number of General Codes, as outlined above. While matters such as disabled access, CPTED, and WSUD are usually resolved as part of the final design development, the requirements of the Parking Code often have an influence in the early site feasibility assessments. The site is subject to the parking requirements set out in Schedule 2 of the Parking Code for residential zones.

The following is a snapshot of parking requirements for selected land uses:

- | | |
|----------------------------------|---|
| ▪ multi-unit housing | 1 space per single bedroom dwelling; and a minimum average provision of 1.5 spaces per two bedroom dwelling, provided that each two bedroom dwelling is allocated a minimum of 1 space and each 2 bedroom dwelling is allocated no more than 2 parking spaces; or 2 parking spaces per two bedroom dwelling; and 2 parking spaces for each dwelling with three or more bedrooms; plus 1 visitor space per 4 dwellings or part thereof where a complex comprises 4 or more dwellings |
| ▪ residential care accommodation | 0.25 spaces/bed or accommodation unit for visitor parking plus 1 space/staff residential unit plus 1 space/non-resident peak shift employee |
| ▪ supportive housing | Not stated |
| ▪ special dwelling | 1 space per resident employee plus 1 space per peak shift non-resident employee plus 1 space per operational vehicle plus 1 visitor space |
| ▪ retirement village | 1 space/self-care unit plus 0.5 spaces/hostel or nursing home unit or bed plus 1 space/staff residential unit plus 0.5 spaces/non-resident peak shift employee |
| ▪ childcare centre | 1 space/centre plus 2 spaces per 15 child care places for employee parking plus visitor parking as follows: 2 spaces < 30 child care spaces; 3 spaces 30-59 child care spaces; 4 spaces 60-90 child care spaces; plus 1 pick-up/set-down bay per 10 child care places |
| ▪ health facility | 4 spaces/practitioner |

It is likely that future development proposals would seek to reduce on-site parking provision given to inner city location and proximity to services and facilities.

Part 2: The Sites

4.0 Ainslie Flats

4.1 Summary of Site Characteristics

The following is a summary of key characteristics the site:

Cadastral Description	Block 22 Section 14 Ainslie
Territory Plan Zoning	RZ1 – Suburban Zone
Site Area	19,553m ² (ACTMapi)
Dimensions	The subject site is irregular in shape with an approximate width (East-West) of 86m and length of 215m (North-South).
Location	The subject site has frontage to Chisholm Street, Hayley Street, Quick Street and Howe Crescent. The site is approximately 1.5km from the Canberra Centre and the Ainslie Local Centre.
Construction	The subject site was developed in 1951 and refurbished as aged persons flats in 1980.
Current Use	The site contains two-storey structures consisting of 88 aged persons flats (32 one bedroom and 56 two bedroom) with a plot ratio of approximately 41%.
Existing Access	There are two vehicular access driveways on Howe Crescent and two on Hayley St. The driveways connect across the site, allowing access to shared parking. The block has a pedestrian footpath along frontages to Chisholm Street, Hayley Street, Quick Street and Howe Crescent.
Public Transport	The site has good access to public transport along Chisholm Street, the bus stop is approximately 50m from the site.
Adjacent Land Uses	Surrounding the site to the East, North and West is a neighbourhood of detached single & two-storey residential houses. Adjacent to the South is nature reserve and the 'Wolseley Drive' road reserve.
Significant plants and animals	There are no records that suggest there may be habitat for any endangered or threatened species on the site. Some sites to the South and East in the vicinity contain rare plants and animals.
Vegetation	The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 30 could be regulated trees.
Heritage	The subject site does <u>not</u> contain any sites or objects that are of heritage significance (ACT Heritage Register). An independent heritage assessment by Philip Leeson Architects indicates the site has little heritage value.

Bushfire	The South-East corner of the site is located within a declared 'Bushfire Prone Area' (ACTMapi).
Easements	The site contains a stormwater/drainage easement running East to West (ACTMAPI).
Topography and drainage	The site falls from a height of RL591 at the East to RL587 at the West, representing an overall average slope of about 4.6%. The site drains to the local stormwater network.
Flooding	The subject site is <u>not</u> located within a flood zone (ACTMapi).
Contamination	The site is <u>not</u> recorded on the Environment Protection Authority Contaminated Land Register.
Utility Services	The site is within the existing urban area with existing residential development and is assumed that is fully serviced.

Figure 7: Ainslie Flats – Site Air Photo



Source: Purdon Planning 2020 (aerial imagery – ACTmap i 2018)

4.2 Key Challenges

4.2.1 Current Zoning

The existing development comprises 88 units on a site of 19,553m². This equates to a density of 45 dwellings per hectare. This is very high for a suburban residential area (RZ1 zone). Densities in the immediate area are mostly around 8-10 dwellings per hectare (net density, excluding roads and public areas). If all blocks over 800m² were developed as dual occupancies (as is permitted under the Territory Plan) then the density would increase to about 16 dwellings per hectare. However, it must be stressed that it would be unusual for all blocks within a section to be developed for dual-occupancy use.

A multi-unit residential development adjacent to the north (Ainslie Grove) comprises 10 x one & two storey units at a density of 20 dwellings per hectare, with each townhouse occupying about 350m² site area. This is considered a low density for multi-unit housing, but results in a built form reasonably consistent in character with the surrounding residential development dominated by detached housing.

The analysis of density in the general area has an influence on future development as the RZ1 Zone objectives have a strong focus on surrounding character, including:

- maintaining residential areas where the housing is low rise and predominantly single dwelling and low density in character
- protecting the character of established single dwelling housing
- ensuring development respects valued features of the neighbourhood

The Planning and Development Act requires that the Planning Authority consider the zones objectives as part of assessment of any new development application.

The existing density being between double and four times the density of surrounding residential development introduces a challenge if a redevelopment scheme proposes to further increase the existing density. The existing arrangement of buildings, with unarticulated two storey buildings of over 50m in length, contrasts with the surrounding detached housing and any proposals to increase the extent and height of buildings or increase site density will pose a challenge to convince the Planning Authority (and broader community) that such a proposal is consistent with the Zone objectives.

4.2.2 Heritage

The site is not listed on the ACT Heritage Register. However, it was subject to an assessment of its heritage values by Phillip Leeson Architects in 2011. The Leeson assessment concluded that the Ainslie Flats are examples of the earliest flat type buildings that were built in the Federal Capital in the immediate post war period (including Braddon & Reid Courts and Griffith Flats). The Ainslie Flats built in 1952 were part of the program to transfer public servants from Melbourne to Canberra. This was an important development which shaped the history of Canberra both as a city and capital.

The Leeson Report also concludes that the Ainslie Flats are less intact than the other unit developments built under the same scheme (e.g. Griffith Flats) with changes having occurred to roof tiling, windows, access stairs, carports, laundries, kitchens and bathrooms and courtyard landscape features.

4.2.3 Landscape

In conjunction with the Leeson heritage assessment in 2011, Harris Hobbs undertook an assessment of the landscape significance of the site. The Harris Hobbs assessment states that the existing landscape appears to have lost many trees from the original plantings, evidenced by the gaps in the tree canopy, noticeable along Howe Street and Chisholm Street. The species selection is consistent with other plantings of this period and is

similar to many other larger residential properties in north and south Canberra of the late 1940's. The mix of deciduous and coniferous species is typical of the period.

4.2.4 Trees

Gold Leaf Consultants provided preliminary advice on existing trees in August 2020, however, a detailed site assessment of each tree was not able to be undertaken. Analysis of previous work by Harris Hobbs, together with air photo interpretation has resulted in an estimate of the number of existing trees that are likely to meet the criteria under the Tree Protection Act 2007 as a 'regulated' tree. It must be stressed that this analysis is not based on any field survey. A regulated tree is generally one that is 12m high or has a 12m canopy spread or has a trunk diameter of 1.5m. There are no registered trees on the site.

The trees likely to be regulated trees are mostly mature Oaks and Elms around the boundary of the site. It is expected that these trees are in good health and therefore would be at least of 'medium' (or higher) value. As such, it is a requirement of the Territory Plan (and general approach of the ACT Government Tree Protection Team) that such trees should be retained unless there are no feasible site planning alternatives. The trees around the perimeter of the site could be readily retained by requiring a greater boundary setback to future buildings than would normally be required. Retention of these trees will assist in building on the character of the site as part of future redevelopment. The regulated trees within the internal courtyards will have a greater impact on development potential and should be subject to further detailed assessment.

Figure 8: Ainslie Flats – Existing Trees



Source: Purdon Planning 2020 (aerial imagery – ACTmap 2018)

4.2.5 Built form

The existing development comprises three buildings of the same design, height and length along each of the frontages to Howe Crescent and Hayley Street. The centre building facing Howe Crescent is set forward of the adjacent buildings, possibly to attempt to reflect the curvature of Howe Crescent. Similarly, the centre building facing Hayley Street is set slightly further from Hayley Street than the two adjacent buildings. This setback and separation provides some articulation along each street frontage.

The frontages to Chisholm and Quick Streets have twin buildings of the same form and scale. There are three internal spaces created by the buildings around the perimeter of the site. The central space includes resident car parking, most of which is covered by open carports. The other two courtyards are landscaped with some small single storey buildings providing facilities for residents (storage, laundry etc).

As stated in Section 4.2.1 above, the built form contrasts with the character of the surrounding area. It is considered that any redevelopment of the site should comprise buildings of smaller scale (i.e. building length) and greater articulation to better reflect the character of the adjacent detached housing.

4.2.6 Building Heights

The existing buildings on the site are of two storeys, except for some internal small-scale ancillary buildings. The surrounding area is predominantly single storey dwellings, with some two storey dwellings and townhouses.

The Multi-Unit Housing Code has a mandatory rule that prevents buildings from being higher than 2 storeys. However, as the site is not a 'Standard Block'¹ it would be possible to design buildings with an attic and basement, in addition to the permitted 2 storeys. Attics and basements are not considered a 'storey'. In addition, there is a further rule limiting heights to 8.5m maximum, unless it can be demonstrated that the higher building is consistent with the desired character and reasonable solar access is provided to dwellings on adjoining residential blocks and their associated private open space. Solar access to adjoining dwellings should not be an issue, however, the consistency with desired character may be a challenge for taller buildings. The 'desired character' is defined under the Territory Plan as the form of development in terms of siting, building bulk and scale, and the nature of the resulting streetscape that is consistent with the relevant zone objectives, and any statement of desired character in a relevant precinct code. As there is no desired character statement in the Ainslie Precinct Code, it is necessary to rely on the Zone objectives. We consider this would be a challenge, as discussed in Section 4.2.1 above.

4.2.7 Traffic

Calibre undertook a preliminary traffic assessment in August 2020. The site has frontage to Chisholm St, a major collector road, plus two low volume local streets, but is in close proximity to Limestone Avenue, an arterial road. The Calibre Report states that the performance of the Limestone Avenue / Quick Street / Batman Street intersections are expected to exceed the acceptable levels for DOS and delay for a priority-controlled intersection within the AM peak along the eastbound movement. This extended delay is caused by the large volume of through traffic travelling southbound along Limestone Avenue, which prevents the priority controlled movements from occurring. These high volumes also result in the Quick Street movements approaching the maximum acceptable values and delays reaching 67 seconds (LOS E).

Despite the long delays, queue lengths are not expected to impact the greater road network or exceed the storage lengths of any short lanes.

During the PM peak period, the intersection is expected to perform within acceptable levels.

The intersection of Limestone Avenue, Chisholm Street and Donaldson Street is expected to perform adequately during both AM and PM peak periods. The average delay for the intersection is 22 seconds (LOS B).

The queue within the short left turn lane along Chisholm Street is also expected to exceed the storage of the lane, with a 46m queue length (30m lane). This will overflow into the through movement lane, however as both these movements run during the same phase, it is unlikely to significantly impact performance. No other queues were observed to cause issues.

The PM peak period performs marginally better than the AM peak, with the average delay for the intersection is 17 seconds (LOS B), with no individual movement delay exceeding 40 seconds (LOS D)..

Parking & Site Access

The site has a large central area for providing covered surface parking for residents. The car park has two points of access/egress of both Hayley St and Howe Crescent. The access driveways connect to each street across the site.

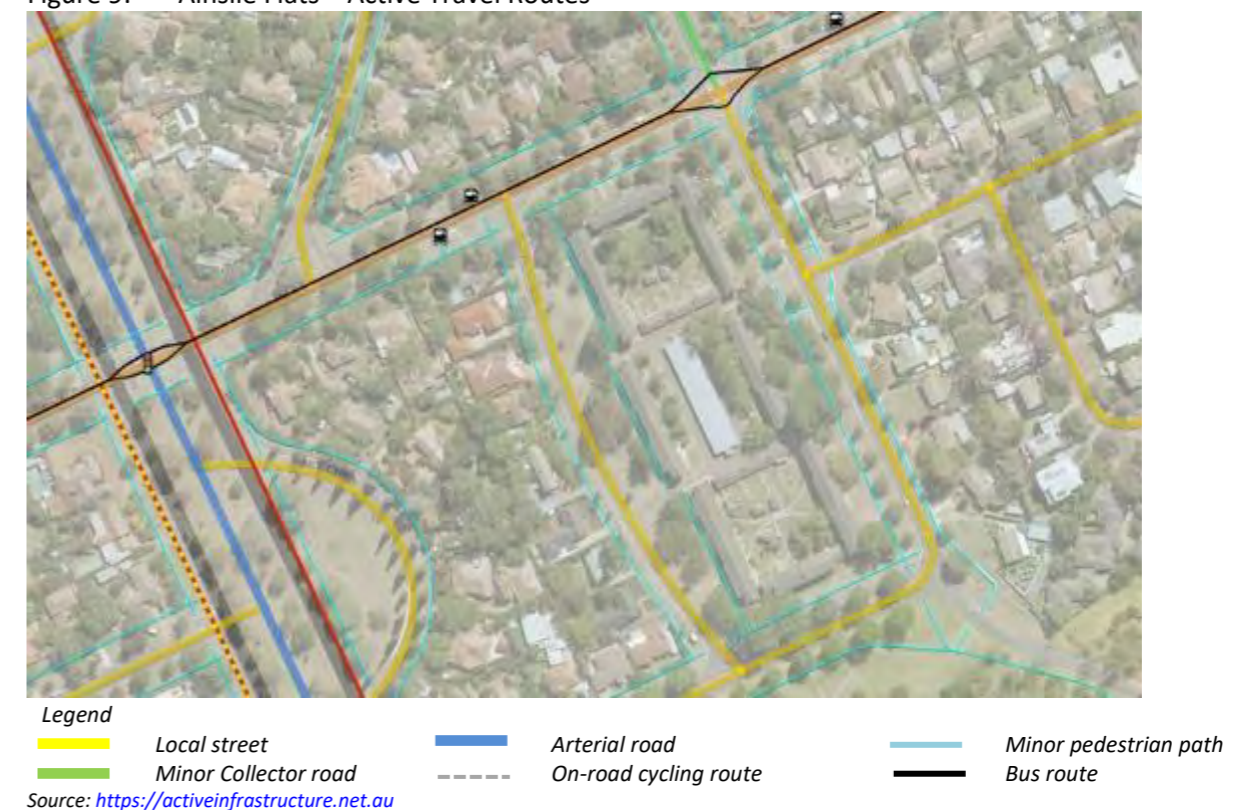
Public Transport

There are bus stops in Chisholm St to the northwest of the site.

Active Travel

The site is located 200-300m from a main on-road cycling route along Ainslie Avenue. The site is ideally located to incentivise active travel, given its central location and close proximity to the City Centre. The site is an 18-20 minute walk to Garema Place, which includes the Bus Interchange, the Griffin Centre, access to the Canberra Centre, and plenty of other services. Given the site has sound access to public transport and is within a central location to the commercial centre, there is less reliance on vehicles for any future development.

Figure 9: Ainslie Flats – Active Travel Routes



¹ Standard Block is a defined term under the Territory Plan (refer Appendix A)

4.2.8 Services

Calibre undertook a preliminary services assessment in August 2020 compiled from DBYD information and ICON Water Geospatial data. Existing services are summarised as follows:

- **Water:**
 - 100mm dia. mains along the southern verge of Chisholm Street and western verge of Howe Crescent
 - 150mm dia. mains along the northern verge of Quick Street and eastern verge of Hayley Street
 - A zone valve present within the northern verge of Quick Street
- **Sewer:**
 - A 150mm dia. PE reticulation main along the northern verge of Quick Street. A 150mm dia. tie-in to the site comes off this main
 - A 150mm dia. vitrified clay reticulation main along the southern verge of Chisholm Street. A property service line ties into the site from this main. The main changes from vitrified clay to reinforced concrete where it crosses Hayley Street.
- **Stormwater -**
- **Telecommunications**
 - NBN - No NBN exclusive services are located within the area.
 - Telstra - Mains conduit running along the southern verge of Chisholm Street, to the north of the site. Two manholes are located along the length of mains adjacent to the site. 100mm dia. conduits along the southern, eastern, and western sides of the site.
 - Optus - a major optic fibre conduit runs along the eastern verge of Howe Crescent for the entire length of the site, then continues within the southern verge of Chisholm Street.
 - TransACT - A trench with a set of four 100/110 conduits along the southern verge of Chisholm Street, which continues into the western verge of Hayley Street for a short distance before crossing the road. A trench with a set of four 100/110 conduits which crosses Hayley Street at approximately the midpoint of the block and enters the site for a short distance.
- **Gas:**
 - A 63mm dia. 210kPa PE distribution main within the northern verge of Quick Street, to the south of the site. This connects to a 50mm dia. 210kPa nylon distribution main which crosses Hayley Street.
 - A 18mm dia. 210kPa nylon distribution mains which runs along all sides of the site. This main connect with the 63mm dia. main mentioned above at the south-western corner of the site via a 32mm, 210kPa nylon main.
- **Electrical:**
 - Overhead HV power lines within the southern verge of Chisholm Street. This includes two poles supporting the overhead lines.
 - Underground HV electric lines along the southern verge of Chisholm Street and the northern verge of Quick Street.
 - Underground LV electric lines along the southern verge of Chisholm Street and eastern verge of Howe Crescent. The underground LV electric lines divert from the Howe Crescent verge and enter the site at approximately one third and two thirds along the length of the block.
 - Underground LV electric lines throughout the site, acting to distribute the power to the individual buildings.
 - Underground earth cables throughout the site
 - Underground streetlight cabling is located in all verges bounding the site. Twelve streetlight poles are powered by this network on the block.
 - A mini pillar located within the southern verge of Chisholm Street.

Figure 10: Ainslie Flats – Existing Services and Easements



Source: Calibre

4.2.9 Bushfire

Part of the site is identified as being Bush Fire Prone on ACTMapi (2020). A specialist Bushfire Assessment has not been undertaken as part of this report. However, it is expected that the main fire threat would be from the public reserve areas to the south. The areas of the reserve are at a higher elevation than the subject site, with a downhill slope of about 5% towards the site and a 30m wide road reserve of Quick Street along the southern edge of the site.

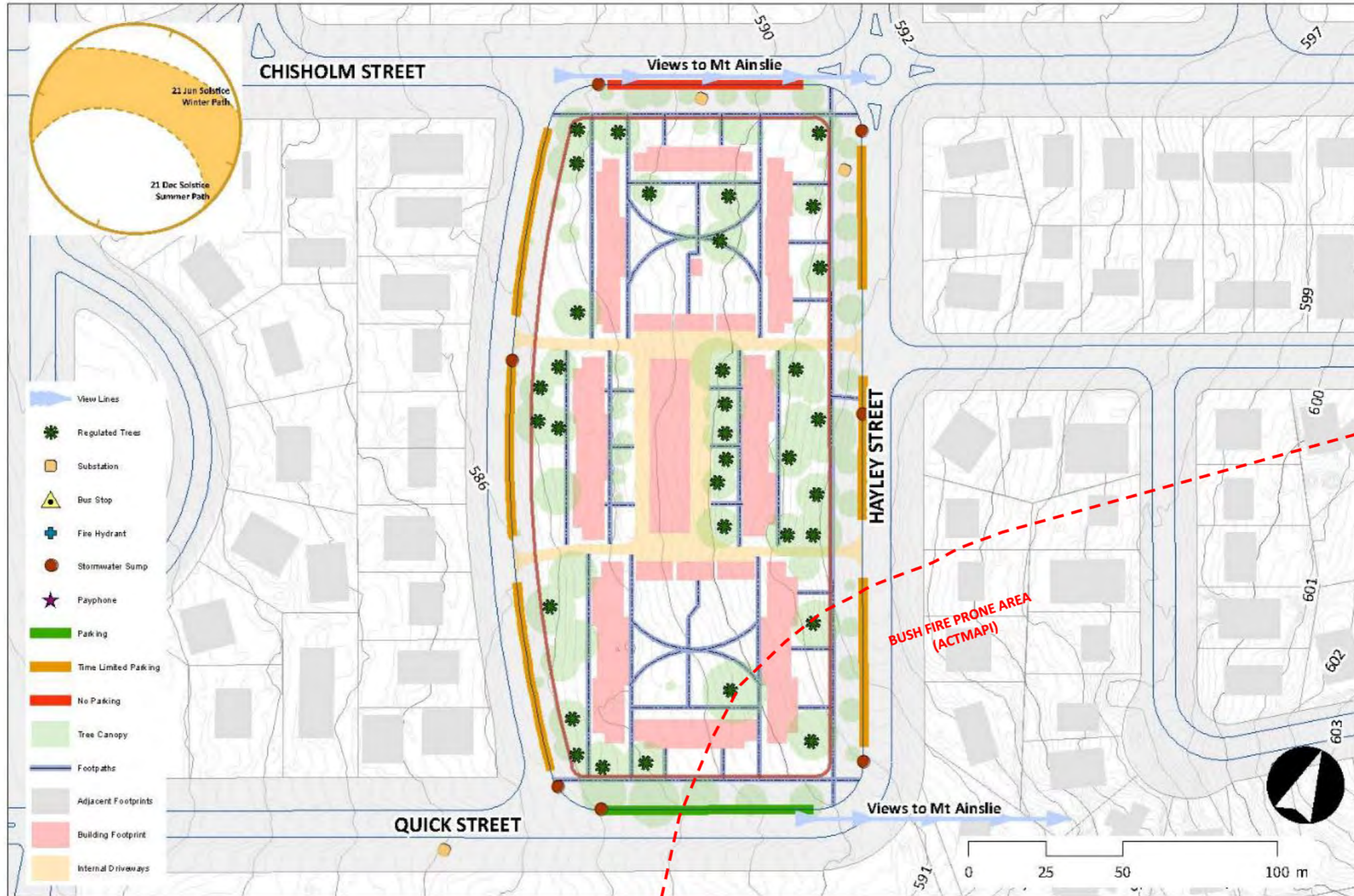
It is considered that these factors minimise the fire risk to the site and that internal reservation of land for asset protection zones should not be required. However, it may be necessary for future development to be constructed to a specific Bushfire Attack Level (BAL).

Figure 11: Ainslie Flats – Bush Fire Prone Area



Source: ACTMapi 2020

Figure 12: Ainslie Flats – Site Analysis



5.0 Reid Court

5.1 Summary of Site Characteristics

The following is a summary of key characteristics the site:

Cadastral Description	Block 1 Section 10 Reid
Territory Plan Zoning	RZ4 – Medium Density Residential Zone
Site Area	9,290m ² (ACTMapi)
Dimensions	The subject site is rectangular in shape with an approximate length (East-West) of 122m and width of 76m (North-South).
Location	The subject site has frontage to Elimatta Street, Allambee Street, Gooreen Street and Ainslie Avenue. The site is within proximity to the Canberra Centre, approximately 550m.
Construction	The subject site was developed in 1951 and converted into Aged Persons Flats in 1980.
Current Use	The site contains two-storey structures consisting of 48 aged persons flats (20 one bedroom and 28 two bedroom) with a plot ratio of approximately 49%.
Existing Access	There are two vehicular access driveways from Allambee Street. The block has a pedestrian footpath along frontages to Elimatta Street, Allambee Street, Gooreen Street and Ainslie Avenue.
Public Transport	The site has good access to existing public transport, there is a bus stop located on the boundary of the site along Ainslie Avenue.
Adjacent Land Uses	Surrounding the site to the East, North and West is RZ4 Medium Density Residential housing, consisting of two storey flats. To the South is a neighbourhood of RZ1 detached and semi-detached single storey residential houses and townhouses.
Significant plants and animals	There are no records that suggest there may be habitat for any endangered or threatened species in the immediate area.
Vegetation	The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 15 could be regulated trees.
Heritage	The subject site does <u>not</u> contain any sites or objects that are of heritage significance (ACT Heritage Register). An independent heritage assessment by Philip Leeson Architects indicates the site has little heritage value.

Bushfire	The subject site is not located within a declared ‘Bushfire Prone Area’ (ACTMapi).
Easements	There are no easements located on the site (ACTMAPI).
Topography and drainage	The site falls from a height of RL574 at the North East corner to RL571 at the South West corner, representing an overall average slope of about 2.4%. The site drains to the local stormwater network.
Flooding	The subject site is <u>not</u> located within a flood zone (ACTMapi).
Contamination	The site is <u>not</u> recorded on the Environment Protection Authority Contaminated Land Register.
Utility Services	The site is within the existing urban area with existing residential development and is assumed that is fully serviced.

Figure 13: Reid Court – Site Plan



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

5.2 Key Challenges

5.2.1 Current Zoning

The existing development at Reid Court comprises 48 units on a site of 9,272m². This equates to a density of 45 dwellings per hectare (per site). This is quite low for a medium density residential area (RZ4 zone). Densities in RZ4 zones are often around 80-90 dwellings per hectare (net density, excluding roads and public areas).

Multi-unit residential developments in the area range between 2 and 4 storeys in height. This is considered a medium density for multi-unit housing, and results in a built form reasonably consistent in character with the surrounding residential development to the south which is dominated by detached housing.

The analysis of density in the general area has an influence on future development as the RZ4 Zone objectives have a strong focus on surrounding character, including:

- Ensure development and redevelopment is carefully managed so that it achieves a high standard of residential amenity, makes a positive contribution to the neighbourhood and landscape character of the area and does not have unreasonable negative impacts on neighbouring properties
- Ensure any redevelopment is consistent with the character of the area
- Promote good solar access.

The Planning and Development Act requires that the Planning Authority consider the zones objectives as part of assessment of any new development application. However, the objectives also encourage medium density housing to:

- Provide for the establishment and maintenance of residential areas where the housing is medium rise and predominantly medium density in character and particularly in areas that have very good access to facilities and services and/ or frequent public transport services
- Provide opportunities for redevelopment by enabling changes to the original pattern of subdivision and the density of dwellings.

5.2.2 Heritage

The site is not listed on the ACT Heritage Register. However, it was subject to an assessment of its heritage values by Phillip Leeson Architects in 2011. The Leeson assessment concluded that Reid Court and Braddon Court are examples of the earliest flat type buildings that were built in the Federal Capital in the immediate post war period (including Ainslie Flats and Griffith Flats). Built in 1952, Reid Court was part of the program to transfer public servants from Melbourne to Canberra. This was an important development which shaped the history of Canberra both as a city and capital.

The report considers the heritage significance of the Braddon and Reid Courts sites together, given the two are reflections of each other by way of composition. The report states that the sites contribute to the streetscape by way of the architectural composition on the eastern and western sides of Ainslie Avenue. This aligns with the National Capital Planning and Development Committee intent for symmetry and balance in design and creating a definitive point of interest along Ainslie Avenue.

The heritage assessment concludes that the Reid Court exhibits aesthetic qualities due to the symmetry, however this is not perceived to be valued or appreciated by the wider community or by any cultural groups.

5.2.3 Landscape

In conjunction with the Leeson heritage assessment in 2011, Harris Hobbs undertook an assessment of the landscape significance of the site.

Trees at Reid Court have an irregular pattern along the street frontages. The report states that the landscape appears to be different from the original intended landscaping, with several gaps s.

5.2.4 Trees

Gold Leaf Consultants undertook a further tree assessment in August 2020. This assessment was not able to include physical assessment of the trees and was based on a desktop analysis. Trees considered likely to meet the criteria as a regulated tree were identified and assumed to be in good health. These trees are shown on Figure 14.

The trees likely to be regulated trees are a mix of mature Eucalypts, Elms, Oaks around the boundary of the site. It is expected that these trees are in good health and therefore would be at least of 'medium' (or higher) value. The trees around the perimeter of the site could be readily retained by requiring a greater boundary setback to future buildings than would normally be required. Retention of these trees will assist in building on the character of the site as part of future redevelopment. The regulated trees within the internal courtyards will have a greater impact on development potential and should be subject to further detailed assessment.

Figure 14: Reid Court – Existing Trees



Source: Purdon Planning 2020 (aerial imagery – ACTmap 2018)

5.2.5 Built form

The existing development comprises of 8 buildings with units on each block, which frame the boundary of the sites. There are 2 carports within the central part of the blocks, as well as laundry blocks.

The external unit buildings are 2 storeys in height and are all similar in design, façade treatments and materials. All buildings have accesses and frontage to the surrounding street, as well as access from the rear car parking area.

The exterior of the building is apricot face brick extending to the exposed subfloor walls, and terracotta vents. Main entries facing the street extend slightly beyond the building to identify the entry way.

5.2.6 Building Heights

The existing buildings on the site are of two storeys, except for some internal small-scale ancillary buildings which are single storey. The height of the existing buildings is compatible with the surrounding area, which is predominately 1-2 storey residential.

The Multi-Unit Housing Code has a mandatory rule that prevents buildings from being higher than 12.5m above ground level. In general, the height limit is also for 3 storey buildings. However, there is a criterion that allows a building greater than 3 storeys but still within the mandatory 12.5m height, provided buildings achieve consistency with the desired character, the appearance from the street of not more than three storeys for that part of the building facing the street and reasonable solar access to dwellings on adjoining residential blocks and their associated private open space.

Within the current zoning there may be opportunity for part of the site, possibly toward the centre of the site to achieve 4 storeys with a 3m floor-floor height (i.e. 12m wall height) and a 0.5m flat roof structure.

5.2.7 Traffic

Calibre undertook a preliminary traffic assessment in August 2020. Their report concluded that the stop-controlled cross intersections at Goreen St and Elimatta Sts along Ainslie Avenue operate well within the acceptable parameters for both capacity and delay during both AM and PM peaks. Maximum delays at the intersections were similar during both AM and PM peaks, with delays between 17 and 18 seconds (LOS B).

Parking & Site Access

Currently, Reid Court has vehicle access via Allambee Street. There are two access egress points along the street, given the two central parking areas.

The internal driveways lead to some outdoor parking and some undercover parking bays to service residents.

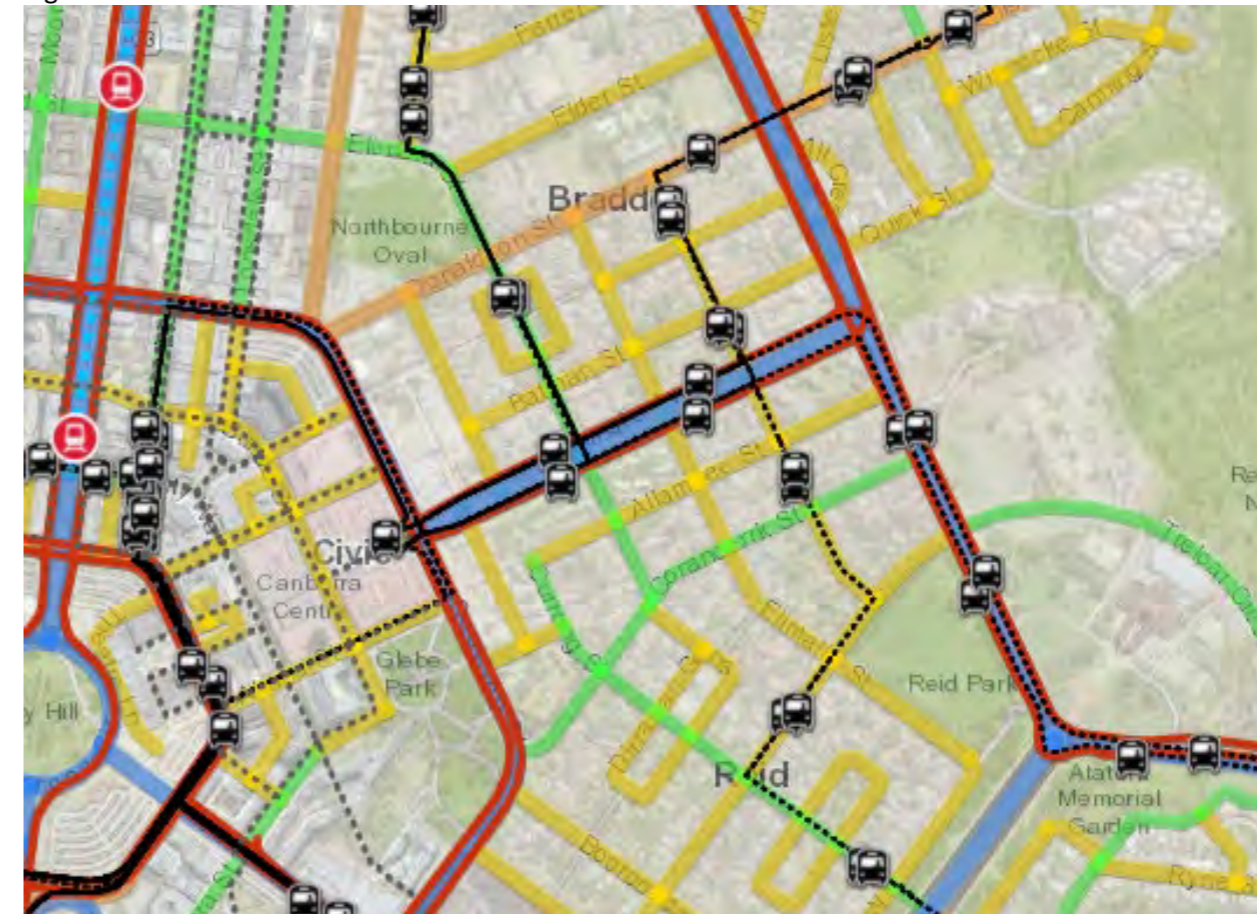
Public Transport

There is a bus stop in Ainslie Avenue in front of Reid Court which services southbound travel.

Active Travel

The site is located along a main on-road cycling route along Ainslie Avenue. The site is ideally located to incentivise active travel, given its central location and close proximity to the City Centre. The site is a 13 minute walk to Garema Place, which includes the Bus Interchange, the Griffin Centre, access to the Canberra Centre, and plenty of other services. Given the site has sound access to public transport and is within a central location to the commercial centre, there is less reliance on vehicles for any future development.

Figure 15: Reid Court – Active Travel Routes



Source: <https://activeinfrastructure.net.au>

5.2.8 Services

Calibre undertook a preliminary services assessment in August 2020 compiled from DBYD information and ICON Water Geospatial data. Existing services are summarised as follows:

- Water
 - 100mm dia. mains run along both the northern verge of Allambee Street and the eastern verge of Elimatta Street. Two water ties (one along each length of water main) connect to the site. The reticulation main to the south also has three water ties to Reid Blocks 2, 3, and 4 Section 17 within the section adjacent to the site.
- Sewer
 - A 150mm dia. main crossing Allambee Street into to the eastern verge of Elimatta Street. Three property service ties extend from this pipe to service the site.
- Stormwater
- Telecommunications
 - Telstra – Mains conduit running along the southern verge of Ainslie Avenue and along the western verge of Gooreen Street. Three manholes are located adjacent to the site along these lengths of mains. 100mm dia. conduits along the western verge of Gooreen Street and the southern verge of Ainslie Avenue. 100mm dia. conduits throughout the site, providing connections to the individual

buildings. These conduits are tied in to the site via a 100mm dia. conduit from the west-most northern manhole. A Telstra payphone within the eastern verge of Elimatta Street

- NBN – the majority of existing NBN assets nearby Reid Court are within the Telstra-owned trenches. For NBN assets which are not within the Telstra trenches, there is only a small section of trench within the north-eastern corner of the site. This trench contains three 100mm dia. NBN conduits and connects to a manhole within the median of Ainslie Avenue.
- Optus –service runs within the southern verge of Allambee Street and eastern verge of Gooreen Street, and doesn't impact the site block.
- Gas
 - A 40mm dia. 210kPa PE distribution main within the southern verge of Allambee Street, to the south of the site.
 - A 100mm 1050kPa steel secondary main within the median of Ainslie Avenue, to the north of the site.
- Electrical
 - Underground HV electric lines along the northern verge of Allambee Street and the southern verge of Ainslie Avenue.
 - Underground LV electric lines along the eastern verge of Elimatta Street, and for a small section along the southern verge of Ainslie Avenue, to the north-west of the site. These lines tie into the site from the line along the southern verge of Ainslie Avenue.
 - Underground service lines throughout the site, acting to distribute the power from the kiosk to the individual buildings.
 - Underground streetlight cabling is located along all four sides of the site. Eight streetlights that are powered by this network are also located on the block.
 - Underground earth cables throughout the site

Figure 16: Reid Court – Services and Easements



Source: Calibre

Figure 17: Reid Court – Site Analysis



6.0 Braddon Court

6.1 Summary of Site Characteristics

The following is a summary of key characteristics the site:

Cadastral Description	Block 1 Section 55 Braddon
Territory Plan Zoning	RZ4 – Medium Density Residential Zone
Site Area	9,272m ² (ACTMapi)
Dimensions	The subject site is rectangular in shape with an approximate length (East-West) of 123m and width of 77m (North-South).
Location	The subject site has frontage to Batman Street, Gooreen Street, Elimatta Street and Ainslie Avenue. The site is approximately 600m from the Canberra Centre.
Construction	The subject site was developed in 1952.
Current Use	The site contains two-storey structures consisting of 48 two-bedroom flats with a plot ratio of approximately 52%.
Existing Access	There are two vehicular access driveways from Batman Street. The block has a pedestrian footpath along frontages to Batman Street, Gooreen Street, Elimatta Street and Ainslie Avenue.
Public Transport	The site has good access to existing public transport, there are two bus stops located on the boundaries of the site along Ainslie Avenue and Gooreen St.
Adjacent Land Uses	Adjacent to the North is a neighbourhood of detached and semi-detached single storey residential houses and townhouses. Directly adjacent to the East is the Mercure Canberra. To the South and East is Medium Density Residential, consisting of two-storey flats.
Significant plants and animals	There are no records that suggest there may be habitat for any endangered or threatened species in the immediate area.
Vegetation	The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 14 could be regulated trees.
Heritage	The subject site does <u>not</u> contain any sites or objects that are of heritage significance (ACT Heritage Register). An independent heritage assessment by Philip Leeson Architects indicates the site has little heritage value.
Bushfire	The subject site is <u>not</u> located within a declared ‘Bushfire Prone Area’ (ACTMapi).

Easements	The site contains a network of electricity easements and a stormwater/drainage easement across the North West corner (ACTMapi). There is a right of way easement which establishes the pedestrian paths within the site.
Topography and drainage	The site falls from a height of RL574 at the East to RL572 at the West, representing an overall average slope of about 1.6%. The site drains to the local stormwater network.
Flooding	The subject site is <u>not</u> located within a flood zone (ACTMapi).
Contamination	The site is <u>not</u> recorded on the Environment Protection Authority Contaminated Land Register.
Utility Services	The site is within the existing urban area with existing residential development and is assumed that is fully serviced.

Figure 18: Braddon Court – Site Plan (Air photo)



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

6.2 Key Challenges

6.2.1 Current Zoning

The existing development at Braddon Court comprises 48 units on a site of 9,272m². This equates to a density of 45 dwellings per hectare (per site). This is quite low for a medium density residential area (RZ4 zone). Densities in RZ4 zones are often around 80-90 dwellings per hectare (net density, excluding roads and public areas).

Multi-unit residential developments in the area range between 2 and 4 storeys in height. This is considered a medium density for multi-unit housing, and results in a built form reasonably consistent in character with the surrounding residential development to the north-west which is dominated by detached housing.

The analysis of density in the general area has an influence on future development as the RZ4 Zone objectives have a strong focus on surrounding character, including:

- Ensure development and redevelopment is carefully managed so that it achieves a high standard of residential amenity, makes a positive contribution to the neighbourhood and landscape character of the area and does not have unreasonable negative impacts on neighbouring properties
- Ensure any redevelopment is consistent with the character of the area
- Promote good solar access.

The Planning and Development Act requires that the Planning Authority consider the zones objectives as part of assessment of any new development application. However, the objectives also encourage medium density housing to:

- Provide for the establishment and maintenance of residential areas where the housing is medium rise and predominantly medium density in character and particularly in areas that have very good access to facilities and services and/ or frequent public transport services
- Provide opportunities for redevelopment by enabling changes to the original pattern of subdivision and the density of dwellings

6.2.2 Heritage

The site is not listed on the ACT Heritage Register. However, it was subject to an assessment of its heritage values by Phillip Leeson Architects in 2011. The Leeson assessment concluded that Braddon Court is an example of the earliest flat type buildings that were built in the Federal Capital in the immediate post war period (including Ainslie Flats and Griffith Flats). Built in 1952, Braddon Court was part of the program to transfer public servants from Melbourne to Canberra. This was an important development which shaped the history of Canberra both as a city and capital.

The report considers the heritage significance of the Braddon and Reid Courts sites together, given the two are reflections of each other across Ainslie Avenue. The report states that the sites contribute to the streetscape by way of the architectural composition on the eastern and western sides of Ainslie Avenue. This aligns with the National Capital Planning and Development Committee intent for symmetry and balance in design, and creating a definitive point of interest along Ainslie Avenue.

The heritage assessment concludes that the Braddon and Reid Courts exhibit aesthetic qualities due to the symmetry, however this is not perceived to be valued or appreciated by the wider community or by any cultural groups.

6.2.3 Landscape

In conjunction with the Leeson heritage assessment in 2011, Harris Hobbs undertook an assessment of the landscape significance of the site.

Braddon Court has a regular pattern of street plantings along Batman Street streetscape. However, the plantings within the site adjacent to the boundary along Gooreen Street, Ainslie Avenue and Elimatta Street are intermittent, which coincide with gaps in street tree plantings.

Trees within the middle of the block were planted later than the surrounding trees. There are heavy plantings of *Melia azedarach* (China Berry or White Cedar), which were not commonly planted in Canberra until the 1970s.

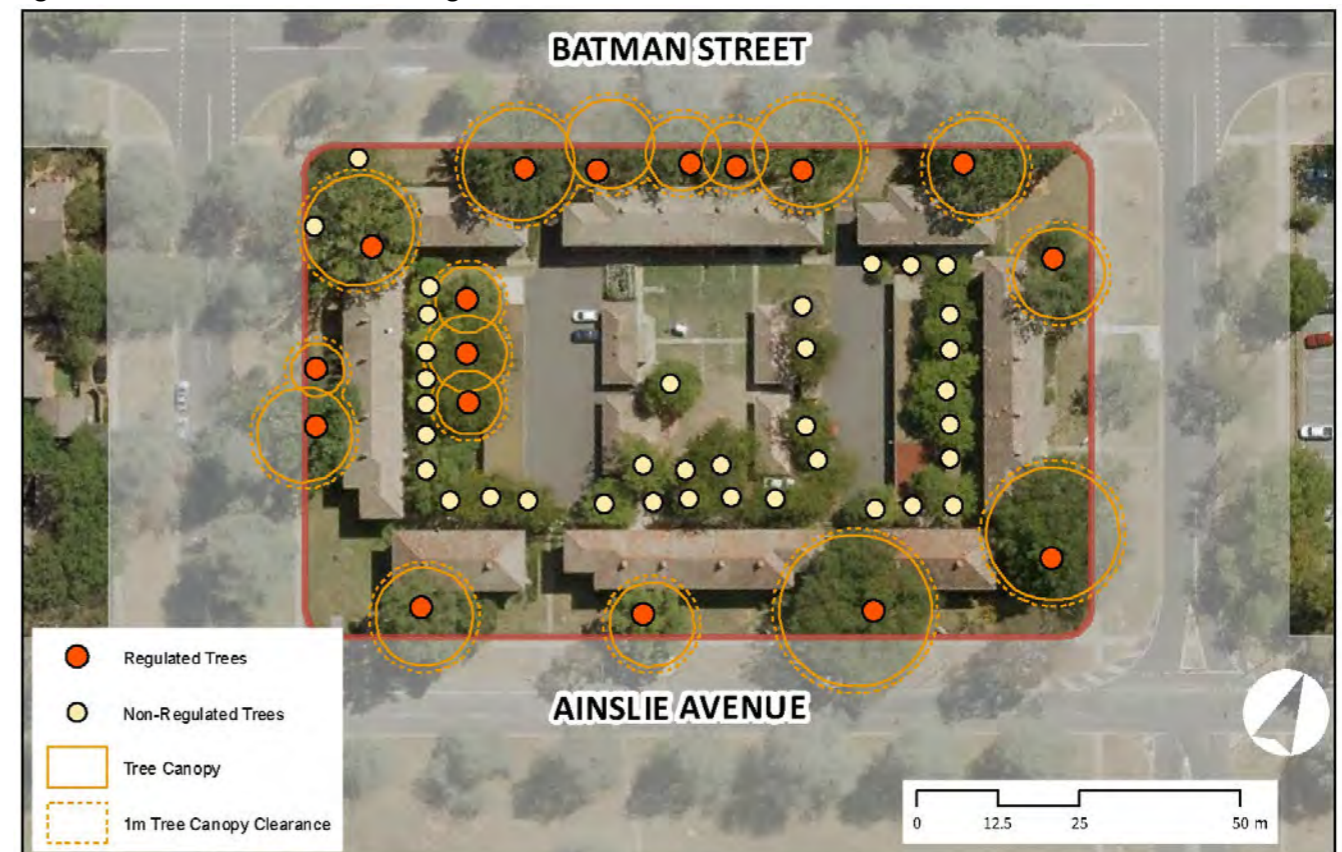
The Harris Hobbs report states that the landscape appears to be different from the original intended landscaping, with several gaps where trees or shrubs previously existed or were meant to be planted.

The landscape for both sites include BBQ areas and community space, including common rooms and laundry blocks. There are high levels of shading in the internal courtyard spaces and which creates visual interest to the landscape setting.

6.2.4 Trees

Gold Leaf Consultants undertook a further desk-top assessment in August 2020. Gold Leaf advice confirms that the trees around the boundary are predominately mature Oaks and Elms and could be retained if they are still in good condition. Trees in internal courtyards are assumed to be un-regulated or lower value

Figure 19: Braddon Court – Existing Trees



Source: Purdon Planning 2020 (aerial imagery – ACTmap1 2018)

6.2.5 Built form

The existing development comprises of 8 buildings with units on each block, which frame the boundary of the sites. There are 2 carports within the central part of the blocks, as well as laundry blocks.

The external unit buildings are 2 storeys in height and are all similar in design, façade treatments and materials. All buildings have accesses and frontage to the surrounding street, as well as access from the rear car parking area.

The exterior of the building is apricot face brick extending to the exposed subfloor walls, and terracotta vents. Main entries facing the street extend slightly beyond the building to identify the entry way.

6.2.6 Building Heights

The existing buildings are of two storeys, except for some internal small-scale ancillary buildings which are single storey. The height of the existing buildings is compatible with the surrounding area, which is predominately 1-2 storey residential.

The Multi-Unit Housing Code has a mandatory rule that prevents buildings from being higher than 12.5m above ground level. In general, the height limit is also for 3 storey buildings. However, there is a criterion that allows a building greater than 3 storeys but still within the mandatory 12.5m height provided buildings achieve consistency with the desired character, the appearance from the street of not more than three storeys for that part of the building facing the street and reasonable solar access to dwellings on adjoining residential blocks and their associated private open space.

In this regard there may be opportunity for part of the site, possibly toward the centre of the site to achieve 4 storeys with a 3m floor-floor height (i.e. 12m wall height) and a 0.5m flat roof structure.

6.2.7 Traffic

Calibre undertook a preliminary traffic assessment in August 2020. Their report concluded that the stop-controlled cross intersections at Goreen St and Elimatta Sts along Ainslie Avenue operate well within the acceptable parameters for both capacity and delay during both AM and PM peaks. Maximum delays at the intersections were similar during both AM and PM peaks, with delays between 17 and 18 seconds (LOS B).

Parking & Site Access

Currently, Braddon Court has vehicle access via Batman Street. There are two access/egress points along the street, providing access to the two central parking areas. The internal driveways lead to some outdoor parking and some undercover parking bays to service residents.

Public Transport

There is a bus stop immediately to the front of Braddon Court along Ainslie Avenue, which services northbound travel, there is another bus stop on the opposite side of Ainslie Avenue which services southbound travel.

Active Travel

The site is located along a main on-road cycling route within Ainslie Avenue. The site is a 13 minute walk to the City Bus Interchange, 7min to the Canberra Centre, and many other commercial and community services.

Figure 20: Braddon Court – Active Travel Routes



6.2.8 Services

Calibre undertook a preliminary services assessment in August 2020 compiled from DBYD information and ICON Water Geospatial data. Existing services are summarised as follows:

- Water
 - A 150mm dia. main along the northern verge of Ainslie Avenue. Water tie to the site at the south-western corner of the block.
 - A 100mm dia. main along the northern verge of Batman Street. Has a water tie to the site at the north-western corner of the block.
- Sewer
 - A 150mm dia. main along the northern verge of Ainslie Avenue. 150mm tie-in to the site at the south-western corner of the block.
- Stormwater
- Telecommunications
 - Telstra - A single 100mm dia. conduit along the western verge of Gooreen Street. A single conduit along the northern verge of Ainslie Avenue. A manhole in the western verge of Gooreen Street, providing a 100mm dia. tie-in to the north-eastern corner of the site. A manhole in the northern

verge of Ainslie Avenue, providing a 50mm dia. tie-in to the southern edge of the site. 50mm dia. conduit running throughout the site.

- NBN - The NBN services utilise the abovementioned Telstra conduits to service the site. The existing NBN assets are three 100mm dia. conduits along the western verge of Gooreen Street, to the east of the site and several lengths of 20mm dia. conduit within the site, extending from the Telstra conduit.
- TransACT - Four 100/110 conduits along the western verge of Elimatta Street. Four 100/110 conduits along the western verge of Gooreen Street, ending near the north-western corner of the site.
- Gas
 - A 100mm dia. 1050kPa steel secondary main within the median of Ainslie Avenue.
 - A 63mm dia. 210kPa PE distribution main within the northern verge of Batman Street. A 50mm dia. 210kPa nylon distribution main extends off this main and provides a tie-in to the north-eastern corner of the site.
- Electrical
 - Underground HV electric lines along the eastern verge of Elimatta Street, the median of Ainslie Avenue, and both eastern and western verges of Gooreen Street.
 - Underground LV electric lines along the western verge of Elimatta Street and crossing Ainslie Avenue into the northern verge of Ainslie Avenue. Several underground LV electric lines tie into the site at the south-west.
 - A Link Pillar within the eastern verge of Elimatta Street.
 - Underground service lines throughout the site, acting to distribute the power to the individual buildings.
 - Underground streetlight cabling is located in all verges bounding the site. The cabling crosses Gooreen Street in two places towards the southern end of the block, crosses Ainslie Avenue at the south-western corner of the block, and crosses Batman street at the north-western corner of the block. Nine streetlight poles are powered by this network on the block.
 - Underground earth cables throughout the site

Figure 21: Braddon Court – Services and Easements



Source: Calibre

Figure 22: Braddon Court – Site Analysis



7.0 Jerilderie Court

7.1 Summary of Site Characteristics

The following is a summary of key characteristics the site:

Cadastral Description	Block 1 Section 9 Reid
Territory Plan Zoning	RZ4 – Medium Density Residential Zone
Site Area	9,290m ² (ACTMAPI)
Dimensions	The subject site is rectangular in shape with an approximate length (East-West) of 122m and width of 75m (North-South).
Location	The subject site has frontage to Doonkuna Street, Allambee Street, Elimatta Street and Ainslie Avenue. The site is within proximity to the Canberra Centre, approximately 350m.
Construction	The subject site was developed in 1978.
Current Use	The site contains two-storey structures consisting of 62 flats (18 one bedroom, 36 two bedroom and 8 three bedroom) with a plot ratio of approximately 62%.
Existing Access	There are three vehicular access driveways in total, one on Doonkuna Street, Allambee Street and Elimatta Street. The access from Allambee Street connects to the internal road Jerilderie Court. The block has a pedestrian footpath along frontages to Doonkuna Street, Allambee Street, Elimatta Street and Ainslie Avenue.
Public Transport	The site has good access to existing public transport along Ainslie Avenue, the bus stop is approximately 80m from the site.
Adjacent Land Uses	Surrounding the site to the East, North and West is RZ4 Medium Density Residential housing, consisting of two storey flats. To the South is a neighbourhood of RZ1 detached and semi-detached single storey residential houses and townhouses.
Significant plants and animals	There are no records that suggest there may be habitat for any endangered or threatened species in the immediate area.
Vegetation	The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 17 could be regulated trees.
Heritage	The subject site does <u>not</u> contain any sites or objects that are of heritage significance (ACT Heritage Register). An independent heritage assessment by Philip Leeson Architects indicates the site has possible heritage value, as the development was designed by Phillip Cox an eminent Australian Architect.

Bushfire	The subject site is not located within a declared ‘Bushfire Prone Area’ (ACTMapi).
Easements	There are no easements located on the site (ACTMAPI).
Topography and drainage	The site falls from a height of RL570 at the North East corner to RL568 at the South West corner, representing an overall average slope of about 1.6%. The site drains to the local stormwater network.
Flooding	The subject site is <u>not</u> located within a flood zone (ACTMapi).
Contamination	The site is <u>not</u> recorded on the Environment Protection Authority Contaminated Land Register.
Utility Services	The site is within the existing urban area with existing residential development and is assumed that is fully serviced.

Figure 23: Jerilderie Court – Site Plan



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

7.2 Key Challenges

7.2.1 Current Zoning

The existing development comprises 62 units on a site of 9,290m². This equates to a density of 57 dwellings per hectare. This is quite low for a medium density residential area (RZ4 zone). Densities in RZ4 zones are often around 80-90 dwellings per hectare (net density, excluding roads and public areas).

Multi-unit residential development in the area range between 2 and 4 storeys in height. This is considered a medium density for multi-unit housing, and results in a built form reasonably consistent in character with the surrounding residential development to the south which is dominated by detached housing.

The analysis of density in the general area has an influence on future development as the RZ4 Zone objectives have a strong focus on surrounding character, including:

- Ensure development and redevelopment is carefully managed so that it achieves a high standard of residential amenity, makes a positive contribution to the neighbourhood and landscape character of the area and does not have unreasonable negative impacts on neighbouring properties protecting the character of established single dwelling housing
- Provide for the establishment and maintenance of residential areas where the housing is medium rise and predominantly medium density in character

However, the objectives also facilitate “opportunities for redevelopment by enabling changes to the original pattern of subdivision and the density of dwellings “

The Planning and Development Act requires that the Planning Authority consider the zones objectives as part of assessment of any new development application.

7.2.2 Heritage

Jerilderie Court is not listed on the ACT Heritage Register nor has it been nominated to the Register or assessed by the ACT Heritage Council. However, the site has been the subject of an assessment of its heritage values by Phillip Leeson Architects in 2011 and further review in 2020.

Jerilderie Court was designed by Sydney based architects, Philip Cox and Partners and was built in 1977, in response to demand due to a depletion of government housing stock in the inner city. It was intended to be residential accommodation for low-income families and was the National Capital Development Commission’s first attempt to build inner city medium density housing in Canberra.

Several alterations have been made to Jerilderie Court including original timber planter balustrades replaced with aluminium balustrades, lead flashings to tile roof replaced with colourbond, original gutters replaced with colourbond slotted sheerline, modification to drainage, alterations to paving, lighting and landscaping and the addition of porch canopies.

The further Leeson assessment undertaken in 2020 in response to changes to the criteria under the Heritage Act considered that the site may be of significance to meet some of the heritage criteria. This is detailed in Table 2. The Leeson Assessment concludes that the “design whole is greater than the sum of its parts” and that the central spine remains the defining design element of the complex. Overall the Leeson Assessment suggests that the place is unlikely to meet the threshold for heritage listing. However, it suggested that in response to established planning features the following elements could be incorporated into a new development (with or without a representative sample of buildings being retained):

- Retain a sense of the 45 degree offset to the road boundaries,
- Incorporate an interpretation of a central landscaped communal spine.

Jerilderie Court received the C.S Daley Medal by the ACT Chapter of the Royal Australian Institute of Architects (RAIA) in 1978 and received the RAIA 25 Year Award in 2005.

Table 2: Jerilderie Court Heritage Assessment

Heritage Criterion	Leeson Architects Response/Assessment
(a) Importance to the course or pattern of the ACT’s cultural or natural history;	Jerilderie Court reflects strongly the changing role of government housing in Canberra, and the growing recognition that the stock of public housing in Canberra – built primarily to serve the major growth in public service employment in the city – was not fulfilling the needs of tenants and prospective tenants, who were increasingly poor, on social benefits, and not traditional nuclear family units. Under pressure from the ACT Trades and Labour Council to provide low-cost accommodation, the NCDC commissioned Jerilderie Court. It responded to the changing profile of people in need of subsidised housing, grouping together a number of different housing types in a mixed public and private medium density development close to the city centre. However it did not prove to be low cost. It also represents a shift away from the approach of the 1960s and early 1970s, of building government flats in large groups, which was seen to concentrate social problems, as in the much-criticised Melba Flats opened in 1975. <i>The place is not considered to meet the threshold for this criterion.</i>
(b) has uncommon, rare or endangered aspects of the ACT’s cultural or natural history;	Jerilderie Court is considered to be a rare Canberra example of 1970s inner urban medium density public housing whose design was a radical departure to past forms. Despite minor changes to fabric and landscaping, the place is relatively intact. <i>The place may meet this criterion.</i>
(c) potential to yield important information that will contribute to an understanding of the ACT’s cultural or natural history;	Jerilderie Court has a potential use as a teaching site as an example of inner urban medium density public housing, and an award winning example of the work of Philip Cox. <i>However, these attributes are not considered sufficient to meet the threshold for this criterion.</i>
(d) importance in demonstrating the principal characteristics of a class of cultural or natural places or objects;	Jerilderie Court is a notable example of this type – innovative 1970s medium density public housing and is comparable to Swinger Hill, Urambi Village and Wybalena Grove. <i>The place may meet this criterion.</i>
(e) Importance in exhibiting particular aesthetic characteristics valued by the ACT community or a cultural group in the ACT;	Jerilderie Court exhibits design and aesthetic qualities that are highly valued by the Australian Institute of Architects. The Institute recognises Jerilderie Court as a creative and appropriate solution to inner city medium density housing, and a demonstration of modern city living. Jerilderie Court is beautifully adapted to its site fronting Ainslie Avenue, and its central, shared garden is faithful to the Griffins’ vision of the “garden city”. The carefully considered arrangement and proportional relationship of the built form and landscape space greatly adds to the amenity of residents, and acts as a unifying element across the development. The ACT Chapter of the Australian Institute of Architects awarded Jerilderie Court with the C. S. Daley Medal in 1978, and the RAIA 25 Year Award in 2005.

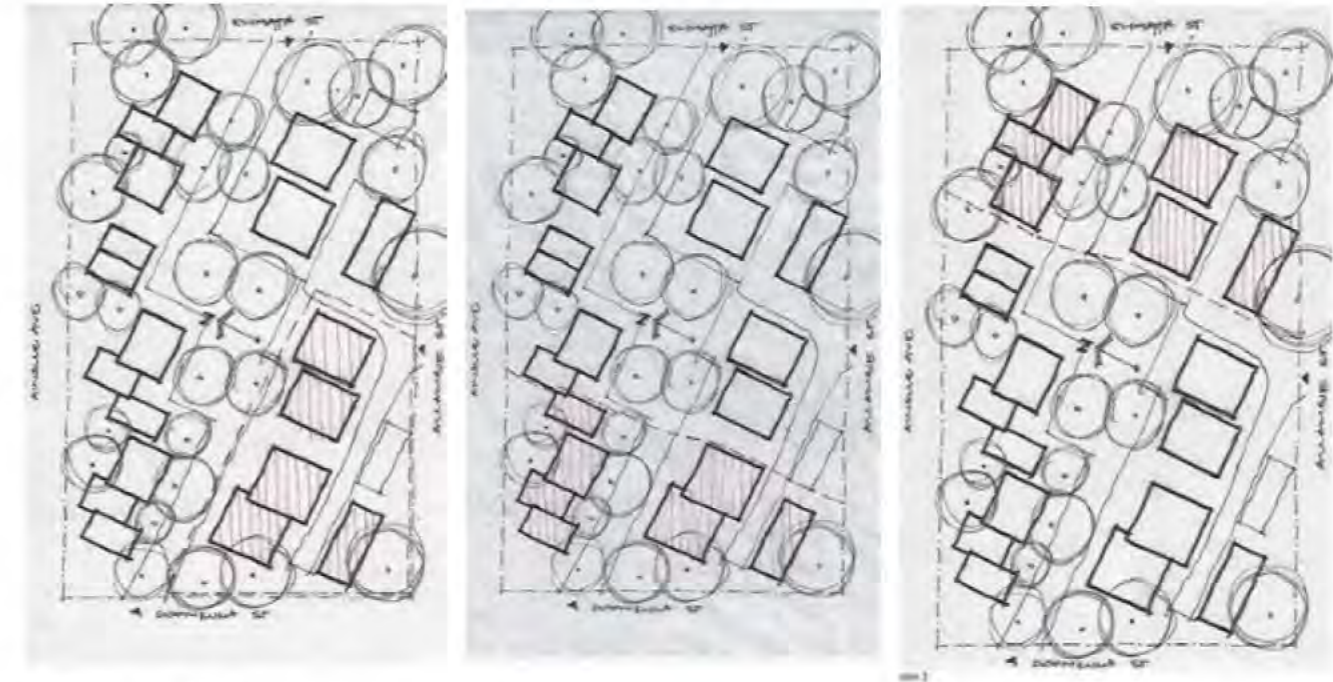
Heritage Criterion	Leeson Architects Response/Assessment
	<p>However the AIA is not considered to be a cultural group for the purposes of this criterion and there is no evidence that the place is valued by the ACT community broadly. <i>The place does not meet this criterion.</i></p>
<p>(f) Importance in demonstrating a high degree of creative or technical achievement at a particular period;</p>	<p>Jerilderie Court demonstrates a high level of creative achievement in its innovative approach to orientation and site planning exemplified by the orientation of the buildings to face north, at 45 degrees to the street frontage and the large, central shared garden and pedestrian space. The significance of the departure of this development from earlier government housing schemes in Canberra is exemplified by the nature of this internal space. No longer a simple rectangle defined by a series of building blocks following the street lines, this internal, communal space is in fact a series of flowing, interconnected spaces. <i>The place may meet this criterion.</i></p>
<p>(g) has a strong or special association with the ACT community or a cultural group in the ACT for social, cultural or spiritual reasons;</p>	<p>Jerilderie Court is valued as a place which represents home, a secure environment and supportive community by individual tenants, both present and former. Jerilderie Court is also strongly valued as an architectural exemplar, as reflected in award of the C. S. Daley Medal and RAIA 25 Year Award. The AIA is not considered to be a cultural group for the purposes of this criterion. There is no current evidence that these social and personal associations are strong or special, or widely shared with the Canberra community. <i>The place does not meet this criterion.</i></p>
<p>(h) Has a special association with the life or work of a person, or people important to the history of the ACT.</p>	<p>Jerilderie Court is associated with renowned Australian architect Philip Cox. It exhibits many of Cox’s visions for an appropriate Australian architecture, and many characteristics of the Sydney School, of which he was identified as a key practitioner. Although Cox was one of many renowned architects whose buildings contributed to the development of the City of Canberra this association cannot be classed as special or important to ACT history. <i>The place does not meet this criterion.</i></p>

The Leeson Assessment considered 3 options for consideration that retain a representative sample of existing buildings within Jerilderie Court. These are shown at Figure 24 and include:

- **Option 1:** Retain the group of units and mews houses to the south of the site, closest to Allambie St. This is a relatively discrete group which would allow c. 70% of the more prominent, north facing part of the site to be redeveloped. It also preserves the “status quo” facing Allambie St in terms of no change to the general domestic residential character and no impact on privacy and overshadowing to adjacent residents. However, this group is not the best representation of the original design concept, primarily because it does not retain a group of buildings which define the central spine. This group is visually the most utilitarian and is defined by unremarkable bitumen driveways to mews type entries, garages, carports and bin enclosures.
- **Option 2:** Retain a group to the west of the site. This would include c. 5 townhouses fronting Ainslie Ave and two three storey mews blocks in the centre of the block, together with the central landscaped spine between the two groups and its termination at Doonkuna St. The unit block in the SW corner could also be retained thus preserving each of the three building types on the site together with a decent amount of mature landscaping. This would allow a significant cohesive portion of the northeast part of the site to be redeveloped

- **Option 3:** Retain a group to the east of the site. This would include five townhouses fronting Ainslie Ave in the NE corner together with two three storey mews blocks in the centre and a unit block to the south, together with a sizeable section of the central spine and its termination with Elimatta St. This would allow a significant cohesive portion of the northwest part of the site to be redeveloped

Figure 24: Jerilderie Court – Building Retention Options



Source: Leeson Architects

An alternative to the above options could be to not retain any of the existing buildings but introduce design principles consistent with the existing site planning for Jerilderie Court and apply such provisions to any redevelopment proposal.

7.2.3 Landscape

The Leeson heritage assessment in 2011 states that the site has high quality landscape setting. It noted that the buildings were likely to have been designed around the large and established *Eucalyptus mannifera* which are sited very close to the buildings. It also notes that the internal areas are shaded by established deciduous trees.

7.2.4 Trees

The Leeson heritage assessment in 2011 identified that several trees may fulfill the criteria to be assessed as ‘regulated’ trees under the Tree Protection Act 2001. These include *Eucalyptus mannifera*, *Platanus orientalis* and *Betula pendula*.

Future redevelopment of the site would require approval for removal of the regulated trees on site from the Conservator.

Figure 25: Jerilderie Court – Existing Trees



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

7.2.5 Built form

The Lesson heritage assessment 2011 describes the existing development as comprising of one, two and three storey buildings of similar design within nine blocks. A total of 62 units are made up of three-bedroom townhouses, single-storey garden units, maisonettes and mews-style units. The townhouses are sited along Ainslie Avenue frontage and the three storey flats are located along Allambee Avenue. The units are sited at 45 degrees and staggered on the block to maximise solar access and are sited around a central internal courtyard. Car parking is provided onsite at ground floor level under some blocks, in group carports, and in open parking spaces.

The built form, especially the siting of buildings, contrasts with other developments to the north and north-east along Ainslie Avenue. This building orientation is shared with Argyle Square to the South west.

7.2.6 Building Heights

The existing buildings on the site are of one, two and three storeys. The surrounding area is predominantly single storey detached dwellings along Allambee Street and other two to four storey multi-unit housing along Ainslie Avenue.

The Multi-Unit Housing Code has a rule which permits buildings to have a maximum of 3 storeys, however the criteria allows for additional height provided the buildings are consistent with the desired character of the area, do not appear more than 3 storeys in height for the part of the building fronting the street frontage, and allow for reasonable solar access to dwellings on adjoining residential blocks and their associated private open space.

The Multi-Unit Housing Code also has a mandatory rule the maximum height of the building is 12.5m.

The ‘desired character’ is defined under the Territory Plan as the form of development in terms of siting, building bulk and scale, and the nature of the resulting streetscape that is consistent with the relevant zone objectives, and any statement of desired character in a relevant precinct code. As there is no character statement in the Reid Precinct Code, it is necessary to rely on the Zone objectives.

Buildings could achieve consistency with the desired character, the appearance from the street of not more than three storeys for that part of the building facing the street and reasonable solar access to dwellings on adjoining residential blocks and their associated private open space. In this regard there may be opportunity for part of the site, possibly toward the centre of the site to achieve 4 storeys with a 3m floor-floor height (i.e. 12m wall height) and a 0.5m flat roof structure.

However, achieving a fourth storey towards the centre of the site may be challenging noting the possible regulated trees in the centre of the site.

7.2.7 National Capital Plan

Ainslie Avenue is identified as a Main Avenue and Approach Route (MAAR) under the National Capital Plan (NCP). As such, any development on the site will be subject to special requirements and referral to the National Capital Authority (NCA).

Although the requirements for sites along a MAAR are not overly prescriptive, there are general principles surrounding landscape design, building materiality, signage and lighting that need to be considered and addressed as part of any redevelopment proposal.

The NCP states “development should generally be constructed to the street boundary to define and enclose streets and create continuous street frontage while allowing variations in individual buildings and uses”. This requirement may be unachievable on the subject site noting presence mature trees along the boundaries of Ainslie Avenue.

7.2.8 Traffic

The site is located adjacent to Ainslie Avenue (an arterial road), Elimatta and Allambee Streets (Local Access Streets) and Doonkuna Street (a minor collector road).

Calibre undertook a preliminary traffic assessment in August 2020. Their report concluded that the stop-controlled cross intersections at Doonkuna and Elimatta Sts along Ainslie Avenue operate well within the acceptable parameters for both capacity and delay during both AM and PM peaks. Maximum delays at the intersections were similar during both AM and PM peaks, with delays between 17 and 18 seconds (LOS B).

Parking & Site Access

Car parking is provided onsite at ground floor level under some blocks, in group carports, and in open parking spaces. Site access is Elimatta Street and Allambee Street.

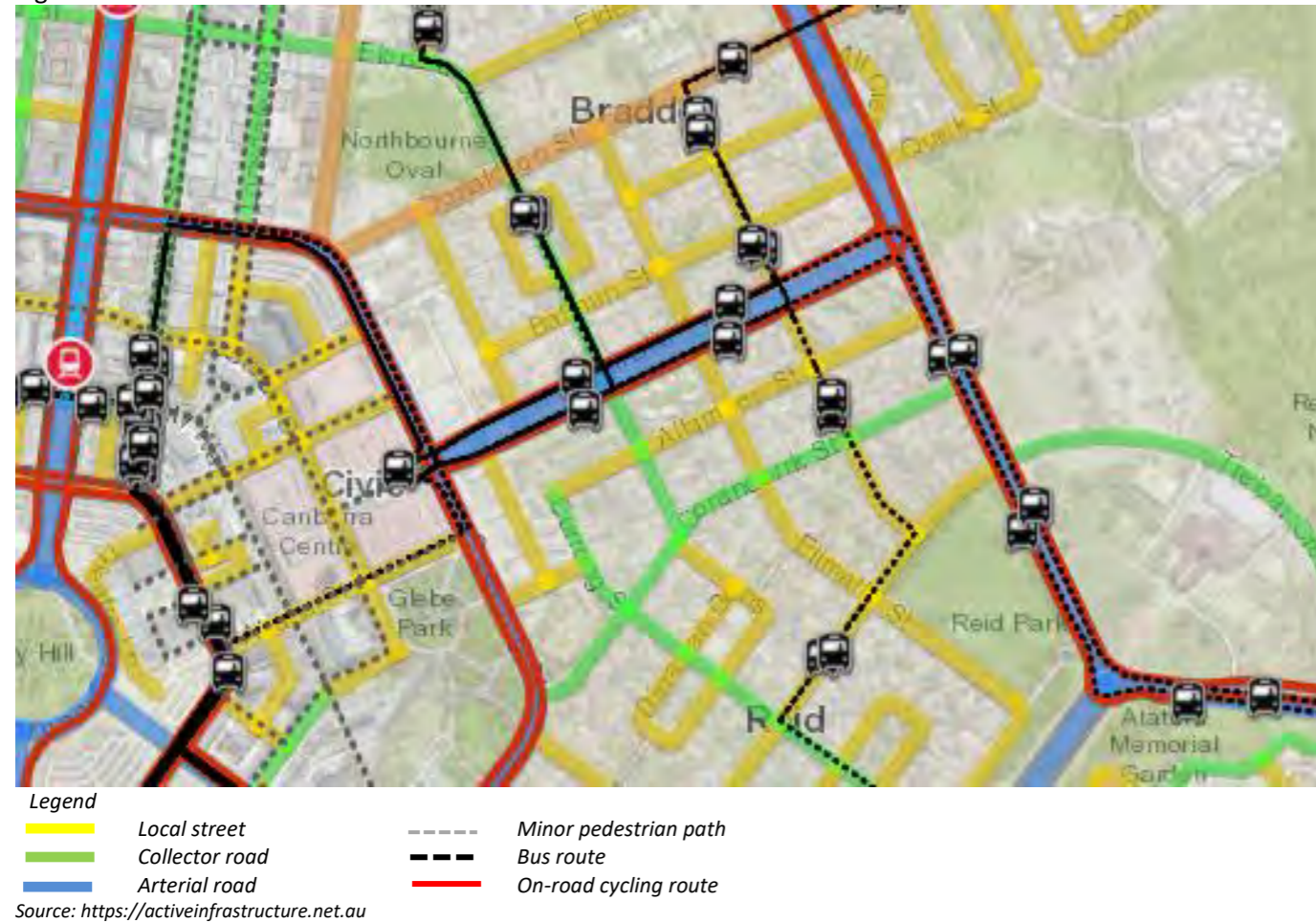
Public Transport

Jerilderie Court is situated along a bus route on Ainslie Avenue, with bus stops within approximately 60m from the site to the north and south of Ainslie Avenue.

Active Travel

The site is located along a main on-road cycling route along Ainslie Avenue.

Figure 26: Jerilderie Court – Active Travel Routes



7.2.9 Services

Calibre undertook a preliminary services assessment in August 2020 compiled from DBYD information and ICON Water Geospatial data. Existing services are summarised as follows:

- Water
 - 100mm dia. cast mains run along the northern verge of Allambee Street, southern verge of Ainslie Avenue, and the eastern verge of Doonkuna Street. A single water tie connects to the site from the main along Allambee Street. This main also has another two ties to Reid Blocks 2 and 3, Section 16 which are adjacent to the site.
- Sewer
 - A 150mm dia. main crossing Doonkuna Street into the northern verge of Allambee Street. This main stops at the south-western corner of the site, where a property service line connects into the site.
- Stormwater
- Telecommunications
 - Telstra - Mains conduit running along the southern verge of Ainslie Avenue. Two manholes are located adjacent to the site along this length of main. 100mm dia. conduit along the western verge of Elimatta Street, to the east of the site. This ties into the site centrally along the eastern side of the block with a 50mm dia. conduit.
 - NBN - NBN assets within the Telstra trenches to the north and east of the site. A 20mm dia. conduit which extends from a manhole within the southern verge of Ainslie Avenue, west of the Doonkuna Street intersection, to the southern edge of the site. A pair of 50mm dia. conduits which cross

Doonkuna at the midpoint of the site, before extending south along the eastern verge of Doonkuna Street.

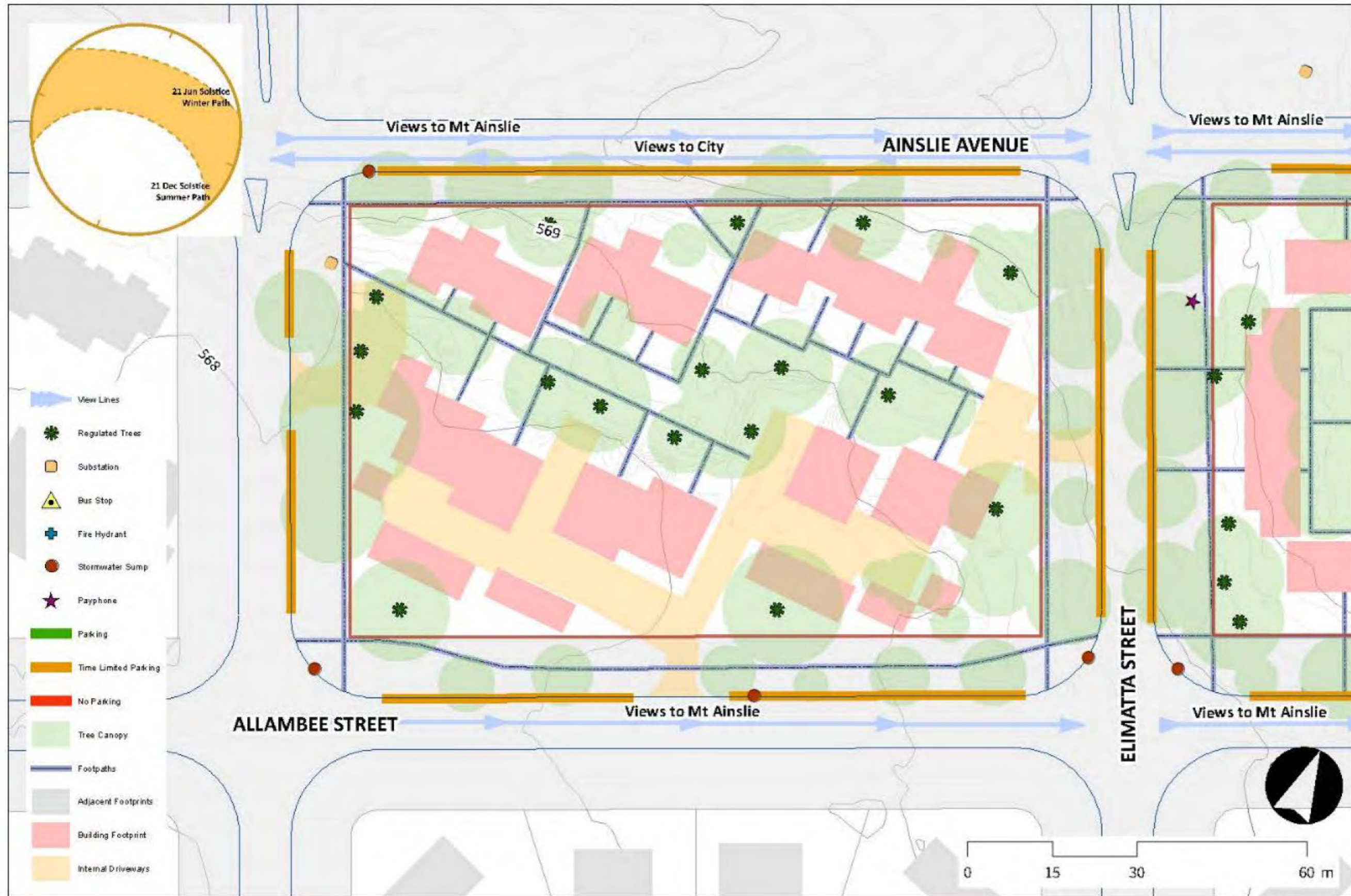
- Optus - Service runs within the southern verge of Allambee Street and western verge of Doonkuna Street.
- TransACT – A set of four 100/110 conduits run within a trench within the southern verge of Ainslie Avenue.
- Gas
 - A 63mm dia. 210kPa PE distribution main within the eastern verge of Doonkuna Street, to the west of the site. This main connects with two 32mm dia. 210kPa nylon distribution mains which cross Doonkuna Street and continue west.
- Electrical
 - Underground HV electric lines along the northern verge of Allambee Street and the southern verge of Ainslie Avenue.
 - Electrical kiosk located within the eastern verge of Doonkuna, at the northern corner of the site.
 - Underground LV electric line which crosses Elimatta Street at the north-east of the site, continues south along the western verge of Elimatta Street until the midpoint of the block, cuts west through the centre of the block and ends in the kiosk at the north-western corner of the site.
 - Underground service lines throughout the site, acting to distribute the power from the kiosk to the individual buildings.
 - Underground streetlight cabling is located along the northern and western sides of the site. Six streetlights that are powered by this network are also located on the block. One streetlight in the southern verge of Allambee Street is also powered exclusively by this network.
 - A 50mm dia. underground NBN electrical line which crosses Doonkuna Street near the midpoint of the block, then continues to the south along the eastern verge of Doonkuna Street.
 - Underground earth cables throughout the site

Figure 27: Jerilderie Court – Existing Services and Easements



Source: Calibre

Figure 28: Jerilderie Court – Site Analysis



8.0 Kanangra Court

8.1 Summary of Site Characteristics

The following is a summary of key characteristics the site:

Cadastral Description	Block 1 Section 11 Reid
Territory Plan Zoning	RZ4 – Medium Density Residential Zone
Site Area	12,773m ² (ACTMAPI)
Dimensions	The subject site is rectangular in shape with an approximate length (East-West) of 167m and width of 77m (North-South).
Location	The subject site has frontage to Gooreen Street, Allambee Street, Limestone Avenue and Ainslie Avenue. The site is within proximity to the Canberra Centre, approximately 550m.
Construction	The subject site was developed in 1964.
Current Use	The site contains three – four storey structures consisting of 78 flats being 36 bed-sit units, one 1 bedroom unit and 41 two bedroom units, with a plot ratio of approximately 34%.
Existing Access	There are two vehicular access driveways from Allambee St. The driveways connect across the site, allowing access to the shared parking. The block has a pedestrian footpath along frontages to Gooreen Street, Allambee Street, Limestone Avenue and Ainslie Avenue.
Public Transport	The site has good access to existing public transport along Ainslie Avenue, the bus stop is approximately 140m from the site.
Adjacent Land Uses	To the south is a neighbourhood of RZ1 detached and semi-detached single storey residential houses and townhouses. To the west is RZ4 medium density residential housing, consisting of two storey flats. Directly adjacent to the north is the Mercure Hotel. Adjacent to the east is the former CSIRO site being redeveloped as ‘The Foothills’ residential development and Campbell High School.
Significant plants and animals	There are no records that suggest there may be habitat for any endangered or threatened species on the site. Some sites to the South East in the vicinity contain rare plants and animals.
Vegetation	The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 7 could be regulated trees.
Heritage	The subject site does was nominated for listing but is <u>not</u> registered (ACT Heritage Register).

Bushfire	The subject site is <u>not</u> located within a declared ‘Bushfire Prone Area’ (ACTMapi).
Easements	There is sewer easement along the North and West boundary of the site. The site also has electricity easement on North of the site (ACTMAPI).
Topography and drainage	The site falls from a height of RL581 at the East to RL574 at the West, representing an overall average slope of about 3%. The site drains to the local stormwater network.
Flooding	The subject site is <u>not</u> located within a flood zone (ACTMapi).
Contamination	The site is <u>not</u> recorded on the Environment Protection Authority Contaminated Land Register.
Utility Services	The site is within the existing urban area with existing residential development and is assumed that is fully serviced.

Figure 29: Kanangra Court – Site Plan



Source: Purdon Planning 2020 (aerial imagery – ACTmapi 2018)

8.2 Key Challenges

8.2.1 Current Zoning & Building Heights

The existing zoning, being RZ4, is a medium density residential zone which is generally limited to 3 storeys in height (R21 Multi-Unit Housing Code). This limit aligns with existing on site buildings which are three storeys in height. As such, redevelopment of the site would likely be limited to the existing height limits.

Having said this, the R21 does have a criteria which allows development beyond the three storey limit as long as all of the following can be achieved:

- a) consistency with the desired character
- b) the appearance from the street of not more than three storeys for that part of the building facing the street
- c) reasonable solar access to dwellings on adjoining residential blocks and their associated private open space

Despite this criteria providing some flexibility with regards to building heights, the requirement to ‘appear not more than 3 storeys from the part of the building facing the street’ will be challenging to achieve noting the site has street frontage to all boundaries.

On this basis, retention of the RZ4 zoning will likely mean that any redevelopment is limited to 3 storeys in height.

8.2.2 Heritage

Kanangra Court was designed for bachelor accommodation, with construction commencing in 1962 to meet a growing demand for single person housing. Whilst bachelor accommodation was provided elsewhere in Canberra, Kanangra Court was the first development solely dedicated to bachelor accommodation.

The buildings were designed by Collard, Clarke & Jackson who intended to create a ‘domestic’ appearance to the buildings, taking inspiration from the siting, materiality, and form of single dwellings of that period. Hence the zig-zagged and staggered positioning of the buildings which do not have frontage to, or dominate a single street front, as is usually the case with flat type developments.

Kanangra Court is included on the Australian Institute of Architects (AIA) Register of Significant Twentieth Century Architecture and was nominated to the ACT Heritage Register by the AIA for its architectural and planning merits and association with the location of the original Ainslie Post Office. A bronze plaque attached to the rear of the carport along Allambee Street commemorates this.

The site was the subject of an assessment of its heritage values by Phillip Leeson Architects in 2011. The assessment concluded that the development did not meet the various criteria to warrant Heritage listing.

In 2015 the ACT Heritage Council determined that in the broader context of medium-density public housing constructed in the post-war period, Kanangra Court is not considered to be uncommon, rare or endangered. The Statement of Reasons prepared by the Heritage Council confirmed that Kanangra Court does not meet any of the criteria specified in Section 10 of the *Heritage Act 2004* to warrant registration as a heritage item.

A further Leeson assessment undertaken in 2020 in response to changes to the criteria under the Heritage Act re-affirmed the 2015 decision of the Heritage Council that the site was not of such significance to warrant Heritage registration.

8.2.3 Traffic

The subject site has frontage to Limestone Avenue, which is an arterial road, as well as a heavy vehicle approved route (TCCS Approved Heavy Vehicle Routes, 2020).

This means that the site is likely to be subject to traffic noise impacts.

Despite this, Purdon Planning expects that appropriate building construction methodologies could mitigate any impacts associated with traffic noise.

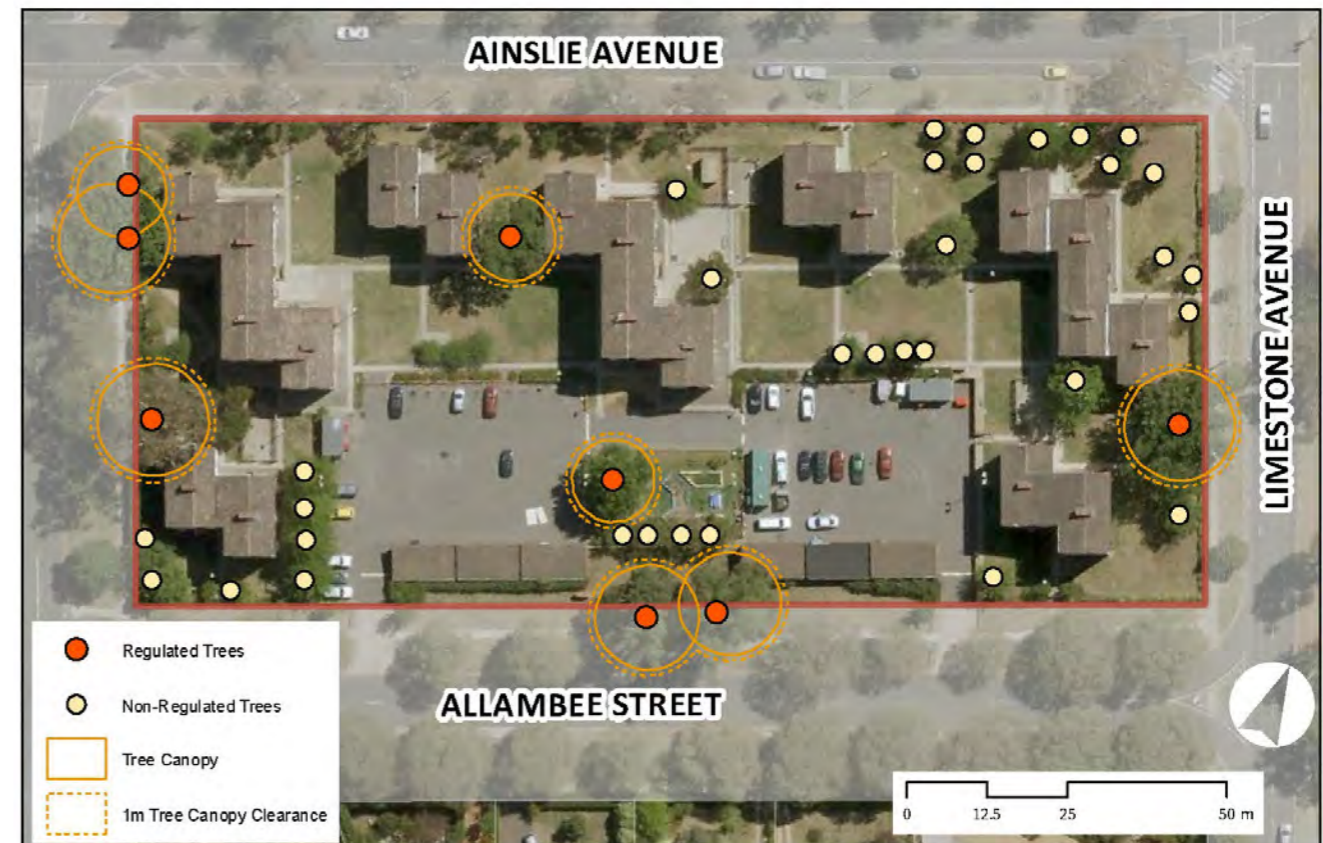
Site access from Limestone Avenue is not likely to be supported noting TCCS generally do not support additional access points on to arterial roads, particularly in close proximity to traffic lights (at Intersection of Limestone & Ainslie Avenue). However, given the site has street frontage to all boundaries, this not expected to be a major issue.

8.2.4 Trees

The site contains a number of mature to semi-mature trees and vegetation. While the site does not contain any registered trees, approximately 7 could be regulated trees.

A requirement to retain on-site trees would result in a reduced building foot print.

Figure 30: Kanangra Court – Existing Trees



Source:

8.2.5 Services

There is an 'L' shaped sewer easement running along the northern and western boundaries (Figure 31) which is approximately 3.5m in width. In addition, there is a small electricity easement about halfway along the northern boundary.

Given both easements are largely located at the boundary to the site, they are unlikely to have a significant impact on redevelopment opportunities noting residential developments are generally setback from the Street and therefore the easements are likely to be contained within the building setbacks.

Notwithstanding this, the presence of these easements on the boundary may impact site access opportunities given some utility providers do not support driveways over the top of their assets noting driveways could impact the assets over time, and any maintenance or repair works to the asset would block site access for a period. As it stands, none of the existing vehicle entries cross over the top of the easements which could indicate an unwillingness from utility providers to allow site access over the top of easements.

Calibre undertook a preliminary services assessment in August 2020 compiled from DBYD information and ICON Water Geospatial data. Existing services are summarised as follows:

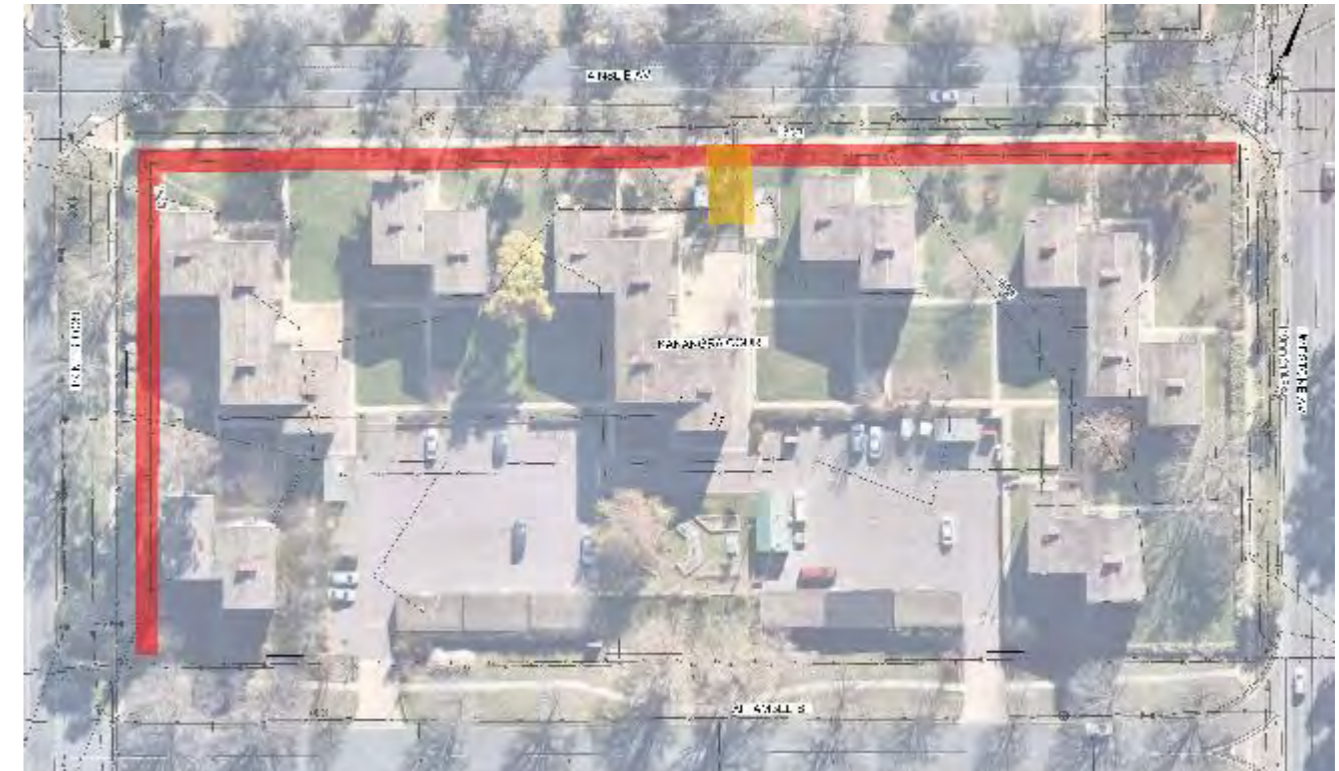
- **Water**
 - A 100mm dia. main along both the northern verge of Allambee Street and the eastern verge of Gooreen Street. Four water ties (two along each length of water main) connect to the site.
 - A 150mm dia. main along the western verge of Limestone Avenue. Has two water ties into the site.
- **Sewer**
 - A 150mm dia. main along the western verge of Limestone Avenue.
 - A 150mm dia. main within the site, running along the northern and western edges of the block. One 150mm dia. vitrified clay and two polyvinyl chloride reticulation mains tie in to the block.
- **Stormwater**
- **Telecommunications**
 - Telstra - Mains conduit running along both eastern and western verges of Gooreen Street, and along the southern verge of Allambee Street. Several manholes are located along these lengths of mains. Two 100mm dia. conduits along the eastern verge of Gooreen Street, which connect into the site around halfway between Ainslie Avenue and Allambee Street intersections. 100mm dia. conduits throughout the site, providing connections to the individual buildings.
 - NBN - the NBN services utilise the abovementioned Telstra conduits to service the site. A single 100mm dia. conduit, crossing the southern leg of the Gooreen Street / Ainslie Avenue intersection to tie into the site.
 - Optus - A Telstra owned conduit along the eastern verge of Gooreen Street which houses Optus fibre. An Optus underground fibre-optics cable which exits the Telstra manhole on the north-western corner of the site and continues into the median of Ainslie Avenue.
- **Gas**
 - A 110mm dia. 210kPa PE distribution main within the western verge of Limestone Avenue, to the east of the site.

Electrical

- Overhead HV power lines along the western verge of Limestone Avenue, to the east of the site. A pole (POL24967) is also located within this verge.
- Underground HV electric lines along the northern verge of Allambee Street and the southern verge of Ainslie Avenue.
- A ground mounted kiosk within the bounds of the site, located central along the northern edge of the site.

- Underground LV service lines throughout the site, acting to distribute the power from the kiosk to the individual buildings.
- Underground streetlight cabling is located along the north and east sides of the site. Three streetlights which are powered by this conduit are also located on the block.
- A streetlight pole on the south-eastern corner of the block, which is powered by an overhead streetlight line crossing Allambee street to the south.
- Underground earth cables throughout the site

Figure 31: Kanangra Court – Existing Services and Easements



Source: Calibre

8.2.6 Site Access

The subject site has street frontage to all boundaries which means that there is generally good potential for site access. However, as noted in the previous sections, two of the Street frontages (Limestone and Ainslie Avenue) are essentially arterial roads, to which direct access onto is unlikely to be supported by TCCS. There is also an easement running along two of the three street frontages.

As such, vehicle access is likely to be limited to its current locations off Allambee Street (x2) as this boundary is not impacted by easements or high traffic volumes.

8.2.7 National Capital Plan

Both Limestone and Ainslie Avenue are Main Avenues and Approach Routes (MAAR) under the National Capital Plan (NCP). As such, any development on the site will be subject to special requirements and referral to the National Capital Authority (NCA).

Although the requirements for sites along a MAAR are not overly prescriptive, there are general principles surrounding landscape design, building materiality, signage and lighting that need to be considered and addressed as part of any redevelopment proposal.

The NCP states “development should generally be constructed to the street boundary to define and enclose streets and create continuous street frontage while allowing variations in individual buildings and uses”. This requirement may be unachievable on the subject site noting presence of easements and mature trees along the boundaries to the MAAR.

8.2.8 Adjacent Land Uses

The subject site is within 30m (approx.) of an RZ1 area that consists of 1-2 storey single dwelling residential properties. Noting the subject site is north of these blocks, any redevelopment on the subject site will have the potential to overshadow these residential blocks.

As such, redevelopment on the subject site will need to be considerate of this and development beyond the existing 4 storeys may not be possible (depending on shadows cast).

In addition to overshadowing, general bulk and scale will also need to be a consideration as the current form of buildings is quite low density (approx. 34% plot ratio) and buildings are spread across the site with significant breaks in built form to allow view corridors through the site.

Noting site access is also likely to be off Allambee Street, traffic volume will also need to be assessed to ensure there is no significant impact to adjacent residential properties.

8.2.9 Land Use

The subject site is approx. 700m from the main commercial area of the City and whilst it has proximity to some community, tourist and commercial facilities including Campbell High School, the Mercure Hotel and the Australian War Memorial, the distance from the main commercial areas of the City is likely to render the site unsuitable for any uses beyond residential.

Given the sites close proximity to lower density residential areas and also the proposed Foothills development at Block 5 Section 38 Campbell, residential use is likely to be the most appropriate land use.

8.2.10 Noise

As highlighted in previous sections, the subject site is adjacent to two major roads which carry high volumes of traffic. In particular, Limestone Avenue which bounds the eastern portion of the site and is an approved heavy vehicle road. As such, the subject site may be impacted by noise from traffic and additional measures may need to be put in place as part of the construction to mitigate this issue.

Figure 32: Kanangra Court – Site Analysis



Part 3: Development Options

9.0 Opportunities (Ainslie Flats)

9.1.1 Potential Land Uses

The current RZ1 zoning allows for a range of residential-type land uses, however, the uses considered most relevant for this site are as follows:

- multi-unit housing
- residential care accommodation
- retirement village
- single dwelling housing
- special dwelling
- supportive housing

It is understood that the current units are occupied by elderly persons, but the development is not defined, for the purposes of the Territory Plan, as supportive housing, residential care accommodation or a retirement village. Notwithstanding the form of residential development, the Territory Plan requirements would result in future development having at least 10% of all dwellings to meet adaptable housing standards. In addition, all ACT Housing units would be constructed to adaptable housing standards.

It is considered that redevelopment of the site for an integrated Retirement Village, possibly providing 3 levels of care including, independent living units (*supportive housing*), hostel rooms and nursing home (*residential care accommodation*), would be an appropriate redevelopment option. Although the site is considerably smaller than many other suburban retirement villages, it is considered of sufficient size to accommodate a small-scale retirement village, or an ‘annexe’ to an existing retirement village. At 19,533m², the Ainslie Flats site is comparable in size to some other inner Canberra Retirement Complexes, as shown in Table 3.

Table 3: Inner Canberra Retirement Complexes

Facility	Suburb	Block	Section	Area (sqm)
Goodwin Village	Ainslie	9	36	26,794
The Grange Deakin Retirement Village	Deakin	8	36	19,639
BaptistCare Griffith Aged care centre	Griffith	45	78	16,489
Canberra Aged care facility	Lyneham	19	56	13,553
Brindabella Court	Watson	23	47	6,210
Goodwin Gardens	Ainslie	9	36	4,506
Southern Cross Care	Campbell	8	49	3,708
Southern Cross Care W.E O'Brien Court	Campbell	8	29	2,551
Southern Cross Care John Cahill Village	Yarralumla	15	57	904

The immediate area of Ainslie has a higher proportion of residents aged over 55 compared to the ACT as a whole (2016 Census). In addition, a retirement village would draw from the entire inner north area as well as other parts of the ACT.

An alternative to a retirement village is an opportunity to redevelop the site as aged persons independent living units (defined as ‘supportive housing’) or as standard residential development. The impacts of either would not be dissimilar. Possibly resulting in slightly less traffic generated by an aged care development.

Although the RZ1 zone is intended predominantly for low density single dwelling housing, the current development as residential units allows the site to be redeveloped for multi-unit housing. As the site is not a ‘Standard Block’ (refer definitions at Attachment A) and was created before 2013, some of the key planning

controls relating to plot ratio and additional dwellings on a site do not apply. However, other planning controls relevant to the RZ1 zone that would influence the design of future multi-unit development, and hence the overall yield, include:

- 6m setback to main boundary, 4m to other boundaries
- Building envelope created by a 45° angle at 3.5m high on the boundaries
- 12m separation between primary living areas and private open spaces
- 1 car space per 1 bed unit, 1.5 spaces per 2 bed unit and 2 spaces per 3 bed unit, plus one space per 4 units for visitor parking.
- 40% of site area to be open space
- 20% of site area to be planted
- Ground level private open space (POS) to be 28m² for 1 bed units and 36m² for 2 & 3 bed units
- Upper level POS is 6m² for 1 bed units and 36m² for 2 & 3 bed units (Note: the discrepancy in POS requirements in the current Code is not clear and proponents usually rely on the criterion for upper level open space and provide balconies at 6-10m², rather than providing a 36m² balcony)
- Units to receive 3 hours of direct sunlight between 9am & 3pm on the winter solstice
- Minimum unit floor areas: studio units= 40m²; 1 bed unit = 50m²; 2 bed = 70m²; 3+ bed = 95m².
- At least 10% of units to be ‘adaptable’
- Courtyard walls not more than 60% of width of block
- Maximum length of unarticulated walls is 15m
- Minimum separation between walls is 3m
- Enclosed storage area of 4m² for each unit, separate from internal area of unit

The site is sufficiently large to enable consideration of subdivision of the section to create a central public laneway with rear-loaded terrace houses fronting each street. This could achieve a design outcome reasonably consistent with the surrounding area with a variety of single and two storey dwellings each on their own block (i.e. not unit titled) similar to the image below. It would be likely that there would be some consistency in overall design through the development of each dwelling as part of an Integrated Housing Development.



The yield for single dwelling housing would be substantially lower than the yield for other redevelopment options and lower than the current number of units. However, it is considered that the loss in yield on this site

could be offset by increases in yields on other sites within the Ainslie Precinct. Further details on potential yield and site planning outcomes is provided in Section 10.2.

9.1.2 Rezoning Potential

The current RZ1 zoning limits the development potential, as discussed in Section 4.2.1. One solution to such limitations is to seek rezoning of the site to a zone that allows for a higher density.

The mature trees around the site provide an urban landscape context for the existing development which is characterised by large verges within which significant trees have grown. Retaining their character still allows for a redevelopment in the centre of the site that will deliver considerable units numbers and improved tenure mix in the area.

Due to the distance from facilities (e.g. 1.5km to each of the Canberra Centre, Braddon and Ainslie shops) and the established low density of surrounding areas, we consider that a successful rezoning process would be a considerable challenge, especially if taller buildings than currently exist on the site are proposed.

It should also be noted that rezoning to an RZ2 zone would not achieve any different development outcome, including yield, than the current RZ1 zoning and associated planning controls.

In addition, rezoning to RZ3 or RZ4 would not achieve increases in yield as the respective plot ratio limits would apply. Rezoning to RZ5 would achieve an increased yield, however, this is not considered appropriate.



10.0 Development Scenarios (Ainslie Flats)

10.1 Potential Development Areas

As outlined in Section 4.2.1 above, the site is not subject to any plot ratio controls, as the relevant rule under the Multi-Unit Housing Code only applies to ‘Standard Blocks’ or other blocks created after 2013. This means the main ‘controls’ influencing the potential development yields is the two storey height limit, plus the desired 12m building separation and the likely need to retain regulated trees.

Based on a 6m setback to one road frontage and 4m to other boundaries, there is an overall potential development footprint of about 16,000m² within the 19,533m² site. However, allowing for retention of all regulated trees, the potential building footprint reduces to about 11,000m².

The various density scenarios are based on the retention of the current RZ1 zoning as, rezoning to RZ3 or RZ4 would not achieve increases in yield as the respective plot ratio limits would apply and rezoning to RZ5 is not considered appropriate.

The potential yields for the various density scenarios are outlined in Table 4 below.

Figure 33: Ainslie Flats – Development Areas



Table 4: Ainslie Flats – Potential Yield Scenarios

Site	Plot Ratio	Possible GFA (m ²)	No. Storeys	Density (dwell/ha)	Estimated Potential Yield
Existing (approx.)	40%	7,800	2	45	88
Large Block single dwellings	65% ⁽¹⁾	12,709	1-2	10	21
Compact Block single dwellings	65% ⁽¹⁾	12,709	1-2	21	40
Townhouses – Low Density	52%	10,070	2	27	53
Townhouses – Medium Density	64%	12,475	2	41	77
Townhouses – High Density	67%	13,0806	2	64	121
Townhouses – Higher Density	75%	14,520	2	64	121

Notes:

1. Subdivision of site would introduce mandatory 65% plot ratio limit.

10.2 Development Scenarios

10.2.1 Site Subdivision

The area and dimensions of the site make it suitable for subdivision into a number of large single dwelling blocks. With an average depth of 40-45m and an average width of 19m blocks would range in size from 750 – 850m², similar to the blocks in the surrounding area. This would yield 21 large blocks for single detached housing. However, the blocks over 800m² could be developed for dual occupancies under the RZ1 zone. The creation of large blocks would enable each future land owner to address the need for retention of regulated trees on each site. This outcome would be directly consistent with the character of the surrounding area (as per zone objectives). However, it would be expected that the relatively long blocks would attract market attention for dual occupancy development, resulting in a proliferation of ‘backyard’ houses and a density of about 40 dwellings, double to quadruple that exists in the local area. It is suggested that if this is to be the likely outcome of such a subdivision, then it would be better to plan for and design a development of 40 dwellings where all dwellings have frontage to the public realm and contribute to the streetscape character, rather than planning for 21 dwellings and ending up with an ad-hoc outcome of 40 dwellings.

A preferred low density outcome is to design the section as a ‘rear-loaded’ series of single dwellings with vehicle access off a rear laneway and all dwellings fronting the existing public streets. This terrace-style arrangement would yield about 41 dwellings based on an average block size of about 210m² (30m deep x 7m wide) and retention of all the regulated trees. As this outcome is based on separate title for each dwelling (i.e. not unit title), with the laneway dedicated as a public road with no common property. The significant areas identified for tree retention would need to be properly maintained by the owner of the property or by establishing these areas as dedicated parkland.

10.2.2 Townhouses

Redevelopment of the site for a large-scale townhouse style development is considered to be consistent with the objectives of the zone as well as the character of the surrounding area. The site could accommodate one large townhouse development or be readily subdivided to achieve 3 or 4 blocks of 5,000-6,500m² each. However, subdivision would reduce overall yield as the development on smaller blocks would need to comply with the 65% plot ratio limit together with solar access requirements along each new southern boundary for the adjoining block to the south and also not achieve efficiencies of scale where retention of regulated trees was required.

Figure 34: Ainslie Flats – Low Density Development Option (Townhouses)



Source: Turco & Associates Architects

Figure 35: Ainslie Flats – Medium Density Option (Townhouses)



Source: Turco & Associates Architects

Figure 36: Ainslie Flats – High Density Option 1



Source: Turco & Associates Architects

Figure 37: Ainslie Flats – High Density Option 2



Source: Turco & Associates Architects

11.0 Opportunities (Reid Court)

11.1 Potential Land Uses

Although the current RZ4 zoning allows for a range of residential-type land uses, the use considered most relevant for this site is multi-unit housing. The site is considered too small for a retirement village.

Some of the key planning controls relevant to the RZ4 zone that would influence the design of future multi-unit development, and hence the overall yield, include:

- 6m setback to main boundary (Ainslie Avenue), 4m to other boundaries
- Building envelope created by a 45° angle at 3.5m high on the boundaries
- 80% plot ratio
- Maximum building height of 12.5m, which does not include basement
- 12m separation between primary living areas and private open spaces
- 1 car space per 1 bed unit, 1.5 spaces per 2 bed unit and 2 spaces per 3 bed unit, plus one space per 4 units for visitor parking.
- 20% off site area to be open space
- 10% of site area to be planted
- Ground level private open space (POS) to be 24m² for 1 or 2 bed units and 36m² for 3 or more bed units
- Upper level POS is 6m² for 1 bed units and 36m² for 2 & 3 bed units (Note: the discrepancy in POS requirements in the current Code is not clear and proponents usually rely on the criterion for upper level open space and provide balconies at 6-10m², rather than providing a 36m² balcony)
- Units to receive 3 hours of direct sunlight between 9am & 3pm on the winter solstice
- Minimum unit floor areas: studio units= 40m²; 1 bed unit = 50m²; 2 bed = 70m²; 3+ bed = 95m².
- At least 10% of units to be 'adaptable'
- Courtyard walls not more than 1.8m in height and include openings not less than 25% of the surface area of the panel
- Maximum length of unarticulated walls and roof is 15m
- Minimum separation between unscreened element and an external wall is 3m
- Minimum separation between external walls at the lower floor on the same block or an adjoining block is not less than 1m
- Enclosed storage area of 1.5m² for each unit, separate from internal area of unit

11.2 Rezoning Potential

The current RZ4 zoning limits the development potential to medium density residential. To achieve a higher density residential development, a rezoning of the site would need to be sought.

Due to the distance from facilities (e.g. 500m to the Canberra Centre and 1km to Braddon) and other higher density developments in the surrounding area to the west along Cooyong Street, we consider that a successful rezoning process could be considered.

Rezoning to RZ5 has the potential to increase the yield along Ainslie Avenue, where developments to 6 storeys could be achieved, however Allambee Street would still be restricted to a three storey development as permitted in the Multi-Unit Housing Development Code.

Some of the key planning controls for multi-unit development in RZ5 zones include:

- 6 stories unless –
 - For the part of the building within 30m of an RZ5 block, 4 stories
 - For the part of a building within 50m of an RZ1, RZ2 or RZ3 block, 3 stories
- Maximum height 21.5m
- Setbacks vary for buildings with 4 or more stories
- No mandatory plot ratio
- Private open space-
 - For dwellings wholly at lower floor level – 24m² with a minimum dimension of 4m;
 - For dwellings located entirely on an upper floor level – 6m² plus 2m² for service functions with a minimum dimension of 1.8m²
- 3m separation between an unscreened element and an external wall is 3m

12.0 Development Scenarios (Reid Court)

12.1 Potential Development Areas

Based on a 6m setback to one road frontage and 4m to other boundaries, there is an overall potential development footprint of about 7,000m² within the 9,272m² site. However, allowing for retention of all regulated trees, the potential building footprint reduces to about 5,300m².

Figure 38: Reid Court – Development Areas



It is considered that a ‘hybrid’ zoning could deliver an appropriate urban outcome where the RZ4 zone objectives still applied but the 3 storey height limit was relaxed along the Ainslie Avenue frontage to allow 4 storeys. This would not have any additional impact on surrounding residents than the current planning controls. The plot ratio limit of 80% would also need to be removed to enable this outcome to be achieved.

Should a rezoning to RZ5 be proposed, future development would effectively be limited to 6 storeys facing Ainslie Avenue and 3 storeys to Allambie St. The RZ5 zone does not have a mandatory plot ratio, so a greater yield than an RZ4 zone would be possible, potentially about 230 units.

Table 5: Reid Court – Potential Yield Scenarios

Site	Plot Ratio	Possible GFA (m ²)	No. Storeys	Density (dwell/ha)	Estimated Potential Yield
Existing (approx.)	48%	4,500	2	82	88
Low Density Option	80%	7,370	2-3 ⁽¹⁾	74	80
Medium Density Option	152%	14,196	3-4 ⁽²⁾	144	182
High Density Option	197%	18,252	3-6 ⁽³⁾	189	234
Higher Density Option	350%	32,448	6-10 ⁽⁴⁾	334	416

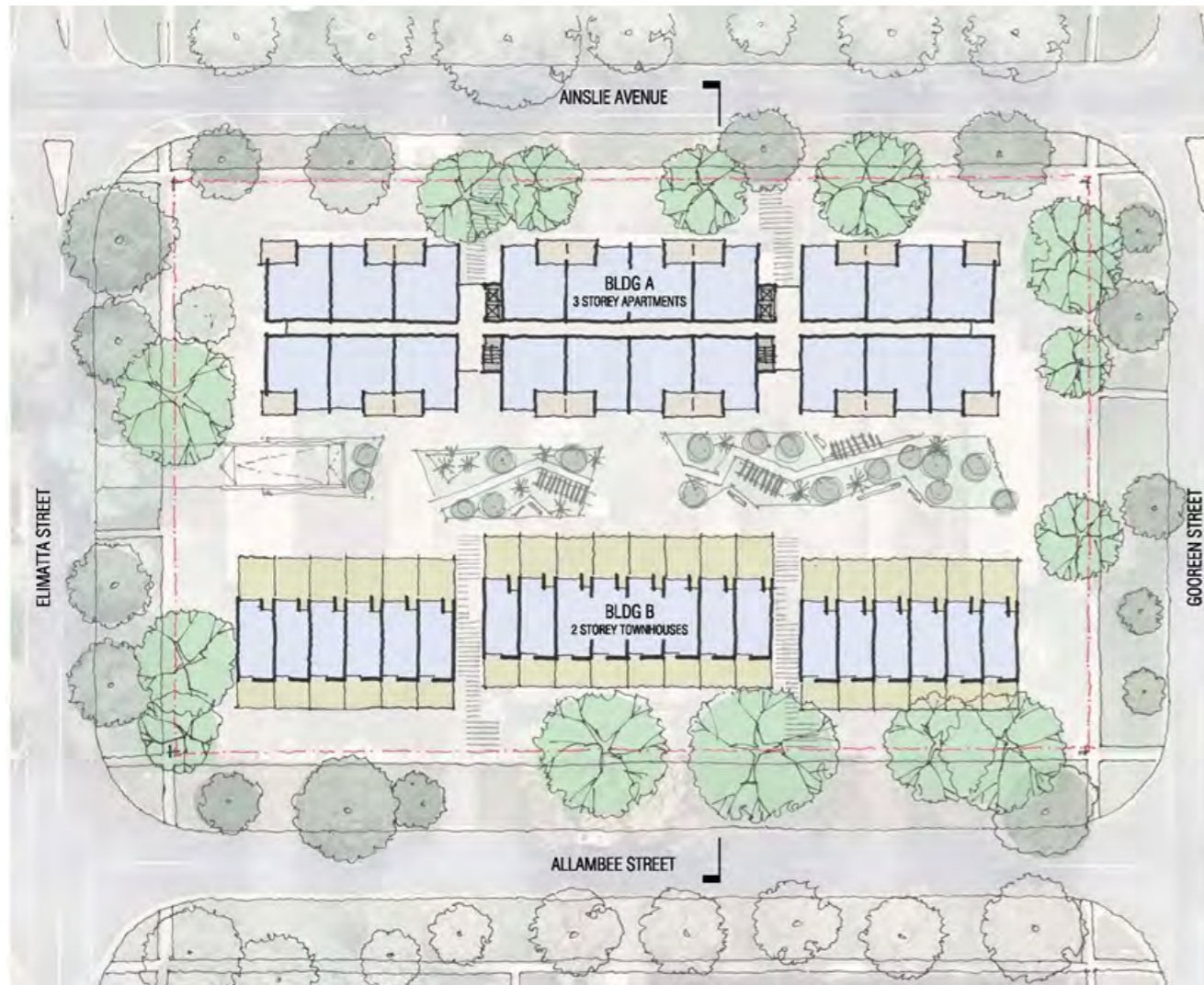
Notes:

1. 2 storey townhouses, 3 storey apartments with basement parking level
2. 4 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambie St
3. 6 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambie St
4. 10 storey apartments fronting Ainslie Ave, 6 storeys fronting Allambie St

The potential development scenarios are shown in the following images

- Figure 39: Low Density Development Option (Site Layout)
- Figure 40: Low Density Development Option (Perspective)
- Figure 41: Medium Density Option (Site Layout)
- Figure 42: Medium Density Option (Perspective)
- Figure 43: High Density Option (Site Layout)
- Figure 44: High Density Option (Perspective)
- Figure 45: Higher Density Option (Site Layout)
- Figure 46: Higher Density Option (Perspective)

Figure 39: Reid Court – Low Density Development Option (Site Layout)



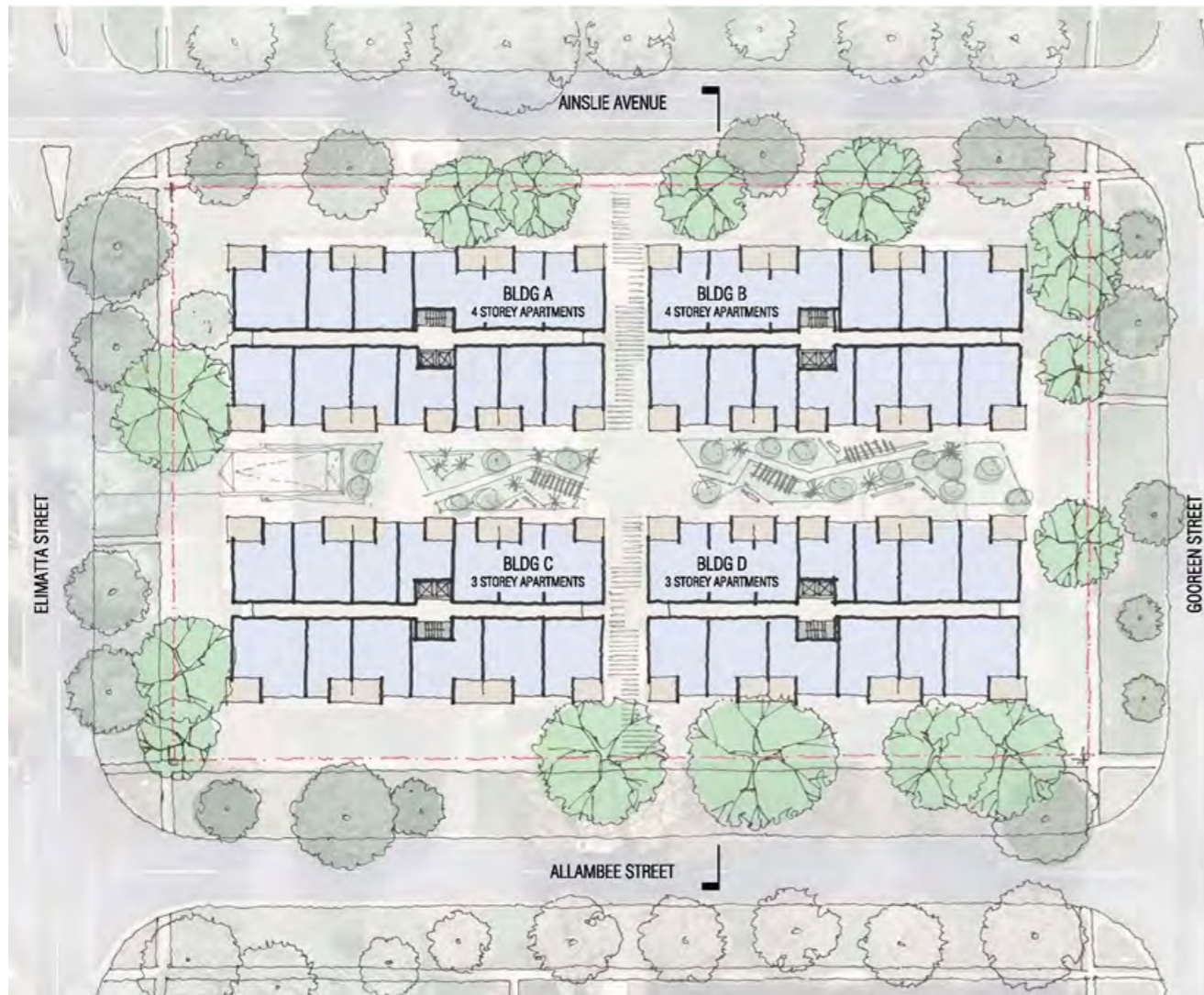
Source: Turco & Associates Architects

Figure 40: Reid Court – Low Density Development Option (Perspective)



Source: Turco & Associates Architects

Figure 41: Reid Court – Medium Density Option (Site Layout)



Source: Turco & Associates Architects

Figure 42: Reid Court – Medium Density Option (Perspective)



Source: Turco & Associates Architects

Figure 43: Reid Court – High Density Option (Site Layout)



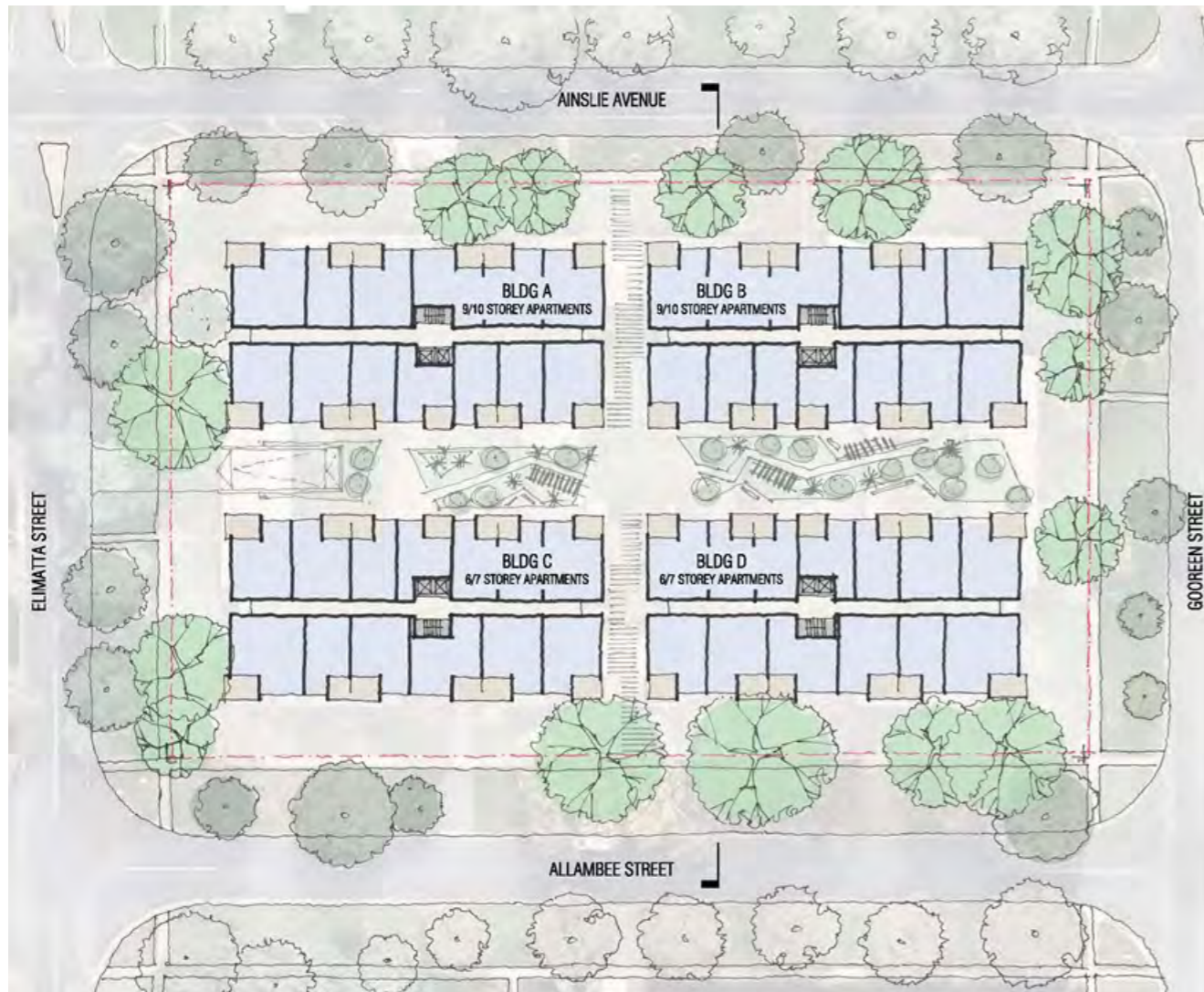
Source: Turco & Associates Architects

Figure 44: Reid Court – High Density Option (Perspective)



Source: Turco & Associates Architects

Figure 45: Reid Court – Higher Density Option (Site Layout)



Source: Turco & Associates Architects

Figure 46: Reid Court – Higher Density Option (Perspective)



Source: Turco & Associates Architects

13.0 Opportunities (Braddon Court)

13.1 Potential Land Uses

The Braddon Court site is identical to the Reid Court sit in regards to size and boundary dimensions. They also share similarities in site slope and siting of significant trees.

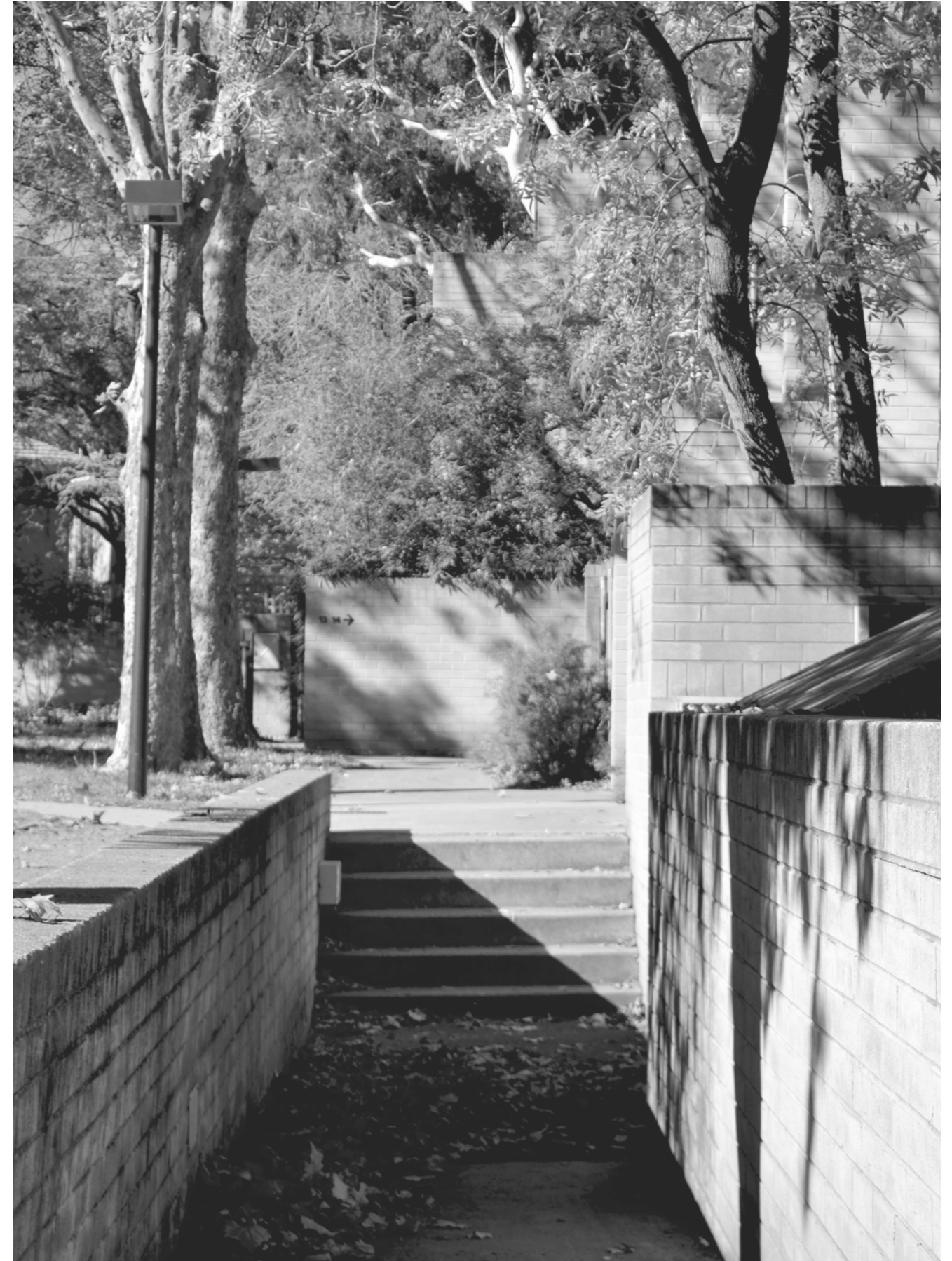
The current RZ4 zoning allows for a range of residential-type land uses, however, the use considered most relevant for this site is multi-unit housing. The site is considered too small for a retirement village. It may be possible (and appropriate) to incorporate a proportion of supportive housing units (social/affordable housing) within any future multi-unit housing development. However, these units would take the same form and typology as the multi-unit dwellings.

13.2 Rezoning Potential

The current RZ4 zoning limits the development potential to medium density residential. To achieve a higher density residential development, a rezoning of the site would need to be sought.

Due to the proximity to significant city centre facilities (e.g. 350m to the Canberra Centre and 650m to Braddon) and other higher density developments in the surrounding area to the south-west, we consider that a successful rezoning process could be considered.

Rezoning to RZ5 has the potential to increase the yield along Ainslie Avenue, where developments to 6 storeys could be achieved, however Batman Street would still be restricted to a three storey development as permitted in the Multi-Unit Housing Development Code.

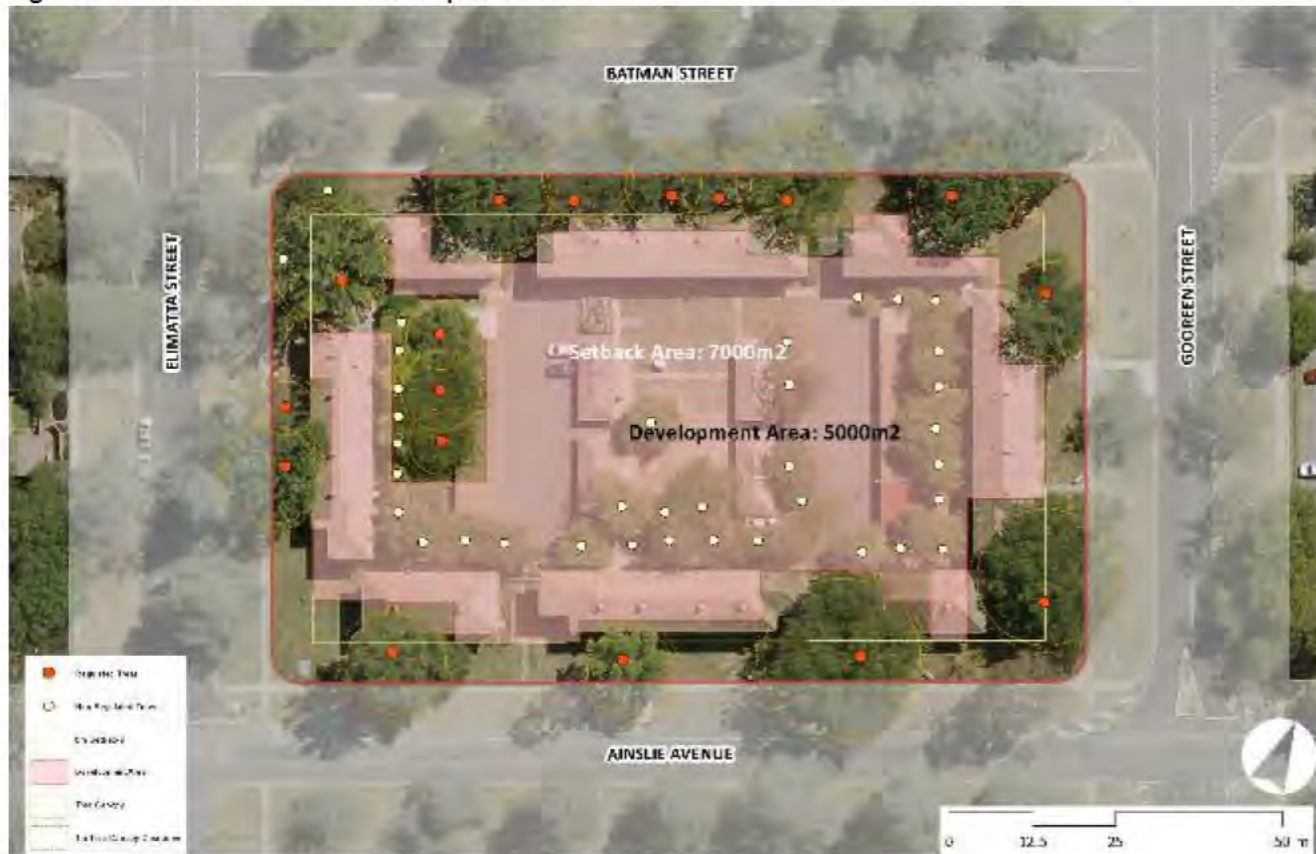


14.0 Development Scenarios (Braddon Court)

14.1 Potential Development Areas

Based on a 6m setback to one road frontage and 4m to other boundaries, there is an overall potential development footprint of about 7,000m² within the 9,272m² site. However, allowing for retention of all regulated trees, the potential building footprint reduces to about 5,000m².

Figure 47: Braddon Court – Development Areas



It is considered that a ‘hybrid’ zoning could deliver an appropriate urban outcome where the RZ4 zone objectives still applied but the 3 storey height limit was relaxed along the Ainslie Avenue frontage to allow 4 storeys. This would not have any additional impact on surrounding residents than the current planning controls. The plot ratio limit of 80% would also need to be removed to enable this outcome to be achieved.

Should a rezoning to RZ5 be proposed, future development would effectively be limited to 6 storeys facing Ainslie Avenue and 3 storeys to Batman St. The RZ5 zone does not have a mandatory plot ratio, so a greater yield than an RZ4 zone would be possible, of about 230 units should be possible.

Table 6: Braddon Court – Potential Yield Scenarios

Site	Plot Ratio	Possible GFA (m ²)	No. Storeys	Density (dwell/ha)	Estimated Potential Yield
Existing (approx.)	48%	4,500	2	82	88
Low Density Option	80%	7,370	2-3 ⁽¹⁾	74	80
Medium Density Option	153%	14,196	3-4 ⁽²⁾	144	182
High Density Option	197%	18,252	3-6 ⁽³⁾	189	234
Higher Density Option	350%	32,448	6-10 ⁽⁴⁾	334	416

Notes:

- 2 storey townhouses, 3 storey apartments with basement parking level
- 4 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambee St
- 6 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambee St
- 10 storey apartments fronting Ainslie Ave, 6 storeys fronting Allambee St

The potential development scenarios are shown in the following images

- Figure 48: Low Density Development Option (Site Layout)
- Figure 49: Medium Density Option (Site Layout)
- Figure 50: High Density Option (Site Layout)
- Figure 51: Higher Density Option (Site Layout)

Figure 48: Braddon Court – Low Density Development Option (Site Layout)



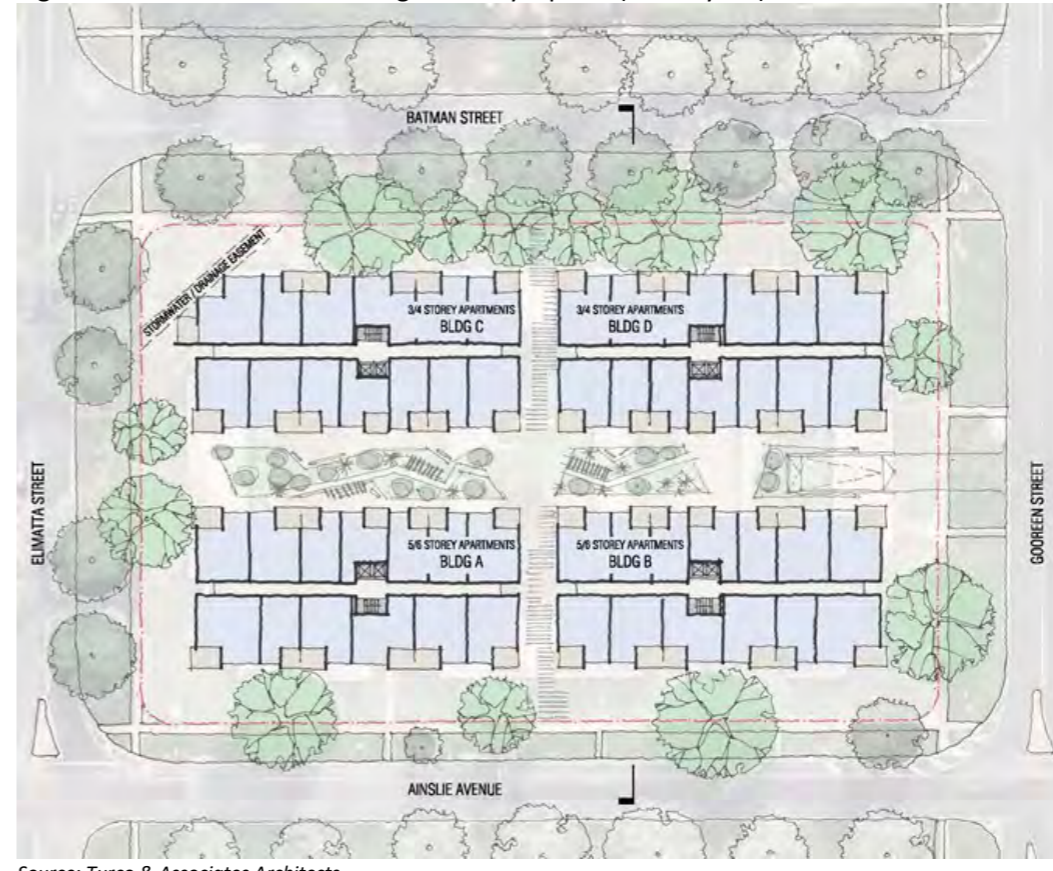
Source: Turco & Associates Architects

Figure 49: Braddon Court – Medium Density Option (Site Layout)



Source: Turco & Associates Architects

Figure 50: Braddon Court – High Density Option (Site Layout)



Source: Turco & Associates Architects

Figure 51: Braddon Court – Higher Density Option (Site Layout)



Source: Turco & Associates Architects

15.0 Opportunities (Jerilderie Court)

15.1 Potential Land Uses

Although the current RZ4 zoning allows for a range of residential-type land uses, the use considered most relevant for this site is multi-unit housing. It may be possible (and appropriate) to incorporate a proportion of supportive housing units (social/affordable housing) within any future multi-unit housing development. However, these units would take the same form and typology as the multi-unit dwellings.

15.2 Rezoning Potential

The current RZ4 zoning limits the development potential to medium density residential. To achieve a higher density residential development, a rezoning of the site would need to be sought.

Due to the distance from facilities (e.g. 350m to the Canberra Centre and 650m to Braddon) and other higher density developments in the surrounding area to the west, we consider that a successful rezoning process could be considered.

Rezoning to RZ5 has the potential to increase the yield along Ainslie Avenue, where developments to 6 storeys could be achieved, however Allambee Street would still be restricted to a three storey development as permitted in the Multi-Unit Housing Development Code.



16.0 Development Scenarios (Jerilderie Court)

16.1 Potential Development Areas

Based on a 6m setback to one road frontage and 4m to other boundaries, there is an overall potential development footprint of about 7,000m² within the 9,290m² site. However, allowing for retention of all regulated trees, the potential building footprint reduces to about 4,100m².

Figure 52: Jerilderie Court – Development Areas



It is considered that a ‘hybrid’ zoning could deliver an appropriate urban outcome where the RZ4 zone objectives still applied but the 3 storey height limit was relaxed along the Ainslie Avenue frontage to allow 4 storeys. This would not have any additional impact on surrounding residents than the current planning controls. The plot ratio limit of 80% would also need to be removed to enable this outcome to be achieved.

Should a rezoning to RZ5 be proposed, future development would effectively be limited to 6 storeys facing Ainslie Avenue and 3 storeys to Allambree St. The RZ5 zone does not have a mandatory plot ratio, so a greater yield than an RZ4 zone would be possible, of about 200 units should be possible.

Table 7: Jerilderie Court – Potential Yield Scenarios

Site	Plot Ratio	Possible GFA (m ²)	No. Storeys	Density (dwell/ha)	Estimated Potential Yield
<i>Existing (approx.)</i>	%		2	82	88
Low Density Option	80%	7,432	2-3 ⁽¹⁾	74	80
Medium Density Option	153%	14,196	3-4 ⁽²⁾	144	182
High Density Option	197%	18,252	3-6 ⁽³⁾	189	234
Higher Density Option	350%	32,448	6-10 ⁽⁴⁾	334	416

Notes:

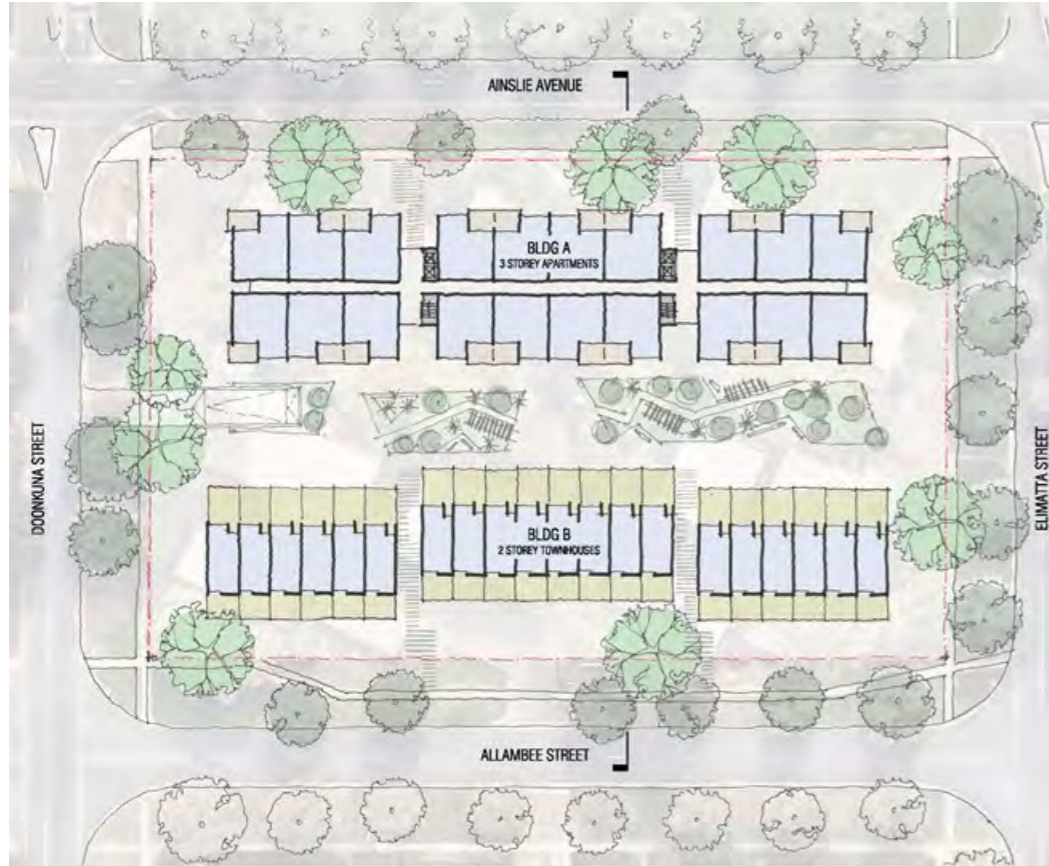
1. 2 storey townhouses, 3 storey apartments with basement parking level
2. 4 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambree St
3. 6 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambree St
4. 10 storey apartments fronting Ainslie Ave, 6 storeys fronting Allambree St

The possible Heritage listing on this site would pose a risk to any development potential. If a sample, or all of the existing development, was retained the level of development indicated in Table 7 would be substantially reduced.

The potential development scenarios are shown in the following images

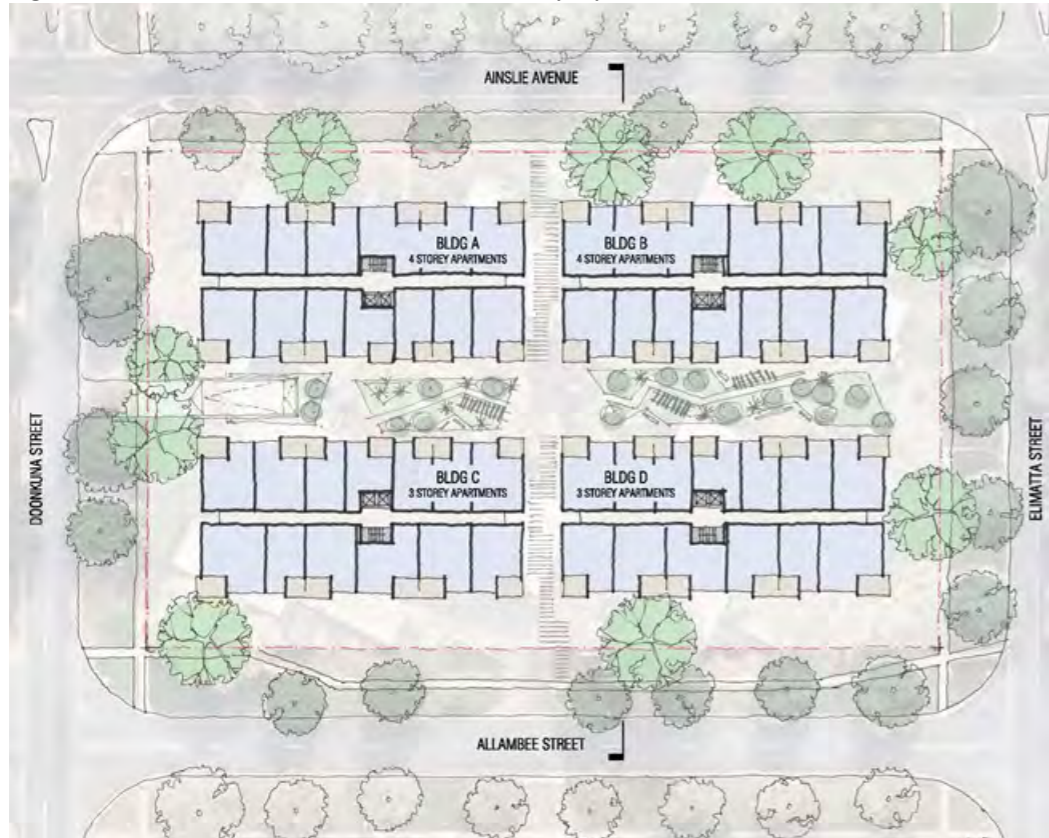
- Figure 53: Low Density Development Option (Site Layout)
- Figure 54: Medium Density Option (Site Layout)
- Figure 55: High Density Option (Site Layout)
- Figure 56: Higher Density Option (Site Layout)

Figure 53: Jerilderie Court – Low Density Option



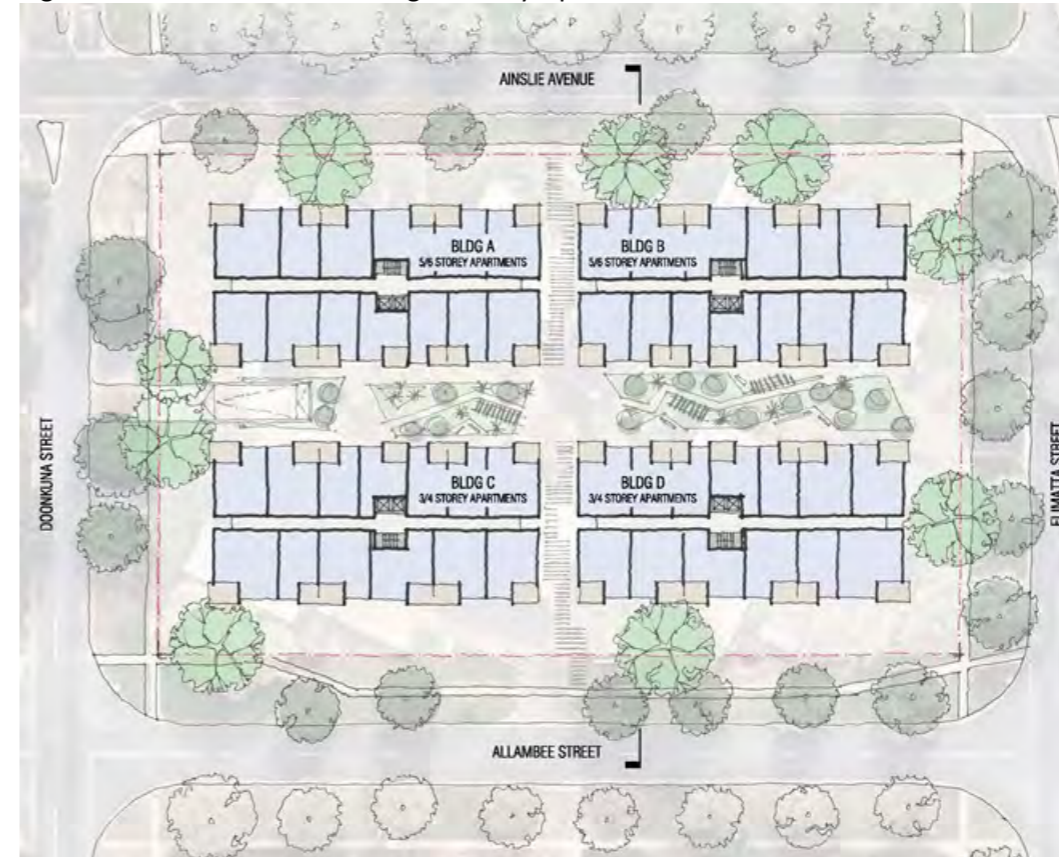
Source: Turco & Associates Architects

Figure 54: Jerilderie Court – Medium Density Option



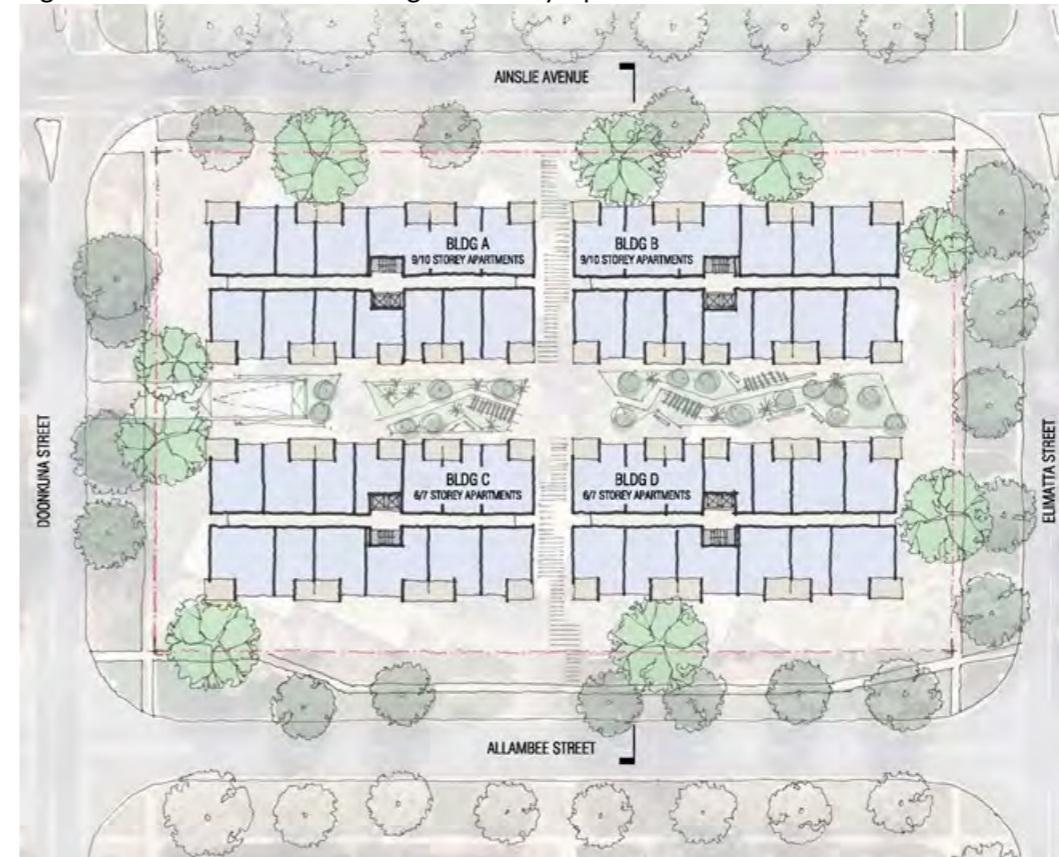
Source: Turco & Associates Architects

Figure 55: Jerilderie Court – High Density Option



Source: Turco & Associates Architects

Figure 56: Jerilderie Court – Higher Density Option



Source: Turco & Associates Architects

17.0 Opportunities (Kanangra Court)

17.1 Potential Land Uses

Although the current RZ4 zoning allows for a range of residential-type land uses, the use considered most relevant for this site is multi-unit housing.

Reid Precinct Code

The site is not subject to any requirements under the Reid Precinct Code which means height, setbacks and plot ratio are determined by the Multi-Unit Housing Code and the Residential Zones Development Code.

The opportunity exists for site specific rules to be introduced into the Reid Precinct Code that either override or differ from those in the Multi-Unit Housing Code or Residential Zones Development Code, similar to what has been done for other sites including Block 2 Section 7 Reid which was a former public housing site as well.

Adjacent Proposed Developments

As noted in previous sections, there is a proposal by the Doma Group under consideration by the NCA for a multi-unit development at Block 5 Section 38 Campbell. The development is known as the 'Foothills' and includes 8-9 storey apartment buildings at the frontage to Limestone Avenue.

The Foothills site is in a much more elevated position (approx. 8m higher) than the subject site which means the 8-9 storey buildings will present even higher.

This sets a precedent for higher developments along Limestone Avenue which could be leveraged to achieve increased height limits on the subject site. Noting the height of proposed apartment buildings at the Foothills is somewhat out of character when considering the surrounds, we consider a marker building at the corner of Limestone and Ainslie Avenue would create balance along the Avenue and improve symmetry between the developments. This being said, there is also a relationship between the Kanangra Court site and Olims across Ainslie Avenue which is a heritage listed building. Olims is unlikely to change from its existing two storey scale so should have a bearing on the Kanangra Court site, and arguably given greater weight as a contrast between the two marker sites as opposed to the proposed Foothills development.

Plot Ratio

As noted above, there are not any controls specific to the site in the Reid Precinct Code. As such, controls surrounding plot ratio are derived from the Residential Zones Development Code which limits plot ratio to 80%. This plot ratio is substantially greater than the plot ratio of existing buildings which currently sits at approx. 34%.

Transport

The subject site is well connected to public transport with the nearest bus stop approx. 140m away. The site is also only 700 (approx.) metres from the Canberra Centre and the border City CBD which means it is well located for active transport as well.

17.2 Rezoning Potential

The current RZ4 zoning limits the development potential to medium density residential. To achieve a higher density residential development, a rezoning of the site would need to be sought.

Due to the distance from facilities (e.g. 350m to the Canberra Centre and 650m to Braddon) and other higher density developments in the surrounding area to the west, we consider that a successful rezoning process could be considered.

Rezoning to RZ5 has the potential to increase the yield along Ainslie Avenue, where developments to 6 storeys could be achieved, however Allambee Street would still be restricted to a three storey development as permitted in the Multi-Unit Housing Development Code.



18.0 Development Scenarios (Kanangra Court)

18.1 Potential Development Areas

The main ‘controls’ influencing the potential development yields at the current RZ4 zoning, is the 80% plot ratio requirement of the Multi-Unit Housing Development Code and the three-storey height limit, plus the desired 12m building separation.

Based on a 6m setback to each road frontage, there is an overall potential development footprint of about 9,100m² within the 12,773m² site.

Figure 57: Kanangra Court – Development Areas



Should a rezoning be proposed to a RZ5 high density zone, future development would effectively be limited to 3 storeys as the Code height limit is 3 storeys for part of the site within 50m of a block within RZ1 zone. The road reserve is 30m wide, so a limit of 3 storeys for the first 20m from each boundary covers part of the site. The remainder of the site fronting Ainslie Avenue can have 6 storeys. The RZ5 zone does not have a mandatory plot ratio, so a greater yield than an RZ4 zone would be possible.

Table 8: Kanangra Court – Potential Yield Scenarios

Site	Plot Ratio	Possible GFA (m ²)	No. Storeys	Density (dwell/ha)	Estimated Potential Yield
<i>Existing (approx.)</i>	34%		3	67	88
Low Density Option	80%	10,192	2-3 ⁽¹⁾	86	112
Medium Density Option	154%	19,684	3-4 ⁽²⁾	163	252
High Density Option	198%	25,308	3-6 ⁽³⁾	212	324
Higher Density Option	352%	44,992	6-10 ⁽⁴⁾	350	576

Notes:

1. 2 storey townhouses, 3 storey apartments with basement parking level
2. 4 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambie St
3. 6 storey apartments fronting Ainslie Ave, 3 storeys fronting Allambie St
4. 10 storey apartments fronting Ainslie Ave, 6 storeys fronting Allambie St

The medium density option retains the RZ4 zoning and proposed 3 three-storey buildings with basement car parking and an overall yield of 252 units could be achieved, using the unit sizes as discussed in Table 8 above.

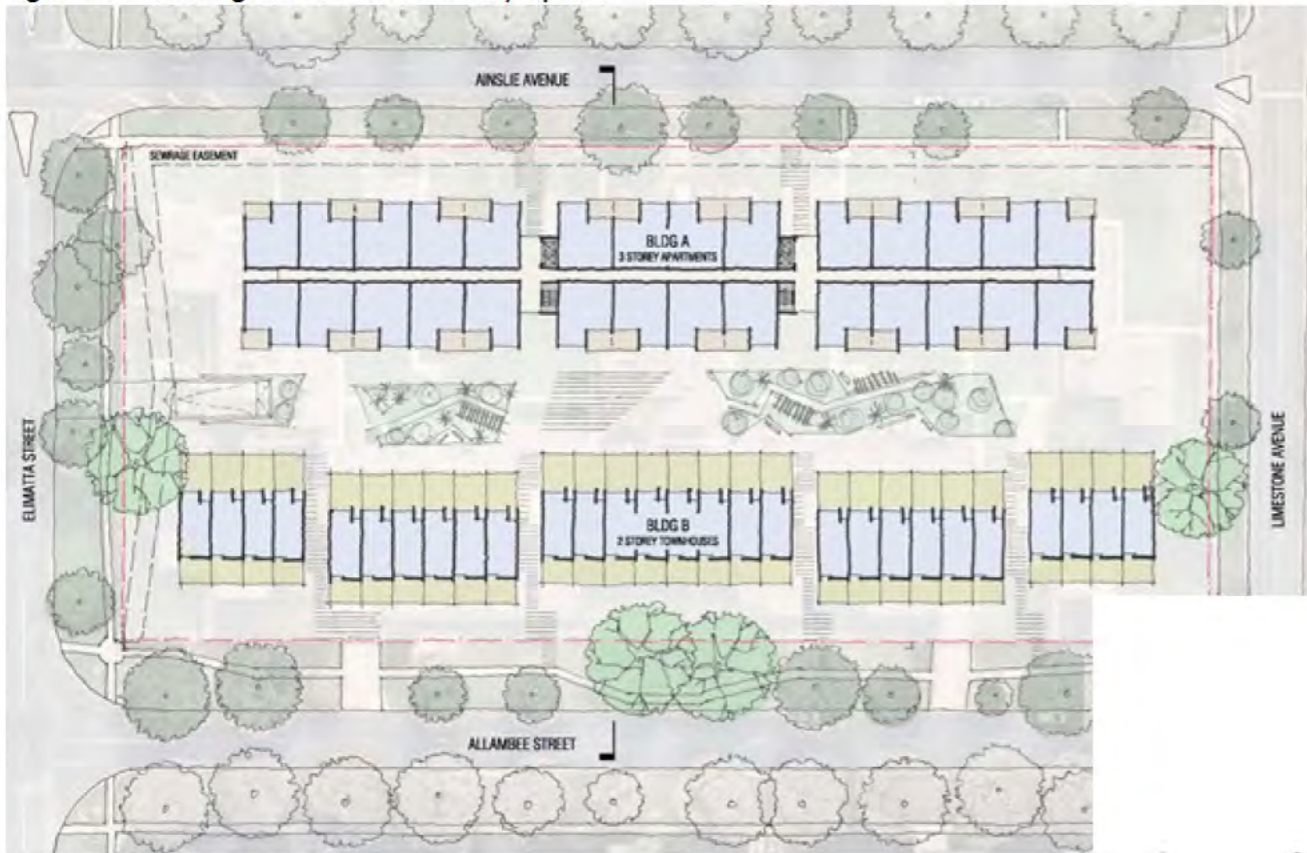
The high density option proposes a rezoning to RZ5 which increases height limits and removes plot ratio restrictions. The proposed buildings range in heights from 3-6 storeys and results in a yield of 324 dwellings (a substantial increase on the medium density option). This is based on calculations shown in Table 8.

The higher density option proposes a rezoning to CZ5 which further increases height limits and removes plot ratio restrictions. The proposed buildings range in heights from 3-10 storeys creating marker buildings along the Ainslie Avenue frontage and results in a yield of 576 dwellings. This is based on calculations shown in Table 8.

The potential development scenarios are shown in the following images

- Figure 58: Low Density Development Option (Site Layout)
- Figure 59: Medium Density Option (Site Layout)
- Figure 60: High Density Option (Site Layout)
- Figure 61: Higher Density Option (Site Layout)

Figure 58: Kanangra Court – Low Density Option



Source: Turco & Associates Architects

Figure 59: Kanangra Court – Medium Density Option



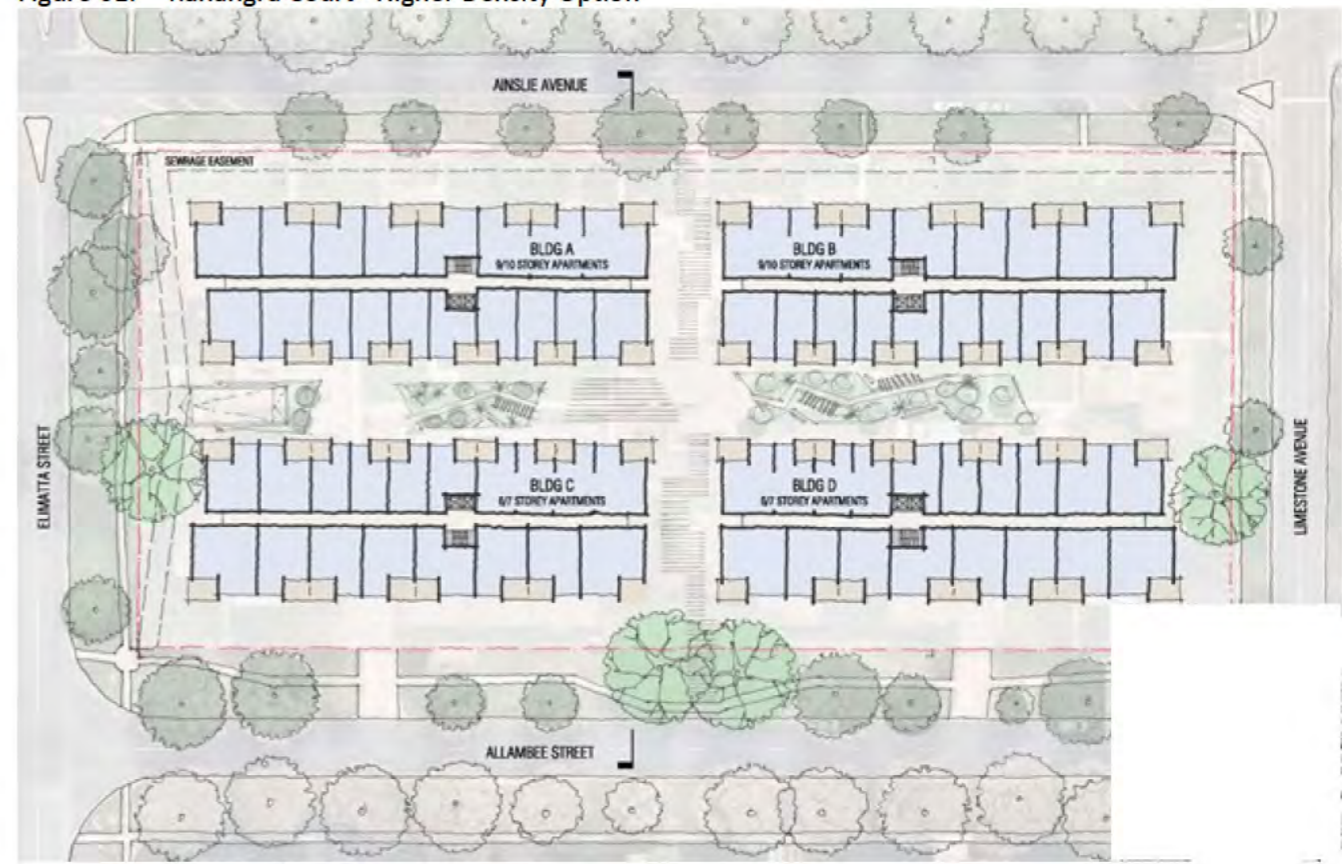
Source: Turco & Associates Architects

Figure 60: Kanangra Court –High Density Option



Source: Turco & Associates Architects

Figure 61: Kanangra Court –Higher Density Option



Source: Turco & Associates Architects

Part 4: Preferred Precinct Outcomes

19.0 Key Precinct Elements

The sites along Ainslie Avenue present the opportunity to consider redevelopment of each of the sites in a collective manner to achieve a quality urban design outcome through a precinct planning approach. While it would easily be possible to develop each site individually with no regard to other sites, the consideration of the inter-relationship of the sites and future development options allows for a holistic design response that has a higher likelihood of achieving a high quality precinct.

The precinct approach would encourage a variety of built form and independent development of each site but facilitate a consistent architectural and urban design language across all Ainslie Avenue sites. This can be achieved by introducing a range of additional planning controls into the Territory Plan that adopt the following key precinct principles:

- Building heights should vary across the sites
- Retain low scale development adjacent to existing residential dwellings.
- Enhanced provision for pedestrian and bicycle movement.
- Set a benchmark for sustainability and include a range of targets for future development projects

These key principles should be supported by the following detailed principles, as outlined in Section 20.2:

- Urban design
- Site Planning
- Site Permeability
- Landscape
- Movement
- Parking
- Pedestrians and Bicycles
- Sustainability Targets
- Place making.



Figure 62: Overall Precinct – Sites Analysis

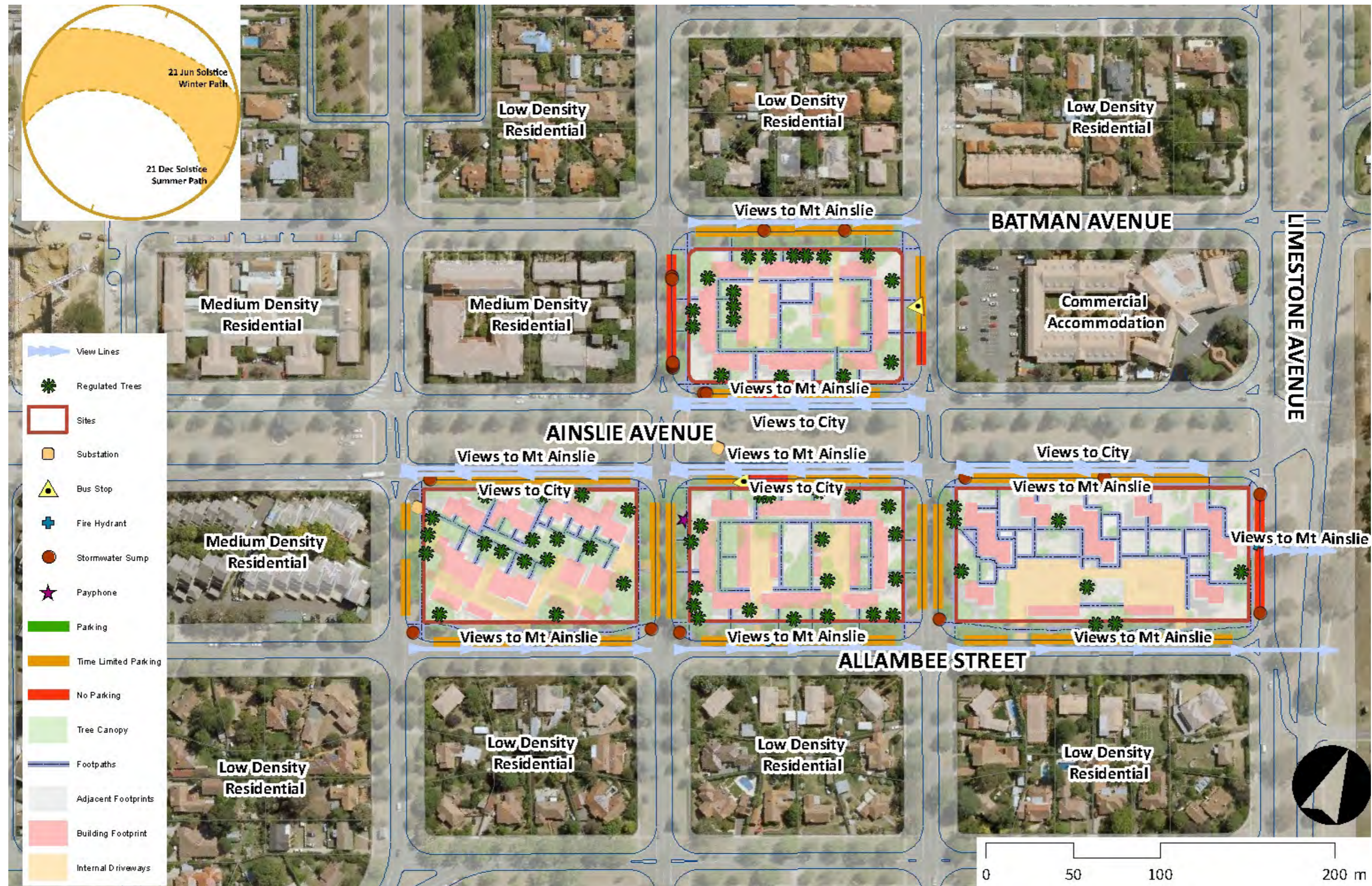
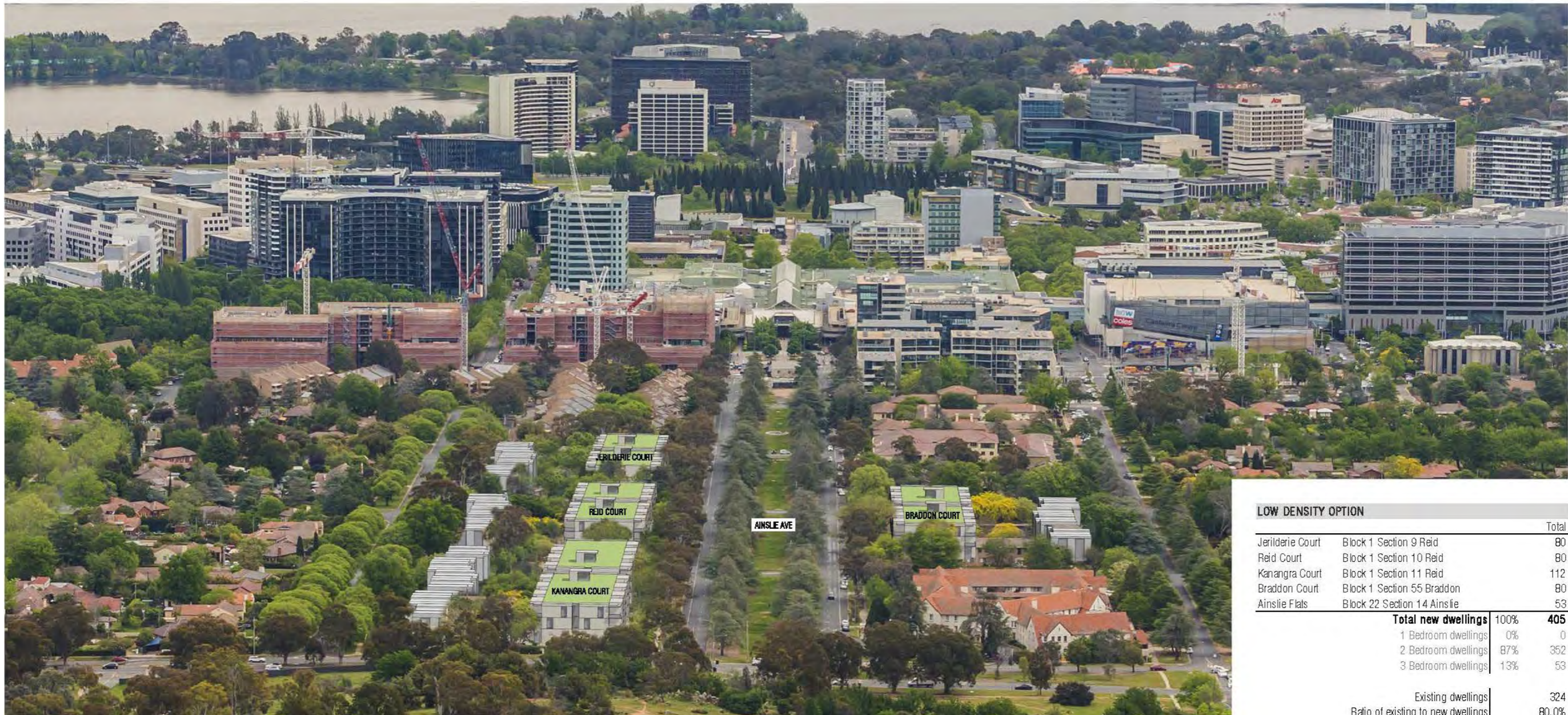
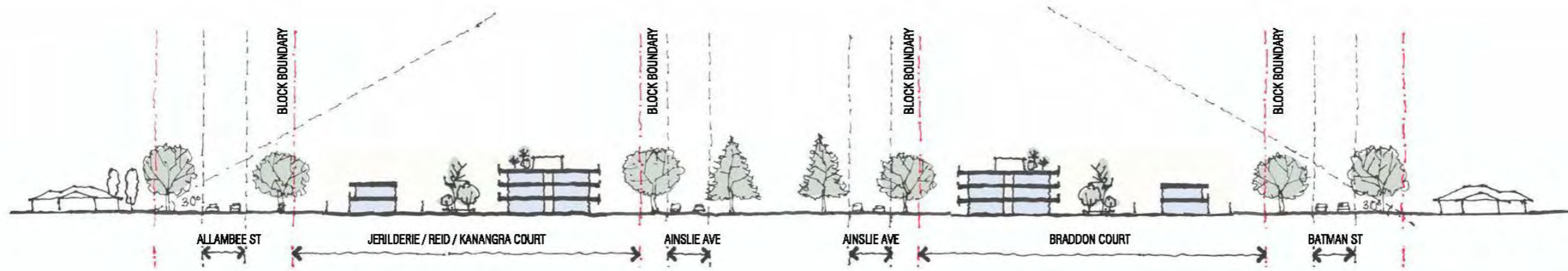


Figure 63: Contextual Links

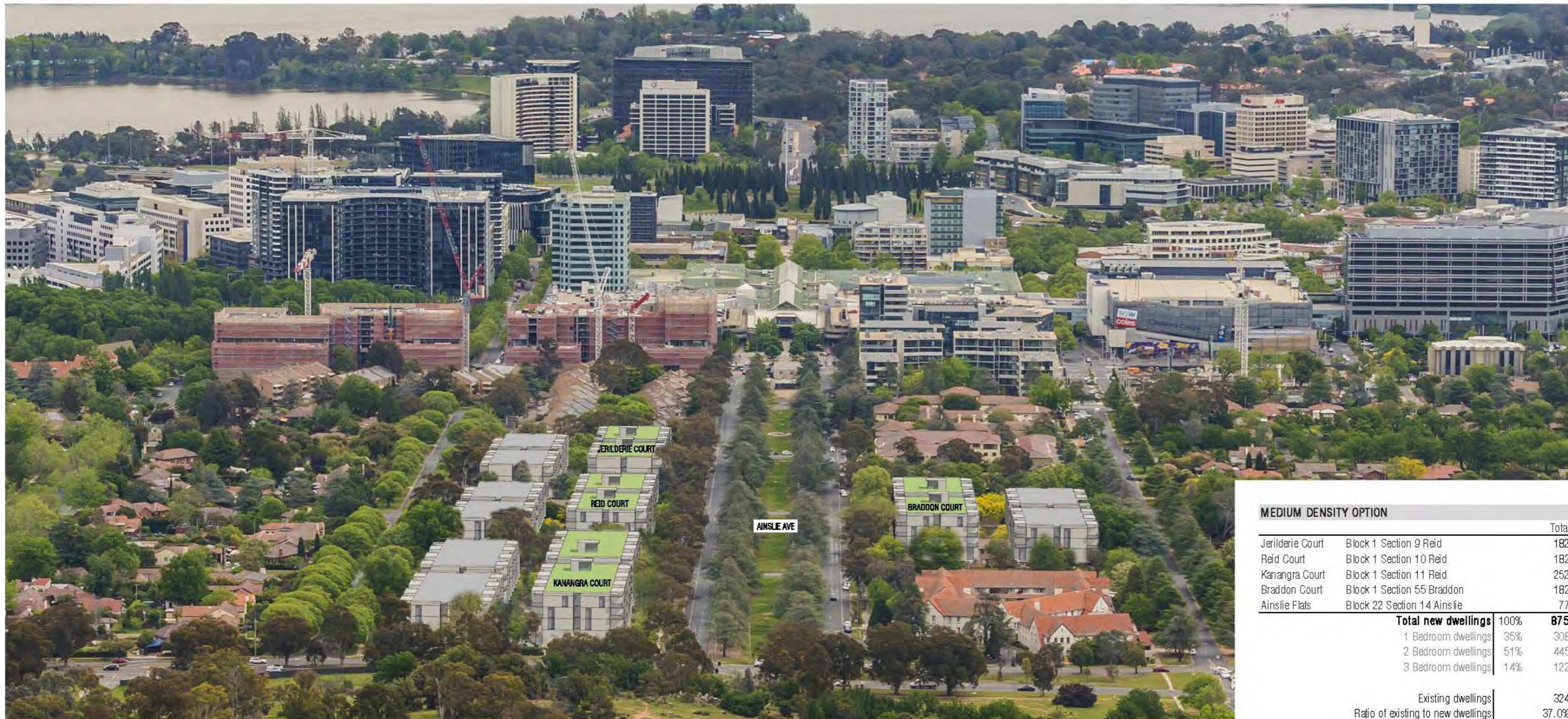
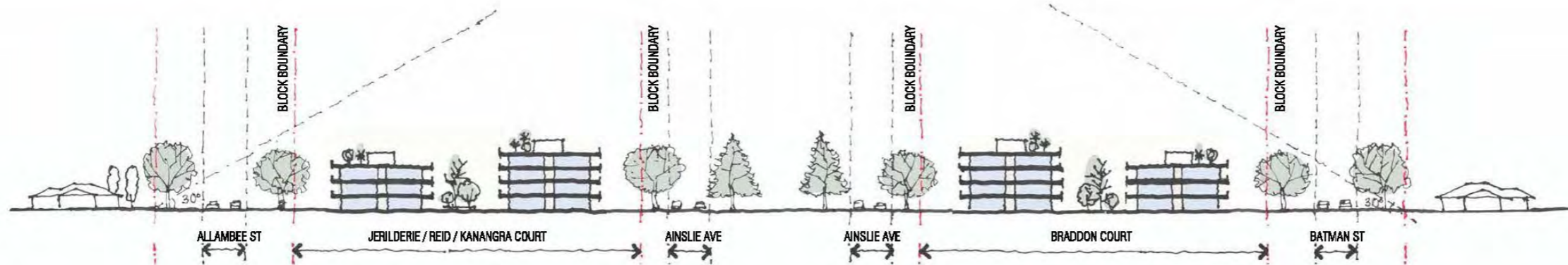


Figure 64: Overall Precinct – Low Density Outcome



LOW DENSITY OPTION			Total
Jerilderie Court	Block 1 Section 9 Reid		80
Reid Court	Block 1 Section 10 Reid		80
Kanangra Court	Block 1 Section 11 Reid		112
Braddon Court	Block 1 Section 55 Braddon		80
Ainslie Flats	Block 22 Section 14 Ainslie		53
Total new dwellings		100%	405
1 Bedroom dwellings		0%	0
2 Bedroom dwellings		87%	352
3 Bedroom dwellings		13%	53
Existing dwellings			324
Ratio of existing to new dwellings			80.0%

Figure 65: Overall Precinct – Medium Density Outcome



MEDIUM DENSITY OPTION		
		Total
Jerilderie Court	Block 1 Section 9 Reid	182
Reid Court	Block 1 Section 10 Reid	182
Kanangra Court	Block 1 Section 11 Reid	252
Braddon Court	Block 1 Section 55 Braddon	182
Ainslie Flats	Block 22 Section 14 Ainslie	77
Total new dwellings		875
	1 Bedroom dwellings	35%
	2 Bedroom dwellings	51%
	3 Bedroom dwellings	14%
Existing dwellings		324
Ratio of existing to new dwellings		37.0%

Figure 66: Overall Precinct – High Density Outcome

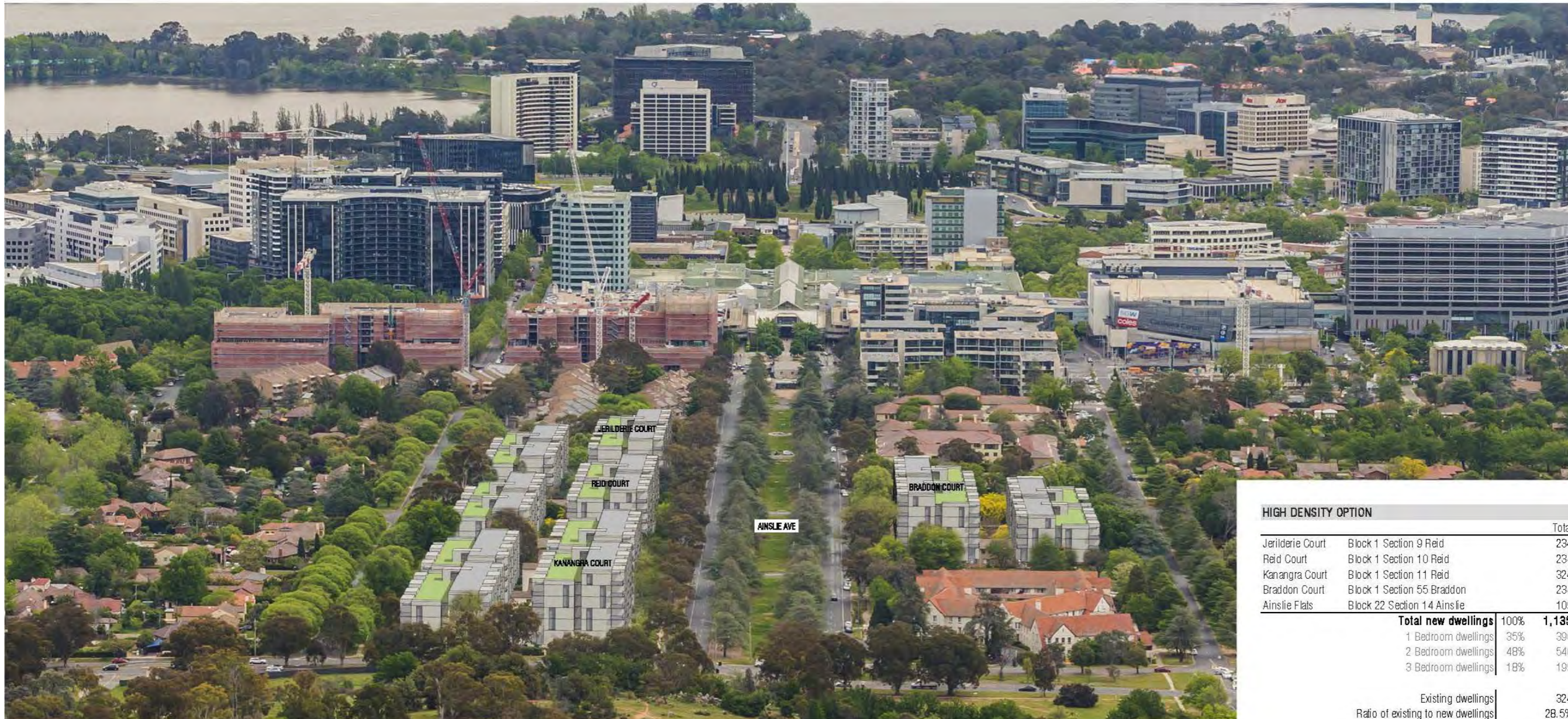
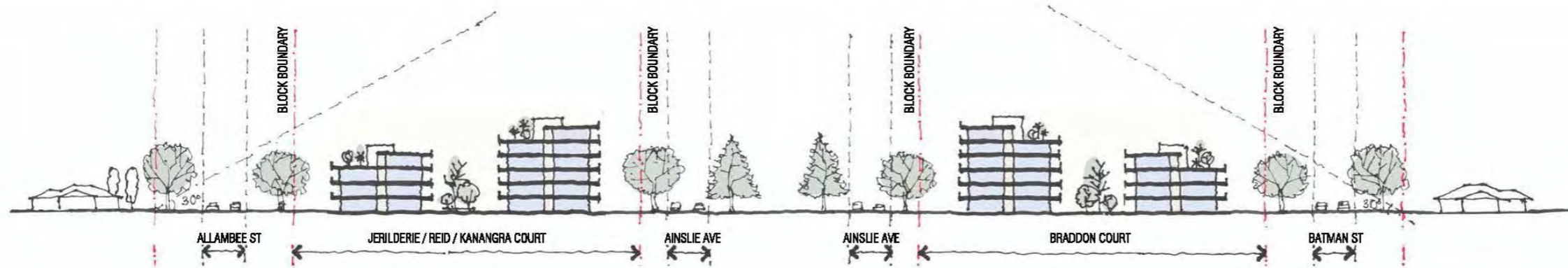
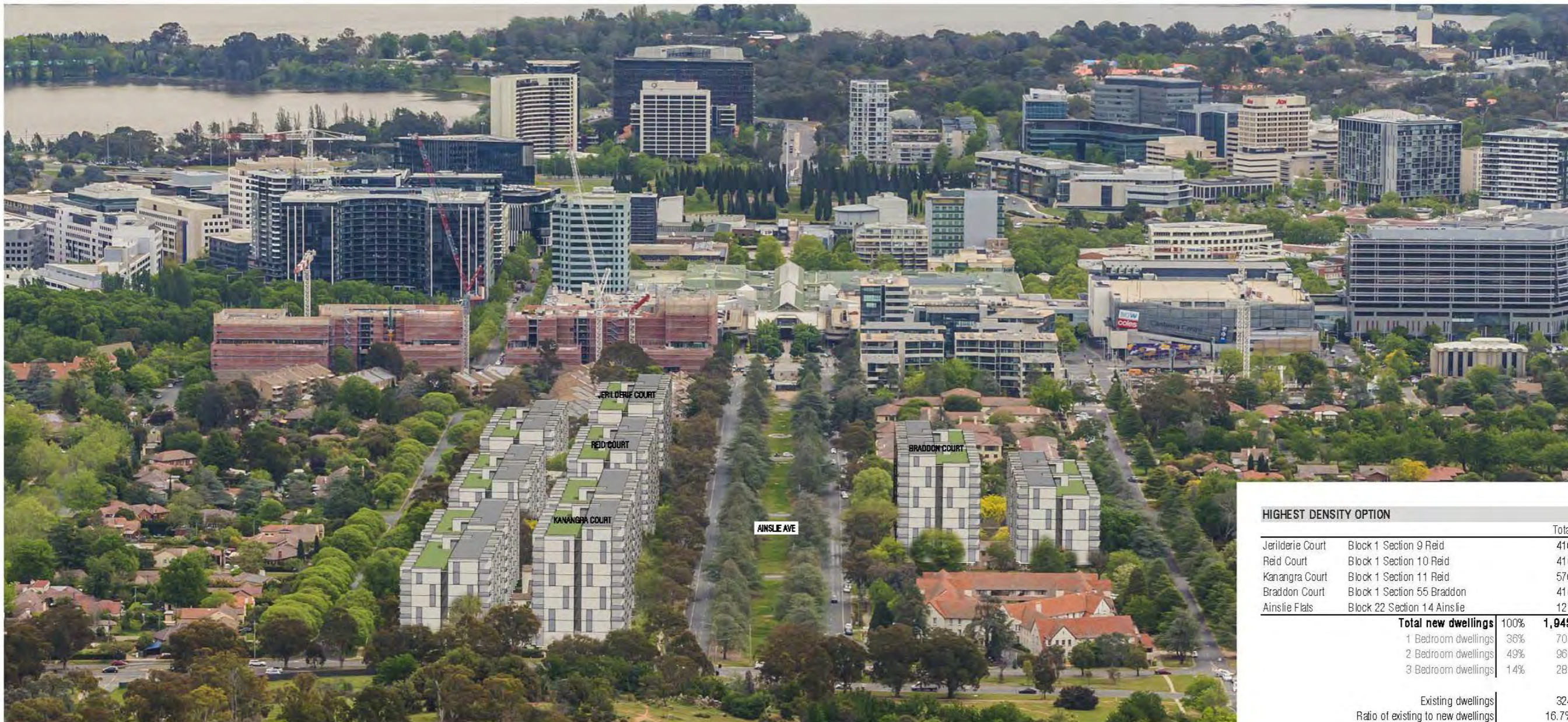
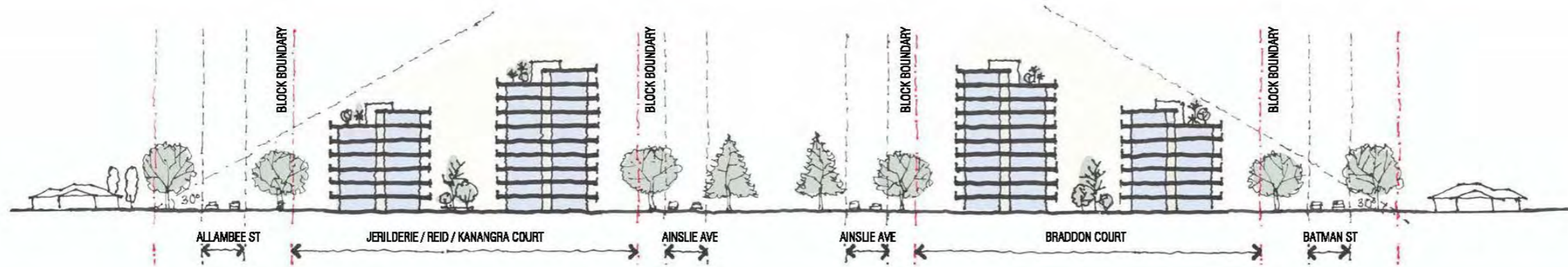


Figure 67: Overall Precinct – Higher Density Outcome



HIGHEST DENSITY OPTION		
		Total
Jerilderie Court	Block 1 Section 9 Reid	416
Reid Court	Block 1 Section 10 Reid	416
Kanangra Court	Block 1 Section 11 Reid	576
Braddon Court	Block 1 Section 55 Braddon	416
Ainslie Flats	Block 22 Section 14 Ainslie	121
Total new dwellings		1,945
	1 Bedroom dwellings	36% 704
	2 Bedroom dwellings	49% 960
	3 Bedroom dwellings	14% 281
Existing dwellings		324
Ratio of existing to new dwellings		16.7%

19.1 Summary Potential Yields

19.1.1 Low Density Outcome

Based on current land zoning and Territory Plan Code limitations where height limits are a maximum of 3 storeys across the Ainslie Avenue sites and 2 storeys for the Ainslie flats site, together with plot ratio controls of 80% for the Ainslie Avenue sites and 65% for the Ainslie Flats site, it is likely that redevelopment across all sites would yield a total of around 405 units as shown in the table below:

Table 9: Potential Yields – Low Density Outcome

Site	Current Zoning	Site Area (m ²)	Plot Ratio *	Possible GFA (m ²)	Likely Yield
Ainslie Flats	RZ1	19,553	65%	12,709	53
Reid Court	RZ4	9,272	80%	7,418	80
Braddon Court	RZ4	9,272	80%	7,418	80
Jerilderie Court	RZ4	9,290	80%	7,432	80
Kanangra Court	RZ4	12,773	80%	10,218	112
TOTAL		60,160		45,195	405

The above figures are based on compliance with current planning controls, retention of most regulated trees (through increased setbacks) and a ratio of 87% 2-bedroom units and 13% 3-bedroom units, with no 1-bedroom units. The resulting built form of the Ainslie Avenue sites provide 3-storey apartments fronting Ainslie Avenue aligned with the street geometry, with 2-storey townhouse/terraces fronting Allambee and Batman Streets along the interface with adjacent detached residential dwellings.

The Ainslie Flats site is proposed as a large townhouse development site with private courtyards and internal driveways and adjacent spaces as common property. Under this scenario, replacement of all public housing units would represent about 80 percent of total achievable yield. This is not considered feasible for the private development industry. However, if the primary objective is to upgrade all sites for increased provision of public housing, then this outcome represents a 25% increase from 324 to 405 public housing units.

19.1.2 Medium Density Outcome

An alternative development outcome is to retain the current zonings but introduce new provisions in the Precinct Codes that would remove the 80% plot ratio limits for the Ainslie Avenue sites and allow an increase of 1 storey in height, to 4-storeys, for that part of the sites fronting Ainslie Avenue. It is noted that most buildings on the Kanangra Court site are already 4-storeys. C55 of the *Residential Zones Development Code of the Territory Plan* states:

“In all residential zones, where the number of storeys lawfully constructed building exceeds the maximum stipulated in the relevant code, a new building or buildings with no more storeys than the existing building may be permitted provided there are no additional adverse impacts on adjoining properties....”

Based on the above, it is our understanding that this site could be redeveloped to 4-storeys without the need for any change in height controls providing additional impacts are avoided. This results in a built form outcome of a series of 3 and 4 storey apartments.

The Ainslie Flats site is proposed as a 2-storey townhouse/terrace housing development but with a reduced site area per dwelling than the low density option described at Section 19.1.1 above.

This medium density outcome results in a total yield across all 5 sites of about 875 units. This would be achievable if the Ainslie Avenue sites were rezoned to RZ5 and the plot ratio limit for the RZ1 site (Ainslie Flats) did not apply.

Table 10: Potential yields – Medium Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	18,000	64%	77
Reid Court	9,272	14,200	153%	182
Braddon Court	9,272	14,200	153%	182
Jerilderie Court	9,290	14,200	153%	182
Kanangra Court	12,773	19,700	154%	252
TOTAL	60,160	80,300		875

The above figures are based on a ratio of 35% x 1-bedroom units, 51% x 2-bedroom units and 14% x 3-bedroom units. Under this scenario, replacement of all 324 public housing units would represent about 37 percent of total achievable yield.

19.1.3 High Density Outcome

As outlined in Section 3.1.3, the Ainslie Avenue sites are within the urban intensification areas identified in the 2018 ACT Planning Strategy. As such, it is appropriate to consider opportunities for higher density development on each site. Noting the Ainslie Flats site is the only site not within the urban intensification area.

A rezoning to a Residential RZ5 zone with no plot ratio controls would enable development up to 6 storeys. However, the current RZ5 planning controls limit heights to 3-storeys where the part of the site is within 50m of a block within an RZ1 zone. The existing dwellings to the south across Allambee St in Reid are heritage listed (including the roads) as are the dwellings to the north-west of Braddon Court and therefore are unlikely to ever be rezoned for higher density development. In this regard the first 20m of the sites are limited to a height of 3 storeys.

The Ainslie Flats site is proposed as a high-density 2-storey townhouse/terrace housing development with a plot ratio slightly over the ‘standard’ 65% for RZ1 zones but noting that this plot ratio control does not apply to the Ainslie Flats site. This high density outcome results in a total yield across all 5 sites of about 1,135 units.

Table 11: Potential yields – High Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	13,080	67%	109
Reid Court	9,272	18,250	197%	234
Braddon Court	9,272	18,250	197%	234
Jerilderie Court	9,290	18,250	197%	234
Kanangra Court	12,773	25,300	198%	324
TOTAL	60,160	80,300		1,135

The above figures are based on a ratio of 35% x 1-bedroom units, 48% x 2-bedroom units and 18% x 3-bedroom units. Under this scenario, replacement of all public housing units would represent about 29 percent of total achievable yield.

19.1.4 Higher Density Outcome

A rezoning to a Commercial CZ5 zone allowing for even higher density development could also be considered to be consistent with the ACT Planning Strategy. A CZ5 zone generally involves no height limits and no plot ratio controls. However, any building taller than the RL617m height limit that applies across the City Centre would be unlikely to be supported by either the NCA or ACT Government. The Ainslie Avenue sites are between RL 570 (at Jerilderie Court) and RL 580 (at the Limestone Avenue frontage of Kanangra Court). This would potentially allow a building up to 37m on the Kanangra Court site, or possibly 11-12 storeys, allowing for the fall of the land or a building of up to 47m on the Jerilderie Court site, or possibly 14-15 storeys.

There is no logical urban planning outcome that would justify a building on the Jerilderie Court site that is taller than the buildings on other sites. As such, it is considered that a rezoning to CZ5 would result in a maximum height limit of 12 storeys for these sites. However, due to significant shadow impacts where a building taller than 6 storeys fronting Allambee St will shadow adjacent existing dwellings for much of the day during mid winter, together with significant interface impacts to adjoining heritage buildings, it is considered that a 6-storey limit for those buildings adjacent to single dwellings and near Gorman House and the Mecure (Olims) Hotel would be more appropriate.

The Ainslie Flats site is proposed as a high-density 2-storey terrace housing development under the higher density option.

This higher density outcome results in a total yield across all 5 sites of about 1,945.

Table 12: Potential yields – Higher Density Outcome

Site	Site Area (m ²)	Proposed GFA (m ²)	Plot Ratio	Potential Yield
Ainslie Flats	19,553	14,520	75%	121
Reid Court	9,272	36,500	393%	416
Braddon Court	9,272	36,500	393%	416
Jerilderie Court	9,290	36,500	393%	416
Kanangra Court	12,773	50,600	396%	576
TOTAL	60,160	174,620		1,945

The above figures are based on a ratio of 36% x 1-bedroom units, 50% x 2-bedroom units and 14% x 3-bedroom units. Under this scenario, replacement of all public housing units would represent about 15 percent of total achievable yield.

19.2 Preferred Outcome (Ainslie Avenue Sites)

Assessment of the various options confirms that the preferred planning/urban design outcome for the sites along Ainslie Avenue is rezoning to achieve a high density residential outcome. This is based on an assessment of key attributes of the sites, considered in a collective manner, together with consideration of how redevelopment could achieve ACT Government planning strategies as well as the potential impacts to surrounding residential areas and existing services. The assessment of ‘pros and cons’ for each option for the

sites along Ainslie Avenue is detailed below and summarised in a matrix format at Table 13. The matrix grades key outcomes for redevelopment as:

- RED (0): Poor outcome
- YELLOW (1): Moderate outcome
- GREEN (2): Good outcome

Assessment of the preferred outcome for the Ainslie Flats site is separately considered in Section 19.3 below.

Low Density Option:

This option, as described in detail in Section 19.1.1, results in approximately 352 units. The existing units within these four sites comprise a total of 236 units. As such, this option would represent a 50% increase in existing unit numbers. The public housing component would represent about 2/3 of all future units. If the existing public housing units currently located on the Ainslie Flats site were added to these four Ainslie Avenue sites (as discussed in Section 19.3) it would result in the public housing units comprising over 90% of all units (i.e. 324 public housing units out of a total of 352 units). This option is consistent with current Territory Plan requirements, based on the existing RZ4 zoning in relation to building height limits and key Code provisions.

It is considered that redevelopment in accordance with current zoning would result in an acceptable urban outcome, however, the resulting low density is not considered the optimum outcome for sites so close to the city centre and within the urban intensification area identified under the ACT Planning Strategy. The RZ4 zoning has effectively been in place since the Territory Plan first came into effect in 1993 (noting that before 2008 it was subject to a Residential B1 Land Use Policy that was effectively the same as the current RZ4 zone) and it is considered that the desired future development outcome is a higher density as reflected in the 2018 Planning Strategy.

Medium Density Option:

This option, as described in detail in Section 19.1.2, results in approximately 800 units. This option would increase in existing unit numbers 3½ times the existing density and the public housing component would represent about 1/3 of all future units. If the existing public housing units currently located on the Ainslie Flats site were added to these four Ainslie Avenue sites (as discussed in Section 19.3) it would result in the public housing units comprising over 40% of all units (i.e. 324 public housing units out of a total of 800 units).

This option represents a reasonable increase in density from that possible under the current Territory Plan. The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as currently applies, to 4 storeys. The current height limit of 3 storeys could be retained for that part of the sites facing existing residential areas.

It is considered that redevelopment for a medium density yield would result in an acceptable urban outcome, however, similar to the low density option, the resulting density is not considered the optimum outcome for sites so close to the city centre and within the urban intensification area identified under the ACT Planning Strategy. It is considered that the desired future development outcome is a higher density as reflected in the 2018 Planning Strategy.

High Density Option:

This option, as described in detail in Section 19.1.3, results in approximately 1,024 units. This option would increase in existing unit numbers 4½ times the existing density and the public housing component would represent about 1/4 of all future units. If the existing public housing units currently located on the Ainslie Flats site were added to these four Ainslie Avenue sites (as discussed in Section 19.3) it would result in the public housing units comprising over 30% of all units (i.e. 324 public housing units out of a total of 1,024 units).

This option represents a significant increase in density from that possible under the current Territory Plan. The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as

currently applies, to 6 storeys. The current height limit of 3 storeys could be retained for that part of the sites facing existing residential areas.

It is considered that redevelopment for a high density yield would result in an acceptable urban outcome with the resulting density considered to be the optimum outcome for these sites close to the city centre and within the urban intensification area identified under the ACT Planning Strategy.

This option is supported by the Preliminary Valuation Advice provided by Capital Valuers at Attachment E.

Higher Density Option:

This option, as described in detail in Section 19.1.4, results in approximately 1,950 units. This option would increase existing unit numbers 8½ times the existing density and the public housing component would represent about 1/8 of all future units. If the existing public housing units currently located on the Ainslie Flats site were added to these four Ainslie Avenue sites (as discussed in Section 19.3) it would result in the public housing units comprising over 15% of all units (i.e. 324 public housing units out of a total of 1,950 units).

This option represents a significant increase in density from that possible under the current Territory Plan. The permissible building height for buildings fronting Ainslie Avenue would need to be increased from 3 storeys, as currently applies, to 10 storeys and 6 storeys for that part of the sites facing existing residential areas. This interface adjacent to single residential areas is a greater change (and impact) than that generally applied across the city where the Territory Plan requirements usually prescribe a 3 storey maximum interface with adjacent single storey residential dwellings.

It is considered that redevelopment for this higher density yield would not result in an acceptable urban outcome with the resulting density and building heights being too great an impact on surrounding existing residential dwellings.

Table 13: Assessment of Density Options

Attribute	Low Density	Medium Density	High Density	Higher Density
Social Outcomes (% Public Housing)	Red	Yellow	Green	Green
ACT Planning Strategy	Yellow	Yellow	Green	Green
Compact/Walkable City	Yellow	Yellow	Green	Green
Neighbourhood Character	Green	Green	Green	Red
Desired character (Cohesive Precinct Outcome)	Red	Yellow	Green	Yellow
Return to Government (yield/economic)	Red	Yellow	Green	Green
Overshadowing Impact (adjacent)	Green	Green	Green	Red
Overshadowing Impact (internal)	Green	Green	Yellow	Red
Services capacity	Green	Yellow	Yellow	Yellow
Traffic capacity	Yellow	Yellow	Yellow	Red
Territory Plan Variation	Green	Yellow	Red	Red
Expected Community Support	Green	Yellow	Yellow	Red
Red = 0, Yellow = 1, Green =2	15	15	18	10

19.3 Preferred Outcome (Ainslie Flats Site)

As discussed in Section 2.1.1 the Ainslie Flats neighbourhood is characterised by large 1-2 storey detached dwellings. The plantings on the Ainslie flats site is dominated by intermittent mature trees with high canopies close to buildings plus a separate row of smaller street trees. The existing apartment buildings on the Ainslie Flats site presents a development density and scale considerably higher than surrounding developments. The extensive lengths of buildings and the sparse landscaping contradicts the surrounding low density neighbourhood character.

The site is about 1½km from both the Canberra Centre and Ainslie local shops and is not near any significant community facilities. It is considered that a rezoning to achieve a higher density and/or taller buildings is not appropriate for this site.

The current RZ1 zoning allows for a range of residential-type land uses, however, the uses considered appropriate for this site are as follows:

- multi-unit housing
- retirement village
- special dwelling
- residential care accommodation
- single dwelling housing
- supportive housing

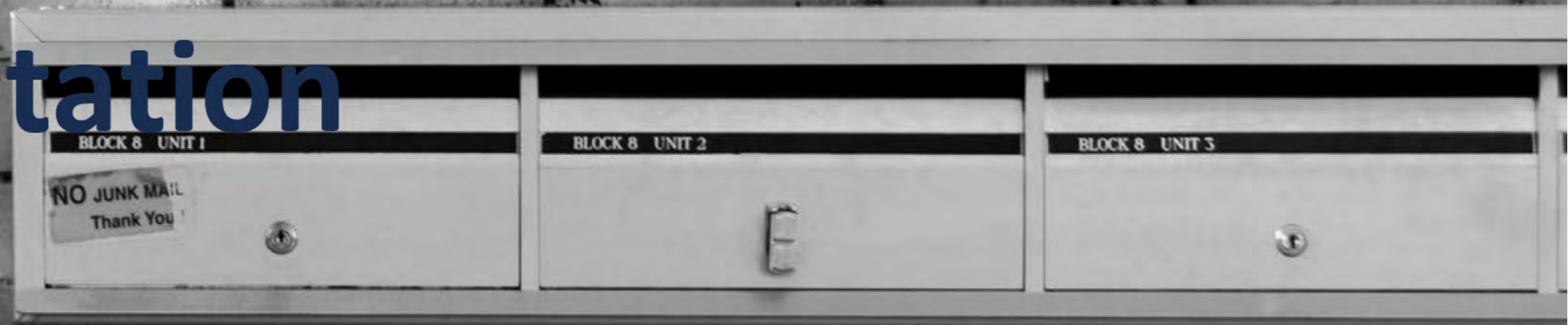
Further market research may be appropriate prior to pursuing the options associated with retirement village and/or residential care accommodation.

Alternatively, it is considered that a high quality low density multi-unit development would be appropriate. Although the RZ1 zone is intended predominantly for low density single dwelling housing, the current development, as residential apartments, allows the site to be redeveloped for multi-unit housing. A low density option allows for about 53 large townhouses each with private courtyards and surface level garages. This option would also allow for retention of most of the mature vegetation.

Higher yields may be achievable while retaining the townhouse character of development, however, as density increases so does the need to remove existing regulated trees.

The low density townhouse option does not require any changes to the Territory Plan and is considered consistent with the surrounding residential character which comprises a mix of detached dwellings and low density town houses.

Part 5: Conclusions and Implementation



20.0 Implementation

To implement the preferred outcome of allowing for an increased density of units and building heights for that part of the sites fronting Ainslie Avenue, potentially resulting in a yield of approximately 1,000 units, it will be necessary to undertake a Territory Plan Variation. This should be undertaken in two forms, being:

1. Rezoning of the Ainslie Avenue sites to RZ5 – High Density Residential
2. Amendments to the Braddon and Reid Precinct Codes to introduce site specific planning controls.

The process for a rezoning (referred to as a Territory Plan Variation) is outlined in Section 20.1 and Section 20.2 below.

No rezoning is necessary to implement the preferred option for the Ainslie Flats site.

20.1 Territory Plan Variation

In order to pursue land rezoning or to change the planning controls (e.g. height limits, plot ratio), a Territory Plan Variation (TPV) would be necessary. A variation to the Territory Plan can be achieved in either of two processes:

1. Technical Amendment
2. Full Territory Plan Variation

The first approach is an abbreviated administrative approach that usually takes between 3-6 months. This approach only applies to changes where there is no planning policy change. In this case a full site rezoning plus new planning controls are proposed. As such, the Technical Amendment process is not considered appropriate.

The full TPV process, involves a detailed submission for initial assessment by EPSDD, then if initially supported by EPSDD, referral to various ACT Agencies, issuing of a 'scoping document', planning studies by proponent, lengthy public consultation and often review by a Legislative Assembly committee. This process often takes 1-2 years.

Key steps in the approval process are summarised below:

1. Prepare and lodge a request for Scoping Document
2. Prepare Planning Report and associated studies
3. Statutory Plan Variation process involving:
 - Agency review of the Planning Report
 - Preparation of the Rezoning documents by EPSDD
 - Public notification of the draft rezoning and the Planning Report
 - Consideration of public and agency comments
 - Determination by EPSDD
 - Consideration (Approval) by the ACT Minister for Planning
 - Legislative Assembly committee (public hearing) occurs if the project generates public interest or objections
 - Gazettal of the new Zoning Plan (if successful)

EPSDD – who assess the TPV submissions – will determine if the rezoning of land is in the public interest.

20.2 Proposed Planning Controls

The implementation of the preferred option through a variation to the Territory Plan, presents an opportunity to ensure that key planning and design principles together with sustainability targets are incorporated into future development schemes. The indicative principles and targets are outlined below (subject to further consideration as part of any Territory Plan Variation):

20.2.1 Planning and Design Principles

The over-arching planning and design principles that are intended to apply to the precinct include:

- Enhanced provision for pedestrian and bicycle movement.
- Retain low scale development adjacent to existing residential dwellings.
- Set a benchmark for sustainability and include a range of targets for future development projects
- Building heights should vary across the sites

Urban design

Key urban design principles for redevelopment of the sites include:

- Retain the existing block configuration for development packages to create a sense of place – this also allows flexibility in staging and site release
- Establish a hierarchy of public and private zones through the sites
- Buildings to have variety in form and facade articulation to create diversity in character
- Higher scale development adjacent to Ainslie Avenue, the main traffic thoroughfare
- Lower scale development opposite existing residential on Batman and Allambee Streets – maximum 3 storeys
- A clearly articulated public domain with a focus on place making
- Universal design / adaptable housing design
- Mix of housing types – public/community housing, as well as private housing
- Enhance existing vegetation as part of the current urban forest renewal program
- High quality landscape to be integrated into public domain
- Safe and attractive pedestrian areas and street lighting
- An address to Ainslie Avenue
- A clear and visible individual building address within the development to create a sense of ownership
- Waste collection and basement parking accessed from secondary street, not from Ainslie Ave

Site Planning and Urban Design

- Reinforcing the urban fabric and the residential edge to the city
- Articulation in the building form and layout providing interest particularly at ground level
- Building grid which is standardised and generates efficient car parking layout
- High levels of site permeability for movement of pedestrians, cyclists
- Range of housing typologies catering for a broad social mix and market demand
- Well lit, highly visible and high quality public spaces for through pedestrian and vehicular traffic

- Private areas for residents off the public domain as secondary spaces in the form of landscaped courtyards
- Scope for service vehicle movement within the site without disruption to traffic
- Enhancing the built environment of Reid and Braddon

Site Permeability

- Integration of the suburban streets:
- Provide clear and visible access for pedestrian and vehicles
- Encourage pedestrian and cyclist movement through the sites for passive surveillance
- Enhance social integration of the sites into the suburb
- Encourage ease of pedestrian access to public transport facilities

Landscape

- Retention of existing on-site trees wherever possible especially those of excellent value (including street trees)
- Interest and change through the seasons
- Low water use gardens
- A hierarchy of planting within public and private spaces
- Use of plants which are both hardy and reflect those used historically in the inner area of Braddon and Reid
- Vandal proof solutions for street furniture and hard finishes
- Finishes which meet code requirements for slip resistance and access and mobility
- Shade trees in private courtyards for protection during summer and sunlight penetration in winter
- Use of self-watering tree pits for all vegetation in public places/streets.

Movement

Provision for site access/egress in the following locations:

- Vehicle access to be secondary streets
- Restriction on vehicle access to Ainslie Avenue
- Avoid conflict with cyclists and pedestrians
- Pedestrian movement to take precedence where driveways cross footpaths

Parking

- maximum parking provision.

Pedestrians and Bicycles

- good pedestrian and cyclist connectivity to the City and surrounding residential areas, as well as provision for safe and convenient facilities on-site.
- Pedestrian movement should be considered as a priority
- Co-ordinate footpath design, location of street trees and public lighting and signage
- Cycle parking to be provided in basements and the public domain

- Encourage use of bicycle and pedestrian traffic including bike parking bays.
- Wider pathway to incorporate safer pedestrian and bicycle traffic
- Bicycle parking for residents and visitors at rates higher than the current bicycle parking code
- Encourage provision of a rental bike and scooter facility on-site

20.2.2 Sustainability Targets

These targets are outlined below:

Energy Targets

- Achieve 7 Star NatHERS ratings for all residential units
- Avoid connection to gas
- Generate a minimum of 10% peak power demand from on-site solar photovoltaic installations
- Implement a Green Power purchase contract for 100% of all grid-source power supply
- Provide a district heating and cooling system, where heating and cooling are determined to be required, to serve at least 80% of the site's annual heating and/or cooling consumption
- Install smart meters for each dwelling so that occupants can determine real-time consumption for electricity and water, as well as peak demand pricing, to future-proof the development for the adoption of smart grid infrastructure. The system allows occupants to quantify consumption on an hourly, daily, monthly and annual basis
- Install energy meters for all electrical loads in the building greater than 100kVA
- External clothes drying lines and/or hoists provided for each dwelling, with a total line length of no less than 7.5m
- Heating systems to have a Coefficient of Performance no less than 3
- Cooling and/or air-conditioning systems to have a Coefficient of Performance no less than 3
- Pre-commissioning, commissioning, quality monitoring, and building tuning to be implemented during design, construction, completion and post-occupancy according to the CIBSE Commissioning Codes
- Provide a daylight factor of 2.5% in kitchen areas and 1.5% in living areas as measured at the floor level under a uniform sky
- Install a ceiling fan in at least one room in each dwelling
- Provide openable windows capable of allowing natural ventilation for lounge rooms, kitchens, dining areas and bedrooms in each dwelling
- Install an over-ride switch for all dwelling mechanical and lighting systems at the main entrance
- Install automatic controls for mechanical and lighting systems in common areas of each building
- Install rooftop solar thermal systems to supply all domestic hot water requirements for each building; if heating systems are to be installed, size the system to accommodate the potential for a hydronic heating system in each dwelling.

Water Targets

- All bathrooms to have 6 Star WELS-rated bathroom and kitchen taps and water closets, as well as 3 Star WELS-rated showerheads
- Install a domestic cold water meter in each dwelling and provide a connection to building management system infrastructure so that water consumption rates can be tracked

- All irrigation water to be supplied from rainwater collection and storage systems located on the site.

Waste Management

- Dedicated recycling, waste collection, sorting and storage areas to be included in each residential building and be accessible to both residents and recycling waste handling companies
- Where waste chutes are provided, include both waste and recycled waste chutes and provide them so they are accessible on each floor
- Provide 1m² for every 500m² of landscape space for dedicated composting areas as part of the site landscape design and to be accessible to all residents; design of the composting area should meet best practice guidelines and ensure leaching does not infiltrate adjacent stormwater or other such systems
- Communal space to be set aside within the overall development for the collection of over-sized personal goods or furniture for the reuse by other occupants
- Recycle or reuse a minimum of 90% of all construction and demolition waste, including reuse on the site as aggregate for footpaths and other similar landscape features

Land Targets

- Provide deep soil planting areas with a minimum depth of 1500mm for at least 75% of on-grade landscaped areas to ensure flexibility for the landscape regime
- Green roofs to include a soil depth of at least 300mm to accommodate agricultural production and diversity of landscape
- At least 25% of all on-grade landscape areas to be designed to enable active play
- Lighting installed in trees or to shine onto trees to be avoided to ensure the biodiversity of the site and that native fauna habitat is not disturbed.

Natural Environment Targets

- Provide trees, with a calliper of at least 0.6 metres, at intervals between 4.5 and 9 metres along footpaths with no overhead utility lines
- Tree planting schemes ensure that 50% of all footpaths are under the tree canopy at tree maturity
- Exterior lighting fixtures not exceed a base allowance of 24,000 lumens with an allowed initial 35.5-45 lamp lumens/m² to conform to the dark sky requirements of the International Dark Skies Association; further, exterior light fixtures shall not have an upward light output ratio greater than 5% and shall comply with AS4282
- New landscaping plants and trees to be predominately native species that are regionally appropriate
- All pest and weed control chemicals used on site be biodegradable and non-toxic
- Use no HVAC refrigerants for mechanical cooling, provide no mechanical cooling, or ensure that all HVAC refrigerants have a Global Warming Potential of 10 or less and an Ozone Depletion Potential of zero
- All thermal insulants shall not include ozone-depleting substances

WSUD

- Install stormwater systems to ensure that peak stormwater flows are not increased for rainfall events of up to a one-in-two year storm
- All stormwater leaving the site be treated in accordance with either the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999) or the Australian and New Zealand Environment Conservation Council's Guidelines for Urban Stormwater Management

- Provide bio-retention rain gardens for individual residences with yards with perennial vegetation, organic and sand amended topsoil, above a gravel drainage layer, for at least 10% of the roof area of the dwelling
- Provide bio-retention swales along the edge of large paved areas or medians; swales to be planted with perennial vegetation, organic and sand-amended topsoil, above a gravel drainage layer, for at least 10% of the adjacent impervious area
- Use paving designed to allow water to pass through the surface, using porous asphalt or concrete or interlocking concrete permeable pavers, for footpaths, driveways, alleys and streets to ensure groundwater recharge during storm events.

Construction Materials Targets

- Source at least 20% of all construction materials from the local area
- Source at least 1% of the building materials using recycled content (by cost)
- All wood certified as sustainably harvested by either the Forest Stewardship Council or PEFC
- At least 20% of all concrete aggregates shall be from recycled sources
- All PVC used to be from suppliers who can demonstrate compliance with the Green Building Council of Australia's Best Practice Guidelines for PVC in the Built Environment
- Undertake a hazardous materials survey for the site prior to demolition of existing buildings and deal with such materials according Occupational Health and Safety legislation
- Comply with the VOC limits for paints, carpets, flooring and adhesives and sealants according to the Green Star Multi-unit Residential V1 credit IEQ-8
- Use timber products that contain no added urea-formaldehyde
- All fencing to contain either 100% recycled metal or wood materials
- Rapidly renewable materials, such as bamboo, to be used for cabinet works and timber floors in all buildings;
- Kitchen floor material to consist of linoleum where vinyl is proposed (or otherwise another material).

Transport Targets

- Provide dedicated parking space for car share program vehicles
- Provide dedicated pedestrian crossing zones at each side street intersection to encourage resident access to adjacent sites as part of a comprehensive urban pedestrian design strategy
- One enclosed/under cover bicycle rack or locker for each dwelling and visitor bicycle racks in signposted, well-lit, accessible areas to be provided
- At least 10% of visitor bicycle parking spaces at each building be set aside for bicycle share schemes for residents

Passive Design Targets

- Provide best practice microclimate design for exterior spaces using methodology and passive means for the following key factors:
 - Wind: based on the Lawson criteria for a 5% exceedance applied to an acceptable velocity of 4m/s for outdoor play, picnic and gathering areas on the site and 8m/s for areas dedicated to walking and circulation
 - Solar Access: ensure that at least 25% of all outdoor communal space is shaded by the sun through either natural or artificial means at any given time
 - Thermal Comfort: identify thermal comfort issues and appropriate mitigation strategies for exterior spaces.

- Individual dwelling units to be designed to provide cross ventilation capability, with openable windows from at least one or more rooms to at least two separate exposures
- Provide high albedo roof materials, with a Solar Reflectance Index (SRI) no less than 78, and hard surfaces, with a SRI no less than 29, to reduce urban heat island effect
- To minimise solar heat gain and the need for cooling, design and orient 75% or more of the entire site's building area such that one axis of each qualifying building is at least 1.5 times longer than the other and that the longer axis is within 15 degrees of geographical east-west.

Adaptability Targets

- Ensure that building services equipment is designed to respond to expected climate change conditions within the next 40 years by undertaking a risk assessment of temperature increases in Canberra based on the CIBSE climate model morphing methodology

Community and Social Targets

- The building to achieve a 5 Star Green Star Multi-Unit Residential Design rating from the Green Building Council of Australia. Use NatHERS in energy targets
- Replace the current level of dwellings for public housing purposes or for otherwise identified low-income and eligible residents
- Ensure that at least 20% of all dwellings are “family friendly” (2-3 bedrooms)
- Provide dedicated, centralised interior communal space for community events, meetings and education opportunities to accommodate at least 5% of residents at any given time
- Set aside a minimum of 20% of all green space, either on-grade or on the roof, for community access gardens for food production
- For universal basic access, provide one zero-step entrance on an accessible route for each building or individual residence
- Interior doors to ensure passable access for all people
- Provide footpaths no less than 1.8 metres in width with no barriers or furniture in the clear walk area and no footpaths are to be gated
- For 90% of all new building frontage, provide a principal entry on the front façade to face a public space, but not a parking lot, and connect to a footpath or equivalent provision for walking
- A building users guide be provided to all new tenants upon occupancy throughout the life of the building, including changeover of tenants within a single unit

20.3 Infrastructure Requirements

Assessment of utility services and traffic conditions concluded that minor upgrades to water services would be required together with intersection improvements as summarised below and detailed in Attachment D.

The intersection of Limestone Avenue / Batman Street / Quick Street operates beyond acceptable levels in the existing conditions and is only expected to worsen throughout the base scenarios. As its poor performance is an existing condition, it is expected that the upgrade of this intersection will be considered as part of a separate assessment by the ACT Government.

The intersection of Ainslie Avenue / Limestone Avenue is expected to have queue lengths which will extend back past the adjacent intersections in the network within the current scenario. The impact of the queuing is expected to worsen within the PM peak of the 2033 base scenario but is not expected to worsen beyond that for any of the development scenarios. Degree of Saturation (DOS) is expected to exceed the practical capacity of 0.9 within the 2033 PM peak period of the high yield development scenario. The DOS is expected to decrease to the practical capacity when the low yield development volumes are adopted. Improvements to the intersection for the high yield case could include an additional lane on approach. Further studies would need to be undertaken to determine the feasibility of this, but the costs are expected to be around \$750K to \$1.5M based on the extent of works.

The intersection of Limestone Avenue / Chisholm Street / Donaldson Street is expected to have queue lengths which will extend back past the adjacent intersections in the network within the current scenario. The impact of the queuing is expected to worsen within the AM peak of the 2033 base scenario but is not expected to worsen beyond that for any of the development scenarios. The DOS is expected to exceed the acceptable limit of 0.9 within the 2023 high yield development scenario. It is noted that the 2023 low yield development volumes do not cause the DOS to exceed acceptable levels. DOS and delays are expected to exceed acceptable levels during the AM peak of the 2033 base scenario. The 2033 high yield and low yield scenarios also exceed the acceptable levels at this intersection, but do not cause any significant changes to the intersection performance over the base scenario. Due to this, it is expected that the upgrades to this intersection will be considered as part of a separate assessment.

The intersection of Ainslie Avenue / Doonkuna Street is expected to surpass the acceptable limit for DOS, delay and queuing during the 2033 AM peak high yield development scenario. The performance of all criteria is noted however to decrease to acceptable levels when the low yield volumes are utilised. There are multiple network options at this location and traffic could redistribute to select the quickest travel path. Signalisation of this intersection would increase delays on Ainslie Avenue but could improve active travel permeability through the area and aligns with the endorsed local community route. The cost of signalisation could be between \$750K to \$1.25M depending on utility clashes and extent of works. The adjacent priority controlled intersections along Ainslie Avenue would also benefit from the vehicle platooning and additional gaps in traffic from the signals.

Increasing congestion can assist with improving the uptake of active travel and public transport modes. With the Territories planning strategy to increase urban infill through intensification in areas close to the town centres and public transport routes, these sites are prime candidates for higher density living. The higher yield scenario may need to contribute to the augmentation of some intersections but these costs could be balanced against the other considerations for the increased yield

21.0 Conclusions and Recommendations

This report has been prepared by Purdon Planning as preliminary planning advice on the opportunities and constraints associated with possible redevelopment of a series of properties managed by Housing ACT.

The primary focus of the study is to understand the possible development potential of the five sites, including information on the infrastructure requirements to accommodate an increase in units and the impact of increased traffic numbers on the road network. The assessment of sites is to be undertaken in the context of a broader analysis of the local area considering analysis neighbourhood character, movement corridors, open space provision, public realm including street trees heritage significance and nearby services and facilities.

The five sites the subject of this report are:

- Ainslie Flats (Block 22 Section 14 Ainslie) bounded by Hayley, Quick and Chisholm Streets and Howe Crescent. Two storey units built in 1951 and refurbished as aged persons flats in 1980. Development comprises a total of 88 units, being 32 one bedroom units and 56 two bedroom units.
- Reid Court (Block 1 Section 10 Reid) bounded by Ainslie Avenue, Allambee, Elimatta and Gooreen Streets. Two storey units constructed in 1951 and converted into Aged Persons Flats in 1980. Development comprises a total of 48 units being 20 one bedroom and 28 two bedroom units.
- Braddon Court (Block 1 Section 55 Braddon) bounded by Ainslie Avenue, Batman, Elimatta and Gooreen Streets. Two storey units built in 1952. Development comprises 48 two-bedroom units.
- Kanangra Court (Block 1 Section 11 Reid) bounded by Ainslie and Limestone Avenues and Allambee and Gooreen Streets. Constructed in 1964 and comprising 78 units being 36 bed-sit units, 1 one bedroom unit and 36 two bedroom units in a series of buildings up to 4 storeys.
- Jerilderie Court (Block 1 Section 9 Reid) bounded by Ainslie Avenue, Allambee, Doonkuna and Elimatta Streets. Two storey units designed by Phillip Cox and built in 1978. Development comprises a total of 62 units being 18 one bedroom, 36 two bedroom and 8 three bedroom units.

Four of the five sites that are the subject of this report are sited along Ainslie Avenue, a 'main approach route' under the National Capital Plan and are between 400m and 800m of the entry to the Canberra Centre in a straight line distance along Ainslie Avenue. The precinct is also between 850 - 1,050m from the dining and entertainment areas of Braddon. There are also a range of community and recreation facilities within walking distance of the precinct.

The precinct approach is considered for four of the five sites, being the sites that front Ainslie Avenue. The Ainslie Flats site is considered separate from the sites along Ainslie Avenue, being physically separated but also being set within a different character of low density (RZ1) housing.

This report has outlined the overall character of the precinct and addressed the rationale for redevelopment of the sites in the context of achieving quality urban outcomes consistent with ACT Government planning strategies.

A series of potential development scenarios were analysed for each site having regard to key challenges and principles, including:

- | | | |
|---------------------|------------------------------|--------------------|
| ▪ Urban design | ▪ Parking | ▪ Built form |
| ▪ Site Planning | ▪ Pedestrians and Bicycles | ▪ Building heights |
| ▪ Site Permeability | ▪ ESD Principles and Targets | ▪ Traffic |
| ▪ Landscape | ▪ Existing character | ▪ Services |
| ▪ Movement | ▪ Landscape setting | ▪ Place making |

Preferred Outcome – Ainslie Avenue Sites

Assessment of the various options confirms that the preferred planning/urban design outcome for the sites along Ainslie Avenue is rezoning to achieve a high density residential outcome. This is based on an assessment of key attributes of the sites, considered in a collective manner, together with consideration of how redevelopment could achieve ACT Government planning strategies as well as the potential impacts to surrounding residential areas and existing services. The assessment of 'pros and cons' for each option for the sites along Ainslie Avenue is detailed below and summarised in a matrix format at Table 13. Assessment of the preferred outcome for the Ainslie Flats site is separately considered below.

Preferred Outcome (Ainslie Flats Site)

A high quality low density multi-unit development is considered to be most appropriate. A low density option allows for about 53 large townhouses each with private courtyards and surface level garages would also allow for retention of most of the mature vegetation. Higher yields may be achievable while retaining the townhouse character of development, however, as density increases so does the need to remove existing regulated trees.

The low density townhouse option does not require any changes to the Territory Plan and is considered consistent with the surrounding residential character which comprises a mix of detached dwellings and low density town houses.

As part of the redevelopment of the Ainslie Flats site for high quality townhouse development, it is also recommended that the current public housing occupants be relocated to new development within the four Ainslie Avenue sites and that no public housing be required to be included as part of a private redevelopment of this site.

On the basis that the high density option is adopted for the 4 Ainslie Avenue sites, then the numbers of public housing tenants currently on the Ainslie Flats site should be readily able to be accommodated within the redevelopments along Ainslie Avenue sites.

To implement the preferred outcome of allowing for a higher density of units, potentially resulting in a yield of 1,135 units, it will be necessary to undertake a Territory Plan Variation for the 4 Ainslie Avenue sites. This should be undertaken in two forms, being:

1. Rezoning of the Ainslie Avenue sites to RZ5 – High Density Residential
2. Amendments to the Braddon and Reid Precinct Codes to introduce site specific planning controls.

The process for a rezoning (referred to as a Territory Plan Variation is outlined in Section 20.2 Section 20.1 below.

The need for a Territory Plan variation, or alternatively as part of a separate Project Delivery Agreement, there is an opportunity to ensure that key urban design, sustainability and planning principles are entrenched in the future redevelopment of the sites.

Attachment A:

Selected Definitions

Ancillary use means the use of land for a purpose that is ancillary to the primary use of the land

Boarding house means the use of land to principally provide long term accommodation where meals, laundry or other services are provided only to those residents of the *boarding house*, and which is not licensed to sell liquor.

Child care centre means the use of land for the purpose of educating, supervising or caring for children of any age throughout a specified period of time in any one day, which is registered under the *Children and Young People Act 2008* or authorised pursuant to the *Education and Care Services National Law (ACT) Act 2011* and which does not include residential care.

Community activity centre means the use of land by a public authority or a body of persons associated for the purpose of providing for the social well being of the community.

Guest house means the use of land for one or more *commercial accommodation units* and where common or shared facilities are provided for the provision of services such as meals and laundry to occupants of the premises but not to non occupant members of the public.

Health facility means the use of land for providing health care services (including diagnosis, preventative care or counselling) or medical or surgical treatment to out-patients only

Home business means the use of a residential lease for carrying on a profession, trade, occupation or calling on the land.

Minor use means the use of land for a purpose that is incidental to the use and development of land in the zone and includes but is not limited to open space; public car parking; community path systems; shared circulation spaces (such as lift wells, stair wells); minor service reticulation; other utility services that do not exclude other uses from the land; street furniture and the like.

Multi-unit housing means the use of land for more than one *dwelling* and includes but is not limited to *dual occupancy housing*

Residential Care Accommodation means the use of land by an agency or organisation that exists for the purposes of providing accommodation and services such as the provision of meals, domestic services and personal care for persons requiring support. Although services must be delivered on site, management and preparation may be carried out on site or elsewhere.

Retirement Village means premises where older members of the community or retired people live, or will live, in independent living units or serviced units, under a retirement village scheme

Single dwelling housing means the use of land for residential purposes for a single dwelling only.

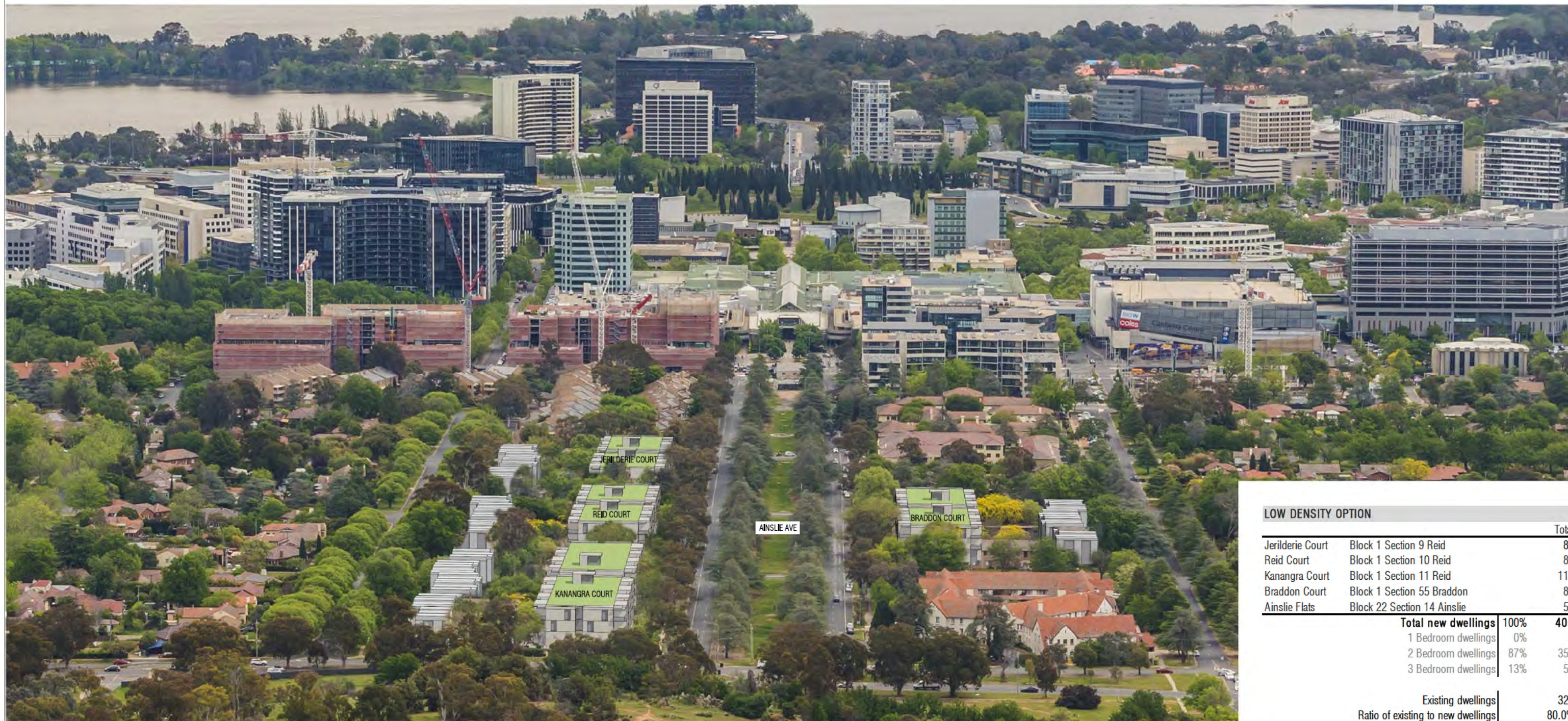
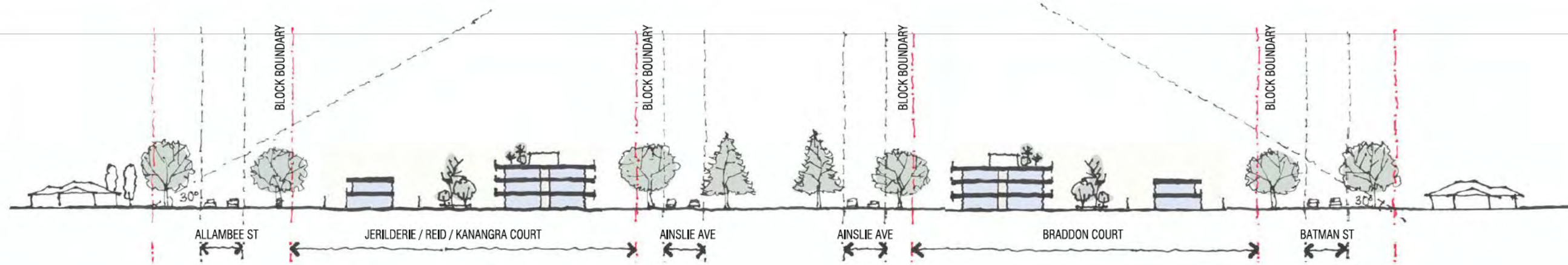
Standard Block means a block with one of the following characteristics:

- a) originally leased or used for the purpose of one or two dwellings except where the original lease explicitly permits two dwellings
- b) created by a consolidation of blocks, at least one of which is covered by a)

Supportive housing means the use of land for residential accommodation for persons in need of support, which is managed by a Territory approved organisation that provides a range of support services such as counselling, domestic assistance and personal care for residents as required. Although such services must be able to be delivered on site, management and preparation may be carried out on site or elsewhere. Housing may be provided in the form of self-contained dwellings. The term does not include a retirement village or student accommodation.

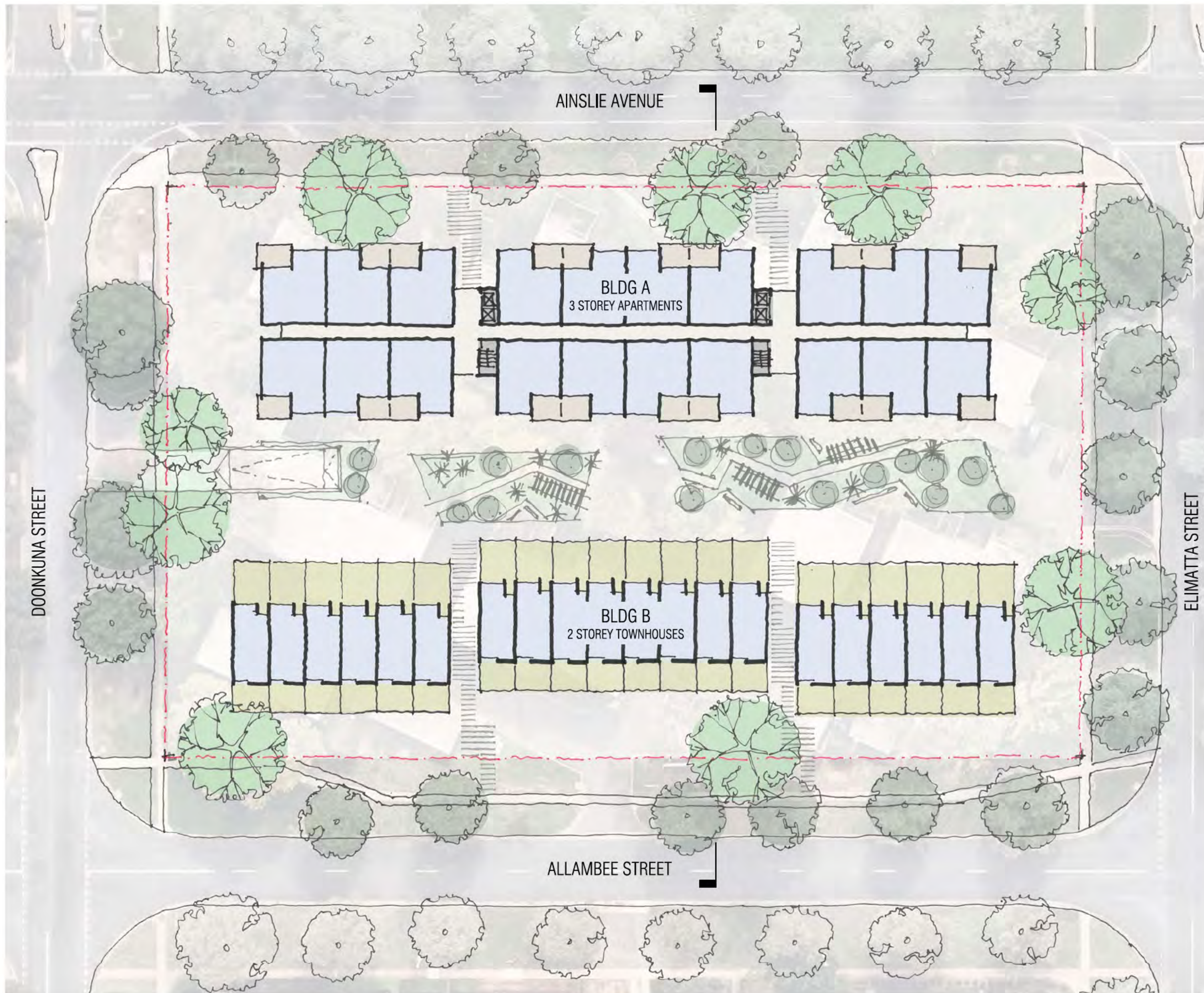
Temporary Use means the use of unleased land for a purpose that is temporary in nature and for which a licence may be issued for a maximum term of three years and which may be renewed.

Attachment B: Turco & Associates Redevelopment Study



LOW DENSITY OPTION

		Total
Jerilderie Court	Block 1 Section 9 Reid	80
Reid Court	Block 1 Section 10 Reid	80
Kanangra Court	Block 1 Section 11 Reid	112
Braddon Court	Block 1 Section 55 Braddon	80
Ainslie Flats	Block 22 Section 14 Ainslie	53
Total new dwellings		405
1 Bedroom dwellings		0%
2 Bedroom dwellings		87%
3 Bedroom dwellings		13%
Existing dwellings		324
Ratio of existing to new dwellings		80.0%



AREA SCHEDULE

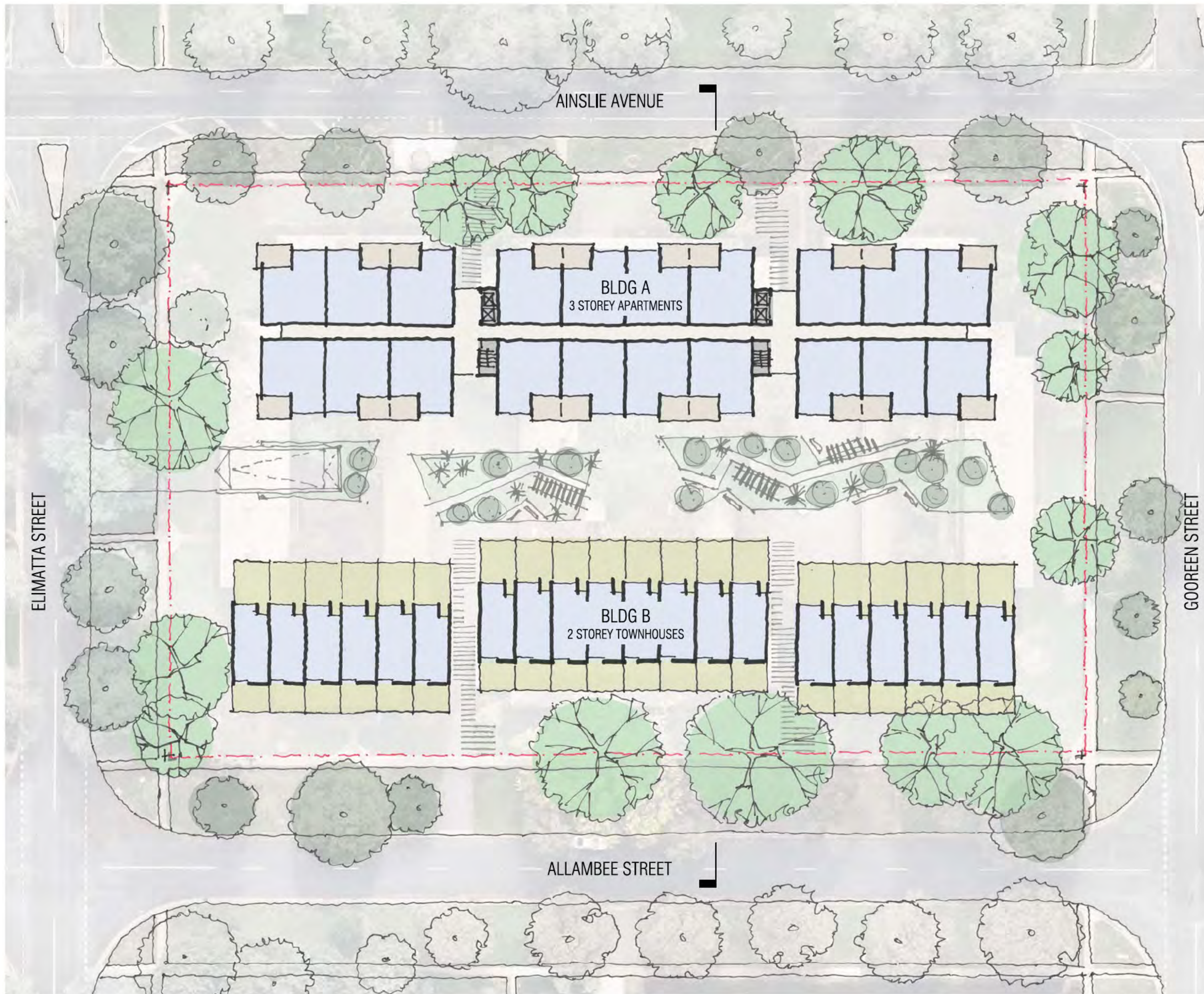
Jerilderie Court
 Block 1 Section 10 Reid
 Low Density Option - RZ4

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	3	20	1790	60	5370
Building B				20	2000
				Total GFA	7,370
				Site Area	9,290
				Plot Ratio	79.3%
				Total Dwellings	80

DWELLING BREAKDOWN

1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	100%	80
3 Bedroom Dwellings	0%	0





AREA SCHEDULE

Reid Court
 Block 1 Section 10 Reid
 Low Density Option - RZ4

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	3	20	1790	60	5370
Building B				20	2000

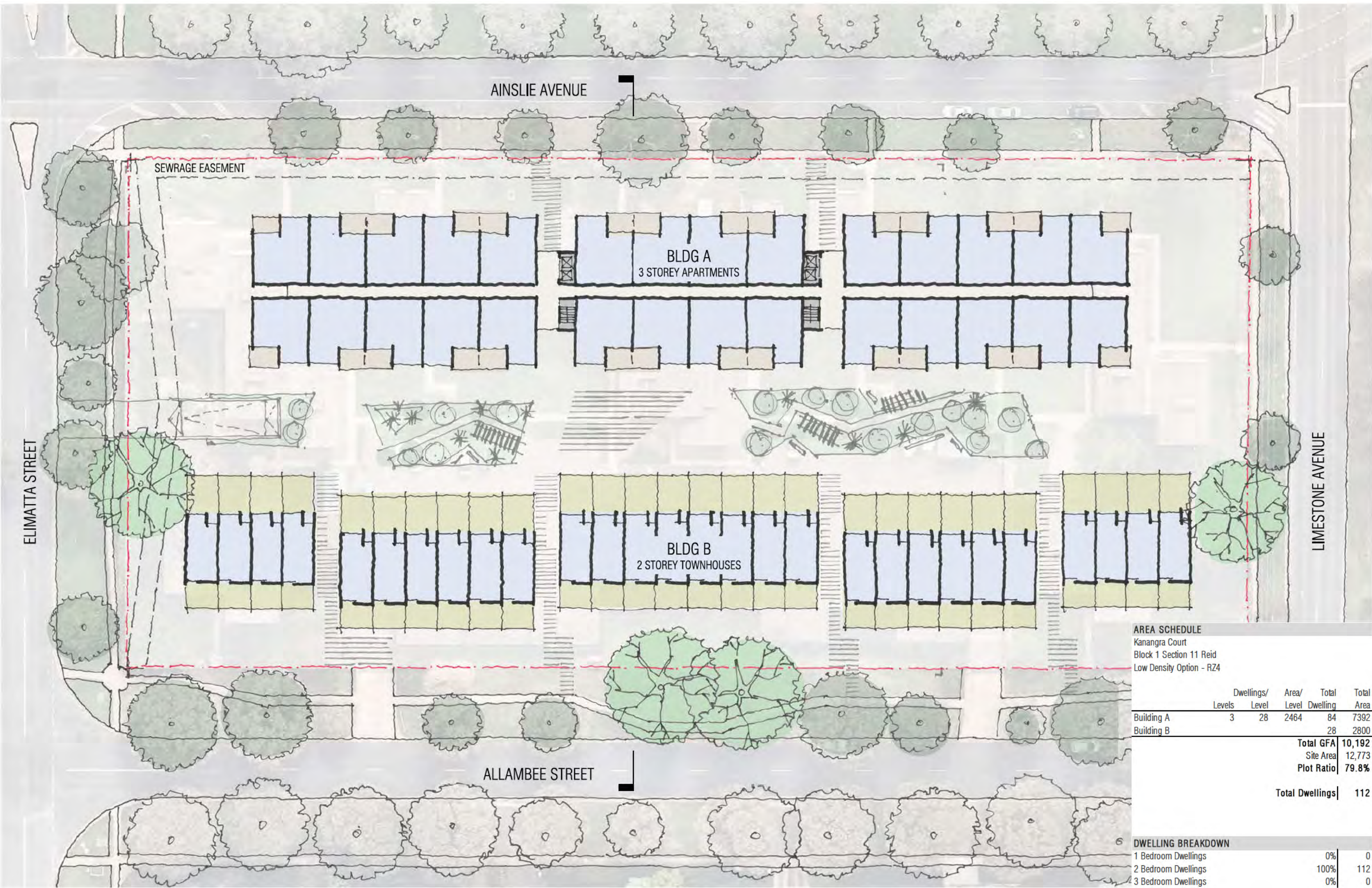
Total GFA 7,370
 Site Area 9,290
 Plot Ratio 79.3%

Total Dwellings | 80

DWELLING BREAKDOWN

1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	100%	80
3 Bedroom Dwellings	0%	0



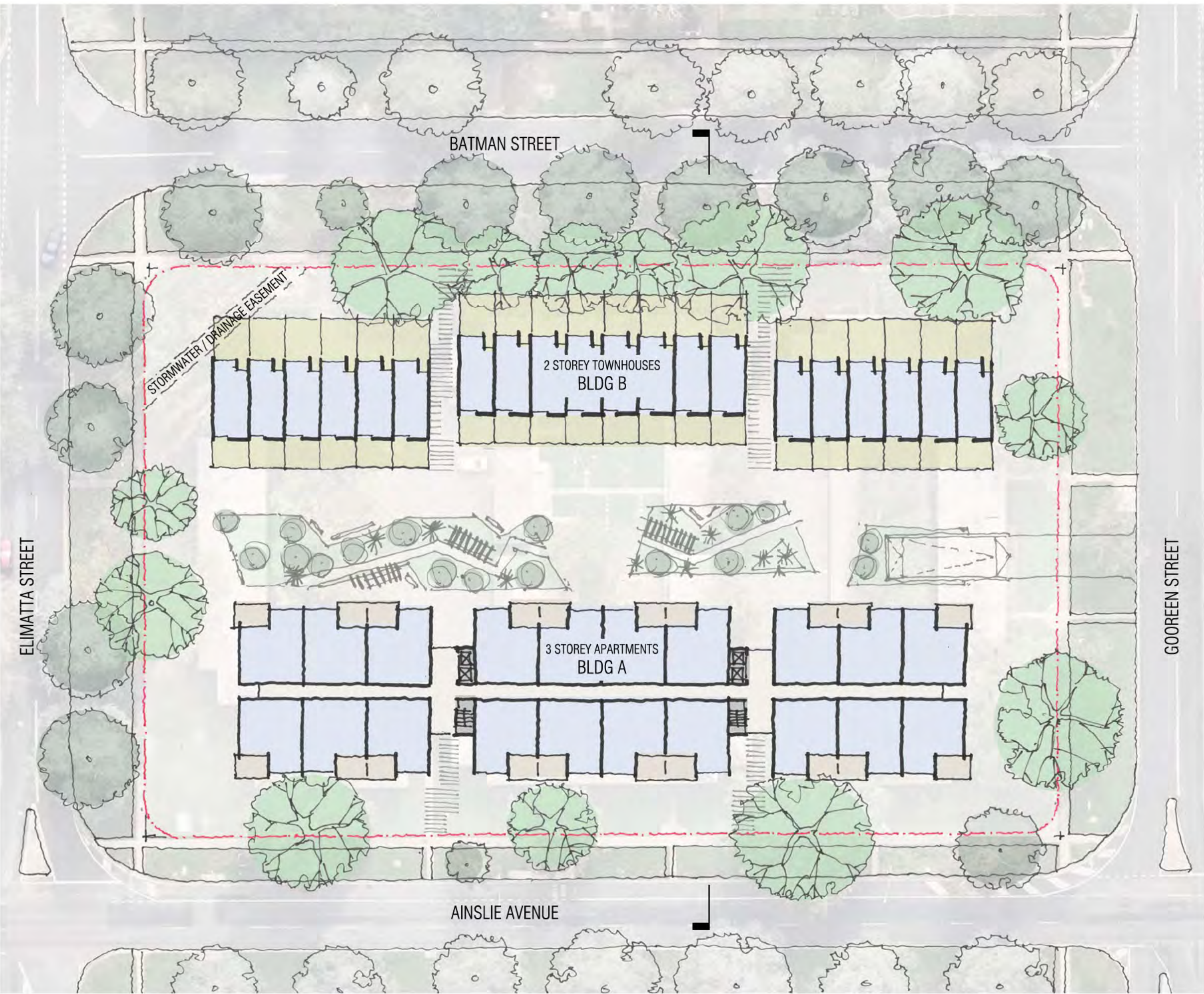


AREA SCHEDULE
 Kanangra Court
 Block 1 Section 11 Reid
 Low Density Option - RZ4

	Dwellings/ Levels	Area/ Level	Total Dwelling	Total Area
Building A	3	28	84	7392
Building B			28	2800
Total GFA			10,192	12,773
Site Area			12,773	12,773
Plot Ratio			79.8%	
Total Dwellings				112

DWELLING BREAKDOWN

1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	100%	112
3 Bedroom Dwellings	0%	0



AREA SCHEDULE

Braddon Court
 Block 1 Section 55 Braddon
 Low Density Option - RZ4

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	3	20	1790	60	5370
Building B				20	2000
				Total GFA	7,370
				Site Area	9,272
				Plot Ratio	79.5%
				Total Dwellings	80

DWELLING BREAKDOWN

1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	100%	80
3 Bedroom Dwellings	0%	0





AREA SCHEDULE

Ainslie Flats
Block 22 Section 14 Ainslie
Low Density Option

	Dwellings	GFA/Dwelling	Area
Block A	7	190	1330
Block B	13	190	2470
Block C	4	190	760
Block D	4	190	760
Block E	4	190	760
Block F	4	190	760
Block G	4	190	760
Block H	4	190	760
Block I	5	190	950
Block J	4	190	760

Total GFA | 10,070

Site Area | 19,553

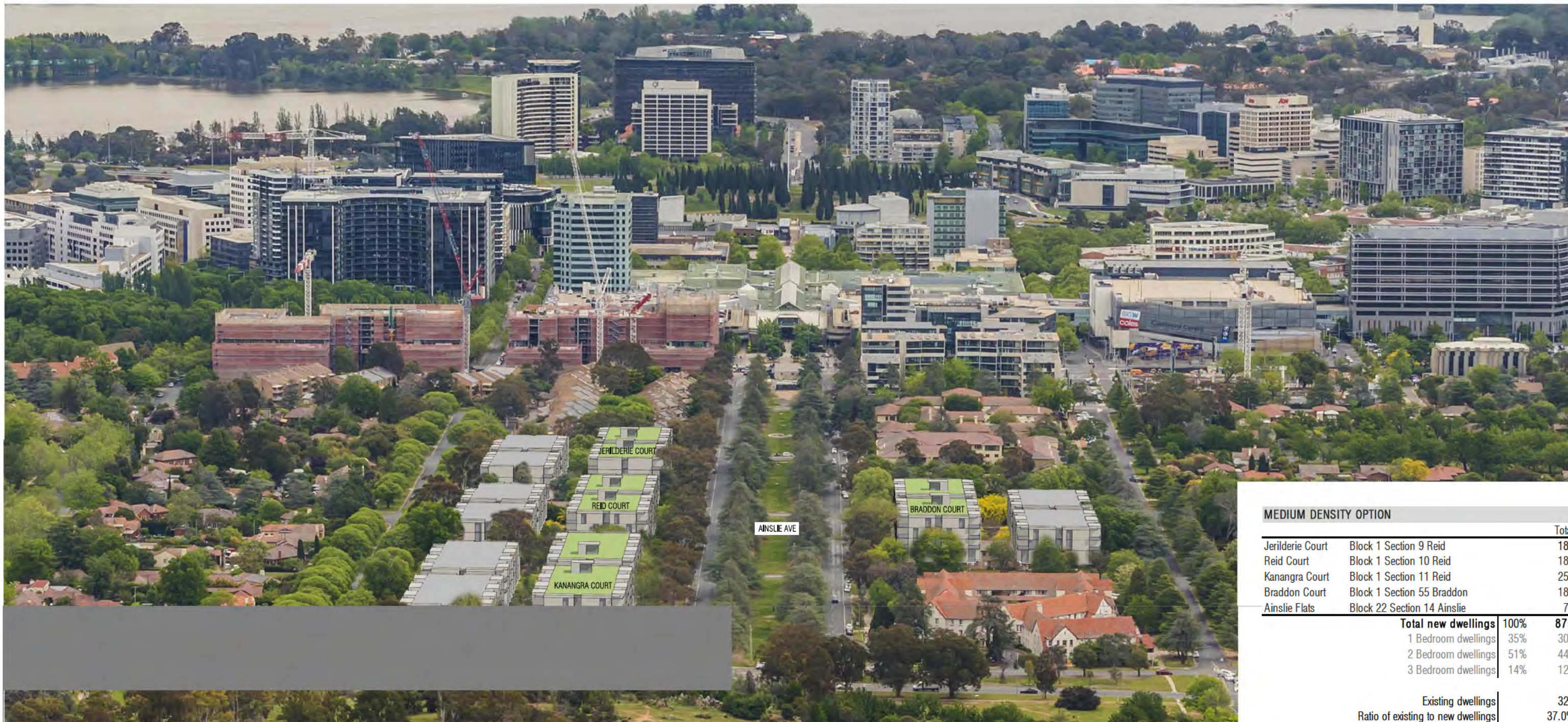
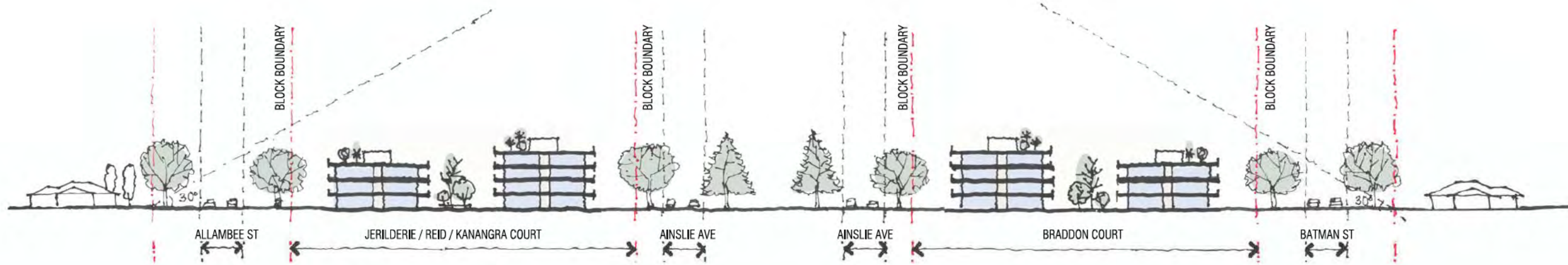
Plot Ratio | 51.5%

Total Dwellings | 53

DWELLING BREAKDOWN

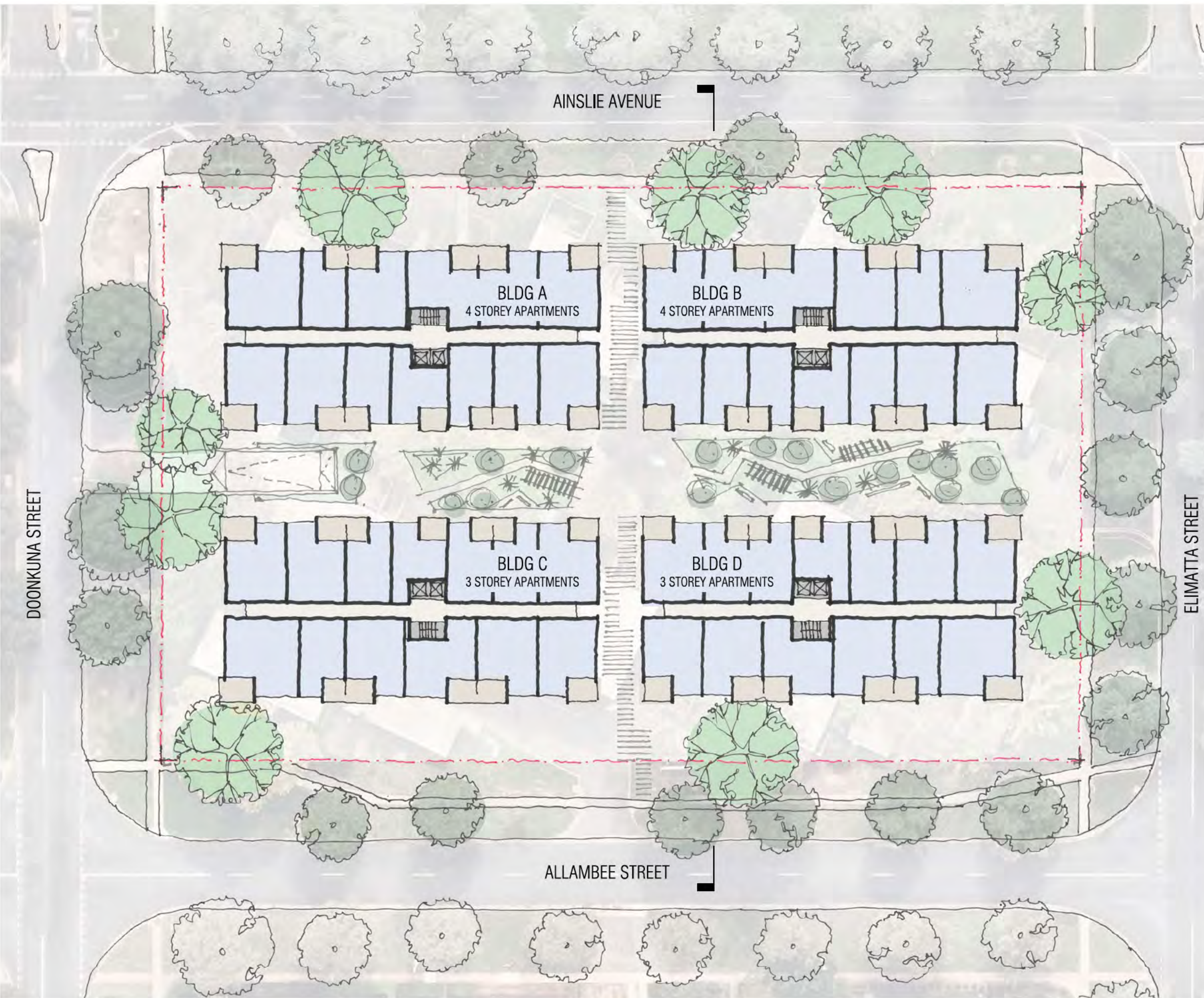
1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	0%	0
3 Bedroom Dwellings	100%	53





MEDIUM DENSITY OPTION

		Total
Jerilderie Court	Block 1 Section 9 Reid	182
Reid Court	Block 1 Section 10 Reid	182
Kanangra Court	Block 1 Section 11 Reid	252
Braddon Court	Block 1 Section 55 Braddon	182
Ainslie Flats	Block 22 Section 14 Ainslie	77
Total new dwellings		875
1 Bedroom dwellings		35% 308
2 Bedroom dwellings		51% 445
3 Bedroom dwellings		14% 122
Existing dwellings		324
Ratio of existing to new dwellings		37.0%



AREA SCHEDULE

Jerilderie Court
 Block 1 Section 10 Reid
 Medium Density Option - Between RZ4 & RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	4	13	1014	52	4056
Building B	4	13	1014	52	4056
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042

Total Area | 14,196

Site Area | 9,290

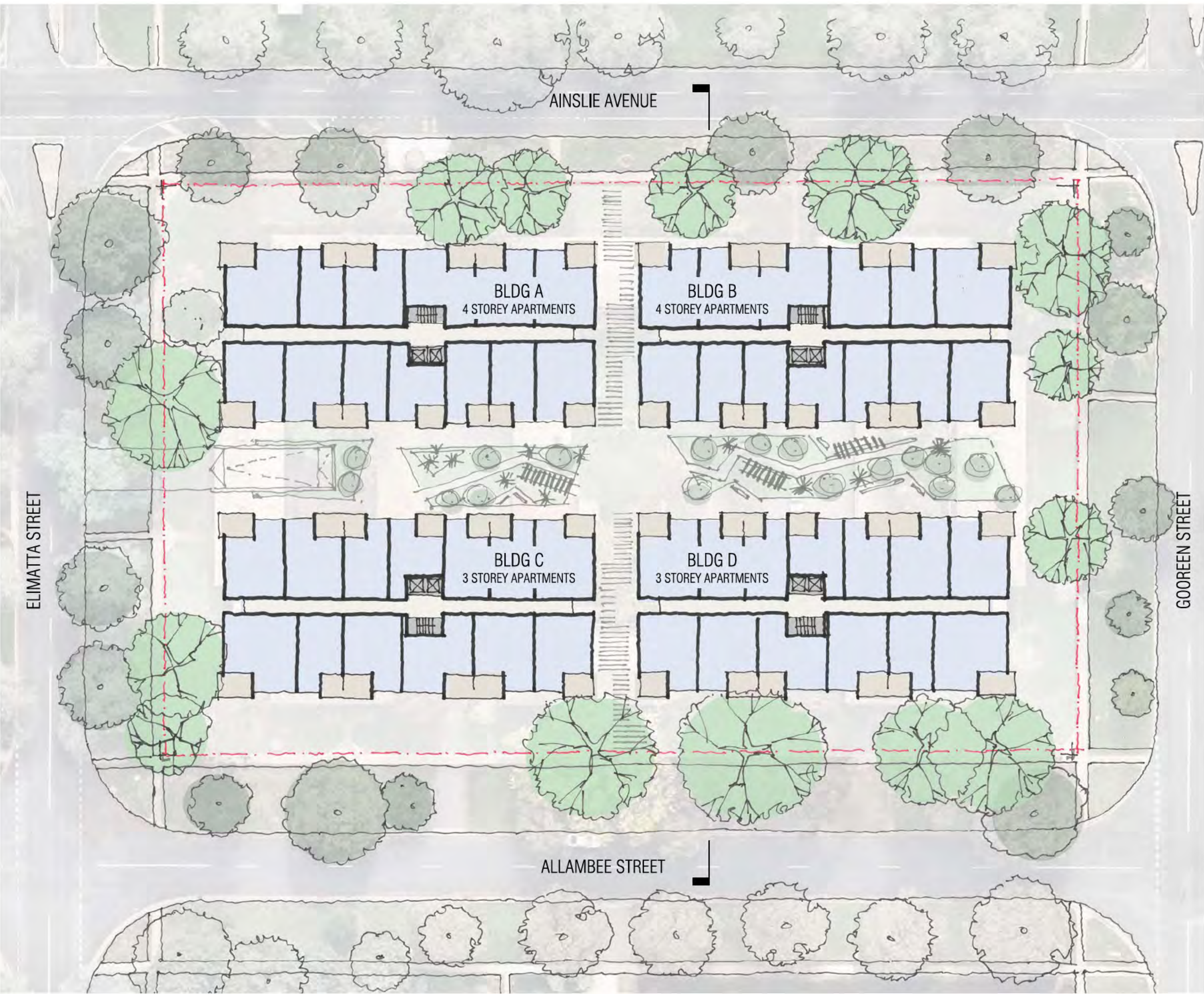
Plot Ratio | 152.8%

Total Dwellings | 182

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	70
2 Bedroom Dwellings	54%	98
3 Bedroom Dwellings	8%	14





AREA SCHEDULE

Reid Court
 Block 1 Section 10 Reid
 Medium Density Option - Between RZ4 & RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	4	13	1014	52	4056
Building B	4	13	1014	52	4056
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042

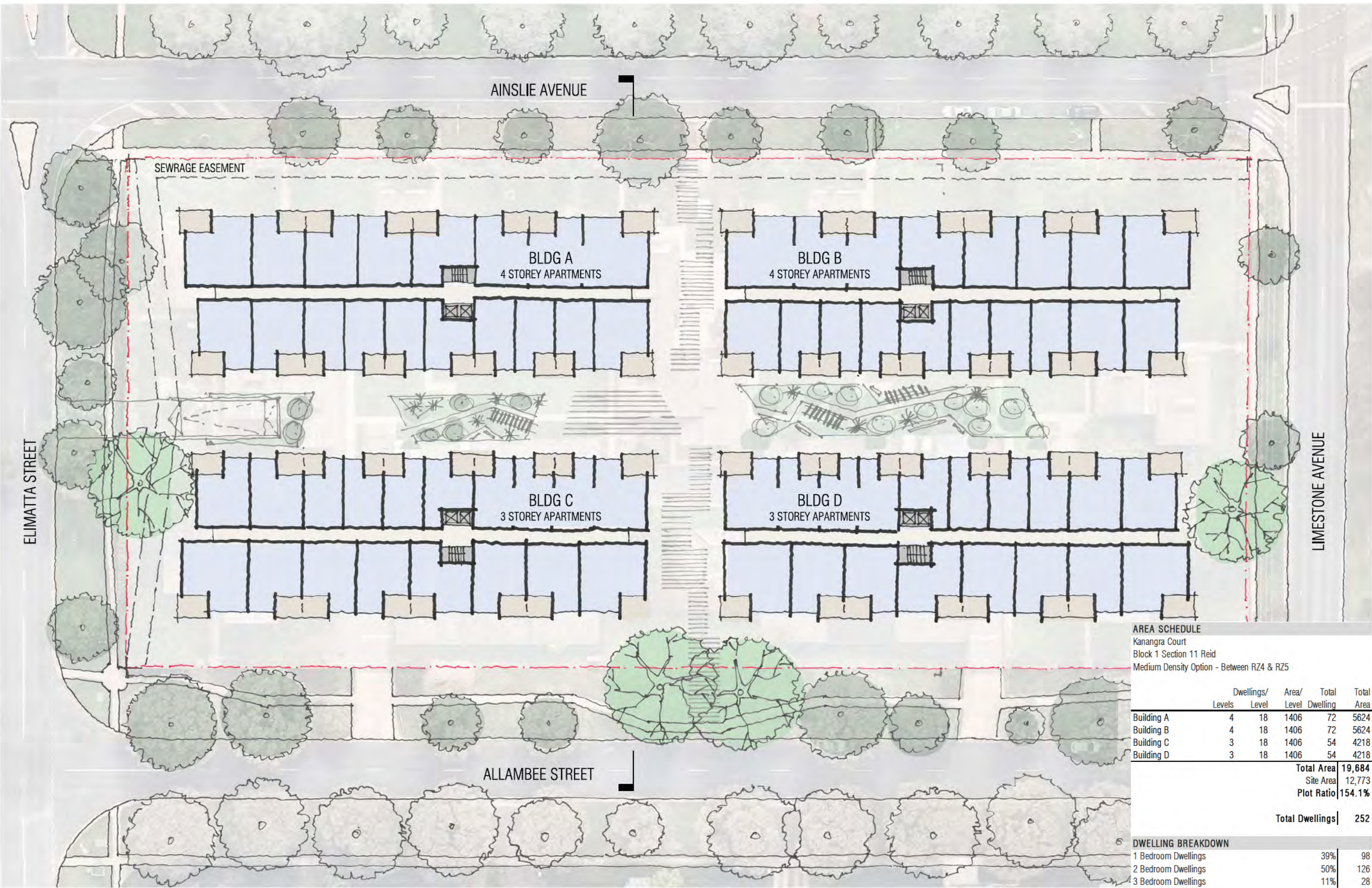
Total Area | 14,196
Site Area | 9,290
Plot Ratio | 152.8%

Total Dwellings | 182

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	70
2 Bedroom Dwellings	54%	98
3 Bedroom Dwellings	8%	14





AREA SCHEDULE
 Kanangra Court
 Block 1 Section 11 Reid
 Medium Density Option - Between RZ4 & RZ5

	Dwellings/ Levels	Area/ Level	Total Dwelling	Total Area
Building A	4	18	72	5624
Building B	4	18	72	5624
Building C	3	18	54	4218
Building D	3	18	54	4218

Total Area 19,684
Site Area 12,773
Plot Ratio 154.1%

Total Dwellings 252

DWELLING BREAKDOWN

1 Bedroom Dwellings	39%	98
2 Bedroom Dwellings	50%	126
3 Bedroom Dwellings	11%	28





AREA SCHEDULE

Braddon Court
 Block 1 Section 55 Braddon
 Medium Density Option - Between RZ4 & RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	4	13	1014	52	4056
Building B	4	13	1014	52	4056
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042
Total Area				14,196	
Site Area				9,272	
Plot Ratio				153.1%	
Total Dwellings				182	

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	70
2 Bedroom Dwellings	54%	98
3 Bedroom Dwellings	8%	14





AREA SCHEDULE

Ainslie Flats
 Block 22 Section 14 Ainslie
 Medium Density Option

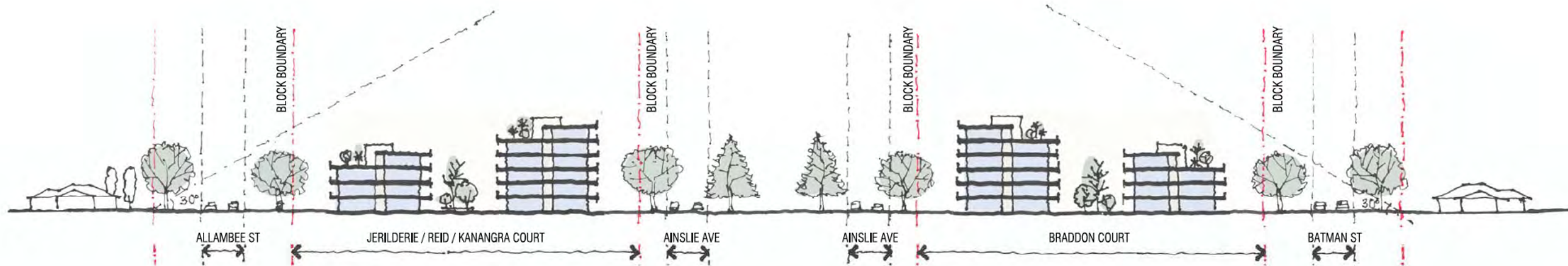
	Dwellings	GFA/Dwelling	Area
Block A	9	175	1575
Block B	17	175	2975
Block C	6	175	1050
Block D	6	135	810
Block E	7	175	1225
Block F	6	135	810
Block G	6	175	1050
Block H	7	135	945
Block I	7	175	1225
Block J	6	135	810
Total GFA			12,475
			Site Area 19,553
			Plot Ratio 63.8%

Total Dwellings | 77

DWELLING BREAKDOWN

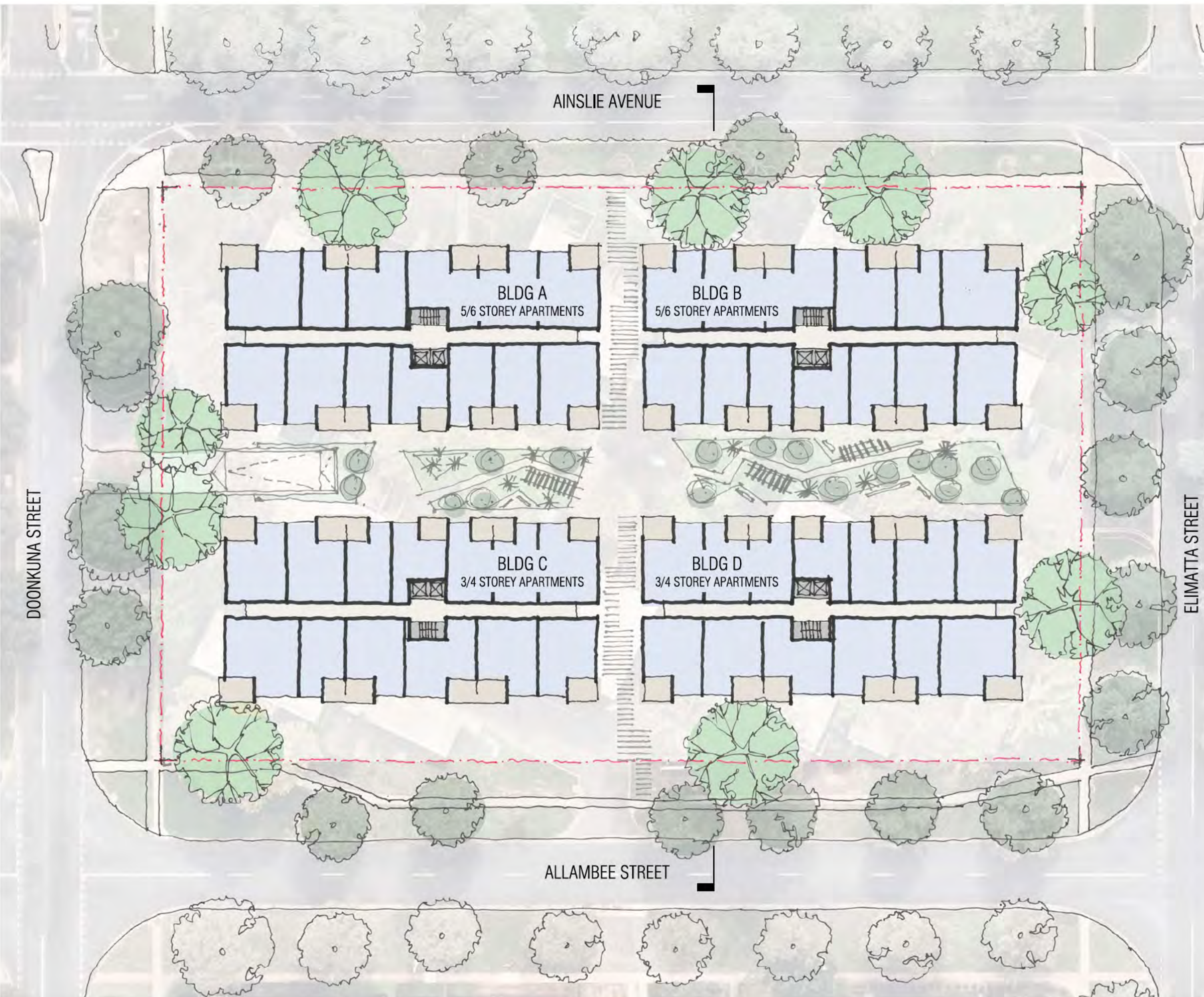
1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	32%	25
3 Bedroom Dwellings	68%	52





HIGH DENSITY OPTION

		Total
Jerilderie Court	Block 1 Section 9 Reid	234
Reid Court	Block 1 Section 10 Reid	234
Kanangra Court	Block 1 Section 11 Reid	324
Braddon Court	Block 1 Section 55 Braddon	234
Ainslie Flats	Block 22 Section 14 Ainslie	109
Total new dwellings		1,135
1 Bedroom dwellings		35%
2 Bedroom dwellings		48%
3 Bedroom dwellings		18%
Existing dwellings		324
Ratio of existing to new dwellings		28.5%



AREA SCHEDULE

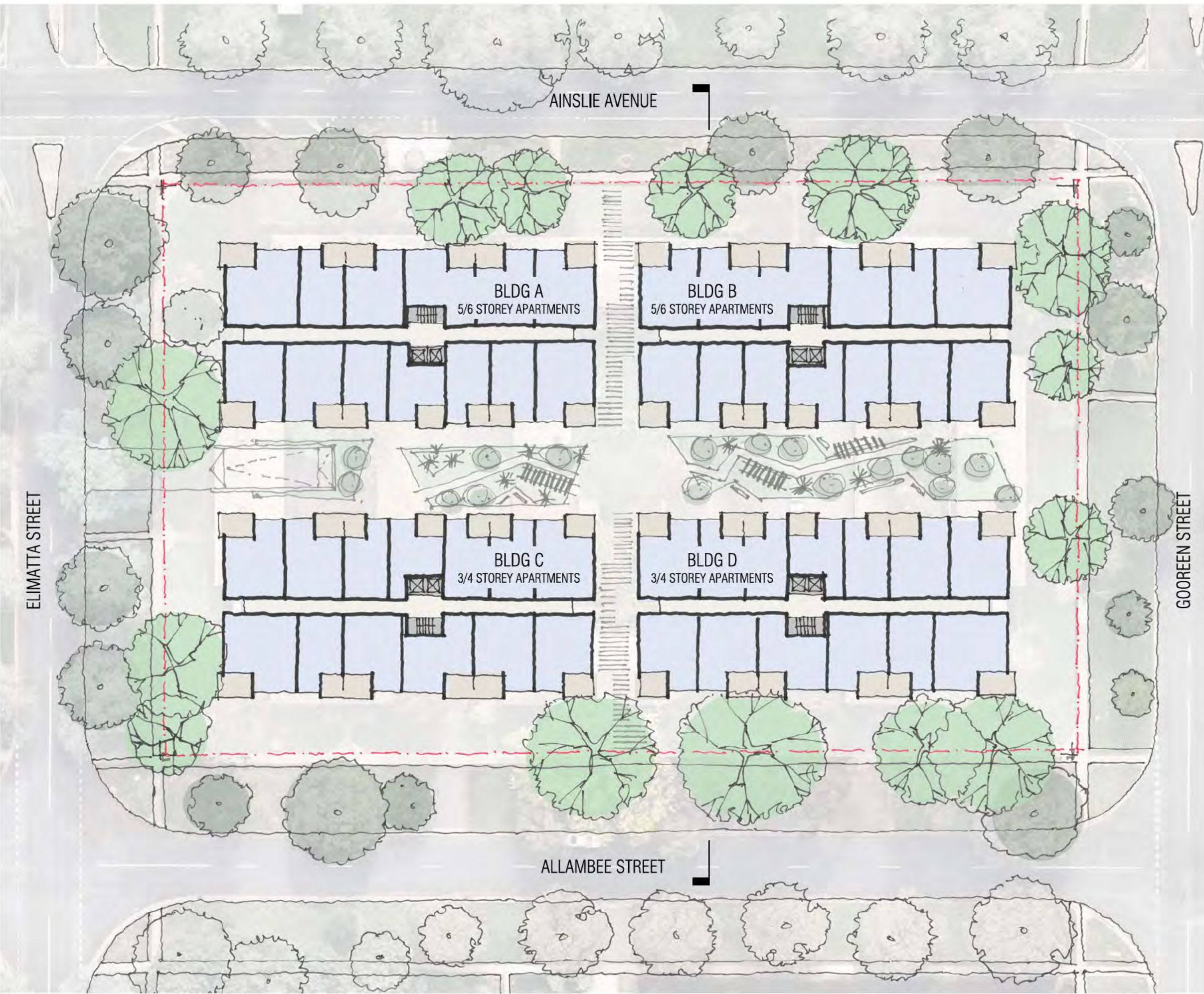
Jerilderie Court
 Block 1 Section 10 Reid
 High Density Option - RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	6	13	1014	78	6084
Building B	6	13	1014	78	6084
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042
Total Area				18,252	
Site Area				9,290	
Plot Ratio				196.5%	
Total Dwellings				234	

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	90
2 Bedroom Dwellings	54%	126
3 Bedroom Dwellings	8%	18





AREA SCHEDULE

Reid Court
 Block 1 Section 10 Reid
 High Density Option - RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	6	13	1014	78	6084
Building B	6	13	1014	78	6084
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042

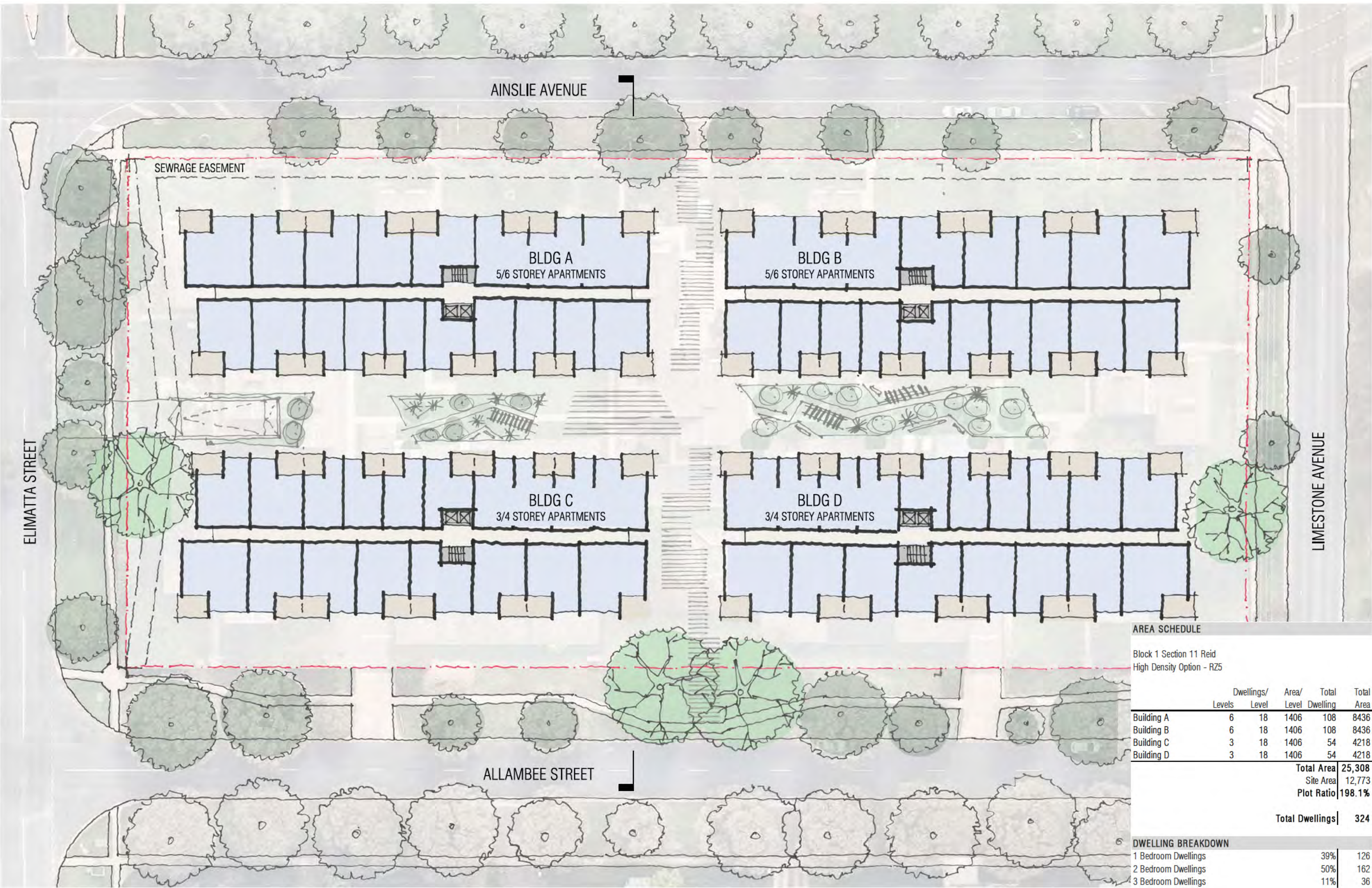
Total Area | 18,252
Site Area | 9,290
Plot Ratio | 196.5%

Total Dwellings | 234

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	90
2 Bedroom Dwellings	54%	126
3 Bedroom Dwellings	8%	18





AREA SCHEDULE

Block 1 Section 11 Reid
High Density Option - RZ5

	Dwellings/ Levels	Area/ Level	Total Dwelling	Total Area
Building A	6	18	108	8436
Building B	6	18	108	8436
Building C	3	18	54	4218
Building D	3	18	54	4218
Total Area				25,308
				Site Area 12,773
				Plot Ratio 198.1%
Total Dwellings				324

DWELLING BREAKDOWN

1 Bedroom Dwellings	39%	126
2 Bedroom Dwellings	50%	162
3 Bedroom Dwellings	11%	36





AREA SCHEDULE

Braddon Court
 Block 1 Section 55 Braddon
 High Density Option - RZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	6	13	1014	78	6084
Building B	6	13	1014	78	6084
Building C	3	13	1014	39	3042
Building D	3	13	1014	39	3042
Total Area				18,252	
				Site Area	9,272
				Plot Ratio	196.9%
Total Dwellings				234	

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	90
2 Bedroom Dwellings	54%	126
3 Bedroom Dwellings	8%	18





AREA SCHEDULE

Ainslie Flats
 Block 22 Section 14 Ainslie
 High Density Option - 6.5m Townhouse Grid

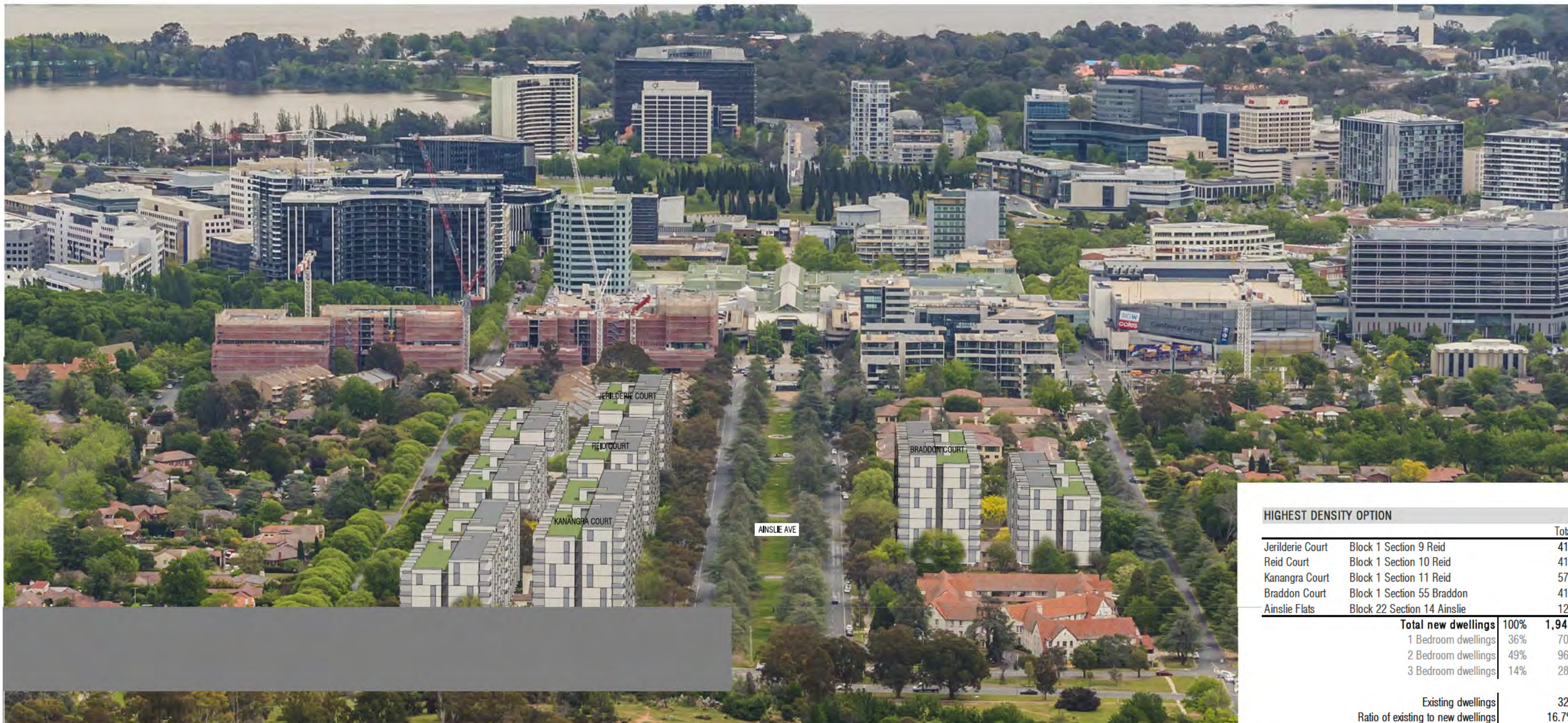
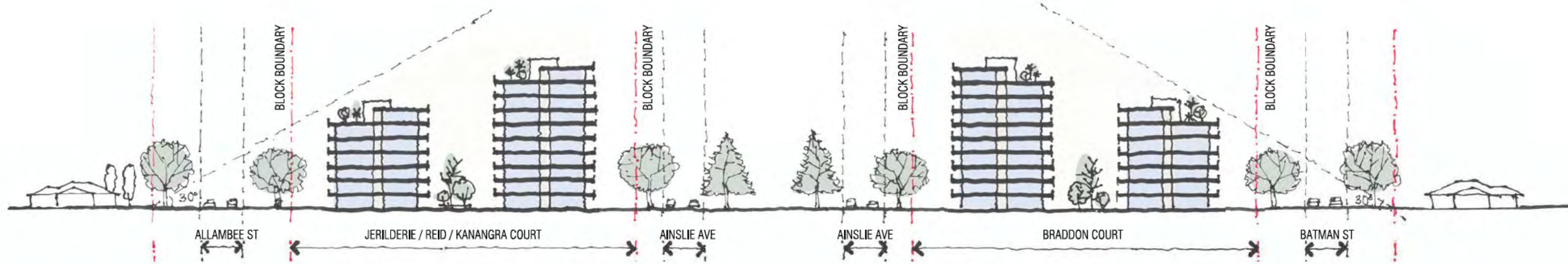
	Dwellings	GFA/Dwelling	Area
Block A	10	120	1200
Block B	20	120	2400
Block C	8	120	960
Block D1 & D2	17	120	2040
Block E	10	120	1200
Block F	10	120	1200
Block G	9	120	1080
Block H	9	120	1080
Block I	8	120	960
Block J	8	120	960
Total GFA			13,080
			Site Area 19,553
			Plot Ratio 66.9%

Total Dwellings | 109

DWELLING BREAKDOWN

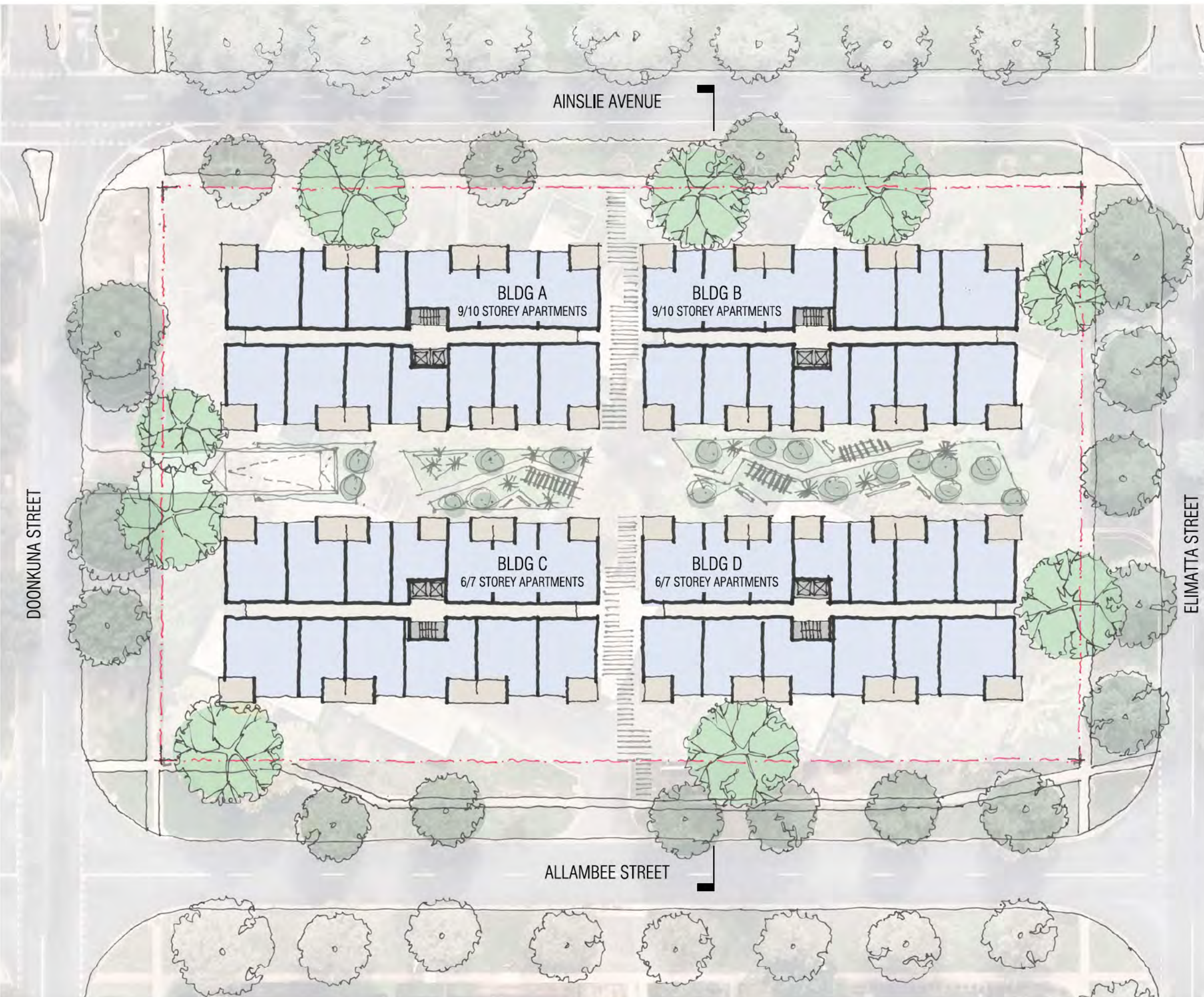
1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	0%	0
3 Bedroom Dwellings	100%	109





HIGHEST DENSITY OPTION

		Total
Jerilderie Court	Block 1 Section 9 Reid	416
Reid Court	Block 1 Section 10 Reid	416
Kanangra Court	Block 1 Section 11 Reid	576
Braddon Court	Block 1 Section 55 Braddon	416
Ainslie Flats	Block 22 Section 14 Ainslie	121
Total new dwellings		100% 1,945
1 Bedroom dwellings		36% 704
2 Bedroom dwellings		49% 960
3 Bedroom dwellings		14% 281
Existing dwellings		324
Ratio of existing to new dwellings		16.7%



AREA SCHEDULE

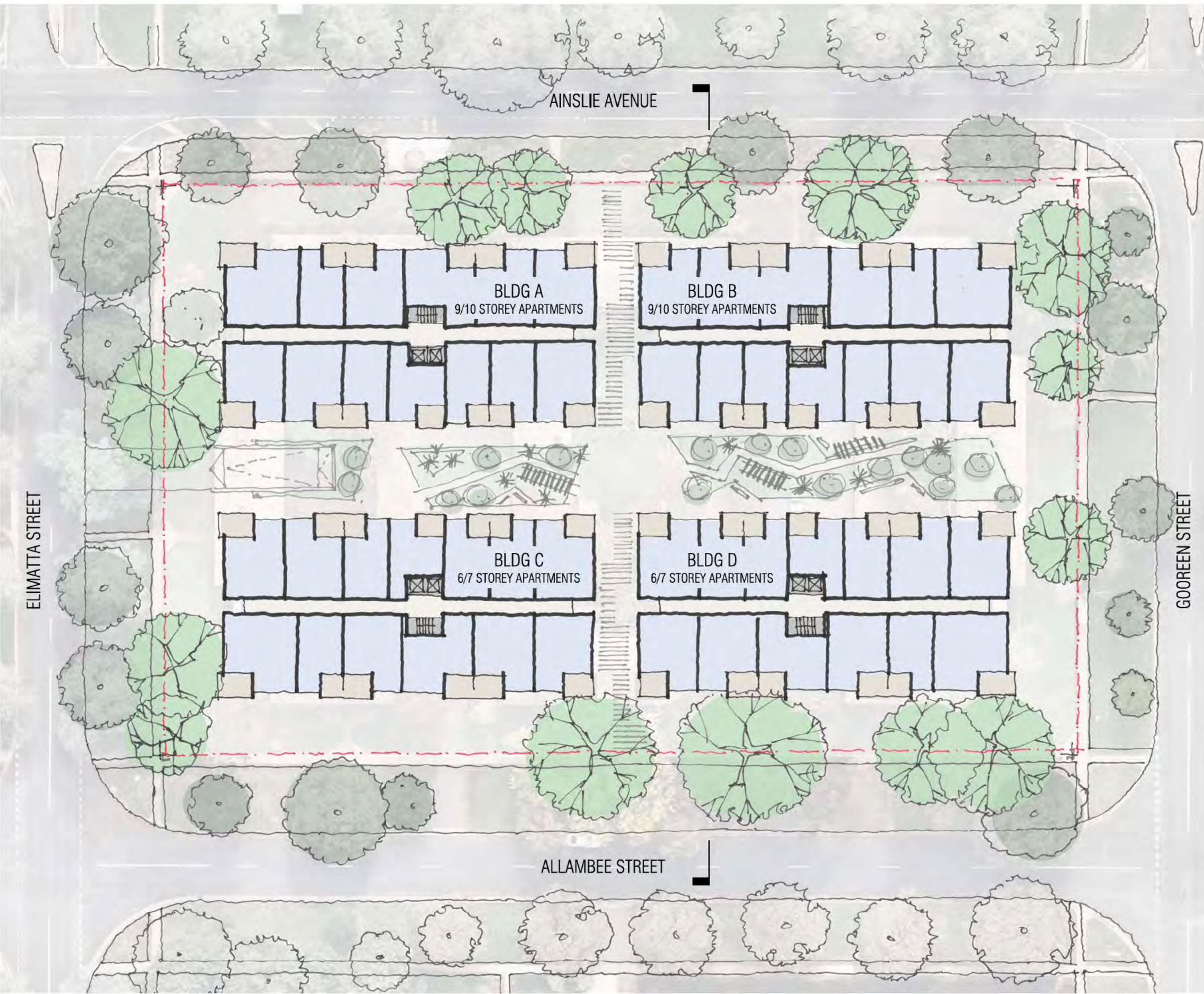
Jerilderie Court
 Block 1 Section 10 Reid
 Highest Density Option - CZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	10	13	1014	130	10140
Building B	10	13	1014	130	10140
Building C	6	13	1014	78	6084
Building D	6	13	1014	78	6084
Total Area				32,448	
Site Area				9,290	
Plot Ratio				349.3%	
Total Dwellings				416	

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	160
2 Bedroom Dwellings	54%	224
3 Bedroom Dwellings	8%	32





AREA SCHEDULE

Reid Court
 Block 1 Section 10 Reid
 Highest Density Option - CZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	10	13	1014	130	10140
Building B	10	13	1014	130	10140
Building C	6	13	1014	78	6084
Building D	6	13	1014	78	6084

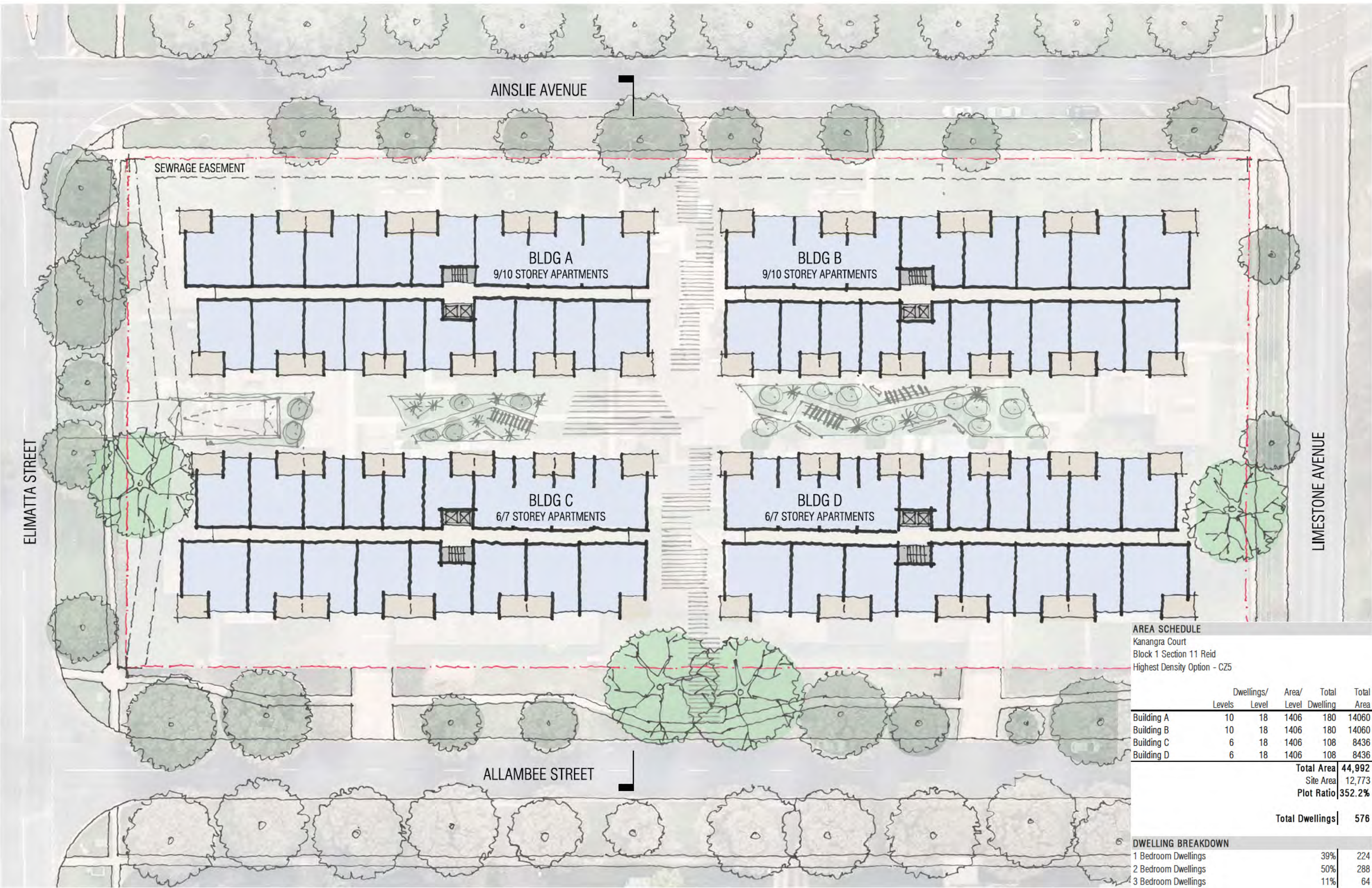
Total Area 32,448
Site Area 9,290
Plot Ratio 349.3%

Total Dwellings 416

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	160
2 Bedroom Dwellings	54%	224
3 Bedroom Dwellings	8%	32





AREA SCHEDULE
 Kanangra Court
 Block 1 Section 11 Reid
 Highest Density Option - CZ5

	Dwellings/ Levels	Area/ Level	Total Dwelling	Total Area
Building A	10	18	180	1406
Building B	10	18	180	1406
Building C	6	18	108	8436
Building D	6	18	108	8436

Total Area 44,992
Site Area 12,773
Plot Ratio 352.2%

Total Dwellings 576

DWELLING BREAKDOWN

1 Bedroom Dwellings	39%	224
2 Bedroom Dwellings	50%	288
3 Bedroom Dwellings	11%	64





AREA SCHEDULE

Braddon Court
 Block 1 Section 55 Braddon
 Highest Density Option - CZ5

	Dwellings/ Levels	Level	Area/ Level	Total Dwelling	Total Area
Building A	10	13	1014	130	10140
Building B	10	13	1014	130	10140
Building C	6	13	1014	78	6084
Building D	6	13	1014	78	6084
Total Area				32,448	
Site Area				9,272	
Plot Ratio				350.0%	
Total Dwellings					416

DWELLING BREAKDOWN

1 Bedroom Dwellings	38%	160
2 Bedroom Dwellings	54%	224
3 Bedroom Dwellings	8%	32





AREA SCHEDULE

Ainslie Flats
 Block 22 Section 14 Ainslie
 Highest Density Option - 4.3m Townhouse Grid

	Dwellings	GFA/Dwelling	Area
Block A	15	120	1800
Block B	30	120	3600
Block C	10	120	1200
Block D	11	120	1320
Block E	11	120	1320
Block F	12	120	1440
Block G	11	120	1320
Block H	11	120	1320
Block I	10	120	1200

Total GFA	14,520
Site Area	19,553
Plot Ratio	74.3%

Total Dwellings | 121

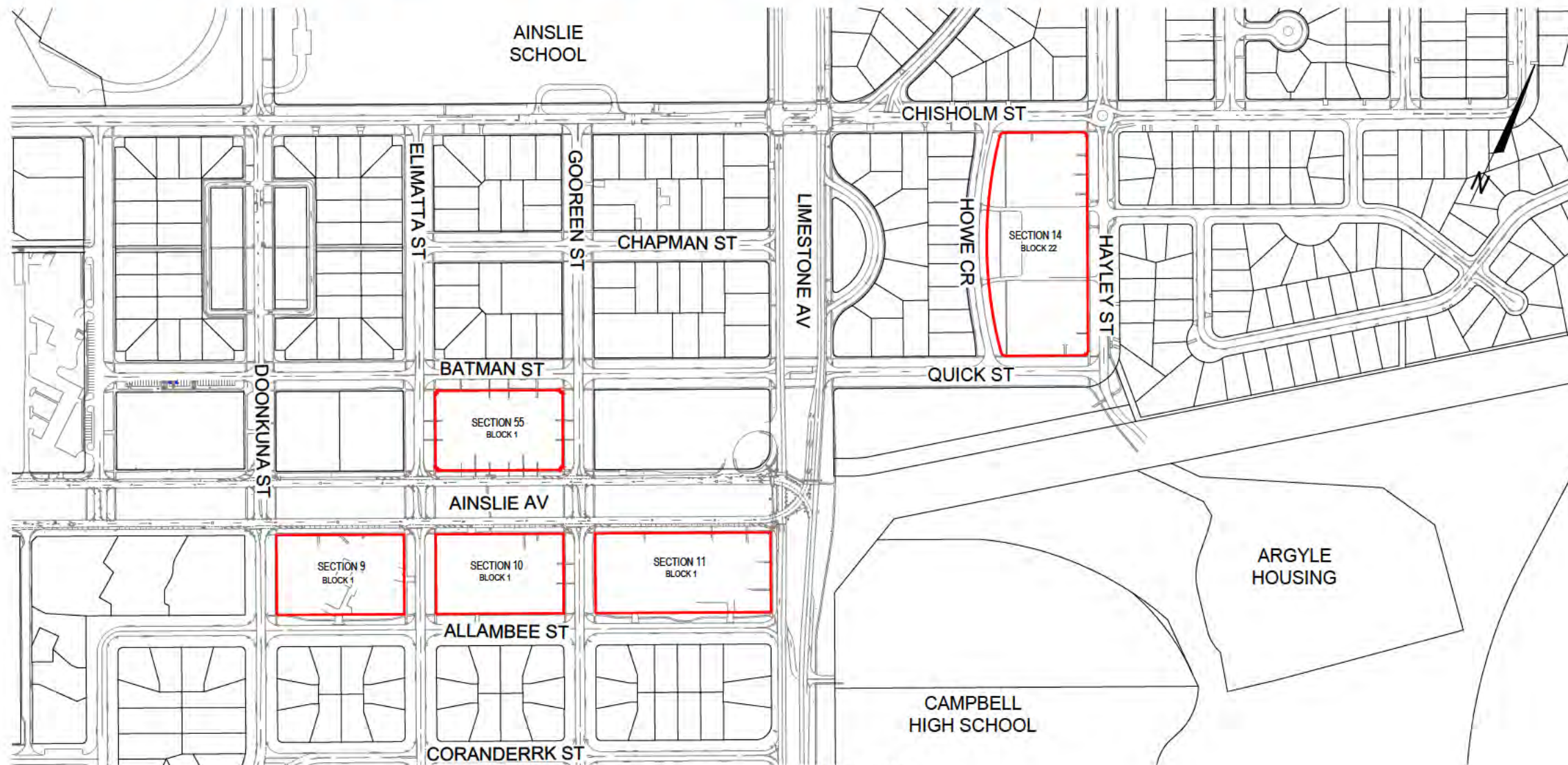
DWELLING BREAKDOWN

1 Bedroom Dwellings	0%	0
2 Bedroom Dwellings	0%	0
3 Bedroom Dwellings	100%	121

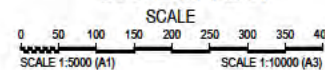


Attachment C: Calibre Utility Services Study

AINSLIE AVENUE CORRIDOR STUDY



LOCALITY PLAN


















AINSLIE AVENUE CORRIDOR FEASIBILITY STUDY

DRAWING INDEX

SHEET TITLE	SHEET DESCRIPTION
000	COVER SHEET
002	NOTES AND LEGEND
055	EXISTING SERVICES PLAN - AINSLIE FLATS
105	EXISTING SERVICES PLAN - BRADDON COURT
155	EXISTING SERVICES PLAN - JERILDERIE COURT
205	EXISTING SERVICES PLAN - REID COURT
255	EXISTING SERVICES PLAN - KANANGRA COURT



LEGEND (EXISTING)

	SUBJECT SITE CADASTRAL
	CADASTRAL
	GAS, VALVE, END CAP
	ELECTRICITY SERVICE
	STREETLIGHT, POLE
	ELECTRICITY LOW VOLTAGE, STRUCTURE
	ELECTRICITY HIGH VOLTAGE
	TELSTRA/ NBN, PIT
	OPTUS
	TRANSACT
	STORMWATER, MANHOLE, FIELD INLET, R-SUMP
	SEWER, MANHOLE
	WATER, HYDRANT, ZONE VALVE, VALVE
	EFFLUENT
	ABANDONED

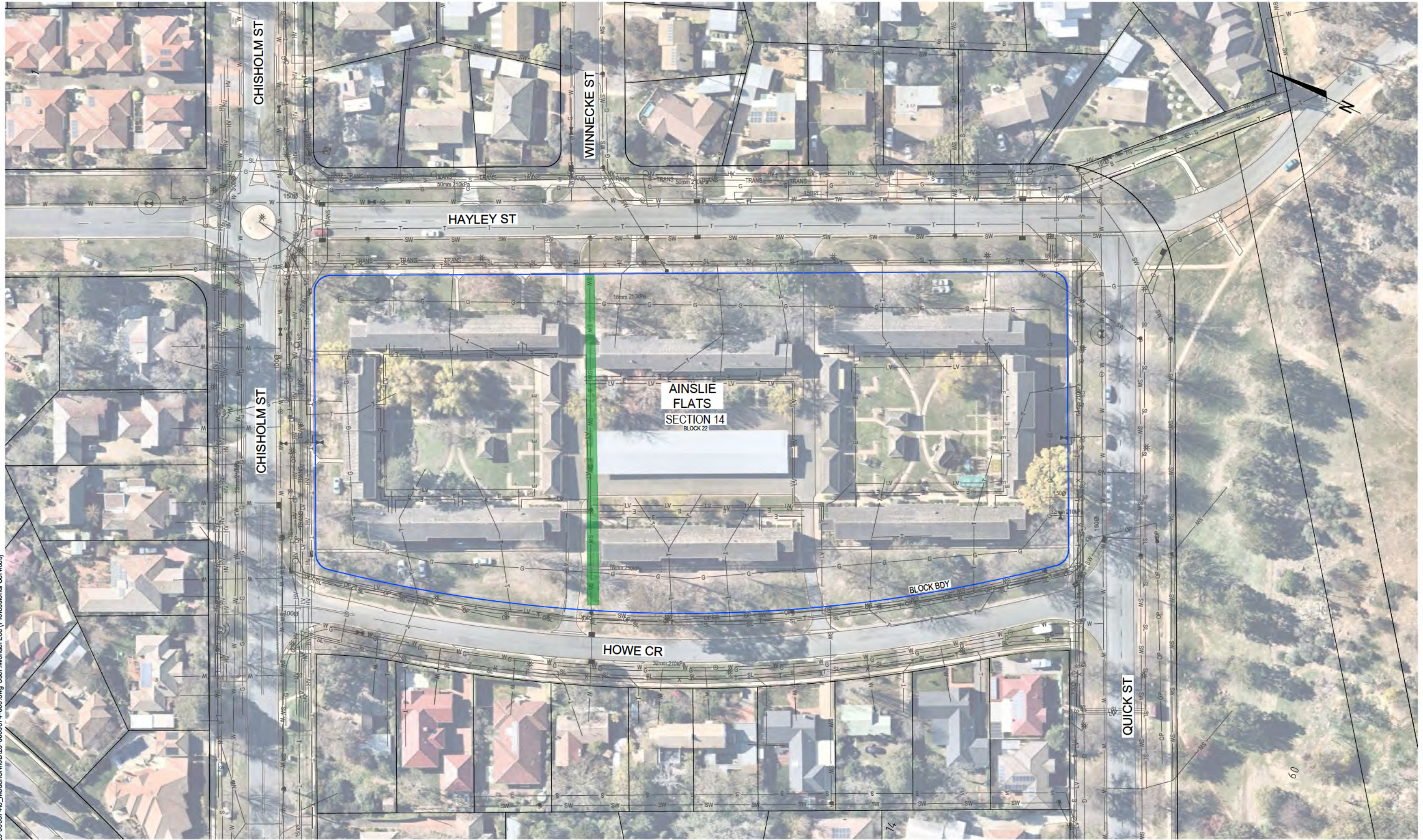
EASEMENTS

	ELECTRICITY
	SEWER
	STORMWATER

Plot Date: 9-Sep-20, 9:57 AM File: H:\20\20-0003746_Model\Civil\3D\20-0000374-002.dwg User: Michael Lee (Professional Services)

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS	SITE INVESTIGATION	FILE No.		AINSLIE AVENUE CORRIDOR FEASIBILITY STUDY	NOTES AND LEGEND	
	SM	ML	OM	TL	26/09/2020					  calibregroup.com	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	20-0000374 002 -

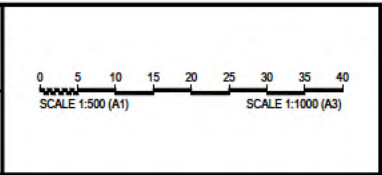
Plot Date: 9-Sep-20, 9:57 AM File: H:\20\20-000374_050.dwg User: Michael Lee (Professional Services)



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	BM	ML	OM	TL	30/09/2020

AMENDMENT DETAILS	

SITE INVESTIGATION



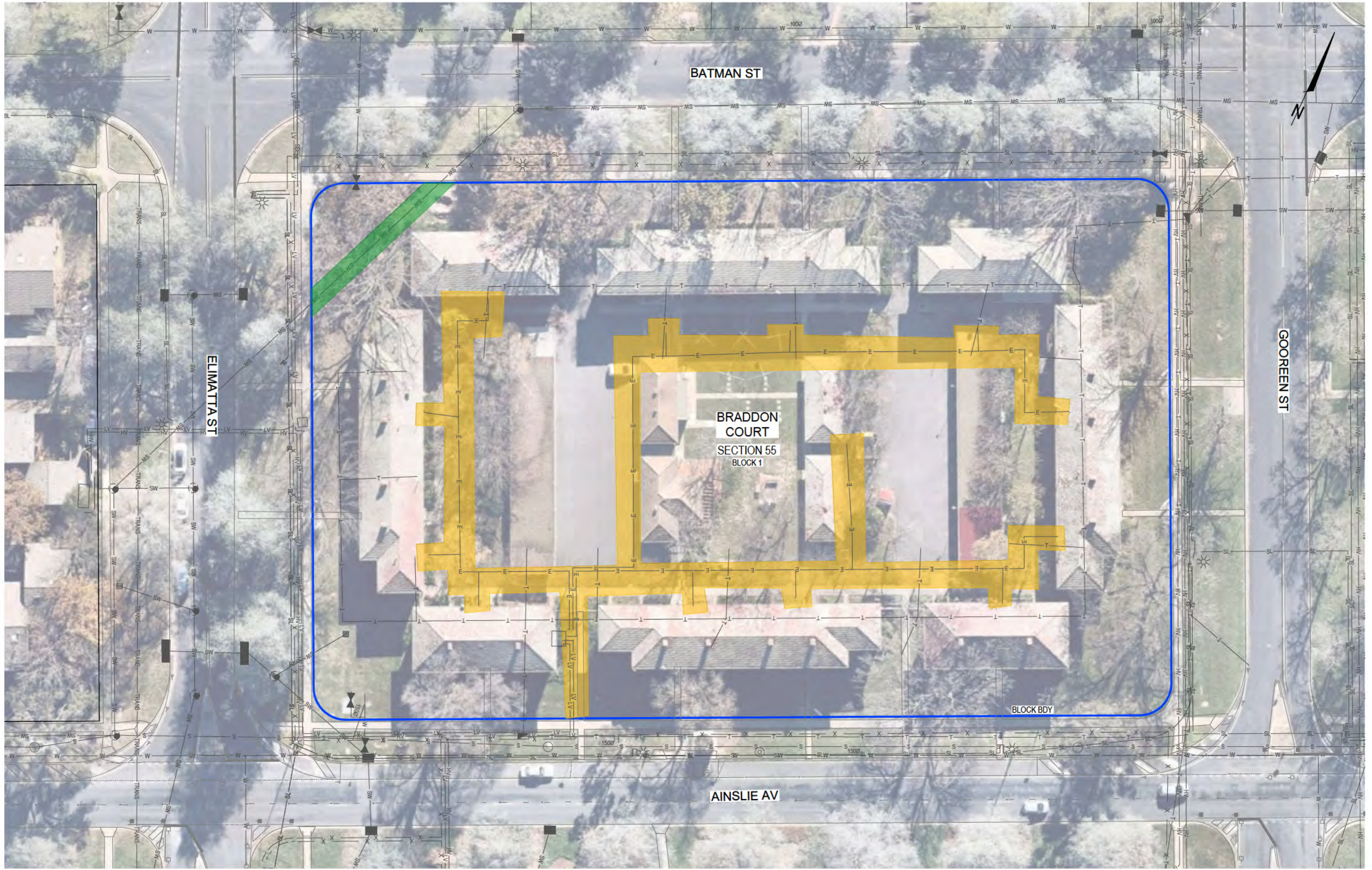
AINSIE AVENUE CORRIDOR
FEASIBILITY STUDY

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PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO
NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
CERTIFYING AUTHORITY

EXISTING SERVICES PLAN - AINSIE
FLATS

20-000374 055

Plot Date: 9-Sep-20, 9:57 AM File: H:\2020-000374-105.dwg User: Michael Lee (Professional Services)

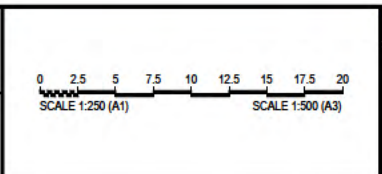


REV	DATE	BY	CHKD	DESCRIPTION

DESIGN	DRAWN	CHECK	APPROVED	DATE

AMENDMENT DETAILS

SITE INVESTIGATION



AINSLIE AVENUE CORRIDOR
FEASIBILITY STUDY

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CERTIFYING AUTHORITY

EXISTING SERVICES PLAN - BRADDON
COURT

20-000374 105

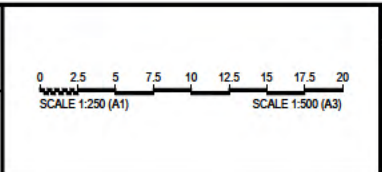


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1	06/09/2020	ML	ML	ML	AMENDMENT DETAILS

NO.	DESCRIPTION
1	SITE INVESTIGATION

SITE INVESTIGATION



AINSLIE AVENUE CORRIDOR
FEASIBILITY STUDY

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NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
CERTIFYING AUTHORITY

EXISTING SERVICES PLAN - JERILDERIE
COURT

20-000374 155



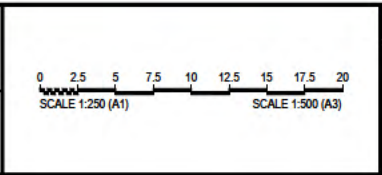
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DESIGN	DRAWN	CHECK	APPROVED	DATE

AMENDMENT DETAILS

SITE INVESTIGATION



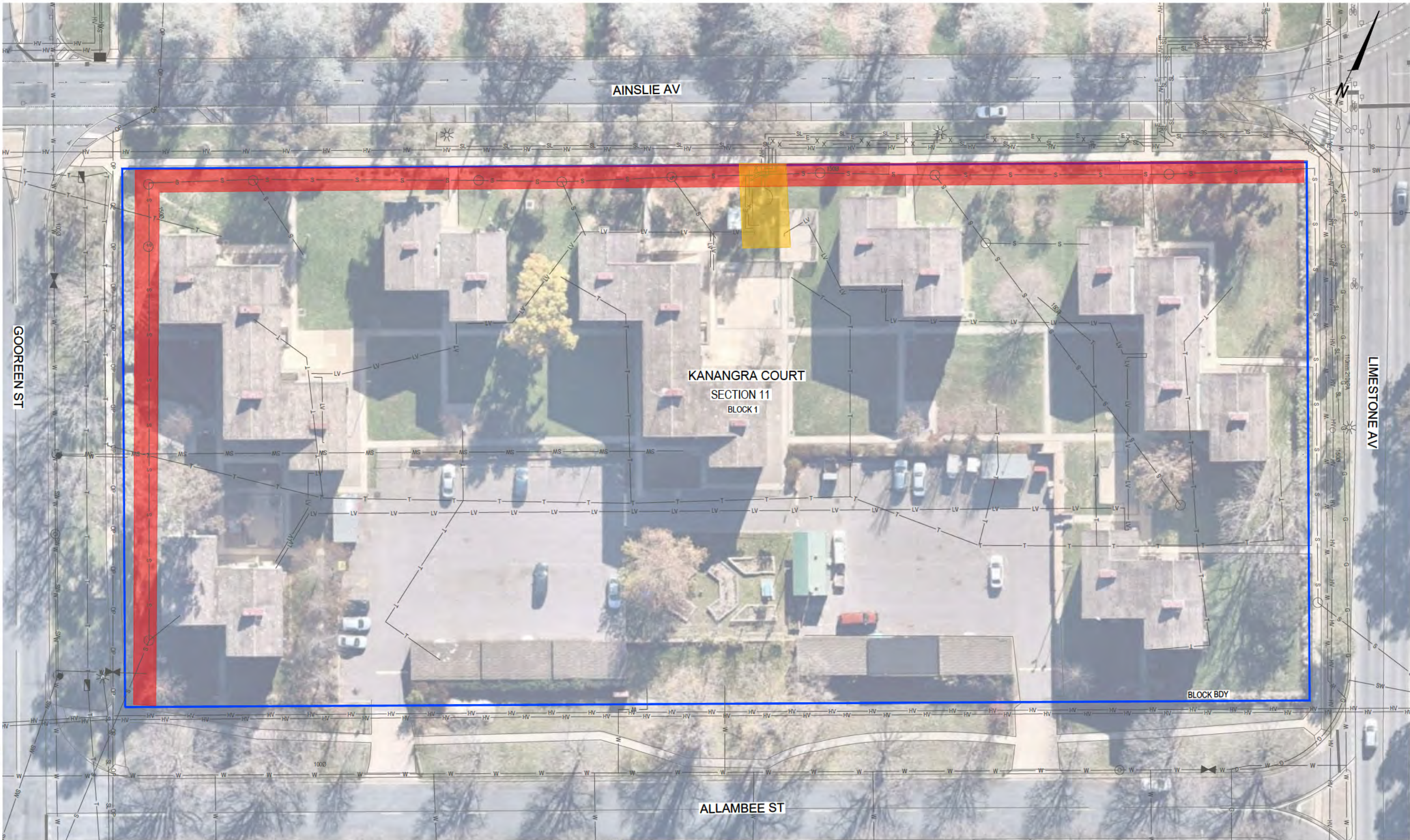
AINSLIE AVENUE CORRIDOR FEASIBILITY STUDY

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

EXISTING SERVICES PLAN - REID COURT

20-000374 205

Plot Date: 9-Sep-20, 9:57 AM File: H:\20\20-000374_255.dwg User: Michael Lee (Professional Services)

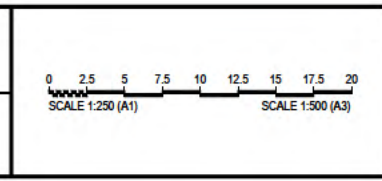


REV	DATE	BY	CHKD	APP'D	DESCRIPTION

DESIGN	DRAWN	CHECK	APPROVED	DATE

AMENDMENT DETAILS

SITE INVESTIGATION



AINSLIE AVENUE CORRIDOR
FEASIBILITY STUDY

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CERTIFYING AUTHORITY

EXISTING SERVICES PLAN - KANANGRA COURT

20-000374 255

Attachment D: Calibre Traffic Study

Report

An aerial photograph of a residential area, showing a grid of streets, houses with red roofs, and some greenery. The image is split vertically by a dark blue semi-transparent panel that contains the report's title and other text.

Ainslie Avenue Corridor Traffic Impact Assessment

Prepared for Purdon Planning

21 October 2020

Calibre Professional Services Pty Ltd
55 070 683 037

QUALITY ASSURANCE STATEMENT

TASK	NAME
Project Manager	
Prepared by	
Reviewed by	
Approved for Issue by	

DOCUMENT CONTROL

ISSUE	DATE	ISSUE DETAILS	AUTHOR	CHECKED	APPROVED
01	20.08.20	Draft	NH	BM	-
02	21.10.20	Final	NH	BM	BH

Ainslie Avenue Corridor Traffic Impact Assessment_Rev02.Docx

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Executive Summary

Introduction

Calibre Professional Services (Calibre) has been engaged by Purdon Planning, on behalf of the Environment, Planning and Sustainable Development Directorate (EPSDD) to assist in a feasibility study for the following five sites:

1. Ainslie Block 22, Section 14 (Ainslie Flats);
2. Braddon Block 1, Section 55 (Braddon Court);
3. Reid Block 1, Section 11 (Kanangra Court);
4. Reid Block 1, Section 10 (Reid Court); and
5. Reid Block 1, Section 9 (Jerilderie Court).

As part of the feasibility study for these sites, a traffic impact and parking assessment of each site and the surrounding road network was completed and included a review of existing traffic, parking, public transport and active travel facilities, along with an assessment of future traffic impact and parking requirements.

Road Network

The existing road network surrounding these sites consists of nine major roads. These are Ainslie Avenue, Doonkuna Street, Elimatta Street, Gooreen Street, Limestone Avenue, Batman Street, Quick Street, Donaldson Street, and Chisholm Street. Speed limits tend to be either 50km/h or 60km/h along these roads. The roads of Ainslie Avenue and Limestone Avenue are two carriageway roads and generally consist of two-lanes in each direction. The remaining roads tend to be a single carriageway and consist of a single lane in each direction.

Current Parking Provisions

Parking for residents of the site is currently provided within each of the sites. A large number of on-street carparks are provided around each of the sites to provide parking to visitors and guests. The on-street parking is predominantly provided overnight, but there are several time limited carparks also present to provide daytime parking.

Active Travel and Public Transport Routes

There are four local bus routes which run within close proximity of the sites throughout the week. These routes tend to operate at intervals of 30 minutes. Active travel is provided in and around the sites through local footpaths. These paths connect into the local community routes which run along Ainslie Avenue, Doonkuna Street, Chapman Street, and Hayley Street. Both Ainslie Avenue and Limestone Avenue are also considered as on-road cycle routes and provide connections to the greater active travel network around Canberra.

Intersection Performance Analysis

SIDRA Intersection 8.0 was used to complete the assessment of the following six intersections:

Ainslie Avenue / Doonkuna Street

Ainslie Avenue / Elimatta Street

Ainslie Avenue / Gooreen Street

Ainslie Avenue / Limestone Avenue

Limestone Avenue / Batman Street / Quick Street

Limestone Avenue / Chisholm Street / Donaldson Street

Assessment was carried out for the existing conditions for each of these intersections, as well as the performance in the years of 2023 and 2033. For the future years, scenarios for no development (base), high yield development volumes, and low yield development volumes were developed.

The traffic counts were scaled up to account for pre COVID volumes utilising comparisons to historical SCATS intersection counts. Given the sensitivities of the works, the traffic team was directed not to attend site as it may draw attention to the project. These combined factors mean the traffic model was not able to be calibrated to the standard practice. The variances are expected to be low but future traffic studies on an individual site basis are recommended for future assessment. A summary of the SIDRA analysis results can be seen in Table 1.1 below. This table is colour coded based on the SIDRA colouring for Level of Service (LOS). Values noted by a dash exceed the limits of what SIDRA is able to accurately calculate and are considered as failing scores. NA values have been included for several of the low yield development scenarios as these were not assessed given existing acceptable performance from the high yield scenarios.

From this assessment, it was determined that the intersection of **Limestone Avenue / Batman Street / Quick Street** operates beyond acceptable levels in the existing conditions, and is only expected to worsen throughout the base scenarios. As its poor performance is an existing condition, it is expected that the upgrade of this intersection will be considered as part of a separate assessment.

The intersection of **Ainslie Avenue / Limestone Avenue** is expected to have queue lengths which will extend back past the adjacent intersections in the network within the current scenario. The impact of the queuing is expected to worsen within the PM peak of the 2033 base scenario but is not expected to worsen beyond that for any of the development scenarios. Degree of Saturation (DOS) is expected to exceed the practical capacity of 0.9 within the 2033 PM peak period of the high yield development scenario. The DOS is expected to decrease to the practical capacity when the low yield development volumes are adopted. Improvements to the intersection for the high yield case could include an additional lane on approach. Further studies would need to be undertaken to determine the feasibility of this, but the costs are expected to be around \$750K to \$1.5M based on the extent of works.

The intersection of **Limestone Avenue / Chisholm Street / Donaldson Street** is expected to have queue lengths which will extend back past the adjacent intersections in the network within the current scenario. The impact of the queuing is expected to worsen within the AM peak of the 2033 base scenario but is not expected to worsen beyond that for any of the development scenarios. The DOS is expected to exceed the acceptable limit of 0.9 within the 2033 high yield development scenario. It is noted that the 2033 low yield development volumes do not cause the DOS to exceed acceptable levels. DOS and delays are expected to exceed acceptable levels during the AM peak of the 2033 base scenario. The 2033 high yield and low yield scenarios also exceed the acceptable levels at this intersection, but do not cause any significant changes to the intersection performance over the base scenario. Due to this, it is expected that the upgrades to this intersection will be considered as part of a separate assessment.

The intersection of **Ainslie Avenue / Doonkuna Street** is expected to surpass the acceptable limit for DOS, delay and queuing during the 2033 AM peak high yield development scenario. The performance of all criteria is noted however to decrease to acceptable levels when the low yield volumes are utilised. There are multiple network options at this location and traffic could redistribute to select the quickest travel path. Signalisation of this intersection would increase delays on Ainslie Avenue but could improve active travel permeability through the area and aligns with the endorsed local community route. The cost of signalisation could be between \$750K to \$1.25M depending on utility clashes and extent of works. The adjacent priority controlled intersections along Ainslie Avenue would also benefit from the vehicle platooning and additional gaps in traffic from the signals.

Increasing congestion can assist with improving the uptake of active travel and public transport modes. With the Territories planning strategy to increase urban infill through intensification in areas close to the town centres and public transport routes, these sites are prime candidates for higher density living. The higher yield scenario may need to contribute to the augmentation of some intersections but these costs could be balanced against the other considerations for the increased yield.

Table 1.1 Summary Table of SIDRA Analysis Results

Intersection	Period	Existing		2023 Base		2023 Design - High Dev		2023 Design - Low Dev		2023 Base		2023 Design - High Dev		2023 Design - Low Dev	
		DOS	Delay	DOS	Delay	DOS	Delay	DOS	Delay	DOS	Delay	DOS	Delay	DOS	Delay
Ainslie Ave / Doonkuna St	AM	0.38	20	0.4	21	0.62	30	0.42	22	0.54	24	0.81	41	0.56	25
	PM	0.25	19	0.28	21	0.39	25	0.27	19	0.24	20	0.49	28	0.34	21
Ainslie Ave / Elimatta St	AM	0.13	18	0.13	18	0.33	23	NA	NA	0.15	18	0.39	25	NA	NA
	PM	0.13	18	0.13	17	0.22	21	NA	NA	0.15	18	0.24	22	NA	NA
Ainslie Ave / Gooreen St	AM	0.12	17	0.12	17	0.33	20	NA	NA	0.14	19	0.35	22	NA	NA
	PM	0.13	17	0.13	17	0.22	21	NA	NA	0.15	18	0.25	22	NA	NA
Ainslie Ave / Limestone Ave	AM	0.75	16	0.7	14	0.78	17	0.78	15	0.84	17	0.88	22	0.82	19
	PM	0.8	17	0.78	16	0.83	18	0.83	16	0.87	20	0.96	26	0.87	20
Limestone Ave / Batman St / Quick St	AM	1.73	701	-	-	-	-	NA	NA	-	-	-	-	NA	NA
	PM	0.61	52	0.65	147	0.67	115	NA	NA	1.1	367	-	-	NA	NA
Limestone Ave / Chisholm St / Donaldson St	AM	0.84	23	0.89	29	0.91	34	0.9	32	1.1	126	1.12	146	1.09	129
	PM	0.88	22	0.77	11	0.79	11	0.78	10	0.8	15	0.87	14	0.86	14

Future Parking Provisions

Based off the high yield development volumes, the number of parking spaces required for each of the sites was determined. Parking rates were taken from the Parking and Vehicular Access General Code (PVAGC). From these rates, it was determined that the following parking would be required for each site.

Site	Resident Parking	Visitor Parking (Disabled Parking)
Ainslie Avenue	192	64 (2)
Braddon Court	300	75 (3)
Kanangra Court	600	150 (5)
Reid Court	300	76 (3)
Jerilderie Court	300	98 (3)

Motorcycle parking would also need to be considered at a rate of three spaces per 100 carparks, with a minimum of one motorcycle space in carparks with at least 30 spaces. For the residential parking, it can be assumed that each dwelling would receive dedicated parking that could be used in place of motorcycle parking and as such no additional allowance is required.

Bicycle parking will also need to be provided at each of the sites, based off the rates provided in the Bicycle Parking General Code (BPGC). From these rates, it was determined that the following parking would be required for each site:

Site	Resident Parking	Visitor Parking
Ainslie Avenue	192	15
Braddon Court	300	24
Kanangra Court	600	49
Reid Court	300	24
Jerilderie Court	300	24

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1. Introduction

In July 2020, Calibre was engaged by Purdon Planning, on behalf of the Environment, Planning and Sustainable Development Directorate (EPSDD) to assist with completing early planning and due diligence investigations for five multi-unit properties within the Ainslie Avenue Corridor. The sites being investigated are as follows:

1. Ainslie Block 22, Section 14 (Ainslie Flats);
2. Braddon Block 1, Section 55 (Braddon Court);
3. Reid Block 1, Section 11 (Kanangra Court);
4. Reid Block 1, Section 10 (Reid Court); and
5. Reid Block 1, Section 9 (Jerilderie Court).

These sites are approximately 1.5km east of the Canberra CBD and are identified in **Figure 1-1**.

1.1 Scope of Investigation

As part of the investigation works for these sites, a traffic impact and parking assessment of the sites and surrounding road network was completed to determine the impact of the development on the existing and future traffic network. The scope of this assessment is as follows:

- Assessment of the existing active travel and public transport networks within the vicinity of the sites
- Assessment of the existing parking conditions at each site
- Assessment of the future parking requirements of each site based off estimated housing numbers at each site
- AM and PM peak performance analysis for the current year, development year, and 10-year development horizon of the following six intersections:
 1. Ainslie Avenue / Doonkuna Street;
 2. Ainslie Avenue / Elimatta Street;
 3. Ainslie Avenue / Gooreen Street;
 4. Ainslie Avenue / Limestone Avenue;
 5. Limestone Avenue / Quick Street / Batman Street; and
 6. Limestone Avenue / Chisholm Street / Donaldson Street.

The location of each of the intersections being analysed can be seen in **Figure 1-1**.



Figure 1-1 Site Location Map

2. Existing Conditions

2.1 Road Network

Ainslie Avenue is an arterial road with a posted speed of 60km/h that extends between Cooyong Street to the west and Limestone Avenue to the east. Along its entire length, Ainslie Avenue provides a dual carriageway cross section which typically supports two 3.3m wide traffic lanes and a 2.5m wide shoulder on the outside which supports on-street parking. Four bus stops are present along the road. The dual carriageway is separated by a 30m wide grassed median. Concrete footpaths are present within both verges of the road.

Doonkuna Street is a minor collector with a default speed limit of 50km/h for urban areas that extends between Donaldson Street to the north and Coranderrk Street to the south. The full length of Doonkuna Street supports a single 8m wide carriageway with a single lane in each direction. Concrete footpaths are present along within both verges of the street.

Elimatta Street is an access-B street with a default speed limit of 50km/h for urban areas (with exception with the school zone of 40km/h) that extends from Donaldson Street to the north and turns into Anzac Park to the south. The full length of Elimatta Street supports a single 8m wide carriageway with a single lane in each direction. Concrete footpaths are present within both verges of the street.

Gooreen Street is an access-B street a default speed limit of 50km/h for urban areas (with exception with the school zone of 40km/h) that extends between Donaldson Street to the north and Euree Street to the south. The full length of Gooreen Street supports a single 8m wide carriageway with a single lane in each direction. Concrete footpaths are present within both verges of the street.

Limestone Avenue is an arterial road with a posted speed of 60km/h that extends between Wakefield Avenue in the north and ends at the roundabout with Anzac Parade and Fairbairn Avenue to the south. Around the Ainslie Avenue intersection, Limestone Avenue consists of a dual carriageways separated by a wide median (between 13m and 20m). Each carriageway typically consists of two lanes, with additional short turn lanes included at the intersections with Ainslie Avenue and Majura Avenue / Wakefield Avenue. Concrete footpaths are present within both verges of the road.

Batman Street is an access-B road with a default speed limit of 50km/h for urban areas which extends between Cooyong Street to the west and Limestone Avenue to the east. The majority of Batman Street supports a single 8m wide carriageway with a single lane in each direction the exception to this is between Cooyong Street and Currong Street North where the road spits into two carriageways separated by a median, with each carriageway possessing a single 5m traffic lane. Within this section, on-street parking and parking within the median are supported. Concrete footpaths are present along both edges of the road for its entire length.

Quick Street is the continuation of Batman Street on the eastern side of Limestone Avenue, extending further east until Hayley Street with default speed limit of 50km/h for urban areas. The road layout matches that of Batman Street, with an 8m carriageway supporting a single lane in each direction. Concrete footpaths are present within both verges of the street.

Donaldson Street is a major collector with default speed limit of 50km/h for urban areas (with exception with the school zone of 40km/h) connecting Cooyong Street to the west with Limestone Avenue to the east. The majority of Donaldson Street supports a 9m wide carriageway with a single lane in each direction. The westbound lane tends to be wider than the eastbound lane to allow for the bus stops located out the front of Ainslie School. Concrete footpaths are present within both verges of the road.

Chisholm Street is the continuation of Donaldson Street to the east of Limestone Avenue and continues east until it becomes Duffy Street with a posted speed limit of 50km/h. Chisholm Street supports a single 8m carriageway with a lane travelling in either direction. Both sides of the road have an off-road cycle path present.

2.2 Parking Provisions

Under the existing conditions, there are a number of carparks provided on-site for use by the residents of the existing complexes. Furthermore, additional on-road parking is provided at certain times along the surrounding streets. With the exception of Chisholm Street, all the streets adjacent to the sites allow for overnight parking (from 6pm to 7.30am). The majority of Ainslie Avenue, Gooreen Street, Howe Crescent, and the section of Elimatta Street between Reid Court and Jerilderie Court extend this overnight parking period. At these locations, parking from 3pm to 9am is permitted, as is lunchtime parking (between 11am and 2pm).

There are three locations adjacent to sites where time-limited on-street parking is available. On Ainslie Avenue along the frontage of Braddon Court, a small number of 1-hour carparks are available. Hayley Street allows for 2-hour parking along

one side, while Doonkuna Street and the section of Elimatta Street next to Braddon Court allows for 3-hour parking along one side of the street.

Given the limited periods during which vehicles can park at these locations, it is assumed that this parking is predominantly used by visitors and guests to residents in the immediate area.

2.3 Active Travel and Public Transport

2.3.1 Public Transport

As can be seen in **Figure 2-1**, there are four local bus routes which is within close proximity to at least one of the sites throughout the week. All of these routes operate at intervals of 30 minutes or less during the weekday peaks. A summary of these routes can be seen in **Table 2.1** and the closest stops to each of the development sites are provided in **Table 2.2**.

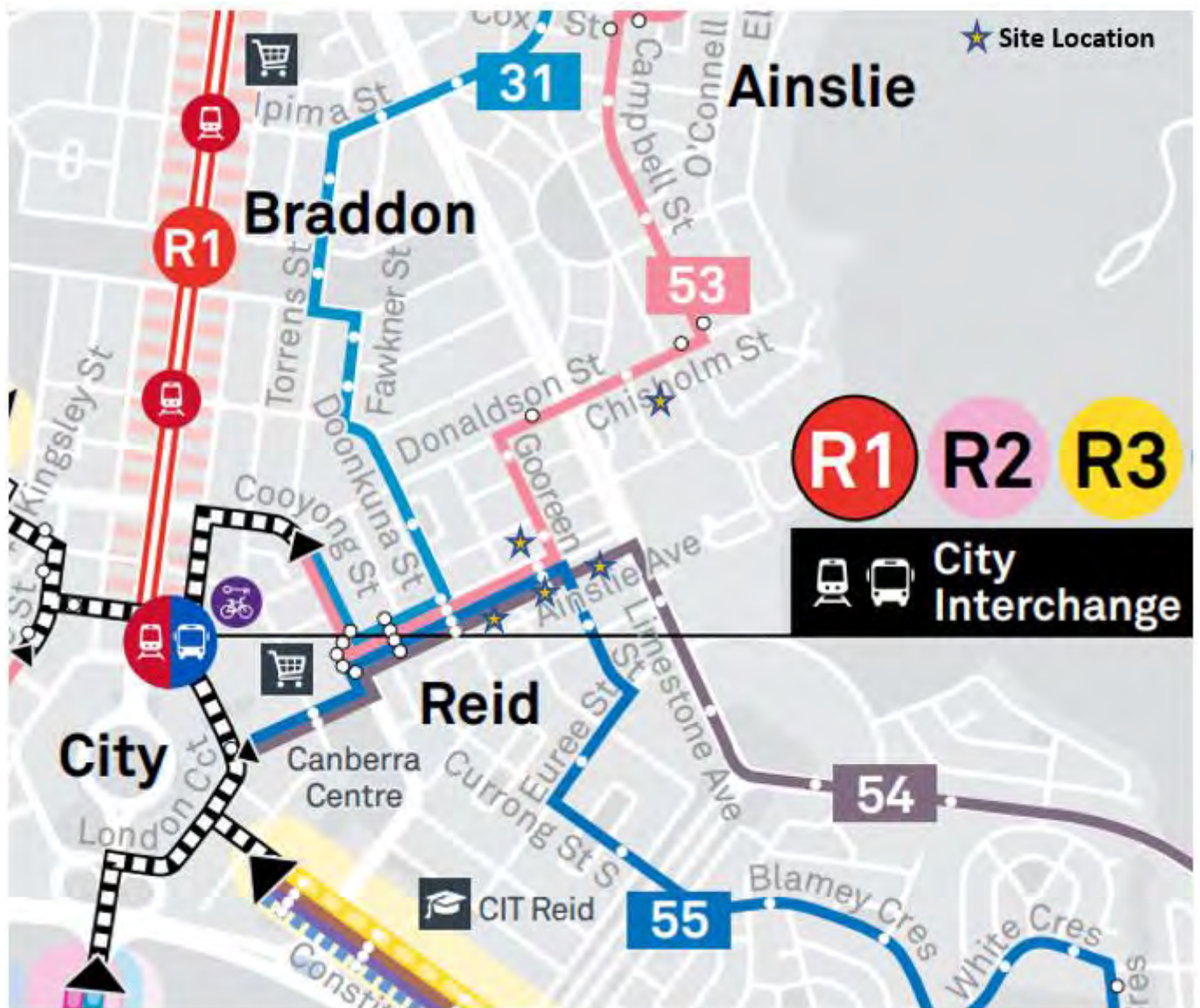


Figure 2-1 Public Transport Network Map

Table 2.1 Summary of Bus Routes Operating in Close Proximity to Sites

Route	Route Description	Hours of Operation (Weekday)	Typical Service Interval
31	Cohen Street Interchange to City Interchange	5:59am – 10:56pm	Weekday peak: 20 mins Weekend Peak: 2 hours
53	Dickson Shops to City Interchange	5:55am – 11:15pm	Weekday peak: 20 mins Weekend Peak: 2 hours
54	City Interchange Loop to Majura Park	5:39am – 8:39pm	Weekday peak: 20 mins Weekend Peak: 2 hours
55	City Interchange Loop to ADFA	5:41am – 10:21pm	Weekday peak: 20 mins Weekend Peak: 2 hours

Table 2.2 Summary of Bus Stop Distances from each Site

Bus Stop Number and Location	Routes	Walking Distance from Site
3054 – Ainslie Av after Doonkuna St	31, 53, 54, 55	95m (Jerilderie Court) 250m (Reid Court) 300m (Braddon Court)
3053 – Ainslie Av after Currong St	31, 53, 54, 55	135m (Jerilderie) 250m (Braddon Court) 300m (Reid Court)
3055 – Ainslie Av after Elimatta St	53, 54, 55	40m (Braddon Court) 105m (Reid Court) 195m (Kanangra Court)
3056 – Ainslie Av before Elimatta St	53, 54, 55	20m (Reid Court) 105m (Braddon Court) 165m (Kanangra Court)
3231 – Chisholm St after Howe Cr	53	125m (Ainslie Flats)
3232 – Chisholm St after Lister Cr	53	140m (Ainslie Flats)

2.3.2 Active Travel

A review of the Active Travel Infrastructure Practitioner Tool, shown in **Figure 2-2**, indicates that there are a number of strategic active travel routes within close proximity to the site. The main strategic routes noted within the vicinity are the local community routes and the on-road cycling routes. The local community routes which are easy to access from the sites include the routes along Ainslie Avenue, Chapman Street, Doonkuna Street, and Hayley Street. Both Ainslie Avenue and Limestone Avenue are also identified as main on-road cycling routes.

Regarding existing active travel infrastructure, all sites include a 1.2m wide concrete footpaths within the road reserve. These paths connect in with both the local routes and on-road cycling routes, providing pedestrian and cyclist access to the broader active travel network.

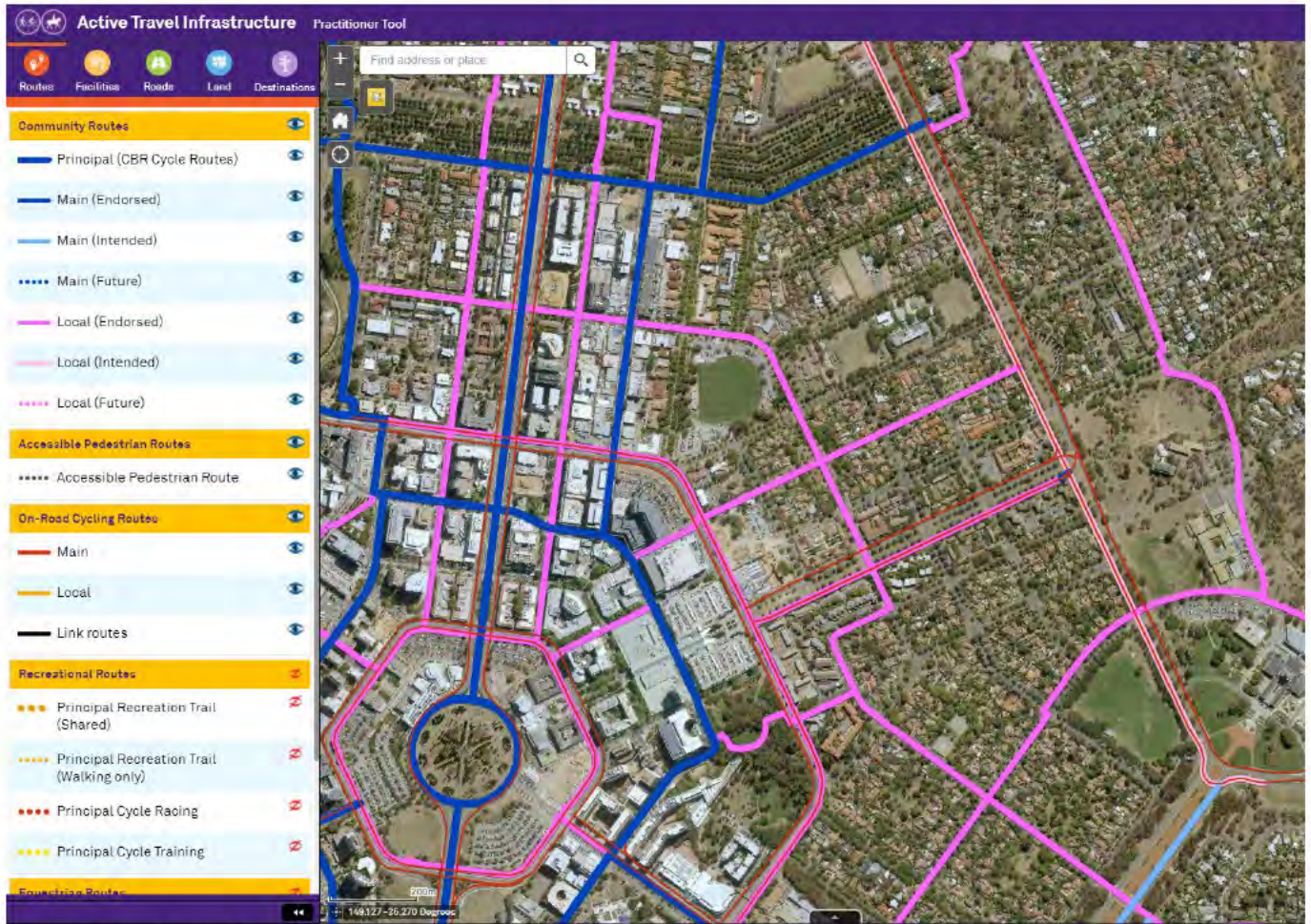


Figure 2-2 Active Travel Network Map

2.4 Intersection Performance Analysis

2.4.1 Performance Criteria

The *RMS Traffic Modelling Guidelines* identify the maximum practical DOS for various intersection controls as presented in **Table 2.3**.

Table 2.3 Maximum Practical DOS by Intersection Control

Intersection Control	Maximum Practical DOS
Traffic Signals	0.90
Roundabouts (incl. Metered)	0.85
Priority-Controlled	0.80

Intersections operating in excess of their maximum practical capacity typically experience unstable traffic flow whereby small disruptions result in excessive congestion and flow breakdown.

The *RMS Traffic Modelling Guidelines* also identify LOS criteria for intersections as shown in **Table 2.4**.

Table 2.4 LOS Criteria for Intersections (RTA NSW Method)

LOS	Average delay per vehicle	Description
A	≤ 14s	Good operation
B	15s – 28s	Acceptable delays and spare capacity
C	29s – 42s	Satisfactory
D	43s – 56s	Near capacity
E	57s – 70s	At capacity, priority-control not suitable
F	> 70s	Unsatisfactory with excessive queueing

The *TCCS Draft Guidelines for SIDRA Analysis* similarly identifies intersections operating at LOS E or better as acceptable. 95th percentile queue lengths have been assessed to ensure that queues in short lanes do not impact traffic in adjacent lanes and queues in full-length lanes do not impact upstream intersections.

2.4.2 Traffic Demands

The existing traffic demands and vehicle movements throughout the road network were determined through intersection counts of the six intersections listed in **Section 1.1**. These counts were conducted by Trans Traffic Survey on the 30th July 2020 and detailed all vehicle movements and classifications through each of the intersections for two-hour periods around both AM and PM peak periods.

Due to the suppressed traffic demands resulting from the COVID-19 restrictions at the time of this analysis, it is expected that the results of these surveys show lower vehicle movements than what would typically be expected. To allow for this difference, the SCATS data for the two signalised intersections within the network were requested for both the 27th February 2020 (prior to COVID-19 restrictions) and the 30th July 2020 (same day as the traffic counts, during the COVID-19 restrictions). The typical traffic conditions were then derived by using the average percentage difference between the two sets of SCATS data and scaling the volumes. In this way, the overall magnitude of the traffic demands should be representative of conditions before the COVID-19 restrictions were adopted. These values were averaged and some side road intersections approaches may vary from this in relation to COVID growth factors.

2.4.3 Current Intersection Layouts

2.4.3.1 Ainslie Avenue / Doonkuna Street

The intersection between Ainslie Avenue and Doonkuna Street currently forms a stop-controlled four-way intersection with a wide median allowing for staged crossings. The Ainslie Avenue legs to the northeast and southwest serve as the major legs, and consist of two lanes in either direction, separated by a 30m wide median. The Doonkuna Street legs to the northwest and southeast serve as the minor legs, having only a single lane in each direction and being controlled by stop signs. The SIDRA layout of the intersection is presented in **Figure 2-3**.

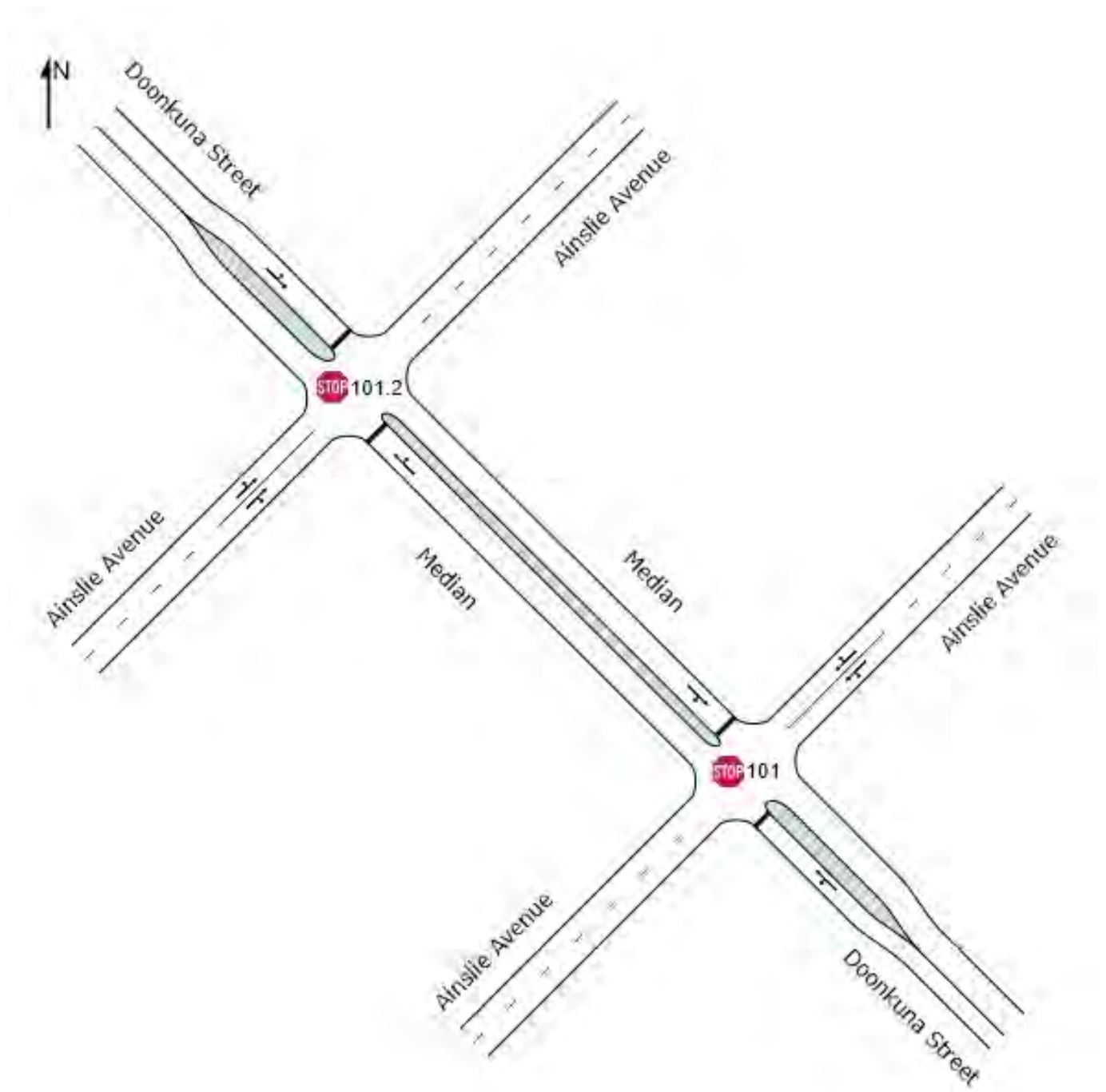


Figure 2-3 Current Intersection Layout – Ainslie Avenue / Doonkuna Street

2.4.3.2 Ainslie Avenue / Elimatta Street

The intersection between Ainslie Avenue and Elimatta Street currently forms a stop-controlled four-way intersection with a wide median allowing for staged crossings. The Ainslie Avenue legs to the northeast and southwest serve as the major legs, and consist of two lanes in either direction, separated by a 30m wide median. The Elimatta Street legs to the northwest and southeast serve as the minor legs, having only a single lane in each direction and being controlled by stop signs. The SIDRA layout of the intersection is presented in **Figure 2-4**.

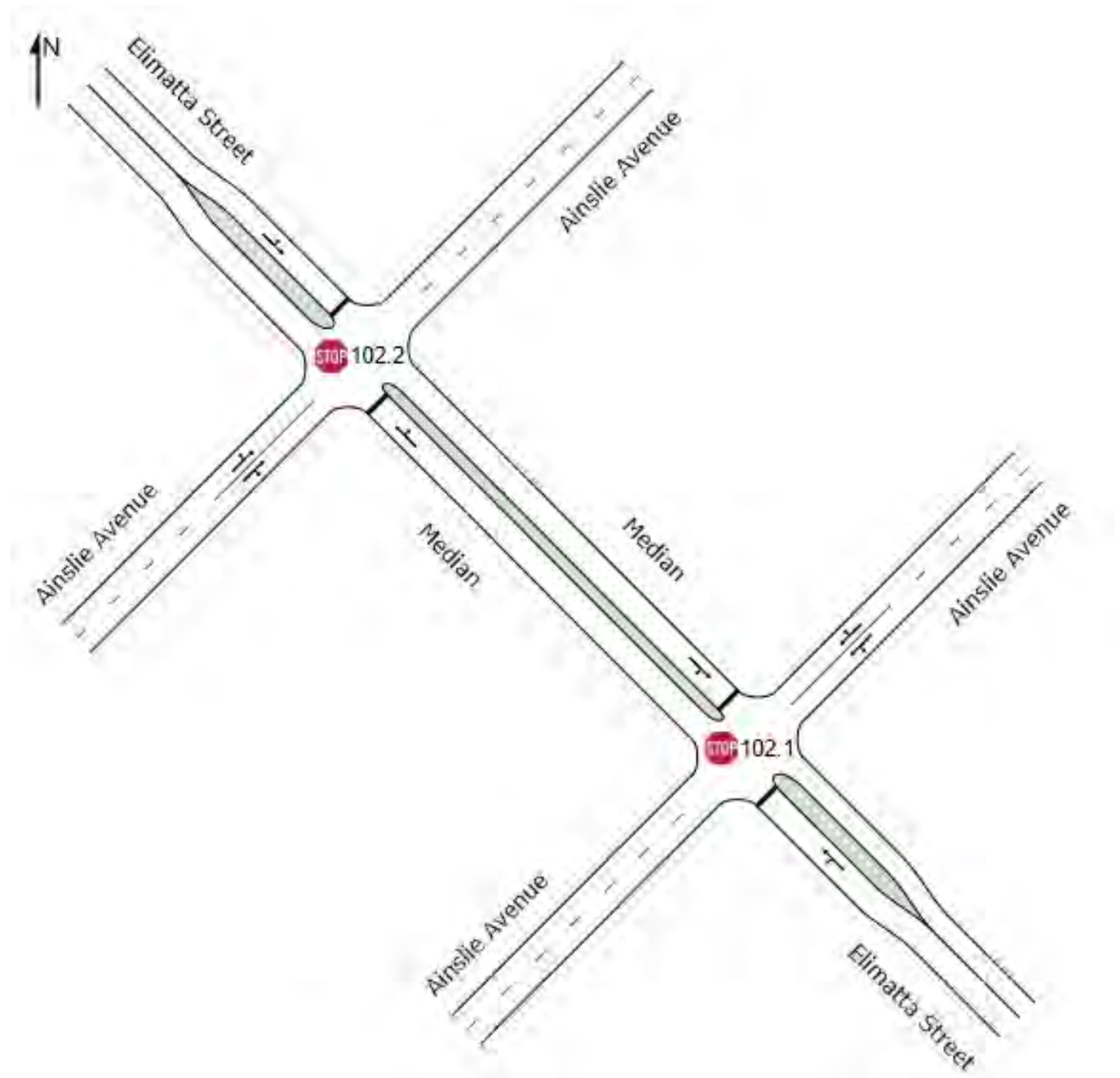


Figure 2-4 Current Intersection Layout – Ainslie Avenue / Elimatta Street

2.4.3.3 Ainslie Avenue / Gooreen Street

The intersection between Ainslie Avenue and Gooreen Street currently forms a stop-controlled four-way intersection with a wide median allowing for staged crossings. The Ainslie Avenue legs to the northeast and southwest serve as the major legs, and consist of two lanes in either direction, separated by a 30m wide median. The Gooreen Street legs to the northwest and southeast serve as the minor legs, having only a single lane in each direction and being controlled by stop signs. The SIDRA layout of the intersection is presented in **Figure 2-5**.

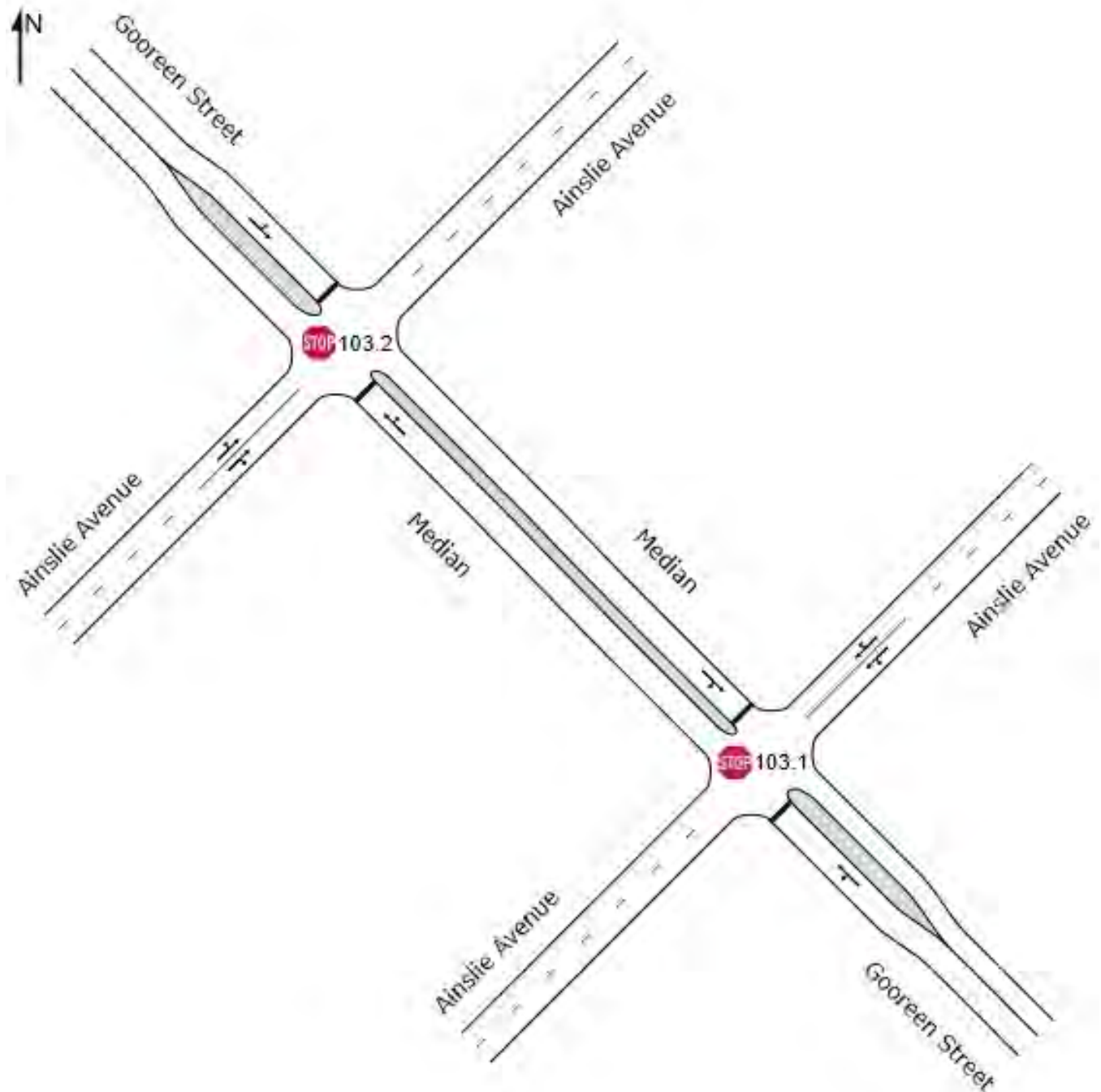


Figure 2-5 Current Intersection Layout – Ainslie Avenue / Gooreen Street

2.4.3.4 Ainslie Avenue / Limestone Avenue

The intersection of Ainslie Avenue and Limestone Avenue currently forms a signalised T-intersection. Ainslie Avenue approach to Limestone Avenue include two right turn-lanes and a left-turn slip lane. The southern leg of Limestone Avenue includes two approach lanes, a dedicated cycle lane and a left-turn slip lane to enter Ainslie Avenue. The northern leg of Limestone Avenue includes two approach lanes, a dedicated cycle lane and two dedicated short right-turn lanes for entering Ainslie Avenue. All legs include two departure lanes. The SIDRA layout of the intersection is presented in **Figure 2-6**.

The current signal phasing for the intersection was adopted from SCATS data. Three-phase trailing right turn movement is adopted. The SIDRA diagram of this phasing is presented in **Figure 2-7**.

During the AM peak period, the average cycle time is 120 seconds, with Phase A receiving the majority of this time with 61%, Phase B receives 25%, and Phase C 14%. The PM peak period has a shorter average cycle time then the AM peak, with 115 seconds. Phase A receives 70% of this time with Phases B and C at 15% and 16% respectively.

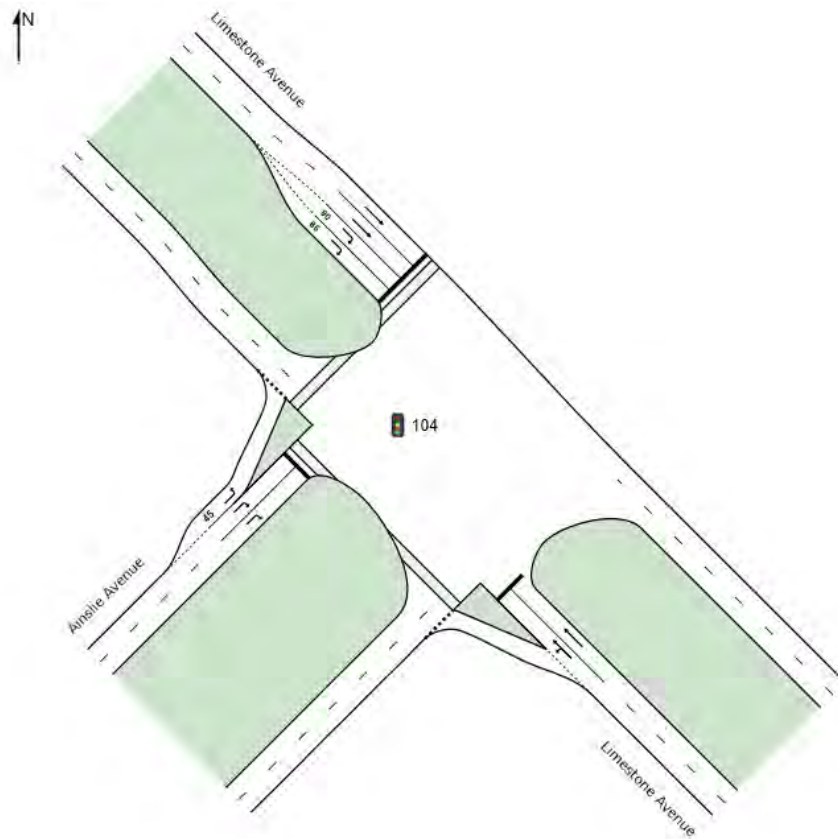


Figure 2-6 Current Intersection Layout – Ainslie Avenue / Limestone Avenue

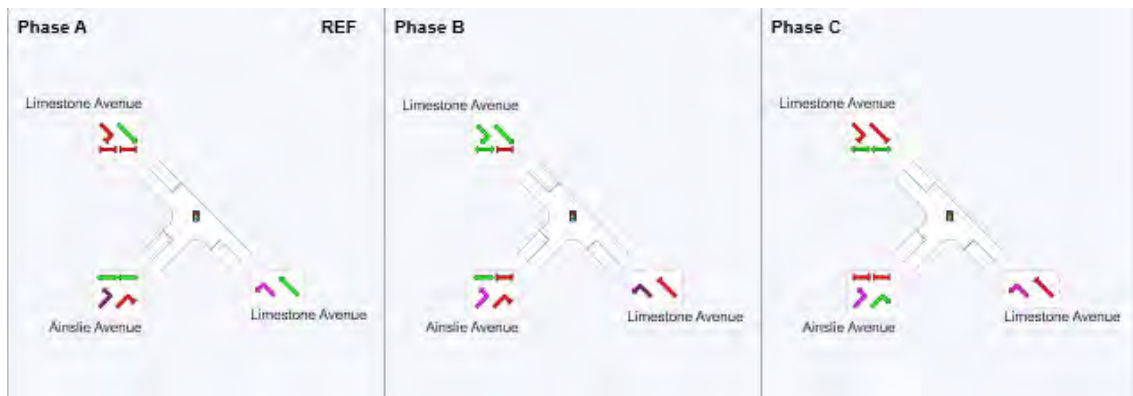


Figure 2-7 Current Traffic Signal Phasing – Ainslie Avenue / Limestone Avenue

2.4.3.5 Limestone Avenue / Quick Street / Batman Street

The intersection between Limestone Avenue, Quick Street and Batman Street closely resembles the three stop-controlled intersections along Ainslie Avenue described above. As in those cases, this intersection currently forms a stop-controlled four-way intersection with a wide median allowing for staged crossings. The Limestone Avenue legs to the northwest and southeast serve as the major legs, and consist of two lanes in either direction, separated by a 30m wide median. The Quick Street leg (northeast) and Batman Street leg (southwest) serve as the minor legs, having only a single lane in each direction and being controlled by stop signs. The SIDRA layout of the intersection is presented in **Figure 2-8**.

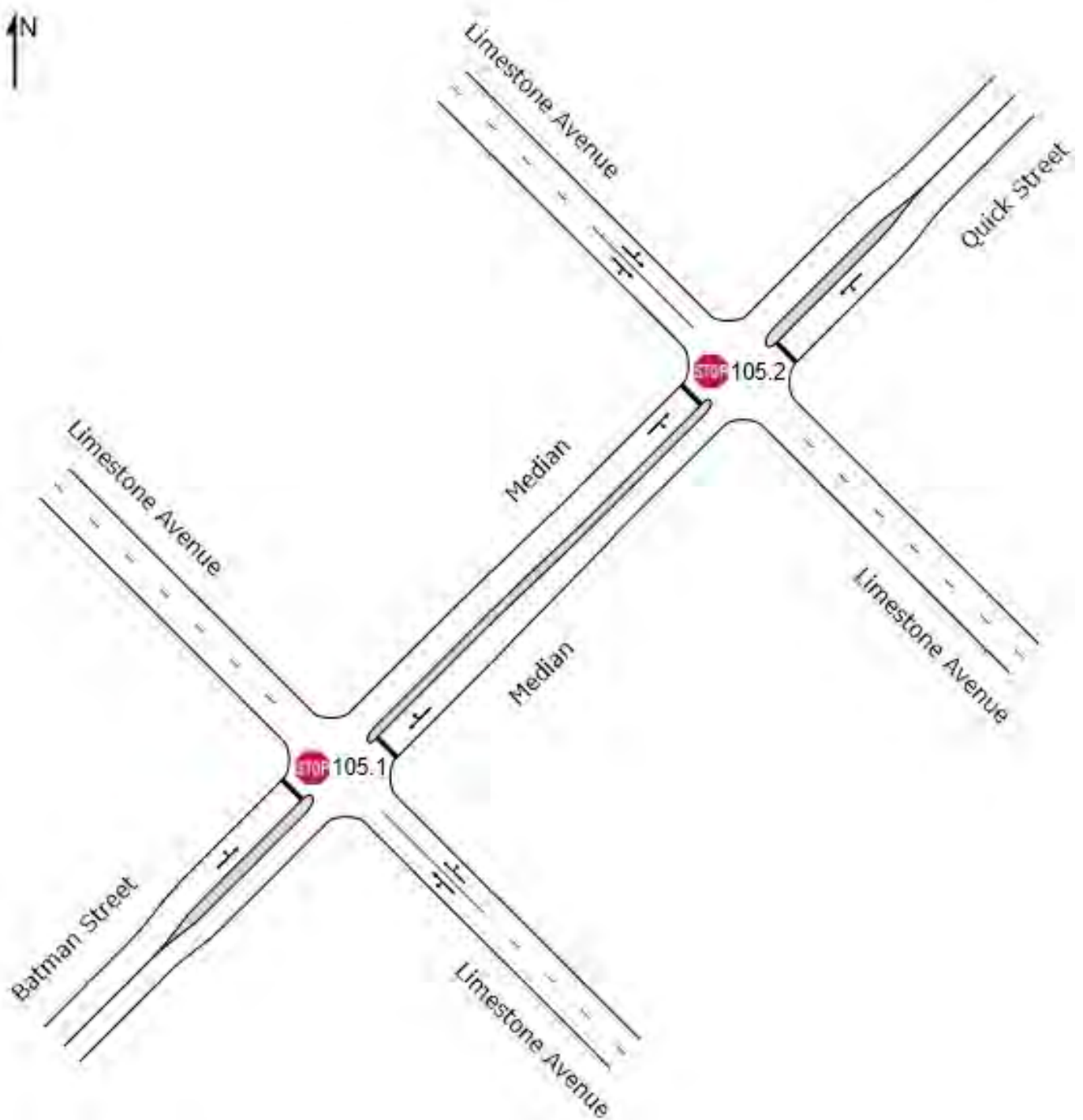


Figure 2-8 Current Intersection Layout –Limestone Avenue / Quick Street / Batman Street

2.4.3.6 Limestone Avenue / Chisholm Street / Donaldson Street

The intersection between Limestone Avenue, Chisholm Street and Donaldson Street currently forms a four-way signalised intersection with a staged crossing within the median. Limestone Avenue has two lanes each direction, with northbound and southbound lanes separated by a 30m median. The Chisholm Street’s northeast leg consists of a through lane and a short left-turn lane. The departure lanes includes a short lane to accommodate the two through movements from the median for both Chisholm Street and Donaldson Street. Donaldson Street approach to Limestone Avenue includes a through lane and short lane for through and left turning traffic. The SIDRA layout of the intersection is presented in **Figure 2-9**.

The current signal phasing for the intersection was adopted from SCATS data. Two-phase cycle is adopted, the SIDRA diagram of this phasing is presented in **Figure 2-10**.

For the AM peak period, the average cycle time is 120 seconds, with Phase A receiving the majority of this time with 66%, and Phase B receiving 34%. The PM peak period has a shorter average cycle time then the AM peak, with 115 seconds. Phase A again receives 68% and Phase B 32%.

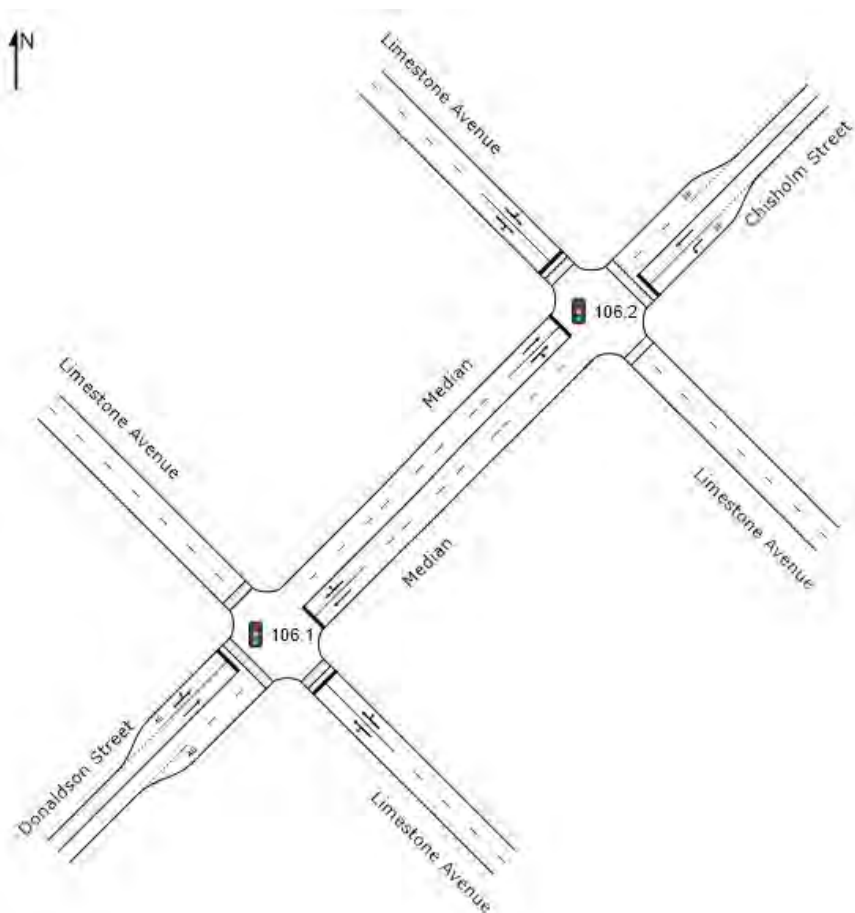


Figure 2-9 Current Intersection Layout –Limestone Avenue / Chisholm Street / Donaldson Street



Figure 2-10 Current Traffic Signal Phasing –Limestone Avenue / Chisholm Street / Donaldson Street

2.4.4 Current Intersection Performance

A Summary of the results for these simulations are provided in **Table 2.5**.

Table 2.5 Current Intersection Performance Summary

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.38	20s	B	6m	0.25	19s	B	3m
Ainslie Ave / Elimatta Street	0.13	18s	B	1m	0.13	18s	B	0m
Ainslie Ave / Gooreen Street	0.12	17s	B	1m	0.13	17s	B	0m
Ainslie Ave / Limestone Avenue	0.75	16s	B	95m	0.80	17s	B	177m
Limestone Avenue / Quick Street / Batman Street	1.73	701s	F	258m	0.61	52s	D	16m
Limestone Avenue / Chisholm Street / Donaldson Street	0.84	23s	B	207m	0.88	22s	B	219m

Ainslie Avenue Stop-controlled Intersections

It can be seen that the three stop-controlled cross intersections along Ainslie Avenue operate within the acceptable parameters for both capacity and delay during AM and PM peak periods. During the AM peak, the maximum DOS seen across these three intersections was observed at the Doonkuna Street intersection, with a value of 0.38. This fell slightly in the PM peak, with a value of 0.25 recorded. Maximum delays at all three intersections were similar during both AM and PM peaks, with delays between 17 and 20 seconds (LOS B). For all three intersections, this delay occurred along the through movement of the minor legs and considered the delay time at both the stop signs. Queueing at all three intersections was seen to be minimal during both peak periods along all legs. Given this, no impact to the greater road network is expected to occur from it.

Ainslie Avenue / Limestone Avenue

The intersection of Ainslie Avenue and Limestone Avenue can be seen to perform within acceptable levels during both AM and PM peaks. During the AM peak, the maximum DOS was recorded as 0.75. This occurred along the northwest leg of the intersection in the through movement. The average delay for the entire intersection was seen to be 16 seconds (LOS B). However, it is noted that the delays within the right-turn movement on Ainslie Avenue is approaching the maximum acceptable delay, with 61 seconds (LOS E). Queue lengths along Limestone Avenue are expected to partially impact the adjacent intersection. The queue to the northwest can reach 95m and may restrict traffic movements from Quick Street and the through and right movements from Batman Street (95m away). It is noted that this impact is only likely to occur between through cycles and should have limited effect on the performance of Quick Street and Batman Street. The queue lengths along all other legs do not impact on adjacent intersections, although it is noted that the queue along Limestone Avenue (southeast) reaches 92m and is approaching the Allambee Street intersection (95m away). The queue lengths within the short lanes shall be below their respective lanes storage length.

During the PM peak, performance is expected to be marginally worse than the AM peak period, but still within acceptable levels. The maximum DOS is observed along the southeast leg of Limestone Avenue, where it reaches 0.80. The average delay is expected to reach 17 seconds (LOS B). The right turn movements for both Limestone Avenue and Ainslie Avenue are expected to be approaching the maximum delay, with delays reaching 60 seconds and 58 seconds (LOS E) respectively. Queue lengths reach 177m for Limestone Avenue south approach to the intersection. This queue would impact Allambee Street (95m away), temporality restricting the movements through this intersection. The queue lengths along all other legs do not impact on adjacent intersections.

Limestone Avenue / Quick Street / Batman Street

Once the count volumes are factored up to account for pre-COVID volumes, the performance of the Limestone Avenue / Quick Street / Batman Street intersection is expected to exceed the acceptable levels for DOS and delay for a priority-controlled intersection. Due to the high through volumes along Limestone Avenue, the movements crossing Limestone Avenue experience excessive delay. It is noted that the results in SIDRA decrease in accuracy when the DOS greatly exceeds 1. As such, it is simply noted that the movements from Batman Street and Quick Street exceed acceptable limits for DOS and delay. Queue lengths from Batman Street to Quick Street and Limestone Avenue South bound are expected to fully utilise the storage in the median with occasional vehicles needing to wait south of Limestone before entering the median. It should be noted that all approach volumes were factored up to account for the drop in traffic volumes due to COVID restrictions. It is likely that the vehicles will find alternate routes once delay and queue lengths increase to excessive levels.

During the PM peak period, the intersection is expected to perform within acceptable levels for both DOS and delay. DOS reaches a maximum of 0.61 along the southeast leg (Limestone Avenue). This DOS comes from the large volume of traffic travelling northbound along this leg during the PM peak. The delay for vehicles crossing Limestone Avenue to Batman Street reaches 52s (LOS E). This delay is acceptable but is approaching the acceptable limit. Queuing was noted to be minor along all legs and no external impact is expected.

Limestone Avenue / Chisholm Street / Donaldson Street

The intersection of Limestone Avenue, Chisholm Street and Donaldson Street will have both acceptable DOS and delays during the AM peak period. This period sees a maximum DOS of 0.84, which occurs along the northwest leg (Limestone Avenue). This is due to the high volume of traffic travelling along this road during the AM peak. The average delay for the intersection is 23s seconds (LOS C), with all individual movements also possessing reasonable delays as well. The queue length along Limestone Avenue to the northwest will reach 207m, which will impact vehicle movements out of Elder Street, Higgins Crescent intersection (140m away). The existing keep clear line marking through the Limestone Avenue / Higgins Crescent intersection indicates this is a known issue during Peak hours. The queue within the short-left turn lane along Chisholm Street is also expected to exceed the storage of the lane, with a 57m queue length (30m lane). This will overflow into the through movement lane, however as both these movements run during the same phase, it is unlikely to significantly impact performance. No other queues were observed.

The PM peak period performs better than the AM peak, with the maximum DOS reaching 0.88. This occurs along Limestone Avenue to the southeast. The average delay for the intersection is 22s (LOS B), with no individual movement delay exceeding 41 seconds (LOS C). The queue length along the southeast leg reach 219m, which will impact on Chapman Street (95m away) and approach the Batman Street / Quick Street intersection (235m away). No other queue lengths were observed as impacting the external road network or exceeding the shorth lane storage length.

3. Proposed Development

3.1 Site Locations and Access

As mentioned in **Section 1** of this report, there are five sites which are planned for development. The locations of the access points are not yet known for the sites. As such, it is assumed that the existing access locations for each site will be utilised.

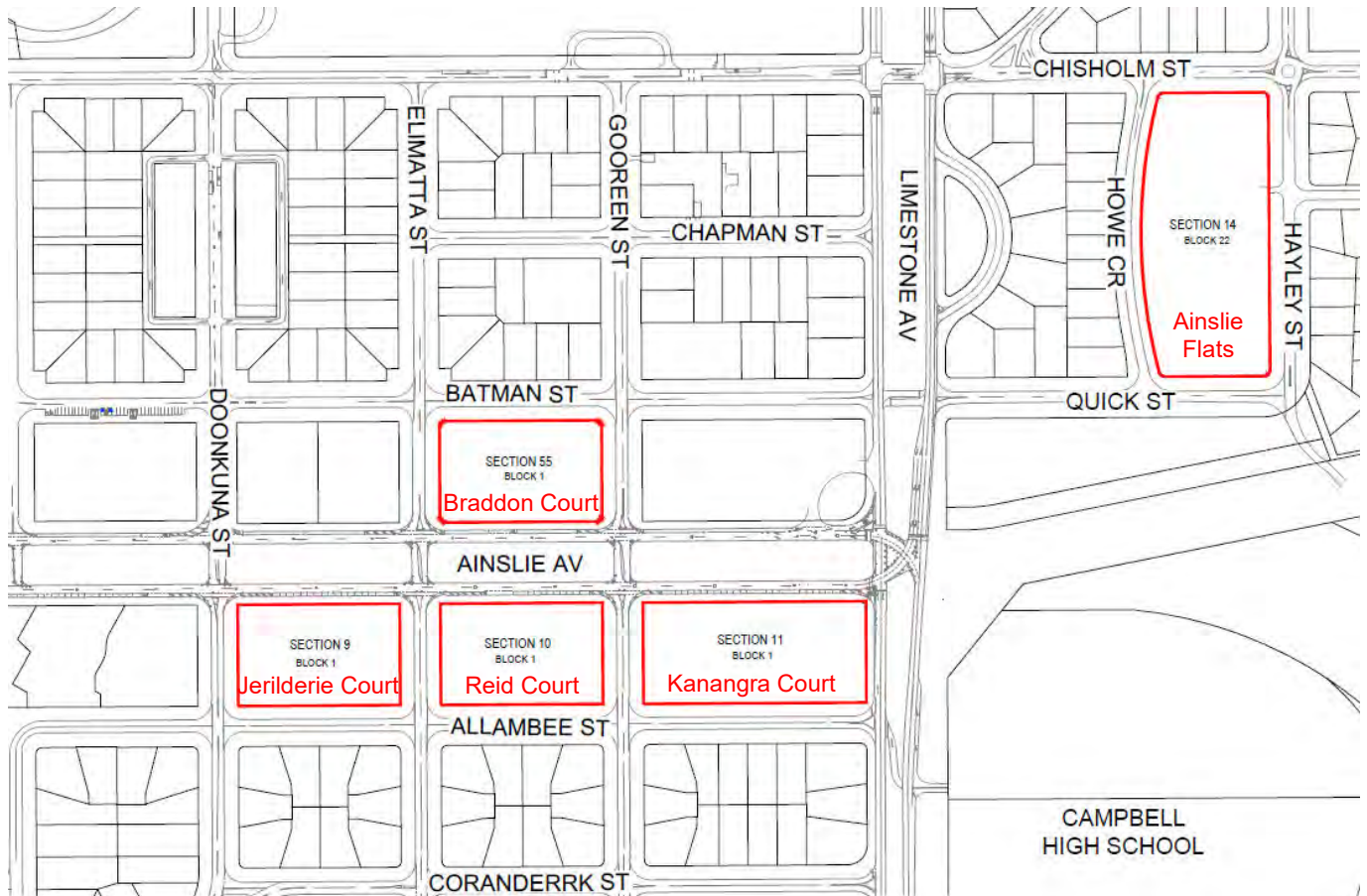


Figure 3-1 Locality Plan

Ainslie Flats is located within Ainslie Block 22, Section 14. This site is bounded by Chisholm Street to the north, Hayley Street to the east, Quick Street to the south, and Howe Crescent to the west. Four access points are currently provided to the site, with two along Howe Crescent and two along Hayley Street.

Braddon Court is located within Braddon Block 1, Section 55. This site is bounded by Batman Street to the north, Gooreen Street to the east, Ainslie Avenue to the south, and Elimatta Street to the west. There are currently two access points to this site, both of which connect to Batman Street.

Kanangra Court is located within Reid Block 1, Section 11. This site is bounded by Ainslie Avenue to the north, Limestone Avenue to the east, Allambie Street to the south, and Gooreen street to the west. Two accesses are currently provided to this site, both of which connect to Allambie Street.

Reid Court is the next block to the west from Kanangra Court, being located within Reid Block 1, Section 10. This site is bounded by Ainslie Avenue to the north, Gooreen Street to the east, Allambie Street to the south, and Elimatta Street to the west. Two access points are provided for this site, both leading onto Allambie Street.

Jerilderie Court is located within Reid Block 1, Section 9, which is directly west of Reid Court. This site is bounded by Ainslie Avenue to the north, Elimatta Street to the east, Allambie Street to the south, and Doonkuna Street to the west. There are three access points to the site, located on Elimatta Street, Allambie Street and Doonkuna Street. The main access is on Allambie Street with the remainder providing access to small resident parking.

3.2 Development Yield

For the purpose of the feasibility study, the following yield numbers were utilised for the traffic assessment as provided by Purdon Planning on the 19th of August 2020.

Table 3.1 Development Yield

Site (Block and Section)		Site Area	Existing Units	Low	Medium	High
				Yield (No. Units)		
Ainslie Flats	B22 S14 Ainslie	19,553m ²	88 (32 x 1-bed + 56 x 2-bed)	41	98	192
Braddon Court	B1 S55 Braddon	9,272m ²	48 (all 2-bed units)	82	-	300
Reid Court	B1 S10 Reid	9,272m ²	48 (20 x 1-bed + 28 x 2-bed)	82	-	300
Jerilderie Court	B1 S9 Reid	9,290m ²	62 18 x 1-bed + 36 x 2-bed + 8 x 3-bed)	82	-	300
Kanangra Court	B1 S11 Reid	12,773m ²	78 (unit mix not known)	114	430	600

3.3 Trip Generation

The proposed developments across all five sites detailed above are assumed to be multi-story developments.

Several sites which are external to the development are also expected to attract trips from the residences. The external sites are composed of schools and shopping centres.

3.3.1 Residential Land Use

The Estate Development Code (EDC) specifies the residential trip generation rates for multi-unit (MU) block as 6 vehicles trips per dwelling per day. This rate has been adopted for the majority of dwellings within the proposed developments. It is noted that a number of three-bedroom MU blocks are currently existing within several of the sites and may also be developed as part of the proposed works. Due to the increased size of these dwellings, A rate of 7 vehicle trips per dwelling per day has been adopted for yields assumed to consist of three bedrooms.

For residential land-uses, the trip generation in each commuter peak hour typically makes up 10% of the daily trip generation rate. On this basis, for the AM and PM peak hours, a trip generation rate of 0.6 trips / dwelling / hour has been adopted for MU dwellings with up to two bedrooms, while a rate of 0.7 has been adopted for three-bedroom MU dwellings.

As the dwelling numbers for each of the sites are not yet fixed, a high and low estimate has been provided for dwelling numbers. The high-yield estimates were used for the majority of the assessments within this report. The low-yield volumes were used to compare the performance of the intersections which exceeded performance criteria using the high-yield volumes.

Table 3.2 and **Table 3.3** presents the adopted high and low residential trip generation for all five sites with a split in unit sizing adopted from the proportional split for the current site usage.

Table 3.2 Residential Trip Generation – High Dwelling Volumes

Dwelling Type	MU Dwelling Numbers	Daily		AM & PM Peak Hour	
		Trip Generation Rate	Trips	Trip Generation Rate	Trips
Ainslie Avenue					
MU (1 bedroom)	70	6 trips / dwelling / day	420	0.6 trips / dwelling / hour	42
MU (2 bedroom)	122		732		73
Sub-Total	192	-	1,152	-	115
Braddon Court					
MU (2 bedroom)	300	6 trips / dwelling / day	1,800	0.6 trips / dwelling / hour	180
Sub-Total	300	-	1,800	-	180
Kanangra Court					
MU (1 bedroom)	300	6 trips / dwelling / day	1,800	0.6 trips / dwelling / hour	180
MU (2 bedroom)	300		1,800		180
Sub-Total	600	-	3,600	-	360
Reid Court					
MU (1 bedroom)	125	6 trips / dwelling / day	750	0.6 trips / dwelling / hour	75
MU (2 bedroom)	174		1,044		104
Sub-Total	300	-	1,800	-	179
Jerilderie Court					
MU (1 bedroom)	87	6 trips / dwelling / day	522	0.6 trips / dwelling / hour	52
MU (2 bedroom)	174		1,044		105
MU (3 bedroom)	39	7 trips / dwelling / day	273	0.7 trips / dwelling / hour	27
Sub-Total	300	-	1,839	-	184
Total	1,692	-	10,191	-	1,091

Table 3.3 Residential Trip Generation – Low Dwelling Volumes

Dwelling Type	MU Dwelling Numbers	Daily		AM & PM Peak Hour	
		Trip Generation Rate	Trips	Trip Generation Rate	Trips
Ainslie Avenue					
MU (1 bedroom)	15	6 trips / dwelling / day	90	0.6 trips / dwelling / hour	9
MU (2 bedroom)	26		156		16
Sub-Total	41	-	246	-	25
Braddon Court					
MU (2 bedroom)	82	6 trips / dwelling / day	492	0.6 trips / dwelling / hour	49
Sub-Total	82	-	492	-	49
Kanangra Court					
MU (1 bedroom)	57	6 trips / dwelling / day	342	0.6 trips / dwelling / hour	34
MU (2 bedroom)	57		342		34
Sub-Total	114	-	684	-	68
Reid Court					
MU (1 bedroom)	34	6 trips / dwelling / day	204	0.6 trips / dwelling / hour	20
MU (2 bedroom)	48		288		29
Sub-Total	82	-	492	-	49
Jerilderie Court					
MU (1 bedroom)	24	6 trips / dwelling / day	144	0.6 trips / dwelling / hour	14
MU (2 bedroom)	48		288		29
MU (3 bedroom)	10	7 trips / dwelling / day	70	0.7 trips / dwelling / hour	7
Sub-Total	82	-	503	-	50
Total	401	-	2,417	-	242

3.3.2 Primary School & High School

Based on the locations of the sites and the priority-enrolment areas for schools, students residing within the south of Ainslie or Braddon, or within Reid are expected to attend Ainslie School (primary) and Campbell High School.

The trip generation rates for the schools have been adopted based on the rates specified in the *RMS School Trip Generation Surveys Analysis Report*. In the AM peak, the average trip generation rate specified was adopted. As the PM school peak occurs prior to the PM commuter peak, the average PM school peak trip generation rate provided in the document was factored down to derive the PM commuter peak trip generation rate. This value was factored down based on the daily trip generation profile for schools.

Table 3.6 shows the expected traffic volumes for each school based off the adopted growth rates for the network and expected enrolments for the schools based on the 2020 semester 1 enrolment numbers.

As both Ainslie School and Campbell High School are already operating and servicing the nearby areas of Ainslie, Braddon, Reid, Campbell, Russel, Pialligo, Turner and the City, it is expected that the Ainslie developments will only contribute to a portion of the total trip generation for each establishment. Based on the total population within area for these schools and the predicted population of the proposed developments, the percentages displayed in **Table 3.4** were assumed to be the trips generated due to each site.

3.3.3 Shopping Centre

For the purpose of this assessment, it is assumed that all shopping trips from the sites will utilise the Canberra Centre.

The daily and PM peak trip generation rates for both the local shops and shopping centre have been adopted based on the rates specified in the *RTA Guide to Traffic Generating Developments (2002)*. For the AM peak hour, the office rate specified in the *RMS Guide to Traffic Generating Developments (2013)* was adopted.

Table 3.6 shows the expected traffic volumes for each shopping location based off the adopted traffic generation rates and the Gross Leasable Floor Area (GLFA) of the Canberra Centre.

As these shops are already operating and servicing the areas of North and South Canberra, it is expected that the development sites will only contribute to a portion of the total trip generation for each site. Based on the total population expected to utilise the Canberra Centre and the expected population of the surrounding area, the percentages displayed in **Table 3.4** and **Table 3.5** were assumed to be each sites contribution to the total trips. It is noted that the percentage drops with the low yield development volumes as the ratio between development dwellings and existing dwellings decreases.

Table 3.4 Percentage Contribution of Trip Generation to External Locations from Development Sites – High Yields

Site	School Trip Percentage		Shops
	Ainslie School	Campbell High School	Canberra Centre
Ainslie Court	4.7%	3.4%	1.5%
Braddon Court	7.3%	5.3%	2.4%
Kanangra Court	14.7%	10.6%	4.7%
Reid Court	7.3%	5.3%	2.4%
Jerilderie Court	7.3%	5.3%	2.4%

Table 3.5 Percentage Contribution of Trip Generation to External Locations from Development Sites – Low Yields

Site	School Trip Percentage		Shops
	Ainslie School	Campbell High School	Canberra Centre
Ainslie Court	1.5%	0.9%	0.4%
Braddon Court	2.9%	1.9%	0.7%
Kanangra Court	4.1%	2.6%	1.0%
Reid Court	2.9%	1.8%	0.7%
Jerilderie Court	2.9%	1.8%	0.7%

Table 3.6 Total External Trip Generation

Land Use	Size / Number	Daily		AM Peak Hour		PM Peak Hour	
		Trip Generation Rate	Trips	Trip Generation Rate	Trips	Trip Generation Rate	Trips
Schools							
Ainslie School	392 students	2.7 trips / student / day	1,073	0.88 trips / student / hour	345	0.1 trips / student / hour	28
Campbell High School	704 students	1.5 trips / student / day	1,052	0.47 trips / student / hour	331	0.1 trips / student / hour	91
Sub-total	-	-	2,125	-	676	-	119
Shops							
City Centre	70,500m ² GLFA	40 trips / 100m ² GLFA / day	28,200	1.6 trips / 100m ² GLFA / hour	1,128	4 trips / 100m ² GLFA / hour	2,820
Total	-	-	30,325	-	1,804	-	2,939

3.4 Trip Distribution

On a daily basis, an equal in-out directional split is expected at all land-use components. This reflects no net accumulation of vehicles at any of the land-uses from one day to the next. During the morning and evening peak hours, the in-out splits reflect the tidal nature of the traffic demands generated by the residences. The directional distribution of trips associated with the site is shown in **Table 3.7**.

Table 3.7 In-Out Directional Splits

Land Use	Daily		AM Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out
Residential (Subject Sites)	50%	50%	20%	80%	70%	30%
Primary School	50%	50%	51%	49%	49%	51%
Secondary School	50%	50%	59%	41%	39%	61%
Shopping Centre	50%	50%	70%	30%	40%	60%

3.5 Trip Distribution Location

All trips generated by the residence within the sites is assumed to travel to either an external workplace, Ainslie School, Campbell High School, or the Canberra Centre. To avoid double-counting and to reflect the complexity associated with trips between multiple destinations (i.e. home to school to work), data from the VISTA 2012-2016 household travel survey was analysed to identify the typical travel patterns associated with the external, non-residential land-uses during each of the analysis time periods. The proportion of trips associated with the dwellings within each of the five sites, between each origin-destination pair are detailed in **Appendix B**.

3.5.1 Work Distribution

The trip distribution for workplaces was determined using the Journey-To-Work (JTW) data from the 2016 Australian Census. For respondents with a 'place of usual residence' within the Ainslie, Braddon and Reid (SA2) statistical areas, the corresponding split across the 'place of work' (SA3) statistical areas of the ACT and surrounding NSW areas was adopted as the expected external trip distribution. These 'place of work' statistical areas were grouped according to the shortest path route between the sites and the 'place of work'.

Table 3.8 details the percentage of trips to the four JTW directions adopted from each of the sites.

Table 3.8 JTW Trip Distribution

Sites	JTW Direction			
	SW (Cooyong St)	SE (Cooyong St)	NE (Limestone Ave)	NW (Limestone Ave)
Ainslie Court	41%	17%	9%	33%
Braddon Court	69%	11%	5%	15%
Kanangra Court	69%	11%	6%	14%
Reid Court	70%	11%	5%	14%
Jerilderie Court	71%	10%	5%	13%

3.5.2 Trip Assignment

All trips throughout the road network surrounding the sites have been assigned to the route with the shortest travel time between their origin and destination. This assignment has not accounted for existing delays due to congestion at intersections and as such, the travel time calculation is based on the road length and the posted speed limit.

4. Future Conditions

4.1 Background Traffic Growth

Outputs from the Canberra Strategic Transport Model (CSTM) were sourced from Transport Canberra and City Services (TCCS). These strategic model outputs show traffic demand forecasts along key road links throughout Canberra and the surrounding area, based on projected population, employment, education and retail growth. CSTM peak hour traffic volumes for the years of 2016, 2021, 2031 and 2041 were sourced for the road network surrounding the sites. From this data, the linear annual growth rates were derived for both AM and PM peak periods. The growth rates adopted for the surrounding road network can be seen in **Table 4.1**.

Table 4.1 Adopted Background Growth Rates

Period	AM Peak	PM Peak
2016 to 2021	0.0%	1.4%
2021 to 2031	2.7%	1.6%
2031 to 2041	0.5%	0.7%

It is noted that for the AM peak between the period of 2016 and 2021, a growth rate of 0% has been adopted. The CSTM model for this period showed negative growth occurring within the streets surrounding the sites. As this is not viewed as realistic, a 0% growth rate was instead adopted.

5. Traffic Impact Assessment

5.1 Future Base Intersection Performance

Based off the scaled traffic count data collected at each intersection and the background growth rates detailed in **Table 4.1**, the expected future traffic volumes were calculated throughout the network. SIDRA analysis of the intersections was completed using these volumes to generate a base model for the intersection performance in both the year 2023 and 2033. The performance metrics defined in **Section 2.4.1** were then used to quantify the performance and enable comparison between years.

A summary of the results for these models are presented in **Table 5.1**. For further information, refer to the SIDRA models included within **Appendix C**.

Table 5.1 2023 (Design Year) Intersection Performance – Base Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.40	21s	B	6m	0.28	21s	B	3m
Ainslie Ave / Elimatta Street	0.13	18s	B	1m	0.13	17s	B	0m
Ainslie Ave / Gooreen Street	0.12	17s	B	1m	0.13	17s	B	1m
Ainslie Ave / Limestone Avenue	0.70	14s	A	125m	0.78	16s	B	166m
Limestone Avenue / Quick Street / Batman Street	-	-	F	-	0.65	147s	F	6m
Limestone Avenue / Chisholm Street / Donaldson Street	0.89	29s	C	226m	0.77	11s	A	143m

Table 5.2 2033 (Design Year +10) Intersection Performance – Base Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.54	24s	B	9m	0.24	20s	B	4m
Ainslie Ave / Elimatta Street	0.15	18s	B	2m	0.15	18s	B	0m
Ainslie Ave / Gooreen Street	0.14	19s	B	2m	0.15	18s	B	1m

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Limestone Avenue	0.84	17s	B	114m	0.87	20s	B	234m
Limestone Avenue / Quick Street / Batman Street	–	–	F	–	1.10	367s	F	16m
Limestone Avenue / Chisholm Street / Donaldson Street	1.10	126s	F	634m	0.80	15s	B	187m

Ainslie Avenue Stop-controlled Intersections

As with the existing year, the three stop-controlled intersections along Ainslie Avenue are expected to perform at an adequate level during both peak periods within the future scenarios. For the intersections of Ainslie Avenue with Elimatta Street and Gooreen Street, the difference in performance is expected to be minimal between each scenario.

A larger difference is observed in the performance for the intersection of Ainslie Avenue and Doonkuna Street, especially during the AM peak period. The degree of saturation (DOS) is expected to increase from 0.38 in the current year to 0.54 during the year 2033. The maximum delay is expected to remain as LOS B, but increases from 20s to 24s. Despite the large change, the intersection is still expected to operate at an acceptable level in both the years 2023 and 2033 and no issues are expected to arise from queue lengths.

Ainslie Avenue / Limestone Avenue

The performance at the intersection of Ainslie Avenue and Limestone Avenue is expected to remain at acceptable levels in both future scenarios. During the year 2023, the DOS is expected to be improve slightly during both peak periods, with 0.72 expected during the AM peak and 0.78 expected during the PM peak. This minor improvement is attributed to optimisation within the signal timings. Delays are expected to remain relatively constant with 14s and 16s (LOS A) for the AM and PM peaks respectively.

As with the current year, the queue lengths within the design year are expected to impact the surrounding road network. During the AM peak, the queue lengths along all legs are expected to increase, with the longest queue reaching 117m along the northwest leg of Limestone Avenue. The PM peak actually shows a slight decrease to the maximum queue lengths compared to the existing conditions, with the longest queue now reaching 166m (originally 177m) along the southwest leg of Limestone Avenue. This decrease is due to optimisation of the signal phasing. No additional impact to the surrounding road network is expected from the changes to queue lengths in either peak.

Within the year 2033, the DOS during the AM peak period is expected to be approaching the practical capacity for a signalised intersection, with a DOS of 0.84 being reached along the through movement from Limestone Avenue (northwest). The DOS within the PM peak is also expected to be approaching the practical capacity of the intersection, reaching 0.87. This is reached along Limestone Avenue (southeast). Even with the high DOS values expected during both peak periods, the delays are still expected to be acceptable, with average delays of 34s and 20s for AM and PM peaks respectively.

Queue lengths are expected to see little change during the AM peak, but increase over the 2023 values within the PM peak. The northwest leg is expected to achieve a 114m queue during the AM peak, and PM peak expecting a 234m queue along the southeast leg. The PM peak queue is expected to have a greater impact on the surrounding road network, with the intersections of Coranderrk Street (235m away) to the south now being blocked.

Limestone Avenue / Quick Street / Batman Street

As in the existing conditions scenario, the intersection between Limestone Avenue, Quick Street and Batman Street is expected to fail completely during the AM peak for both future year scenarios. As before, the SIDRA software is unable to

accurately calculate the delays and queue lengths due to the high DOS in both design and future years. As such, it is simply noted that the movements from Batman Street and Quick Street far exceed acceptable limits for DOS and delay.

The PM peak period does not experience the same issues described above, as the DOS does not reach the extremes that were achieved during the AM peak periods. During 2023, the DOS is expected to reach 0.65, which is a slight increase over the existing condition value. Queue lengths see no significant changes, with maximum queue length remaining as 16m. Delays are now expected to exceed acceptable levels, with 147s (LOS F) within the median facing Batman Street and 92s (LOS F) within Batman Street. These results are due to a small number of cars along the minor legs being unable to find a gap in the through traffic along Limestone Avenue.

Performance is expected to worsen during 2033, with DOS now reaching 1.10 within the median facing Batman Street. Delay also increases to 367s (LOS F). Queue lengths are expected to remain at 16m.

Limestone Avenue / Chisholm Street / Donaldson Street

For the 2023 scenario, the performance at the intersection of Limestone Avenue, Chisholm Street, and Donaldson Street is expected remain at acceptable levels during both peak periods. The DOS for the AM peak is expected to increase slightly over the current scenario and reach 0.89. This also results in a slight increase to average delay times, with 28s (LOS B) expected. The DOS for the PM peak is expected to decrease to 0.77 (0.88 in existing conditions). This decrease is attributed to optimisation of the signal timings over those used in the existing conditions. The average delays is also expected to improve over existing conditions, decreasing to 11s (LOS A).

The queue lengths during both AM and PM peak periods are not expected to increase the impact on the surrounding network compared to the existing conditions.

For the 2033 scenario, performance is expected to worsen. The AM peak period is expected to see the values for DOS and delay increase to beyond acceptable levels. DOS is expected to reach 1.10 along Limestone Avenue (northwest) and experience delays of 126s (LOS F). The PM peak period is still within acceptable levels for both DOS and delay, with 0.80 and 15s expected.

Queue lengths are expected to greatly increase compared to the 2023 scenario queue lengths. The AM peak is expected to achieve a 634m queue along Limestone Avenue (northwest), which would increase the external network impacts to include the intersections of Limestone Avenue with Farrer Street, Girrawheen Street and Henty Street. It is noted that there is a KEEP CLEAR linemarking across Girrawheen Street, meaning the through movements to and from Girrawheen Street and Grimes Street will not be blocked. The PM peak queue is expected to increase to 187m along Limestone Avenue (southeast), which would not increase the external network impact. No additional impacts to short lanes are expected.

5.2 Future Post Development Intersection Scenario

5.2.1 Post Development Intersection Performance

Based off the trip generation, trip distribution and trip assignment expected for the five sites, as detailed in Sections 3.2, 3.4, and 3.5 above, the expected future traffic volumes post-development were calculated throughout the network. It has been assumed that all five sites shall have construction completed within the year 2023. As such, SIDRA models for that year and the 10-year horizon (2033) were assessed. The performance metrics defined in Section 2.4.1 were then used to quantify the performance and enable comparison between years and base scenarios.

Table 5.3 2023 (Design Year) Intersection Performance – Development Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.62	30s	C	10m	0.39	25s	B	5m
Ainslie Ave / Elimatta Street	0.33	23s	B	4m	0.22	21s	B	1m
Ainslie Ave / Gooreen Street	0.33	20s	B	5m	0.22	21s	B	3m

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Limestone Avenue	0.78	17s	B	95m	0.83	18s	B	172m
Limestone Avenue / Quick Street / Batman Street	–	–	F	–	0.67	115s	F	5m
Limestone Avenue / Chisholm Street / Donaldson Street	0.91	34s	C	278m	0.79	11s	A	141m

Table 5.4 2033 (Design Year+10) Intersection Performance – Development Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.81	41s	D	19m	0.49	28s	B	7m
Ainslie Ave / Elimatta Street	0.39	25s	B	5m	0.24	22s	B	1m
Ainslie Ave / Gooreen Street	0.35	22s	B	6m	0.25	22s	B	3m
Ainslie Ave / Limestone Avenue	0.88	22s	B	184m	0.96	26s	B	254m
Limestone Avenue / Quick Street / Batman Street	–	–	F	–	–	–	F	–
Limestone Avenue / Chisholm Street / Donaldson Street	1.12	146s	F	639m	0.87	14s	A	215m

Ainslie Avenue Stop-controlled Intersections

With the addition of the development traffic within the network, a significant increase to both DOS and delay is expected within the three stop-controlled intersections along Ainslie Avenue. During 2023, all intersections are expected to still function at acceptable levels. The intersections of Ainslie Avenue with Elimatta Street and Gooreen Street don't exceed a DOS of 0.33 or delay of 23s in both AM and PM peak periods. The intersection of Ainslie Avenue and Doonkuna Street is expected have a DOS of 0.62 during the AM peak. The DOS is expected to be lower during the PM peak, only reaching a value of 0.39. Delays during both peak periods are expected to be acceptable, with 30s (LOS C) and 25s (LOS B) for AM and PM peak periods respectively.

Queuing distances are not expected to extend far enough to impact the external road network and do not exceed the storage lengths of any of the lanes.

For the 2033 scenario, it is expected that the intersections of Ainslie Avenue with Elimatta Street and Gooreen Street will still function at acceptable levels during both peak periods, with only minor increases to DOS, delays and queuing as compared to the 2023 scenario. The intersection of Ainslie Avenue and Doonkuna Street on the other hand, is expected to exceed the acceptable limits for DOS at a priority-controlled intersection (0.8) in the AM peak. DOS is expected to reach 0.81 within the eastbound movement in the median. This is caused by insufficient gaps in the southbound traffic along Ainslie Avenue for vehicles to cross, resulting in delays of up to 41s (LOS D) for this movement. This also results in queuing to reach 19m, which falls short of the 30m storage length of the median. Performance during the PM peak is still expected to operate at acceptable levels, with no issues observed within the DOS, delay or queuing.

Ainslie Avenue / Limestone Avenue

For the intersection of Ainslie Avenue and Limestone Avenue, the addition of the development traffic in the 2023 scenario is expected to have minimal impact on the performance. During the AM peak period, the DOS is expected to increase from 0.70 to 0.78 while delays increase from 14s to 17s (LOS B). During the PM peak the DOS is expected to increase from 0.78 to 0.83, with only a slight increase in delay from 16s to 18s. Maximum queue lengths are expected to only increase during the PM peak period by approx. 7m and will cause no additional impact to the external road network. The AM peak period is expected to decrease in maximum length, but increase the length of queues along Ainslie Avenue. Despite this shift in queues, no additional impact to the road network is expected. Impacts to the storage lengths of short lanes are not expected to differ from those seen in the base scenario.

In the 2033 scenario, the addition of the development traffic is also expected to have minimal effect on DOS and delay during the AM peak, but a moderate impact during the PM peak. The AM peak can expect DOS to increase to 0.88, while the delay increases from 17s to 22s (LOS B). The PM peak period sees slightly larger changes with DOS increasing from 0.87 to 0.96 within the Ainslie Avenue left turn movement, which causes the DOS to exceed the acceptable limit for this intersection. The average delay is still expected to be acceptable but does increase from 20s to 26s (LOS C).

Queue lengths in both peak periods are expected to see moderate increases. Queues in the AM peak increase along Limestone Avenue (northwest) by 59m, which results in no additional impact to the external road network. The queues within the PM peak are expected to increase by 88m along Limestone Avenue (southeast), which is likely to impact on the intersection of Limestone Avenue and Coranderrk Street. As this intersection is predominantly used for left-turn movements off Limestone Avenue, the queuing past this intersection is unlikely to have a significant impact on the performance of the network. Impacts to the storage lengths of short lanes are not expected to differ from those seen in the base scenario.

Limestone Avenue / Quick Street / Batman Street

As with the base scenarios, the results for the AM peak of the Limestone Avenue / Quick Street / Batman Street intersection are considered inaccurate due to the high DOS and limitations with the SIDRA software calculations. Values were seen to increase exponentially as traffic volumes along the roads increased. Based on the results, it is expected that the intersection remains broken along the minor legs and will need to be upgraded.

Limestone Avenue / Chisholm Street / Donaldson Street

For the intersection of Limestone Avenue, Chisholm Street and Donaldson Street, the addition of the development traffic in the 2023 scenario is expected to worsen the performance of the intersection. During the AM peak period, the DOS is expected to increase from 0.89 to 0.91 and exceed the acceptable limit of the intersection. The average delay also increases from 29s (LOS B) to 34s (LOS C) but is still at an acceptable level. For the PM peak, the change to both DOS and delay was minimal, with an increase from 0.77 to 0.79 and delay remaining constant at 11s. Changes to queuing lengths were also minor, with the AM peak seeing an increase of 58m along Limestone Avenue (northwest) and the PM peak seeing a decrease of 2m along Limestone Avenue (southeast). These changes are not expected to increase the impact on the surrounding road network.

For the 2033 scenario, the addition of the development volumes are also not expected to have a significant impact on the performance. During the AM peak period, the DOS is expected to increase slightly from 1.10 to 1.12, which results in an increase of the delay from 126s to 146s (LOS F). This improvement is attributed to a minor change in the linked phase timing between Chisholm Street and Ainslie Avenue intersections with Limestone Avenue. The PM peak period is expected to increase, with DOS increasing from 0.80 to 0.87 while the delay decreases from 15s to 14s (LOS B).

The increase in the AM peak period queue length is expected to decrease by 28m compared to the base scenario. This would naturally not increase the impact on the surrounding road network. The increase to the PM peak period queue length is expected to be 18m, which has no additional impact on the external road network.

5.2.2 Post Development Intersection Performance – Low Volumes

To determine whether intersection performance will be significantly improved through the reduction of development volumes, trip generation from the low yield development numbers was also assessed. The assessment was only conducted for the following intersections:

- Ainslie Avenue / Doonkuna Street
- Ainslie Avenue / Limestone Avenue
- Limestone Avenue / Chisholm Street / Donaldson Street

The other two Ainslie Avenue priority-controlled intersections were not assessed as their performance is well below acceptable levels with the high yield volumes. The Limestone Avenue / Quick Street/ Batman Street intersection was not assessed due to its poor performance in the base scenarios.

A summary of the performance can be seen in Table 5.5 and Table 5.6 below. For further detail, refer to **Appendix E**.

Table 5.5 2023 (Design Year) Intersection Performance – Low Yield Development Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.42	22s	B	6m	0.27	19s	B	3m
Ainslie Ave / Limestone Avenue	0.78	15s	B	95m	0.83	16s	B	170m
Limestone Avenue / Chisholm Street / Donaldson Street	0.90	32s	C	264m	0.78	10s	A	135m

Table 5.6 2033 (Design Year+10) Intersection Performance – Low Yield Development Scenario

Intersection	AM Peak Hour				PM Peak Hour			
	DOS	Delay	LOS	Queue	DOS	Delay	LOS	Queue
Ainslie Ave / Doonkuna Street	0.56	25s	B	10m	0.34	21s	B	5m
Ainslie Ave / Limestone Avenue	0.82	19s	B	184m	0.87	20s	B	235m
Limestone Avenue / Chisholm Street / Donaldson Street	1.09	129s	F	677m	0.86	14s	B	209m

Ainslie Avenue / Doonkuna Street

Through the reduction of vehicle trips from the low yield developments, it is expected that the performance of the intersection between Ainslie Avenue and Doonkuna Street should improve significantly. During the 2033 AM peak period, both DOS and delays are expected to decrease to acceptable levels as compared to the High Yield development scenario. All other scenarios still perform at acceptable levels and show only minor increases from the base scenarios.

Ainslie Avenue / Limestone Avenue

The intersection between Ainslie Avenue and Doonkuna Street is expected to see minor improvements in performance as compared to the High Yield development scenarios. For the 2023 scenarios, the performance of the DOS is expected to remain at 0.78. Delays are expected to decrease by 2s and are still well below the maximum limit. Queues are not expected to change significantly. These changes result in no additional impact from the base scenarios.

For the 2033 AM scenario, performance is again expected to decrease slightly, with DOS decreasing to 0.82 and a 2s change to delay noted. Queuing is also expected to decrease by 14m, which has no additional impact on the network. The PM peak is expected to have a greater change, with the DOS expected to drop from 0.96 to 0.87, falling just below the practical capacity of the intersection. Delay is expected to decrease by 6s and queuing by 19m, neither of which are expected to have a significant impact on the intersection performance.

Limestone Avenue / Chisholm Street / Donaldson Street

The intersection between Limestone Avenue, Chisholm Street and Donaldson Street is expected to see minor improvements in performance as compared to the High Yield development scenarios. For the 2023 AM scenario, the value for the DOS is expected to decrease from 0.92 to 0.90, which is at the practical capacity for the intersection. Delay and queue length are also expected to decrease slightly, with 2s and 14m respectively. The PM peak is still expected to operate at acceptable levels, with no significant changes from the High Yield scenario.

For the 2033 scenarios, both AM and PM peaks again are expected to see minor improvements from the High Yield scenarios. The AM peak DOS is expected to drop to 1.09, which is a slight improvement over the base scenario. Delay increases by 5s and queue length increases by 49m over the base scenario, neither of which significantly change the performance of the intersection. The PM peak is within acceptable levels and only sees minor increases over the base scenario for all categories. No major changes to performance are expected due to these increases.

6. Parking Assessment

6.1 Car Parking

The parking assessment has been undertaken in accordance with the parking rates specified in the Parking and Vehicular Access General Code (PVAGC). Using the development yields identified in Table 3.2 above, an estimate of the parking requirements for each of the proposed developments can be calculated. As the blocks are proposed to be utilised solely for Multi-unit residential dwellings, the parking rates for apartments was adopted. A summary of the parking requirement rates for each of the dwelling types can be seen in Table 6.1.

It is noted in the PVAGC that for residential dwelling, parking for residents must be included on-site, while visitor parking can be provided either on site or within 100m of the site. Given this, it is possible that visitor parking could be partially or fully provided by the existing on-street parking on the roads adjacent to each site.

Table 6.1 Parking Requirement Rates for Residential Dwellings – High Yield Volumes

Dwelling Type	MU Dwelling Numbers	Resident Parking		Visitor Parking	
		Parking Requirement Rate	Parking Spaces	Parking Requirement Rate	Parking Spaces
Ainslie Avenue					
MU (1 bedroom)	70	1 space / dwelling	70	0.25 spaces / dwelling	18
MU (2 bedroom)	122	1.5 spaces / dwelling	183		46
Sub-Total	192	-	253	-	64
Braddon Court					
MU (2 bedroom)	300	1.5 spaces / dwelling	450	0.25 spaces / dwelling	75
Kanangra Court					
MU (1 bedroom)	300	1 space / dwelling	300	0.25 spaces / dwelling	75
MU (2 bedroom)	300	1.5 spaces / dwelling	450		75
Sub-Total	600	-	750	-	150
Reid Court					
MU (1 bedroom)	125	1 space / dwelling	125	0.25 spaces / dwelling	32
MU (2 bedroom)	174	1.5 spaces / dwelling	261		44
Sub-Total	300	-	386	-	76
Jerilderie Court					
MU (1 bedroom)	87	1 space / dwelling	87	0.25 spaces / dwelling	22
MU (2 bedroom)	174	1.5 spaces / dwelling	261		66
MU (3 bedroom)	39	2 spaces / dwelling	78		10
Sub-Total	300	-	426	-	98
Total	1,692	-	2,265	-	463

6.1.1 Disabled Car Parking

As part of the requirements of the PVAGC, 3% of all visitor parking spaces must be allowed for disabled parking. This requirement does not apply to the residents parking as these spaces are subject to the adaptable housing requirements. The disabled parking requirements for each of the sites can be seen in Table 6.2.

Table 6.2 Disabled Car Parking Provisions

Site	Visitor Parking Spaces	Disabled Car Parking Requirements	
		Rate	Spaces
Ainslie Court	64	3% of parking spaces	2
Braddon Court	75		3
Kanangra Court	150		5
Reid Court	76		3
Jerilderie Court	98		3
Total	463	-	16

6.2 Motorcycle Parking

The PVAGC states that parking for motorcycles must be provided at a rate of three spaces per 100 car parking spaces provided, with a minimum provision of one motorcycle space in carparks with at least 30 car spaces.

For the residential parking, it is assumed each dwelling would receive a dedicated 1-2 parking spaces which could be utilised by either a car or motorcycle. As such, no dedicated motorcycle parking is required in addition to the residential parking spaces.

For the visitor parking, it is assumed that motorcycle parking could be facilitated by the on-street parking surrounding each site and so no dedicated motorcycle parking spaces are required. Should a dedicated visitor carpark be constructed for any of the sites, then an allowance for motorcycle parking may need to be provided at the rate specified above.

6.3 Bicycle Parking

The following bicycle parking assessment has been undertaken based on the bicycle parking requirements specified in the Bicycle Parking General Code (BPGC). As with the car parking assessment, all residential units are being considered as apartments for the purpose of this assessment. A summary of the bicycle parking requirements for each of the five sites can be seen in Table 6.3.

Table 6.3 Bicycle Parking Requirements – High Yield Requirements

Dwelling Type	MU Dwelling Numbers	Resident Parking		Visitor Parking	
		Parking Requirement Rate	Parking Spaces	Parking Requirement Rate	Parking Spaces
Ainslie Avenue	192	1 secure space / dwelling	192	1 convenient space / 12 dwellings after the first 12 dwellings	15
Braddon Court	300		300		24
Kanangra Court	600		600		49
Reid Court	300		300		24
Jerilderie Court	300		300		24
Total	1,692	-	1,692	-	136

It is noted that secure bicycle parking includes facilities such as individual bicycle lockers or communal bicycle enclosures not accessible to the general public.

The BPGC does allow for a reduction in the resident bicycle parking for apartments and similar developments where a secure general-purpose storage space is provided for each resident (i.e. a secure storage space in the basement). If the storage space is secure, suitably shaped and accessible by bicycle, it can be utilised for bicycle storage and a separate allowance does not need to be made.

For visitor parking, convenient bicycle spaces are typically provided as a bicycle rail, which is accessible to the general public and in convenient locations with high levels of passive surveillance.

7. Conclusion

Calibre Professional Services (Calibre) has been engaged by Purdon Planning, on behalf of the Environment, Planning and Sustainable Development Directorate (EPSDD) to complete site investigations for the following five sites:

6. Ainslie Block 22, Section 14 (Ainslie Flats);
7. Braddon Block 1, Section 55 (Braddon Court);
8. Reid Block 1, Section 11 (Kanangra Court);
9. Reid Block 1, Section 10 (Reid Court); and
10. Reid Block 1, Section 9 (Jerilderie Court).

Each of the sites provide parking within the block for residents, and provide for visitor parking through a number of on-street parking arrangements, including overnight parking and limited time carparks.

Each of the developments is located within close proximity to at least one public transport network. The local bus routes 31, 53, 54, and 55 all have stops within walking distance (less than 400m) from one of the sites and are available for use by residents. Along with the availability of public transport, active travel facilities in the form of footpaths, local community routes, and on-road cycling routes are within close proximity to each of the sites. These provide access to the City Centre as well as the wider active travel network throughout Canberra.

Intersection performance analysis was completed using SIDRA intersection models of the 6 key intersection within the vicinity of the site. An existing conditions scenario was created to quantify the current performance, with base and development scenarios also completed for the years of 2023 and 2033. Each scenario considered AM and PM peak performance at the intersections.

As the exact number of dwellings to be included within each site are currently unknown, both a high and low yield volumes were developed. The high yield volumes were used for the standard development scenario, while the low yield volumes were used to compare the impact of the intersections which exceed acceptable performance parameters for the high yield volumes and significantly differ from base scenarios.

It was found that under existing conditions, the intersection of Limestone Avenue / Quick Street / Batman Street exceed acceptable levels for DOS and delay, as well as having queue lengths which impact the surrounding road network. The intersection of Ainslie Avenue / Limestone Avenue and Limestone Avenue / Chisholm Street / Donaldson Street are also noted to have queue lengths which will impact the surrounding road network in both AM and PM peaks.

For all future base and development scenarios, it is expected that the intersection of Limestone Avenue / Quick Street / Batman Street will exceed acceptable levels of all criteria. This is attributed to this intersection being priority-controlled and the volumes along Limestone Avenue being too high for sufficient gaps to appear. There are other options in the network and redistribution or changes to the platoons based on optimisation of the traffic signals could assist with better network capacity.

The intersection of Ainslie Avenue / Limestone Avenue is expected to perform at an acceptable DOS up until 2033, at which point the DOS in the high yield scenario PM peak exceeds the limit, reaching 1.03. Queuing within the 2033 base scenario also has an increased impact and causes blockages to additional intersections. Improvements to the intersection for the high yield case could include an additional lane on approach. Further studies would need to be undertaken to determine the feasibility of this, but the costs are expected to be around \$750K to \$1.5M based on the extent of works.

The intersection of Limestone Avenue / Chisholm Street / Donaldson Street is expected to exceed intersection capacity within the 2023 high yield scenario AM peak, as well as in the AM peak for the 2033 base, high yield, and low yield scenarios. It is noted that the performance of the intersection in the 2033 base scenario is not expected to significantly worsen with the additional traffic from either high or low yield developments and this could be considered an existing network deficiency rather than site specific.

The intersection of Ainslie Avenue and Doonkuna Street is expected to surpass the acceptable limit for DOS, delay and queuing during the 2033 AM peak high yield development scenario. The performance of all criteria is noted however to decrease to acceptable levels when the low yield volumes are utilised. As such, low yield volumes could be used in this instance to avoid upgrading this intersection. There are multiple network options at this location and traffic could redistribute to select the quickest travel path. Signalisation of this intersection would increase delays on Ainslie Avenue but could improve active travel permeability through the area and aligns with the endorsed local community route. The cost

of signalisation could be between \$750K to \$1.25M depending on utility clashes and extent of works. The adjacent priority controlled intersections along Ainslie Avenue would also benefit from the vehicle platooning and additional gaps in traffic from the signals.

The remaining two intersections of Ainslie Avenue with Doonkuna Street and Elimatta Street are expected to operate at acceptable levels for all scenarios.

It is noted that the performance of the intersections of Ainslie Avenue / Limestone Avenue, Limestone Avenue / Quick Street / Batman Street, and Limestone Avenue / Chisholm Street / Donaldson Street is poor within the base scenarios. Irrespective of these redevelopments augmentation along Limestone Avenue may be required in future to accommodate general growth in network traffic. Given the minimal impact, the low yield dwellings scenarios could be implemented without the need for any network augmentation attributed to the developments.

Increasing congestion can assist with improving the uptake of active travel and public transport modes. With the Territories planning strategy to increase urban infill through intensification in areas close to the town centres and public transport routes, these sites are prime candidates for higher density living. The higher yield scenario may need to contribute to the augmentation of intersections but these costs could be balanced against the other considerations for the increased yield.

Based on the parking assessment conducted for the high yield volumes, a total of 2,265 car parking spaces will be required for resident parking across all sites. An additional 463 car parks will be required for visitor parking; however these can be partially accounted for with the existing on-road parking which exists around each site.

Secure bicycle parking for residents of the developments will need to be provided. This will require a total of 1,692 bicycle parking spots across all sites. It is noted that a reduction to this volume can be applied, provided a secure general-purpose storage space suitable for bike storage is provided to residents. A total of 136 visitor bicycle parking spaces will also need to be provided within easily accessible areas with a high level of passive surveillance.

Appendix A SIDRA Analysis Results – Existing Conditions

Ainslie Avenue Corridor Traffic Impact Assessment_rev02.docx

Appendix B Trip Distribution Location Graphs

Ainslie Avenue Corridor Traffic Impact Assessment_rev02.docx

Appendix C SIDRA Analysis Results – Future Conditions (No Development)

Appendix D SIDRA Analysis Results – Future Conditions (High Yield Development)

Appendix E SIDRA Analysis Results – Future Conditions (Low Yield Development)



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Attachment E: Capital Valuers Preliminary Valuation Advice

16 November 2020

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Dear Trevor,

**AINSLIE PRECINCT – INDICATIVE MARKET VALUES FOR RESIDENTIAL UNITS AND AGED
CARE**

Sch 2.2(a)(xi)

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Sch 2.2(a)(xi)

Sch 2.2(a)(xi)

This advice has been prepared for and on behalf of Capital Valuers Pty Ltd by NARELLE BYRNE an Associate and RICHARD JOHN SWINBOURNE a Life Fellow of the Australian Property Institute and Certified Practising Valuer.

CAPITAL VALUERS PTY LTD

Sch 2.2(a)(ii)

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