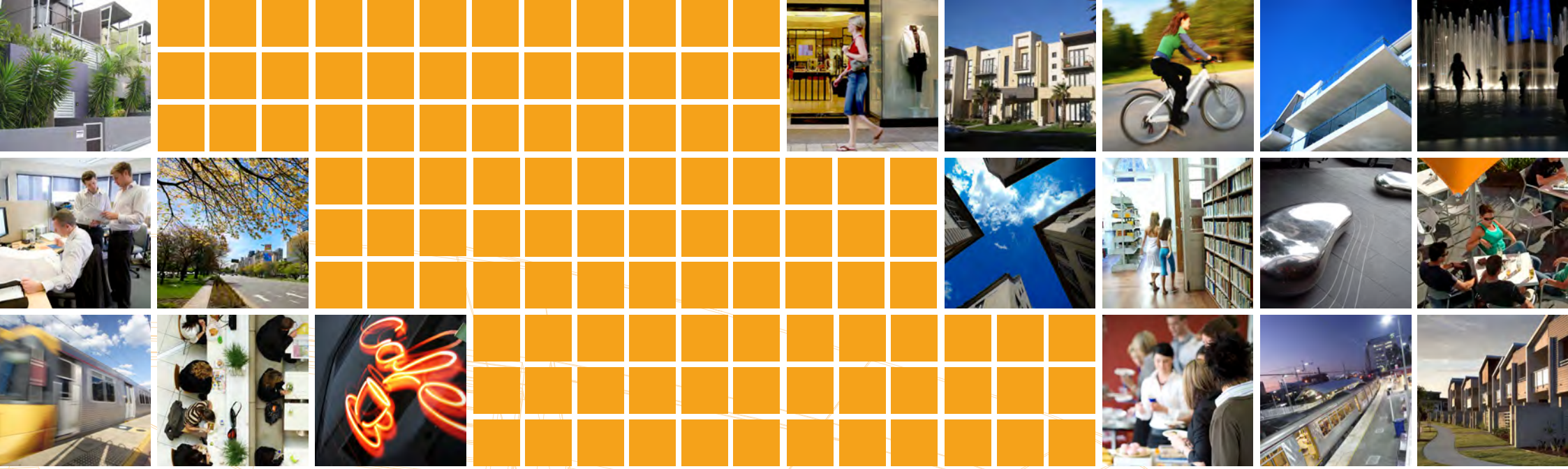


Lot 359 Goddard Street

Rockingham, Integrated Development Guide Plan

LandCorp
November 2012
Urbis.com.au

Contents.

Executive Summary

Lot 359 Goddard Street provides a truly exciting opportunity to deliver on the both the State Government and City of Rockingham's desire to create an active and vibrant, transit based Rockingham City Centre. Identified as a Strategic Metropolitan Centre by the Western Australian Planning Commission's Statement of Planning Policy 4.2 Activity Centre for Perth and Peel, the Rockingham City Centre is to ultimately function as a multipurpose centre, providing a full range of economic and community services for its supporting catchment. Lot 359 will be at the heart of creating that supporting catchment by delivering a range of medium density housing options and mixed use development. In progressing this strategically important project, LandCorp have assembled a team of leading designers and technical consultants and charged them with the task of delivering an exemplar project that facilitates a range of new medium density housing and mixed use typologies, at an affordable price point.

This Integrated Development Guide Plan (IDGP) has been prepared to guide and inform subdivision and development for Lot 359 in a way that is consistent with the City's intentions and LandCorp's vision for the site. Consistent with the requirements of the City's Town Planning Scheme No.2, the IDGP considers matters of subdivision design, built form, land use and access. It also more broadly considers environmental management and how the site will ultimately be serviced. Whilst a statutory document, the IDGP generally establishes a set of parameters as opposed fixed design and land use requirements to allow for flexibility in responding to changing housing and market trends, whilst not compromising the design intent for the project.

1.0 Introduction

1.1 Background

Planning for the Rockingham Strategic Metropolitan Centre has been ongoing for almost 20 years. A considerable amount of work has been undertaken by the City of Rockingham and Department of Planning over that period in establishing a planning framework for the City Centre that ensures quality development, as opposed to simply facilitating growth.

The planning for and development of Lot 359 Goddard Street will be guided by this framework.

1.2 Purpose of Report

The City of Rockingham's Town Planning Scheme No.2 (TPS2) requires the preparation and adoption of an Integrated Development Guide Plan (IDGP) prior to subdivision of the subject site. The intention of an IDGP is to guide the development of built form prior to subdivision occurring. As set out in clause 4.3.5 of TPS2 the contents of the IDGP is to cover:

- Site configuration and lot layout
- Movement networks – pedestrian and vehicular
- Movement networks - access and parking
- Built form – building envelopes, configuration and setbacks
- Built form – height and density

1.3 Report Structure

The IDGP report is structured to provide the necessary information to supplement the design detailed within the IDGP proper. Specifically this report sets out the following;

- Lot 359 Goddard Street background and context
- Design approach and rationale
- IDGP explanatory text
- Infrastructure and environmental considerations
- Implementation

1.4 Study Team

In July 2012 LandCorp assembled a consultant team to develop design concepts for the development of the subject site. This team included:

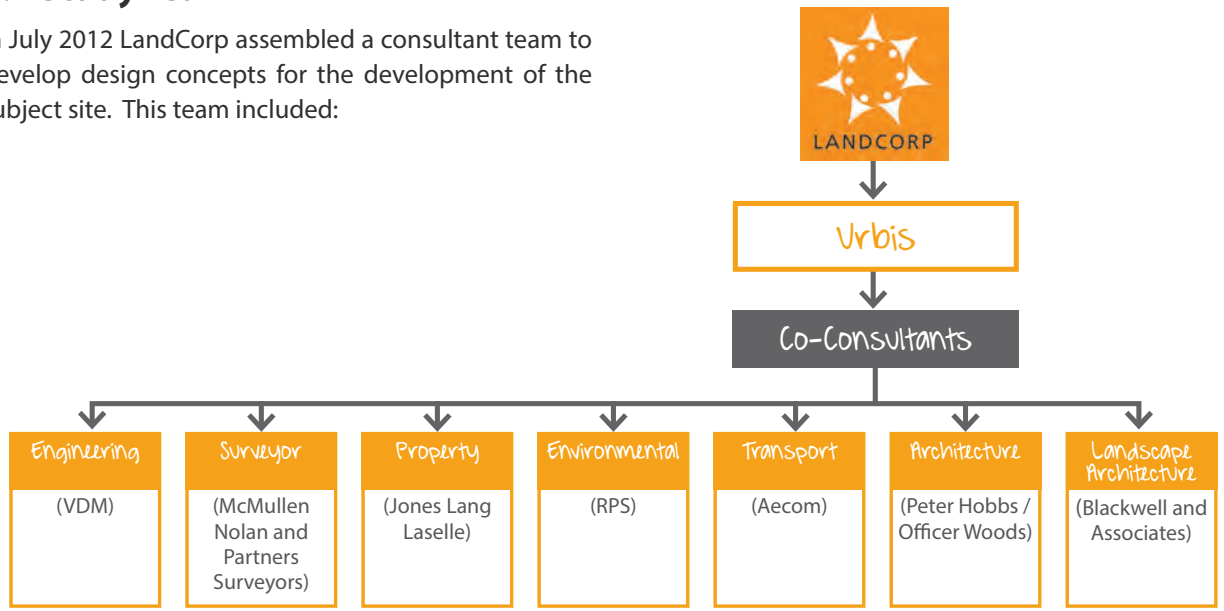


Figure 1 - Team Structure

1.5 Integrated Development Guide Plan Area

The IDGP incorporates the subject site at Lot 359 Goddard Street as identified in **Figure 2** below.

Figure 2 *- Integrated Development Guide Plan Area*

1.6 Location

The subject site is located within the Rockingham Strategic Metropolitan Centre. The Rockingham Strategic Metropolitan Centre consists of a number of precincts which form the framework for the development of the existing City Centre Sector. The subject site is located within the Goddard Precinct, directly to the north of the City Centre Precinct and Civic Precinct and to the west of the Smart Villages Precinct. The proposed transit route runs adjacent the site connecting the Rockingham Transport Interchange and the Rockingham Waterfront.

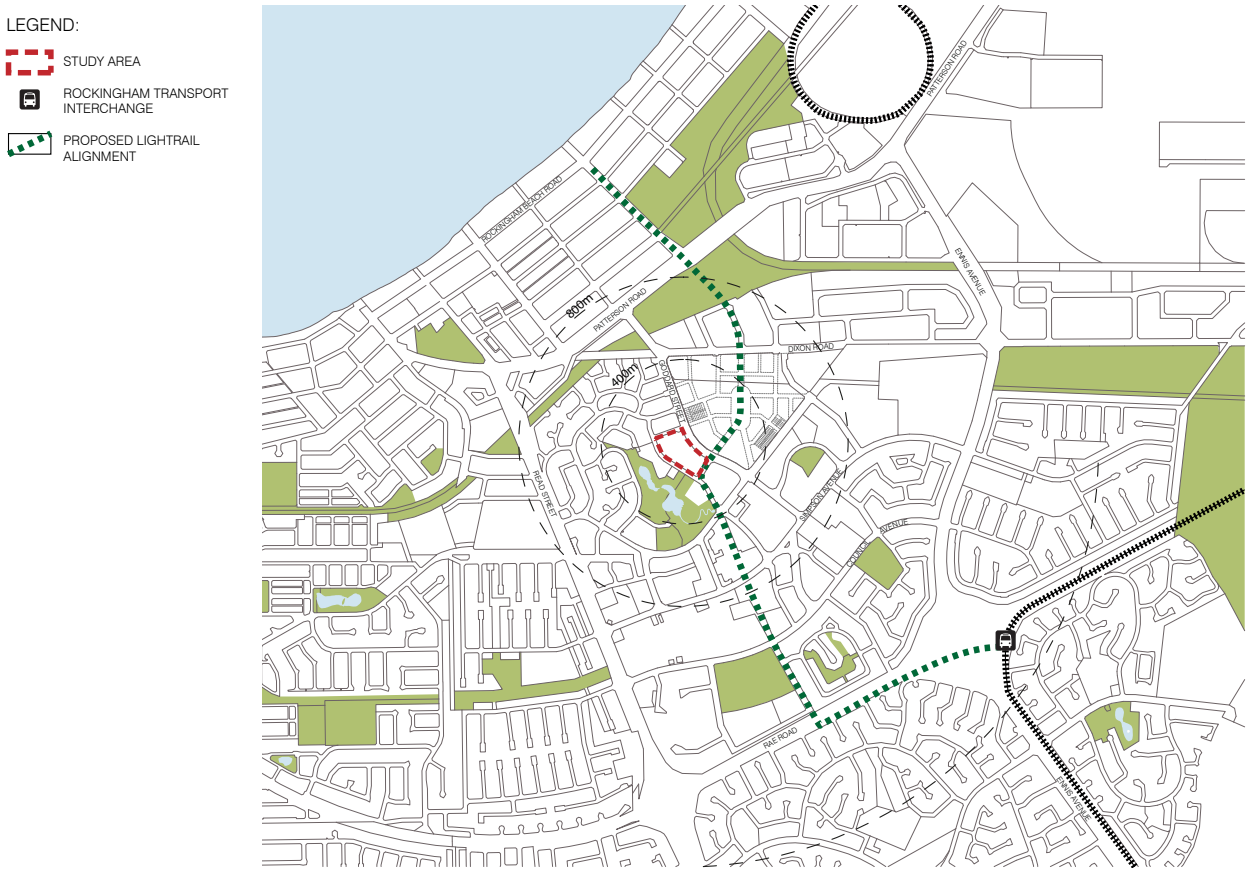


Figure 3 *- Lot 359 Goddard Street Location Plan*

1.7 Design Vision

"Located in the emerging Rockingham City Centre, Lot 359 Goddard Street provides an exciting opportunity to "push the envelope" and create a stepping stone for increasing the density of development in this rapidly expanding coastal city.

Formally set aside as part of the planned route of the South West Metropolitan Railway through the Rockingham Strategic Regional Centre, the site is located between the City Centre, the Rockingham Waterfront and the expansive manicured gardens of City Park. These enviable attributes will naturally lend themselves to the delivery of a variety of housing typologies ranging from traditional apartments to townhouses that will in turn serve a diverse range of households.

A network of small, urban landscaped streets and pedestrian paths, together with a variety of built form products ranging significantly in height, scale and mass, will also create a visually interesting but particularly urban environment. "

1.8 Design Philosophy

The design brief for Lot 359 Goddard Street, Rockingham is to deliver an exemplar project that can demonstrate the benefits of medium density housing in a traditionally low to medium density location. This project further confirms the State Government's commitment to the delivery of Directions 2031 and Beyond, and the City of Rockingham's desire to create an active and vibrant City Centre. The project must demonstrate design excellence in the context of affordability built on the City of Rockingham's intentions to create a truly transit based City Centre.

The following core design philosophies underpin the design work for Lot 359, and permeate all aspects of the project including servicing, lot design, landscape and architecture.

1.8.1 Sustainability

Lot 359 represents the opportunity to test innovative building typologies that are not prevalent in the current urban of the Rockingham City Centre Sector. Throughout the design process LandCorp's sustainability indicators have been a key consideration in measuring sustainability and innovation. The following outlines how these indicators have been addressed and incorporated into the deisgn outcomes for Lot 359 Goddard Street.

Community Wellbeing and Economic Health

Affordable Communities - To provide a range of housing product that competes with the local median price points and product.

Diversity - To provide a range of apartments, town houses and attached dwellings that cater for a wide and diverse demographic including students, singles, first home owners, families and retirees

Adaptability - To provide buildings that can be adapted to the changing needs of the current and future residents

Mixed Use - To provide opportunity for small, local businesses to leverage off a denser neighbourhood structure, providing opportunities for local employment and services

Private Development - Provide a lot structure with land at a price point that encourages private investment in affordable non-typical residential typologies

Environmental Leadership

Transit Orientated - Provide density around proposed Light Rail Transit routes that will reduce reliance on private car usage

Building Performance - Ensure best practice specification in regards power and water consumption.

Amenity

The denser suburban structure proposed by the overarching Rockingham Strategic Regional Centre Plan represents a watershed for a community that has traditionally lived and recreated in a low density residential development. The vision for a denser neighbourhood structure will need to ensure an enhanced residential and neighbourhood amenity.

At the neighbourhood scale, this amenity includes walkable access to parks, schools, shops and services such as libraries and health services. These neighbourhoods need to be safe and secure with appropriate levels of surveillance, while respecting the rights to privacy of each resident.

At the scale of individual buildings, particularly apartment structures, improved amenity includes:

- Access to light, ventilation and outlook
- Visual and Auditory Privacy
- Access to adequate storage and bicycle storage

Design Excellence

The urban structure and built form response of Lot 359 has been largely determined by the Rockingham Strategic Regional Centre Plan, particularly in relation to building setbacks, street block configuration, heights and density. Detailed design has largely followed this established framework; however there are instances where a more site responsive approach is required in striving to achieve the design vision for the project.

More specifically, Lot 359 is in a transitional location between the existing residential development facing City Park, and the proposed high density Smart City located north of Goddard Street. The transitional nature of the site lends itself to the provision of a variety of medium density typologies of varying scales depending upon location either adjacent the surrounding low density residential development or to the north, in close proximity to the future Smart City.

1.9 Design Evolution

The design evolution has essentially been an iterative process focused on bridging the requirements of the current City of Rockingham Strategic Regional Centre Plan in terms of built form and density outcomes, the design team's stated high order visions, and achieving a viable development model in the current low point of the development cycle.

The design process for Goddard Street was an iterative process consisting of 6 design workshops attended by all design team members (LandCorp project managers, urban designers, planners, architects, landscape architects and traffic engineers). These workshops considered a variety of subdivision design options and a variety of built form typologies that responded to these subdivision options. During this iterative process, 3 design sessions were held with senior staff at the City of Rockingham to ensure the design direction was consistent with the intentions of the City.

In striving to achieve the City's residential density targets and built form requirements, the design team considered a number of new (to Perth) typologies including Garden Apartments, Maisonettes and 3-4 storey walk-up Apartments. Some of these typologies were considered appropriate in the context of Goddard Street and others not applicable. The various typologies preferred for specific street blocks within the project area are considered in greater detail as part of **Section 5**.

The outcome of this design testing process is the Integrated Development Guide Plan (IDGP) and supporting plans presented in this document.

2.0 Existing Environment

2.1 Landform

The subject site is generally flat with about 1.0m average crossfall between Goddard Street and McNicholl Street. The indicative height is below 5 metres (m) Australian Height Datum (AHD).

The underlying landform unit is the Quindalup Dune System. The Quindalup Dune System is generally described as being comprised of unconsolidated sand (quartz grains) and shell fragments.

2.2 Access

The site is bounded by Goddard Street to the east, Market Street to the south, McNicholl Street to the west and Marks Place to the north. Goddard Street and Chalgrove Avenue, both of which are classed as City Centre Access Streets provide connections to the major traffic routes and provide access directly into and through the city centre. These streets generally balance access, parking and pedestrian amenity needs. They typically have only one lane in each direction with a median (it should be noted however that Goddard Street has two lanes in each direction).

At the northern end of the transit corridor, the existing Goddard Street/Market Street junction is a priority layout.

The Chalgrove Avenue junction with McNicholl Street is currently signalised and incorporates the bus only corridor on the approach to Chalgrove Avenue, opposite McNicholl Street, as shown on the adjacent photo.

2.3 Vegetation

The subject land is currently vacant and is partially vegetated. There are two extents of regenerated native vegetation in the west and east of the subject land, totalling approximately 1.11ha, and an area comprised of grass species in the centre of the site. The vegetation is noted to be of the Quindalup Vegetation Complex (a coastal dune complex) and largely in a "completely degraded" condition. There are no threatened rare flora species on the site.

One occurrence of the weed species Asparagus asparagoides (bridal creeper) is located on the site.

2.4 Hydrology

The subject site does not contain any surface water features. The expected depth of groundwater is 5m below the natural ground level. The depth of this groundwater is estimated to fluctuate between 0.5m and 3m due to seasonal variation.

The flow of groundwater is expected to be in a north-westerly direction toward the Cockburn Sound.

2.5 Site Contamination

A search of the Department of Environment and Conservation's Contaminated Sites database does not register any contamination on the subject site or surrounding sites. A Preliminary Site Investigation was undertaken by RPS in May 2011. This assessment detected potentially contaminated material on the subject site as a result of uncontrolled filling and dumping of rubbish.

The initial investigations show with the removal of dumped rubbish, the site complies with the Department of Health's stardards requirement for high density development with restricted soil access. Remediation and Validation will be undertaken in accordance with the DEC's Contaminated Sites Management Series (refer **Section 7**) and the Detailed Site Investigation that has also been recently completed.

2.6 Indigenous and Cultural Heritage

A search of the Department of Indigenous Affairs Aboriginal Heritage Inquiry System has been undertaken and no matches were recorded for the subject site or adjacent sites.

A review of the Heritage Council of Western Australia's Heritage Places database was undertaken and no matches were found for the subject site.

3.0 Contextual Site Analysis

3.1 Site Context

The subject site forms part of the Rockingham Strategic Metropolitan Centre (also referenced as the Rockingham Strategic Regional Centre), a 600ha tract of land located approximately 38kms south of the Perth CBD.

3.2 Existing Land Use and Development Patterns

The site comprises Lot 359 Goddard Street and is located within an area characterised by existing and proposed commercial and residential development of varying densities and forms. The area provides a significant level of residential amenity, existing and proposed, through the provision of public open spaces and recreation opportunities.

Within a 1km radius of the subject site there are a number of undeveloped greenfield sites which are appropriately zoned for further residential and town centre development. This is represented in **Table 2** (right) and **Figure 4.**

TABLE 1 - SITE DETAILS

LOT	AREA	OWNER	COUNCIL ZONING
Lot 359 Volume 2061 Folio 784 and 785 of Deposited Plan 17759	2.8083 ha	Western Australian Planning Commission (1/2 Undivided Shares of Lot 359 on Plan 17759)	Primary City Centre
Property Address: 7-29 McNicholl Street, Rockingham			
Council: City of Rockingham			
Ward: Rockingham			

TABLE 2 - SURROUNDING LAND USE

DIRECTION	IMMEDIATELY ADJACENT	FURTHER
North	Residential	Residential Industrial
East	Former Mike Barnett Sports Complex Smart Village A	Murdoch University Rockingham Campus Residential
South	Vacant	Commercial Centre
West	Park Lake Villas	Rockingham Autumn Centre

***Figure 4** - Lot 359 Goddard Street – Surrounding Land Uses*

3.3 Opportunities, Constraints and Issues Analysis

The study team has undertaken a review main opportunities and constraints that apply to the site in order to inform the subdivision layout and built form design. The opportunities and constraints as outlined adjacent, within **Figure 5** have influenced design decisions and enabled the design to respond to the unique characteristics of the site.

Views

The south portion of the site has excellent views to City Park across McNicholl Street. City Park features a lake and a number of clusters of mature trees.

The belltower of the City of Rockingham's administrative building is quite prominent, and can be clearly viewed from many parts of the site.

There is a line of large, attractive gum trees along Goddard St near the Market Street intersection. These trees can be viewed from the southern part of the site.

Existing Vegetation

Site has approximately 25% vegetation coverage, though none is considered significant. Existing vegetation is generally low, with a few modest trees.

Topography

The site is relatively flat, facilitating development without need for excessive retaining.

The existing contours sit, on average, 1m above the level of surrounding streets, creating natural level difference between perimeter lots and the adjacent streets. This is beneficial for preserving privacy for ground level residential dwellings.

The site slopes and soils allow for both internal storage of stormwater drainage and overland flow of large storm events into the adjacent parkland.

Proximity

The site is within walking distance (1.4km) of the Rockingham City Centre.

The site is a key stepping stone in the delivery of the Rockingham City Centre, including the Smart Village and linking the Town Centre to the larger transit-village planned to the north-east.

The site has excellent access and proximity to adjacent City Park.

Accessibility

Good existing vehicular connections around and from the site, particularly once Marks Place, currently a cul de sac, is reconnected with Goddard St.

McNicholl St, bordering the site on the west, leads directly into the heart of the Rockingham City Centre.

The site is located along a proposed future Light Rail Transit (LRT) route, with a proposed stop adjacent to the site on Market Street. In the interim, a rapid bus service will stop at Market St.

Climate

Given the reasonably flat topography and lack of adjacent overshadowing, there is an opportunity to achieve excellent solar orientation for development on the site.

Proximity of the site to the ocean and the openness of the surrounding landscape means development on the site will have access to cooling sea breezes in summer.

Figure 5 *- Lot 359 Goddard Street – Opportunities and Constraints Plan*

4.0 Planning Context

4.1 Introduction

The following planning documents have informed the preparation of the design concepts for Lot 359 Goddard Street.

4.2 Metropolitan Region Scheme

Lot 359 Goddard Street is zoned Central City Area Zone under the Metropolitan Regional Scheme (MRS) as per **Figure 6**

4.3 Directions 2031 and Beyond

Creating a "world class liveable city: green, vibrant, more compact and accessible with a unique sense of place". Directions 2031 and Beyond provides a high level spatial framework and vision for the future growth of the Perth and Peel Region. Directions 2031 estimates the population within the south west sub-region to increase by 34% to approximately 278,000 persons by 2031.

Rockingham has been highlighted as the Strategic Metropolitan Centre for the South West sub-region. Future development within the Strategic Metropolitan Centre is noted to require the provision of a multi-purpose centre with a range of services in which residents 'live, work and play'.

4.4 State Planning Policy 4.2 Activity Centres for Perth and Peel

State Planning Policy No. 4.5 (SPP 4.2) sets out the broad planning requirements to guide the development of activity centres within the Perth and Peel Region. Rockingham is noted as the Strategic Metropolitan Centre and as such the policy sets out a desirable residential density of 45 dwellings per gross residential hectare within the walkable catchment of 800m.

The policy is intended to be implemented through the planning strategies, schemes and plans at the local level and provisions are included for the preparation of activity centre structure plans, and district and local structure plans.

4.5 Liveable Neighbourhoods

Liveable Neighbourhoods provides the sustainable development of sustainable communities within WA to 2029. The policy aims to create neighbourhoods which:

- Are walkable and reduce car dependence
- Provide a sense of community and local identity
- Provide access via an interconnected street network which is safe and efficient
- Promote active street-land use interfaces
- Facilitate development which supports use of public transport systems
- Provide a wide range of living, employment and leisure opportunities
- Are adaptable over time
- Provide a variety of lot sizes and housing types, maximising land efficiency
- Provide an integrated approach to open space and urban water management
- The design for the subdivision layout and built form of Lot 359 Goddard Street has been undertaken, consistent with the requirements of Liveable Neighbourhoods.

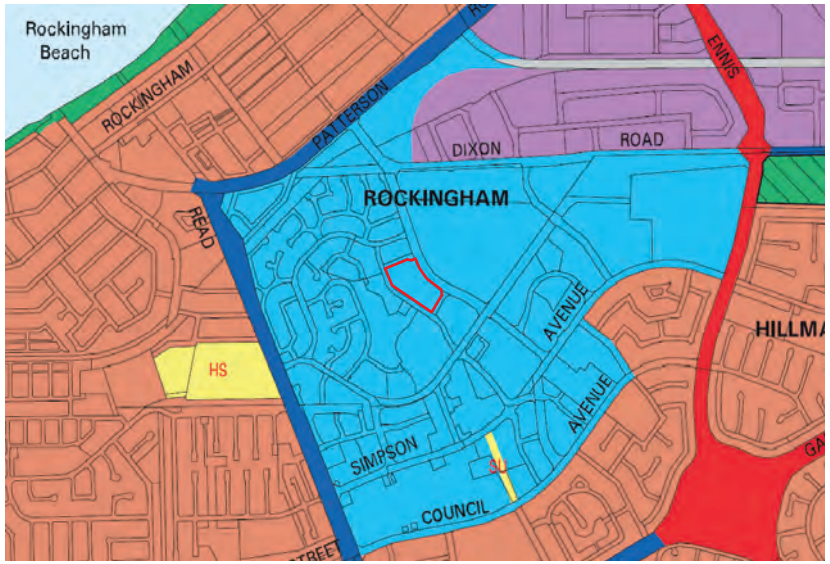


Figure 6 *- Metropolitan Regional Scheme (Source: WAPC)*

Figure 7 *- City of Rockingham TPS2 Zoning Plan (Source: City Of Rockingham)*

4.6 City of Rockingham Town Planning Scheme No.2

The City of Rockingham Town Planning Scheme No.2 (TPS2), gazetted in November 2004, provides the statutory basis for planning within the City of Rockingham.

The zoning of the subject site of land is illustrated in **Figure 7**.

The subject site is located within the Primary Centre City Centre Zone, a subset of the Primary Centre Zone. In summary the objectives for the relevant zones (both which apply) are set out to:

- Establish a vibrant and diverse people oriented centre
- Provide a diverse mix of uses and land use patterns
- Create permeable, well-connected streets and public spaces
- Facilitate built form and urban design outcomes which promote high standards of quality and amenity
- Facilitate sustainable economic growth and employment
- The following considerations are applicable to development within the Primary Centre City Centre Zone:
- Regard is to be given to the provisions of the Centre Plan, Development Policy Plan (City Centre Sector) and any other policy which applies.
- An Integrated Development Guide Plan is to be adopted by the City prior to any application for subdivision
- The Residential Design Codes are not to apply to the development of land in the Primary Centre City Centre Zone for any of the residential purposes dealt with by the Residential Design Codes.
- Minimum Residential Density within the Primary Centre City Centre Zone for all grouped or multiple dwellings must have a minimum of one dwelling per 125m^2 land area.

4.7 City of Rockingham Strategic Regional Centre Plan

The City of Rockingham Strategic Regional Centre plan is an endorsed Centre Plan to guide the development of public and private property within the Rockingham Strategic Regional Centre.

'The vision is for a modern, distinctly coastal centre offering a wide range of mixed uses including retail, commercial, office, civic, residential, education and recreation within an accessible and highly inter-connected, urban-scaled townscape, comprising a major activity centre and related urban village based on 'main street' principals'.

The location of the development site within the Rockingham Strategic Regional Centre is shown in **Figure 8**.

4.7.1 Regional Centre Framework Plan

The Centre Plan sets out a framework plan to illustrate the general built form, movement network, and public and private spaces associated with the Concept Plan. The framework plan factors in long term development of the Centre and provides for initial development and redevelopment potential.

The following development provisions are relevant to the subject site:

TABLE 3 - REGIONAL CENTRE FRAMEWORK PLAN – DEVELOPMENT CONCEPTS

SECTION	REQUIREMENT
9.2 - Residential Density	80 – 160+ dwellings per hectare (see **Figure 9**)
9.3 - Building Height	2-6 stories (see **Figure 9**) 2-9+ stories
9.4 – Frontage Types* Type 2 (Medium Activation) Type 3 (Moderate Activation) Type 4 (Moderate Activation)	(see **Figure 10**) Nil setback (Market Street, corner of Market Street and McNicholl Street) 2m setback (part McNicholl Street) 2-4m setback (Goddard Street, part McNicholl Street, Marks Place)

**Frontage type requirements*

Type 2: Medium Activation – 2 to 3 story façade positioned at street front, consisting of secondary retail, customer oriented offices, residential lobbies. Buildings should address the street with at least 60% of the façade being transparent.

Type 3: Moderate Activation – 2 to 3 story façade positioned behind a 2m green landscaped setback. Buildings should address the street with commercial tenancies having a transparent façade of 60%, and residential units of at least 30%.

Type 4: Moderate Activation - 2 to 3 story façade positioned behind a 2 -4m green landscaped setback. Mixed use buildings should address the street with commercial tenancies having a transparent façade of 60%, and residential units of at least 30%.

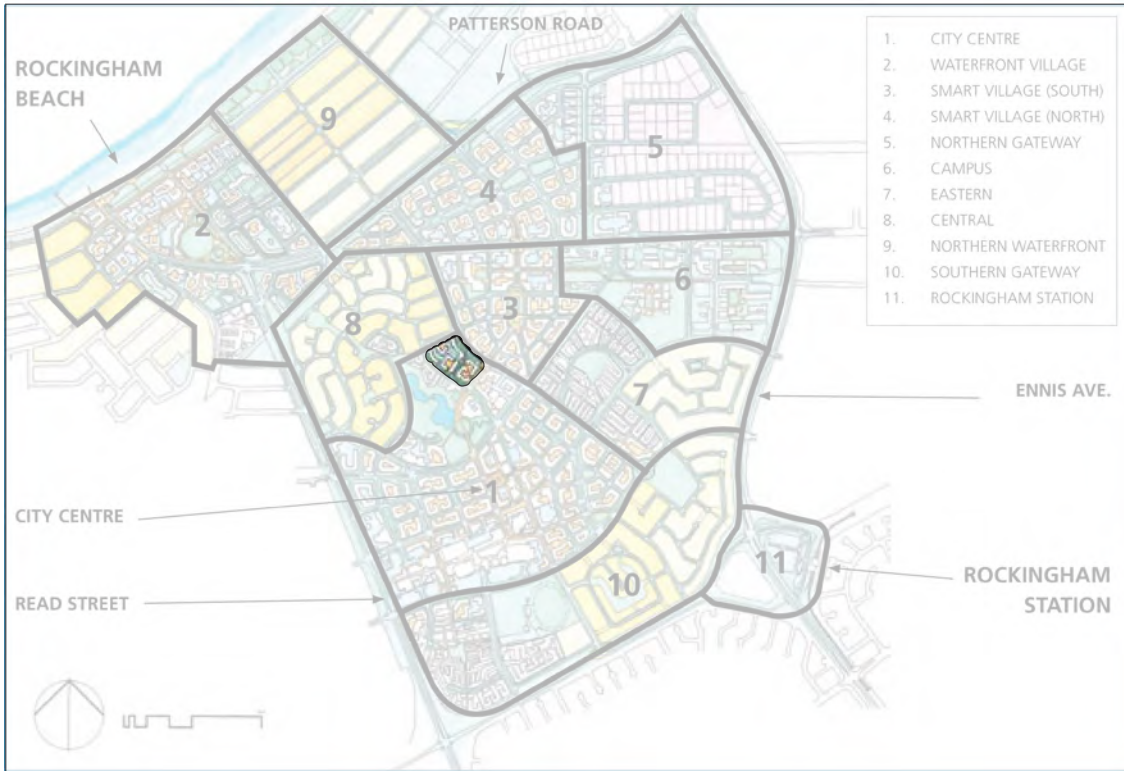


Figure 8 *-Rockingham Strategic Regional Centre Plan – Sector Overlay (Source: City of Rockingham)*

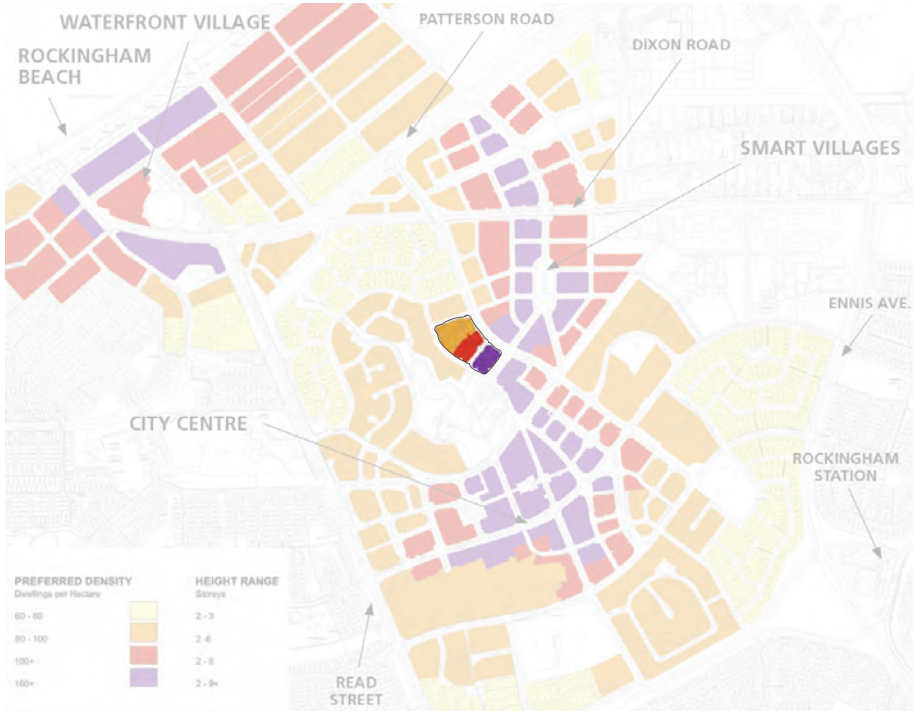


Figure 9 *-Rockingham Strategic Regional Centre Plan – Building Density (Source: City of Rockingham)*

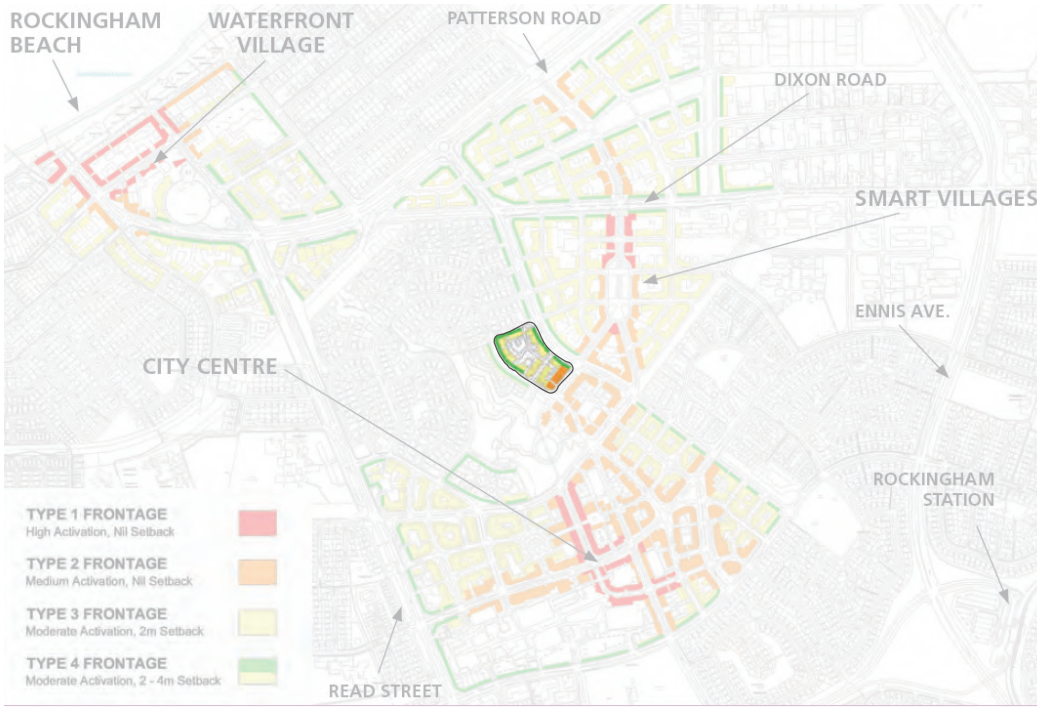


Figure 10 *- Rockingham Strategic Regional Centre Plan – Frontage Types (Source: City of Rockingham)*

4.7.2 Planning Policy No.3.2.1 Development Policy Plan City Centre Sector

The subject site is located within the 'Goddard Precinct'. This precinct is primarily noted to be medium to high density mixed use. The indicative development pattern can be seen in **Figure 11** and is characterised by the following:

- Preferred land uses – office and commercial, professional consulting rooms, showrooms, residential, serviced accommodation, eating and drinking venues, retail, leisure and education.
- Development of an urban townscape which creates high quality streetscapes through multi-level commercial and mixed use buildings along the Goddard Street and Market Street frontages.
- Creating a connection between Marks Street and Goddard Street.
- Managing the interface with existing residential development through building mass and scale controls, with particular regard to overshadowing
- Residential development which facilitates a balanced mix of dwelling types and densities ranging between 80 and 200 dwellings per hectare
- Side and rear setbacks by reference to the concept plan and at Council's discretion
- Density and height which is in accordance with Figure 9.5 'Density and Height'
- Provision of a minimum 2 storey or equivalent parapet height to street or public space with maintenance of a 10m height limit along street frontages. Height greater than 10m to be setback a minimum of 6m
- Car parking in accordance with that of the City Centre Development Policy Plan (refer **Table 4**)
- No parking permitted between road reserves and building frontages and no closer than 20m to the front street boundary
- Opportunity to contribute in lieu of TPS2 landscaping requirements, to the cost of streetscape and landscape works the vicinity of the development site
- Preparation of a landscaping plan which is generally consistent with the desired urban character of the Precinct.

The design of the subdivision and indicative development has taken into account the requirements of the City Centre Development Policy were applicable, and proposes variations where required. These are discussed within section 5.

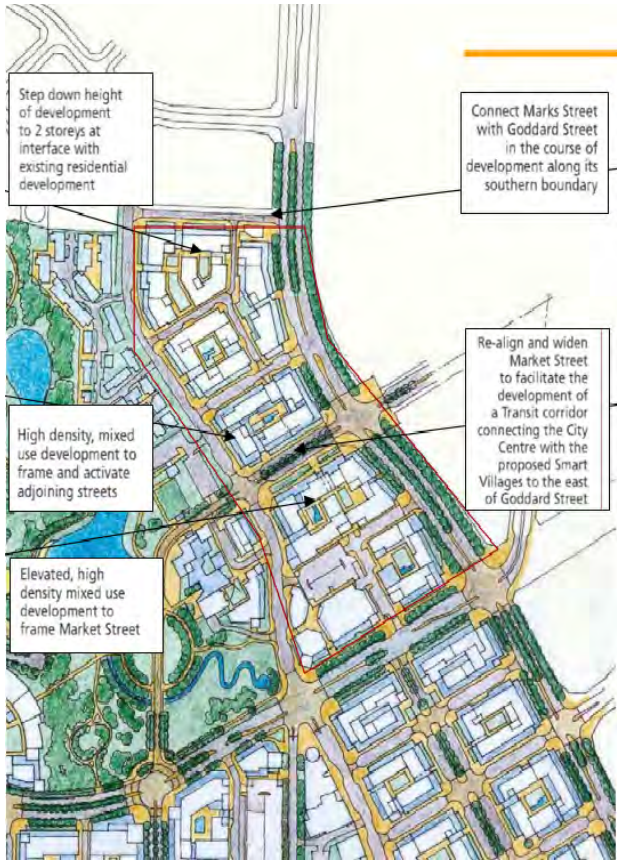
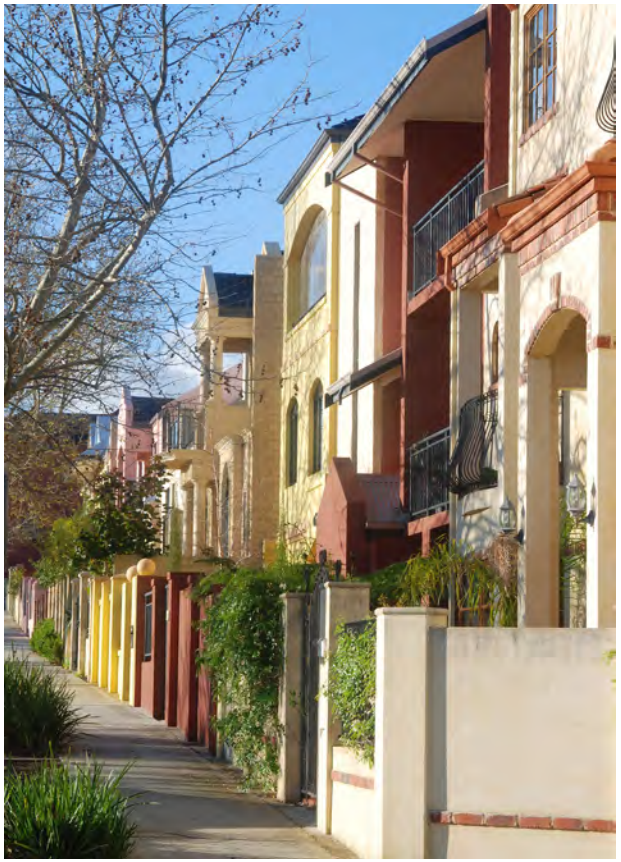


Figure 11 *- Goddard Street Precinct (Source: City of Rockingham)*



As outlined within the Rockingham City Centre Development Policy Plan, the following car parking rates are applicable to development within the Rockingham Centre:

TABLE 4 - CITY CENTRE DEVELOPMENT POLICY PLAN - CAR PARKING (TABLE A1)

USE	MINIMUM PARKING REQUIREMENT (AND MAXIMUM PARKING ALLOWABLE – IN BRACKETS)
Residential	The provision of the Residential Design Codes are taken to apply
Cinema, Theatre	1 bay per 8 (6) seats
Consulting Rooms	3 (4) bays per consultant
Fast Food Outlet	1 bay per 14 (11)m² NLA
Health Studio	1 bay per 20 (15)m² NLA available to the public, including swimming pools
Office	1 bay per 60 (40)m² NLA
Private Recreation, Restaurant, Reception Centre	1 bay for every 8 (6) persons the building is designed to accommodate
Shop	1 bay per 22 (17)m² NLA
Showroom, Warehouse	1 bay per 80 (60)m² NLA
Hotel, Motel, Tavern	1 bay per bedroom plus 1 bay for every 5 (4)m² of bar and public areas including lounges, beer gardens and restaurants
Childcare Premises	1 bay per employee and 1 bay per eight children
Public assembly, public worship	1 bay per 8 (6) seats
Short stay accommodation	The provisions of the Residential Design Codes with respect to multiple dwellings are taken to apply.


GODDARD
MARKS
PLACE
McNICHOLL

5 Proposed Integrated Development Guide Plan

This section describes the various design components that make up the IDGP.

5.1 Subdivision Layout

Intended Character

Lot 359 is part of the City of Rockingham's 'City Centre' development plan. The City Centre plan envisions medium- and high-density housing and mixed-use development, arranged around tight urban streets and public spaces. It envisions a connected network of small, walkable streets. This development pattern is predicated on a future LRT mass transit system supporting more intensive development around the city centre. The proposed IDGP for Lot 359 creates a framework that balances short and long term objectives: allowing for a more intensive development pattern in the future while accommodating development that is feasible in the current market.

Consistent with the City of Rockingham's planning framework, buildings will have small setbacks and direct interfaces with the streets. This will create an intimate street scale and promote interaction among residents, enhancing the sense of vibrancy and safety of the precinct. Building heights will be carefully controlled; minimum heights ensure an appropriate level of containment to streets and public spaces; maximum heights and setbacks above 3 storeys limit overshadowing and bulk impacts.

To Market Street, offices and retail shops at ground level will provide activity, weather protection, and visual interest for pedestrians. For the balance of the precinct, ground level residential dwellings will be set up 0.5m above the adjacent footpath to ensure privacy protection but also allow for some interaction with passers-by.

The street environment is intended to handle the balance of through-traffic in the area, leaving the internal street network to accommodate primarily local trips. As such, a very low-speed environment is envisioned for these local streets, one where pedestrians and vehicles share priority and space. The design of these streets is modelled on successful European examples from Holland and Scandinavia – multipurpose spaces that balance a variety of travel modes and that encourage walking, cycling and enthusiastic use of the public realm.

This design intention requires that the streets vary from conventional local streets in their design and use of materials. The width of the main internal spine is reduced to 12.5m (from 15m standard local street reserve), though the reserve flares out at certain points to merge with open space, creating the feeling that the street is simply an extension of the public space network and useable by all modes. The street paving will be consistent across the road reserve, with the vehicle travel area defined by trees, car parking, benches, and other landscape elements rather than barrier kerbing. Extensive tree planting will ensure that the public spaces are well shaded, providing a greening and softening to an otherwise largely hard landscaped environment. Several linkages will be pedestrian only, allowing space for children's playgrounds, bench seating, and art work. These spaces will also accommodate underground storage for stormwater.

Site Geometry

Lot 359 Goddard Street is a trapezoidal shaped parcel, sitting between Goddard St and McNichol Streets to the east and west. The short end along Marks Place faces roughly north. The parcel then twists around and becomes wider as it progresses south, such that the southern boundary to Market Street is angled north-east / south-west.

While serviced by perimeter roads, the site is too deep to use these as the only access points. As such, an internal spine road was necessary to provide access to the internal blocks. The proposed spine roads bisects the parcel, running south from Marks Place to about 60m from Market Street, then it turns 90 degrees and heads west, providing a vista to the adjacent City Park.

In addition to the central spine road, a number of smaller laneways and pedestrian links provide connections through the site. These generally link across the site, running south-west from Goddard St through to McNicholl Street. This network of streets and public spaces creates five distinct development parcels, which are then further divided for various land uses and building typologies. The development parcel along Market Street is large in order to accommodate sufficient internal block car parking to support the high-density, mixed-use development intended for the southern precinct. The other parcels are smaller in scale to match their intended densities.

The broad approach to density on the site is to graduate it from Marks Place to Market Street (north to south) and from McNicholl to Goddard Street (west to east). This results in the lowest density at the corner of Marks Place and McNicholl Street, and the highest density proposed on the corner of Market Street and Goddard Street. In general, the buildings envisioned along McNicholl Street are likely to be 2-3 storeys in height, while those along Goddard Street may be considerably higher (4-9 storeys).

Flexible Framework

The three parcels in the north-west portion of the site have been specifically designed to create a standard 25m block dimension with access from a rear laneway. This dimension can accommodate a broad range of building typologies (and associated car parking) envisioned for the site, including zero-lot-line townhouses, terraces (variety of widths), maisonettes, walk-up apartments, and car court apartments. This flexible framework allows a diverse mix of buildings to enliven the streetscapes, accommodate a range of typologies to suit various demographic groups, and allows builders to test various ideas to see what the market prefers. This promotes a rich variety of housing within the precinct and helps reduce the risk profile of the project by allowing developers to test various options and change course if necessary.

5.2 Proposed Building Envelopes

The proposed Integrated Development Guide Plan (refer **Figure 12)** has been prepared to facilitate a variety of mixed use and medium density residential development, generally in accordance with the Rockingham Strategic Regional Centre Plan, Regional Centre Framework Plan and the City Centre Development Policy Plan. Clause 4.3.5 (3a) of the City of Rockingham TPS 2 requires an IDGP to consider the following:

- Proposed building envelopes;
- Indicative building configurations;
- Setbacks;
- Pedestrian and vehicular access;
- Indicative car parking layouts;

The following outlines the State Government's unique response to these requirements and specifically highlights where the proposed IDGP seeks to vary from the framework established by the City of Rockingham and why this variation is being sought. The site has been broken down into 3 different frontage types. Each of the frontage types have their own setback, height and land use requirements and other specific site specific requirements where applicable. These are outlined in **Figure 13.**

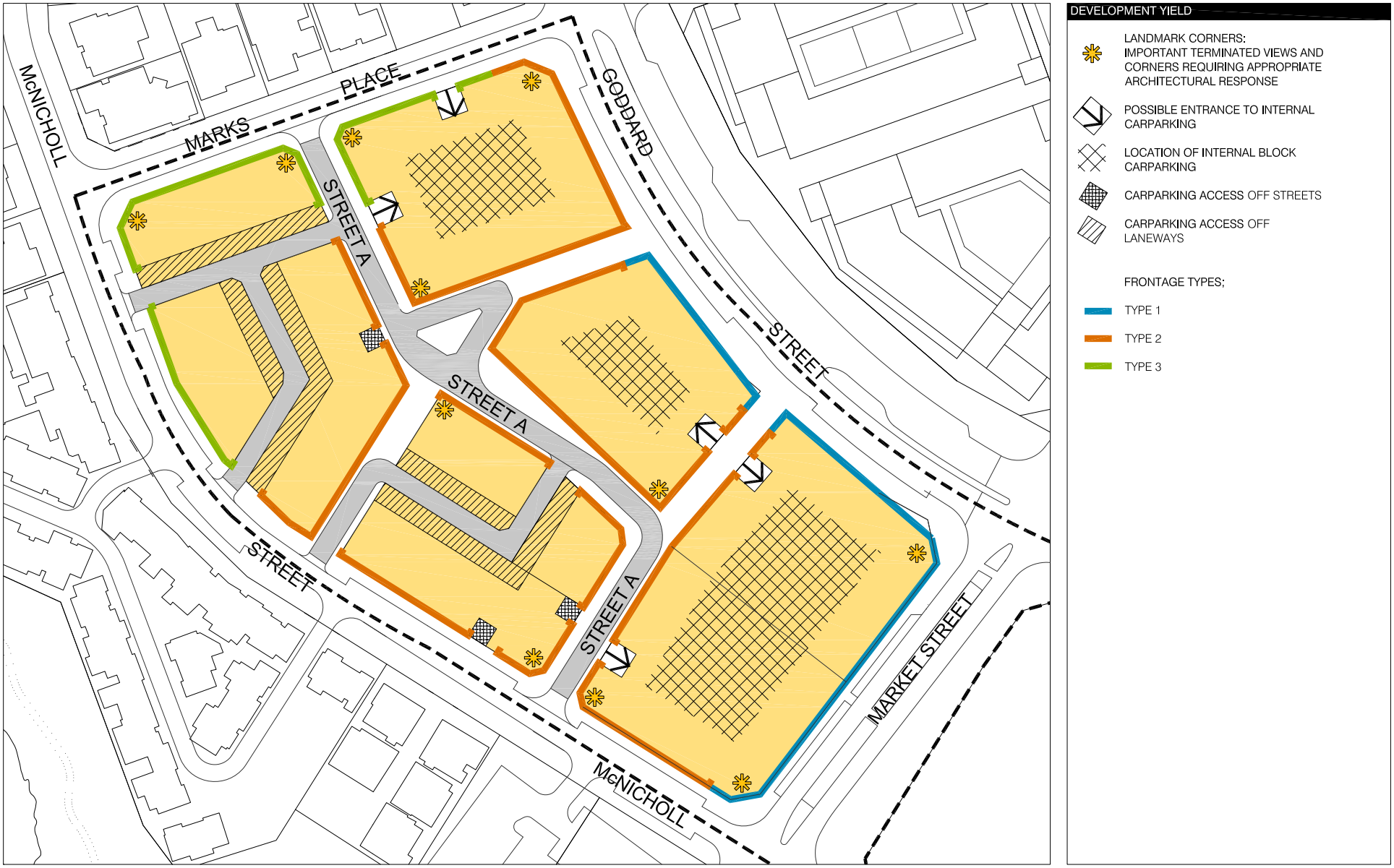
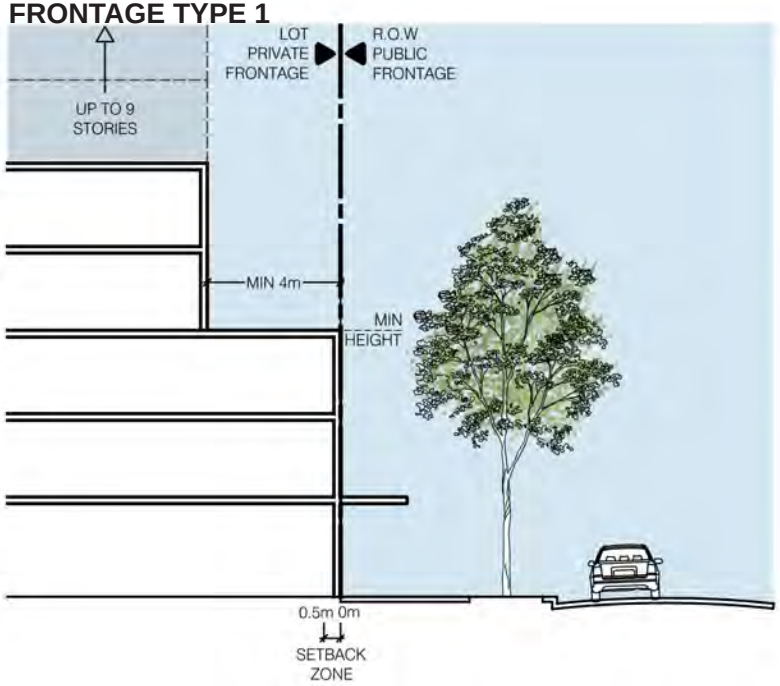
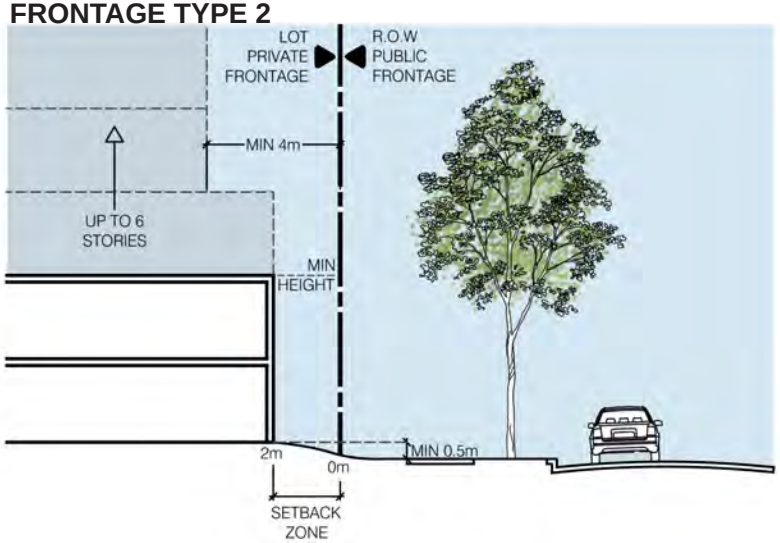


Figure 12 *- Integrated Development Guide Plan*

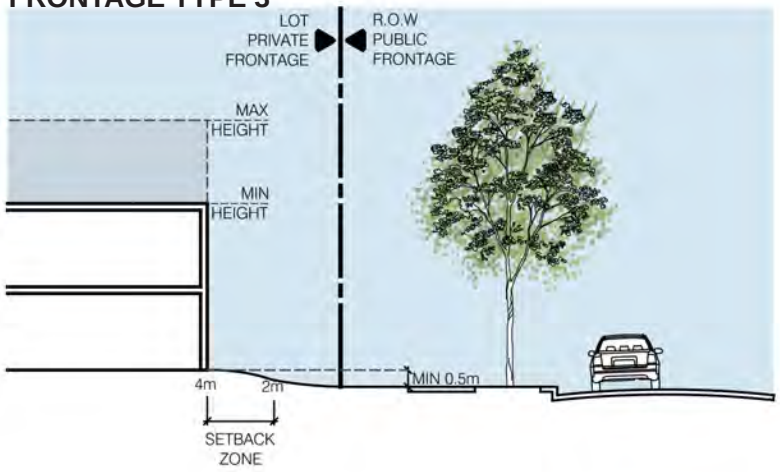
FRONTAGE TYPE 1



FRONTAGE TYPE 2



FRONTAGE TYPE 3



	Frontage 1	Frontage 2	Frontage 3
Primary Entry - Public Footpath	Yes	Yes	Yes
Permissible Ground Floor Land Use	Retail / Commercial	Residential / Commercial / Retail*	Residential
Min Front Setback (1-3 Storeys)	Nil	Nil	2m
Max Front Setback (1-3 Storeys)	0.5m	2m	4m
Min Front Setback (4+ Storeys)	4m	4m	n/a
Min Lot Frontage Buildout	80%	70%	60%
Min Height	3 Storeys	2 Storeys	2 Storeys
Max Height	9 Storeys	6 Storeys	3 Storeys
Ground Floor Level	Flush with Footpath	Min 0.5m above Footpath	Min 0.5m above Footpath
Street-Facing Ground Floor Glazing	Min 60% Below 3.5m	Min 30% Below 3.0m	Min 30% Below 3.0m
Awning Depth	Min 2m	n/a	n/a
Awnings Along Footpath	80% of Frontage	n/a	n/a

**Small scale retail (ie no greater than 50m2 gfa) may be permissible*

Figure 13 *- Frontage Types*

5.3 Indicative Building Configurations

The Integrated Development Guide Plan for Lot 359 provides for a number of different building typologies across the site. The following section and **Figure 14** considers the preferred building typologies for each individual street block (or grouping of street blocks). It is important to note that whilst these typologies are preferred, they are by no means fixed and alternative building configurations will be achievable if all other requirements of the IDGP and the City's Centre Plan are satisfied. Development site depths of 25m ensure there is flexibility within the IDGP design to accommodate a variety of medium density housing typologies for most locations.

As has been outlined previously, as part of this project, LandCorp is seeking to deliver a minimum of 30 transit based mixed use medium density dwellings and this is likely to be delivered on Street Block B.

5.3.1 Street Block A

Street Block A is intended to be the most dense and diverse street block within the IDGP area; the sites proximity to the Rockingham City Centre Smart Village and being located on the future transit corridor only reaffirm why this site should be developed out to its maximum potential. LandCorp considers apartments ranging between 4-6 storey's (with the potential for up to 9 storeys recessed back from the street), the optimal form of development in this location. As outlined in the IDGP, development should generally provide a contiguous frontage to both Market and Goddard Streets. Ground floor uses should be retail/commercial in nature.

Parking within this street block is to be internalised and sleeved from streets and may be provided at grade or be decked should parking requirement necessitate.

5.3.2 Street Block B

Street Block B will predominantly accommodate 3-4 storey apartments, framing McNicholl and Market Streets. Ground floor uses to Market Street shall again be retail/commercial, consistent with the Strategic Regional Centre Framework. It is also intended that a series of small frontage (i.e 5m) two storey terraces be provided to the internal access street; development in this location however could take on different forms providing that density targets and other components of the IDGP and Strategic Regional Centre Framework are satisfied.

Like Street Block A, parking in this located is to be internalised and screened from public view. Parking is likely to be provided at grade, however decked parking could be provided for should residential densities warrant a greater provision of parking. It is the intention that detached carports/garages will be provided for the terrace development to the internal street.

As previously mentioned, LandCorp is likely to utilise this site to deliver 30 affordable housing units, as part of the Federal Government's Liveable Cities program.

1 Medium Rise Mixed Use Apartments

2 Mixed Use Apartments

3 Walk-up Apartments

4 Maisonette Apartments

5 5m Terrace Apartments

6 7m Terrace Apartments

7 Motor Court Apartments

Figure 14 *- Indicative Building Configurations*

5.3.3 Street Block C

As outlined in **Figure 14**, it is the desire of LandCorp for Street Block C to contain an array of medium density housing options. Whilst the individual development sites within the block are interchangeable from a typology perspective, it is LandCorp's desire to see a range of typologies provided as is identified in **Figure 14**. Specifically, this means the delivery of small frontage (5-7m) terrace housing to McNicholl Street and the internal access street, maisonette form development at the corner of McNicholl Street and the internal access street and walk-up apartments for the north facing development site with frontage to the internal access street. It is envisaged that development in this location will vary from 2 storeys for the terrace housing and 2-3 storey development for the maisonettes and walk-up apartments. This lower scale (in comparison to street blocks A and B) is considered appropriate from an interface perspective in the context of the single storey residential development to the immediate south of this site.

Parking for all development within this location should be detached as identified on the IDGP and may take the form of garages, carports or open shared car parking areas.

5.3.4 Street Block D

Similar to Street Block C, Block D is also to provide for a variety of medium density residential housing typologies ranging from terraces to walk-up apartments and maisonettes. Development within this street block is to be in the 2-3 storey range with 2 storey development to Marks Place and McNicholl Street preferable again for reasons of interface and scale.

Again parking is to be detached and may take the form of garages, carports and open shared parking areas.

5.3.5 Street Block E

The regular shape and size of Street Block E affords itself to a number of possible building typologies. These could include terrace development, walk-up apartments or a Californian style car-court development. Regardless of typology delivered, any development on this site shall provide a primarily contiguous frontage to all streets and should be 2-3 storeys in scale (2 storeys preferable to Marks Place). All parking areas shall be screened from public view wherever possible.

5.3.6 Street Block F

With frontage to Goddard Street and its proximity to the Rockingham City Centre Smart Village, it is intended that Street Flock F will facilitate mixed use apartment development of a scale ranging from 3-4 storeys. Ground floor uses to Goddard Street will be commercial in nature. Development on this site should, wherever possible provide a contiguous frontage to streets and screen parking areas from public view. Parking in this location may be at grade or decked, depending upon the ultimate residential yield.

5.3.7 Landmark Buildings

The IDGP (refer **Figure 12**) identifies a number of landmark locations throughout the site. These sites are either termination points for important views/vistas or prominent on external roads. These landmark locations are to be treated in one of the following ways:

- Architectural emphasis such as an element of increased height, distinctive roof form, balconies, articulation of wall elements, entry forecourts, materials and/or colour;
- Introduction of public art; or
- A landscape treatment.

The purpose of differentiating these sites is to promote legibility through the project, assist in way finding and provide visual interest and character.

5.3.8 Residential Densities

Figure 15 identifies the three density target zones within the IDGP area. The target densities outlined are consistent with the Regional Centre Framework Plan. **Figure 16** outlines the medium and high density residential development yields associated with the density target zones.

It is important to note that these figures are intended to be targets and not minimum requirements and Council is to consider the applicability of residential densities provided at either the subdivision of development application stage of the planning process.

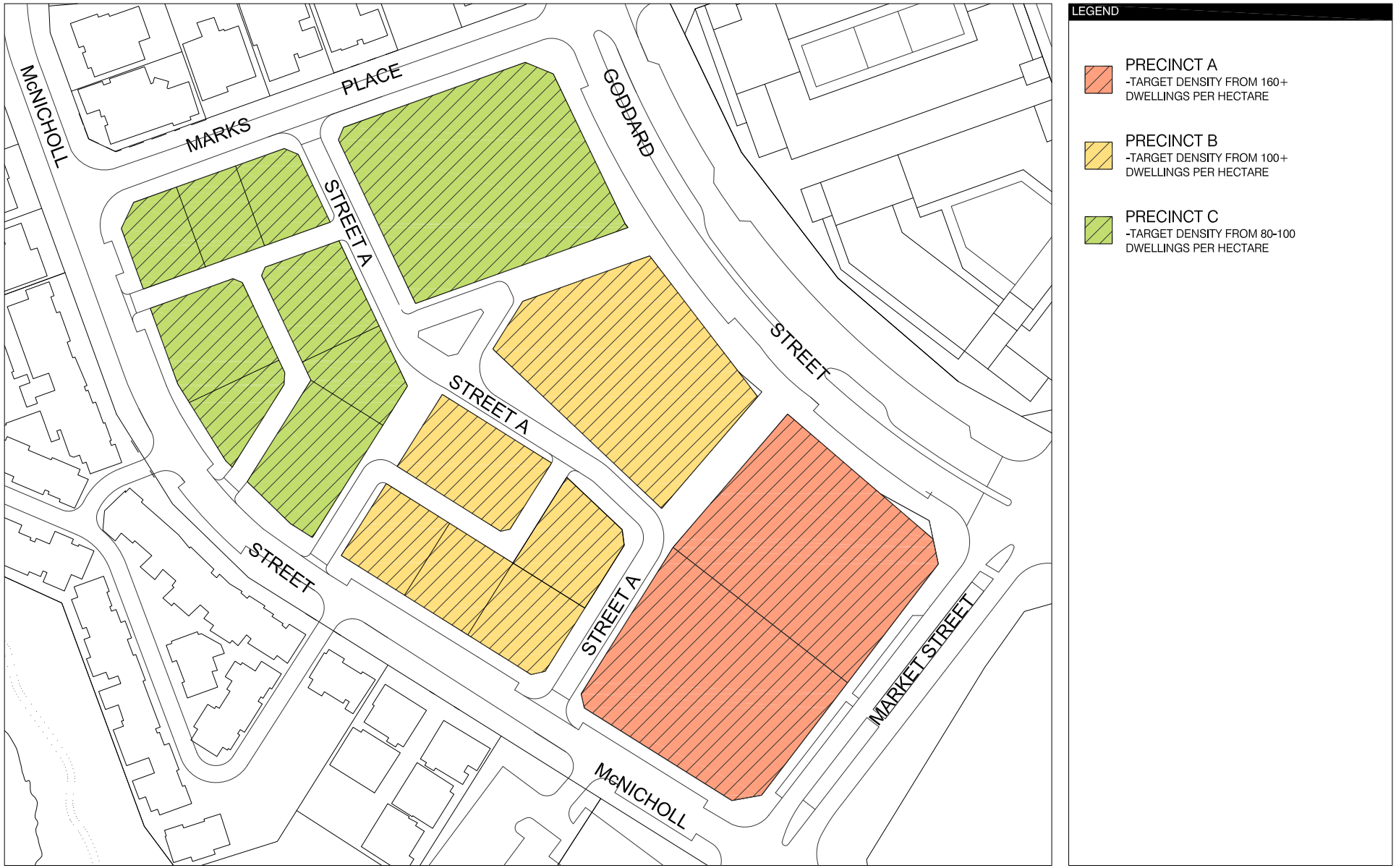
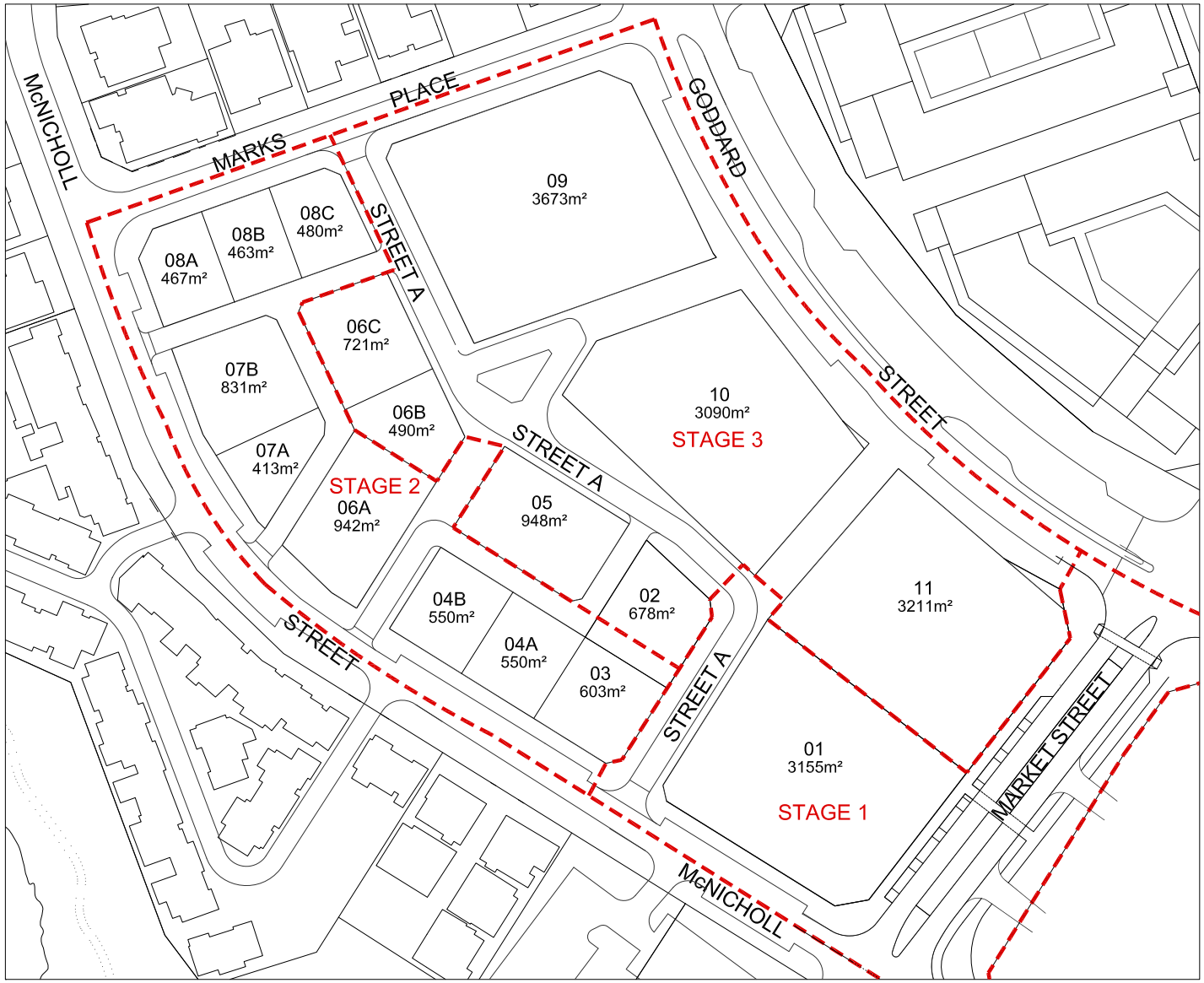


Figure 15 *- Residential Densities - Tasrget Zones*



DEVELOPMENT YIELD	MEDIUM	HIGH DENISTY
BLOCK 1:	3,155m²	3,155m²
DWELLINGS:	30	30
COMMERCIAL FLOOR AREA:	902m²	902m²
BLOCK 2:	678m²	678m²
SHORT TERM:	678m²	678m²
TERRACE:	4	
APARTMENT:		12
LONG TERM:	678m²	678m²
TERRACE:	5	
APARTMENT:		15
BLOCK 3:	603m²	603m²
MAISONETTE:	4	
APARTMENT:		6
BLOCK 4:	1,100m²	1,100m²
BLOCK 4A:	550m²	550m²
TERRACE:	3	
WALK UP:		9
BLOCK 4B:	550m²	550m²
TERRACE:	3	
WALK UP:		9
BLOCK 5:	948m²	948m²
WALK UP:	12	12
BLOCK 6:	2,153m²	2,153m²
BLOCK 6A:	942m²	942m²
TERRACE:	5	
WALK UP:		12
BLOCK 6B:	490m²	490m²
MAISONETTE:	4	
WALK UP:		6
BLOCK 6C:	721m²	721m²
WALK UP:	9	9
BLOCK 7:	1,244m²	1,244m²
BLOCK 7A:	413m²	413m²
MAISONETTE:	4	
WALK UP:		6
BLOCK 7B:	831m²	831m²
TERRACE:	4	
WALK UP:		12
BLOCK 8:	1,410m²	1,410m²
BLOCK 8A:	467m²	467m²
TERRACE:	4	
WALK UP:		6
BLOCK 8B:	463m²	463m²
MAISONETTE:	4	
WALK UP:		6
BLOCK 8C:	480m²	480m²
WALK UP:	4	6
BLOCK 9:	3,673m²	3,673m²
APARTMENT UNIT:	24	39
WALK UP:		36
BLOCK 10:	3,090m²	3,090m²
APARTMENT UNIT:	24	24
WALK UP:	33	33
COMMERCIAL FLOOR AREA:	969m²	969m²
BLOCK 11:	3,211m²	3,211m²
APARTMENT UNIT:	68	68
WALK UP:	12	12
COMMERCIAL FLOOR AREA:	1,155m²	1,155m²
TOTAL DEVELOPABLE AREA:	21,265m²	21,265m²
TOTAL UNITS:	256	356
TOTAL COMMERCIAL FLOOR AREA:	3,026m²	3,026m²

Figure 16 *- Residential Densities - Development Yields*

5.4 Movement, Access and Parking

5.4.1 Vehicular and Pedestrian Access

Figure 17 describes the overall proposed movement network for Lot 359 Goddard Street. As can be seen by this figure, through the site, vehicular and pedestrian access will be primarily by Street A. This street is intended to perform the function of a "Small Town Centre Street" as identified within Element 2, Figure 23 of the WAPC's Liveable Neighbourhoods. Street A will primarily have a reserve width of 12.5m but expand in some locations where landscape features and additional tree planting/parking are being sought. More specifically, the street itself is intended to be a two-way vehicular movement, low speed environment, where both pedestrians and vehicles can safely traverse their way from one end of the project to another. Parking embayments and a footpath will be provided to one side of the street; which side of the street however will vary from one location to another to respond to built-form and provide variation and visual interest in the streetscape.

To ensure optimal streetscape outcomes, the IDGP also proposes a series of rear laneways to provide vehicular access to a number of medium density development sites. Consistent with Liveable Neighbourhoods, these laneways have been provided at 6.0m, are short and will be adequately illuminated.

Laneways will also be configured and truncated (where required) to ensure rubbish truck movement.

The IDGP also proposes a series of short north-south streets (Streets B, C and D) that will primarily have a pedestrian function for through-access to Goddard and McNicholl Streets. Some small lengths of these streets will also provide vehicular access to adjacent development sites.

All existing external streets will be upgraded to include footpaths and on-street parking embayments. Consistent with the Strategic Regional Framework, the IDGP also proposes the extension of Marks Place through to Goddard Street. Market Street has been widened and realigned, consistent with the Regional Centre Framework. This street will ultimately function as a transit based Main Street however in the interim will be a median divided boulevard. More detail on the ultimate transit configuration for Market Street is provided in **Section 5.6.**

Further detail on the treatment of each of the street types within the project areas is provided at **Section 5.7**.

5.5 Car Parking

Car Parking within Lot 359 Goddard Street is to be provided in accordance with Table A1 (**Table 4**) of the Strategic Regional Framework and the Residential Design Codes.

Parking is to be generally located in those locations as depicted on the IDGP (refer **Figure 12**). It is acknowledged that these locations may vary slightly depending upon design/density and whether the parking is provided at grade or is decked. Parking, wherever possible, shall be screened from public streets by buildings or landscaping.

As identified in **Section 5.7** of this report, on-street parking is to be provided on one side of the street for the internal access street and to all external streets (Goddard, McNicholl, Market and Marks). It is considered these on-street embayments will provide adequate visitor parking and customer parking in the case of Market Street.

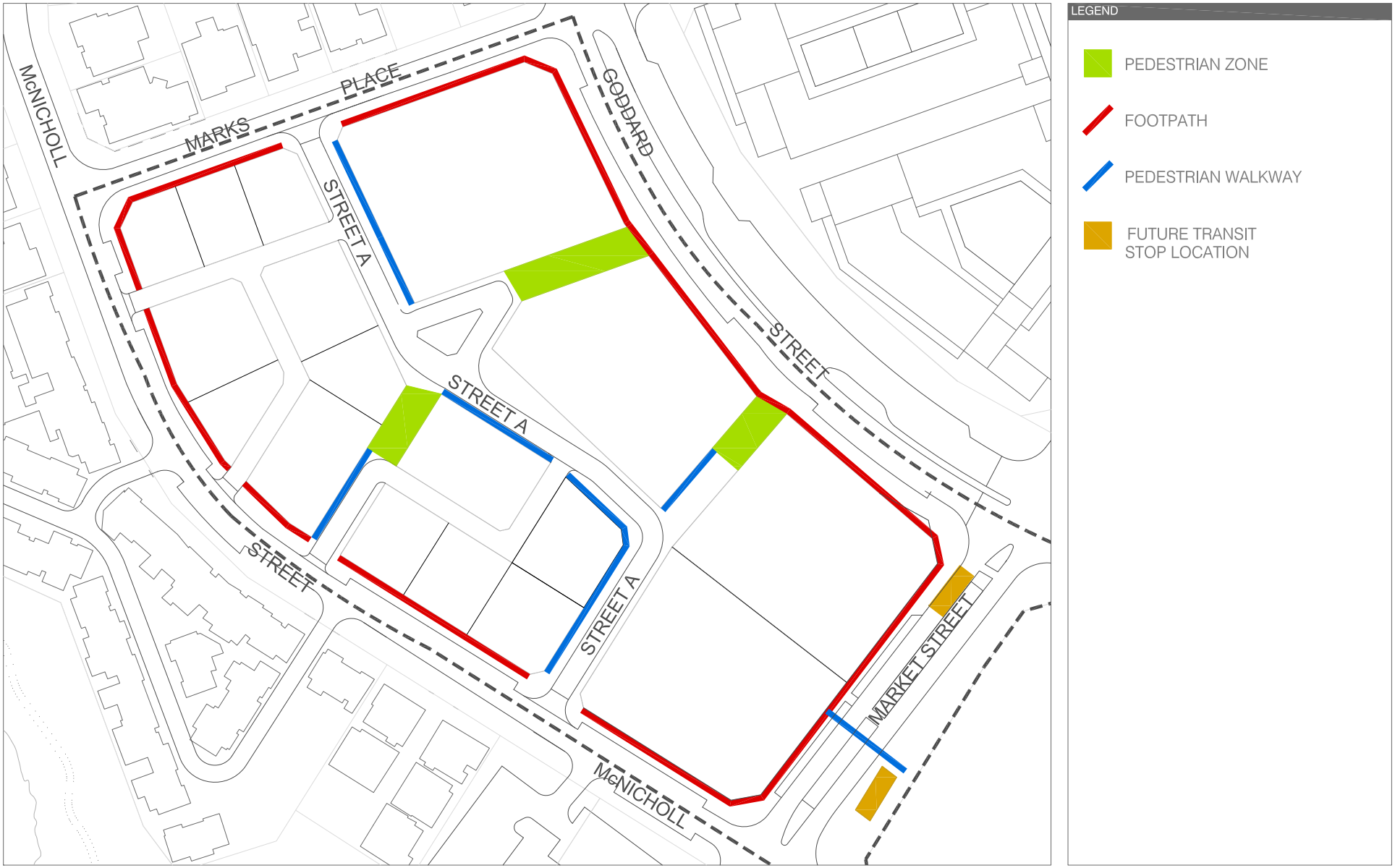


***Figure 17**- Vehicular and Pedestrian Access*

5.6 Transit Corridor

The planning and design aspects for the transit corridor between Goddard Street and Chalgrove Avenue have been considered in the context of the Rockingham City Centre Transit Service and the planning and design for Lot 359. To this end the City of Rockingham has identified a future higher-capacity transit corridor that acts as a spine connecting the Rockingham Foreshore to the Rockingham City Centre and the Rockingham railway station. In addition to providing upgraded, frequent, more reliable transit service along this alignment, it is intended that the transit corridor will provide a catalyst for more sustainable, pedestrian-friendly transit-orientated development.

The Rockingham Strategic Regional Centre Plan identified two primary transit corridor alternatives that were identified during a 2006 integrated transport workshop for further development of a transit corridor from the Rockingham Foreshore to the Rockingham railway station.

- "Option 1", crossed Goddard Street via Chalgrove Avenue before turning south at the Chalgrove Avenue/McIntosh Road intersection to the railway station.
- "Option 2", was a more direct alignment from the Foreshore to the railway station and crossed Goddard Street via an extended Market Street.

Following an analysis of the strengths and weaknesses of both options, Option 2 was advanced as the selected option and this option forms the basis of this IDGP.

5.6.1 Preferred Corridor through Market Street

As part of its selection of Option 2 (above), the City of Rockingham has also identified a station location along the Market Street frontage of Lot 359, as shown in **Figure 18**.

Along with the station and the transit corridor, the City has also proposed a widened and slightly re-aligned Market Street to allow for private vehicle access, private vehicle kerb parking, footpaths, and bicycle access.

The main considerations when developing design options for the transit corridor on Market Street include the following;

- Designation of corridor – providing an balanced level of integration between transit and general traffic;
- Integration with surrounding highway network – achieving optimal levels of priority at junctions;
- Land acquisition considerations – identification of constraints within corridor;
- Platform locations and layout – side or central platform locations; and
- Other road user requirements – car parking provision, pedestrians and cyclists.

5.6.2 Final Design

The preferred design option is as shown in **Figure 18** below and is based on the CoR Masterplan Market Street alignment, central platforms, northern location

This is considered to be the ideal option, as it achieves the objectives of the transit corridor whilst also maximising the opportunity to incorporate on-street parking and pedestrian crossing facilities. As shown, cycle lanes are proposed in each direction, with indicative bus stop locations for the short to mid-term identified.

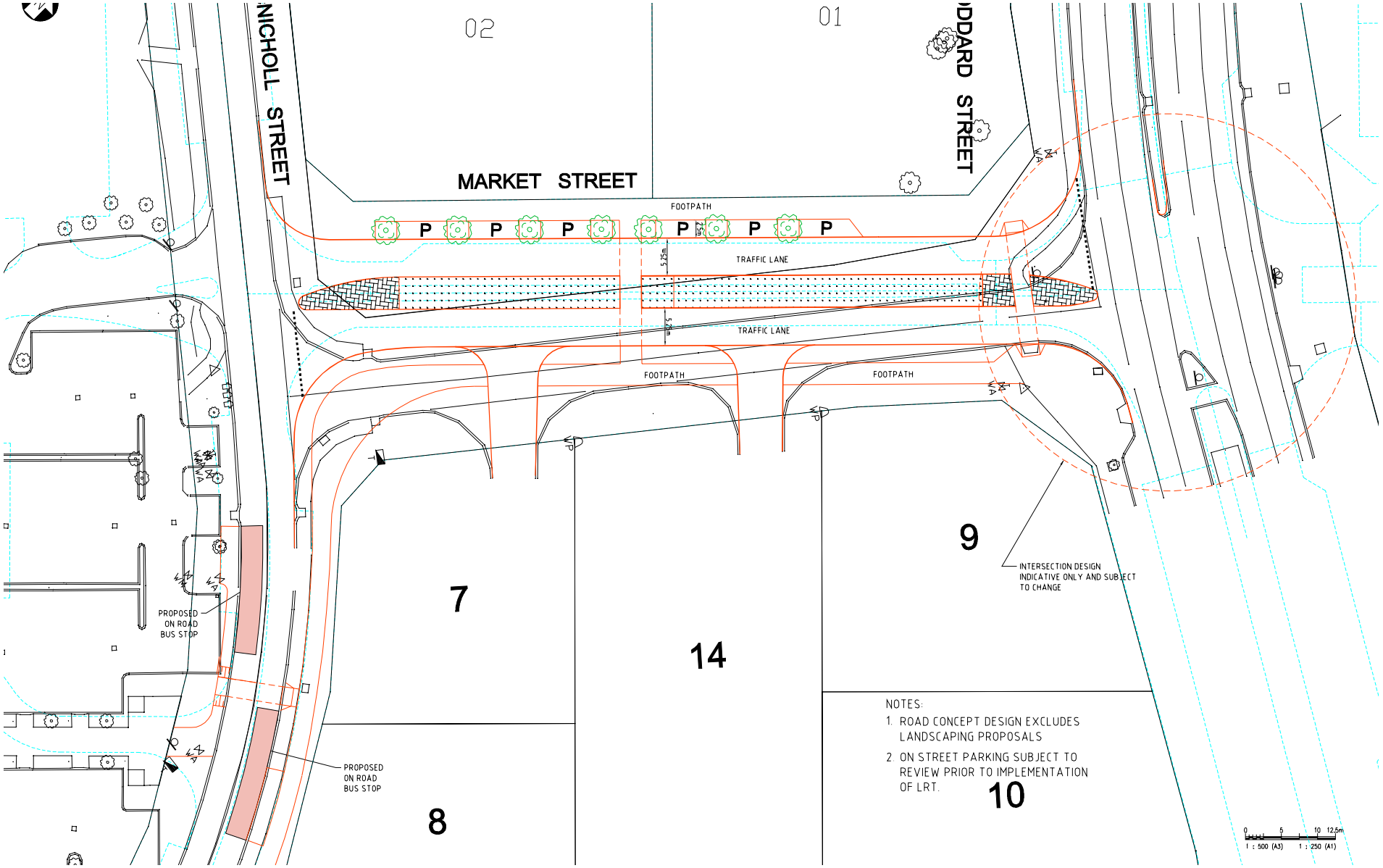


Figure 18 *- Market Street Alignment - Final*

5.7 Public Realm

5.7.1 Landscape Master Plan

Figure 19 depicts a conceptual landscape Master Plan for the IDGP area. The plan illustrates the various paving treatments being sought and the intended locations for street tree planting, on-street car parking embayment locations and the central landscape feature. In order to soften what will be a particularly urban environment, it is intended that planting will be provided to all external and internal access streets. This planting will also assist in containment and achieving the low-speed shared vehicular/pedestrian access environment being sought for the primary internal access street.

The central landscape feature (subject to detailed design) will provide a pedestrian friendly space for residents and visitors of the project to sit, socialise and recreate (on a small scale). The identified pedestrian only zones (refer **Figure 18**) will also form a key landscape component for the project. These locations may consistent of significant planting, seating, sculpture and/or public art.

The City of Rockingham City Centre Development Policy Plan provides for the opportunity to contribute in lieu of TPS2 landscaping requirements, to the cost of streetscape and landscape works the vicinity of the development site.

The consultant team have undertaken to develop the landscaping of public open spaces, being the street network and internal pedestrian areas within the to the subject site as part of future subdivision and development. The landscaping of these public spaces is considered adequate in fulfilling LandCorp's landscaping / open space obligation for the project.

5.7.2 Street Treatments

Street treatments and configurations that respond to the intended built form are a key component of the IDGP design. **Figure 20** depicts cross-sections for each of the individual proposed street treatments within the IDGP area.

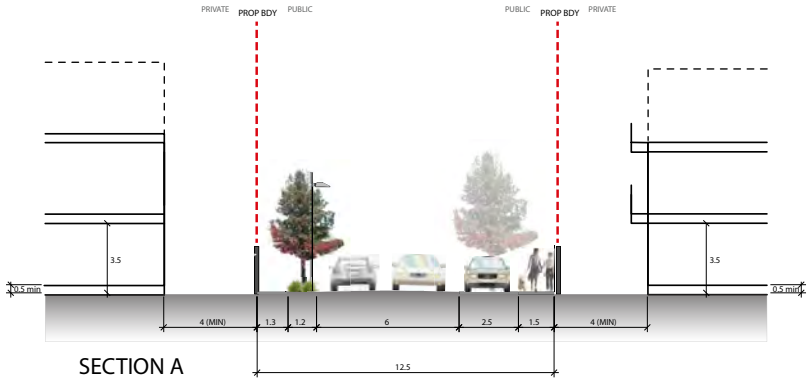
Street A – Internal Access Street: Street A is the primary internal access street within the project area. This street will predominantly be a 12.5m reservation and be configured to accommodate a footpath, row of trees, car parking embayments, a 6m pavement, another row of trees and a small access way for pedestrian and vehicular access to residences. Whilst subject to detailed design, it is important to note that the side of the street that does not contain formal on-street parking embayments will be configured in such a way so as to not allow informal parking which could impede through traffic movement. This narrower than typical local access street will greatly contribute to the urban environment being sought for the project but conversely will be wide enough to ensure functionality is not lost.

A flush paving treatment will be provided to Street A . Refer Sections A, B and C of **Figure 20**.

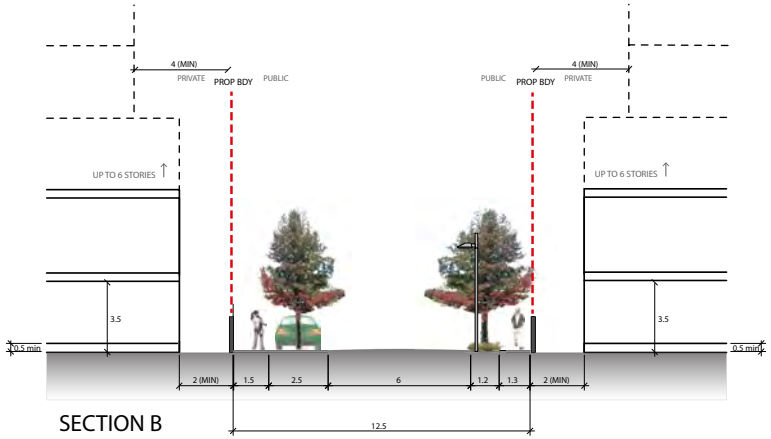
Pedestrian Zone: These pedestrian based streets will be provided at 10m and may contain informal pathways, seating, plantings and public art. If required, bollards can be utilised to ensure vehicular access is not permissible to external streets. Refer Section D of **Figure 21**.

Market Street: Market Street will be provided as a median divided boulevard in the interim prior to the ultimate delivery of light rail transit. The street itself will contain on-street parking, a cycle way and a 2.5m (approx.) footpath. Tree planting in this location will be limited to the median and within nibs of the on-street parking. The widening and realignment required will utilise the existing Market Street pavement for the most eastern carriageway. The treatment of the eastern verge and access to the adjacent properties is to be determined in conjunction with the City of Rockingham. Refer Section F of **Figure 21**.

Figure 19 *- Landscape Master Plan*



SECTION A



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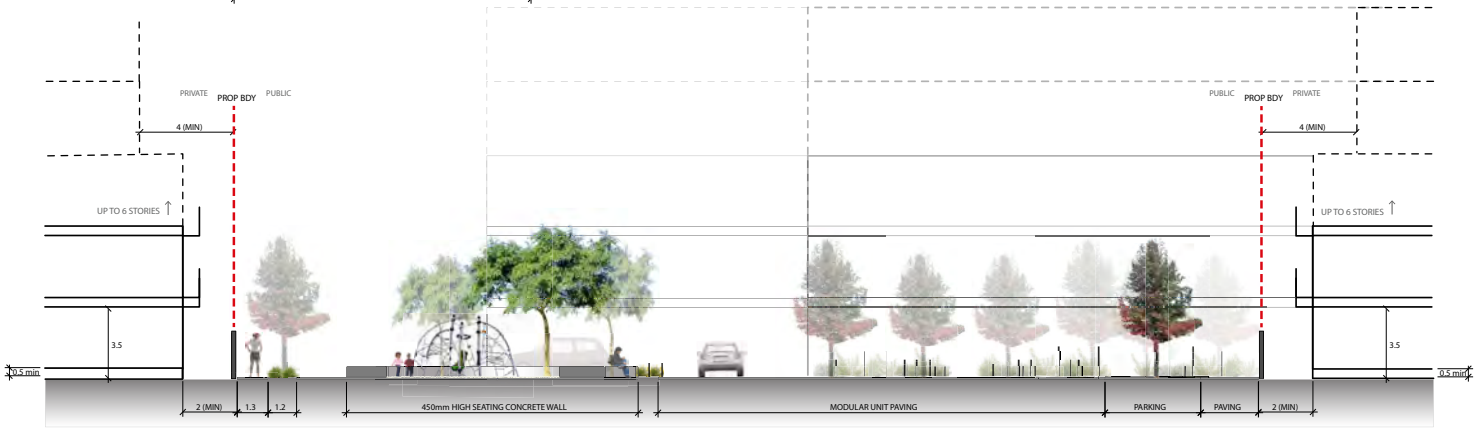

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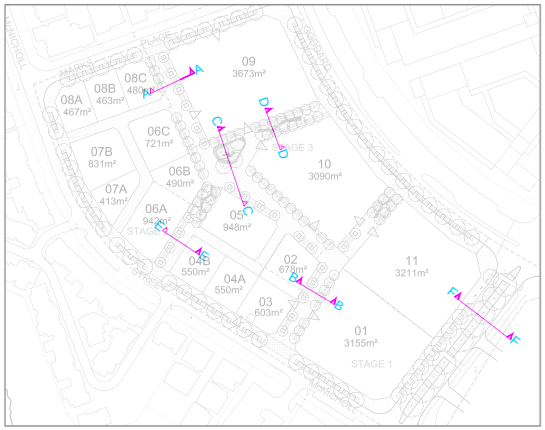
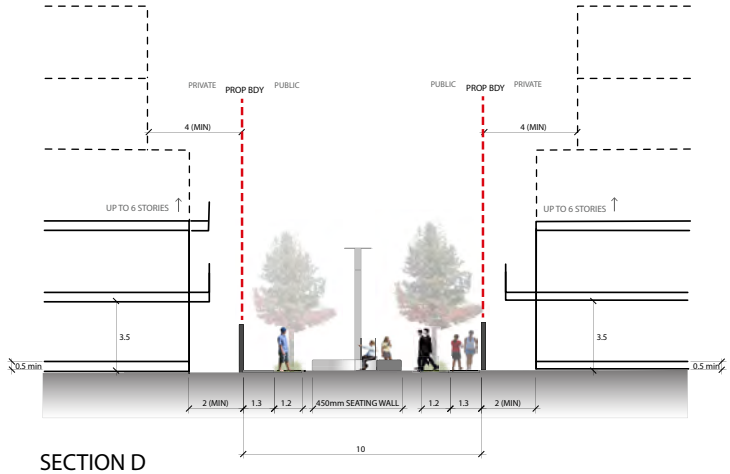
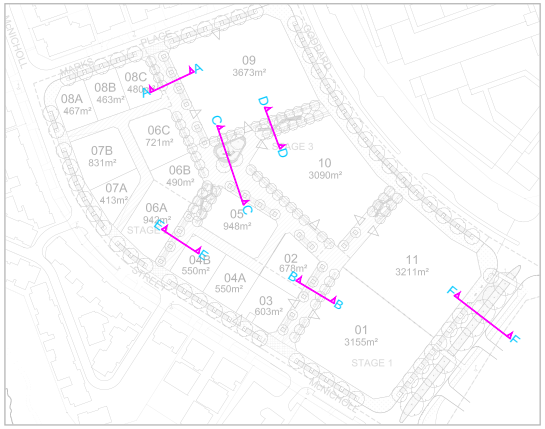


SECTION CUT LOCATION PLAN

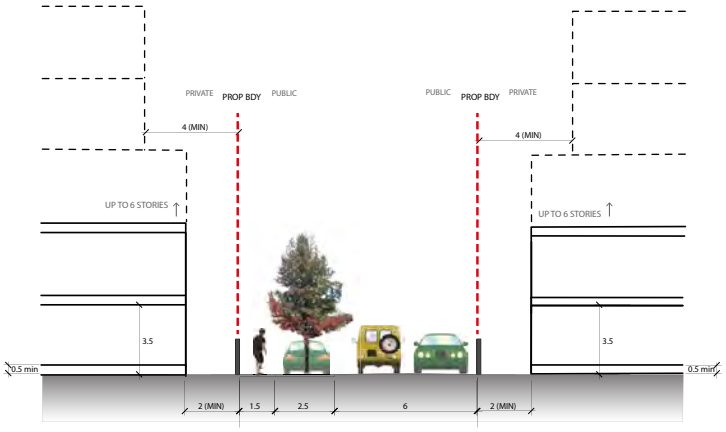
Figure 20 *- Street Treatment A-C*



SECTION D



SECTION CUT LOCATION PLAN



SECTION E

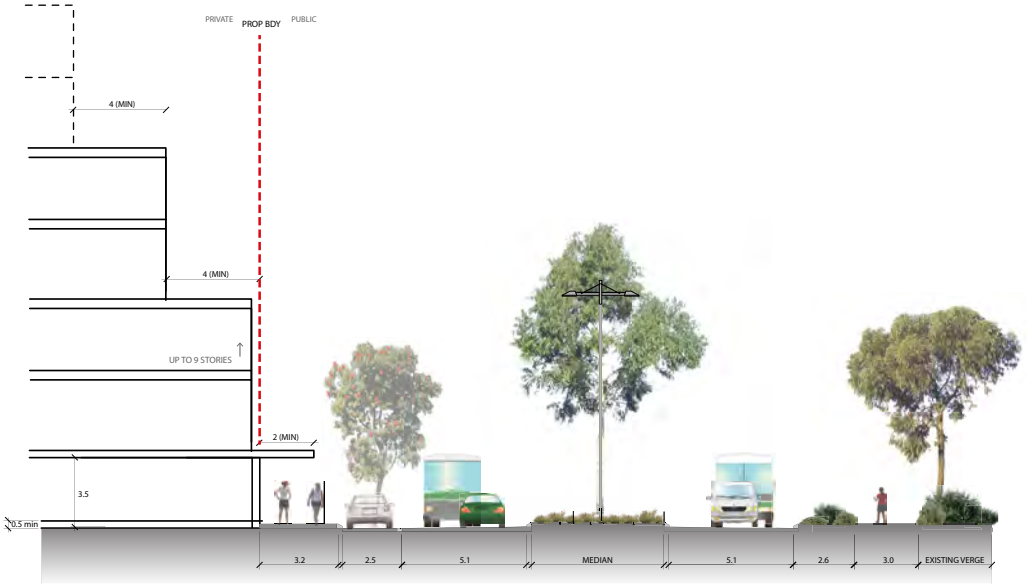


***Figure 21** - Street Treatment D-F*

5.8 Variations to Strategic Regional Centre Plan

The only variations being sought to the Strategic Regional Centre Plan relate to the provision of mixed use development and setbacks. Specifically, a mandatory nil front setback (Type 1 frontage) has been extended to much of the length of Goddard Street, whereas the framework seeks a 2-4m setback.

The reason for this variation is that a nil frontage will provide greater site flexibility and a greater level of activation for what will predominantly be apartment development. Furthermore, this nil setback will provide the street presence desired for the ground floor in this location. A 0-2 m setback has also been provided to much of the length of McNicholl Street, the most northern portion of Goddard Street and the internal access street. The existing framework primarily seeks a 2-4m setback in these locations, however a reduced setback again is considered more appropriate given the urban setting being sought. In all other locations a 2-4m setback applies; which is consistent with the existing planning framework.

The Regional Centre Framework proposed mixed use development to all frontages within the project area. The proposed IDGP facilitates mixed use development for Frontage Types 1 and 2, but not Frontage Type 3. Frontage Type 3 locations are to be residential only in composition. The rationale for this approach being for the purposes of achieving appropriate interface with the existing surrounding low-density residential development and so as not to dilute the retail / commercial development being sought for Market Street.

6.0 Servicing

6.1 Earthworks

Minimal cut and fill is to be undertaken within the subject site. This will ensure suitable levels are maintained at the site boundaries, maintaining appropriate connections with the adjacent Goddard Street and Market Street, and McNicholl Street and Marks Place. The topography of the subject site results in a minimal amount of retaining required in order to create level building pads.

Earthworks are to include the clearance of site vegetation, remediation of the site, stripping top soil, and cut to fill operations to contour and terrace the site to suit required development levels.

Upon completion of bulk earthworks, any disturbed areas will be stabilised either by respreading the stockpiled topsoil from the bulk earthwork operations or by alternative means of stabilisation in accordance with the requirements of the City of Rockingham.

6.2 Stormwater Drainage

The catchment in which the subject site is located contains various drainage systems including open drains, piped drainage systems and overland flow paths to the natural low points forming public open space networks.

Stormwater within the development is to be retained at predevelopment rates for events up to a 1 in 100 year event. To achieve this, a combination of piped drainage and infiltration structures are to be utilised. The following systems are to be utilised for the varying stormwater runoff levels:

- 1 in 5 year events: infiltration to original groundwater.
- 1 in 10 year events or less: infiltration via combination of soakwell/gullytrap and storage/soakage features located within landscaping on the site.
- 1 in 100 year ARI: conveyance via conventional pipes and paving directing surface flows to low points within landscaped pedestrian links prior to storage and infiltration via below ground storage cells releasing water along defined routes to the natural regional low point.

6.3 Road Works

The proposed development will incorporate a legible and highly developed urban road structure.

The proposed internal roadworks will be designed and constructed in accordance with the requirements and standards of the City of Rockingham, as appropriate to the regulatory control requirement of the individual roads and hierarchy requirements.

6.4 Waste Water

Information from Water Corporation of WA indicates that there is an extensive wastewater collection and reticulation network available within the vicinity of the site. The pipe sizes in the vicinity are of a size that can take the additional flow proposed by the IDGP.

All developed lots will be served with a conventional gravity sewer system with the majority of the reticulation sewers located within road reserves.

6.5 Water Supply

Information from Water Corporation of WA indicates the area is served by a Water Corporation distribution network and ranges in size from 63MDPE to 200DN distribution main pipes. Accordingly, there is an extensive water supply within the surrounding network to service the subject site.

6.6 Underground Power

Information from Western Power indicates that there is an extensive service network in the area. The existing 315kVA transformer in McNicholl street midway along the subject land currently supplies units to the south of McNicholl Street. As such it is unlikely there is capacity to supply the whole of the new subdivision.

It is anticipated that new switchgear and transformers will be required to supply the power to proposed development. The location and number of the transformers will be confirmed at the next detailed development stage but it is most likely 2 transformers and a switchyard will be required to service the proposed development.

6.7 Telecommunications

The existing Telstra networks are located within the perimeter road network. It is anticipated that this network will have sufficient capacity to service the development with telecommunication services.

6.8 Gas

Information from Atco Gas Network indicates that there are existing 100 PVC 1.5MP services along McNicholll Street and 40 PVC 1.5 MP services along Marks Place. Extension of these networks will provide the necessary reticulated gas services and with some minor upgrading will provide sufficient capacity for the proposed re-development site

7.0 Environmental Management

In response to the existing environmental values of the subject land, management measures are proposed to minimise and mitigate any impacts to the environment resulting from the proposed development of the subject land. A full environmental review has been undertaken by RPS.

7.1 Hydrology / Urban Water Management

To ensure that the quantity and quality of groundwater beneath the subject land is not adversely impacted by the proposed development, a carefully designed water sensitive approach to managing the total water cycle will be delivered through combining the separate requirements of a Local Water Management Strategy (LWMS) and Urban Water Management Plan (UWMP) into one overarching methodology. DoW are satisfied with this approach

The combined LWMS/UWMP is currently being finalised by RPS to support the future subdivision application for the subject land.

7.2 Flora and Vegetation

To avoid the spread of the weed plant Asparagus asparagoides (bridal creeper) from the subject land when the clearing of vegetation is being undertaken, the one Asparagus asparagoides plant should be eradicated prior to any clearing of the vegetation being undertaken.

7.3 Contamination

To ensure the contamination on the site (refer Section 2.5) is appropriately remediated to a level appropriate for development the following management actions are to be taken:

7.3.1.1 Pre-Remediation

A Site Management Plan which details the preferred option for remediating the subject land and management procedures and practices that will be invoked to achieve site remediation during construction is to be prepared and will be submitted at the subdivision application stage of planning.

7.3.1.2 Post-Remediation

A Remediation Validation Report, which details the validation of the remediation works, will be prepared upon completion of remediation works.

After the validation of the remediation, a DEC accredited Auditor will undertake an assessment of all the technical contamination reports produced for the subject land.

8.0 Implementation

8.1 Adoption Of The IDGP

The City of Rockingham's Town Planning Scheme No.2 requires the preparation and adoption of an IDGP, prior to subdivision of the subject site.

The City has confirmed it does not require the adoption of an IDGP prior to the consideration of a Development Application. Its preference however is that the IDGP for the site is somewhat progressed prior to the determination of a Development Application so as to ensure the proposed overall structure is consistent with its Centre Plan.

This IDGP as prepared by the Consultant Team shall be lodged with the City of Rockingham. A processing timeframe of 60 days applies (assuming no advertising; which the City has advised is unlikely to be required). The Council in accordance with TPS2 will then either adopt or refuse to adopt the IDGP.

8.2 Staging

Figure 22 identifies a possible staging scenario for Lot 359 Goddard Street. The following considerations were taken in to account when determining a possible approach to staging;

- The need for providing a representative and accessible key focal point as part of the first stage.
- A gradual integration of new development forms and density into the existing low urban fabric; and
- Ensuring a "gentle" entrance to the market by providing a lower scale, medium density product mix upfront setting the scene for a gradual build-up to higher density products as the project and surrounding areas mature and a level of market acceptance is achieved;

Stage 1

As can be seen from **Figure 22** LandCorp intends on developing the site in three stages. Stage 1, at the corner of Market and McNicholl Streets, is likely to be delivered as both a built and urban form precinct and act as a catalyst for the development of the balance of the site.

Stage 2

Stage 2 will consist of a variety of streetblocks intended to facilitate a variety of medium density typologies. It is intended that this variety and flexibility in terms of the types of development that could be developed on this site will assist in terms of market acceptability/suitability.

Stage 3

Stage 3 is seeking the development of those sites, allocated generally with the highest residential densities. It is envisaged that by the time Stage 3 is delivered the project and the greater Rockingham City Centre would have established itself and there would be strong demand for these higher residential densities and forms.

It is important to note that LandCorp intends on upgrading Market Street as part of the Stage 1 works. The delivery of this key piece of infrastructure is seen as the cornerstone of the project and therefore upfront delivery is essential. The upgrade of all other external streets will occur on a stage by stage basis.

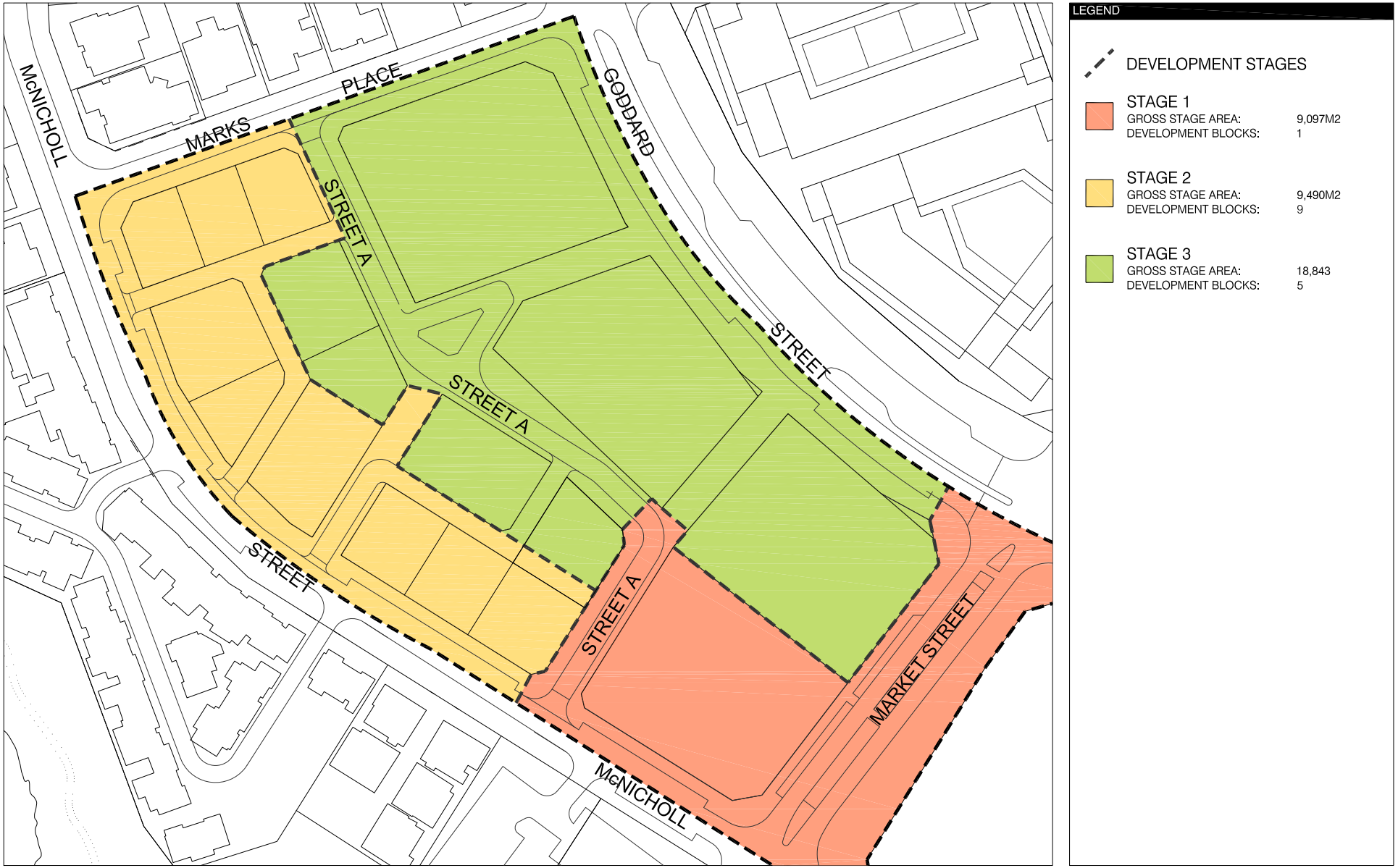


Figure 22 *- Lot 359 Goddard Street Staging Plan*

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