



# Murdoch

## Specialised Activity Centre

### Structure Plan

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# 3. Activity

Murdoch Activity Centre is classified as a specialised centre in the *Directions 2031 and Beyond* activity centres hierarchy. The basis of this, as outlined, is the existence of two key activities at Murdoch (health and education services) making it different to all of Perth’s activity centres, except University of Western Australia/Queen Elizabeth II Medical Centre (UWA-QEII). The distinctive nature of this centre needs to be embellished to include other complementary uses which will harness the urban environment to build upon this base of activity. Unlike other retail based centres, this centre will rely on significant volumes of employees and therefore activities will need to be focused on taking advantage of the needs of this user group.

## 3.1 Activity anchor drivers

The presence of four significant strategic anchors (Murdoch University, Fiona Stanley Hospital, St John of God Hospital and Challenger Institute of Technology) has the potential to form the foundations of a large, highly significant economic base for Perth because the scale and intensity of activity resulting from these institutions can, if managed appropriately, drive a large amount of direct, secondary and induced activity (Figure 3.01). The sheer number of employees and the spin-off business opportunities that activities of this nature generate, can form the basis for a large and ready-made activity centre.

For most other activity centres within Perth, the challenge tends to be attracting the strategic anchors in the first place, whereas Murdoch already has four. The challenge, therefore, is in configuring this existing infrastructure to produce the optimal output for Perth and Western Australia. The opportunity for job creation at Murdoch is unique to the

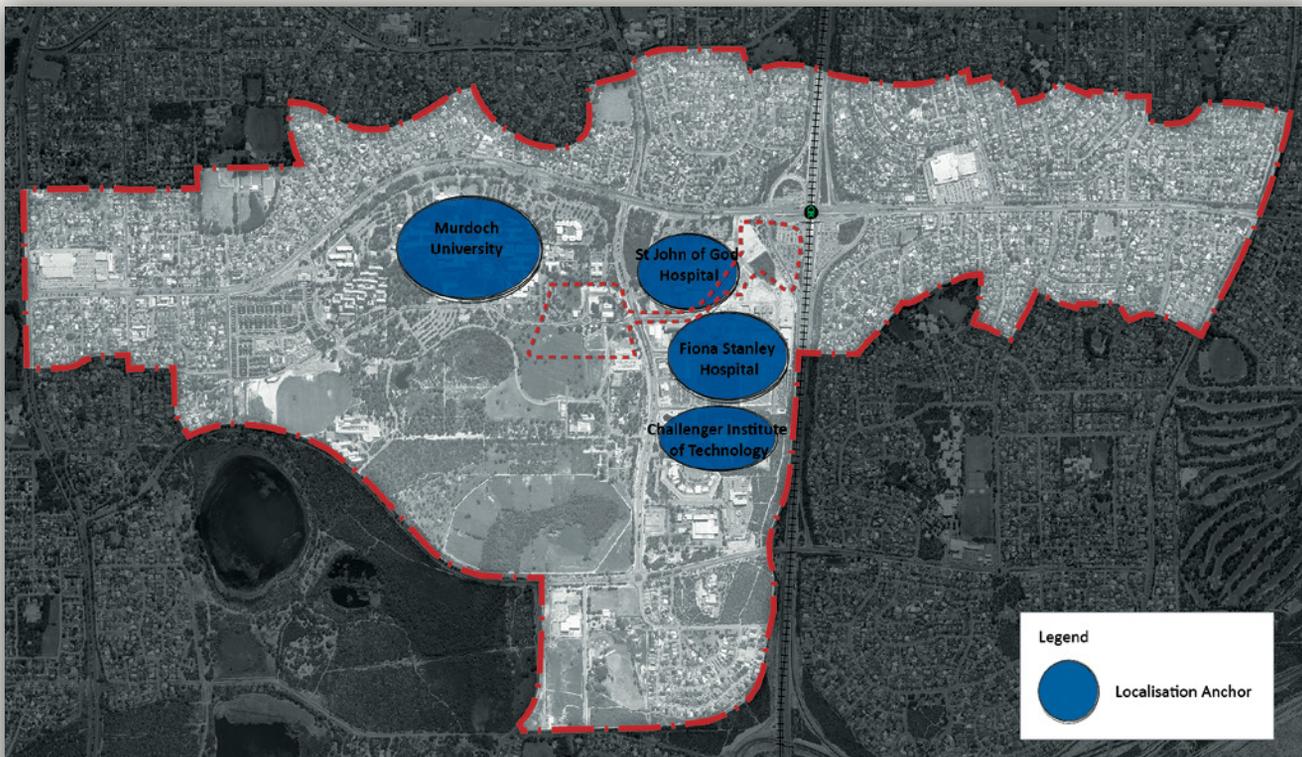


Figure 3.01: Anchor drivers

Perth metropolitan area, with existing major employment infrastructure unlikely to be replicated at a different site. Given the challenges Perth faces in decentralising employment away from the CBD and inner central sub-region, maximising the employment benefits from this infrastructure is critical.

Most other population based centres rely on low knowledge consumer services, such as retail, to drive the local economy. These centres are unable to generate a comparable economic base because low knowledge jobs generally do not support the same quality and range of economic activity as high knowledge jobs. Any strategic anchors that may underpin all other activities often sit in isolation, with only loose relationships with the larger activity centres in which they sit, or are adjacent. The value of these anchors to the greater activity centre is diminished as it does not contribute the ongoing development of secondary strategic activity related to the anchor, nor activate the other urban activities existing in the centre.

It is vital that Murdoch Activity Centre achieves a significant urbanisation economy of shops, offices and accommodation to support the major activity drawcards, not only to provide the services and goods present in an integrated local economy, but also to develop strong, significant agglomerations of activity and build upon the potential of the significant infrastructure at Murdoch.

### 3.2 Employment targets

Murdoch has been set an employment target of 35,000 jobs in the long term. This is an aspirational number aimed at building Murdoch into a substantial activity centre in the southern region of Perth. Achieving this target will require significant investment and interest from both the public and private sectors and will rely on ongoing targeted economic development initiatives aimed at building Murdoch's value proposition for high quality public and private economic activity.

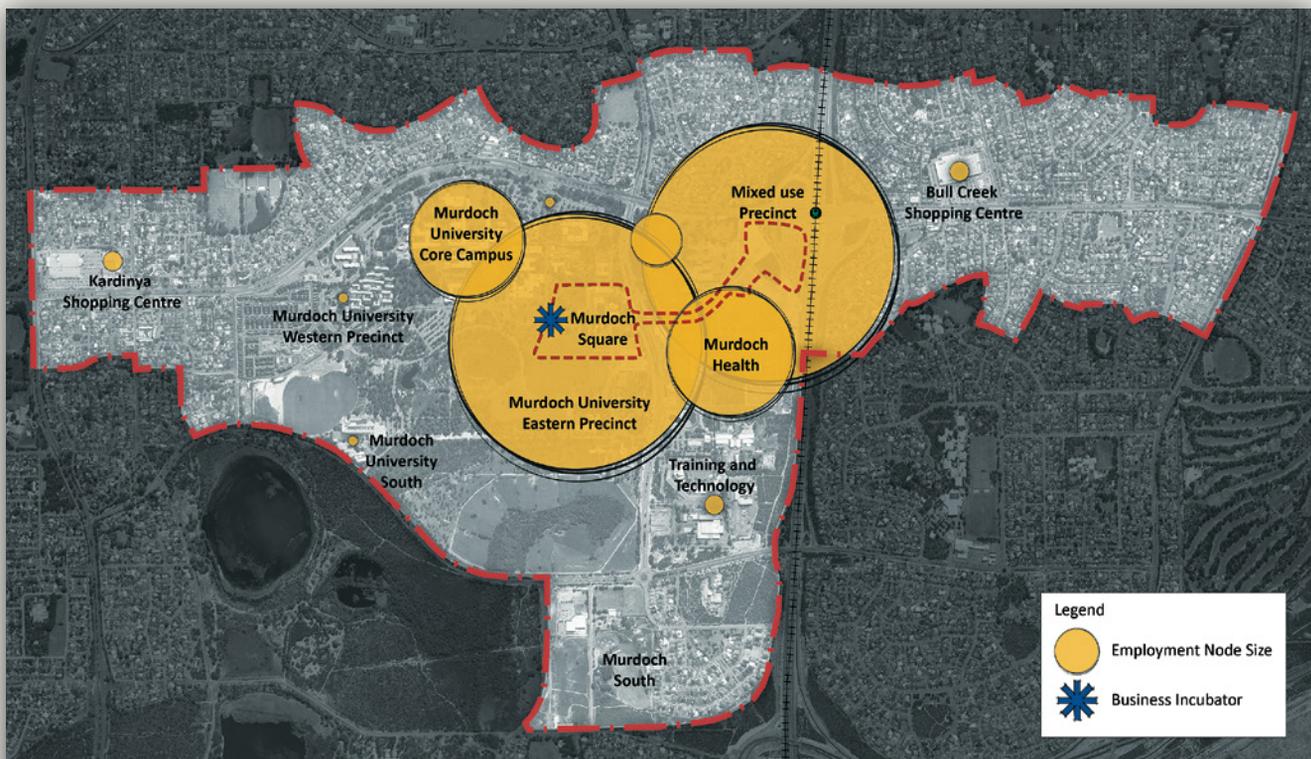


Figure 3.02: Relative scale of employees (by number within each node)

# 3. Activity

With an estimated workforce numbering approximately 11,000 employees in 2014, Murdoch will undertake a substantial transformation both in scale and type over the 20-year horizon of the structure plan. Where office based jobs account for approximately 87 per cent of total employment in the early years, this will rise to 91 per cent of a much larger workforce in the longer term. However, the early characteristic of these jobs predominantly sitting in the institutions of Murdoch University, Challenger Institute of Technology, Fiona Stanley Hospital and St John of God Hospital, will transition into two thirds of the jobs being provided in the urbanisation nodes of Murdoch Square and the mixed use precinct (Figure 3.02).

Retail and consumer service jobs will double over the period as the local population of workers, students and residents increases. There will also be an expansion of technology and training job numbers as the requirement grows for commercialisation of the research functions being undertaken in association with Murdoch University and in support of services at the hospitals. In this regard there is also a clear role for business incubator type models which are dedicated to nurturing the creativity within the knowledge based environments through providing training facilities and funding to develop ideas.

The success of an integrated centre and the vibrancy of the urban core is dependent on the intensity of employment in the core to provide the critical mass. While there is set to be a significant number of jobs which will fall outside the core area due to the need for additional education and health services, a prioritisation of all other jobs to the core is required to allow the centre to achieve its potential (Figure 3.03).

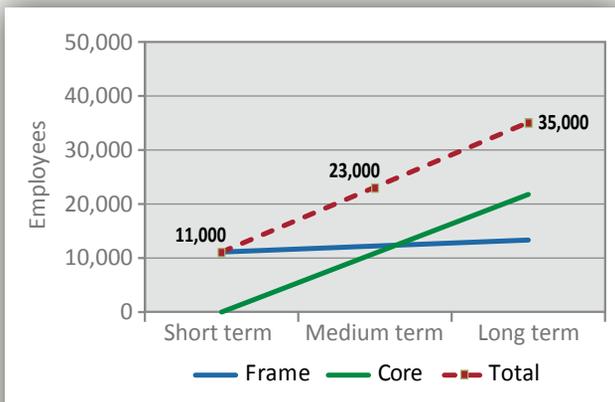


Figure 3.03: Employee targets

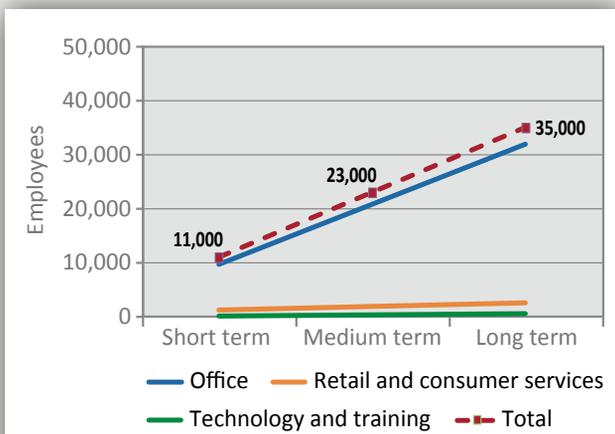


Figure 3.04: Employment by type of activity

## 3.3 Employment types

The employment type of Murdoch will be substantially different to other areas of Perth with the exception of the CBD area. Jobs will be much more focused on high knowledge based industries and activities rather than lower knowledge consumer services such as retail. Health, research and learning based employment are categorised under 'office' in the predicted growth graph in Figure 3.04. The centre will also have a greater presence of knowledge-intensive export-oriented services actively engaged in leveraging the activities of the anchor institutions for the commercial applications and opportunities.

In a typical economic model of this type of centre, the strategic anchors would account for approximately 15-20 per cent of jobs within the centre while knowledge services which spin off from the anchors would account for 25-30 per cent of all jobs (Figure 3.05). The balance would fall in the urbanisation economy such as retail, hospitality, entertainment, catering, cleaning and personal professional services, which are needed to support these other functions.

At Murdoch, where the strategic institutional anchors in education and health are already well established but support services are underdeveloped, the employment profile will take time to evolve into a more balanced mix across urbanisation and localisation economies.

### 3.4 Health

Fiona Stanley Hospital and St John of God Hospital both serve a regional function in providing health services. In the short term there will be an influx of allied health and ancillary health services associated with the opening of Fiona Stanley Hospital, creating a health agglomeration servicing the external needs of the health precinct. A large proportion of these services will locate within the hospitals and in the mixed use precinct with a smaller proportion being located at Murdoch Square (Figure 3.06).

As Perth's population increases there will be a greater demand for the services of these two hospitals and subsequently, they may need to expand. Capacity for expansion in medium to longer term will be able to be contained within the existing health precinct.

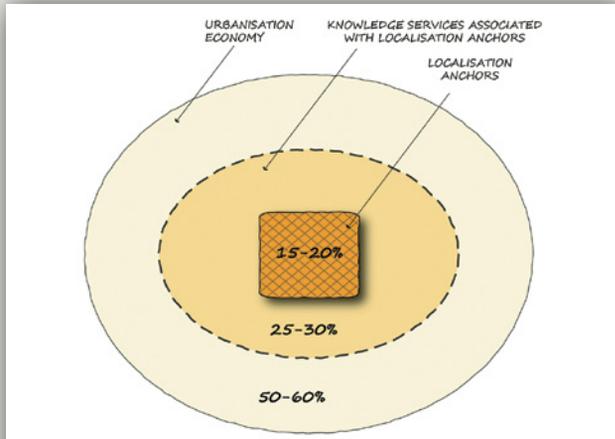


Figure 3.05: Indicative employment intensity and specialisation

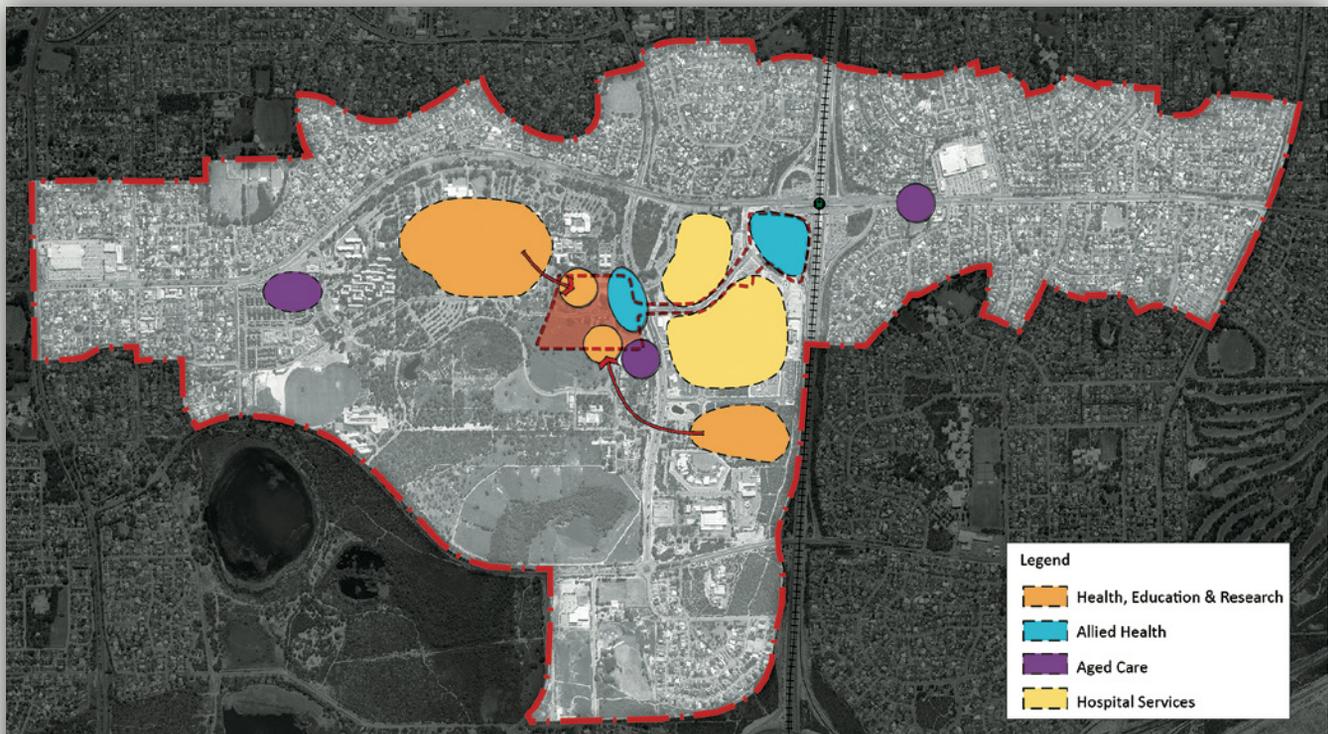


Figure 3.06: Proposed principal health, education and research zones

# 3. Activity

Both Fiona Stanley Hospital and St John of God Hospital, being tertiary teaching hospitals, presents a logical opportunity for the provision of related medical and biomedical research and teaching facilities. There is therefore, an opportunity to co-locate new teaching facilities within the core of Murdoch.

Aged care will be in increasing demand as the surrounding population ages as projected. There are significant opportunities for new facilities to be accommodated within the centre.

## 3.5 Education and training

The composition of tertiary education services in the centre currently provides 20,300 equivalent full-time students. This is set to rise significantly in the short to medium term by 10,000 as there are plans by Challenger Institute of Technology to relocate their Beaconsfield campus to their existing campus on Murdoch Drive (Figure 3.07). This will add to the range of training facilities in the activity centre.

There are currently 1,700 secondary students studying at the two secondary schools on Murdoch University land (Murdoch College and Kennedy Baptist College).

These schools have regional catchments beyond the local population catchment and therefore, are only likely to expand if there is sufficient demand for private education. As the population of the centre increases in the long term, a greater number of school places will be required. However, given the increasing single/couple demographic which is likely to fill the majority of the new high-density development at Murdoch, this may not be as high as historical increases have shown. Much of the new population may be served by schools in the suburbs surrounding the study area and, as such, the number of secondary students over the long term is constant for the purposes of determining the student capacity of Murdoch.

Over the long term the overall university student numbers within the centre will rise in accordance with population demands. The estimated number of students based on Murdoch University projections and the expansion of Challenger Institute of Technology, indicate 33,700 students in 2021. Using this projection there is assumed to be 43,400 students in the long-term scenario.

A key strategy for Murdoch Activity Centre is to introduce the concept of 'town and gown' in order to integrate the education functions with the town fabric to create a vibrant community with the right mix of activities. The existing location of the Challenger Institute of Technology campus on Murdoch Drive creates a dislocation between the two education institutions and presents a risk that Challenger Institute will be isolated from the full benefits of the urbanisation functions which are possible at Murdoch Square and the mixed use precinct. The existing site is also located beyond convenient walking distance of the proposed high-frequency transit route and thus may rely more on personal vehicle travel, as opposed to capturing the benefits of ready access to future forms of urban public transport (Figure 3.08).

The proposed relocation of Challenger Institute's Beaconsfield campus to Murdoch Activity Centre is significant and, as with other local institutions, needs to be planned in an integrated not separated manner. There are wide ranging benefits associated with the economic potential of an increase of this number of students, which

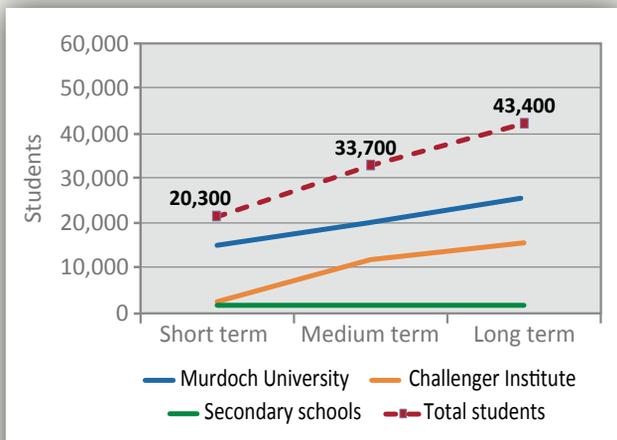
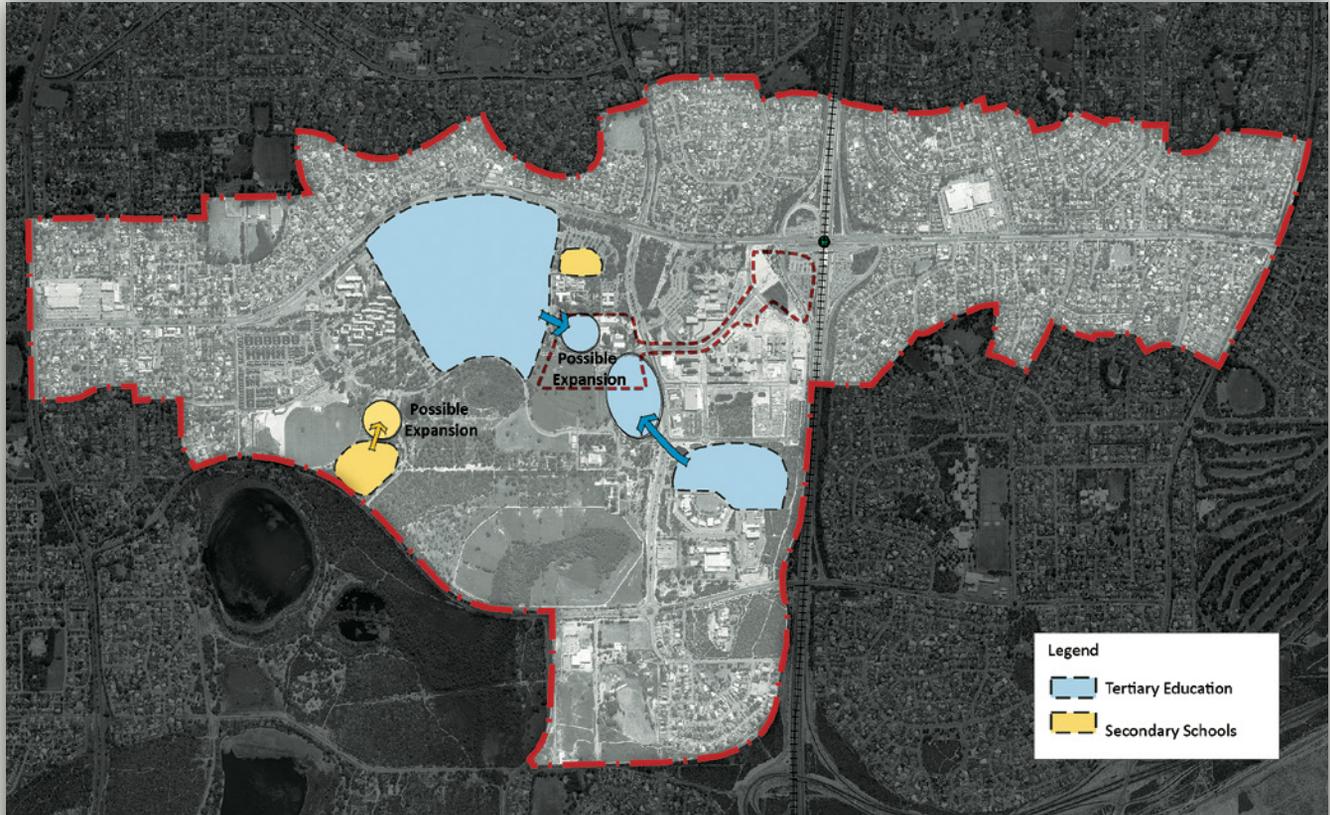
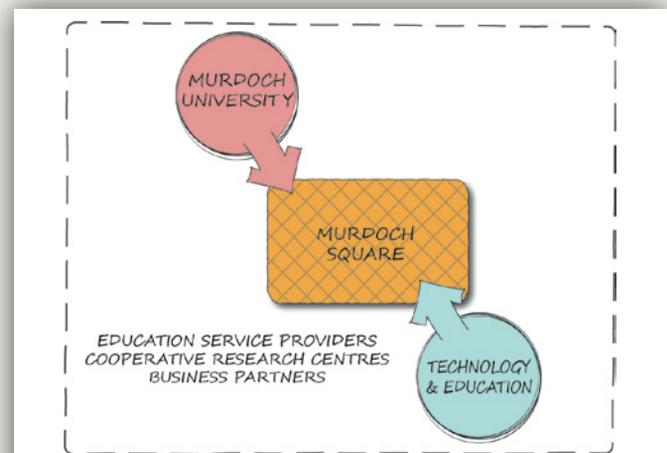


Figure 3.07: Projected students



**Figure 3.08:** Proposed education zones

should be more fully captured within the activity centre. The economies of scale may offer scope for collaborative ventures between the tertiary institutions or provision of shared services and new urban amenities, which will help to create a more vibrant and appealing environment for students and the activity centre as a whole (Figure 3.09). Educational providers are encouraged to consider strategies that enable mutual economic and educational benefits.



**Figure 3.09:** Education service providers

# 3. Activity

## 3.6 Offices and service industry

The predominance of new office and knowledge based jobs will facilitate a large expansion of commercial floorspace in the centre. Assuming a floor area of 18 square metres per job and that 85 per cent of the new office floorspace will be built within the core, in the long term, office accommodation is set to more than double to over 400,000 square metres (Figure 3.10). For the purposes of this exercise, education and health jobs are considered as office functions when determining indicative floor area.

In this structure plan the allocation of office floorspace capacity within the core has been divided equally between Murdoch Square and the mixed use precinct. However, this breakdown would need to be reviewed should land tenure or construction cost issues prove to be inhibitive or market conditions determine otherwise (Figure 3.11).

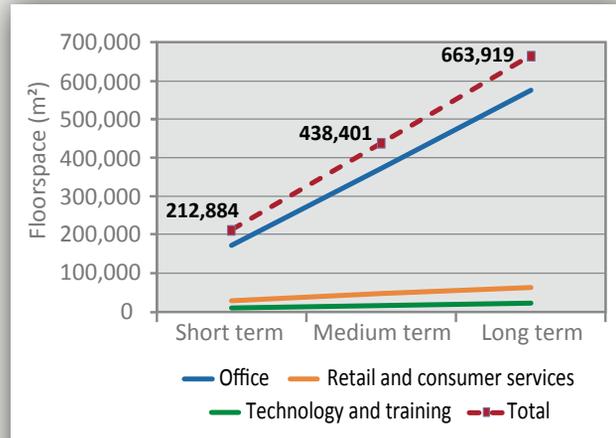


Figure 3.10: Capacity of commercial floorspace

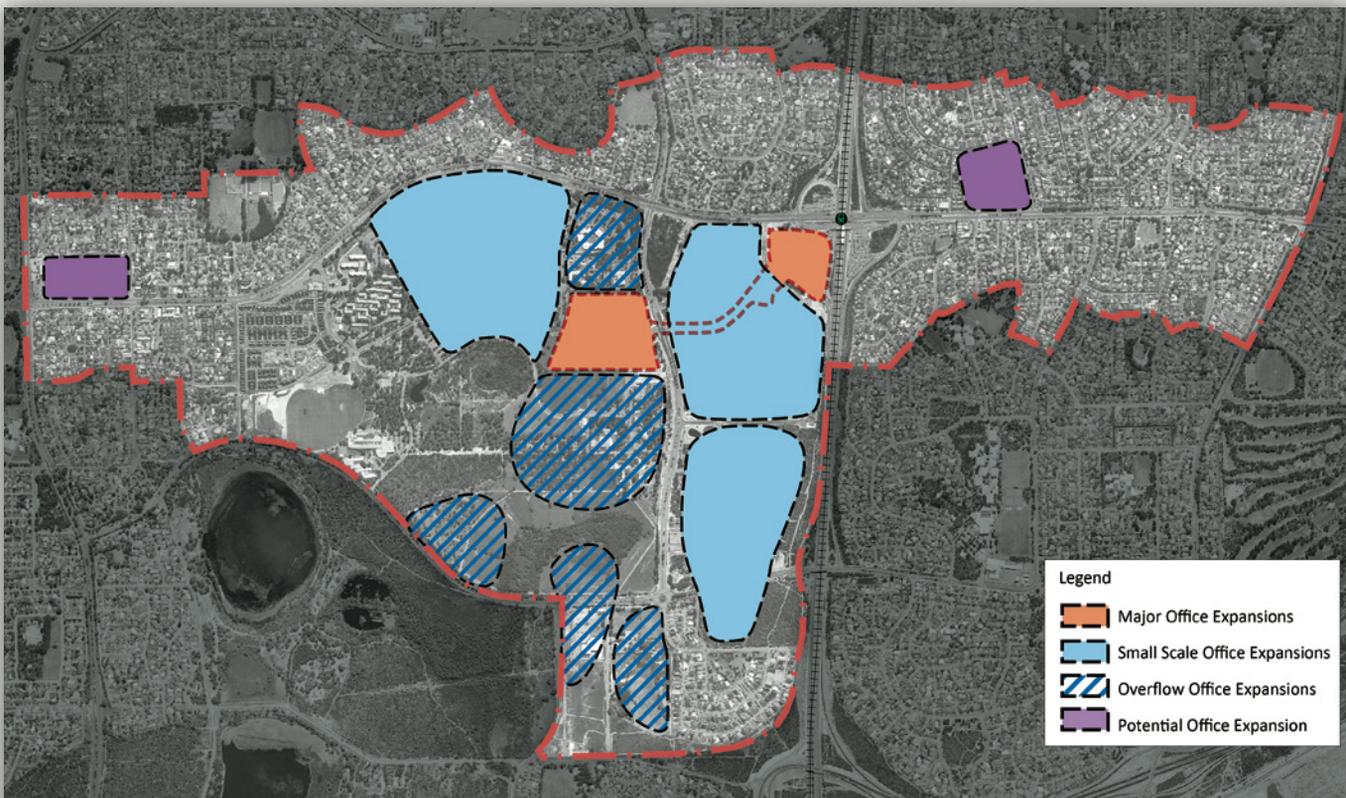


Figure 3.11: Office expansion areas

Where appropriate, smaller-scale office based employment could occur within the hospital, university or college campuses without prejudicing their principal land-use function, consistent with the overall goal of an integrated activity centre. However, development of office floorspace outside the core and activity nodes, which is not associated with tertiary education or health, should be subject to prioritisation controls in respect of intensity aspirations for the urban core.

### 3.7 Retail

Unlike many of Perth's activity centres, Murdoch is not based on retail and consumer based services, and instead has a strategic employment focus. While this focus is set to remain and be enhanced over time, it will require augmentation with supporting retail. This will be in the form of the shops, food and beverage and consumer services needed by the local resident, worker and student populations (Figures 3.12 and 3.14). Retail is an intrinsic element of an active and functional town centre, however, the retail role of the centre needs to be considered in relation to the surrounding activity centres.

These centres are either based on higher order comparison retail or serve a broader district or neighbourhood catchment. Booragoon Activity Centre's role as a centre is strategic retail function. The role of both Kardinya and Bull Creek district centres should continue to serve their existing function.

#### The core

Retail within the core of the centre is aimed at servicing the population of workers, residents and students who are located within the study area boundary. New retail development should be prioritised to the core to support the intensity of development required to achieve a vibrant centre. Retail types will be focused on entertainment and convenience functions (including supermarkets) to support the daily and weekly needs of the population. For example, buying food for lunch or dinner and purchasing books and stationery will be typical activities in Murdoch town centre. Higher order comparison goods retail, such as discount department stores and department stores are not considered appropriate forms of retail development within the Murdoch town centre.

#### Activity nodes

The two activity centres — Kardinya and Bull Creek — which sit outside of the central area of Murdoch are existing successful shopping centres serving a district and neighbourhood catchment. Although the focus of Murdoch will be in the core, these activity nodes have a

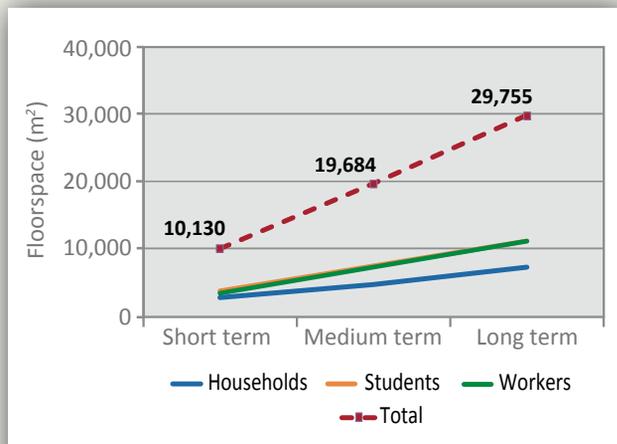


Figure 3.12: Retail floorspace drivers (urban core)



Figure 3.13: Range of retail floorspace (urban core)

### 3. Activity

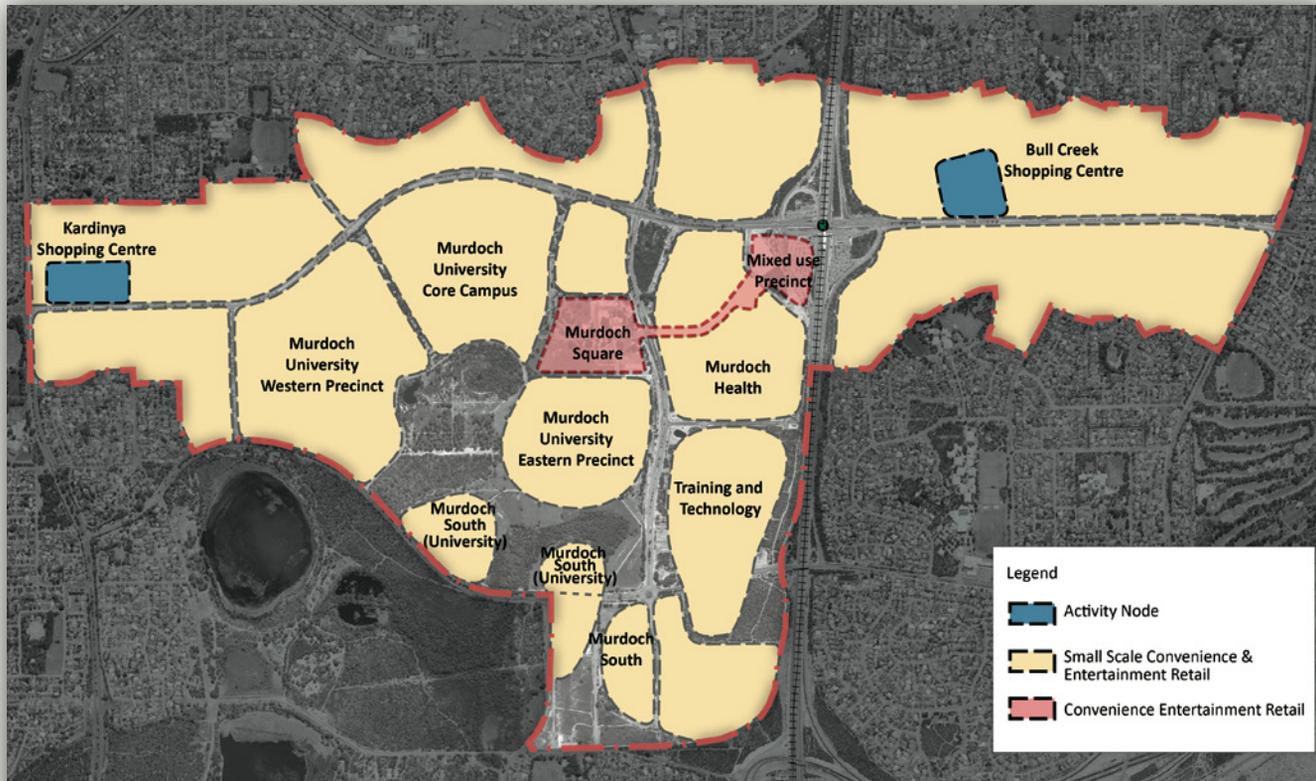


Figure 3.14: Retail zones

complimentary role to play in the centre framework. These centres will continue to serve their existing catchments responding to the needs of the local population thus minimising personal vehicle trips.

Retail Sustainability Assessments (RSA) should be prepared for the expansion of these activity nodes. The RSA should have regard for the intent to provide 29,755sqm future retail identified for the core of Murdoch and ensure that retail expansion of Kardinya or Bull Creek district centres does not undermine this potential.

Expansion of retail in these centres should be complemented by an urban form which will make the centre attractive to non-retail activities. In this regard, proposals to increase floorspace should accord with *State Planning Policy 4.2, Table 3* in relation to providing a mix of uses and indicative residential densities.

#### Central area

Due to the intensity targets for the development of the core the time frame for development of these areas is uncertain. Should residential use become a realistic opportunity or should temporary commercial uses develop, there may be a need for a local retail function. If this occurs it should be in accordance with the City of Melville Commercial Centres Strategy and should be consistent with controls over areas designated in the City of Melville Planning Scheme No 5 as living areas. An RSA will be required to justify a retail expansion.

## Living areas

Due to the current low density of the living areas of Murdoch, there has not been significant development of neighbourhood retail in these areas. However, as these areas increase in density over time, there may be an economic case to add small-scale retail. This would align with the objective to have more activities within a walkable catchment. Therefore, retail development in the living areas should be in accordance with the City of Melville Commercial Centres Strategy and should be consistent with controls over areas designated in the City of Melville Town Planning Scheme No 3 as living areas.

## Entertainment activities

High quality and diverse options for interaction and after hours trading are needed for Murdoch to become a truly multi-faceted activity centre, though the injection of vibrancy will only occur if there is a critical mass of these operators. Therefore entertainment activities within the core are excluded from requiring an RSA and the quantum of floorspace will not be included in the overall retail area analysis. These activities include hotels, bars, cafes, restaurants, cinemas and other recreational activities.

**Table 3-1: Retail development matrix**

	Activity				Urban Form		
	Expansion capacity (GLAm <sup>2</sup> )	Retail assessment required	Catchment	Type	Configuration	Car parking configuration	Diversity, scale and density
Core	Approximately 29,000 by 2031	RSA	Murdoch Structure Plan Boundary	Entertainment convenience (including supermarkets)	Main street/ Town centre	Concealed and on street	Residential or office above retail to a height of 4 storeys (minimum)
Activity node	Expansions should consider the impact on potential and existing retail within the core	RSA	Existing catchment	Convenience (including supermarkets) discount department stores Specialities	Retail box forms may be permitted with active frontage to public realm	Multi level, at grade exposed to passing trade	In accordance with <i>State Planning Policy 4.2</i>
Frame	Individual developments	RSA	Walkable catchment	Entertainment convenience (excluding supermarkets)	Active frontage to public realm	On street	Residential or office above to a height of minimum 2 storeys
Living areas	Individual developments	RSA	Walkable catchment	Entertainment convenience (excluding supermarkets)	Active frontage to public realm	On street	Residential or office above to a height of minimum 2 storeys

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### 3.8 Storage/distribution/ other retail

Uses such as storage or bulky goods are not compatible with the primary function of an activity centre due to the low intensity of employment which is generated from these types of activities. The building form is also not compatible with urban form objectives due to the inactive edges, industrial aesthetic and lack of scale the buildings often provide to the street.

Storage or bulky goods uses are not permitted in the core of Murdoch, however, given the size of the structure plan area, they may be permitted in the training and technology precinct in the following circumstances.

- The use is related to health/education/research industries.
- The use is for a temporary time period only.

Distribution uses are not permitted within the activity centre due to their associated bulky building forms and the scale and volume of vehicles, which would put additional pressure on the road network.

### 3.9 Manufacturing/ processing/fabrication

Manufacturing/processing/fabrication shall be permitted on the basis that activity output is related to health services or the commercialisation of research undertaken within the centre. These activities shall be restricted to the technology and training precinct.

### 3.10 Primary agricultural/university

Murdoch University currently provides one of the most highly regarded veterinary schools in Australia. As this is a key education service, the agricultural use of Murdoch University land will continue in the short to medium term. It is envisaged that the agricultural paddocks will have sufficient space within Murdoch University during this period due to the time frame for development of the urban core and the intensity requirements directing development to the area of Murdoch Square. The balance of Murdoch University's eastern precinct lying to the south could therefore be quarantined from development in the short and medium term. In the longer term the veterinary school may need to be relocated to a more suitable setting away from the central area of Murdoch (Figure 3.15).

Should the veterinary school be relocated, agricultural uses should cease to be permitted within the activity centre in order to achieve a suitable urban environment within the central area of Murdoch.

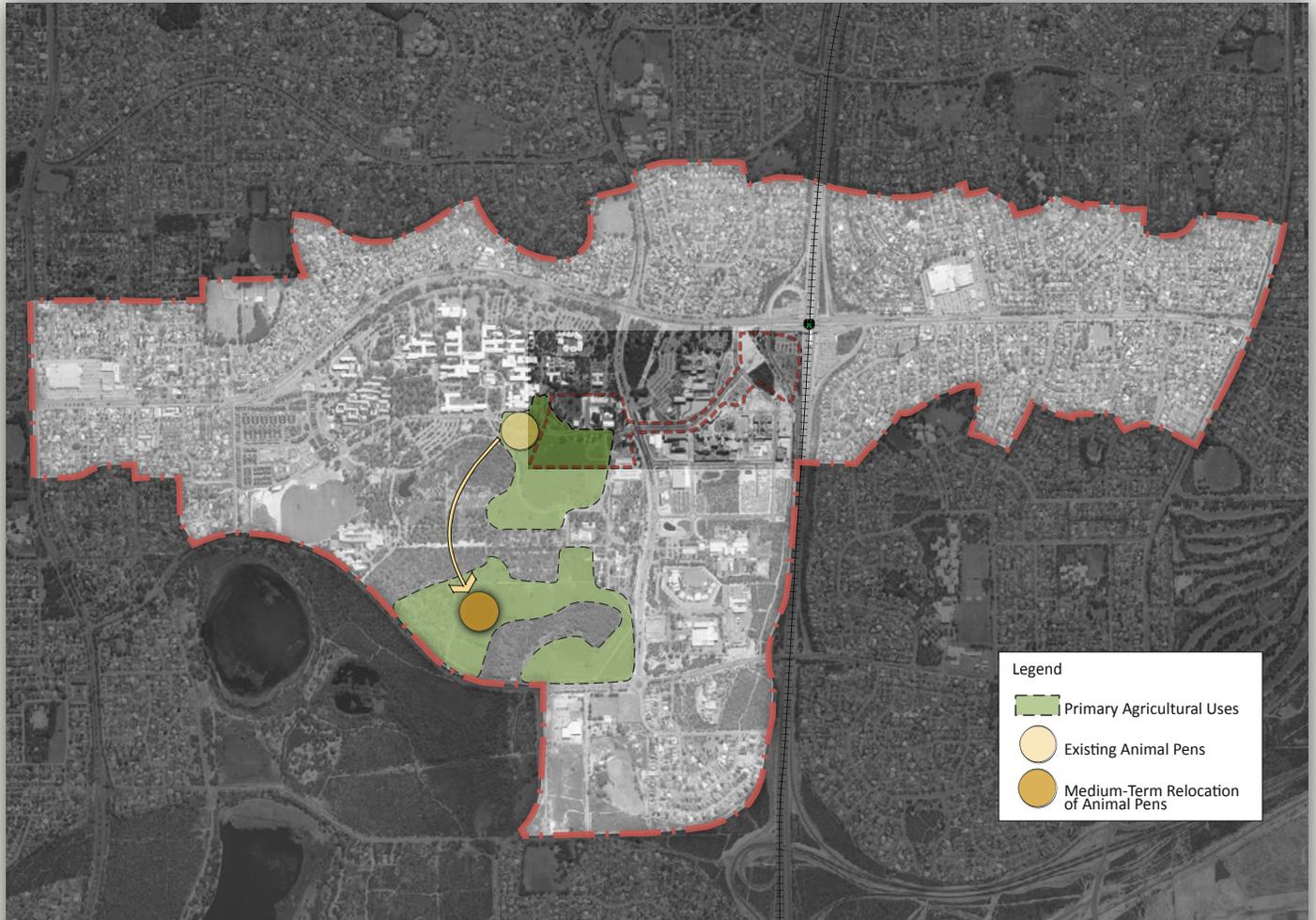


Figure 3.15: Agricultural uses

# 3. Activity

## 3.11 Community infrastructure

As Murdoch Activity Centre grows in prominence within the Perth metropolitan area and the City of Melville, there will be a need for supporting community facilities of various types. There will be opportunities to integrate new community provision within the urban core and in association with the existing academic institutions which, for example, already offer their sporting venues and learning facilities for public use (Figure 3.16). Parties should work closely to identify collaborative needs.

The role of government as an activator within Murdoch will have increasing importance. In historical city design, government buildings had pride of place in the urban

structure, announcing the role of government to the people and providing a setting for the people’s voice to be heard. Within the core of the centre there is an opportunity to introduce government buildings as a landmark in the urban hierarchy. A government presence will add to the activity of the centre by increasing vibrancy and adding to the economy, as well as providing easy access to a large population base using the centre each day.

In order to achieve this objective a study should be undertaken by the City of Melville to assess the feasibility of locating a City of Melville community facility in a location of high prominence, for example, related to the proposed civic space within Murdoch Square.

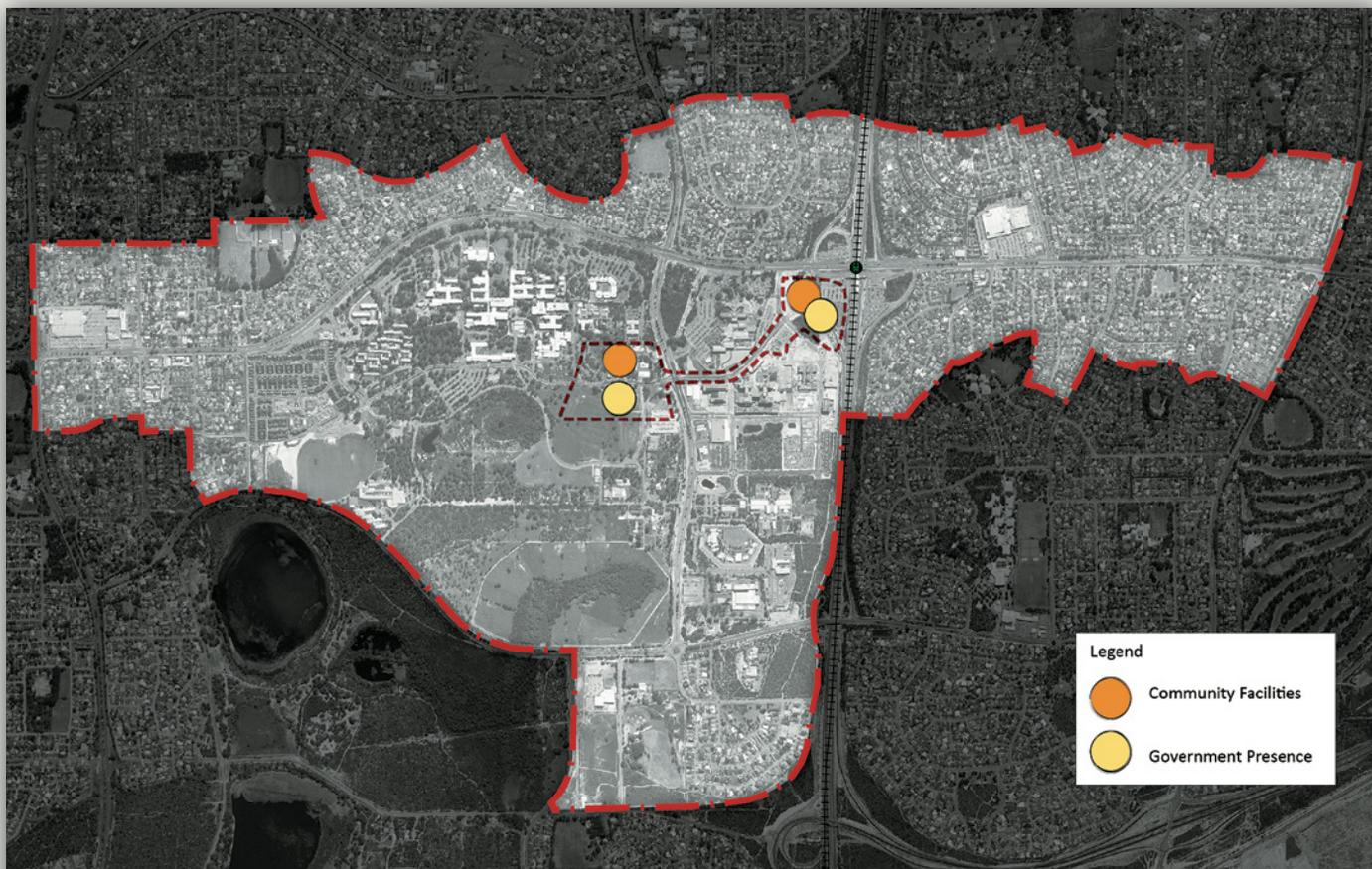


Figure 3.16: Community and government facilities

There are a number of government support facilities and emergency services stations located within the activity centre on the east side of Murdoch Drive. The emergency services buildings have been developed on stand-alone sites with a prominent frontage to Murdoch Drive, which could be more intensely used as the activity centre expands in the future. The Wandoo Reintegration Facility sits in an isolated site and is not a land use that will interact well with adjacent core activities. Its long-term role and location within the activity centre should therefore be revisited at the appropriate juncture.

### 3.12 Utilities

Several items of key infrastructure already exist within the centre including the cogeneration plant at Fiona Stanley Hospital and the Western Power electrical substation located on Murdoch Drive (Figure 3.17). As the activity centre grows, additional infrastructure will be required to service the demand of an increased population. Due to the often unsightly aesthetic of utilities infrastructure, expansion should be restricted to the training and technology precinct where possible. Where development is required it must be screened from view from the public realm. Further work will also be required at the local structure plan stage to identify, provide and protect appropriate buffers between public utilities infrastructure and other forms of development.

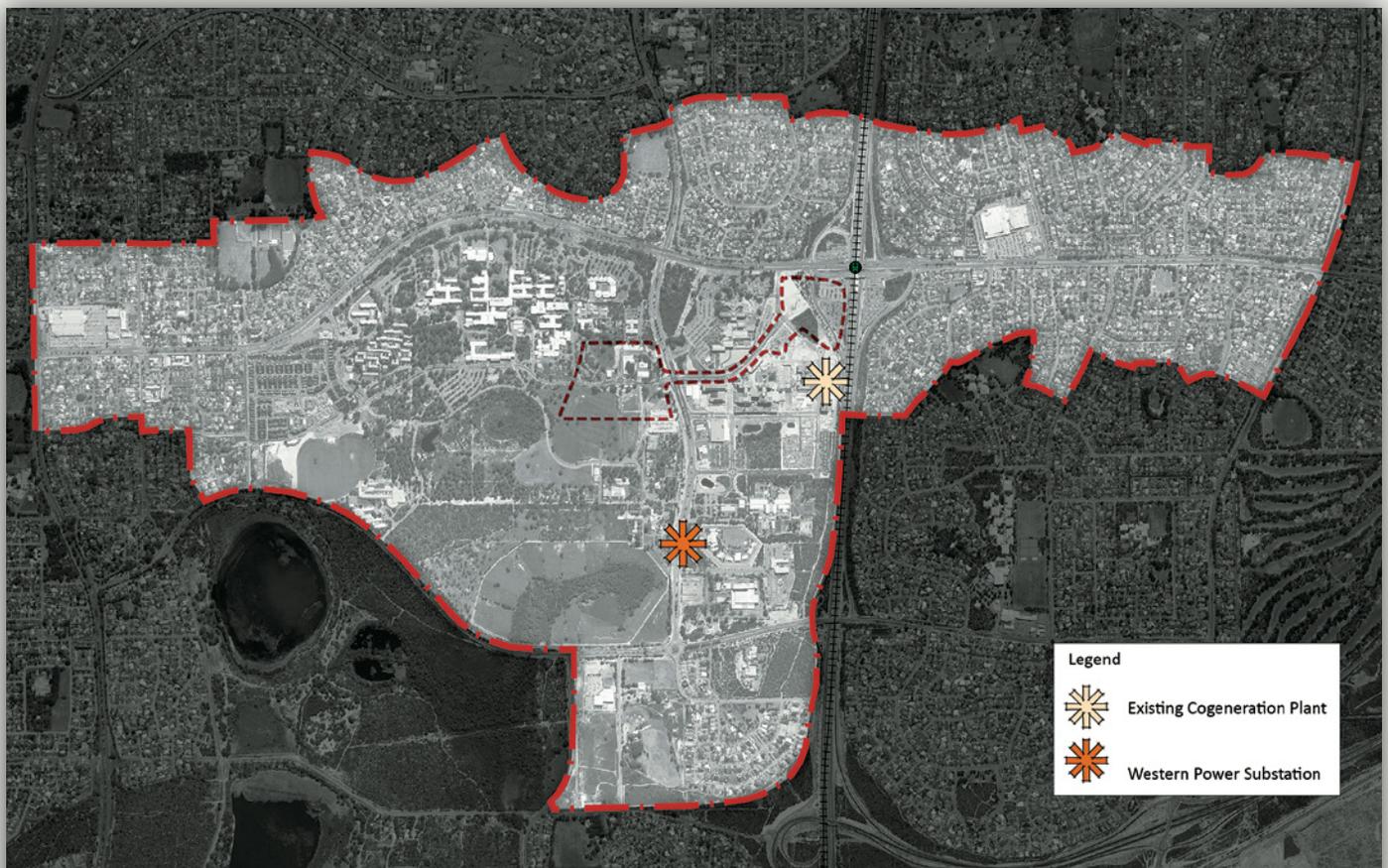


Figure 3.17: Utilities

# 3. Activity

## 3.13 Dwellings and resident population

The Murdoch structure plan area is currently comprised of approximately 3,700 dwellings and an estimated resident population of around 8,100 (based on 2.2 persons per dwelling). These are typically low-density detached double brick dwellings which were built in the postwar period to support nuclear family structures. There are some small pockets of strata residential development of a slightly higher density augmented by a number of retirement villages.

The draft *Directions 2031 Central Metropolitan Perth Sub-Regional Strategy* set a target of 3,400 additional dwellings to be located in the centre by 2031. The availability of underdeveloped land in government control at Murdoch suggests that there is capacity for more dwellings beyond 2031. This additional capacity could help to alleviate Perth's future population pressures. Accordingly, for this structure plan, two scenarios have been considered:

- Medium term – applying the *Directions 2031* target of 3,400 additional dwellings; and
- Long term – applying a gross density of 80 dwellings/ha to underdeveloped land within Murdoch University eastern precinct, Murdoch South and the mixed use precinct to generate a possible yield.

The population projections indicate that approximately 15,500 residents could live within the structure plan study area by 2031, potentially increasing to 22,000 in the longer term. The long term scenario also includes an allowance for natural turnover in the housing stock – for this exercise, an assumption of 15 per cent growth in dwelling numbers was adopted to account for urban regeneration (at 1.5 per cent annually) over 10 years within the suburban frame area.

Although a relatively modest average household size of 2.2 persons/dwelling was used in the calculations, it can be predicted that this will drop substantially in the longer term due to the trend of reducing household sizes, the high proportion of apartments needed to meet density requirements, and the growing demand for student and other affordable housing. If a figure of 1.9 persons/dwelling is assumed, this results in a further increase in the quantum of dwellings required to yield a similar population, in the order of an additional 1,500 dwellings (Figures 3.18–3.20).

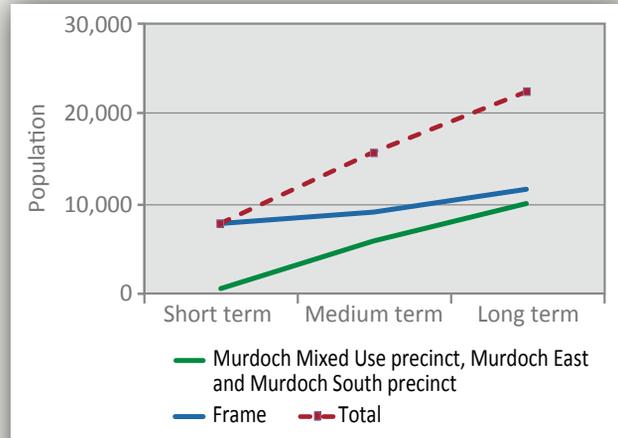


Figure 3.18: Resident population capacity

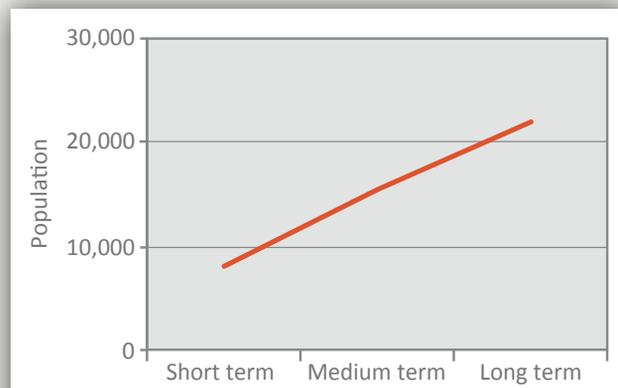


Figure 3.19: Potential resident population growth

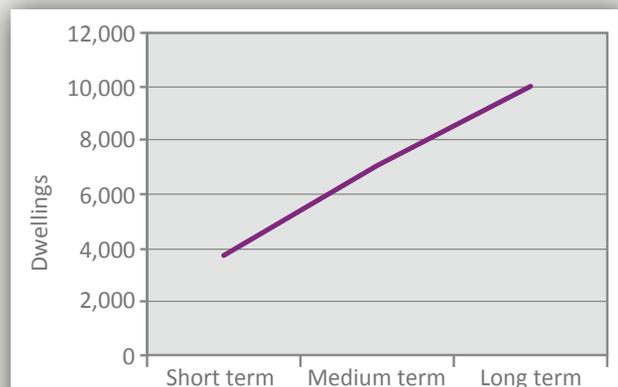


Figure 3.20: Dwelling numbers

It should be noted that the existing but temporary residents within Murdoch University's student village are not taken into account in this dwelling/population assessment.

The long-term projections for Murdoch suggest that there will be a significant change in the mix of housing types with a large rise in the number of apartments. However, due to the envisaged economic factors, it is assumed that this will not necessarily be at the expense of the suburban detached house located within the frame. There will be small incremental change but this is not likely to trigger a major revamp and the nuclear family home is likely to remain a core element of the housing mix.

However, with the demographic cycle pointing to a major shift in household structure over the next 20 years, current families will soon become empty nesters and there will be a significant surplus of bedrooms in dwellings. This may lead to more owners offering the previous family home to be rented to capture the student and health services workers

in a co-sharing arrangement. In turn, the increase in renters could be the impetus which triggers market forces for a regeneration of the housing stock.

With an ageing population and an identified undersupply of housing specifically for older people in the area surrounding Murdoch, there is expected to be a significant rise in the demand for aged care facilities and retirement living.

In order to ascertain a sound understanding of the capability for regeneration of the suburban frame, a capacity study will be needed to explore the economic and market forces, ownership patterns and the physical limitations of the existing housing arrangements. A better understanding of these factors will significantly influence the outcomes which are achieved within the central area of the activity centre. Subsequently, a simplistic approach to changing the R-Codes has not been proposed in this document (Figure 3.21).

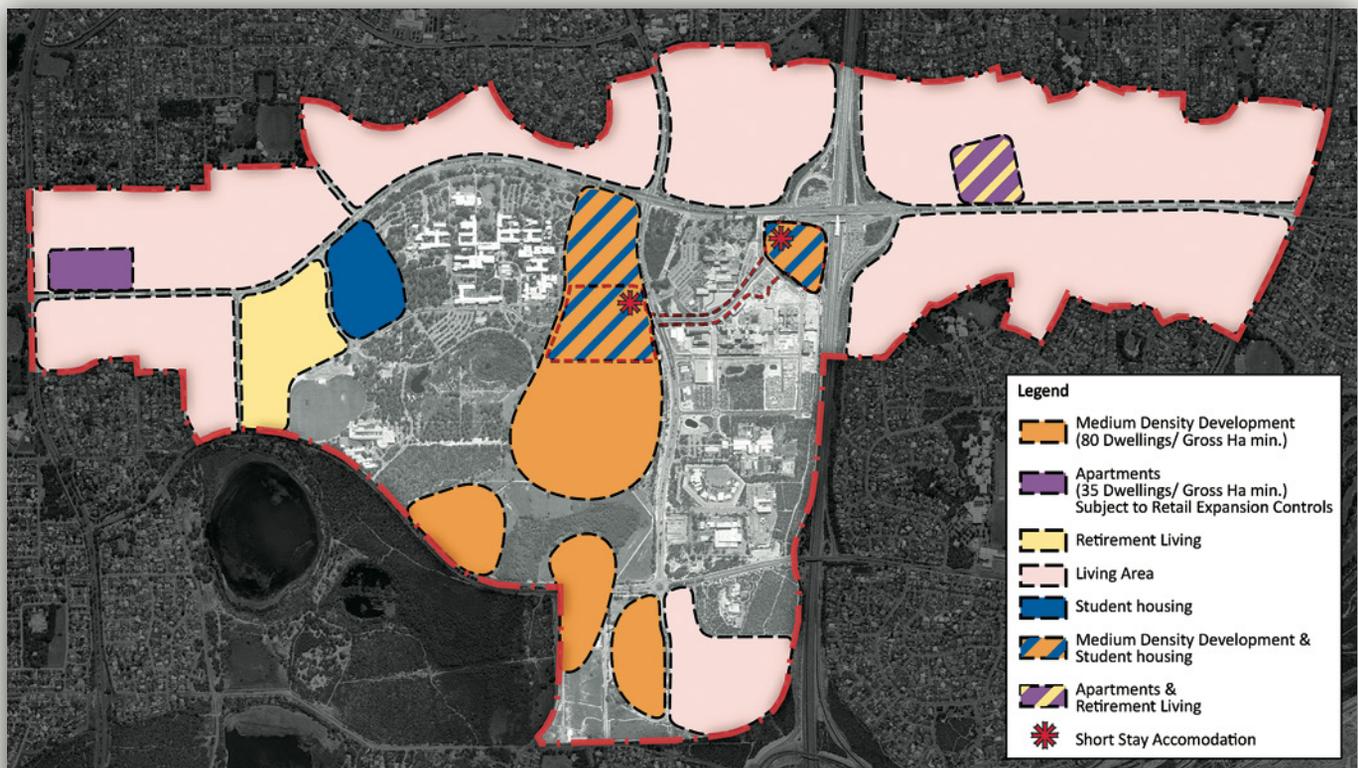


Figure 3.21: Range of dwelling zones