



# *Carine Vision Local Structure Plan*

AUGUST 2012





TITLE:

Local Structure Plan

PROJECT:

Carine Vision Local Structure Plan

PREPARED FOR:

LandCorp / Cedar Woods Properties / St Ives Group

VERSION:

Final (4)

DATE OF RELEASE:

AUGUST 2012

PROJECT TEAM

The project team comprises highly qualified and experienced consultants from a range of disciplines. The team’s collective contributions have informed the preparation of this Structure Plan, which provides a balanced and informed response to the unique opportunities presented by the former Carine TAFE site. The Project Team comprises:

Cardno	Traffic and Local Water Management
Cedar Woods Properties	Project Management, Property Development and Statutory Planning
Coffey Environments	Flora and Fauna Assessment
Donald Veal Consultants	Parking Analysis and Management
McDonald Jones Architects	Project Architect
Plan E	Landscape Architect
Pracsys	Commercial Floorspace Analysis
Roberts Day	Masterplanning, Urban Design
Syrinx	Vegetation and Sustainability Auditing
TABEC	Civil Engineering and Service Infrastructure

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# Executive Summary

This report provides information in support of a Local Structure Plan (LSP) for the redevelopment of the former Carine TAFE site, pursuant to Part 6A and Schedule 10 of the City of Stirling Local Town Planning Scheme No.3. It has been prepared on behalf of the owner of the site, the Departments of Education / Training and Workplace Development, and arises from the appointment of LandCorp, Cedar Woods Properties and the St Ives Group as the project developers.

The proposal is for the comprehensive redevelopment of the Project Site for the purposes of a retirement village, residential aged care, a mixed use (support retail, office and medical uses) and general residential development in the form of medium and high density housing. The redevelopment concept stems from a Project Vision, the 'Carine Vision – A Place for All Ages', built on the City of Stirling's own Carine - Hamersley Local Area Plan. The guiding principles of the Carine Vision are to create a place which facilitates and promotes Intergenerational Living, Health and Vibrancy, Accessibility, the Environment and Economic Wellbeing. These principles and their associated objectives have shaped the Carine Vision LSP and have been embedded into the proposed statutory provisions to ensure that they continue to guide on-going decision making.

The former Carine TAFE campus has historically functioned as a local Activity Centre, as a centre for education and training and offering local employment. This Activity Centre status will be retained but refocused as a centre for aged care and still offering local employment opportunities. New State government planning directions, including *Directions 2031*, the *draft Central Sub-Region Growth Management Strategy* and *Activity Centres for Perth and Peel* also add a heightened focus on the need for housing density and the accompaniment of a diversity of mixed use on such a strategically located redevelopment site.

The Project Team has sought to ensure that the LSP is responsive to and addresses community objectives by setting up a Stakeholder Reference Group. Responding to the Memorandum of Understanding with the City of Stirling, relating to the protection of vegetation, also required an 'up-front' appreciation of community values on vegetation retention. The LSP has responded directly to the feedback from the Reference Group and has upheld the Group's prioritisation of what vegetation should be retained. A summary table of the LSP response to each of the related action requirements under the Memorandum of Understanding has been provided as part of this summary.

Detail of the LSP is provided in Section 3 of this report. Indicative built form layouts are provided which seek to balance:

- » the critical mass required to deliver a comprehensively planned retirement and aged care centre;

- » the need to create an efficient walkable community which provides surveillance, safety and manages building and site levels to ensure good access for the aged and immobile;
- » the need for ancillary support uses in a mixed use expansion of the existing local centre opposite the site;
- » the integration of the existing Marmion Avenue Child Care Centre; and
- » the need to provide housing density and diversity, including more affordable housing options, in accordance with the relevant State planning policies.

While careful attention has been given to the strategic placement of public open space and tree protection areas for the efficient retention of existing vegetation, as required under the Memorandum of Understanding, there is a corresponding need for vegetation to be cleared.

The retirement village sites achieve a maximum height of 6 storeys plus basement parking at the centre of the Project Site. Building heights then graduate down to provide a suitable interface with the adjoining existing low density residential area.

The movement network has been driven by two key objectives: to minimise the external impact of the proposed development while maintaining a high degree of connectivity and integration with the surrounds; and to promote sustainability, amenity and mobility for residents.

A Village Green is proposed at the centre of the redevelopment providing for traffic movement and active public open space, as well as functioning as the merge point for the retirement, aged care and traditional residential development.

There are three main access points to the site, one from each of the bordering access roads. The access off Almadine Drive has been moved further from the intersection with Marmion Avenue to improve queuing. A private access to the Retirement Village and Residential Aged Care is provided off Silica Way, using an existing entrance of the former Carine TAFE. The access off Emerald Way is close to an existing access point and its use will be generally confined to residential traffic movements.

The uses of Retirement Village and Residential Aged Care are comparatively low traffic generators. A comparison in traffic volumes arising from the LSP and from the former Carine TAFE shows that the LSP results in a reduced number of car trips and an overall operational improvement. The provision of on-site parking complies with the requirements under the City of Stirling's Local Planning Scheme No.3.

Development partners LandCorp, Cedar Woods and the St Ives Group are

seeking to deliver the Carine Vision LSP as a new benchmark in sustainable development for the Perth metropolitan region. The LSP's performance has been assessed against 21 sustainability categories with some 42 objectives agreed to by the Project Team. These objectives focus on issues such as measuring the carbon footprint of the LSP, new standards for reduced water and energy use, integrated water management systems, recycling of materials (such as building waste) and reduced private vehicle use. Particular objectives will be delivered at key milestones throughout the planning, construction and occupation phases of the Project.

We are pleased to present this LSP to the City of Stirling and the Western Australian Planning Commission. We believe that the proposed combination and integration of land use will represent an urban development 'first' in Western Australia and a design for the future as the State begins to face the implications of a dramatically aging population over the coming decades.



Response to the Memorandum of Understanding - Summary Table	
Confirming fauna and flora (clause 1.2)	Coffey Environment Level 1 Spring Flora Report (2007) is updated to include a more current aerial photograph, differentiate between native and introduced species and identify a unique woodland community ( <i>Eucalyptus decipiens</i> / <i>Eucalyptus tottiana</i> ) on the southern boundary.
Vegetation protection in context of the State Planning Framework (clause 1.3)	The State Planning Framework acknowledges the role and function of the former Carine TAFE as an Activity Centre, which is maintained under the LSP, where there is a priority for intensification of urban form, housing density and employment. Considerations which have equal and sometimes over-riding priority to vegetation protection, particularly where that vegetation has little conservation significance. The LSP provides an area of public open space equivalent to 11% of the total Project Site area and 15% of the gross subdividable area, which exceeds the normal requirements under Western Australian Planning Commission policy.
Vegetation Protection in the context of community consultation (clause 1.3)	A Stakeholder Reference Group was established to ensure that the LSP responded to community values and priorities. This Group indicated a strong preference to create a vegetation buffer along the eastern and southern boundaries of the Project Site. This preference is represented in the final LSP.
Preference to 'Excellent' or 'Very Good' condition vegetation (clause 1.4).	The Level 1 Spring Flora Report noted that the native vegetation has no conservation significance. It clarifies that vegetation classified as being of 'Excellent' or 'Very Good' condition does not suggest that it is of conservation value but rather is only an indication of the intactness of the vegetation structure and the relative absence of aggressive weed species. The Stakeholder Reference Group identified a unique woodland community ( <i>Eucalyptus decipiens</i> / <i>Eucalyptus tottiana</i> ) along the southern boundary. Preserving this community was given over-riding status in the LSP.
Maintaining consistency with LandCorp's sustainability objective (clause 1.5)	The LSP delivers much needed retirement and aged care accommodation in the City of Stirling, which is a clear community priority. The benefits include a wide range of 'aging in place' services and programs for surrounding residents. The proposed scale and density of development is consistent with the role and function of the site as an Activity Centre, which is balanced with a contribution to public open space well in excess of normal planning policy requirements.
Identifying (clause 1.6)	
1. Bushland Projection	The LSP employs a number of initiatives to protect existing vegetation, in particular mature trees, through the allocation of public open space and the identification of tree protection areas on private land. The overall extent of tree retention is equivalent to 20% of the gross subdividable area.
2. Urban Public Open Space	Implementation of the LSP will be accompanied by a Landscape Masterplan which will demonstrate that the vegetation which is put back can be just as important as what is taken away.
3. Off-site Revegetation	The existing public open space reserve on the corner of Almadine Drive and Silica Road, adjoining to the north of the Project Site, has been nominated for rehabilitation.
4. Tree border retention	The proposed public open space allocation and tree protection areas predominantly form a tree border / buffer, reflecting the preference of the Stakeholder Reference Group. It also reflects the fact that the protection of internal areas is unlikely to be sustained in the long term.
5. Significant Tree retention	The strategic allocation of public open space, tree retention areas and urban design generally has responded responsibly to the need to retain significant trees on-site. The LSP has potential to retain most of the Priority 1 trees, over half of the total number of significant trees and 75% of the total number of Tuarts.

» Carine Vision Indicative Building Plan





# *Part 1*

# *Statutory*

PART 1 - STATUTORY

CERTIFICATION OF AGREED STRUCTURE PLAN

RECORD OF AMENDMENTS

1.0 APPLICATION

2.0 PRINCIPLES AND OBJECTIVES

- Principle 1 - Intergenerational Living
- Principle 2 - Health and Vibrancy
- Principle 3 - Accessibility
- Principle 4 - Environment
- Principle 5 - Economic Wellbeing

3.0 PRECINCT PLANNING PROVISIONS

- Precinct A - Mixed Use
- Precinct B - Retirement Village and Residential Aged Care
- Precinct C - Medium Density Residential
- Precinct D - High Density Residential

4.0 DETAILED AREA PLANS

FIGURE 1 - CARINE VISION LOCAL STRUCTURE PLAN

FIGURE 2 - CARINE VISION DEVELOPMENT CONTROL PLAN

FIGURE 2A - CARINE VISION DEVELOPMENT CONTROL PLAN - BUILDING HEIGHT

TABLE 1 - STRATEGY AND PLAN SUBMISSION

TABLE 2 - CARINE VISION DEVELOPMENT CONTROL



CERTIFIED THAT THIS AGREED CARINE VISION STRUCTURE PLAN  
 WAS ADOPTED BY  
 RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION  
 ON 27 November 2012



  
 Chairperson, Western Australian  
 Planning Commission

AND BY  
 RESOLUTION OF THE COUNCIL OF THE CITY OF

STIRLING ON 1st May 2012

AND THE SEAL OF THE MUNICIPALITY WAS PURSUANT TO THE COUNCIL'S  
 RESOLUTION HEREUNTO AFFIXED IN THE

PRESENCE OF:

  
 Mayor, City of Stirling  
  
 Chief Executive Officer, City of Stirling



Record of Amendments made to the Agreed Structure Plan			
Amendment No.	Description of Amendment	WAPC Adopted	Council Adopted

## 1.0 APPLICATION

- 1.1 The Carine Vision Local Structure Plan (LSP) relates to the local structure plan area contained within the line denoting the boundary as shown on Figure 1 – Carine Vision Local Structure Plan Area.
- 1.2 Plans, strategies and studies either undertaken to inform the structure planning process or required to inform subsequent subdivision and development applications are listed in Table 1.
- 1.3 All sections of this Part 1 form the statutory provisions of the LSP and prescribe the standards, requirements and prerequisites for subdivision and development in the corresponding precincts designated on the LSP.
- 1.4 Unless otherwise specified in this part, the words and expressions used in this LSP document shall have the respective meanings given to them in the City of Stirling Local Planning Scheme No. 3 (Scheme 3).
- 1.5 Pursuant to Part 6A of Scheme 3, the provisions of this part shall apply to land contained within the LSP as follows:
  - (a) the objectives, standards and requirements applicable to zones and R-Codings under Scheme 3 shall apply to the same extent to the areas having corresponding designations under the LSP, unless specific provision is made to the contrary in this part;
  - (b) any other provision, standard or requirement of this part that is not otherwise contained in Scheme 3, shall apply to the land as though it is incorporated into Scheme 3, and shall be binding and enforceable to the same extent as if part of Scheme 3; and
  - (c) where any variation arises between any provision of this section and a provision of Scheme 3, then the provisions of this section shall prevail to the extent of that variation and shall apply as an intended variation to Scheme 3 in accordance with clause 5.5.
- 1.6 The Principles and Objectives in section 2.0 are to assist in facilitating and delivering the project and to inform the interpretation of the other statutory provisions in Part 1 and Scheme 3.
- 1.7 This LSP shall come into operation when it is certified by the Western Australian Planning Commission (WAPC) pursuant to clause 6A.10 of Scheme 3.
- 1.8 When an amendment to the LSP is proposed, it shall be accompanied by the following:
  - (a) a statement outlining how the amendment will maintain the Principles and Objectives in section 2.0;
  - (b) relevant reports and documents, strategies and management plans as may be required to justify the amendment; and
  - (c) if necessary, an updated version of the LSP Map with appropriate modified text addressing the relevant components of the urban form elements.
- 1.9 Pursuant to clause 1.8, where an amendment to the LSP is not considered to materially affect the original intent of the LSP, the City of Stirling may waive any requirement for the amendment to be advertised.

## 2.0 PRINCIPLES AND OBJECTIVES

The following Principles and Objectives of the LSP are to act as a guide to decision making in the LSP area.

### PRINCIPAL 1 - Intergenerational Living

Create a place that supports an intergenerational community, ranging from the young to retirees and those requiring assisted living and everybody in between.

#### Objectives

- (a) Provide Residential Aged Care.
- (b) Provide a Retirement Village, consisting of independent living units, health, wellness, entertainment and meeting facilities and services.
- (c) Provide a range of medium and high density housing alternatives catering for differing lifestyle choices, including affordable housing types.
- (d) Provide a mix of support retail, office and medical uses aligned with the needs of retired and aged persons.
- (e) Integrate with the existing Marmion Avenue Child Care Centre.

### PRINCIPAL 2 - Health and Vibrancy

Create a place where social infrastructure is shared across all ages, where public spaces provide meeting places for the young, strengthen families, activate retirees and provide opportunity for the elderly to participate in community activation.

#### Objectives

- (a) Provide a Village Square and central Village Green designed as the merge point of the various landuse and housing types and to function as a dynamic and vibrant public meeting place.
- (b) Reverse the traditional gated approach to retirement and aged care accommodation by broadening access to its social infrastructure.
- (c) Deliver aged care and retirement support services and programs for the benefit of those living in the broader Carine and other surrounding districts.

### PRINCIPAL 3 - Accessibility

Create a place that is safe, walkable, universally accessible and where local facilities are conveniently accessible to those who can no longer drive a car.

#### Objectives

- (a) Create a walkable community and provide for permeability of access.
- (b) Create a safe environment by integrating surveillance principles into urban design and built form.
- (c) Promote a variety of alternative transport choices.

### PRINCIPAL 4 - Environment

Create a place that strives to deliver environmental equity across generations through its response to local ecological values and showcasing innovation in sustainable landuse mix, urban design and built form.

#### Objectives

- (a) Optimise the use of existing urban land and infrastructure in a Local Activity Centre context.
- (b) Encourage climate responsive urban design which promotes more efficient use of water, energy and other resources.
- (c) Investigate options for total water cycle management.
- (d) Consider the carbon footprint of the Project.
- (e) Encourage sustainable waste management and improve resource recovery.
- (f) Enhance existing parkland.
- (g) Respond responsibly to the need to remove existing vegetation.

## PRINCIPAL 5 - Economic Wellbeing

Create a place that generates local employment, facilitates education and training, promotes a healthy work / lifestyle balance through available technologies and supports local health care by providing 'aging in place' services and programs to surrounding residents.

### Objectives

- (a) Create local jobs.
- (b) Support home based business.
- (c) Complement and add to the patronage and viability of the existing local commercial centre.

## 3.0 PRECINCT PLANNING PROVISIONS

The LSP is divided into four Precincts, as shown on the LSP Map (Figure 1). The following landuse and development controls, including Table 1, apply and are to be read in conjunction with Scheme 3.

### PRECINCT A – Mixed Use

#### Objectives

To provide:

- (a) retail, office and medical uses which support other landuse and the principles and objectives of the LSP;
- (b) a mainstreet element along the internal access road;
- (c) residential apartments as a discretionary option;
- (d) an appropriate interface with the existing 'Marmion Avenue Child Care Centre'; and
- (e) shared parking in accordance with the Parking Management Strategy, in Part 3, section 5.

#### Land Use

Land Use permissibility shall be consistent with the objectives for the Precinct and generally in accordance with Table 1 -Zoning Table of Scheme 3 but with the following variations:

USE CLASS	PERMISSIBILITY
Child Care Premises	P

#### Development Controls

As per Table 2 and Figures 1, 2 and 2A.

### PRECINCT B – Retirement Village and Residential Aged Care

#### Objectives

To provide:

- a) an integrated Retirement Village in the order of 165 independent living units, together with the necessary support services and facilities, including ancillary and incidental health, wellness, private recreation and entertainment uses;
- b) Residential Aged Care providing in the order of 120 beds, together with the necessary support services and facilities;
- (c) a Retirement Village mainstreet frontage to the Village Green
- (d) a landscaped Village Square, with a cafe and alfresco area, as generally located on Figure 2; and
- (e) controlled pedestrian access from Silica Road to the Village Green.

#### LandUse

Land Use permissibility shall be consistent with the objectives for the Precinct and in accordance with the following Table:

USE CLASSES	PERMISSIBILITY
Aged or Dependant Persons Dwelling	P
Caretaker's Dwelling	P
Cinema / Theatre	P <sup>4</sup>
Consulting Rooms	P <sup>4</sup>
Convenience Store	P <sup>4</sup>
Grouped Dwelling	P
Medical Centre	P <sup>4</sup>
Multiple Dwelling	P
Nursing Home	P
Office	P <sup>4</sup>
Personal Care Services	P
Recreation Private	P

Restaurant	P
Retirement Complex	P
Shop	P <sup>4</sup>
Telecommunications Infrastructure	P <sup>4</sup>

<sup>4</sup> As an incidental use.

#### Development Controls

As per Table 2 and Figures 1, 2 and 2A.

### PRECINCT C – Medium Density Residential

#### Objective

To provide:

- (a) a diversity of dwelling types consistent with an R30 density
- (b) a discretionary option to provide a diversity of dwelling types consistent with the R60 density on selected sites;
- (c) limited opportunity for studio apartments over car parking spaces, as a variation to the R Codes, on selected sites; and
- (d) opportunities for affordable housing through density bonuses.

#### Land Use

Land Use permissibility shall generally be in accordance with Table 1: Zoning Table in Scheme 3 - in relation to the Residential Zone, and the Residential Design Codes, with variations relating to the controlled provision of loft apartments and affordable housing through density bonuses, to be outlined in Detailed Area Plans.

The affordable housing requirement specified in Schedule 10 of Scheme 3 applies only to Precinct C - Medium Density Residential and Precinct D - High Density Residential.

#### Development Control

As per Table 2 and Figures 1, 2 and 2A.

### PRECINCT D – High Density Residential

#### Objectives

To provide:

- (a) a range of dwelling types consistent with the R80 density; and
- (b) opportunities for affordable housing through density bonuses.

Land Use

Land Use permissibility shall be in generally in accordance with Table 1: Zoning Table in Scheme 3 - in relation to the Residential Zone and the Residential Design Codes, with variations relating to the controlled provision of affordable housing through density bonuses, to be outlined in Detailed Area Plans.

The affordable housing requirement specified in Schedule 10 of the Scheme applies only to Precinct C - Medium Density Residential and Precinct D - High Density Residential.

3.4.3 Development Control

As per Table 2 and Figures 1, 2 and 2A.

4.0 DETAILED AREA PLANS

- 4.1 Detailed Area Plans are to be prepared in accordance with clause 6A.16 of Scheme 3.
- 4.2 Detailed Area Plans are to be in keeping with the Precinct planning provisions and specifically incorporate the following information and design elements:

(a) variations to the Residential Design Codes necessary to provide for the variety of housing types, including studio apartments in Precinct C;

(b) dwelling density bonuses, as may be required to satisfy the 10% affordable housing requirement specified in Schedule 10 of the Scheme;

(c) significant trees which are to be retained; and

(d) Provide a definition or criteria for ‘Affordable Housing’.

» Table 1 – Strategy and Plan Submission

Strategy / Plan	Submission Stage	Approval Authority
Detailed Area Plans	Subdivision	City of Stirling
Level 1 Flora Survey	Local Structure Plan	City of Stirling
Local Water Management Strategy	Local Structure Plan	City of Stirling/DoW
Urban Water Management Plan	Subdivision	City of Stirling
Traffic Technical Note	Local Structure Plan	City of Stirling
Servicing Plan	Subdivision	City of Stirling
Earthworks and Contour Plan	Subdivision	City of Stirling
Commercial Floorspace Analysis	Local Structure Plan	City of Stirling
Parking Management Strategy	Local Structure Plan	City of Stirling
Landscape Masterplan	Subdivision	City of Stirling

» Table 2 – Carine Vision Development Control

	Approximate Lot Area m <sup>2</sup>	Maximum Yield / floorspace (m2)	Affordable Housing (included in Maximum Yield)	Maximum Number of Storeys <sup>1</sup>	Setback Requirements	Site Cover	Plot Ratio	Indicative building and access layouts	Car parking
PRECINCT A – MIXED USE									
Child Care Centre	2,842	Existing	NA	Existing	Existing, with option for parking in front (Almadine Drive) setback.	As per Scheme 3	As per Scheme 3	As per Figure 2.	As per Figure 27, Carine Vision Parking Plan.
Proposed commercial / medical / office / residential	3,400m <sup>2</sup> (incorporates former public parking area)	Approx. 1,655m <sup>2</sup>	NA	2	Nil setbacks as per Figure 2. Option to provide parking in front (Almadine Drive) setback. All other setbacks, as per Scheme 3 for mixed use development.	As per Scheme 3	As per Scheme 3		
PRECINCT B - RETIREMENT VILLAGE AND RESIDENTIAL AGED CARE									
Retirement Village	18,687	165 units	NA	As per Figure 2A	Setbacks as per Figure 2.	55%	1.2 (excluding balconies)	As per Figure 2	1 bay per unit
Residential Aged Care	11,802	120 beds	NA	2	Requirement to provide landscaping in Silica Road setback.	55%	1.2		As per Scheme 3.
PRECINCT C – MEDIUM DENSITY RESIDENTIAL									
R30 Lots	As per R30	33 single dwellings	6	As per Residential Design Codes	Nil in select locations, as per Figure 2. 2m minimum front setbacks unless annotated on Figure 2. Other setbacks in accordance with Residential Design Codes or approved Detailed Area Plan.	As per Residential Design Codes plus bonus to allow affordable housing, where applicable.	As per Residential Design Codes, plus bonus to allow affordable housing, where applicable.	As per Figure 2	As per Residential Design Codes.
R 30/60 Lots	4,310 (combined total)	30 grouped/ multiple dwellings							
PRECINCT D – HIGH DENSITY RESIDENTIAL									
Northern site	2,545	50 grouped/ multiple dwellings	5	As per Residential Design Codes	As per Residential Design Codes or approved Detailed Area Plan.	As per Residential Design Codes, plus bonus to allow affordable housing, where applicable.	As per Residential Design Codes, plus bonus to allow affordable housing, where applicable.	As per Figure 2	As per Residential Design Codes
Southern site	2,876								

1 The definition of ‘storey’ means that portion of building which is situated between the top of any floor and the top of the next floor above it, and if there is no floor above it, that portion between the top of the floor and the ceiling above it, does not include any portion of a storey having 50% or more of its volume between natural ground level (City of Stirling Local Planning Scheme No. 3)





» Figure 1 – Carine Vision Local Structure Plan

#### PRECINCTS

- Precinct A: Mixed Use
- Precinct B: Retirement Village/  
Residential Aged Care
- Precinct C: Medium Density Residential
- Precinct D: High Density Residential

#### LANDUSE DESIGNATIONS

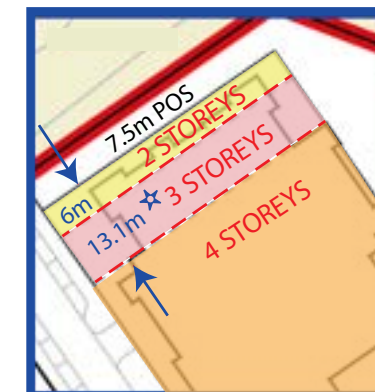
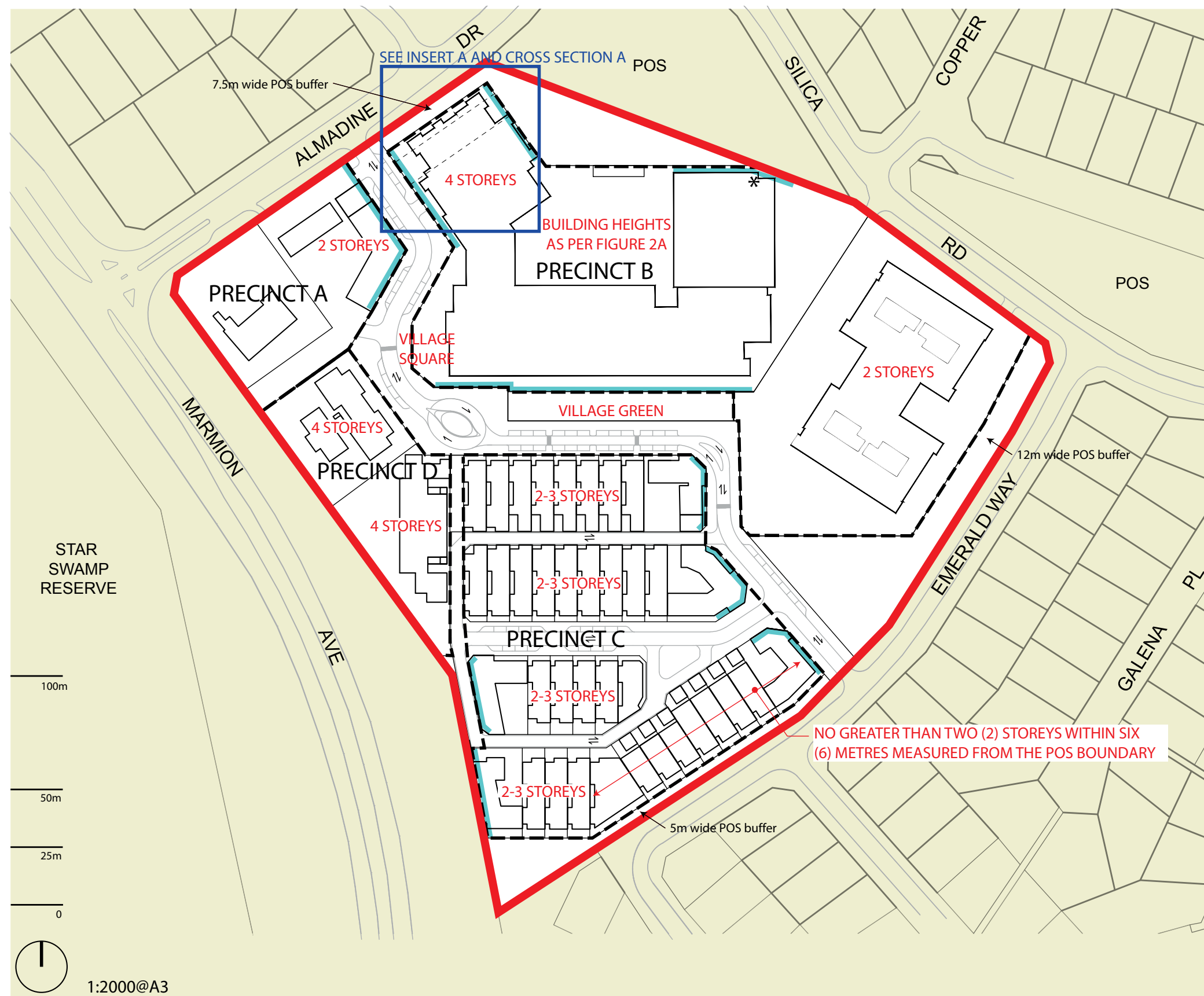
- Residential R30
- Retirement Village/  
Residential Aged Care
- Mixed Use R60
- Residential R30/R60
- Residential R80
- Public Open Space
- Trees to be retained (where possible)
- D Drainage
- Structure Plan Boundary



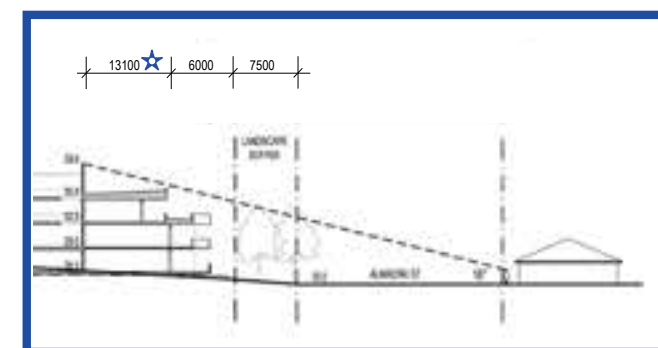
Cedar Woods  
PROPERTIES LIMITED



» Figure 2 – Carine Vision Development Control Plan



INSERT A - SETBACKS FROM ALMADINE DRIVE



CROSS SECTION A

- ★ Setback of the upper fourth storey to be 13100mm or to otherwise provide a three (3) storey appearance from Almadine Drive

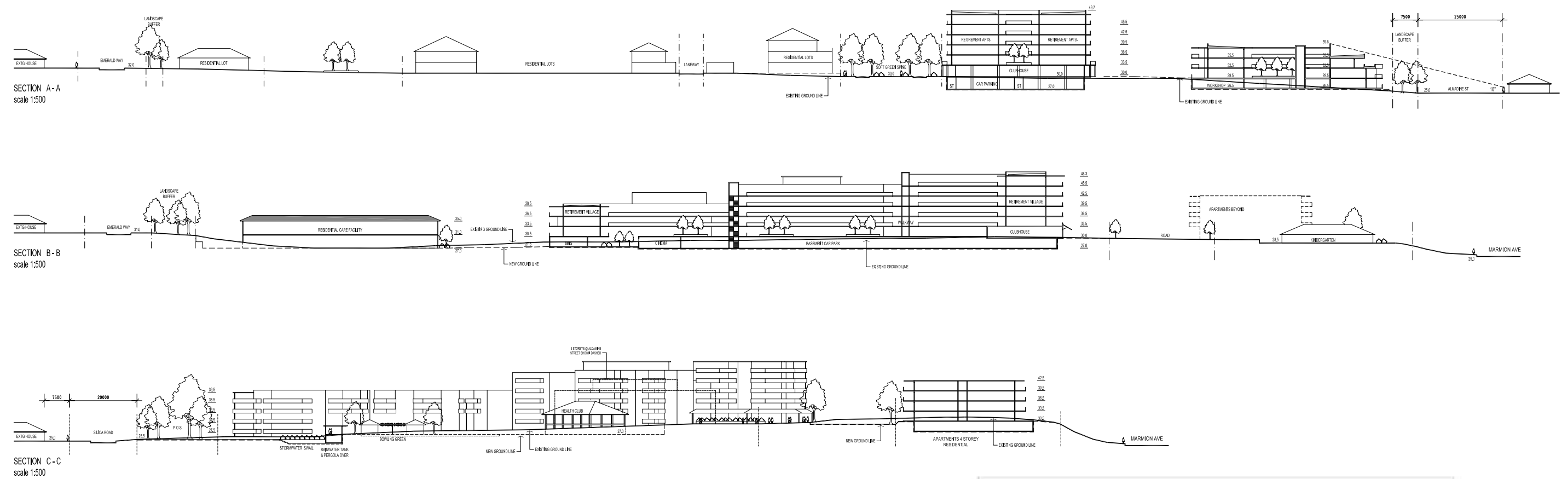
#### PRECINCTS

- Precinct A: Mixed Use
- Precinct B: Retirement Village/Residential Aged Care
- Precinct C: Medium Density Residential
- Precinct D: High Density Residential

#### LEGEND

- Nil Setbacks
- \* Nil Setback subject to tree retention along boundary
- Structure Plan Boundary

» Figure 2A - Carine Vision Development Control Plan - Building Height



**McDONALD JONES**  
ARCHITECTS PTY LTD

REVISION : MEDIATED OUTCOME







# *Part 2*

## *Context*



PART 2 - CONTEXT

1.0 INTRODUCTION + BACKGROUND

- Introduction
- Site Description
- Ownership + History

2.0 VISION – A PLACE FOR ALL AGES

- Principal 1 - Intergenerational Living
- Principal 2 - Health and Vibrancy
- Principal 3 - Accessibility
- Principal 4 - Environment
- Principal 5 - Economic Wellbeing

3.0 PLANNING FRAMEWORK

- Metropolitan Region Scheme
- City Of Stirling Local Planning Scheme No. 3
- Memorandum of Understanding
- State Planning Framework
- Directions 2031
- Draft Central Subregion Growth Management Strategy
- Activity Centres for Perth and Peel
- Liveable Neighbourhoods
- State Sustainability Strategy
- Local Planning Framework -- Carine Hamersley Local Area Plan

4.0 COMMUNITY CONSULTATION

- Land Use Mix
- Finding the Best Fit
- Community Bulletins
- On-going Consultation

5.0 THE NEED FOR A RETIREMENT VILLAGE AND RESIDENTIAL AGED CARE

- An Ageing Population
- City of Stirling Demographic Profile
- Carine Area - Community Needs Study

6.0 SITE ANALYSIS ASSESSMENT–OPPORTUNITIES + CONSTRAINTS

- Surrounding Land Use + Development
- Existing On-Site Land Use + Development
- Climate
- Landform + Topography
- Hydrology
- Soils
- Heritage
- Road Layout
- Pedestrians + Cyclists
- Public Transport

FIGURE 3 -	REGIONAL CONTEXT
FIGURE 4 -	LOCAL CONTEXT
FIGURE 5 -	METROPOLITAN REGION SCHEME
FIGURE 6 -	LOCAL PLANNING SCHEME NO. 3
FIGURE 7 -	CARINE-HAMERSLEY LOCAL AREA PLAN
FIGURE 8 -	CARINE VISION INDICATIVE LAND USE PLAN
FIGURE 9 -	CARINE VISION COMMUNITY OPEN DAY
FIGURE 10 -	STAKEHOLDER REFERENCE GROUP VEGETATION PLAN
FIGURE 11 -	CARINE COMMUNITY NEEDS STUDY (METROPOLITAN NORTH)
FIGURE 12 -	CARINE AREA COMMUNITY NEEDS STUDY (CARINE STUDY AREA)
FIGURE 13 -	SURROUNDING LAND USE PLAN
FIGURE 14 -	TOPOGRAPHY
FIGURE 15 -	PATH NETWORK
FIGURE 16 -	PUBLIC TRANSPORT
APPENDIX 1 -	SPRING FLORA AND VEGETATION SURVEY & FAUNA ASSESSMENT
APPENDIX 2 -	CARINE VISION COMMUNITY BULLETINS
APPENDIX 3 -	CARINE AREA COMMUNITY NEEDS STUDY & DEPT. HEALTH AND AGEING ALLOCATION OF PLACES

## 1.0 INTRODUCTION+BACKGROUND

### Introduction

This LSP for the former Carine TAFE site arises from an agreement between LandCorp, Cedar Woods and the St Ives Group to redevelop the site. The LSP establishes the framework to decide on matters relating to urban design, land use, built form, movement networks, open space provision and service infrastructure considerations. It will guide future subdivision and development options.

### Site Description

The 7.93 hectare Project Site is located in the City of Stirling and in the residential suburb of Carine. It adjoins a small local commercial centre and residential area to the north, residential areas to the east and to the south and Marmion Avenue and the Star Swamp Reserve to the west. The site is bound by Almadine Drive to the north, Silica Road to the east, Emerald Way to the south and Marmion Avenue to the west. The site comprises one lot, being Lot 9378 on Deposited Plan 213725, the subject of Certificate of Title Volume LR3047 Folio 381.

### Ownership + History

Retaining the Carine TAFE campus was not consistent with the Departments of Education / Training and Workplace Development's strategic plan to consolidate TAFE centres in a few central locations. The campus has subsequently been closed for nearly 10 years but is still owned by the Departments.

Having determined that the Carine TAFE facility is no longer required, the State Government amended the Metropolitan Region Scheme to transfer the site from its 'Public Purpose (technical school) Reservation' to the 'Urban' Zone, allowing it to be redeveloped for alternative purposes.

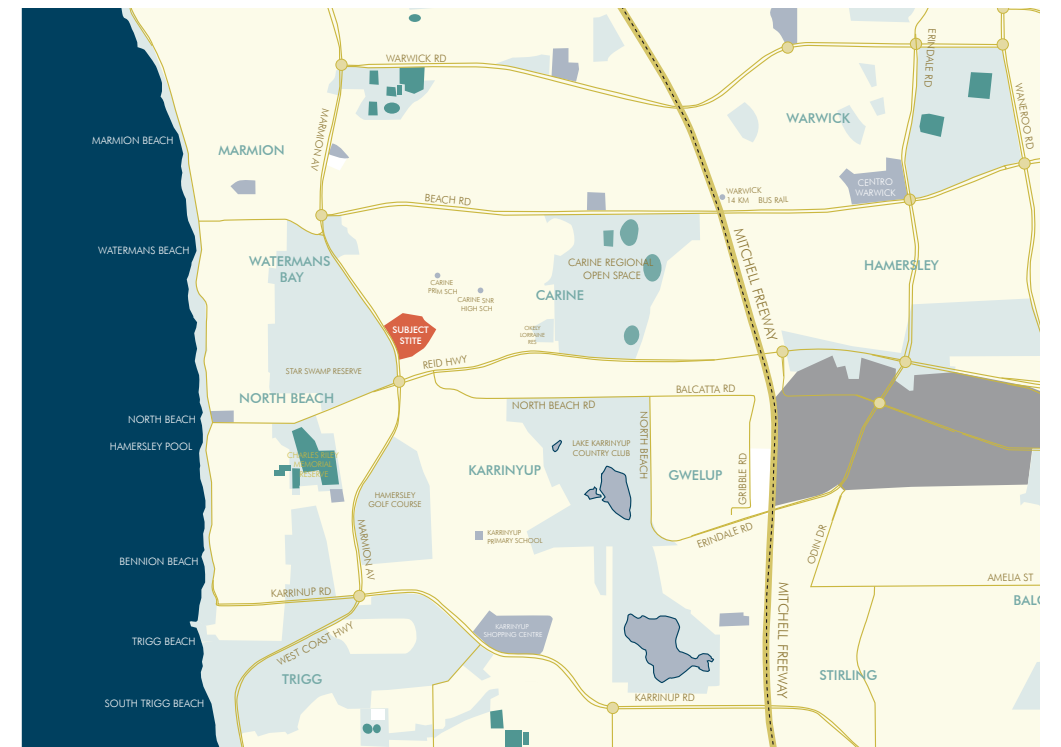
To investigate future redevelopment options, LandCorp, on behalf of the Departments for Education / Training and Workplace Development, sought expressions of interest. Through a highly competitive selection process, Cedar Woods and the St Ives Group were chosen as the preferred redevelopment partners to redevelop the site for the purposes of residential aged care, retirement living, mixed use and general residential purposes.

Cedar Woods is a multi-award winning land development company which has been involved in land subdivision and built form in Western Australia for over 20 years. The St Ives Group is a leading provider of

retirement accommodation, residential and community care services in Western Australia. Their combined skill is seen as the best way of delivering an integrated intergenerational community on the Project Site.

The Marmion Avenue Child Care Centre is located in the north-western corner of the site and is the subject of a lease between the Departments of Education / Training and Workplace Development and the Department for Communities. The site, excluding the Child Care Centre, will be acquired by LandCorp and redeveloped by LandCorp, Cedar Woods and St Ives in accordance with this LSP. Consultation has been on-going with both the Department for Communities and the proprietor of the Child Care Centre on how the Centre will be best integrated into the redevelopment.

» Figure 3 - Regional Context



» Figure 4 - Local Context



## 2.0 VISION- A PLACE FOR ALL AGES

The Project Vision ‘A Place for All Ages’ evolved through input from the great many individuals, groups and agencies who communicated ideas, qualities, principles and values on what Carine can become. Important building blocks for this vision were:

- » local demographics which shows Carine and surrounding communities with an aging population, in need of high density housing options (see Part 2, section 5);
- » the City of Stirling 2004-2008 Strategic Plan which recognised the need for improved services for the elderly and called for the development of a large retirement village;
- » community consultation as part of the preparation of this LSP ( see Part 2, section 5); and
- » the City of Stirling’s Carine - Hamersley Local Area Plan (also see Part 2, section 3).

The Carine-Hamersley Local Area Plan was prepared as part of the City of Stirling’s Local Area Planning program. It provides background and research information on the Carine and Hamersley areas and involved extensive community consultation to identify local community values and aspirations. The following local vision emerged:

*‘In the year 2020 the Carine-Hamersley Local Area is a place for everyone. While the peaceful, safe residential character of the place remains, a wider range of housing types means families, young people and seniors can all find opportunities to live well and make friends. Meeting places and activities have allowed a strong sense of community to develop. Sustainable transport options enable people to travel easily around the area and access places for relaxing and socialising both during the day and in the evening. Carine-Hamersley has become distinguished by the quality of its natural environment, as native plantings enable the place to flourish within its natural capacity, and green, leafy streets lead the way to high quality open space that provides a heart for the Local Area.’*

The Carine Vision seeks to activate a balanced response to the local needs reflected in this local vision statement by incorporating guiding principles and objectives, which are referenced back to the Carine-Hamersley Local Area Plan. This Carine Vision has been translated onto the LSP through a combination of landuse, urban design and built-form outcomes and is included in the statutory provisions of the LSP to ensure that it continues to act as a reference guide and decision making tool for the Project Site.

## PRINCIPAL 1 - Intergenerational Living

Create a place that supports an intergenerational community, ranging from the young to retirees and those requiring assisted living and everybody in between ☒ Community Outcome / ☒ Built Environment Outcome

### Objectives

- (a) Provide Residential Aged Care.
- (b) Provide a Retirement Village, consisting of independent living units, health, wellness, entertainment and meeting facilities and services. ☒ Built Environment Outcome
- (c) Provide a range of medium and high density housing alternatives, catering for differing lifestyle choices, including apartments and affordable housing types.
- (d) Provide a mix of support retail, office and medical uses aligned with the needs of retired and aged persons.
- (e) Integrate with the existing Marmion Avenue Child Care Centre.

## PRINCIPAL 2 - Health and Vibrancy

Create a place where social infrastructure is shared across all ages, where public spaces provide meeting places for the young, strengthen families, activate retirees and provide opportunity for the elderly to participate in community activation. ☒ Community Outcome

### Objectives

- (a) Provide a Village Square and central Village Green designed as the merge point of the various landuse and housing types and to function as a dynamic and vibrant public meeting place. ☒ Community Outcome
- (b) Reverse the traditional gated approach to retirement and aged care accommodation by broadening access to its social infrastructure.
- (c) Deliver aged care and retirement support services and programs for the benefit of those living in the broader Carine and surrounding area. ☒ Economic Outcome

## PRINCIPAL 3 - Accessibility

Create a place that is safe, walkable, universally accessible and where local facilities are conveniently accessible to those who do not yet or can no longer drive a car. ☒ Community Outcome

### Objectives

- (a) Create a walkable community and provide for permeability of access. ☒ Movement Network Outcome
- (b) Create a safe environment by integrating surveillance principles into urban design and built form. ☒ Community Outcome / ☒ Movement Network Outcome
- (c) Promote a variety of alternative transport choices. ☒ Movement Network Outcome

## PRINCIPAL 4 - Environment

Create a place that strives to deliver environmental equity across generations through its response to local ecological values and showcasing innovation in sustainable landuse mix, urban design and built form.

### Objectives

- (a) Optimise the use of existing urban land and infrastructure in a local activity centre context. ☒ Built Environment Outcome / ☒ Economic Outcome;
- (b) Encourage climate responsive urban design which promotes more efficient use of water, energy and other resources.
- (c) Investigate options for total water cycle management.
- (d) Consider the carbon footprint of the Project.
- (e) Encourage sustainable waste management and improve resource recovery.
- (f) Enhance existing parkland. ☒ Natural Environment Outcome
- (g) Respond responsibly to the need to remove existing vegetation.

## PRINCIPAL 5 - Economic Wellbeing

Create a place that generates local employment, facilitates education and training, promotes a healthy work / lifestyle balance through available technologies and supports local health care by providing ‘aging in place’ services and programs to surrounding residents ☒ Economic Outcome.

### Objectives

- (a) Create local jobs.
- (b) Support home based business.
- (c) Complement and add to the patronage and viability of the existing local commercial centre ☒ Economic Outcome.



### 3.0 PLANNING FRAMEWORK

#### Metropolitan Region Scheme

Reservations under the Metropolitan Region Scheme (MRS) are used to protect a resource or identify and protect key State government infrastructure. In this case, a 'Public Purpose (Technical School) Reserve' protected strategic Department of Education / Training Workplace Development educational infrastructure on the Carine TAFE site. The decision to close the Carine TAFE campus also made the Public Purpose (Technical School) reservation redundant. The MRS was subsequently amended by removing this reservation and rezoning the site to 'Urban' to enable it to be redeveloped for general urban purposes.

#### City Of Stirling Planning Scheme No. 3

This rezoning under the MRS placed a statutory obligation on the City of Stirling to rezone the site under its local town planning scheme by removing the local reservation and introducing an appropriate urban development zone, to be consistent with the region scheme.

As a prerequisite to its commencement of this local scheme amendment, the City of Stirling required the preparation and endorsement of a Memorandum of Understanding relating to vegetation protection.

The local scheme amendment was commenced under the City's former Town Planning Scheme No.2 but was finalised under the newly gazetted Local Planning Scheme No.3. Under Scheme 3, the Project Site is now zoned 'Development' and listed in 'Schedule 10 - Development (Structure Plan) Areas'. Under Schedule 10, the specified purpose of the LSP is to facilitate the development of:

1. aged or dependant persons dwellings
2. a nursing home
3. ancillary facilities and services associated with Aged or Dependent Persons dwelling and the Nursing Home.
4. a range of residential densities to facilitate a broad mix and type of housing; and
5. mixed use development with a range of commercial uses and child care.

Special requirements include:

1. a minimum of 10% affordable housing; and
2. ensuring that the existing vegetation continues to contribute to local biodiversity and local landscape characteristics of the area and provides an attractive setting for the redevelopment of the site.

#### Memorandum of Understanding

The Memorandum of Understanding (MOU) required by the City of Stirling requires identification and protection of vegetation to be determined through the Structure Plan process while providing appropriate landuse, density and built form outcomes, consistent with the State Planning Framework which is detailed in this section, and having regard to the outcomes of community consultation. The MOU requires vegetation protection initiatives in the following areas:

- » bushland protection;
- » urban public open space;
- » off-site revegetation;
- » tree border retention; and
- » other significant tree retention.

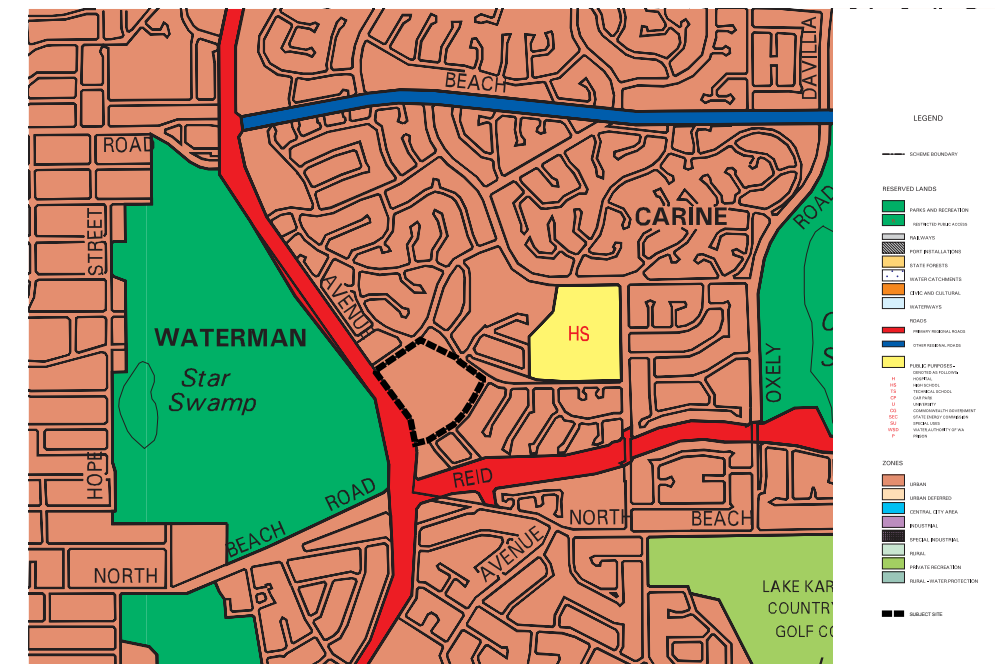
#### State Planning Framework

There are a number of State statutory and strategic planning controls and policies, in addition to the MRS, that have guided the preparation of this LSP. They provide the general context for considering both community and developer expectations for the Project Site and, in light of the MOU, the context for considering vegetation protection.

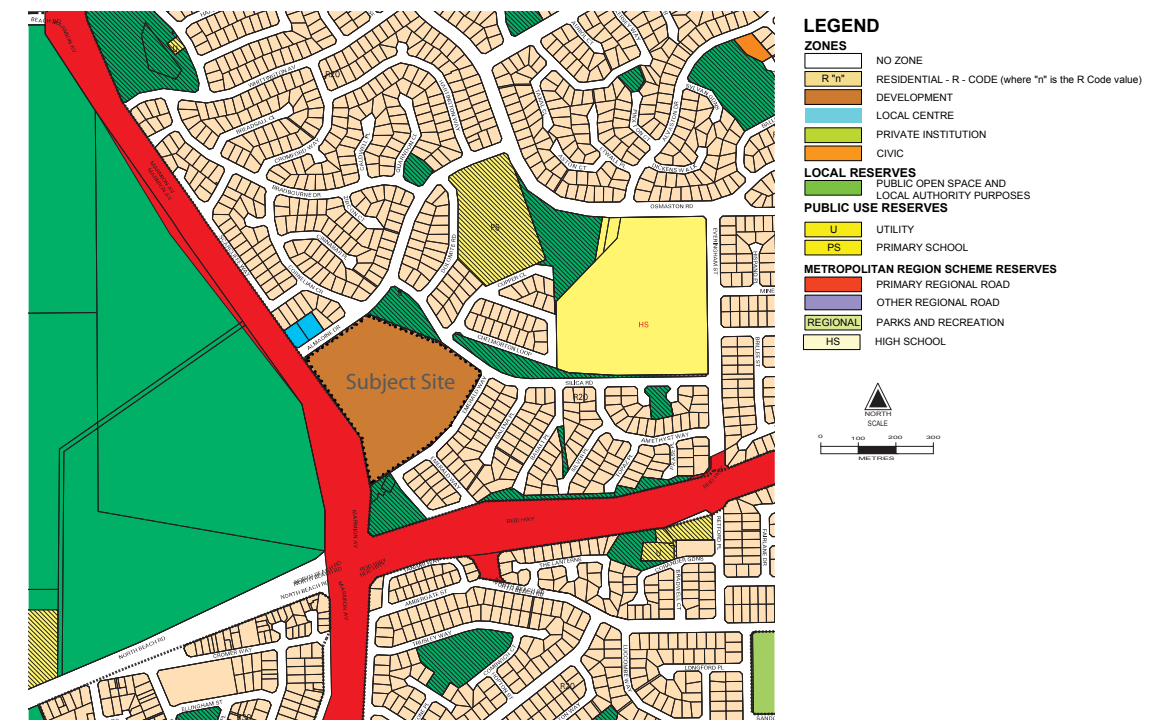
Historically the Carine TAFE has constituted an Activity Centre. Activity Centres are a combination of mixed use retail, civic, institutional, commercial and service businesses and they come in varying sizes and functions. The Carine TAFE Activity Centre was comprised of institutional educational facilities (serving regional, district and local catchments), providing employment and training, complemented by the adjoining local commercial centre and with good arterial road access.

The Activity Centre status of the site will remain, with the existing local commercial centre and the proposed mixed use retail, office and medical uses and local employment. While the need for these complementary uses will be predominantly generated by the aged and retirement accommodation, they will have a broader community catchment. Adding to the Activity Centre status will be the provision of 'in home' aged support and care services to residents in the broader community, provided from the site.

» Figure 5 - Metropolitan Region Scheme



» Figure 6 - Local Planning Scheme No. 3



## Directions 2031

Directions 2031 is a spatial framework and high level strategic plan that establishes a vision for future growth of the Perth and Peel region and provides a framework to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate that growth. The document identifies the following vision for Perth:

*“By 2031, Perth and Peel people will have created a world class liveable city; green, vibrant, more compact and accessible with a unique sense of place.”*

The expectations generally include a place that:

- » is clean, green, productive and distinctive;
- » has good public transport, cycling and pedestrian systems;
- » is equitable, inclusive safe and prosperous;
- » provides high standards of affordable housing, education and health care;
- » maintains high levels of employment;
- » is tolerant and embraces diversity;
- » is culturally and intellectually stimulating; and
- » gives people a sense of identity, pride and belonging.

The Project Site is located within the Central sub-region, which covers 19 local government areas, including the City of Stirling. The sub-region is proposed to have an additional 121,000 dwellings and an increase in population of 205,000 by 2031.

## Draft Central Sub-Region Growth Management Strategy

As part of the implementation of Directions 2031, the Western Australian Planning Commission has developed a growth management strategy for the 19 local government areas in the Central sub-region. The strategy will include a long-term housing supply target for each local government. Stirling is the largest local government in the sub-region and has the largest housing target.

The growth management strategy will require local government strategies and schemes to provide for a wider range of housing to meet the community's needs, particularly for smaller and older households. Activity Centres and other areas near services and public transport are priority locations for higher density housing. The Project Site is recognised in the draft growth management strategy as one of a number of priority locations for higher density housing.

## Activity Centres for Perth and Peel

This Activity Centres policy reinforces the growth strategy outlined in Directions 2031 by establishing a hierarchy of Activity Centres and setting out guidelines for their development and growth. Policy aims relevant to the Project Site include:

- » provision of greater density of housing, increasing the range of housing types and affordability choices;
- » providing for local employment and businesses;
- » encourage a high standard of residential amenity and urban design;
- » providing for home-based businesses; and
- » promoting public transport usage.

## Liveable Neighbourhoods

Liveable Neighbourhoods (LN) is an operational policy to guide the design and assessment of Structure Plans. Its aims include promoting the design of walkable neighbourhoods; places that offer community and sense of place; mixed uses and active streets; accessible and sustainable parks; energy efficient design; and a variety of lot sizes and housing types.

The key initiatives of LN are covered under eight Design Elements. The implementation of each of these elements and the fulfilment of the overall principles of LN will be fundamental to ensuring that development of the structure plan area and the wider metropolitan region occurs in a thoughtful and sustainable manner. Application of the LN principles is therefore relevant to all levels of planning for the Project Site, from the proposed Structure Plan through to detailed lot and building design.

Liveable Neighbourhoods promotes the following principles when planning for or near Activity Centres:

- » provision of greater density of housing, increasing the range of housing types and affordability choices;
- » providing for local employment and businesses;
- » providing for home-based businesses; and
- » promoting public transport usage.

## State Sustainability Strategy

A purpose of the Planning and Development Act is to “promote the sustainable use and development of land in the State”. The Act does not define the term “sustainable” however its meaning is informed by the State Sustainability Strategy (2003) and other relevant State planning policies.

The State Sustainability Strategy defines sustainability as “meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity”.

The objective of the Strategy, in relation to urban settlement efficiency and quality of life, is for settlements to reduce their ecological footprint (i.e. less material and energy demands and reduction in waste) while simultaneously improving the quality of life (i.e. health, housing, employment, community)”.

The application of sustainability to urban planning was further developed by the Western Australian Planning Commission through *State Planning Policy No 3 – Urban Growth and Settlement* (2006) (SPP3). The overall aim of this Policy is to “facilitate sustainable patterns of urban growth and settlement through a shift away from urban expansion on the fringe of the city to the consolidation of established urban areas, in a compact Activity Centre network, as detailed in Directions 2031.

However, on the more detailed level, a reduced ecological footprint of an urban area can be further achieved through measures which:

- » promote recycling and reuse;
- » reduce private car use;
- » climatic responsive design;
- » encouraging local employment to reduce travel to work;
- » reduce water and energy consumption and waste generation; and
- » minimise environmental impacts.



Local Planning Framework  
Carine-Hamersley Local Area Plan

The Carine-Hamersley Local Area Plan is the first comprehensive, community based plan the City of Stirling has produced for this locality. It is part of the City's Local Area Planning program, which provides a local focus and encourages integrated planning and management at the community level. This allows for holistic consideration of social, economic and environmental issues and unique opportunities in a Local Area and integrates the outcomes of community engagement with the City's broader strategic objectives. Local Area Planning also acknowledges that the City is not uniform in character and function and that community values and issues vary from place to place.

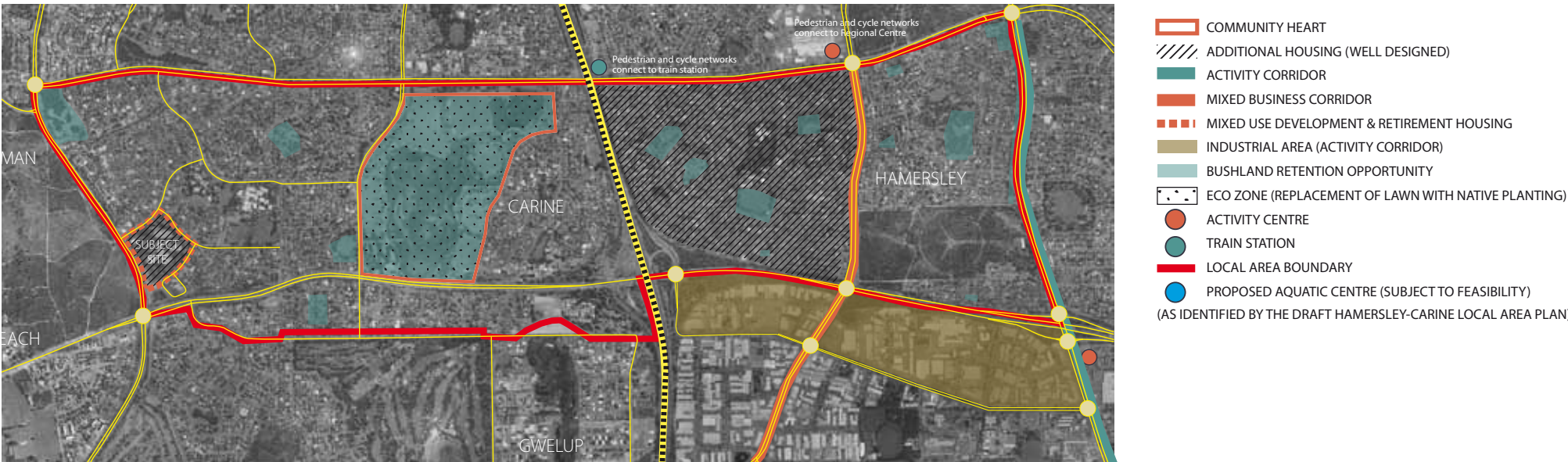
The plan presents a detailed profile of the localities of Carine and Hamersley and provides the context for analysing potential future directions. The profile combines empirical planning research with the outcomes of the community engagement process and what the visions for the Local Area are within the community. The plan then instigates achievable actions to work towards the realization of the community's vision. The plan also serves as a reference guide and decision making tool for the City's business units, Council, landowners and the community more generally.

The Local Area Plan identifies the following specific outcomes in respect to the Project Site. These outcomes have been used to shape the Carine Vision LSP, as discussed in section 2.

» Table 3 - Carine - Hamersley Local Area Plan 'Outcomes to Achieve'

Built Environment Outcomes to Achieve	
<b>Outcome 2</b> Retirement housing is provided to enable older residents to remain a vital part of their local community	Introduce retirement housing at the redeveloped Carine TAFE site
Economic Outcomes to Achieve	
<b>Outcome 1</b> Local businesses in the area thrive as restaurants and cafes provide somewhere to socialise and relax	Provide commercial facilities at redeveloped Carine TAFE site to offer opportunity for a café on site
<b>Outcome 2</b> The Carine TAFE site is redeveloped to provide a greater range of facilities and amenities within the area.	Residential development on Carine TAFE site to provide a strong customer base for commercial development on the site Provide a range of community amenities on site such as commercial outlets, medical services and child care Diversity of housing types including higher density apartment housing Provides increased space for commercial outlets Provide good connectivity (pedestrian and cycle) with the surrounding residential area to enable local residents to also benefit from new amenities
<b>Outcome 3</b> Selecting sites close to commercial centres around the Local Area for increased residential development helps retain businesses by providing them with a greater customer base.	Increase residential development at the Carine TAFE site alongside commercial development

» Figure 7 - Carine - Hamersley Local Area Plan



## 4.0 Community Consultation

This Carine Vision LSP has benefited from various stakeholder and community consultation initiatives undertaken over several years. The consultation has related to the two primary issues, determining the appropriate landuse mix for the Project Site and, secondly, how that landuse mix best fits on the site.

### LandUse Mix

As discussed in Part 2, section 3, community feedback through the Carine-Hamersley Local Area Plan identified a strong need for the provision of aged care in the Carine locality and, more specifically, the former Carine TAFE site was identified as a preferred location for a retirement village.

Acknowledgement of this need led to the formation and appointment of the LandCorp, Cedar Woods and the St Ives Group development partnership to specifically deliver residential aged care, a retirement village, a mix of ancillary retail, office and medical uses and general residential landuse on the Project Site.

The local scheme amendment documentation presented to and endorsed by the City of Stirling, and incorporated into Scheme 3, specifically prescribed the purpose of the new 'Development' zone to facilitate the development of this landuse mix (Part 2, section 3).

### Community Open Day and Survey

The Carine Vision Project Team hosted a Community Open Day in August 2008 to outline the Carine Vision to the broader community and to enable the Project Team to get an appreciation of local issues and objectives. Over 300 people attended.

A community survey asked people to comment on what they considered to be important aspects of the Carine Vision and sought to gauge the level of support for an indicative Land Use Plan (Figure 8). 133 surveys were completed, mostly by residents living in Carine, and determined the most important elements of the Carine Vision were:

- landscaping
- building Heights
- vegetation protection
- housing types
- integration
- cyclist/pedestrian access
- traffic
- vehicle access
- retirement village
- housing density
- community facilities
- residential aged care

The level of support for the landuse placements on Indicative Plan were as follows:

- public open space Yes - 91.7% No - 3.8%
- retirement village Yes - 85% No - 6.8%
- residential aged care Yes - 81.2% No - 10.5%
- mixed use Yes - 73.7% No - 15.8%
- medium density Yes - 72.9% No - 18.8%
- multi-level apartments Yes - 44.4% No - 48.1%

### Interest In St Ives

At the Open Day, the St Ives Group made provision for interested persons to register an interest in future retirement village apartments. Over 200 names were recorded. Those registered were subsequently invited to tour the St Ives Centro retirement village, closely aligned to the scale of development and offering the lifestyle opportunities envisaged for the Project Site. Approximately 170 persons attended the tour of St Ives Centro. The registration of interest list has now grown to 380 parties, with 72% from Carine and 20% from surrounding suburbs.

## Finding the Best Fit

Having determined the highest and best use of the site, from a community perspective, the Project Team needed to determine how those uses best fit on the site. This meant building on the feedback from the Carine-Hamersley Local Area Plan and the Community Open Day by gaining a more definitive understanding of the community objectives, values and priorities relating to the redevelopment of the Project Site.

### Memorandum of Understanding

Importantly, the Memorandum of Understanding with the City of Stirling, (Part 2 section 3) required the identification of vegetation protection areas to be determined 'having regard to community consultation'. As the location of these protection areas significantly impacts on all other aspects of the LSP, this 'community consultation' needed to occur at the commencement of the LSP process.

### Stakeholder Reference Group

A Stakeholder Reference Group was considered the most appropriate means of undertaking community consultation at the outset of the LSP, by defining and engaging those with a direct interest in the Project outcomes and ensuring that the LSP responded to community values and priorities.

» Figure 8 - Carine Vision Indicative LandUse Plan



» Figure 9 - Carine Vision Community Open Day



»



Membership of the Stakeholder Reference Group included:

- » Carine Residents' Association (2 representatives),
- » local residents opposite the site and from the local area (6 representatives),
- » City of Stirling Planning Department (1 representative);
- » City of Stirling Council (2 Ward Councillors)
- » office of Tony Krsticevic MLA – Member for Carine (1 representative),
- » local commercial and medical centre (1 representative),
- » Marmion Avenue Child Care Centre (1 representative),
- » Friends of Star Swamp (1 representative)
- » Western Regional Environmental Network (1 representative)

The initial meeting with the Reference Group was used to provide background information on the Project Team, the planning context and processes relating to the redevelopment, the proposed landuse mix and the LSP process. The key community engagement parameter was that the proposed landuse mix was not subject to reconsideration.

### Community Objectives

Reference Group Members identified and defined key Community Objectives to inform the LSP. These were:

- » Traffic
  - » local residential streets not being overloaded
  - » vehicle access points to address local amenity
  - » traffic volumes to be appropriate for the area
  - » manage congestion at the corner of Almadine Drive/Marmion Avenue
- » Cyclists / Pedestrians
  - » create a walkable community and provide permeability of access
  - » create a safe pedestrian environment
  - » Building Heights
  - » height of multi-level apartments to be appropriate for the area
- » Integration
  - » integrate future development with the surrounding community

- » Retention of Vegetation
  - » maximise retention of vegetation, local biodiversity and amenity values
  - » preference to retain vegetation in good condition
  - » improve parks and plant more trees
- » Scale and Density
  - » do not overdevelop the site
  - » provide a diverse range of housing types, densities for different lifestyles and life stages in a manner which fits the local character
- » Mixed Use
  - » add value to the adjoining local centre and not compete with it
  - » address existing floorspace needs
  - » facilitate integration with the child care facility
  - » create a hub with a strong sense of community

Members were taken on a bus tour stopping at sites which contained landuse comparable to those planned for the Project Site, including a small-lot medium-density residential subdivision, Mixed Use development and the St Ives 'Subi Centro' retirement village. Having sighted various built-form examples, Members then ranked the community objectives, using a 'pairwise comparison matrix', to better identify the importance and priority of each objective. The results are provided below.

Average of scores (highest score = highest priority)	Average of rankings (lowest score = highest ranking)
1. Building Heights (9.9)	1. Building Heights (2.9)
2. Scale and Density (8.1)	2. Scale and Density / Traffic (3.4/3.4)
3. Retention of Vegetation (7.6)	3. Retention of Vegetation (3.6)
4. Traffic (7.4)	4. Cyclists and Pedestrians / Mixed Use (3.8/3.8)
5. Integration (6.4)	5. Integration (4.1)
6. Cyclists and Pedestrians (6.1)	
7. Mixed Use (5.9)	

## 2.0 Context

### Vegetation Projection

In relation to Vegetation Protection, Reference Group Members were provided with::

- » a copy of the Level 1 Flora Survey undertaken by Coffey Environmental in Spring 2007 (Appendix 1)
- » a written overview of the Western Australian Planning Commission policy framework relating to the provision of public open space
- » the opportunity to walk the site with the Project Team botanist to discuss the values of the existing vegetation.

Members were then asked to identify on a plan what vegetation they considered the most valuable to be retained and why. Figure 10 provides the collation of individual results. It identifies a strong preference to create a vegetated buffer which includes a stand of Tuarts at the existing entry off Silica Road and the strip of fringing vegetation at the corner of Silica Road and which runs the length of Emerald Way. Preference to retain this buffer range from 64%-91%, while votes to retain other vegetation where significantly lower, ranging from 8%-34%. It was clear that nearby residents were most interested in the provision of a vegetated frame for the site, to break up the potential impact of built form and to retain a leafy outlook.

Representatives of the 'Friends of Star Swamp' on the Reference Group, identified a unique woodland community (*Eucalyptus decipiens* / *Eucalyptus Todtiana*) along the southern boundary, which is sited within the southern vegetation buffer area.

### Community Bulletins

Since the initiation of the Carine Vision, the Project Team has issued a series of community bulletins (provided in Appendix 2) to keep local residents and stakeholders informed on the project updates, including the demolition of the TAFE buildings and the planning and LSP process. These Bulletins will continue throughout the redevelopment process.

### Ongoing Consultation

The assessment process for this Structure Plan will include further community consultation, as required under the City of Stirling Local Planning Scheme No.3.

» Figure 10 - Stakeholder Reference Group Vegetation Plan





## 5.0 The Need for a Retirement Village and Residential Aged Care

The opportunity to provide for retirement and residential aged care housing integrated into a surrounding middle suburban community like Carine is very scarce, making the Carine Project an opportunity to be embraced.

A comprehensive retirement estate will not only provide services and facilities for the residents of the estate but will see an extension of health care and wellbeing programs in the broader Carine locality and surrounds, assisting those who choose to remain and age in their existing homes. The long-term benefits this will deliver cannot be understated. Moving to a nursing home is not necessarily based on choice but because there is no alternative, while the common preference for older people is to maintain their independence in their own homes and neighbourhood they have lived for a long time and are happy in.

The focus of the St Ives Group through the Carine Project is to build a strong community interface, including linked Community Aged Care Programs, Primary Care Services, Interim Care Programs and Wellness Activities that will ensure that long term residents of the Carine area have the option of remaining in their established locality, with their family and friends, without the need for relocation.

The retirement and aged care facilities, in themselves, are planned to be integral components of a local activity node, integrated with ancillary retail, office and medical uses, and co-located with the existing Marmion Avenue Child Care site and surrounding residential area, setting the scene for a truly intergenerational community and enabling the elderly, in particular, to maintain their valuable contributions to community life.

The St Ives Group has been granted provisional approval by the Federal Department of Health and Ageing for the establishment of a 120 bed residential high care facility at the Project Site. A copy of the Department's advice is provided in Appendix 3.

### An Ageing Population

Australia's population is ageing and, on average, we are living longer. The Australian Government's third Intergenerational Report 2010 projects that, over the next 40 years, the number of Australians aged 85 and over will more than quadruple – from around 400,000 in 2010 to 1.8 million by 2050.

The implications of this aging population are widespread. More older Australians will mean a significant increase in both demand for aged care

services and spending on aged care. The National Health and Hospitals Reform Commission (NHHRC 2009) forecasts that the number of aged care places will need to at least double by 2030 to meet projected demand (Caring for Older Australians – Productivity Commission Issues Paper May 2010).

### City of Stirling Demographic Profile

The City of Stirling publication 'Population and Household Forecasts' (Feb 2010) states, 'The number of persons aged over 65 is expected to increase by 9,937 (26.6%), and represent 17% of the population by 2021. The age group which is forecast to have the largest proportional increase (relative to its population size) by 2021 is 70-74 year olds, who are forecast to increase by 45.8% to 9,494 persons.'

The implications of the ageing population go beyond the delivery of health and aged care services but extend more generally to the number, type and location of dwellings within the City of Stirling to accommodate its ageing population.

### Carine Area - Community Needs Study

In April 2008, the St Ives Group commissioned Verso Consulting to undertake a community needs study to:

- » present a demographic analysis which outlines the current and projected aged care needs
- » examine current residential aged care services and their distribution
- » provide commentary on the types of aged care services which may best meet the identified needs.

This report is provided in Appendix 3 and its key findings are summarised below. The study area 'Metropolitan North' and 'the Carine Area' are defined in Figures 11 and 12.

» Figure 11 – Carine Area Community Needs Study (Metropolitan North)



» Figure 12 – Carine Area Community Needs Study (Carine Study Area)



## Demographic Analysis

- » Metropolitan North is experiencing strong growth in its ageing population.
  - » Persons aged 55+ (115,776 persons) is forecast to rise 51.2%, to 175,060 persons, by 2011. In 2006, the City of Stirling had a greater proportion of persons aged 55+ (26.1%) than Metropolitan North (22.8%)
  - » 68% of persons aged 70+ in Metropolitan North (42,953) live in the Town of Cambridge (2,857), the City of Joondalup (9,128) and the City of Stirling (17,489).
  - » The City of Joondalup is predicted to experience one of the steepest growth rates of persons 70+ in Western Australia over the next decade, increasing by 73.1%, to 15,800 persons, by 2021. This will be exceeded only in the City of Wanneroo where persons 70+ are predicted to increase 151%, to 16,300 persons.
  - » Persons aged 85+ is forecast to rise by 53.4% by 2021. 25% of persons aged 85+ will require high-care accommodation options.
  - » In the Carine Area, 9.8% (1,7841) of persons aged over 65 provide unpaid care, help or assistance to family members or others because of a disability, a long-term illness or issue related to old age. Anecdotal evidence suggests that the majority of these carers would be caring for their ageing spouse/partner. This proportion is higher than for the Metropolitan North region as a whole (9.2%).

rapidly increasing 70+ population. This will result in growing needs for community and home care programs linked to age-appropriate housing developments in this region.

## Key Findings from Community Consultations

In 2008 Community Needs survey was conducted with agencies in the region with key findings as follows:

- » There are insufficient residential respite options (both low care and high care) within the Metropolitan North region which suggests that future residential care development should include provision for respite beds.
- » “Many older persons are living in homes that are unsuitable or unsafe for older people to live in” (direct quote from survey participant).
- » There are few senior-friendly housing developments in the established areas of the Metropolitan North region, requiring older persons to move away from ‘their area’ to find more appropriate housing.
- » There are insufficient day activity options for older persons, including recreational programs and dementia-specific day care, which suggests that retirement village developments in the region should include provision of facilities suitable for community programs.

## Unmet Demands for Residential Aged Care

There are 68 residential aged care facilities in Metropolitan North offering approximately 1,545 high care and 2,017 low care places. Of these, 18 are located within the Carine Area and offer 400 high care and 639 low care places.

The current Department of Health and Aging allocation ratio for residential aged care places is 44:1000 (high care) and 44:1000 (low care) in reference to the population aged 70+.

A local area analysis has revealed that Joondalup (28.2:1000 high care, 34.8:1000 low care) and Stirling (17.6:1000 high care, 45.8:1000 low care) will be significantly ‘under-bedded’ in future years given they are currently below the allocation ratio and are projected to experience high increases in the older population segment.

The future allocation of residential aged care places for Metropolitan North foreshadowed by the DoHA in 2007 (400 placed in 2008-09 and 205 places in 2009-10) will not be adequate to keep pace with the



## 6.0 Site Analysis Assessment- Opportunities + Constraints

The following information identifies the existing conditions and the key opportunities and constraints for the Project Site.

### Surrounding Land Use + Development

The surrounding land uses include a local centre on the opposite corner of Marmion Avenue and Almadine Drive, comprised of a fast food outlet, convenience retail and a medical centre and established residential areas to the north, east and south. Star Swamp Reserve (Bush Forever site) is located to the west on the opposite side of Marmion Avenue.

### Existing On-Site Land Use + Development

There is an operating Child Care Centre on the north western corner of the Project Site which will to remain and be integrated into the redevelopment. All improvements on the Project Site, associated with the former Carine TAFE campus, have been demolished.

### Climate

The Swan Coastal Plain experiences a warm Mediterranean climate. In Perth, winters are mild and wet while summers are hot and dry. The average temperature at Perth Airport is 18.8°C in winter and 30.1°C in summer, while the average annual rainfall is 758.9mm.

Much of the Project Site is exposed to the dominant off-shore winds. During summer, winds blow from the east in the morning and from the southwest in the afternoon, bringing cooling sea breezes created from the temperature differential between land and sea. The most severe winds come from the west and occur during the winter months, although tropical cyclones may occasionally migrate south in the summer to autumn period bringing gale force winds and heavy rains.

Key climatic considerations for the LSP and subsequent detailed design include optimising solar orientation and utilising breezes for cooling effects, whilst ensuring that adequate sheltered and wind protected spaces are available, where appropriate.

### Landform + Topography

Levels on the site range from 35m AHD on the south western portion of the site to 23m AHD on the north eastern corner. A ridge line traverses the site from the south-east to the north-west with the land sloping downwards to the north and the south-west.

The topography of the site presents no significant constraints to development however due to level changes on the south-western boundary the erection of retaining walls and subsequent fill will be required.

The topography provides the opportunity to take advantage of the sites aspect over Star Swamp to the coast. The road layout and built form should be designed having consideration to this aspect.

### Hydrology

There are no wetlands or natural surface water or drainage features within the site. The water table under the survey area is approximately 2m AHD and flows in a westerly direction. The depth to the base of the superficial formation in the Carine area is approximately 27m AHD below sea level. The hydrology of the site does not present a constraint to development.

### Soils

The survey area occurs on the Cottesloe soils of the Spearwood Dune System. The Cottesloe association is a low hilly landscape with shallow sands over limestone; yellow sands on hills and brown sands in karst depressions and some lower slopes. The site is identified as having no known risk for acid sulfate soils. The soils on the site present no constraint to development.

### Heritage

#### Aboriginal Heritage

An archival search of the 'Aboriginal Sites Register' of the Department of Indigenous Affairs confirmed there are no recorded sites of cultural significance to Aboriginal people on the land comprising the Structure Plan.

#### European Heritage

A search of the Heritage Council of WA State Register and the City of Stirling's Municipal Inventory confirmed that there are no recorded sites of European heritage significance.

### Road Layout

The site is bound by Almadine Drive to the north, Silica Way to the east, Emerald Way to the south and Marmion Avenue to the west. Almadine Drive is a neighbourhood distributor and has a width of 25 metres. Silica Way and Emerald Way are local roads with widths of 20 metres. Marmion Avenue is a Controlled Access Highway under the control of Main Roads WA and reserved as a Major Regional Road under the MRS. Vehicular access will not be permitted from the site to Marmion Avenue.

### Pedestrians + Cyclists

The site is serviced by dual use paths on its eastern and western boundaries. Footpaths are located on or adjacent to the sites northern and southern boundaries. The dual use paths and footpaths connect directly to the Perth Bicycle Network.

As a result of the sites proximity to the Carine Senior High School and Carine Primary School and Star Swamp it is considered imperative that the subdivision design allows for legible permeability through the site.

### Public Transport

The site is served by the bus routes 425 and 435 which run along the northern boundary of the site on Silica Road. These bus routes link with the Karrinyup bus terminal to the south and the Warwick train station to the east.

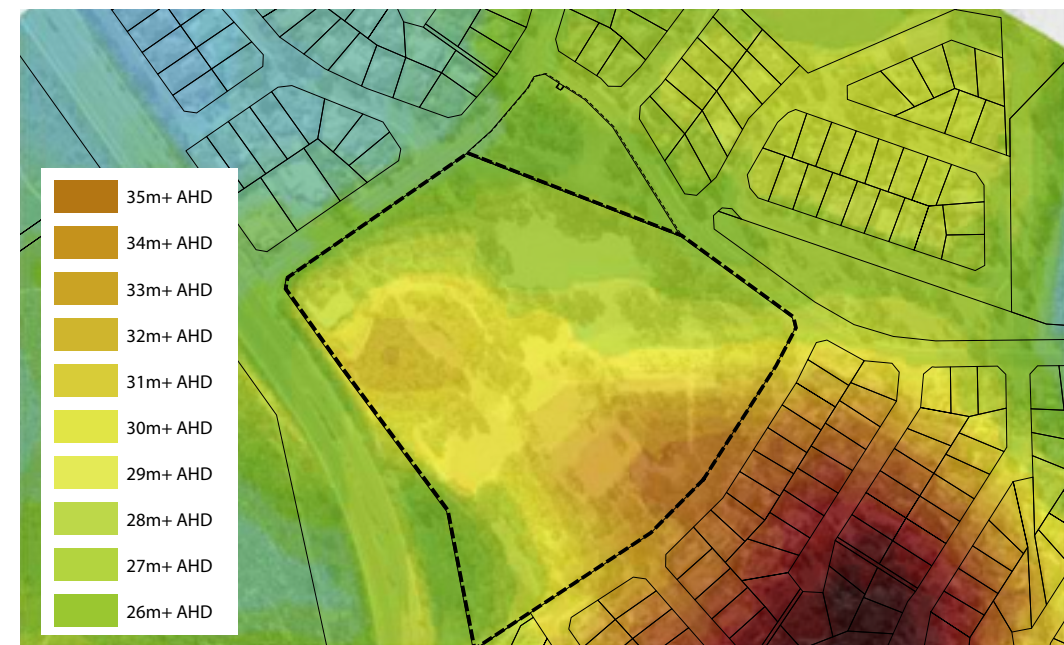


# 2.0 Context

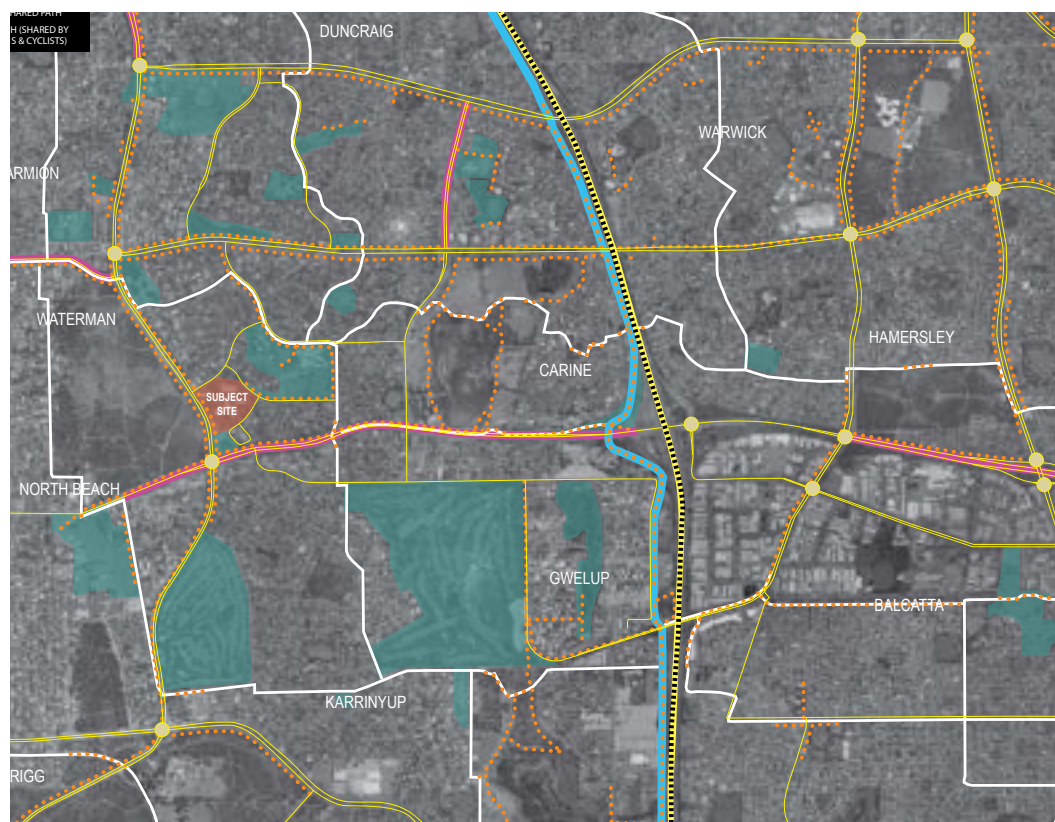
» Figure 13 - Surrounding Land Use Plan



» Figure 14 - Topography



» Figure 15 - Path Network



» Figure 16 - Public Transport



# *Part 3*

# *Local Structure Plan*



PART 3 - LOCAL STRUCTURE PLAN

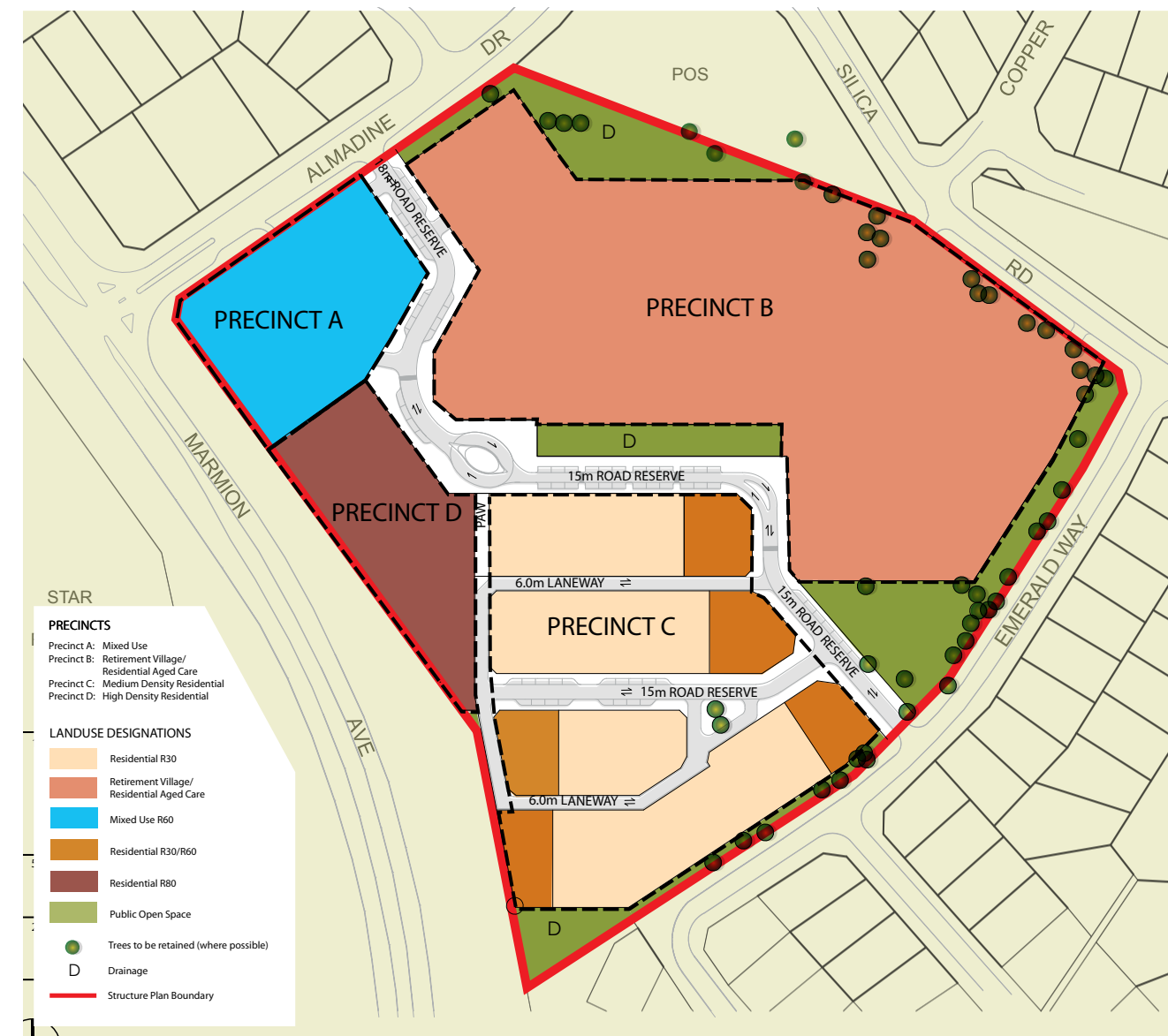
1.0	FULFILLING THE CARINE VISION	FIGURE 17 -	CARINE VISION INDICATIVE BUILDING PLAN
	Intergenerational Living	FIGURE 18 -	CARINE VISION PATH NETWORK
	Precinct A: Mixed Use	FIGURE 19 -	CARINE VISION BUILT FORM SECTIONS
	Precinct B: Retirement Village and Aged Care	FIGURE 20 -	CARINE VISION PUBLIC OPEN SPACE PLAN
	Precincts C/D: Medium and High Density Residential	FIGURE 21 -	LEVEL 1 SPRING FLORA SURVEY
	Residential	FIGURE 22 -	UPDATED VEGETATION PLAN
	Health and Vibrancy	FIGURE 23 -	CARINE VISION PUBLIC OPEN SPACE/VEGETATION PROTECTION
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	Environment	FIGURE 25 -	SIGNIFICANT TREE SURVEY
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2.0	RESPONSE TO COMMUNITY OBJECTIVES	FIGURE 27 -	MARMION AVENUE / ALMADINE DRIVE - SIDRA LAYOUT
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	Memorandum of Understanding		
	Bushland Protection		
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4.0	MOVEMENT NETWORK	APPENDIX 4 -	MIXED USE - ECONOMIC IMPACT ANALYSIS
	Internal Movement Network	APPENDIX 5 -	TRAFFIC IMPACT ASSESSMENT
	External Transport Network	APPENDIX 6 -	LOCAL WATER MANAGEMENT STRATEGY
	Almadine Drive		
	Silica Way		
	Emerald Way		
	Site Analysis		
	Transport Initiatives		
5.0	PARKING		
6.0	SERVICING AND ENGINEERING		
	Services		
	Roads		
	Earthworks		
	Stormwater		



» Figure 17 - Carine Vision Indicative Building Plan



» Figure 1 reproduced – Carine Vision Structure Plan



## 1.0 Fulfilling the Carine Vision

Central to the Carine Vision - 'A Place for All Ages', derived from the Carine-Hamersley Local Area Plan, is the delivery of Residential Aged Care and a Retirement Village, supported by retail, office and medical uses, offering a range of support services and facilities to the broader ageing community, and as fully integrated components of a broader diverse and vibrant residential community. That is what the Carine Vision Local Structure Plan delivers.

Staying true to the Project Vision Guiding Principles and responding to the Community Objectives defined by the Stakeholder Reference Group, is what has moulded this LSP and driven the urban structure and design.

### Intergenerational Living

Creating a place that supports an intergenerational community, ranging from the young to retirees and those requiring assisted living and everybody in between.

### Precinct A: Mixed Use

(d) Provide a mix of support medical and commercial uses aligned with the needs of retired and aged persons; and

(e) Integrate with the existing Marmion Avenue Child Care Centre.

The Mixed Use Precinct will consist of two sites, the existing Child Care Centre site and a **3,400m<sup>2</sup>** site located on the corner of Almadine Drive and the main project entry road. The existing Child Care Centre is proposed to be retained and the associated car park consolidated to a more conventional layout.

The second mixed use site has been identified with the potential for retail, commercial and residential land uses. It is proposed that any ground floor uses will provide activation on the adjacent streets with retail and other high pedestrian uses encouraged. Potential land uses include the expansion of the medical centre on the opposite side of Almadine Drive and a daily needs grocery store to service existing and proposed residents. The provision of retail and commercial facilities addresses the Economic Outcome 2 of the Carine-Hamersley Local Area Plan, which reads, 'Carine TAFE site is redeveloped to provide a greater range of facilities and amenities within the area'.

The land use permissibility for the Mixed Use Precinct allows for the discretionary development of multiple dwellings above the ground floor commercial uses. This creates the opportunity to provide affordable apartment housing.

## Precinct B: Retirement Village and Aged Care

(a) Provide Residential Aged Care; and

(b) Provide a Retirement Village, consisting of independent living units, health, wellness, entertainment and meeting facilities and services.

The Retirement Village and Aged Care Precinct has been designed to accommodate a St Ives Retirement Village and Residential Aged Care.

The Retirement Village will be comprised of approximately 165 independent living units, private recreation opportunities including a bowling green, cinema and activity rooms, a gymnasium with heated pool and a cafe'/ restaurant. The Residential Aged Care will be comprised of a 120 bed facility, predominantly high care, with associated support services.

## Precincts C / D: Medium and High Density Residential

(c) Provide a range of medium and high density housing alternatives, catering for differing lifestyle choices, including affordable housing types.

The Medium Density Residential Precinct has been designed to accommodate larger family homes and to provide a suitable interface with the existing residential area to the south. The lots proposed for this Precinct are generally narrow fronted (10 metres) and are accessed via laneways. The use of laneways for access allows for a better utilisation of land and creates a more attractive streetscape by removing garage doors and crossovers from the front of lots. This Precinct also provides for a lot size and dwelling type that is not currently available in Carine.

To further diversify the range of dwelling types, five strategic sites have been identified for a dual residential density coding of R30/R60, allowing for single dwellings in accordance the R30 coding or grouped / multiple dwellings in accordance the R60 density coding.

The High Density Residential Precinct further diversifies housing types by allowing R80 housing types. The majority of Carine is low density residential housing, with limited opportunity for first home buyers to buy into the locality or for people to down size. It is therefore considered essential to provide housing which is not currently available in the locality, such as higher density housing.

This Precinct is also located on an elevated portion of the site which provides the opportunity to take advantage of the views over Star Swamp Reserve to the coast.



## Health and Vibrancy

Creating a place where facilities and services are shared across all ages, where public spaces provide meeting places for the young, strengthen families, activate retirees and provide opportunity for the elderly to participate in community activation.

- (a) **Provide a Village Square and central Village Green designed as the merge point of the various landuse and housing types and to function as a dynamic and vibrant public meeting place.**

An east-west Village Green is proposed at the centre of the redevelopment, made up of vehicle access and linear public pen space. The Village Green functions as the merge point for the retirement, aged care, apartments and traditional residential, development. A place where all generations can come together and interact. The Village Green will be constructed at the same level as the Retirement Village ground floor (with basement parking below) to provide for universal access and a safe walking environment for seniors. The medium density lots opposite will also have an active interface with the Green.

The Village Square is located at the western end of the Village Green. The cafe' / restaurant components of the Retirement Village have been externalised, creating a public meeting place, with alfresco seating and landscaping to promote an interactive expression of intergenerational living. The location of the Village Square provides a good integrated extension of the Mixed Use activation.

- (b) **Reverse the traditional gated approach to retirement and aged care accommodation by broadening access to ancillary services and facilities.**

The café component of the Retirement Village has been externalised, integrated into the Village Square, making it accessible to all residents and visitors. The St Ives Group is also exploring options to broaden membership to the Village gym to assist in integrating the residents of the retirement village with the wider community. It will also activate an important elevation of the retirement site adjacent to the 'main street' and mixed use precinct.

- (c) **Deliver aged care and retirement support services and facilities for the benefit of those living in the broader Carine and surrounding area.**

The decision by LandCorp, Cedar Woods and the St Ives Group to deliver a vision which includes the provision of much needed residential and aged care demonstrates a commitment to the sustainable development of Carine and the City of Stirling generally. The Residential Aged Care facility represents a capital investment of over \$30 million (based on the cost of a similar St Ives facility in Murdoch) and delivers widespread dividends to

the surrounding community through provision of 'aging in place' services and facilities, essential social capital for an aging population.

The provision of 'in home' aged support and care services including 'Community Aged Care Programs, Primary Care Services, Interim Care Programs and Wellness Activities to residents in the broader community, reinforcing the function and role of the Project Site as an important Activity Centre for Carine and surrounds.

## Accessibility

Creating a place that is safe, walkable, universally accessible and where local facilities are conveniently accessible to those who do not yet or can no longer drive a car.

- (a) **Create a walkable community and provide for permeability of access; and**
- (b) **Create a safe environment by integrating surveillance principles into urban design and built form.**

The public realm running through the site will be designed as shared spaces, where the pedestrian, cyclist or senior riding a 'gopher' has equal, and sometimes greater, right of access than the car.

The key pedestrian and cyclist destinations in and around the site include the Almadine Drive local centre, the Village Green, the bus stop on Silica Road, Carine Senior High School, Carine Primary School and Star Swamp Reserve. The footpath network has been designed to allow for easy access to these destinations by linking with the existing path network.

The proposed footpath network provides for key internal connections from Silica Road through to the Village Green, from Emerald Way through to the Village Green and the main access off Almadine through to the Village Green and Emerald Way. The Village Green provides high pedestrian amenity which will be the main pedestrian focal point in the site. The road network will be designed to ensure that this area is pedestrian dominated rather than car dominated.

**The proposed pedestrian access from Silica Road to the Village Green will include a public pathway between the Retirement Village and Residential Aged Care facility, together with steps and landings to access the 3m higher Village Green. To maintain adequate security, this pedestrian link will be closed in the evenings and at night.**

Interaction between the public and private realm will encourage the development of a safe community. Passive and active surveillance is

# 3.0 Local Structure Plan

strongly enhanced through the design and location of public spaces in relation to the future built form. All public spaces will be usable and easily viewed from adjoining buildings. Placement of street lighting and positioning and type of landscaping will provide a sense of security, which is highly valued by older residents in particular. Types of materials used in future buildings and placement of windows and balconies will ensure that there will always be continuous passive and active surveillance, external and internal to the built form.

## (c) Promote a variety of alternative transport choices.

As part of the LSP, residents, workers and visitors will be encouraged to use alternative transport options and reduce their dependency on private vehicles. Accessibility to and mobility around the site will be encouraged through urban design that maximises walking, street activation, quality public open space and pedestrian-friendly streets.

## Environment

Creating a place that strives to deliver environmental equity across generations through its response to local ecological values and showcasing innovation in sustainable landuse mix, urban design and built form.

### (a) Optimise the use of existing urban Land and infrastructure in a local activity centre context.

The proposed density and scale of development upholds the status of the Project Site within the State Planning Framework as a Local Activity Centre with the enhancement of the existing local centre and the proposed mixed use retail, office and medical uses and employment associated with residential aged care.

### (b) Encourage climate responsive urban design.

The road network provides for a north-south / east-west orientation for the medium density cells, in line with solar passive design principles. As well as lot orientation, the built form and layout of dwellings is also essential to take advantage of climatic opportunities. Building layout to meet solar passive design principles will be addressed through Detailed Area Plans, provided for in Part 1 - Statutory Section.

Where site configuration is not conducive to north-south / east west orientation, such as Precinct D, solar passive and climate responsive design will be addressed through appropriate built form to maximise solar gain and take advantage of prevailing winds.

### (c) Investigate options for total water cycle management;

### (d) Consider the carbon footprint of the Project; and

### (e) Encourage sustainable waste management and improve resource recovery.

LandCorp and Cedar Woods / the St Ives Group have jointly agreed for the Carine Vision LSP to set a new benchmark in sustainable development for the Perth Metropolitan region. The LSP's performance has been assessed against 21 sustainability categories with some 42 objectives agreed to by the Project Team.

These objectives focus on issues such as measuring the carbon footprint of the LSP, new standards for reduced water and energy usage, integrated water management systems, recycling of materials, such as building waste, and reduced private vehicle use. Particular objectives will be delivered at key milestones throughout the planning, construction and occupation phases of the Project.

### (f) Enhance existing parkland; and

### (g) Respond responsibly to the need to remove existing vegetation.

Designs for the aged care and retirement village development include the provision of basement parking areas to reduce the development footprint, enabling the identification of these on-site tree protection areas, adding to the visual depth to the existing adjoining public open space reserve on the corner of Almadine Drive and Silica Road and to provide opportunity for private on-site open space and native landscaping. This adjoining public open space has also been nominated as a focus for off-site revegetation, as detailed in Part 3, section 3.

The allocation of public open space and designation of tree protection areas on the LSP are effectively dedicated to the retention of significant trees. These areas will be cleaned up and complimented through a Landscape Masterplan. This matter is discussed in more detail in Part 3, section 3.

## Economic Wellbeing

Creating a place that generates local employment, facilitates education and training, promotes a healthy work / lifestyle balance through available technologies and supports local health care by providing 'aging in place' services to surrounding residents.

### (a) Create local jobs; and

### (b) Support home based business.

» Figure 18 - Carine Vision Path Network





The proposed Mixed Use precinct, development of the retirement village and residential aged care and the synergies between these landuses will provide direct employment on the Project Site and foster live/work opportunities.

**(c) Complement and add to the patronage and viability of the existing local commercial centre.**

The retail floorpace allocation for the Structure Plan area has been capped at 1655m<sup>2</sup>. This is in accordance with the recommendation of a demand analysis report prepared by Pracsys (refer to Appendix 4). This analysis suggests that there is a current shortage of convenience retail within the catchment of the Project Site. The analysis also identifies a minor under supply of café/restaurant and pharmaceutical services.

## 2.0 Response to Community Objectives

### Building Height, Scale and Density and Integration

The response to the Community Objectives defined by the Stakeholder Reference Group, in relation to 'Mixed Use' and 'Cyclists and Pedestrians' is covered in previous sections of this report and discussion on 'Retention of Vegetation' and 'Traffic' follows. Subsequently, this section deals with the remaining, inter-related, objectives of Building Height, Scale and Density and Integration.

The LSP proposes building heights which respond to site sensitivities including the surrounding low density residential areas, site topography and proximity to open space.

The building heights for the LSP are as follows:

- a) The proposed retirement village building fronting Almadine Drive being 2 storeys adjacent Almadine Drive, rising to 3 storeys after a 6 metre setback from the lot boundary and then rising to 4 storeys at the rear.
- b) The proposed retirement village clubhouse building - 6 storeys;
- c) The proposed retirement village building adjacent to the clubhouse building, fronting the Village Green - 6 storeys;
- d) The buildings within Precinct D - 4 storeys; and
- e) The residences adjacent to Emerald Street (and no further than the L-Bend in Emerald Street) being no greater than 2 storeys within 6 metres of the lot boundary.

The height of the retirement village building fronting Almadine Drive will provide a domestic scale interface with residences on the opposite side of the road. The retirement village height of 6 storeys is considered acceptable as this building is central to the site and over 150 metres from the closest residence.

The design of the retirement village buildings will incorporate flat rooves which will provide a lower overall building height compared to the same number of storeys with a pitched roof. It will also better facilitate the provision and servicing of photovoltaic cells, considered as part of the Project Sustainability Commitments.

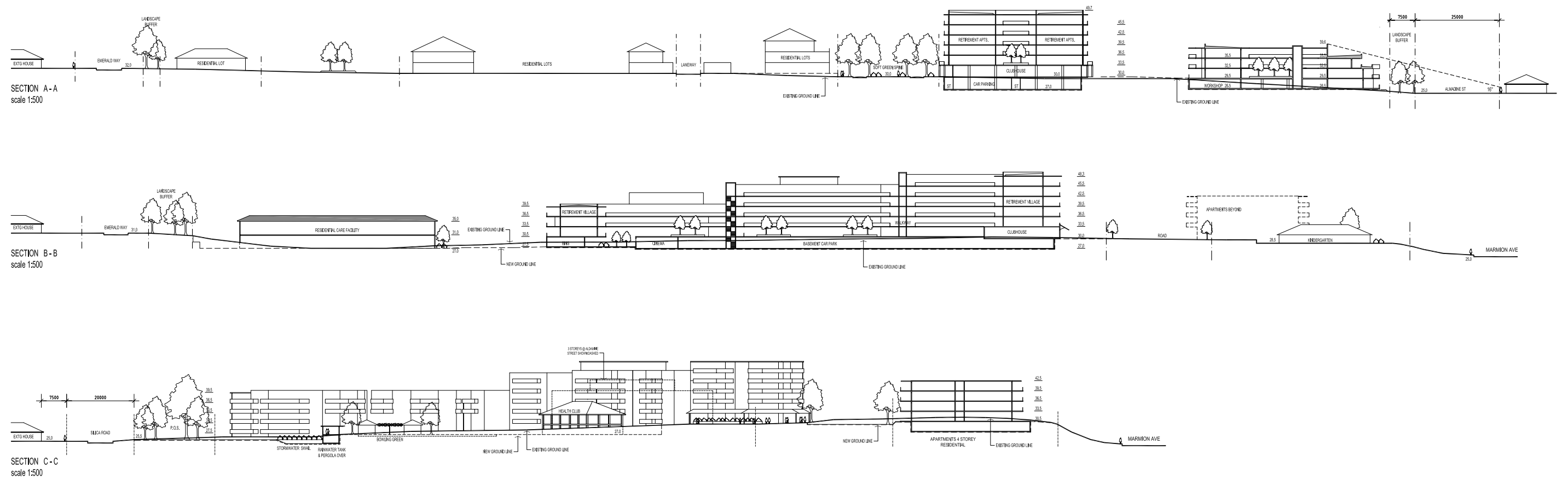
Figure 19 provides three sections through the site, illustrating the height profile.

The maximum height of the previous institutional TAFE buildings was the equivalent scale to 4 residential levels or 5 levels including basement parking. Subsequently, the proposed building heights are not disproportionate to the previous use.

The Residential Aged Care is restricted to 2 storeys and housing in the medium density residential area will range from 2-3 storeys, which is consistent with small lot housing trends in middle suburban locations. Three storey housing is already evident amongst the existing housing stock in Emerald Way. Impact of housing along Emerald Way will be further reduced through the use of rear loaded lots and the retention of existing mature trees via the provision of public open space along the Emerald Way frontage.

# 3.0 Local Structure Plan

» Figure 19 - Carine Vision Built Form Sections



**MCDONALD JONES**  
ARCHITECTS PTY LTD  
REVISION: MEDIATED OUTCOME



### 3.0 Public Open Space

The Western Australian Planning Commission imposes a general requirement of 10% of gross subdividable area to be given up for public open space. The gross subdividable area calculation does not include various non-residential uses, such as commercial and mixed use, and other uses which are considered not to contribute to the need to provide public active or passive recreation. In relation to the LSP, such deductions include:

- » the 'Mixed Use' precinct incorporating the Marmion Avenue Child Care Centre, which contains secured exclusive use open space on-site and where predominantly medical and convenience retail is proposed. Some affordable residential apartments may be included in the mixed development but limited in number; and
- » the Residential Aged Care site. The Department of Planning advises that it has previously agreed to exclude residential aged care from public open space calculations, recognising that elderly residents, restricted in movement and mobility (particularly in high care), do not generate a public need for open space. The proposed aged care site is to contain a sizable secured area (on-site) for the passive recreation of residents.

There is also established precedent for excluding lifestyle residential developments from public open space contributions, where private recreation is provided on site, such as a retirement village. In this case, an 8% contribution has is attributed to the Retirement Village.

It is also recognised that there is often an overlap in the provision of open space and its use for urban water management. Consequently, up to 20% of the required open space area can have some restricted or constrained use for drainage purposes.

A public open space schedule is provided in Table 4, identifying the total site area, less deductions, gross subdividable area, the 10% public open space contribution and the restricted use public open space allocation. The proposed total provision of public open space represents close to 11% of the total site area and just under 15% of the gross subdividable area, taking into account the deductions previously discussed. The proposed provision of public open space therefore represents a significant over-provision, when considered in the context of Western Australian Planning Commission policy requirements.

» Table 4 - Public Open Space Schedule

<b>Structure Plan Area (Site Area)</b>		<b>7.92 ha</b>
<b>Total Net Site Area</b>		<b>7.92 ha</b>
<b>Deductions</b>		
Mixed Use Precinct		0.6242 ha
Aged Care		1.1802 ha
<b>Gross Subdividable Area (GSA)</b>		<b>6.116ha</b>
<b>Required Public Open Space</b>		
@ 8% of Retirement Village site		0.1495ha
@ 10% of residential component		0.425ha
<b>Total</b>		<b>0.575ha</b>
May comprise:		
Minimum 80% Unrestricted Public Open Space		0.4594ha
Maximum 20% Restricted Public Open Space (based on 0.5742ha)		0.1148ha
<b>Unrestricted Public Open Space Sites</b> (minus 1 in 5 year)		
Northern POS (1 in 5 = 0.0520ha)	0.2671ha	0.2151ha
Central POS (1 in 5 = 0.0120ha)	0.1300ha	0.1180ha
Eastern POS (not impacted by drainage)	0.3790ha	0.3790ha
Southern POS (1 in 5 = 0.0505ha)	0.1769ha	0.1429ha
<b>Total Unrestricted Public Open Space</b>		<b>0.8550ha</b>
<b>Restricted Public Open Space Sites</b>		
Total restricted use public open space contribution (less than 20% of total POS)		
Drainage areas in POS (subject to inundation greater than 1 year ARI rainfall interval but more frequently than 5 year ARI rainfall event i.e. between 1 and 5 year rainfall event)		
Northern POS (0.0520ha minus 0.215ha)	0.0305ha	0.0305ha
Central POS (0.0120ha minus 0.0065ha)	0.055ha	0.0055ha
Southern POS (0.0340ha minus 0.165ha)	0.0175ha	0.0175ha
Total Unrestricted Public Open Space		0.0535ha
<b>Total Public Open Space Provision</b>	<b>14.8% of GSA</b>	<b>0.9085ha</b>

» Figure 20 - Carine Vision Public Open Space Plan





# 3.0 Local Structure Plan

## Memorandum of Understanding

The Memorandum of Understanding between LandCorp and the City of Stirling relating to vegetation protection incorporates a number of considerations which are discussed below.

### Clause 1.2 -

Confirming that the Coffey Environmental Level 1 Flora Assessment Report (2007) and Level 1 fauna Assessment Report (2008) is a fair and accurate representation of the vegetation types, the vegetation condition and fauna habitat associated with existing vegetation on site.

LandCorp commissioned a flora and fauna survey, undertaken by Coffey Environmental in Spring 2007 which found four distinct pockets of native vegetation, separated by buildings, car parking and accessways of the previous TAFE development. This vegetation is associated with the 'Cottesloe – Central and South' and the 'Karrakatta Central and South' complexes. At the time of the survey the condition of the vegetation in these precincts, using the Keighery 1994 Vegetation Condition Scale ranged from 'Very Good' – to 'Excellent'. (Figure 21).

The vegetation survey map included in the flora report was out of date, dated 2000, taken some 7 years prior to the flora survey. More recent photography provides a more current definition of these remnant vegetation areas. Landscaping plans which were implemented as part of the TAFE development in 1980 enables a clearer differentiation between native and introduced vegetation. This is shown on Figure 22.

*Friends of Star Swamp*, represented on the Stakeholder Reference Group, identified a unique woodland community (calyptus decipiens / Eucalyptus Todtiana) along the southern boundary of the project site, which is sited in the southern vegetation buffer prioritised by the Reference Group. This is also identified in Figure 22.

### Clause 1.3 -

Determine vegetation protection through the structure plan process in a manner consistent with the State Planning Framework and having regard to the outcomes of community consultation.

The State Planning Framework, discussed in Part 2, section 3, recognised the role and function of the Project Site as a local Activity Centre, a focus for services employment and social interaction in the City of Stirling. A place where people shop, work, meet, relax and live. This LSP will facilitate the transformation of the Activity Centre from its former place

of education and training to a centre of aged care, where a wide range of support services, amenities and programs extend beyond the boundaries of the site to benefit the broader Carine community. Optimising the opportunities the proposed development will bring is reinforced by the support documents such as 'Activity Centres for Perth and Peel', 'Directions 2031', 'draft Central Sub-Regional Growth Management Strategy', 'Liveable Neighbourhoods', and the 'State Sustainability Strategy', which promote the co-location of density housing and local employment. In the context of an Activity Centre, these competing planning outcomes can have an equal and sometimes greater priority to retaining existing vegetation.

Feedback from the Stakeholder Reference Group suggests that the importance of existing vegetation found primarily in its aesthetic value and ability to preserve local character. As detailed in Part 2, section 4, members of the Reference Group were asked to identify the vegetation they valued most highly. Their response saw the strong prioritisation of a vegetated buffer which includes a stand of Tuarts at the existing entry off Silica Road and the strip of fringing vegetation at the corner of Silica Road and which runs the length of Emerald Way. Preference to retain this buffer ranged from 64%-91%, while votes to retain other vegetation where significantly lower, ranging from only 8%-34%. It was clear that nearby residents are interested in the provision of a vegetated frame for the site, to break up the potential impact of built form and to retain a leafy outlook. Consequently, these community values have been reflected in the LSP.

### Clause 1.4 -

Giving preference to vegetation which has been categorised as being in either 'Excellent' or 'Very Good' condition.

The spring flora survey noted that the native vegetation has no conservation significance, given it is well represented within the Metropolitan region. In relation to Cottesloe – Central and South, some 36% of the original extent of this complex remained in 2000, with 18% protected in BushForever sites. The City's Biodiversity Strategy identifies Cottesloe – Central and South as one of the highest locally represented vegetation complexes in the City. It is found in the 5 nearby BushForever sites within a 5km radius of the Project Site. Similarly, Karrakatta - Central and South is the most represented vegetation community in the City of Stirling and the Perth Metropolitan Region generally.

The report also clarifies that vegetation classified as being of 'Excellent' condition does not suggest that it is of conservation value but rather it is only an indication of the intactness of the vegetation structure and the relative absence of aggressive weed species.

» Figure 21 - Level 1 Spring Flora Survey



» Figure 22 - Updated Vegetation Plan





Vegetation within the Project Site is not identified in either the City's GreenPlan 2 or its recently adopted Biodiversity Strategy.

The identified pockets of native vegetation fall significantly below the viability criteria contained in the City's Biodiversity Strategy. They are highly fragmented, divided by the network of access ways, parking areas and buildings associated with the previous TAFE, forming disconnected islands with an average area of only 4000m<sup>2</sup> with high perimeter to size ratios. If they were to be retained as part of the Project Development, there is no doubt that the significant degree of site level change required to properly integrate the landuse mix and meet the access needs of retired and aged persons, the associated loss of surrounding vegetation and the proposed intensification of urbanisation and the heightened 'edge effects' would accentuate the disconnection of these vegetation islands, transforming them into patches of unviable plants deprived of sufficient resources to be sustained into the future.

The unique woodland community (*Eucalyptus decipiens* / *Eucalyptus Todtiana*) identified by the Friends of Star Swamp / Stakeholder Reference Group is similarly not rare or endangered and does not have conservation status. However there was a general feeling that it should be kept where possible as it is found in relatively small sized pockets on the Swan Coastal Plain. Consequently this woodland community has been protected through the LSP (eastern POS reserve).

### Clause 1.5 -

**Balancing vegetation protection with the provision of appropriate landuse, density and built form outcomes in accordance with the State Planning Framework.**

This builds on the discussion under clause 1.3.

In preliminary consultation, the question has been raised as to whether a greater extent of public open space and vegetation protection can be proposed under the Structure Plan, with reference being made of the provision of trade-offs to justify the density and scale ultimately permitted on the balance of the site.

The decision to deliver the Carine Vision which includes the provision of much needed retirement and residential and aged care in Carine demonstrates a commitment to the sustainable development of Carine and the City of Stirling generally. The Residential Aged Care facility represents a capital investment of over \$30 million (based on the cost of a similar St Ives facility in Murdoch), and delivers widespread dividends to the surrounding community through provision of aging in place services and facilities, essential social capital for an aging population.

In light of these LSP outcomes, there is not an unlimited scope to correspondingly provide additional public open space above what is provided. The proposed 11% total site area and 15% Gross Subdivisible Area under Western Australian Planning Commission Policy exceeds the normal public open space expectations from the site and, considered in the context of expectations on the site arising from the State Planning Framework, the LSP represents the maximum open space contribution that will be proposed.

**The Western Australian Planning Commission has also now confirmed that the LSP provides an 'adequate degree of vegetation protection, tree retention, urban parkland and off-site revegetation. Vegetation protection is considered to be balanced appropriately with the built form outcomes which the WAPC considers are desirable for this 'activity centre' site.'**

### Clause 1.6 -

**In the context of balancing vegetation protection with landuse, density and built form outcomes consistent with the State Planning Framework, identify vegetation protection measures under the categories of: bushland protection; urban public open space; off-site revegetation; tree border retention; and other significant tree retention.**

### Bushland Protection

The response to the Memorandum is not limited to the physical positioning of the public open space allocation detailed in Table 4. **Tree protection areas have been identified within the Retirement Village and Aged Care sites, along the northern / Silica Road boundaries. These areas add 2,622m<sup>2</sup> of vegetation protection and have the same effect as though 20% of public open space was provided.**

Preliminary indicative designs for the aged care and retirement village development include the provision of basement parking areas to reduce the development footprint, enabling the identification of these on-site tree protection areas, adding to the visual depth to the existing adjoining public open space reserve on the corner of Almadine Drive and Silica Road and to provide opportunity for private on-site open space and native landscaping.

Figure 23 shows the Structure Plan and peels back the public open space and tree protection areas and demonstrates that these areas are effectively dedicated to the retention of vegetation and significant trees. These areas will be cleaned up and complimented through native landscaping through a Landscape Masterplan

» Figure 23 - Carine Vision Public Open Space / Vegetation Protection





## 3.0 Local Structure Plan

This first initiative under the MOU has been addressed in the preceding text but it is worth stressing that although good condition patches of remnant bushland are found on site, they have no conservation status beyond the stand of Eucalyptus decipiens trees which are located along the southern boundary and have been preserved as part of the public open space allocation. The site does not contain flora or fauna that have endangered, rare priority or other conservation significance. The small pocket size of the remnant vegetation combined with the disturbance and incompatible land use change proposed on site will result in it having little on-going local value.

### Urban Public Open Space

Implementation of the Structure Plan will be accompanied by a detailed Landscape Masterplan to ensure that the revegetation that takes place as part of the LSP will have an important environmental, social and amenity role to play. Key components of the Landscape Masterplan will include:

- » Cleaning up and enhancing existing vegetation area, including pruning, removal of dead and diseased species and complementary planting of compatible natives (Figure 24);
- » The consolidation of public open space within the Village Green, as requested by the City of Stirling, to ensure that it provides an active recreation function. Other initiatives in the Village Green will include the planting of shade trees and paving treatments which reinforce the clear distinction between trafficable and pedestrian/recreation areas;
- » Public Open Space enhancement initiatives which will include rehabilitation and development on the existing Almadine / Silica reserve, including improved stormwater management provisions for the structure plan area (further detail is provided under the following section 'Off-site Revegetation');
- » Providing for a mix of deciduous and evergreen planting offering year round shade and visual amenity, with seasons colour;
- » Street planting not interrupted by vehicle access; and
- » Stormwater and infiltration treatments compatible with retention of vegetation and high visual amenity.
- » Provision of additional landscaping with mature plants along Almadine Drive to assist with visual screening. (Refer to Figure 20)

### Off-Site Revegetation

The Project Team has nominated the Almadine Drive / Silica Road public open space reserve adjoining to the north of the Project Site as the focus for off-site rehabilitation. This reserve has been identified in the City's Biodiversity Strategy as containing the same vegetation complex as the Project Site, Cottesloe Central and South. It contains a small pocket of 'Good' condition vegetation in the northern corner with the balance being 'Degraded' or 'Completed Degraded'. The condition of the park over the 09/10 summer months saw the dying off of previously irrigated sections of the park, demonstrating that the City has not maintained any irrigation regime which previously existed, assumably as part of its Ground Water Conservation Strategy and reflective of the absence of any evidence of public use. In such cases, the City would normally seek to transform and regenerate the park to native bushland but this has not yet occurred.

The reserve has an area of 1ha, which is the minimum size, as determined by the Biodiversity Strategy, as having a reasonable prospect of withstanding pressures from edge effects' from adjoining urbanisation. This is assisted by its abutment to the 'soft' edge of the Retirement Village, containing a fringing tree protection area and the landscaped private recreation areas.

» Figure 24 - Urban Landscapes



**The Landscape Masterplan will assist in the transformation of the Almadine/Silica reserve into an Ecozone through transfer of top soil, seeding, transplanting certain native species from the Project Site, together with additional planting of local native trees, shrubs and ground cover.**

**In consultation with the City of Stirling, the LSP has sought to consolidate additional public open space allocation adjacent to the Almadine / Silica reserve to increase the potential use for active recreation. The Landscape Masterplan will reflect the outcomes of a partnership agreement with the City relating to the rehabilitation and development of this consolidated open space reserve, addressing the principles discussed.**

### Tree Border Retention

The potential for some irrigated areas under the water reuse schemes adopted within the Project Site will also be investigated. Implementing the City's Ecozone principles in this manner will maintain the ecological link / stepping stone philosophy advocated in the City's Green Plan 2.

The proposed public open space allocation and tree protection areas predominantly form a tree border / buffer – reflective of the preference of the Stakeholder Reference Group, discussed in Part 2, section 4. It is also reflective of the fact that the protection of internalised remnant bushland is unlikely to be sustainable.

### Significant Tree Retention

The table below indicates the scores and weighting criteria used to determine tree significance within the Carine TAFE site by assessing four characteristics of individual trees

Tree size was calculated on the basis of tree height (i.e. 15m+=3, 10-15m=2 and 0-10m=1) multiplied by girth/ diameter at breast height (DBH) (i.e. >3m=4, 2-3m=3, 1-2m=2 and <1m=1). Using this method trees that scored 12 were classed as Very Large (overall score of 4), 9 as Large (3), 6 as Medium (2) and less than 6 as Small (0). This scoring system tended to favour the naturally larger tree species (eg Eucalyptus gomphocephala) over the smaller species (eg Banksia attenuata). However these occasional prejudicial scores were partially offset by species appropriate size being considered an important criterion when determining landscape value scores.

All trees were scored on an individual basis. However there is a presumption that those trees that form part of the Eucalyptus decipiens and Eucalyptus

totdiana Woodland community (EdEtLOW) which had been previously identified by the Friends of Star Swamp as being under-represented in the Perth Metropolitan Area and within the broader Preferred Vegetation Retention Area will be retained irrespective of the scores. Trees endemic to the Carine area were assigned a higher habitat value than introduced or planted species (i.e Corymbia calophylla var. rosea, Eucalyptus citriodora and other non-endemic plantings).

Landscape values for surveyed trees provided in the Syrinx spreadsheet along with data relating to the height and girth and condition of individual trees were reviewed and assessed using criteria relating to suitability of the retention of tree species in an urban landscape (see Table below).

Landscape Value Rating System	
4	Majestic tree / well-formed tree offering established shade / relief from urban skylines and roofscapes / some habitat potential and associated passive educational & recreational pursuits (like bird watching)
3	Medium sized tree / representative of local landscape character values / offering partial visual relief to the urban landscape structure / some shade opportunities
2	Medium to small tree offering some contribution to local landscape character values / limited shade / poor form, health or damaged specimen / non-vigorous weed species that could be retained if managed
0	Risks associated with limb drop / heaving of ground surface / allelopathic leaf litter (growth inhibitors) affecting understorey & turf success / drops nuts or leaf litter that pose trip or slip hazards / declared noxious weed

Trees that were classified as being Poor or Poor-Good, which may have been a result of termite infestation, burnt around trunk or general poor tree health were excluded from retention consideration regardless of whether they had high environmental, landscape or size values.

Figure 26 plots the results of the significant tree survey, together with an overlay of the proposed structure plan. The trees identified for retention are situated well within the public open space and tree protection areas. Those identified as 'possible retention' are located on lot boundaries, within road reserves and car parking areas, where retention is likely but cannot be verified until the detailed design is undertaken. The location of tuarts and the numbers to be retained or removed are included in total number of significant trees but have been extracted for easier reference.

This table demonstrates that the strategic allocation of public open space, tree retention area and urban design generally has responded responsibly to the need to retain significant trees on site. The Structure Plan demonstrating its potential to retain most of the Priority 1 trees (which are tuarts), over half of the total number of significant trees identified on site and 75% of the total number of tuarts.

Weighting	25%	25%	25%	25%	
Values	Size (height x girth)	Environmental Value	Landscape Value	Condition	Scores
	Small	Low	Low	Poor	0
	Medium	Medium	Medium	Average	2
	Large	High	High	Good	3
	Very Large	Very High	Very High	Excellent	4

» Table 5 - Significant Tree Weighting Matrix

number of significant trees 157						
Trees disregarded due to poor health 18 (reduced total to 139)						
	total	To be retained	Possible retention		To be removed	
Priority 1	6	5	-	83%	1	17%
Priority 2	59	20	13	56%	26	44%
Priority 3	68	23	10	48%	35	52%
Priority 4	6	3	1	66%	2	34%
total	139	51	24	54%	64	46%

» Table 6 - Significant Tree Protection Schedule

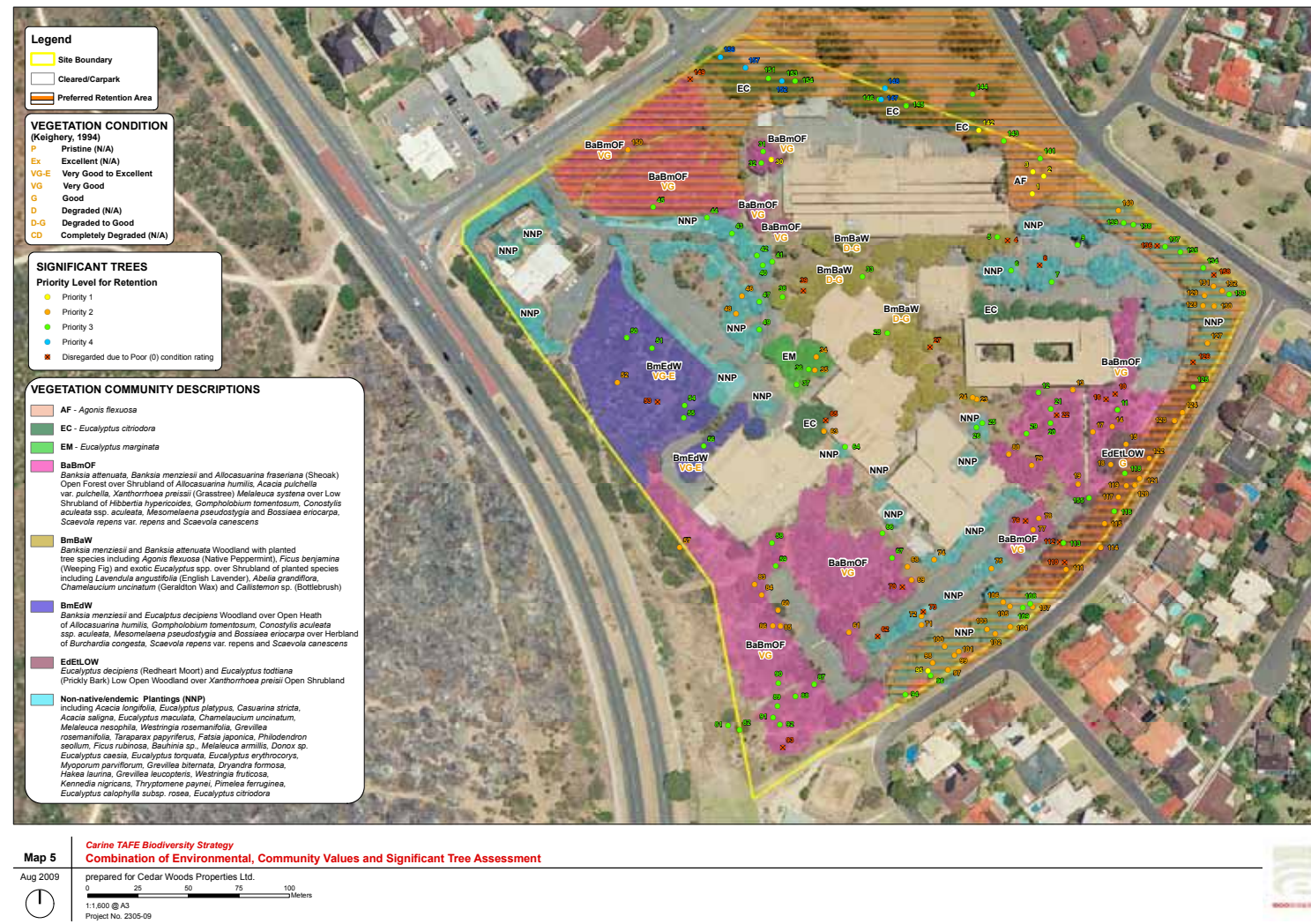
number of tuarts 39						
Trees to be disregarded due to poor health 3 (reduced total to 36)						
Priority 1	6	4	1	83%	1	17%
Priority 2	30	10	11	73%	9	27%
total	36	14	12	72%	10	28%

» Table 7 - Protection of Tuarts Schedule



# 3.0 Local Structure Plan

» Figure 25 - Significant Tree Survey



» Figure 26 - Significant Tree Survey / Indicative Built Form Overlay





## 4.0 Movement Network

This section describes the proposed movement networks, street design and construction and parking and their impact on existing movement networks.

The design of the movement network has been influenced by two key objectives: to minimise the external impact of the development while maintaining a high degree of connectivity and integration with the surrounding area; and to promote sustainability, amenity and mobility for residents.

The related Community Objectives identified by the Stakeholder Reference Group are:

- » local residential streets are not to be overloaded;
- » future vehicle access points are to address the amenity of surrounding residents;
- » local traffic volumes generated by the redevelopment are to be appropriate for the area; and
- » the need to manage and minimise congestion at the corner of Almadine Drive and Marmion Avenue.

### Internal Movement Network

The internal road network provides a combination of permeability and traffic control. The road network uses a range of road reserve widths that will allow for appropriate vehicular, cyclist and pedestrian movement as well as providing a social community link between existing and proposed residents.

The main entrance to the site is from Almadine Drive, with the main access road being 18 metres in width and activated on both sides of the street via mixed use development, residential courtyards and the Village Square. This road will act as a main street and will be designed for safe pedestrian movement.

An east-west Village Green is proposed at the centre of the redevelopment, providing both for vehicle movement and public open space. **A detailed Landscape Masterplan will be prepared to improve the usability of the Village Green for more active public recreation and better encourage the use of the Village Green as the 'pedestrian' and recreational merge point for the retirement, aged care, apartments and traditional residential development. A place where all generations can come together and interact.**

The Village Green will be constructed at the same level as the retirement village ground floor (with basement parking below) to provide for universal access and a safe walkable environment for seniors. The medium density level lots opposite will also have an active interface with the Village Green.

The medium density residential precinct will be serviced by 15 metre wide road reserves and 6 metre laneways. The laneways allow for controlled access to the rear of the residential properties and will result in an improved front streetscape by removing crossovers and garages. This is a particular objective along Emerald Way.

Features of the internal network that enhance safety are short road lengths, the deliberate omission of four-way intersections, provision of on-street parking and road alignments that encourage drivers to concentrate on their immediate surrounds and reduce travel speeds. The use of the internal road network by through traffic will also be discouraged through design and traffic management initiatives. **Road construction will comply with the City of Stirling engineering design requirements.**

### Transport Initiatives

When assessing the sustainability performance of a redevelopment project, it is as important to reduce the global warming effects of personal transport as it is to tackle the energy performance of buildings.

As part of its commitment to promoting sustainable development, the Project Team will investigate other opportunities to reduce car dependency through the following initiatives:

- » Private bus service – the Retirement Village proposes to operate a private bus service. Opportunities will be explored to make this bus service available to other residents on-site.
- » Car Sharing (feasibility) – the Project team will undertake a feasibility study on the establishment of car sharing facility for residents.

» Figure 1 (reproduced) – Carine Vision Structure Plan



## Transport Impact Assessment

A Traffic Impact Assessment (TIA) has been prepared to consider the impact of the proposed Carine Vision Local Structure Plan. In particular, the TIA considers the operational impact on the associated adjacent road network. This report has been prepared in accordance with the WAPC Transport Assessment Guidelines for Developments: Volume 2 – Individual Developments (2006).

The TIA provided the following conclusions in regards to the CVLSP:

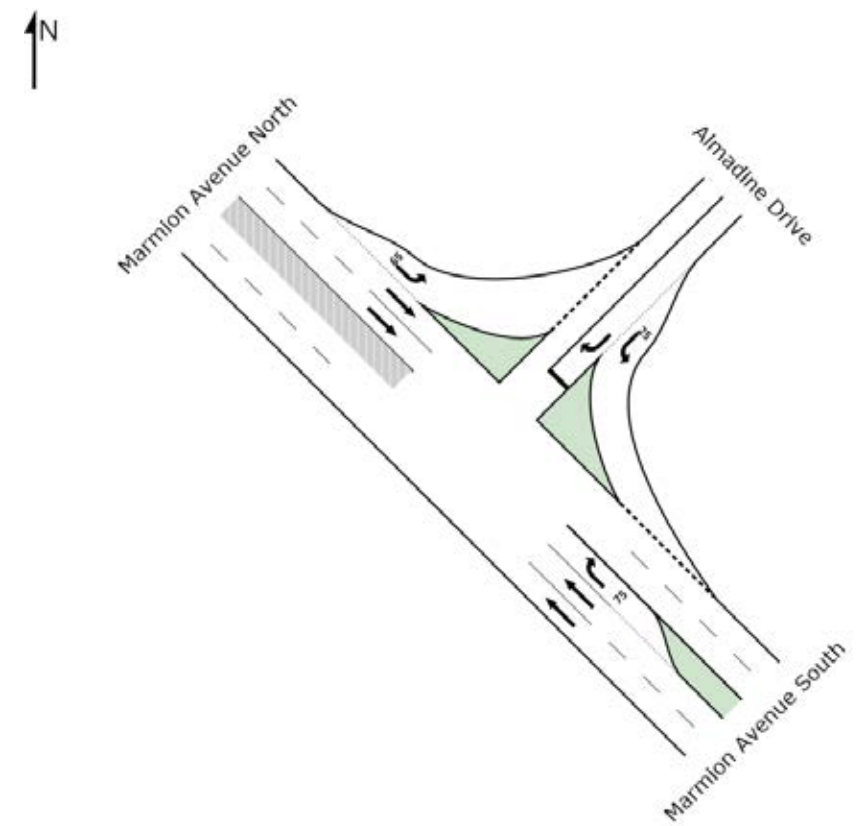
- The proposed development will consist of a variety of uses including a mixed-use precinct, retirement village and aged care facility and general residential;
- The proposed development is anticipated to generate a total of 2,532 vehicle trips each weekday, including 209 during the AM peak and 289 during the PM peak;
- These volumes represent a lower daily generation than the previous Carine TAFE, and substantially lower generation during the critical AM peak;
- Traffic volumes along Silica Road are expected to increase from approximately 1,600vpd to 2,750vpd, well below the practical capacity of the road and within the target volume of 3,000vpd designated under Liveable Neighbourhoods;
- Traffic volumes along Almadine Drive are expected to increase from approximately 1,750vpd to 2,300vpd, well below the practical capacity of the road and within the target volume of 3,000-7,000vpd designated under Liveable Neighbourhoods;
- The majority of boundary road intersections including the priority intersection of Almadine Drive / Silica Road, the roundabout intersections of Osmaston Road / Everingham Street and Silica Road / Everingham Street currently operate at a LOS A, and are anticipated to continue to operate at this Level of Service;
- The critical intersection of Marmion Avenue and Almadine Drive currently operates at a LOS F for the left-turn egress movement from Almadine Drive, due to the high volume of traffic along Marmion Avenue;
- Due to the forced-flow situation caused by traffic queued back from the southbound Marmion Avenue / Reid Highway / North Beach Road intersection, right-turning ingress and egress movements are greatly improved when compared to a free-flow scenario. This effect also limits the impact of increased traffic along Marmion Avenue as modelled in the 2021 and 2031 scenarios;

- Minor modifications to the Marmion Avenue / Almadine Drive intersection are recommended to improve the existing situation. This involves defining and lengthening the left-turning pocket on the westbound Almadine Drive approach. These upgrades will improve future operation following development but are not triggered by the development; (Refer to Figure 27)
- The existing public transport network is relatively good for the site, with services running at 20 minute intervals during peak periods;
- The pedestrian and cycling network within the proposed development and along the boundary road network is of relatively high quality, with good connections to strategic links. Pedestrians crossing Marmion Avenue have a number of opportunities, including the protected pedestrian crossing at the Marmion Avenue / Reid Highway signalised intersection.

Accordingly, traffic impacts associated with this proposal should not form an impediment to the proposed development.

Main Roads WA has reviewed the TIA and advised that the conclusions and recommendations are acceptable. The TIA is appended to this LSP (Appendix 5).

» Figure 27 - Marmion Avenue / Almadine Drive - SIDRA Layout



## 5.0 Parking

Maximum parking capacity for the LSP is as follows (refer to Figure 28):

- » Self-contained car parking for the single family and group housing/multiple residential uses as per the R-Codes;
- » Car parking bays for the Retirement Village as per the Scheme
- » Car parking bays for the Residential Aged Care as per the Scheme.
- » 13 on-site car parking bays for the Child Care Centre, with potential for additional bays within the front (Almadine Drive) setback;
- » **46** on-site car parking bays for the Mixed Use, incorporating retail (supermarket), office/medical centre and residential apartments; and
- » 20 on-street parking within the reserve of the entry road off Almadine Drive and an additional 24 on-street bays within the Village Green.

The total on-street car parking available for the Mixed Use Precinct is **44** bays. Additional parking is possible on the site but for the purposes of this assessment, only the **44** on-street bays are taken into account.

A detailed assessment of the parking needs has been undertaken to determine the adequacy of supply in the context of anticipated demand. This assessment has included a review of Scheme 3, the City's Policy N101315 – Parking Policy and best-practice from around the Perth Metropolitan area as well as a review of the proposed parking supply in the context of internationally-recognised traffic engineering standards for the planning and management of car parking supply.

Table 8 outlines the parking requirements in relation to each of the proposed landuses, as required by Scheme 3, and other relevant planning policies.

» Table 8 - Scheme 3 Car Parking Requirements

Land Use	Parking Guidelines	Source
Retail	8 bays for each 100 m <sup>2</sup> GLA	Scheme 3/ Parking Policy
Office	1 spaces for every 30 sqm of GFA	Scheme 3/ Parking Policy
Medical Centre	10 bays plus 2 bays for each practitioner in excess of 2	Scheme 3/ Parking Policy
Residential	min 1 bay per dwelling for <75 - 110m <sup>2</sup> plus 0.25 visitor bays per dwelling	R-Codes
Child Care	1 space per 7 children plus 1 space per employee	Scheme 3



Table 9 calculates the number of car parking spaces generated by the LSP, using floor areas taken from the Carine Vision Indicative Built Form Plan (Figure 17). On -street public car parking has been allocated for use by all users of the mixed-use area and therefore has been provided to broadly serve all the uses within each respective area. It shows an over-provision of 12 car parking bays.

» Table 9 - Carine Vision Car Parking Requirements

Land Use	No. Spaces Required	No. Spaces Provided
Retail (inc. Supermarket)	52	<b>46</b>
Commercial (Office)	8	Inc. in retail
Medical Centre	14	Inc. in retail
Residential (Above Office – 3 x 2 bdrm apts)	5	Inc. in retail
Child Care	16	13
<b>On-Street Parking</b>		<b>44</b>
<b>TOTAL REQUIRED/PROPOSED :</b>	<b>95</b>	<b>103</b>

» Figure 28 - Carine Vision Parking Plan



## 3.0 Local Structure Plan

There are also a number of synergies between the various uses in the Mixed Use precinct which makes the provision of 107 car parking bays more efficient. The indicative built form for the Mixed Use Precinct allows approximately 490m<sup>2</sup> for the potential expansion of the existing medical centre on the opposite side of Almadine Drive. Interest has also been expressed by a convenience retailer 'The Good Grocer', which is a small scale supermarket, selling popular grocery lines, fruit and vegetables, small goods and with various speciality lines. Provision has also been made for three small (76m<sup>2</sup>) residential apartments.

Donald Veal Consultants undertook a 'worst case' peak parking demand analysis for this landuse mix, based upon information documented in the Institute of Transportation Engineers Parking Generation Manual, 3rd Edition (2004), and commonly used as the traffic engineering industry-standard for parking supply assessment. Table 10 shows the results of possible 'worst case' scenarios which takes into account the potential for synergies to operate between the proposed mix of uses (excluding residential) through their differing peak demand times and the resulting opportunities to share car parking spaces.

Table 10 shows that the 'worst case' scenario for car parking demand would occur during the Thursday afternoon (2-3p.m.) period. However, even at this period of heightened demand, an excess of 26 parking bays would remain. This allows for the likely event that some of the 28 bays in the Village Green will be used by visitors to the Retirement Village and private residents opposite.

It should also be noted that the overall demand for parking within the LSP may be reduced, taking into account internal trip making by residents in the Structure Plan area, as well as those within the walkable catchment. The expansion of the local commercial area also increases the likelihood of multi-purpose trips.

» Table 10 - Carine Vision Car Parking Demand Analysis

	Land Use	% Parking Used	Parking Bays Required Under Scheme 3 (90)	Parking Bays As Per Utilisation	Parking Surplus as Per Scheme Requirements)	Overall Parking Surplus as LSP Parking Provision - excl. residential (102)
Thursday Afternoon Peak 2:00 - 3:00PM	Child Care	42%	16	7	+9	+27
	Office	84%	8	7	+1	
	Medical Centre	84%	14	12	+2	
	Retail	94%	52	49	+3	
Thursday Evening Peak 7:00 - 8:00PM	Child Care	0%	16	0	+16	+66
	Office	5%	8	1	+7	
	Medical Centre	5%	14	1	+13	
	Retail	64%	52	34	+18	
Saturday Afternoon Peak 2:00 - 3:00PM	Child Care	0%	16	0	+16	+58
	Office	8%	8	1	+7	
	Medical Centre	10%	14	1	+13	
	Retail	80%	52	42	+10	
Saturday Evening Peak 7:00 - 8:00PM	Child Care	0%	16	0	+16	+97
	Office	1%	8	1	+7	
	Medical Centre	1%	14	1	+13	
	Retail	5%	52	3	+49	

## 6.0 Engineering and Servicing

### Services

The Project Site is capable of being serviced by all necessary utility services required to accommodate the urban development proposed, including sewer and water reticulation, power, gas and communications. There are some existing authority services that will either be retained or relocated to suit the redevelopment of the site.

### Roads

Road design has been briefly discussed in the previous Section 4.0. Detail designs will comply with the requirement of the City of Stirling, including the provision of 6m minimum carriageway widths. In addition, all roads will have sufficient dimensions to accommodate rubbish and recycling truck movements (12.5m long single unit truck).

### Earthworks

Extensive earthworks will be required. However, the intention will be to retain the majority of existing trees in the fringing public open space buffer and the tree protection areas identified on the LSP and discussed in section 3. An indicative earthworks and retaining plan is provided in Figure 28.

The Retirement Village / Residential Aged Care developments will be cut into the site, with basement / undercroft parking areas below the level of the Village Green.

The medium density precinct will be predominantly terraced with the slope of the land, with fill required in most of the southern corner of the site. The first row of medium density lots will maintain an interactive frontage to the Village Green while accommodating the upward slope of the land to the rear. As such, these are proposed as split level lots, restricted to 2-3 levels, where the front level, facing the Village Green, is lower.

The apartment sites will sit predominantly at natural ground level

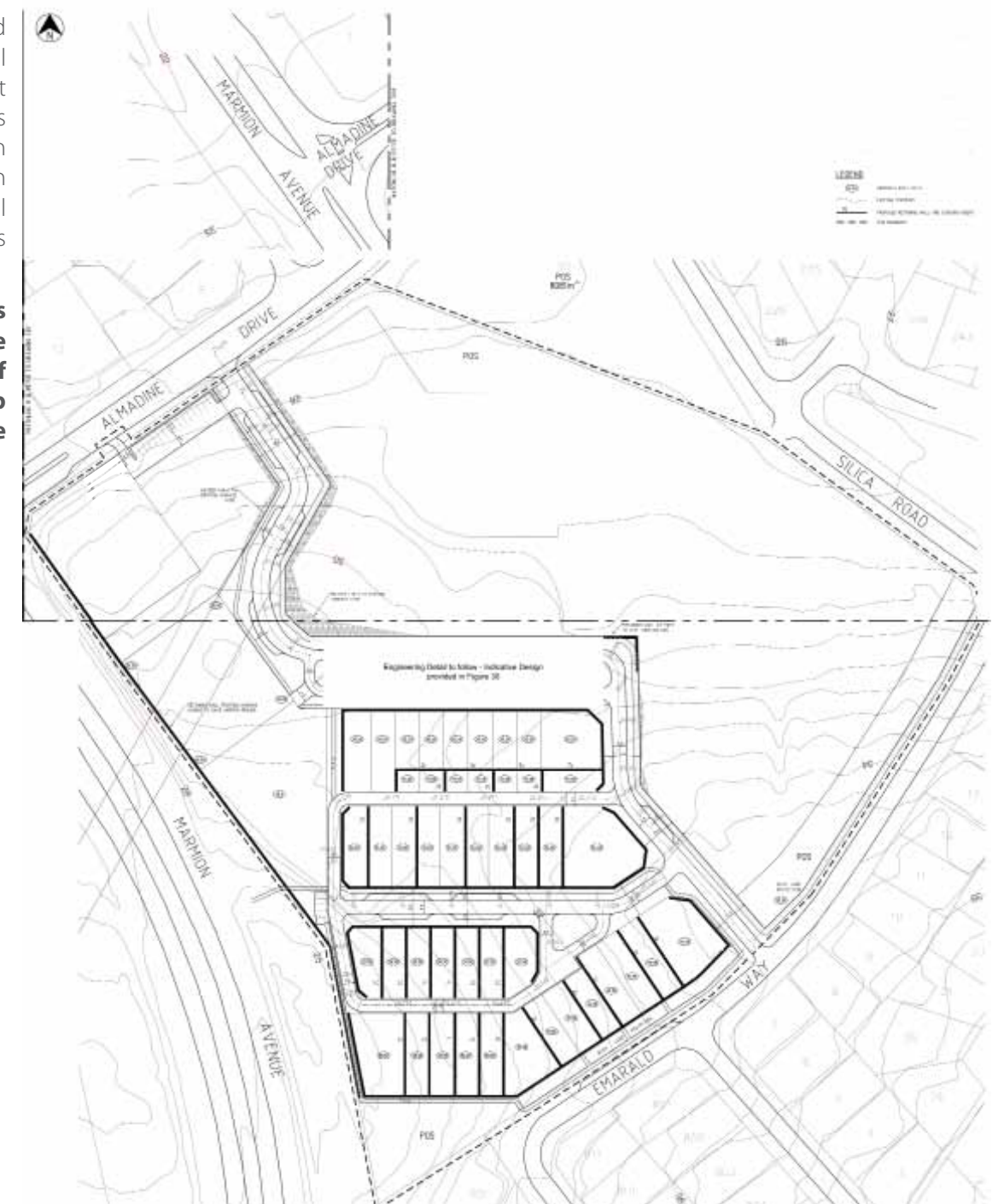
The Mixed Use development will be cut into the site, with 2 levels fronting Almadine Drive, graduating to a single level at the rear, taking into account the steep rise.

### Stormwater

The principles of Water Sensitive Urban Design will be utilised within the stormwater management system for the LSP. This will consist of Best Management Practices to promote infiltration at source at a number of locations along the drainage system. This will take the form of a series of broad open landscaped detention basins/swales to the north and south of the Project Site, which will provide the opportunity for infiltration and double as informal public open space. The Local Water Management Strategy is provided in Appendix 6.

**The public open space strategy outlined in the previous section 3.0 discusses a proposed partnership with the City of Stirling for the rehabilitation and development of the adjoining Almadine / Silica reserve. This partnership agreement will include the extension of on-site drainage requirements into the Almadine / Silica reserve.**

» Figure 29 - Indicative Earthworks / Retaining Plan







# *Appendices*

<b><i>Appendix 1</i></b>	<i>Spring Flora and Vegetation Survey &amp; Fauna Assessment</i>
<b><i>Appendix 2</i></b>	<i>Carine Vision Community Bulletins</i>
<b><i>Appendix 3</i></b>	<i>Carine Area Community Needs Study and Dept of Health &amp; Ageing - Allocation of Places</i>
<b><i>Appendix 4</i></b>	<i>Mixed Use - Economic Impact Analysis</i>
<b><i>Appendix 5</i></b>	<i>Traffic Impact Assessment</i>
<b><i>Appendix 6</i></b>	<i>Local Water Management Strategy</i>







# *Carine Vision Local Structure Plan*

AUGUST 2012

