## Herdsman Glendalough Area Structure Plan

### Prepared By:
Taylor Burrell Barnett Town Planning and Design  
187 Roberts Road  
SUBIACO WA 6008  
Phone: 9382 2911  Fax: 9382 4586  
admin@tbbplanning.com.au

### In association with:
- MGA Planners  
- EPCAD  
- Urbanizma  
- Colliers International  
- GHD  
- Sinclair Knight Merz

<table>
<thead>
<tr>
<th>Revision</th>
<th>Reviewer</th>
<th>Date Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>JR</td>
<td>May 2013</td>
</tr>
<tr>
<td>1</td>
<td>KH</td>
<td>June 2013</td>
</tr>
<tr>
<td>2</td>
<td>KH</td>
<td>Apr 2014</td>
</tr>
<tr>
<td>3</td>
<td>KH</td>
<td>June 2014</td>
</tr>
<tr>
<td>4</td>
<td>KH</td>
<td>Sept 2014</td>
</tr>
</tbody>
</table>
# CONTENTS

## TABLE OF MODIFICATIONS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>1</td>
</tr>
<tr>
<td>PART ONE STATUTORY SECTION</td>
<td>5</td>
</tr>
<tr>
<td>1 THE STRUCTURE PLAN</td>
<td>6</td>
</tr>
<tr>
<td>1.1 STRUCTURE PLAN AREA</td>
<td>6</td>
</tr>
<tr>
<td>1.2 STRUCTURE PLAN CONTENT</td>
<td>6</td>
</tr>
<tr>
<td>1.3 INTERPRETATIONS</td>
<td>6</td>
</tr>
<tr>
<td>1.4 OPERATION</td>
<td>7</td>
</tr>
<tr>
<td>1.5 DEVELOPMENT REQUIREMENTS</td>
<td>7</td>
</tr>
<tr>
<td>1.5.1 HERDSMAN GLENDALOUGH DETAILED AREA PLAN</td>
<td>7</td>
</tr>
<tr>
<td>1.6 LAND USE AND SUBDIVISION REQUIREMENTS</td>
<td>7</td>
</tr>
<tr>
<td>1.6.1 LAND USE ZONES</td>
<td>7</td>
</tr>
<tr>
<td>1.6.2 LAND USE PERMISSIBILITY</td>
<td>8</td>
</tr>
<tr>
<td>1.6.3 ADDITIONAL USE CLASSIFICATIONS</td>
<td>10</td>
</tr>
<tr>
<td>1.6.4 SPECIAL CONTROL AREA – MANDATORY RESIDENTIAL</td>
<td>11</td>
</tr>
<tr>
<td>1.6.5 PUBLIC OPEN SPACE</td>
<td>12</td>
</tr>
<tr>
<td>1.6.6 PUBLIC ROAD CONNECTIONS</td>
<td>12</td>
</tr>
<tr>
<td>1.7 GENERAL REQUIREMENTS</td>
<td>12</td>
</tr>
<tr>
<td>1.7.1 AFFORDABLE DWELLINGS</td>
<td>12</td>
</tr>
<tr>
<td>1.7.2 VEHICLE PARKING</td>
<td>13</td>
</tr>
<tr>
<td>1.7.3 RETAIL FLOORSPACE</td>
<td>13</td>
</tr>
<tr>
<td>1.7.4 ROAD RESERVE WIDTH REQUIREMENTS</td>
<td>14</td>
</tr>
<tr>
<td>1.8 OTHER REQUIREMENTS</td>
<td>14</td>
</tr>
<tr>
<td>1.8.1 DEVELOPMENT CONTRIBUTIONS</td>
<td>14</td>
</tr>
<tr>
<td>1.8.2 NOISE MITIGATION</td>
<td>14</td>
</tr>
<tr>
<td>1.8.3 ODOUR MANAGEMENT</td>
<td>15</td>
</tr>
<tr>
<td>PART TWO EXPLANATORY INFORMATION</td>
<td>17</td>
</tr>
<tr>
<td>1 INTRODUCTION</td>
<td>18</td>
</tr>
<tr>
<td>1.1 PURPOSE</td>
<td>18</td>
</tr>
<tr>
<td>1.2 BACKGROUND</td>
<td>18</td>
</tr>
<tr>
<td>1.3 COMMUNITY CONSULTATION</td>
<td>18</td>
</tr>
<tr>
<td>1.3.1 VISIONING WORKSHOP (MAY 2013)</td>
<td>18</td>
</tr>
<tr>
<td>1.3.2 PRECINCT WORKSHOPS (JUNE 2013)</td>
<td>19</td>
</tr>
<tr>
<td>1.3.3 COMMUNITY OPEN DAY (NOVEMBER 2013)</td>
<td>20</td>
</tr>
<tr>
<td>1.3.4 PUBLIC ADVERTISING</td>
<td>20</td>
</tr>
<tr>
<td>2 SUBJECT LAND</td>
<td>21</td>
</tr>
<tr>
<td>2.1 LOCATION</td>
<td>21</td>
</tr>
<tr>
<td>2.2 LAND OWNERSHIP</td>
<td>21</td>
</tr>
<tr>
<td>2.3 LOCAL CONTEXT</td>
<td>21</td>
</tr>
<tr>
<td>2.4 REGIONAL CONTEXT</td>
<td>23</td>
</tr>
<tr>
<td>3 STATUTORY AND POLICY FRAMEWORK</td>
<td>24</td>
</tr>
<tr>
<td>3.1 STRATEGIC PLANNING CONTEXT</td>
<td>24</td>
</tr>
<tr>
<td>3.1.1 DIRECTIONS 2031 AND BEYOND</td>
<td>24</td>
</tr>
<tr>
<td>3.1.2 CENTRAL METROPOLITAN PERTH SUB REGIONAL STRATEGY</td>
<td>25</td>
</tr>
</tbody>
</table>
3.1.3 SPP 4.2 ACTIVITY CENTRES FOR PERTH AND PEEL 27
3.1.4 CAPITAL CITY PLANNING FRAMEWORK 27
3.1.5 ECONOMIC AND EMPLOYMENT LAND STRATEGY (EELS) 28
3.1.6 DRAFT PUBLIC TRANSPORT FOR PERTH STRATEGY IN 2031 29
3.1.7 RELEVANT STATE PLANNING POLICIES 29
3.1.8 STIRLING CITY CENTRE STRUCTURE PLAN 31
3.1.9 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR FRAMEWORK 32
3.1.10 HERDSMAN GLENDALOUGH CONCEPT STRUCTURE PLAN 33

3.2 STATUTORY PLANNING CONTEXT 35
3.2.1 METROPOLITAN REGION SCHEME 35
3.2.2 CITY OF STIRLING LOCAL PLANNING SCHEME NO. 3 37

4 SUBJECT AREA 40
4.1 DEMOGRAPHIC AND HOUSEHOLD ANALYSIS 40
4.2 SOCIO-ECONOMIC ANALYSIS 41
4.3 EMPLOYMENT GENERATION 43
4.4 RETAIL NEEDS ANALYSIS 46
4.4.1 ACTIVITY CENTRES FOR PERTH AND PEEL – SPP 4.2 46
4.4.2 RNA PREPARATION 47
4.4.3 RNA OUTCOMES 48

4.5 HOUSING 49

5 EXISTING SITE DESCRIPTION 50
5.1 NATURAL ENVIRONMENT 50
5.1.1 TOPOGRAPHY AND LANDFORM 50
5.1.2 SOILS AND GEOMORPHOLOGY 50
5.1.3 NATURAL ENVIRONMENT 50
5.1.4 FLORA & FAUNA 50
5.1.5 INDIGENOUS HERITAGE 51

5.2 BUILT FORM AND LOT SIZE 51

5.3 COMMUNITY FACILITIES AND PUBLIC REALM 52
5.3.1 EXISTING FACILITIES 52
5.3.2 COMMUNITY INFRASTRUCTURE PLAN 52

5.4 MOVEMENT NETWORK 53
5.4.1 EXISTING MOVEMENT NETWORK 54
5.4.2 PEDESTRIANS AND CYCLISTS 54

5.5 EXISTING TRANSPORT STUDIES 55
5.5.1 LONG TERM TRANSPORT PLAN (2009) 55
5.5.2 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR TRANSPORT REPORT (2010) 56
5.5.3 HERDSMAN BUSINESS PARK & GLENDALOUGH STATION TRANSPORT STRATEGY (2010) 57
5.5.4 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR PROJECT – TRANSPORT MODELLING 2011 57
5.5.5 STIRLING CITY CENTRES TRANSPORT STRATEGIES (2013) 57
5.5.6 INTEGRATED TRANSPORT STRATEGY 58

5.6 SERVICING INFRASTRUCTURE 58
5.6.1 SEWER 58
5.6.2 WATER 59
5.6.3 POWER 59
5.6.4 GAS 60
5.6.5 TELECOMMUNICATIONS 60
6 OPPORTUNITIES & ISSUES

6.1 OPPORTUNITIES & ISSUES
6.1.1 LAND USE
6.1.2 BUILT FORM
6.1.3 MOVEMENT NETWORK
6.1.4 LANDSCAPING AND PUBLIC REALM

6.2 ISSUES
6.2.1 MOTIVATION FOR REDEVELOPMENT
6.2.2 LAND USE COMPATIBILITY
6.2.3 INFRASTRUCTURE AVAILABILITY
6.2.4 MARKET ACCEPTABILITY

7 STRUCTURE PLAN

7.1 DESIGN VISION & PHILOSOPHY
7.2 PRINCIPLES
7.3 LAND USE
7.3.1 MIXED USE
7.3.2 COMMERCIAL/BUSINESS
7.3.3 TRANSITIONAL INDUSTRY
7.3.4 RESIDENTIAL
7.3.5 ADDITIONAL USE – SHOP
7.3.6 ADDITIONAL USE – SHOWROOM
7.3.7 ADDITIONAL USE – OFFICE
7.3.8 ADDITIONAL USE – MULTIPLE DWELLINGS
7.3.9 SPECIAL CONTROL AREA – MANDATORY RESIDENTIAL
7.3.10 AFFORDABLE DWELLING PROVISION
7.3.11 POTENTIAL REDEVELOPMENT YIELDS

7.4 BUILT FORM
7.4.1 BUILT FORM HEIGHT
7.4.2 DESIGN GUIDANCE

7.5 MOVEMENT NETWORK
7.5.1 STREET CHARACTER TYPE 1
7.5.2 STREET CHARACTER TYPE 2
7.5.3 STREET CHARACTER TYPE 3
7.5.4 STREET CHARACTER TYPE 4
7.5.5 STREET CHARACTER TYPE 5
7.5.6 ADDITIONAL SPECIFIC ROAD RESERVE REQUIREMENTS
7.5.7 PROPOSED ROAD CONNECTIONS
7.5.8 ADDITIONAL MOVEMENT NETWORK CONSIDERATIONS

7.6 STREETSCAPE AND PUBLIC SPACE

7.7 WATER MANAGEMENT
7.7.1 WATER MANAGEMENT IMPLEMENTATION

7.8 SERVICING INFRASTRUCTURE
7.8.1 SEWER
7.8.2 WATER
7.8.3 ELECTRICITY
7.8.4 GAS
7.8.5 TELECOMMUNICATIONS

7.9 COMMUNITY INFRASTRUCTURE

8 IMPLEMENTATION
8.1 ADOPTION OF LOCAL STRUCTURE PLAN
8.2 MANAGEMENT PLANS 98
8.3 STAGING 98
8.4 POLICY DEVELOPMENT 98
  8.4.1 CAR PARKING POLICY 99
  8.4.2 PUBLIC ART POLICY 99
  8.4.3 INTERIM DEVELOPER CONTRIBUTIONS POLICY 99

9 REFERENCES 100

FIGURES

PLAN 1 STRUCTURE PLAN 6
PLAN 2 ADDITIONAL USES PLAN 6

FIGURE 1 LOCATION PLAN 21
FIGURE 2 LAND OWNERSHIP PLAN 21
FIGURE 3 LOCAL CONTEXT PLAN 22
FIGURE 4 REGIONAL CONTEXT PLAN 23
FIGURE 5 DIRECTIONS 2031 AND BEYOND EXTRACT 24
FIGURE 6 CENTRAL METROPOLITAN PERTH SUB REGION STRATEGY EXTRACT 26
FIGURE 7 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR FRAMEWORK PLAN 32
FIGURE 8 HERDSMAN GLENDALOUGH CONCEPT STRUCTURE PLAN 33
FIGURE 9 EXISTING METROPOLITAN REGION SCHEME 35
FIGURE 10 PROPOSED METROPOLITAN REGION SCHEME AMENDMENT 36
FIGURE 11 LOCAL PLANNING SCHEME 37
FIGURE 12 RETAIL NEEDS ANALYSIS 47
FIGURE 13 TOPOGRAPHY AND DRAINAGE CATCHMENTS PLAN 50
FIGURE 14 SOILS & GEOMORPHOLOGY PLAN 50
FIGURE 15 NATURAL ENVIRONMENT PLAN 50
FIGURE 16 FIGURE GROUND ANALYSIS 52
FIGURE 17 LOT SIZE ANALYSIS 52
FIGURE 18 EXISTING MOVEMENT NETWORK 54
FIGURE 19 PED SHED ANALYSIS 54
FIGURE 20 S.A.F.E. ASSESSMENT 55
FIGURE 21 LONG TERM TRANSPORT PLAN EXTRACT 55
FIGURE 22 LAND USE OPPORTUNITIES AND CONSTRAINTS PLAN 61
FIGURE 23 BUILT FORM OPPORTUNITIES AND CONSTRAINTS PLAN 61
FIGURE 24 MOVEMENT NETWORK OPPORTUNITIES AND CONSTRAINTS PLAN 62
FIGURE 25 LANDSCAPING AND PUBLIC REALM OPPORTUNITIES AND CONSTRAINTS PLAN 64
FIGURE 26 REDEVELOPMENT OPPORTUNITIES PLAN 67
FIGURE 27 MASTERPLAN 71
FIGURE 28 BUILDING HEIGHTS PLAN 76
FIGURE 29 STREET CHARACTER TYPE PLAN 78
FIGURE 30 INDICATIVE SCARBOROUGH BEACH ROAD CROSS-SECTION 80
FIGURE 31 PROPOSED CROSS-SECTION OF JON SANDERS DRIVE (HASLER ROAD TO HUTTON STREET EXTENSION) 81
FIGURE 32 PROPOSED CROSS-SECTION OF JON SANDERS DRIVE (NORTH OF HUTTON STREET) 82
FIGURE 33 INDICATIVE STREET CHARACTER TYPE 2 & 3 CROSS-SECTION 83
FIGURE 34 INDICATIVE STREET CHARACTER TYPE 4 & 5 CROSS-SECTION 84

CHART 1: MEDIAN INCOME, RENT & MORTGAGE BY SUBURB (ABS, 2011 CENSUS) 41
CHART 2: HOUSING TENURE (ABS, 2011 CENSUS) 42
CHART 3: HOUSING RENT & MORTGAGE AFFORDABILITY (ABS, 2011 CENSUS) 42
CHART 4: METHOD OF TRAVEL TO WORK (ABS, 2011 CENSUS) 44
APPENDICES

APPENDIX 1  VISIONING WORKSHOP OUTCOMES SUMMARY
APPENDIX 2  PRECINCT WORKSHOP OUTCOMES SUMMARY
APPENDIX 3  RETAIL NEEDS ANALYSIS
APPENDIX 4  COMMUNITY INFRASTRUCTURE PLAN
APPENDIX 5  INTEGRATED TRANSPORT STRATEGY
APPENDIX 6  UTILITIES SERVICING STRATEGY
APPENDIX 7  DISTRICT WATER MANAGEMENT STRATEGY
CERTIFICATION OF AGREED STRUCTURE PLAN

CERTIFIED THAT THE AGREED HERDSMAN GLENDALOUGH LOCAL STRUCTURE PLAN

WAS ADOPTED BY

RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON

………………………………

Signed for and on behalf of the Western Australian Planning Commission

………………………………………………

an officer of the Commission duly authorised by the Commission pursuant to section 57 of the Western Australian Planning Commission Act 1985 for that purpose, in the presence of:

……………………………… Witness

………………………… Date

AND BY

RESOLUTION OF THE COUNCIL OF THE CITY OF STIRLING ON

…………………………

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

……………… Date
# TABLE OF MODIFICATIONS

<table>
<thead>
<tr>
<th>Modification Reference Number</th>
<th>Date of Endorsement</th>
<th>Modification Section Number</th>
<th>Modification Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Herdsman Glendalough Area Structure Plan (The ‘Structure Plan’) has been prepared by Taylor Burrell Barnett, on behalf of the City of Stirling, to assist in facilitating the growth of the Herdsman Glendalough Area (HGA) as one of Perth’s key high-density, mixed-use employment centres. The Structure Plan will guide the assessment of land use and development of all private and public land within the Structure Plan area demarcated on Plan 1.

The vision of the Structure Plan is that:

“The Herdsman Glendalough area, together with the Stirling City Centre, will form Perth’s second central business district, with a vibrant urbanism that embraces mixed use development, dense built form, high frequency public transport and quality public spaces for the enjoyment of residents and employees.”

The Structure Plan will facilitate the redevelopment of the HGA as a Mixed Use precinct, incorporating higher density residential dwellings and additional office and commercial facilities, in line with the objectives of Directions 2031 and Beyond, the Scarborough Beach Road Activity Corridor Framework and the Herdsman Glendalough Concept Structure Plan. The redevelopment of the HGA will be characterised by the introduction of rapid public transport, which will act as a catalyst for land use change and built form transformation. The HGA represents one of the major infill development areas within the City of Stirling and redevelopment will have a strong focus on maintaining and strengthening the employment offering within the area which is of considerable metropolitan-wide significance.

### STRUCTURE PLAN SUMMARY TABLE

<table>
<thead>
<tr>
<th>Item</th>
<th>Relevant Data</th>
<th>Reference in Structure Plan Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area covered by Structure Plan</td>
<td>227.3 ha</td>
<td>Section 2.1</td>
</tr>
<tr>
<td>Area of each land use zone proposed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mixed Use</strong></td>
<td>96.9 ha</td>
<td>Section 7.3.1</td>
</tr>
<tr>
<td><strong>Commercial/Business</strong></td>
<td>20.4 ha</td>
<td>Section 7.3.2</td>
</tr>
<tr>
<td><strong>Transitional Industry</strong></td>
<td>31.1 ha</td>
<td>Section 7.3.3</td>
</tr>
<tr>
<td><strong>Residential</strong></td>
<td>16.1 ha</td>
<td>Section 7.3.4</td>
</tr>
<tr>
<td>Estimated Lot Yield</td>
<td>3,575m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Estimated Population</td>
<td>6,275m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Estimated Commercial Floor Space</td>
<td>183,954 m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Estimated Retail Floor Space</td>
<td>16,815 m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Estimated Industrial Floor Space</td>
<td>11,653 m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Employment Generation</td>
<td>8,309m²</td>
<td>Section 7.3.11</td>
</tr>
<tr>
<td>Estimated Area of Public Open Space</td>
<td>11,822 m²</td>
<td>Section 7.6</td>
</tr>
</tbody>
</table>

This Structure Plan is to be read in conjunction with the Herdsman Glendalough Area Detailed Area Plan. The purpose of and relationship between the various documents is outlined below.
HERDSMAN GLENDALOUGH AREA STRUCTURE PLAN

Purpose: Regulation of Land Use Permissibility

HERDSMAN GLENDALOUGH URBAN DESIGN AND LANDSCAPE STRATEGY

Purpose: General guidance on urban design and landscape strategy within the public realm

HERDSMAN GLENDALOUGH DETAILED AREA PLAN

Purpose: Detailed guidance on built form and development standards within private landholdings

CITY OF STIRLING CAPITAL WORKS PROGRAM

Purpose: Specific guidance on public works to be undertaken within subject area

CITY OF STIRLING LOCAL PLANNING POLICIES

Purpose: Further guidance on specific relevant planning matters
### HOW TO DETERMINE YOUR DEVELOPMENT POTENTIAL AND DEVELOPMENT REQUIREMENTS IN THE HERDSMAN GLENDALOUGH AREA

<table>
<thead>
<tr>
<th>Step</th>
<th>What?</th>
<th>Where?</th>
</tr>
</thead>
</table>
| **Step 1** | Determine the standard land uses that apply to your property. | Structure Plan – Part 1  
• Plan 1  
• Table A |
| **Step 2** | Identify any potential additional land uses and/or special control areas (and associated development requirements) that may apply to your property. | Structure Plan – Part 1  
• Plan 2  
• Sections 1.6.3 and 1.6.4  
Detailed Area Plan  
• Section 4.1.6 Additional Uses |
| **Step 3** | Identify any potential areas of public open space and/or road reserves to be provided. | Structure Plan – Part 1  
• Plan 1  
• Sections 1.6.5 and 1.6.6 |
| **Step 4** | Determine applicable Street Character Type and standard built form requirements (i.e. building height, setbacks) that apply to your property/ | Detailed Area Plan  
• Section 4.1.1 and Street Character Type Plan  
• Section 4.2 (as applicable) |
| **Step 5** | Determine car parking requirements. | Structure Plan – Part 1  
• Section 1.7.2 |
| **Step 6** | Identify opportunities for built form bonuses. | Detailed Area Plan  
• Section 4.1.7  
• Sections 4.2.1-4.2.5 (as applicable) – Performance Based Bonus Criteria |
| **Step 7** | Review general development provisions. | Detailed Area Plan  
• Section 3 |
| **Step 8** | Commence design discussions with City of Stirling. | Detailed Area Plan  
• Section 1.3 |
PART ONE
STATUTORY SECTION
1 THE STRUCTURE PLAN

1.1 STRUCTURE PLAN AREA

The Herdsman Glendalough Local Structure Plan shall apply to all land parcels and reserves contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan 1).

1.2 STRUCTURE PLAN CONTENT

The Herdsman Glendalough Structure Plan comprises:

a) Statutory Section (Part 1) – This section contains the Structure Plan (Plan 1), the Additional Uses Plan (Plan 2) and statutory planning provisions and requirements.

b) Explanatory Report (Part 2) – This section is to be used as a reference guide to interpret and justify the implementation of Part One.

c) Appendices – This section contains the detailed technical reports that have been prepared to support the structure plan.

1.3 INTERPRETATIONS

Unless otherwise specified in this part, the words and expressions used in this Structure Plan shall have the respective meanings given to them in the City of Stirling’s Local Planning Scheme No. 3 (the Scheme) including any amendments gazetted thereto.

The structure plan area is zoned ‘Development Area’ under the provisions of Local Planning Scheme No. 3, which under clause 6A.3 of the Scheme requires that a structure plan be prepared and adopted prior to subdivision or other development being commenced or carried out within the subject area. This document has been drafted to satisfy the requirements of clause 6A.3 and Part 6A of the Scheme, in order to facilitate subdivision and development of the structure plan area.

Pursuant to clause 6A.12.2 of the Scheme:

a) The provisions, standards and requirements specified under Part 1 of this Structure Plan shall have the same force and effect as if they were a provision, standard or requirement of the Scheme. In the event of there being a variation or conflict between the provisions, standards or requirements of the Scheme and the provisions, standards or requirements of this structure plan, then the provisions, standards or requirements of the Scheme shall prevail;

b) Any other provisions, standards or requirements of Part 1 of the Structure Plan that are not otherwise contained in the Scheme shall apply to the subject area as though they are incorporated into the Scheme, and shall be binding and enforceable to the same extent as if part of the Scheme; and

c) Part 2 of this Structure Plan and the Appendices – Technical Reports are to be used as a reference only to clarify and guide interpretation and implementation of Part 1.
STANDARD SYSTEMS

HERDSMAN GLENDALOUGH AREA STRUCTURE PLAN

A City of Stirling Project

Copyright Taylor Burrell Barnett. All rights reserved. No part of this document may be reproduced in any form or by any other means, electronic, mechanical, photocopying, microcopying or recording without permission in writing from Taylor Burrell Barnett. All areas and dimensions displayed are subject to detail survey.

PLAN 01

The above plan is based on maps made available by Barnett. All lines and dimensions are subject to final surveys and approvals.

A City of Stirling Project

Herdsman Glendalough Area Structure Plan

15 Jul 2014

1:4000@A1

Copyright Taylor Burrell Barnett. All rights reserved. No part of this document may be reproduced in any form or by any other means, electronic, mechanical, photocopying, microcopying or recording without permission in writing from Taylor Burrell Barnett. All areas and dimensions displayed are subject to detail survey.

LEGEND

- STRUCTURE PLAN BOUNDARY
- METROPOLITAN REGION SCHEME RESERVES
- PRIMARY REGIONAL ROAD
- OTHER REGIONAL ROAD
- LOCAL SCHEME RESERVES
- PUBLIC OPEN SPACE
- ZONES
- RESIDENTIAL
- MIXED USE
- COMMERCIAL/BUSINESS
- TRANSITIONAL INDUSTRY
- OTHER
- EXACT LOCATION OF PUBLIC OPEN SPACE TO BE DETERMINED AT SUBDIVISION STAGE
- LOCAL ROAD RESERVE
- PROPOSED LOCAL ROAD RESERVE
- RAILWAY STATION
- FUTURE TRANSIT STATION (PROPOSED)
- SPECIAL CONTROL AREA - MANDATORY RESIDENTIAL
1.4 OPERATION

In accordance with clause 6A.12 of the Scheme, this Structure Plan shall come into operation when it is certified by the Western Australian Planning Commission (WAPC) pursuant to clause 6A.12.1a) of the Scheme or adopted, signed and sealed by the Council pursuant to clause 6A.12.1b) of the Scheme, whichever is the latter.

1.5 DEVELOPMENT REQUIREMENTS

1.5.1 HERDSMAN GLENDALOUGH DETAILED AREA PLAN

Any development application (including change of use applications) proposed within the Structure Plan area, where the overall resultant net leasable area is greater than 0.7 plot ratio, is to be compliant with the built form standards and development requirements outlined within the Herdsman Glendalough Area Detailed Area Plan, approved for the subject area under Clause 6A.16 of Local Planning Scheme No. 3.

1.6 LAND USE AND SUBDIVISION REQUIREMENTS

1.6.1 LAND USE ZONES

The Structure Plan area is classified into the zones shown on the Structure Plan Map (Plan 1). The zones are delineated and depicted on the Structure Plan map according to the legend on Plan 1.

The objectives of each of the zones are as follows, and are intended to provide the context for development within the respective zones.

MIXED USE ZONE

a) To provide for a variety of land uses and activities which contribute to a vibrant and active street front;

b) To provide a high density, multi-storey built form outcome with vertical integration of land uses;

c) To facilitate the creation of employment within the area so as to reduce the demand for travel and enhance the level of self-sufficiency; and

d) To ensure a high standard of design that negates issues such as noise, smell and vibration that are related to mixed use developments.

COMMERCIAL/BUSINESS ZONE

a) To facilitate a development of a mixture of high employment generating activities in a high density, multi-storey built form outcome;

b) To ensure a high standard of design that negates issues such as noise, smell and vibration that are related to mixed use developments.

c) To ensure that traffic management, road safety, site access, onsite parking, building design and streetscape appearance are not compromise by built form development.

TRANSITIONAL INDUSTRY ZONE

a) To provide for a range of industrial and business development, as well as facilities for the storage and distribution of goods.
b) To ensure a high standard of development appropriate to a modern commercial/industrial area and which is conducive to safe and convenient access by all clientele.

c) To enable cottage and service industrial development that does not adversely impact the amenity of the locality.

RESIDENTIAL ZONE

a) To provide for residential development at a range of densities with a variety of housing types, sizes and tenures to meet the current and future needs of the community.

b) To provide for a range of non-residential uses, which are compatible with and complementary to residential development.

1.6.2 LAND USE PERMISSIBILITY

The permissibility of individual land use classifications within the zones delineated on Plan 1 are outlined within Table A (Permissibility Table) below. The symbols used in the cross reference in Table A are defined under clause 4.3.2 of Local Planning Scheme No. 3, and the uses referenced are defined within 1.7 of Local Planning Scheme No. 3.

**TABLE A: USE CLASS PERMISSIBILITY TABLE**

<table>
<thead>
<tr>
<th>Use Classifications/Zone</th>
<th>Mixed Use</th>
<th>Commercial/ Business</th>
<th>Transitional Industry</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged or Dependent Persons Dwelling</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>P</td>
</tr>
<tr>
<td>Amusement Parlour</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bed and Breakfast</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Betting Agency</td>
<td>D</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Boarding House</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Car Park</td>
<td>D</td>
<td>P</td>
<td>P</td>
<td>X</td>
</tr>
<tr>
<td>Caravan Park</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Caretakers Dwelling</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>D</td>
</tr>
<tr>
<td>Child Care Premises</td>
<td>A</td>
<td>D</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>Cinema / Theatre</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Civic Use</td>
<td>P</td>
<td>D</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>Club Premises</td>
<td>P</td>
<td>D</td>
<td>A</td>
<td>X</td>
</tr>
<tr>
<td>Community Purposes</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Consulting Rooms</td>
<td>P</td>
<td>P</td>
<td>X</td>
<td>D</td>
</tr>
<tr>
<td>Convenience Store</td>
<td>P</td>
<td>D</td>
<td>D</td>
<td>X</td>
</tr>
<tr>
<td>Drive through Fast Food Outlet</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Educational Establishment</td>
<td>D</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Exhibition Centre</td>
<td>D</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Family Day Care</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Fast Food Outlet</td>
<td>P</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fuel Depot</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Use Classifications/Zone</td>
<td>Mixed Use</td>
<td>Commercial/ Business</td>
<td>Transitional Industry</td>
<td>Residential</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Grouped Dwelling</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>P</td>
</tr>
<tr>
<td>Hardware Showroom</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Home Business</td>
<td>D</td>
<td>X</td>
<td>p²</td>
<td>A</td>
</tr>
<tr>
<td>Home Occupation</td>
<td>D</td>
<td>X</td>
<td>p²</td>
<td>D</td>
</tr>
<tr>
<td>Home Office</td>
<td>P</td>
<td>X</td>
<td>p²</td>
<td>P</td>
</tr>
<tr>
<td>Home Store</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Hospital</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hotel</td>
<td>A</td>
<td>A</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hostel</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Industry – Cottage</td>
<td>X</td>
<td>X</td>
<td>P</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Extractive</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – General</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Light</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Mining</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Noxious</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Rural</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Industry – Service</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Institutional Building</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Institutional Home</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Market</td>
<td>P</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Media Establishment</td>
<td>P</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Medical Centre</td>
<td>P</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Motel</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Motor Vehicle Repair</td>
<td>X</td>
<td>X</td>
<td>P</td>
<td>X</td>
</tr>
<tr>
<td>Motor Vehicle Wash</td>
<td>X</td>
<td>X</td>
<td>P</td>
<td>X</td>
</tr>
<tr>
<td>Motor Vehicle, Boat or Caravan Sales</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Multiple Dwelling</td>
<td>P</td>
<td>X</td>
<td>x²</td>
<td>P</td>
</tr>
<tr>
<td>Night Club</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nursing Home</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Office</td>
<td>P</td>
<td>P</td>
<td>x²</td>
<td>X</td>
</tr>
<tr>
<td>Park Home Park</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Personal Care Services</td>
<td>P</td>
<td>X</td>
<td>D</td>
<td>X</td>
</tr>
<tr>
<td>Personal Services</td>
<td>P</td>
<td>X</td>
<td>D</td>
<td>X</td>
</tr>
<tr>
<td>Place of Worship</td>
<td>A</td>
<td>D</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>Reception Centre</td>
<td>P</td>
<td>P</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Recreation – Private</td>
<td>P</td>
<td>P</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Residential Building</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>D</td>
</tr>
<tr>
<td>Restaurant</td>
<td>P</td>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Restricted Premises</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
### 1.6.3 ADDITIONAL USE CLASSIFICATIONS

The use class permissibility outlined within Table A is supplemented with the following Additional Use classifications for identified areas outlined within Plan 2.

#### SHOP

The use classification of ‘Shop’ is an ‘X’ Use (Not Permitted) within any zone of the structure plan area outside of those areas identified within the ‘Additional Use – Shop’ classification.

Where a development is proposed within an area noted on Plan 1 as ‘Additional Use – Shop’, the use classification of ‘Shop’ will be considered as a ‘D’ Use (Discretionary), with the approval of the use subject to Council’s discretion. Development shall comply with the development controls associated with Additional Uses, as outlined in the Detailed Area Plan.

#### SHOWROOM

The use classification of ‘Showroom’ is an ‘X’ Use (Not Permitted) within any zone of the structure plan area outside of those areas identified within the ‘Additional Use – Showroom’ classification.

Where a development is proposed within an area noted on Plan 2 as ‘Additional Use – Showroom’, the use classification of ‘Showroom’ will be considered as a ‘D’ Use (Discretionary), with the approval of the use subject to Council’s discretion. Development shall comply with the development controls associated with Additional Uses, as outlined in the Detailed Area Plan.
OFFICE

The use classification of ‘Office’ is an ‘X’ Use (Not Permitted) within the ‘Transitional Industry’ zone of the structure plan area with the exception of those areas identified with an ‘Additional Use – Office’ classification.

Where a development is proposed within an area noted on Plan 2 as ‘Additional Use – Office’, the use classification of ‘Office’ will be considered as a ‘D’ Use (Discretionary), with the approval of the use subject to Council’s discretion taking into consideration the following criteria:

a) The office use will be accommodated within a built form development with a minimum podium height of four storeys;

b) The built form is to be designed such that the office use presents to any primary or secondary street(s) at both ground level and upper storeys through the use of non-opaque glazing, articulation and signage;

c) Primary pedestrian access to the office use is to occur from the Primary Street but vehicular access and vehicle parking is to occur from a secondary street or shared access point wherever possible; and

d) The provision and development of a suitable public space (either ceded as public open space or private open space with agreed public access) that is equal to or greater than 100m² in area.

MULTIPLE DWELLING

The use classification of ‘Multiple Dwelling’ is an ‘X’ Use (Not Permitted) within the ‘Transitional Industry’ zone of the structure plan area with the exception of those areas identified with an ‘Additional Use – Multiple Dwelling’ classification.

Where a development is proposed within an area noted on Plan 2 as ‘Additional Use – Multiple Dwelling’, the use classification of ‘Multiple Dwelling’ will be considered as a ‘D’ Use (Discretionary), with the approval of the use subject to Council’s discretion taking into consideration the following criteria:

a) The multiple dwellings are to be occupied exclusively by proprietors or employees of an operational and registered business or enterprise occurring on the subject site; and

b) The built form of the subject site is to be designed such that the multiple dwellings front the primary street and are developed above the ground floor level.

Where multiple dwellings are proposed, a minimum of 60% of the plot ratio area shall be developed for industrial uses in accordance with Table A.

1.6.4 SPECIAL CONTROL AREA – MANDATORY RESIDENTIAL

The areas identified on Plan 1 as ‘Special Control Area – Mandatory Residential’ represent areas where a development proposed on any lot is to incorporate a minimum of 20% of the plot ratio area on site for residential dwellings as a component of a mixed use, multi storey development.
Any development approval granted within the identified ‘Special Control Area – Mandatory Residential’ precinct will be subject to a condition of development approval requiring the preparation of plans, construction and delivery of a minimum of 20% of the plot ratio area on site for multiple dwellings.

1.6.5 PUBLIC OPEN SPACE

LOCAL RESERVE – PUBLIC OPEN SPACE

The areas identified on Plan 1 as ‘Local Reserve – Public Open Space’ represent existing or proposed Local Reserves to be set aside for the provision of local public open space.

These areas are to be developed and improved by the private sector and under the provisions of Local Planning Scheme No. 3 as specified in the Detailed Area Plan. A developer contributions Scheme may be implemented by the City to provide for additional regional level open space and improvements to existing which will be required as a result of the urban regeneration program.

1.6.6 PUBLIC ROAD CONNECTIONS

LOCAL ROAD RESERVE

The areas identified on Plan 1 as ‘Local Road Reserve’ represent proposed local reserves to be set aside for the provision of local road connections. The Detailed Area Plan provides additional development potential to sites where these local reserves are provided. These areas are to be ceded free of cost and constructed by the landowner.

PROPOSED LOCAL ROAD RESERVE

The areas identified on Plan 1 as ‘Proposed Local Road Reserve’ represent desired local road connections to improve the overall connectivity within the Structure Plan area. The Detailed Area Plan provides additional development potential to sites where these local reserves are provided. These road connections are subject to detailed design, including location, alignment and road reserve width, as a component of adjacent subdivision and/or development approvals. These roads are to be ceded free of cost and constructed by the landowner.

1.7 GENERAL REQUIREMENTS

1.7.1 AFFORDABLE DWELLINGS

Within the ‘Mixed Use’ and ‘Residential’ zones, any new development with a residential component of 10 or more ‘Multiple Dwelling’ is required to incorporate a minimum of 12% of dwellings constructed on site as Affordable Dwellings for disposal as either shared equity, social housing or the equivalent (including student accommodation and long term rental). Affordable dwellings shall be sold by the developer to a recognised affordable housing provider at construction cost.

When more than one affordable dwelling is required to be provided within a development, a range of dwelling types (a mix of one, two and three bedroom units) and sizes shall be provided.

The affordable dwellings shall be externally finished to the same standard, quality and level of detail as other housing within the development. Internal finishes may be of a lower specification than other dwellings within the development.
The affordable dwellings shall be integrated and dispersed throughout a development to achieve a mix of building orientation and to avoid the affordable dwellings being located in one part of a development.

Any development approval granted for ‘Multiple Dwellings’ within the ‘Mixed Use’ or ‘Residential’ zones will be subject to a condition of development approval requiring the preparation of plans, construction and delivery of a minimum number of affordable dwellings equivalent to 12% of the total dwellings proposed onsite.

1.7.2 VEHICLE PARKING

NON-RESIDENTIAL VEHICLE PARKING

Where land is approved to be developed or used under this structure plan for a non-residential or non-short stay accommodation use the landowner shall provide, as a condition of development approval, onsite parking at a rate of a maximum of 250 bays per net site hectare (to be confirmed). The supplied parking bays shall be constructed in accordance with the approved plans to the satisfaction of the local government.

RESIDENTIAL VEHICLE PARKING

For the purpose of this section the term ‘Residential Use’ shall incorporate the use classifications of ‘Single House’, ‘Grouped Dwelling’ and ‘Multiple Dwelling’.

Where land is approved to be developed or used under this structure plan for a residential use, onsite parking shall be provided at a maximum average of 1.25 bays per approved dwelling unit (to be confirmed).

Parking bays provided for residential uses shall be occupied exclusively by the vehicles of bona fide residents of the approved dwelling units in the development or by vehicles of bona fide visitors to the approved dwelling units.

CASH IN LIEU

Pending Stirling City Centre parking review

PUBLIC PARKING ON PRIVATE LAND

Pending Stirling City Centre parking review

1.7.3 RETAIL FLOORSPACE

The Herdsman Glendalough Retail Needs Assessment demonstrates that an additional 16,815m² of net retail leasable area can be developed within the Structure Plan area. The spatial distribution of this additional floorspace is outlined below and identified on Plan 2:

- Main St – 3,815m² NLA
- Glendalough District Activity Centre (surrounding Railway Station) – 10,000m² NLA
- Scarborough Beach Road (west of Harborne St) – 3,000m² NLA

A Retail Sustainability Assessment will be required where a significant increase to the NLA is proposed in a specific geographic location.
1.7.4 ROAD RESERVE WIDTH REQUIREMENTS

Proposed Local Road Reserves are identified on the Structure Plan. These roads provide for a permeable local street pattern. These roads are to be provided for and constructed by the private sector as development occurs. All local street connections within the Structure Plan area, with and without bicycle lanes or Copenhagen paths, are 20 metres and laneways are 10m and should be allowed for in development applications. The required road reservation and cross-section details shall be agreed to with the City of Stirling at the development application stage and should be allowed for in development applications.

Other Local Road Reserves have different road reservation and cross-section requirements in order to achieve specific movement network objectives. These roads are as follows:

- Main Street (no cycle facilities) – 25 metres
- Edward Street parallel to Main Street (with bike paths) - 20 metres
- Harborne Street – 32.4 metres
- Frobisher Street (with bike paths) – 25 metres
- Walters Drive (no cycle facilities) – 25 metres
- Selby Street and King Edward Road (with bike paths) – 25 metres

The required road reservation and cross-section details shall be agreed to with the City of Stirling at the development application stage and should be allowed for in development applications.

Primary Regional and Other Regional Roads have a regional function and are reserved under the MRS

- Hutton Street (no bicycle paths or lanes) – 30 metres
- Jon Sanders Drive – 40.5 metres
- Scarborough Beach Road - 42 metres

1.8 OTHER REQUIREMENTS

1.8.1 DEVELOPMENT CONTRIBUTIONS

The Structure Plan area may be subject to development contribution requirements under Part 6B of Local Planning Scheme No. 3 for the infrastructure items listed. Any development within the Structure Plan area may be subject to a condition of approval requiring compliance with the relevant development contributions plan.

1.8.2 NOISE MITIGATION

The development of sensitive land uses within the Structure Plan area may be subject to a requirement for a noise assessment prior to planning approval being granted. The consideration of existing noise generating activities within proximity to a proposed development may necessitate conditions of planning approval being imposed, including but not limited to:

- Requirements for noise attenuation measures to be incorporated in construction; and
• Notifications being placed on the certificate of title to ensure future landowners are informed.

1.8.3 ODOUR MANAGEMENT

The development of sensitive land uses within the areas identified as ‘Odour Management Area’ on Plan 1 may be subject to a requirement for an odour assessment prior to planning approval being granted.

The consideration of the odour impact associated with the existing poultry processing plants may necessitate conditions of planning approval being imposed on applications for sensitive development, including but not limited to:

• Requirements for odour attenuation measures to be incorporated in construction; and
• Notifications being placed on the certificate of title to ensure future landowners are informed.

1.8.4 DWMS

All sites and development applications shall be drained and designed to be in accordance with the DWMS for this Area. The DWMS is attached to this Structure Plan. Proposed Road Cross sections are to be referred to as contained in the Detailed Area Plan for this Area. An Urban Water Management Plan will need to be prepared and accompany the submission of Development Applications covering elements typically addressed in a Local Water Management Strategy and are not covered in the DWMS.

1.8.5 STORMWATER MANAGEMENT

All sites and development applications shall be drained and designed to be in accordance with the DWMS for this Area and the Detailed Area Plan. An Urban Water Management Plan will need to be prepared and accompany the submission of Development Applications covering elements typically addressed in a Local Water Management Strategy and are not covered in the DWMS.

1.8.6 ELEMENTS OF CULTURAL AND HERITAGE SIGNIFICANCE

Items listed on the City or State Heritage Inventory shall be retained. Other features of cultural and heritage significance shall be retained and incorporated into development where ever possible, as specified within the Detailed Area Plan.
PART TWO
EXPLANATORY INFORMATION
1 INTRODUCTION

1.1 PURPOSE

This Structure Plan has been prepared by Taylor Burrell Barnett, on behalf of the City of Stirling, to fulfil the requirements of Clause 6A of Local Planning Scheme No. 3 and assist in facilitating the growth of the Herdsman Glendalough Area (HGA) as one of Perth's and Australia's key high-density, mixed-use employment centres.

The Structure Plan will guide the assessment of land use and development of all private and public land within the Structure Plan area as shown on Plan 1.

1.2 BACKGROUND

As a long established urban and industrial area, the Herdsman Glendalough locality has been traditionally characterised by showrooms, office buildings, low density residential development and a mixture of light and cottage industrial activities. Whilst this mixture of land uses has propelled the subject area as a key employment generator within the Perth metropolitan area, it has resulted in a relatively low density, car based urban environment with poor pedestrian amenity.

The subject area does, however, offer one of the more premier urban redevelopment opportunities within the Perth metropolitan area, due largely to:

- Geographic proximity in relation to the Perth CBD, coastal port areas and surrounding residential areas and natural areas;
- Significant and diverse employment generation;
- Accessibility by road and rail;
- Presence of existing underutilised mass transit infrastructure; and
- Existing vibrancy and diversity of uses and services available throughout the area.

In recognition of the significant redevelopment opportunities available, a number of land use planning studies have been undertaken to facilitate co-ordinated redevelopment of the area. These studies have primarily been undertaken in collaboration with the Department of Planning, the City of Stirling and key landowners throughout the locality, and are further outlined within Section 3. The preparation of a statutory Structure Plan to guide land use and development within the locality is viewed by the City of Stirling as the next logical step in achieving the desired development outcomes for the subject area.

1.3 COMMUNITY CONSULTATION

The preparation of the Structure Plan has been facilitated as a collaborative process involving relevant stakeholders from the initial stages. The consultation process undertaken to date has been as follows:

1.3.1 VISIONING WORKSHOP (MAY 2013)

The visioning workshop successfully integrated the comments and feedback of landowners, residents, business owners and key government authorities to establish an overall vision and objectives for the development of the HGA. The workshop promoted a shared understanding of the context and drivers for development, the community and stakeholder aspirations/challenges and opportunities for mutual assistance in achieving development outcomes.
At the workshop, groups were asked to consider three key themes, outline their aspirations and the primary challenges in addressing each of these themes.

The key themes and general discussion are summarised as follows:

- **Movement, traffic and parking throughout the locality:** The discussion primarily focused on public transport availability, road connection requirements and the existing parking issues plaguing the local area;

- **Land Use and built form opportunities and constraints:** The discussion primarily focused on the need to increase development potential without unduly impacting upon existing business operations;

- **Landscaping and the public realm:** The discussion primarily focused on the need for improvement of urban amenity for pedestrians and cyclists, and the lack of quality urban spaces for employees, residents and visitors.

The outcomes of the visioning workshop were considered by the project working group and assisted in framing the Precinct Workshops. The workshop outcomes are further outlined within Appendix 1.

### 1.3.2 PRECINCT WORKSHOPS (JUNE 2013)

In June 2013, the City of Stirling facilitated a series of public workshops aimed at generating feedback from landowners and interested stakeholders regarding opportunities and issues throughout the locality. The subject area was divided into eastern, central and western precincts, and workshop attendees were encouraged to outline their aspirations and concerns with future development of land within their area.

The results of these workshops have been carefully considered by the project working group and have assisted in the preparation of the HGA Structure Plan. The key principles agreed by the stakeholders involved in the workshops are outlined as follows:

- Facilitate the growth of the area as one of Perth’s key employment areas on the periphery of a Second CBD.

- Provide an appropriate framework for future development that integrates land use, built form and the public domain while managing the interface between light industry/commercial and existing and proposed residential development.

- Ensure improved transport infrastructure is well-integrated with new built form and public domain development.

- Provide a more balanced transport system to improve overall accessibility by providing for a higher proportion of travel by public transport, cycling and walking, and a lower proportion of travel by car.

- Effectively manage traffic to facilitate regional traffic flows while improving local amenity.

- Minimise impacts on businesses and residents by ensuring road and transit infrastructure development can be implemented and staged well.

- Optimise the relationship between the subject area and the Herdsman Lake environs.

- Enable the growth of the residential population to accord with key government policies.

- Private contributions for upgrades to infrastructure and public transport associated with intensification.
Each of the workshop results are further outlined within Appendix 2.

1.3.3 COMMUNITY OPEN DAY (NOVEMBER 2013)

A Community Open Day was held on 30 November 2013 at the Stirling Community Centre to present the visioning and concept planning work that had been undertaken to that point in time for the HGA. The Open Day was well attended by local residents, business owners and other stakeholders and provided a forum for the presentation of the visioning and plan formulation work that had occurred following the previous workshops. Stakeholders who attended also had the opportunity to ask questions regarding the plans and speak with the City’s officers and members of the project team to fully understand the implications of the various land use, built form and public realm proposals.

1.3.4 PUBLIC ADVERTISING

Upon endorsement of the Structure Plan by the City of Stirling Council for the purposes of public consultation, this documentation will be formally advertised for a minimum period of 21 days under Clause 6A.8 of Local Planning Scheme No. 3. Given the significance and size of the Structure Plan, advertising may occur for a period longer that the minimum statutory timeframe.
2 SUBJECT LAND

2.1 LOCATION

The subject area is located 5.5km north-west of the Perth Central Business District and approximately 6.0km east of the coast (refer Figure 1). The Structure Plan covers an area of 227.3 ha and is bound by Jon Sanders Drive, Parkland Road and Scarborough Beach Road to the south; Selby Street, King Edward Road to the west; and Garner and Bauxite Lanes to the east. The northern boundary of the study area runs along Cape Street in the east and the northern boundary of Howe Street in the west.

![FIGURE 1: LOCATION PLAN](image)

2.2 LAND OWNERSHIP

The vast majority of the subject area is held in private ownership, as shown in Figure 2. There are several lots throughout the subject area, however, which are owned or managed by government agencies, including the City of Stirling, Department of Housing and essential servicing authorities.

2.3 LOCAL CONTEXT

As a large and diverse urban area, the Herdsman Glendalough locality is characterised by a wide spectrum of land uses and services, including but not limited to residential, commercial, retail, industrial, community facility and civic activities.
The mixture of uses is illustrated in Figure 3 below, with residential in the north-east and eastern precincts, industrial activities occurring throughout the area north of Scarborough Beach Road and immediately east of the Mitchell Freeway, commercial and retail uses occurring south and immediately north of Scarborough Beach Road.

The subject area is highly accessible by both road and rail, with the Mitchell Freeway and northern passenger rail traversing the eastern section of the subject area, and Scarborough Beach Road forming the central east-west spine. Glendalough Train Station is located within the eastern part of the Structure Plan area, and the Stirling City Centre abuts the subject area to the north-west.

There are two chicken processing facilities within the Structure Plan area. It is understood that these plants will continue in operation for the foreseeable future, and as such any sensitive development within proximity to the plants will need to be carefully managed.

The Herdsman Lake area to the south provides a substantial cultural and natural resource for the subject area, with the lake home to a wide variety of fauna and flora species. The boardwalks and adjacent open space areas offer passive and active recreation opportunities to residents and visitors within the locality.

FIGURE 3: LOCAL CONTEXT PLAN
2.4 REGIONAL CONTEXT

The Herdsman Glendalough area is located approximately 5.2km north-west of the Perth CBD and approximately 6.0km east of Scarborough Beach (refer Figure 4). The location is bisected by the northern suburbs passenger railway line and the Mitchell/Kwinana Freeway providing. This transport infrastructure provides continuous access between Bunbury/Mandurah and the north-west metropolitan corridor.

The combination of Stirling City Centre and Herdsman Glendalough make the location the second largest employment hub outside Perth CBD. Scarborough Beach Road is also Australia’s largest bulky goods/showroom location. Scarborough Beach Road is one of Perth’s designated Activity Corridors of some 2.5km between Glendalough and Stirling train stations.
3 STATUTORY AND POLICY FRAMEWORK

3.1 STRATEGIC PLANNING CONTEXT

3.1.1 DIRECTIONS 2031 AND BEYOND

The WAPC’s Directions 2031 and Beyond (2010) is intended as a high level spatial framework and strategic plan for the Perth and Peel Region, establishing a vision for future growth and guiding the planning and delivery of housing, infrastructure and services necessary to accommodate a rapidly expanding population.

The study area falls within the central metropolitan sub-region of Directions 2031, as shown in Figure 5. Directions 2031 provides the following guidance for the Structure Plan area:

- The Stirling Centre is identified as a ‘Strategic Metropolitan Centre’ which is to provide a mix of retail, office, community, entertainment, residential and employment activities and is to be well serviced by high frequency public transport.

- Osborne Park is identified as an existing industrial centre which caters for a broad range of manufacturing, fabrication, processing, warehousing and bulk goods handling activities, in addition to providing household needs of a non-bulky goods nature.

It is reasonable to regard the HGA and the Stirling City Centre as providing a unique and linked centre, which offers strategic, regional and local employment needs and services. The location performs the function of Perth’s second CBD and should be classified as a whole as a strategically important employment centre under Directions 2031, SPP 4.2 and the future Perth and Peel Economic Development Strategy. Section 4 of this report elaborates on this proposition.

FIGURE 5: DIRECTIONS 2031 AND BEYOND EXTRACT
3.1.2 CENTRAL METROPOLITAN PERTH SUB REGIONAL STRATEGY

The Central Metropolitan Perth and Peel Sub-Regional Strategy (CMPSRS) provides a framework for delivering the objectives of Directions 2031 within the central metropolitan region. The document is intended to aid in linking State and local government strategic planning, particularly in the review of structure plans and local planning strategies. An extract of the CMPSRS applicable to the Structure Plan area is included below as Figure 6.

With respect to the subject area, the CMPSRS provides the following guidance:

- The Stirling Centre and Glendalough Train Station areas are both identified as major growth areas with a yield in excess of 1000 dwellings;
- Glendalough and Stirling Train Station’s are identified for Transit Oriented Development sites, with the extension of Stephenson Avenue as a public transport corridor;
- The premise of rapid transport on Scarborough Beach Road is supported by the Strategy’s expectation for consolidated redevelopment around key existing and new intersections and transit nodes; and
- The Strategy notes that the “Osborne Park industrial area has experienced a transition of uses over recent years, largely to bulky goods retailing. Despite offering a grid network and large landholdings conducive to consolidated redevelopment it is yet to experience the degree of development that has occurred south of Scarborough Beach Road. This may be partly attributed to the lack of sewerage in some portions of Osborne Park, limited amenity and access issues”. It notes a need for many of the existing service and light industrial uses to remain, so these are likely to be neighbouring the Structure Plan area in the long-term future.
FIGURE 6: CENTRAL METROPOLITAN PERTH SUB-REGIONAL STRATEGY EXTRACT
3.1.3 SPP 4.2 ACTIVITY CENTRES FOR PERTH AND PEEL

SPP 4.2 applies to centres classified as ‘District’ and above. Glendalough, situated within the eastern part of the HGA, is a District Centre and the Stirling Strategic Metropolitan Centre anchors the west.

Commensurate with the categories, District Centres should:

- Be a focal point for bus network;
- Be characterised by a variety of retail types, including discount department stores, supermarkets, convenience goods, small-scale comparison shopping, personal services, some specialty stores, district-level office development and local professional services;
- Achieve a minimum residential density target per gross hectare of 20, and desirable target of 30; and
- Provide a mix of land uses floor space as a proportion of the centre’s total floor space.

The Mitchell Freeway is a physical impediment to introducing retail, residential and mix of floorspace within immediate proximity to the Glendalough District Centre. It must be determined on what side of the Freeway this District Centre should be placed, potentially centred on the Main Street-Scarborough Beach Road-Brady Street. The City of Vincent has a role to play in catalysing development of land south-east of Scarborough Beach Road and the Mitchell Freeway. The implication is wherever the District Centre is determined via an Activity Centre Structure Plan, bulky goods retail will be pushed out to the edge of the centre.

District Centres with retail floor space exceeding 20,000m² require Activity Centre Structure Plans with approval required from the WAPC. Centres with less floor space are subject to local government approval. A retail assessment is necessary to determine the impact of attracting district-level retail facilities into the HGA (in particular near the Glendalough station) on other retail centres in the broader region.

3.1.4 CAPITAL CITY PLANNING FRAMEWORK

The Capital City Planning Framework (CCPF) has a set of vision statements and objectives that supplement and expand upon the vision of Directions 2031.

The CCPF generally identifies an employment density between 131-300 persons per hectare within the Osborne Park Industrial Area, the relative equivalent densities to West Perth, East Perth, Leederville, Beaufort Street (Mount Lawley), Subiaco and Scarborough Beach Road (Mount Hawthorn). Osborne Park is reflective of services and retailing of larger goods and a car-borne catchment.

Herdsman Lake is identified as a major green space, to be supported through water sensitive ‘grey’ infrastructure (drains, roads) and landscaping. The Structure Plan area will contribute to Central Perth, embracing intensified built form, improved accessibility, land uses integrated with transportation, diverse businesses and services and improved local amenity.

There is an impetus to return to a resilient urban structure through adaptable street grids, Main Streets with people-focused edges and good access by walking and public transport to activity centres. This can be supported by other practices including green-building objectives, sustainable water management and adaptive re-use of building fabric. Scarborough Beach Road is recognised for high-frequency priority public transport, extending west from Main Street. Scarborough Beach Road, Harborne Street and Mitchell Freeway are also recognised for a proposed strategic bike route.
Overall, the CCPF recognises an urban transformation for the HGA commensurate with greater public transport infrastructure investment, growth of residential population and more intense dwelling yields surrounding Glendalough Station and within the Stirling City Centre, combined with amenity from the proximity of Herdsman Lake.

3.1.5 ECONOMIC AND EMPLOYMENT LAND STRATEGY (EELS)

The EELS aims to identify short, medium and long-term protection and delivery of industrial land. The industry zoned area of Osborne Park and Herdsman on the west side of Mitchell Freeway is identified as an existing Industrial Area; the land on the east side of Mitchell Freeway is not.

Industrial land in the central metropolitan sub-region is being sought after for residential and office uses, with the Property Council of Australia Suburban Office Development Survey identifying 43,500m² of commercial office space developed on industrially zoned land between 2007 and 2010. The remaining industrially zoned land is nearing its own capacity, notwithstanding this pressure for redevelopment. Various benefits have been identified for retaining industrial land within proximity to the central city.

The EELS is concerned with the erosion of industrial land at the expense of higher order uses, without understanding the regional implications. The Strategy identifies inter alia the need for central local governments to collaboratively develop an economic development and employment strategy; for MRWA to reduce congestion on the Freeways; and improved connections between activity centres (to support more efficient freight movements). The City of Stirling City Centre Structure Plan and the Herdsman Glendale Area Structure Plan will be pivotal to this approach. Within the central sub-region, only Canning Vale is identified for extra industrial land being delivered.

The Industrial Land Needs Study prepared by Syme Marmion & Co for the Department of Planning in 2008 as preparation for the EELS, identifies significant changes in the land use pattern in Osborne Park over the previous 20 years. Between 1993 and 2001, the proportion of manufacturing/processing/fabrication land use fell from 31.4% to 18.3% with a corresponding rise in retail, office and storage floor space. The study notes that this is an established and continuing pattern of adaptation and change in industrial estates close to the Perth CBD and strategic regional centres, created by pressure on land supply and rising land values. However, despite the changes in land use, the value of the area as a place of employment has remained constant if not strengthened with the diversity of uses. In 2001, the total employment in Osborne Park was approximately 15,500 and rose to over 18,000 by 2008. The EELS recognises Osborne Park and particularly the Herdsman Business Park and Scarborough Beach Road corridor as a quasi-commercial centre.

The EELS places importance on the creation of employment and has identified the need to support transition in employment uses particularly in the central sub region where residential infill and population growth is occurring. In 2008, the Central region had an employment self-sufficiency of 124%, and in order to meet the targets outlined in Directions 2031 and Beyond, this target must be maintained in spite of a growing local resident population. This will require the creation of an additional 147,000 jobs by 2031 in order to maintain the ESS percentage.
3.1.6 DRAFT PUBLIC TRANSPORT FOR PERTH STRATEGY IN 2031

The draft Public Transport Strategy identifies the majority of public transport infrastructure investment and system improvements are needed within 15km of the Perth central area. The emphasis in the Strategy is not for heavy rail but road-based rapid transit services (bus or light rail), and standard bus services. By 2031, the Strategy envisions light rail infrastructure between the Subiaco, Glendalough and Stirling railway stations, with bus rapid transit infrastructure from Stirling to Scarborough. Rapid transit east of Glendalough or Stirling (connecting to the Mirrabooka LRT route) is identified to occur after 2031.

The Osborne Park Industrial Area is noted in the Strategy as being only behind West Perth, East Perth, Welshpool/Kewdale and the Central City in terms of providing employment. West Perth, East Perth and the Central City have several complementary public transport systems to develop mode shift from private vehicles.

In terms of staging, the Strategy identifies Bus Rapid Transit infrastructure before 2020 between Glendalough and Stirling. This would then be proposed for upgrading to light rail transit infrastructure by 2031. A westerly extension of bus rapid transit to Scarborough is identified for 2031. A light rail link between Subiaco and Glendalough is also identified for 2031 to connect the ‘Transformational’ Mirrabooka-UWA/QEII-Curtin LRT network with Stirling. The identification of this route was developed through the Stirling City Centre project, which assumed significant office, retail and residential development along the route.

An issue for future delivery will be the arrangements for the development of public transport priority infrastructure requiring negotiation and cooperation between state agencies and local governments”. Provisions for the State to have an appropriate level of authority are required (potentially MRWA having powers and allowances for constructing and maintaining infrastructure items), as well as responsibility for care and control.

3.1.7 RELEVANT STATE PLANNING POLICIES

SPP 2.8 BUSHLAND POLICY FOR THE PERTH METROPOLITAN REGION

Herdsman Lake is covered by the Bush Forever Notice of Delegation. The Bush Forever areas are a policy overlay and do not affect the current zoning or reservation of land. The Bush Forever areas are notated on the MRS map to alert landowners to bushland protection considerations.

SPP 2.8 does not apply where a proposal or decision has no adverse impact on regionally significant bushland within a Bush Forever area. Existing cleared or developed areas within Bush Forever areas, such as those portions within Herdsman Lake, are not intended for protection through SPP 2.8.

The policy will otherwise apply during preparation of proposals or decision-making for areas within Herdsman Lake that affect bushland.

SPP 2.9 WATER RESOURCES

The implementation of sustainability initiatives is encouraged within the HGA. These have been identified within workshops and issues and opportunities analyses, including water sensitive urban design and total water cycle management and other proposals for on-site capture, harvesting and infiltration of stormwater and waste/grey water.
The development of land in proximity to water bodies and acid sulphate soils will be of importance.

**SPP 3.6 DEVELOPMENT CONTRIBUTIONS FOR INFRASTRUCTURE**

The principles inherent in development contributions are fundamental to ensure development contributions for infrastructure are valid within the Structure Plan area. It is understood that the City of Stirling may introduce provisions into the City of Stirling Local Planning Scheme 3 (LPS 3) to outline the principles, process and procedure for the preparation of Development Contribution Areas for the Structure Plan area.

The process for introducing such provisions would have regard to the policy measures within SPP 3.6. Contributions may include a combination of:

- Ceding of land for roads, public open space, drainage, and other reserves as required;
- Construction of infrastructure works, for example reticulated services, public transport, car parking; and
- Monetary contributions to acquire land or undertake works.

**SPP 4.1 STATE INDUSTRIAL BUFFER POLICY**

A draft update to SPP 4.1 State Industrial Buffer (July 2009) has not been finalised, with the current SPP 4.1 gazetted in May 1997. This Structure Plan refers to the gazetted version of SPP 4.1.

As part of consultation, TBB has liaised with the EPA regarding environmental standards for buffers within Osborne Park Industrial Area to clarify whether any buffers are in effect/accepted for the concrete batching plant and two poultry processing facilities (Steggles and Ingham). The EPA has not yet provided clarity regarding the buffer requirements for these existing land uses.

It is necessary to understand the nature of these buffers to ensure that encroachment of sensitive land uses is managed, minimised and/or avoided. Subdivision and land use controls may be the most appropriate methods to prevent encroachment. The identification of appropriate complimentary land uses will have regard to the principles and policy requirements of SPP 4.2.

**SPP 5.4 ROAD AND RAIL TRANSPORT NOISE AND FREIGHT CONSIDERATIONS IN LAND USE PLANNING**

SPP 5.4 identifies the balance for protecting people from unreasonable levels of transport noise whilst protecting major transport corridors and freight operations. The freight requirements of the Structure Plan area together with the development of Scarborough Beach Road as a rapid transit corridor will have implications to manage transport-related noise for businesses and residents.

Design and placement of built form can protect other sensitive land uses from noise. The application of various techniques (i.e. construction materials, technique, design) can also assist in ameliorating noise impacts in order to comply with relevant noise criteria. Design solutions would be integrated into development of noise sensitive uses in proximity to Mitchell Freeway (and Railway), Scarborough Beach Road, freight routes, and major roads as defined by SPP 5.4.
3.1.8 STIRLING CITY CENTRE STRUCTURE PLAN

The draft Structure Plan establishes a general intent and vision for the six precincts comprising the Stirling City Centre, with further detailed planning through the preparation of Detailed Area Plans (adopted as policy under LPS 3).

The Structure Plan’s boundary encroaches onto the eastern side of King Edward Road, taking up the first line of properties, contained within the ‘Osborne Park Precincts’. The majority of the Structure Plan is within the identified Area of Influence of the Stirling City Centre.

Analysis by Pracsys indicates that the area in and around Stirling needs to contribute 4,124 ‘strategic’ jobs by 2031, to meet the needs of forecasted population growthiv. An aspirational target of 30,000 jobs is set for the Stirling City Centre. Herdsman Business Park is recognised as developing a significant office function complementary to the Perth CBD, and by inference the Stirling City Centre, but is not recognised to contribute to this target.

The Osborne Park Precinct, encompassing the first line of properties on King Edward Road, is viewed as an area of transition between the Stirling City Centre, the existing industrial area, and the future revitalisation of the HGA Structure Plan area towards primarily commercial development. It recognises a new fine grained road structure will be required to facilitate development, with the connection of existing streets across Stephenson Avenue to make these areas highly accessible to the amenity and services of the City Centrev.

A minimum target of 1,619 dwelling units, and desired target of 2,500, is identified. Key issues include the existing industrial land use; assembly of private land; and the placement of future public open space and a primary school site (as an urban campus model). Affordable housing is recognised as important for the City Centre.

The Structure Plan aspires for a modal shift of approximately 60% of trips in and around Stirling City Centre being taken by other means than private motor vehicles. Six staged strategies aim to achieve a dispersed transport network:

1. Light rail system from Stirling Station to Glendalough Station (and beyond);
2. Parking demand management;
3. High quality and safe walking and cycling infrastructure;
4. Mitchell Freeway access improvements;
5. New local roads; and
6. Freight Bypass Route between the Mitchell Freeway and Herdsman business area, via Hutton Street and via a bypass tunnel under the centre (if required, long term).

A maximum number of parking bays of 29,600 for the Stirling City Centre is proposed in order to achieve a balance between parking demand and ensuring mode shift to alternatives from private vehicles is realised and to enable the desired development yields can be achieved. The Structure Plan aims to allow a maximum 200 bays per hectare within the Centre and 250 bays per hectare for the remainder of the Structure Plan areavi.
3.1.9 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR FRAMEWORK

The draft Scarborough Beach Road Activity Corridor Framework (SBRACF) has been prepared by the Western Australian Planning Commission to set out a vision for 50,000 residents, 40,000 jobs, priority public transport, pedestrian and cycling infrastructure, and renewed built form.

It identifies the Osborne Park industrial and ‘business park’ area as being a link between Stirling City Centre and Glendalough, with potential for two future local nodes (refer Figure 7). The HGA is broadly identified to develop in the future for office, residential and local retail with some service, distribution and light industrial uses. The Osborne Park industrial area north of Scarborough Beach Road is anticipated to remain.

The design for Scarborough Beach Road is resolved within the SBRACF. Glendalough is recognised to become transit oriented as a centre, and provide medium and higher density residential, office, food and beverage opportunities. Scarborough Bach Road in this location is being designed for dedicated transit lanes, off-street cycle lanes, on-street parking (north side subject to further investigation) and pedestrian facilities. Access is proposed to be rationalised with new road connections on the northern side of Scarborough Beach Road.

The road reserve in the medium term needs to be 30m, with widening to 39.5m for cycling and pedestrian infrastructure to be delivered and 42m to include verge treatments.

Osborne Park is identified to continually evolve with enhanced public transport, cycling and walking options, a series of nodes coinciding with transit stops and increased densities and height in these nodes.

FIGURE 7: SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR FRAMEWORK PLAN
The Herdsman and Glendalough Concept Structure Plan (Figure 8) represents a process towards completing a full Structure Plan, and was approved for advertising by Council in March 2011 and modified by Council in December 2011. The Concept Structure Plan report was prepared to direct growth of the land surrounding the Glendalough railway station to facilitate the creation of an effective and intensive activity centre. The Concept Structure Plan generally includes the same study area south of Scarborough Beach Road and between the Mitchell Freeway and Main Street; however, it only extends to the lots abutting the northern side of Scarborough Beach Road.

The Concept Structure Plan recognises the importance of showrooms in the area, but envisages a transition towards a mix of uses, incorporating residential and office facilities. The vision encompasses more intensive TOD development around Glendalough and additional jobs through intensive business uses supported by light rail along Scarborough Beach Road. New road connections are proposed to increase permeability of the subject area.

The Concept Structure Plan report implies that additional development density and intensity at Glendalough Station, along Scarborough Beach Road and more generally within the subject area will contribute to improved use of transport infrastructure. It does not, however, focus on the relationship between the delivery of improved transit and the ability to increase development densities and intensity.

The report considers the preparation of Detailed Area Plans for six sub-precincts as identified on the Concept Structure Plan report. It should be noted an activity centre structure plan is a requirement under SPP 4.2 for Glendalough District Centre.

The following is proposed for the six precincts:
1. Glendalough East – 1,100 potential dwellings, new roads to increase permeability, emphasis on high-intensity mixed use development, some additional public open space and fostering multi-modal transportation options along Scarborough Beach Road.

2. Glendalough West – 725 potential dwellings, mixed use development, slow-speed vehicle environment and additional pedestrian crossings on Scarborough Beach Road and redevelopment of Water Corporation open drain.

3. Herdsman Mixed Use – 1,147 potential dwellings, widened Scarborough Beach Road to 42m reserve, transitioned car parking requirements and foster street parking and adaptation for public transport.

4. Herdsman Commercial – 306 potential dwellings, provision of urban square/open space, development up to eight storeys to capitalise on light rail, widening of Scarborough Beach Road and additional road connections.

5. Herdsman West – 722 potential dwellings, transition of uses to Stirling City Centre, urban square, retail/office/residential mixed use and widening of Scarborough Beach Road.

6. Osborne Park – mix of land uses and zones that transition to the industrial functions of Osborne Park.

Dwelling yields have been calculated to address Directions 2031 projections, assuming a household size of 1.8 persons per dwelling. An equivalent residential density coding of R150’ around Glendalough Station was used, to address SPP 4.2 desirable density targets.

Based on a Pracsy (2009) economic development scoping paper, the Concept Structure Plan aims to potentially cater for a cumulative total workforce population of 37,744 over thirty years, with an indicative breakdown towards 3.65% bulky goods, 90.25% office, 2.55% shop retail, and 3.55% industrial. A summary of floorspace and employment generation projection for the Concept Structure Plan are outlined Table 1 below.

**TABLE 1: FLOORSPACE AND EMPLOYMENT CALCULATIONS, CONCEPT STRUCTURE PLAN**

<table>
<thead>
<tr>
<th>Commercial Type</th>
<th>Bulky Goods (Other Retail)</th>
<th>Office</th>
<th>Shop Retail</th>
<th>Industrial</th>
<th>Total Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Area</td>
<td>96,556m²</td>
<td>681,300m²</td>
<td>28,780m²</td>
<td>107,190m²</td>
<td>914,312m²</td>
</tr>
<tr>
<td>Employee Rate</td>
<td>1 per 70m²</td>
<td>1 per 20m²</td>
<td>1 per 30m²</td>
<td>1 per 80m²</td>
<td>N/A</td>
</tr>
<tr>
<td>Employee Number</td>
<td>1,379</td>
<td>34,065</td>
<td>959</td>
<td>1,340</td>
<td>37,744</td>
</tr>
</tbody>
</table>
3.2 STATUTORY PLANNING CONTEXT

3.2.1 METROPOLITAN REGION SCHEME

The Metropolitan Region Scheme (MRS) provides the statutory framework for land use in the Metropolitan region (refer Figure 9). The subject area is primarily zoned ‘Industry’ under the provisions of the MRS, which is identified as land ‘in which manufacturing, processing, warehousing and related activities are undertaken’. The area to the immediate south of the Glendalough Train Station and the area between Main Street and the Mitchell Freeway is zoned ‘Urban’, which is identified as land ‘in which a range of activities are undertaken, including residential, commercial, recreational and light industry’.1

In order to rationalise and intensify the existing mixed use development throughout the HGA and to enable the introduction of residential land use components, it is considered that an amendment to the MRS is required to appropriately zone and reserve the subject land. A request to amend the MRS has consequently been submitted to the Department of Planning for its consideration, initiation, referral and advertising. The proposed MRS amendment has been separated into three components described as follows and shown visually in Figure 10:

a) Herdsman Glendalough Area (Amendment Area A): This area (123.3 ha) is proposed to be rezoned from ‘Industrial’ to ‘Urban’ in order to facilitate its growth as mixed use precincts accommodating commercial, light industrial, retail and residential uses that take full advantage of the high quality public transport infrastructure investments along Scarborough Beach Road.

b) **Stirling City Centre Area (Amendment Area B):** This area (17.1 ha) is proposed to be rezoned from ‘Industrial’ to ‘City Centre’ to reflect its inclusion in the Stirling City Centre Redevelopment area, for which further land use planning is being undertaken by the Stirling Alliance in conjunction with the City of Stirling and the Department of Planning.

c) **Scarborough Beach Road Widening (Amendment Area C):** This area (10.8 ha) is proposed to be reserved ‘Other Regional Roads’ to support the proposed widening of Scarborough Beach Road, in accordance with the requirements outlined in the WAPC’s Planning Control Area 104 to ensure that the reserve is sufficient to accommodate private vehicles, cyclists, pedestrians and high frequency public transport in an efficient, safe and attractive manner.
3.2.2 CITY OF STIRLING LOCAL PLANNING SCHEME NO. 3

An aim of LPS 3 is to assist employment and economic growth through the timely provision of suitable land for development. This is supported by the aim effective implementation of regional plans and policies.

Under Clause 4.2.3 of the Scheme, a ‘Development’ Zone is to provide for coordinated development through the application of a comprehensive Structure Plan to guide subdivision and development. Land within a Development Zone should not be developed for purposes likely to compromise its future development in accordance with a vision and objectives outlined in a Structure Plan, or in a manner likely to detract from the amenity or integrity of the area. Land use is determined via the application of the Structure Plan.

The LPS (refer Figure 11) provides a base zoning of ‘Industry’ over the land within the Osborne Park Industry Area, with the notable exception of Lot 30, No. 444 Scarborough Beach Road, which is zoned ‘Hotel’ for OP’s Tavern. The properties bounded by Harborne Street, Pollard Street and Cayley Street are zoned ‘Residential R60’. Residential within the HGA on the eastern side of Mitchell Freeway and north of Roberts Street has a residential density coding of ‘R40’, and south of Roberts Street is ‘R50’.

Several properties on Main Street have different zonings:

- Industry – Lot 1420 (274) Scarborough Beach Road; 3 (5), 4 (11), 426 (13), and 427 (19) Main Street;
- Local Centre – Lots 419 (2), 418 (4), 200 (8), 100 (10), 447 (83), 448 (85), 449 (87) and 451 (91) Main Street, Lot 50 (88) McDonald Street; and
- Business – Lots 413 (14), 412 (16) and 411 (18) Main Street.

Several sites within the HGA are affected by Additional Uses (under Schedule 2 and Clause 4.5) and Special Use Zones (under Clause 4.7).

<table>
<thead>
<tr>
<th>Additional Use (cl. 4.5 and Sch 2)</th>
<th>Description</th>
<th>Special Use Zone (cl. 4.7 and Sch 4)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A56 – Lot 246, 474 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S16 – Lot 46, 469 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A57 – Lot 245, 472 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S17 – Lot 7, 470 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A59 – Lot 11, 460 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S22 – Lot 501 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A68 – Lot 24, 3 Hutton Street</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S18 – Lot 7, 443 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A16 – Lot 25, 3A Hutton Street</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S15 – Lot 7, 419 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A61 – Lot 18, 430 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S19 – Lots 601, 43 &amp; 86, 405 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A16 – Lot 25, 3A Hutton Street</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S20 – Lot 800, 392 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A55 – Lot 15, 435 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td>S21 – Lot 3, 381 Scarborough Beach Road</td>
<td>Showroom</td>
</tr>
<tr>
<td>A54 – Lot 100, 397 Scarborough Beach Road</td>
<td>Motor vehicle, boat, or caravan sales</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There is a Special Control Area around Glendalough Station, pursuant to Part 6 of LPS 3, which requires a Structure Plan be prepared.

“6.4 Glendalough Station Special Control Area

6.4.1 Objectives

a) The development of land with the Glendalough Station Special Control Area shall comply with the adopted Structure Plan and Local Planning Policy for this area.

b) To encourage development which capitalises on the strategic advantages of the Special Control Area’s excellent public transport, accessibility and proximity to the Central Business District.

c) To create a more economically, socially and environmentally sustainable City.

d) To create a pedestrian friendly environment by having buildings with nil setbacks and weather protection.”

The Special Control Area is proposed to be removed as part of Amendment No. 39 to LPS 3, with the introduction of a Development Zone to give a head of power to the Structure Plan.

Part 6A Development (Structure Plan) Areas outlines the process for preparing and adopting a Structure Plan, which is used to coordinate subdivision and development. Subdivision and development is to be in
accordance with the applicable Structure Plan, and Council is not to consider recommending subdivision or approving development unless a Structure Plan is adopted for an area zoned ‘Development’. Notwithstanding this, the provisions of LPS 3 do allow Council to favourably consider applications if the proposal satisfies the purposes and requirements of the Development area.

A collection of Local Planning Policies (LPPs) have been prepared by the City of Stirling, and many of these have influenced the preparation of this Structure Plan. The following LPPs have been considered and where relevant will be implemented through further detailed design at subdivision and detailed area planning stages:

- LPP 2.4 Home Office, Home Occupation & Home Business
- LPP 2.7 Streetscapes
- LPP 4.1 Reserves & Other Zones Design Guidelines
- LPP 4.2 Mixed Use & Commercial Centre Design Guidelines
- LPP 4.3 Industrial Design Guidelines
- LPP 4.4 Mixed Business Design Guidelines
- LPP 6.1 Advertising Signs
- LPP 6.5 Development Abutting Rights of Ways
- LPP 6.6 Landscaping
- LPP 6.7 Parking and Access
- Land Resumptions
- Pedestrian Access Ways
4 SUBJECT AREA

A comparison of the suburb statistical areas surrounding the Herdsman Glendalough Area was undertaken based on the 2011 ABS census data. The Statistical Areas selected were Innaloo—Doubleview (I-D), Wembley-West Leederville-Glendalough (W-L-G), Tuart Hill–Joondanna (T-J), Stirling-Osborne Park (S-O), Wembley Downs–Churchlands–Woodlands (W-C-W), Nollamara–Westminster (N-W), Floreat (F). Further, an overall comparison of the combined Statistical Areas has also been undertaken to facilitate a comparative analysis against the Greater Perth statistical area.

The areas of demographics, education, employment, travel to work patterns, and housing stock, tenure and affordability are all characteristics for drawing information for the future influence of the Herdsman Glendalough Area.

4.1 DEMOGRAPHIC AND HOUSEHOLD ANALYSIS

All statistical areas surrounding the Osborne Park Industrial Area have experienced positive population growth between the 2001 and 2011 censuses (refer Table 2). For Greater Perth the change in population has ranged between 8 and 14% per census period, and 23.6% over 10 years. For the combined statistical areas, population growth has ranged between 6 and 14 percent per census period, and 21.5 percent over 10 years. The greatest growth has been within N-W an S-O. This indicates that whilst these are established suburban areas within 10km of the CBD, they are still contributing to accommodating population growth.

Several statistical areas have exceeded the Greater Perth average, including I-D (24.2% over 10 years), N-W (35.7 percent over 10 years), and S-O (46.7 percent over 10 years). The development of infill housing, whether at a micro-scale (i.e. single lots subdivided into 3-4 lots on McDonald Street) or larger-scale developments (i.e. Stirling’s Princeton development area), would be contributing to this population growth. There has also been a reduction in single person households and growth in family households, a contributor to the population increase.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Innaloo – Doubleview</td>
<td>12,004</td>
<td>13,302</td>
<td>14,904</td>
<td>110.8%</td>
<td>112%</td>
</tr>
<tr>
<td>Nollamara – Westminster</td>
<td>10,966</td>
<td>11,491</td>
<td>14,886</td>
<td>104.8%</td>
<td>129.5%</td>
</tr>
<tr>
<td>Stirling – Osborne Park</td>
<td>8,954</td>
<td>10,099</td>
<td>13,135</td>
<td>112.8%</td>
<td>130.1%</td>
</tr>
<tr>
<td>Tuart Hill – Joondanna</td>
<td>9,865</td>
<td>10,033</td>
<td>11,090</td>
<td>101.7%</td>
<td>110.5%</td>
</tr>
<tr>
<td>Wembley – West Leederville - Glendalough</td>
<td>14,456</td>
<td>15,340</td>
<td>16,644</td>
<td>106.1%</td>
<td>108.5%</td>
</tr>
<tr>
<td>Wembley Downs – Churchlands - Woodlands</td>
<td>11,222</td>
<td>11,499</td>
<td>12,353</td>
<td>102.5%</td>
<td>107.4%</td>
</tr>
<tr>
<td>Floreat</td>
<td>6,718</td>
<td>6,856</td>
<td>7,094</td>
<td>102.1%</td>
<td>103.5%</td>
</tr>
<tr>
<td>Statistical Areas (combined above)</td>
<td>74,185</td>
<td>78,620</td>
<td>90,106</td>
<td>106%</td>
<td>114.6%</td>
</tr>
<tr>
<td>Greater Perth</td>
<td>1,379,532</td>
<td>1,493,097</td>
<td>1,704,933</td>
<td>108.2%</td>
<td>114.2%</td>
</tr>
</tbody>
</table>
4.2 SOCIO-ECONOMIC ANALYSIS

The statistical areas with higher percentages of Professionals and Management appear to also have higher than average personal, family and household median incomes (refer Chart 1). F, W-C-W, and W-L-G have the highest family median income levels, which has a bearing on their ability to more comfortably afford rental and mortgage payments. In contrast, T-J and N-W have below-average Personal, Family and Household incomes.

Whilst there is definite fluctuation in Median Household Incomes, Median Rents are largely similar (F being the highest) whilst Median Mortgages expose a more substantial trend. On average, Median Mortgages outstrip Median Household Incomes across Greater Perth. Whilst F has the highest Median Mortgages, their Median Household Incomes are almost at parity. The divergence is also less pronounced for S-O, W-L-G, I-D and W-C-W. Unfortunately for T-J and N-W, the separation between Median Household Incomes and Median Mortgages appear to be contributing to poor rates of home ownership.

As a result of the median incomes, median rentals and median mortgages, overall home ownership is lower within N-W, S-O, T-J, W-L-G and I-D in comparison to Greater Perth (refer Chart 2). Only F and W-C-W have higher than average home ownership, whether fully owned or with mortgages. Renting is most pronounced within N-W, T-J, and W-L-G. In direct connection, rental stress is also most pronounced within these same suburbs – potentially an indicator that pressure on the rental market in these statistical areas is directly contributing to higher rentals that people are now paying to live there.
F has the highest rates of home ownership. W-G-W and I-D have the highest rates of homes with mortgages. S-O, N-W and F also have 10.5-11.9% of households spending more than 30% on mortgages, whereas I-D enjoys a lower rate of 8.3% (refer Chart 3).

Additional housing in the HGA may provide an opportunity for a more affordable lifestyle for those engaged in local employment with access to public transport. The potential may also exist to consider provision of affordable and adaptable housing product meeting the needs of lower income working households and households on retirement incomes seeking independent living.
4.3 **EMPLOYMENT GENERATION**

Overall, the statistics show employment changes between 2001 and 2011 are similar to those experienced across Greater Perth (refer Table 3).

**TABLE 3: EMPLOYMENT CHANGE (ABS, 2011 & 2011 CENSUSES)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>337.6</td>
<td>Accommodation and food services</td>
<td>117.7</td>
</tr>
<tr>
<td>Construction</td>
<td>178.1</td>
<td>Other services</td>
<td>115.5</td>
</tr>
<tr>
<td>Professional, scientific and technical services</td>
<td>157.4</td>
<td>Administrative and support services</td>
<td>111.2</td>
</tr>
<tr>
<td>Arts and recreation services</td>
<td>149.8</td>
<td>Wholesale trade</td>
<td>110.2</td>
</tr>
<tr>
<td>Public administration and safety</td>
<td>149.1</td>
<td>Manufacturing</td>
<td>103.9</td>
</tr>
<tr>
<td>Electricity, gas, water and waste services</td>
<td>144.8</td>
<td>Rental, hiring and real estate services</td>
<td>101.5</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>143.1</td>
<td>Information media and telecommunications</td>
<td>89.7</td>
</tr>
<tr>
<td>Education and training</td>
<td>131.7</td>
<td>Agriculture, forestry and fishing</td>
<td>85.3</td>
</tr>
<tr>
<td>Transport, postal and warehousing</td>
<td>130.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial and insurance services</td>
<td>128.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail trade</td>
<td>120.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Whilst the mining and construction industries would not necessarily create localised employment within the HGA (except for office headquarters), other opportunities exist to capitalise on the metropolitan growth in health, education, professional and technical service industries.

As at the 2011 census, the most common professions of residents within the locality surrounding the HGA are shown below in Table 4.

**TABLE 4: MOST COMMON PROFESSIONS (ABS, 2011 CENSUS)**

<table>
<thead>
<tr>
<th>Innaloo Doubleview</th>
<th>Wembley West Leederville Glendalough</th>
<th>Tuart Hill Joondanna</th>
<th>Stirling Osborne Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>• School Education</td>
<td>• Hospitals</td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
</tr>
<tr>
<td>• Hospitals</td>
<td>• Architectural, Engineering and Technical Services</td>
<td>• Hospitals</td>
<td>• School Education</td>
</tr>
<tr>
<td>• Architectural, Engineering and Technical Services</td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• School Education</td>
<td>• Architectural, Engineering and Technical Services</td>
</tr>
<tr>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• Architectural, Engineering and Technical Services</td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• School Education</td>
</tr>
<tr>
<td>• School Education</td>
<td>• Legal and Accounting Services</td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• Architectural, Engineering and Technical Services</td>
</tr>
<tr>
<td>• Metal Ore Mining</td>
<td></td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• Legal and Accounting Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cafés, Restaurants and Takeaway Food Services</td>
<td>• Legal and Accounting Services</td>
</tr>
</tbody>
</table>
There is potential therefore in the HGA to allow for mixed business uses in appropriate, serviced locations which may have the advantage of servicing a local employment catchment.

Osborne Park competes with other nearby employment attractors such as Balcatta, the closest other industrial area; the remainder of attractors are district or specialised centres, and there is the significant attraction of employment within the Perth CBD.

The 2011 census data gathered by the ABS shows the place of work for those in the workforce in their usual place of residence. Whilst a number of local residents travel to Osborne Park to work, due to the limited employment diversity of the HGA, many more local residents are attracted to Perth CBD, Nedlands, Dalkeith and Subiaco.

Overall, 10.3% of workplaces are within that person’s statistical area place of residence. The Osborne Park Industrial Area contributes to an overall 6% of employment for the surrounding statistical areas. The other employment attractors (Subiaco, Nedlands-Dalkeith, Perth City, Mount Hawthorn-Leederville and Balcatta) cater for 40.1% of the total labourforce. The remainder of workplaces for 49.6% of people are distributed throughout the remainder of Western Australia.

The journey to work data shows some impact upon public transport, but significant car dominance (refer Charts 4 and 5). Those accessing work from home with direct access to train stations at each end demonstrated the lowest dependence, including those living north or south of the Osborne Park/Glendalough area. Those living east or west of the study area relied heavily on their cars.

Whilst the Osborne Park Industrial Area is in proximity to many surrounding suburbs, the numbers of people travelling from further afield still demonstrates that the location has the potential to attract people for employment from outer metropolitan areas. As previously shown, approximately six percent of the surrounding population goes there for employment.
Osborne Park Industrial Area provides for significant employment for people north of the river, with a large number of people within the north-west corridor travelling to the area. Chart 6 illustrates the top locations for 200 or more persons working in Osborne Park, spatially distributed based upon their usual place of residence.
The Place of Usual Residence for Business Owners of the Osborne Park Industrial Area is outlined in Table 5 below. For simplicity, only Places of Usual Residence for more than 30 Business Owners per Area have been identified.

### TABLE 5: USUAL PLACE OF RESIDENCE – OWNERS OF BUSINESSES (ABS, 2011 CENSUS)

<table>
<thead>
<tr>
<th>Neighbourhood 1</th>
<th>Neighbourhood 2</th>
<th>Neighbourhood 3</th>
<th>Neighbourhood 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karrinyup – Gwelup – Carine</td>
<td>72</td>
<td>Trigg – North Beach – Watermans Bay</td>
<td>33</td>
</tr>
<tr>
<td>Wembley Downs – Churchlands – Woodlands</td>
<td>63</td>
<td>Innaloo – Doubleview</td>
<td>33</td>
</tr>
<tr>
<td>Scarborough</td>
<td>61</td>
<td>Floreat</td>
<td>32</td>
</tr>
<tr>
<td>City Beach</td>
<td>43</td>
<td>Wembley – West Leederville – Glendalough</td>
<td>23</td>
</tr>
<tr>
<td>Duncraig</td>
<td>39</td>
<td>Nedlands – Dalkeith</td>
<td>31</td>
</tr>
<tr>
<td>Sorrento – Marmion</td>
<td>38</td>
<td>Yokine – Coolbinia – Menora</td>
<td>30</td>
</tr>
<tr>
<td>Stirling – Osborne Park</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the detail above that the majority of owners of Osborne Park businesses reside within the nearby suburbs positioned in proximity to or situated along the coastline, having taken advantage of proximity to their businesses as well as the amenity of these suburban areas.

### 4.4 RETAIL NEEDS ANALYSIS

A Retail Needs Assessment (RNA) has been prepared (refer Appendix 3) to accompany the HGA Structure Plan, providing guidance regarding the extent of Planning Land Use Category 5 (PLUC 5) retail floor space that may be accommodated within Structure Plan area as redevelopment occurs. This demand has been determined with due regard to the potential and long term viability of competing activity centres both within the City of Stirling and surrounding Local Government Areas (LGAs). The RNA provides indicative maximum levels of PLUC 5 shop/retail floor space for each separate activity centre identified in the HGLSP area.

The City of Stirling Planning and Sustainability Strategy is the City’s new local planning strategy (LPS), which is also in the process of being completed as it relates to activity centre planning, with the preparation of an RNA being an outstanding requirement.

The RNA being prepared to inform the LPS will determine the estimated retail need and indicative distribution of PLUC 5 shop/retail floor space across all activity centres in the LGA concurrently with the retail potential of activity centres within the Structure Plan area. This approach will define a more accurate outcome with respect to retail allocation throughout the Structure Plan area, being cognisant of the objectives and strategies for activity centre growth identified in the LPS; and the future growth potential of competing centres within the City of Stirling and surrounding LGAs.

This consistency throughout the planning framework is desirable, particularly where accompanying strategic planning for a higher order activity centre such as the Stirling Strategic Metropolitan Centre (SMC), as discussed in Section 3. LPSs are intended to provide the basis for preparing and amending local planning schemes, structure plans and development applications.

### 4.4.1 ACTIVITY CENTRES FOR PERTH AND PEEL – SPP 4.2

Section 3 of the Activity Centres for Perth and Peel (SPP 4.2) indicates that the policy applies throughout the Perth and Peel regions guiding the preparation and review of local planning strategies, schemes and structure plans; and development control. This is also reflected in Figure 2 of SPP 4.2.
RNA POLICY REQUIREMENTS

Clause 6.2.2 of SPP 4.2 indicates that local planning strategies should show the estimated retail need and indicative distribution of floor space across activity centres in a local government area, consistent with the activity centre hierarchy.

In addition to local planning strategies, Clause 6.2.2 (3) of SPP 4.2 indicates that retail needs assessments are also intended to guide structure planning, and generally include:

- the projected population and its socio-economic characteristics;
- household expenditure and required retail floorspace;
- changing shopping patterns and trends; and
- the needs of different retail sectors.

The retail modelling informing the RNA has involved the assessment of the potential economic effects of future retail expansions in the Structure Plan area and among the network of activity centres throughout the Stirling LGA. To this extent, the RNA addresses the requirements associated with a Retail Sustainability Assessment (RSA) identified in Clause 6.5.1 of SPP 4.2.

LARGE FORMAT/BULKY GOODS RETAILING

Clause 5.6.1 (5) of SPP 4.2 indicates that ‘local governments should review the land use permissibility of bulky goods retail to reduce its potential dispersal throughout industrial zones’... ‘Local planning schemes and planning decision-making for bulky goods retail should include consideration of land requirements based on demonstrated future floor space needs and the need to retain affordable industrial land’.

Consistent with the abovementioned requirements of the policy, the Structure Plan facilitates the protection and retention of industrial lands by identifying the extent of land which may accommodate this type of retailing and limit its further proliferation in undesirable locations.

4.4.2 RNA PREPARATION

STUDY AREA

Figure 12 identifies existing activity centres within the City of Stirling, including the Glendalough District Activity Centre identified in SPP 4.2. The figure excludes those future activity centres shown indicatively on the HGA Structure Plan.

The study area associated with the retail modelling exercises extends well beyond the Stirling LGA boundary. Retail potential associated with PLUC 5 floor space has been modelled over the majority of the metropolitan urban area north of the Swan River, and with modelling associated with bulky goods retailing extending south of the Swan River. The RNA therefore involves a regional assessment, commensurate with the role and function of the Stirling SMC and the propensity for consumers to visit activity centres within the City of Stirling from surrounding LGA areas.

In addition to the activity centres identified on Figure 12, the retail modelling incorporates land currently zoned ‘Industrial’ under the MRS (including within the HGA Structure Plan) and City’s LPS 3, which feature existing PLUC 5 and PLUC 6 retail floor space.
ACTIVITY CENTRE GROWTH IN SURROUNDING LGAS

The retail modelling undertaken takes account of the retail potential of centres identified in the activity centres strategies, structure plans and activity centre plans of surrounding local authorities. This includes the Cities of Joondalup, Vincent, Bayswater, Cambridge, Subiaco, Nedlands, Swan, and the Town of Claremont. Approved structure plans within the upper north-west corridor in the City of Wanneroo provide guidance as to retail potential in future planned centres, in conjunction with retail studies being undertaken for the City of Wanneroo at this time; which has informed the RNA for the Structure Plan area.

STAKEHOLDER CONSULTATION

Consultation with the following stakeholders has occurred in the preparation of the RNA:

- Department of Planning regarding population and employment forecasts to 2026 and 2031.
- Department of Planning regarding the interpretation of SPP 4.2 and requirements for the Stirling/Herdsman Glendalough Activity Centre, surrounding industrial and missed business land use.
- Stirling Alliance regarding the implications for retail and bulky goods along the Scarborough Beach Road Activity Corridor.
- City of Stirling regarding the development of the LPS, implications of WAPC multi-unit housing code and the scope of the required RNA.
- Cities of Vincent, Wanneroo and Joondalup regarding planning for retail development and Activity Centres in adjacent areas where catchments may overlap for the Structure Plan
- The employed resident community within the Structure Plan area regarding aspirations for retail provision.

4.4.3 RNA OUTCOMES

The key outcomes of the RNA for the Structure Plan area are as follows:

- An additional 16,815m² of PLUC 5 shop/retail floor space can be established within the Structure Plan area with no significant adverse economic impact in the short or medium term. This additional floorspace consists of the following:
  - Glendalough District Activity Centre – 10,000m² NLA; 
  - Main Street – 3,815m² NLA; and
  - Scarborough Beach Road – 3,000m² NLA.

- Potential adverse trade impacts in the order of 10% are limited and result from the extent of planned growth under the Joondalup Activity Centres Strategy and various higher order centres in the Stirling LGA. The model assumes that all potential planned retail growth will be implemented, which may not be the case.

- The proposed additional shop/retail floor space within the Structure Plan area will not result in any significant economic impact; where assuming planned growth for competing centres in the Stirling LGA as at 2026.
• No loss of community benefit or reduced access to goods and services at the neighbourhood and district level will affect members of the community in proximity to the Structure Plan area. The proposed retail expansions will improve the local competitive environment; and access to daily/weekly goods and services for future residents.

On the basis that there is adequate demand and no potential for significant adverse impacts from a community access and benefit perspective, it is considered to be in the interest of the community to enable the proposed extent of new shop/retail floor space to be provided for in the Structure Plan.

4.5 HOUSING

The City of Stirling adopted its Local Housing Strategy under the framework of its draft Local Planning Strategy, and is undertaking a number of initiatives to help identify further opportunities for medium or higher density and mixed-use developments in appropriate locations. The strategy notes that opportunities for infill will become available in the Glendalough Station Precinct. Clause 5.3.2 of LPS 3 requires that residential development not in the Residential Zone comply with the requirements for multiple dwellings under the R80 code, providing the opportunity for infill redevelopment.

The City is also investigating the suitability of providing higher density housing in the Herdsman Business Park as part of a comprehensive review of the Osborne Park Industrial Area. The Herdsman Business Park has developed into the main administrative node of the northern metropolitan area, however, it is poorly connected to the transit services operating along Scarborough Beach Road. The City is committed to undertaking planning initiatives seeking to improve the connectivity of the Herdsman Business Park.
5 EXISTING SITE DESCRIPTION

5.1 NATURAL ENVIRONMENT

5.1.1 TOPOGRAPHY AND LANDFORM

The subject land has a gently undulating topography, with the highest point in north east corner at 35m AHD falling to 15m AHD at the eastern side of the Mitchell Freeway (refer Figure 13).

The topography on the western side of the Mitchell Freeway gradually falls in a south-westerly direction from approximately 20m AHD around Howe Street and falling to approximately 10m AHD south of Jon Sanders Drive. The most significant natural feature within the study area is Herdsman Lake, which is further described in Section 5.1.3.

5.1.2 SOILS AND GEOMORPHOLOGY

The Department of Agriculture and Food (DAFWA 2007) Soil Subsystems dataset Soil Units was assessed to determine the soil landscapes of the subject area. Herdsman Lake can be categorised as Peaty Clay with the remainder of the area comprising of sand with areas of peat near the Mitchell Freeway.

The DEC Acid Sulfate Soil (ASS) risk mapping identifies the area near Herdsman Lake (corresponding to the peaty clay area) as high to moderate ASS risk (refer Figure 14). Additionally the area of peat near the Mitchell Freeway has also been mapped as a high to moderate ASS risk.

5.1.3 NATURAL ENVIRONMENT

Herdsman Lake is the dominant environmental and hydrological feature directly adjacent to the Structure Plan area (refer Figure 15). The Geomorphic Wetlands of the Swan Coastal Plain categorises Herdsman Lake as a Conservation Category Wetland, which is the highest priority wetland type. Additionally, there is a small Resource Enhancement Wetland towards the south east corner of the Structure Plan area.

The maximum groundwater contours in the study area ranges from 15m AHD to 8m AHD near Herdsman Lake. Based on the topography described above, the depth to the maximum groundwater ranges from approximately 5m to 2m near Herdsman Lake.

5.1.4 FLORA & FAUNA

The Structure Plan area is highly modified with no known areas of existing native flora within the boundary. Herdsman Lake, located immediately adjacent to the study area, is identified as Bush Forever site 281. No fauna surveys have been completed as there are no areas of vegetation and given the highly modified nature of the study area no significant habitat for fauna is likely to occur. Outside of the study area, Herdsman Lake contains intact habitat and is known to support a diversity of wildlife species. Herdsman Lake is an important bird breeding ground and is a summer refuge for migratory birds (Conservation Commission of WA 2004) including listed under the Japan-Australia Migratory Birds Agreement (JAMBA) and the China-Australia Migratory Birds Agreement (CAMBA). Other significant fauna listed under Commonwealth and State legislation that have the potential to occur within the study area include:
- Baudin’s Black Cockatoo;
- Carnaby’s Black Cockatoo;
- Australasian bittern (*Botaurus poiciloptilus*);
- Peregrine falcon (*Falco peregrinus*);
- Australian painted snipe; and
- Black striped snake.

### 5.1.5 INDIGENOUS HERITAGE

The Department of Aboriginal Affairs online Aboriginal Heritage Inquiry System indicates Herdsman Lake is a registered Aboriginal site and there are several other heritage places adjacent to the Structure Plan area. Additionally, there is one heritage place (artefacts/scatter) within the Structure Plan area, located in the area between Hasler Road and Walters Drive (refer Figure 15). The subject site consists of a cleared vacant block and a number of existing commercial developments.

### 5.2 BUILT FORM AND LOT SIZE

The general built form typology within the subject land comprises of predominantly one to two storey office and commercial buildings (refer Plate 1).

![Plate 1: Example of typical existing built form (Howe Street)](image)

More recently, however, Herdsman Business Park (south of Scarborough Beach Road) has seen up to 11 storey development (refer Plate 2), highlighting the opportunity the site has to offer.

![Plate 2: Example of recent development (Parkland Road)](image)
Due to large lot sizes and street blocks, significant quantities of surface parking and generous setbacks, the proportion of building footprint to developable area is extremely low. The Figure Ground Analysis (refer Figure 16) illustrates the inefficiency of development within the subject site, particularly considering the status of Stirling as a Strategic Metropolitan Centre.

Originally planned as a light industrial precinct, the site has been subdivided into large lot sizes to accommodate this land use. A Lot Size Analysis has been undertaken (refer Figure 17) which illustrates an existing diversity of lot sizes within the subject site from 600m² lots through to 3.5ha lots.

Smaller lots, between 600-2000m², are predominantly located in the north-eastern quadrant of the subject land and adjacent to Main Street where smaller residential lots exist; together with smaller ‘light industrial’ lots north of Howe Street.

Larger lots, albeit common, are randomly located within the subject area. These larger sites generally accommodate low density, single storey built form, providing an opportunity for subdivision and/or redevelopment to make more efficient use of land.

5.3 COMMUNITY FACILITIES AND PUBLIC REALM

5.3.1 EXISTING FACILITIES

The public realm throughout the area is very poor from a pedestrian perspective, with limited public infrastructure offering any amenity for walking, cycling or recreation activities. The area is largely dominated by vehicular traffic, with very little pedestrian infrastructure such as footpaths or shade trees available.

Dedicated public open space is also limited within the subject area, with existing passive and active recreation opportunities available to the south at Herdsman Lake and Glendalough Open Space and to the east at Enterprise Park.

With respect to community facilities, the provision of child care services, education, health care, community centres and emergency services are largely sourced from the surrounding communities, being Mount Hawthorn, Glendalough, Stirling and Woodlands.

5.3.2 COMMUNITY INFRASTRUCTURE PLAN

The WAPC’s State Planning Policy 3.6 Development Contributions for Infrastructure (SPP 3.6) defines community infrastructure as “the structure and facilities which help communities and neighbourhoods to function effectively, including – sporting and recreation facilities, community centres, child care and after school centres, libraries and cultural facilities.”

It is recognised by the City and the WAPC that the introduction of co-ordinated mixed use development to the precinct, particularly focusing on high density residential development, will require a co-ordinated strategy for the improvement of local community facilities and public open space.

To be effective, community infrastructure must meet the changing needs of the community. If this does not occur, the residents and workers in an area may find it hard to function as a true community and this will ultimately impact on the social sustainability of the area.
In anticipation of this, GHD, on behalf of the City of Stirling, has prepared a Community Infrastructure Plan (CIP), included as Appendix 4, to assess existing and determine future community infrastructure demands within the locality as redevelopment of the Structure Plan area proceeds. The CIP incorporates an assessment of the future needs of the anticipated resident and worker population, based on the following:

- Normative need – assessment of statistical and demographic data on the existing and future community profile;
- Comparative need – assessment of the existing community facilities with this taking into consideration the future needs of the community and ensuring service equity across the LGA;
- Identified need – consultation with Council officers, key stakeholders and information from members of the community with their anticipated requirements for the future; and
- Evidence based practice requirements – identifying benchmark need using evidence-based practice principles. This information benefits from the experience and knowledge of others and applying proven principles to better address needs.

The recommendations of the CIP are presented in Section 7.9.

5.4 MOVEMENT NETWORK

Originally planned as a light industrial precinct, the HGA is now a well established Business Park, a key transport route between northern inner city suburbs and the beach and recently identified as a Strategic Metropolitan Centre. With the areas substantial increase in significance, the existing transport network is highly inefficient and inadequate to cater for the increasing demand. Attributing to this inefficiency is the existing large street blocks and lack of road connections resulting in a dysfunctional road network. Of particular note, no existing roads connect Scarborough Beach Road and Walters Drive between Selby Street and Parkland Road. The key issues are summarised as follows:

- There is currently limited spare capacity on the road network within and adjacent to the HGA and in the sub-region generally, including on the Mitchell Freeway.
- High levels of car parking and limited public transport services have contributed to too high a proportion of travel to/from the Herdsman Glendalough area being made by car.
- The existing street network in the area is not well connected resulting in bottlenecks and congestion. There is a need to develop a more connected street network to improve accessibility and provide a greater choice of travel routes.
- Scarborough Beach Road is an important activity corridor and will be an important route for public transport, including bus rapid transit or light rail. Strategic planning for delivery of efficient public transport and safe, convenient walking to stops/stations along the route will be an important consideration in structure planning.
- The potential increase in development of the HGA to two to three times its current intensity will result in significant increased travel on the networks – car, public transport, cycling and walking.
5.4.1 EXISTING MOVEMENT NETWORK

EXISTING ROAD NETWORK

The existing movement network within the Herdsman Glendalough Subject Site is illustrated in Figure 18. Mitchell Freeway, a 6 lane north-south Primary Distributor, dissects the Structure Plan into two halves, however it is Scarborough Beach Road, a four lane east-west Primary Distributor, that is the precincts most important transport route. Four lane Integrator A roads include Hutton Street, Jon Sanders Drive, Harborne, and Main Street, whilst two lane Integrator B roads include Selby Street, King Edward Street Frobisher Street and Parkland Road. The remaining roads are wide two lane local access streets.

The Scarborough Beach Road reserve varies in width from between 25 to 30m whilst all other roads, except for the freeway, are generally 20m wide road reserves.

Signalled intersections within the subject site exist at the intersections of Selby Street and Scarborough Beach Road; Hutton Street and Scarborough Beach Road; Harborne Street and Scarborough Beach Road; Main Street and Cape Street; and on Scarborough Beach Road (west of Glendalough Train Station).

EXISTING PUBLIC TRANSPORT NETWORK

Multiple Bus Routes run along Scarborough Beach Road and Main Street with the 400 connecting the CBD with the beach the most popular. The 413 services north of Scarborough Beach Road, running along King Edward, Guthrie and Frobisher Streets and the 407 services the area south of Scarborough Beach Road, running a loop of Walters Drive to/from Glendalough Train Station.

5.4.2 PEDESTRIANS AND CYCLISTS

The provision of shared paths within the subject site is minimal. Albeit good quality, the only shared path exists along Jon Sanders Drive adjacent to Herdsman Lake. A second shared path exists along Waterloo Street albeit outside of the Structure Plan area.

The provision of pedestrian paths within the subject site is reasonable however the amenity along these footpaths and connectivity, particularly between Scarborough Beach Road and Herdsman Lake, is very poor. Scarborough Beach Road, Harborne, Frobisher, Hutton and Main Streets have footpaths both sides. The majority of the remaining roads within the subject area have a footpath on at least one side, however Burgay Court, O’Malley, Donovan, Gould and Howe Streets were notable exceptions.

A Ped Shed Analysis has been prepared illustrating a 400/800m radius around Glendalough Train Station depicting 5/10 minute walk respectively. Figure 19 demonstrates that of all of the lots within an 800m radius of Glendalough Train Station, 34% are within 400m/5 minute walk and another 34% are within 800m/10 minute walk. In addition, Figure 19 illustrates the large extent of lots within a 10 minute walk to Glendalough Train Station, revealing the Transit Orientated Development opportunities.

The key issues are:

- The bicycle network in the sub-region is very much under-developed and does not provide realistic options to maximise bicycle travel.
- An activity centre such as the HGA requires a high quality of pedestrian amenity and safety, including legible walking routes, and safe road crossings, particularly along Scarborough Beach Road and to Glendalough rail station.
A S.A.F.E. (Safe, Attractive, Friendly, Efficient) assessment has been undertaken (refer Figure 20) which documents the current status of streets within the Structure Plan area.

5.5 EXISTING TRANSPORT STUDIES

Extensive transport studies, modelling and reporting have been completed for the Stirling City Centre and Herdsman Glendalough. These key aspects of these studies, as they relate to the Structure Plan area, are summarised below.

5.5.1 LONG TERM TRANSPORT PLAN (2009)

The Long Term Transport Plan (LTTP) (refer Figure 21) identified the following improvements in the HGA:

- Scarborough Beach Road widening to 42m to include:
  - Four lanes of vehicle traffic;
  - Two dedicated lanes for public transit;
  - Separated Copenhagen-style cycle lanes; and
  - Right turn pockets.

  The road design and required widening has been implemented through Planning Control Area 104. The road design has been agreed to by the Department of Transport, Main Roads WA, City of Stirling and the Department of Planning.

- Hutton Street extension to Jon Sanders Drive:
  - Provision of a 30m reserve; and
  - Widening of Hutton Street north of Scarborough Beach Road.

  This has been agreed to by the City of Stirling, Department of Planning, Main Roads WA and the Department of Transport.

- Widening of King Edward Road and Selby Street to 25m to accommodate four lanes of traffic if the future King Edward freeway interchange is constructed.

- Widening of Frobisher Street to 25m to accommodate future traffic.

- Widening of Main St to 25m to accommodate peak hour bus lanes and right turn pockets.
This report, which has been endorsed by the City of Stirling and the WAPC, identified the following:

- New local road connections between Scarborough Beach Road and Walters Drive, providing a significant increase in the permeability in the study area.
- Additional new local road connections elsewhere within the study area.
- Widening of Scarborough Beach Road to 42m and inclusion of rear lanes to assist with provision of rear vehicle access to sites fronting Scarborough Beach Road.
- Cycling Plan for the Herdsman Glendale area, with a fine-grain network of Copenhagen-style lanes, recreational cycle ways and dual use paths.
5.5.3 HERDSMAN BUSINESS PARK & GLENDALOUGH STATION TRANSPORT STRATEGY (2010)

This report confirmed all of the recommendations of the previous studies and proposed new parking-related provisions that sought to:

- Limit parking within the study area in accordance with SPP 4.2.
- Identify funding contributions for public parking and public transport.

The parking provisions were consistent with those for the Stirling City Centre. This document has been endorsed by the City of Stirling, with extensive consultation with the Department of Planning, Department of Transport and Main Roads WA also occurring.

5.5.4 SCARBOROUGH BEACH ROAD ACTIVITY CORRIDOR PROJECT – TRANSPORT MODELLING 2011

This report, prepared by ARRB on behalf of the Department of Planning, modelled the Scarborough Beach Road Activity Corridor Transport Plans under three scenarios for 2031 and found the following:

- Scarborough Beach Road will need to be maintained as a main arterial road as identified.
- Public transport to and from Stirling will increase.
- Scarborough Beach Road will carry 24,000 and 46,000 vehicles per day at different sections of the road and these volumes can be accommodated on a four lane divided road.
- Jan Sanders Drive will carry between 21,000 and 26,000 vehicles per day and these volumes can be accommodated on a four lane divided road.

The intersection analysis showed the major intersections on Scarborough Beach Road having high levels of traffic; however the 42m cross-section for Scarborough Beach Road provided sufficient flexibility to cater for future demand. As noted above, the Department of Transport has advised that the Scarborough Beach Road cross-section is supported as it provided sufficient flexibility for all transport needs in the future.

5.5.5 STIRLING CITY CENTRES TRANSPORT STRATEGIES (2013)

A suite of transport studies were completed by GHD in 2013, on behalf of the Stirling Alliance. The studies focussed on the Stirling City Centre, however, a number of these contained items relevant to the Herdsman Glendalough area, including the following:

- Public transport lanes from Glendalough to Stirling Station.
- A width of 42m for Scarborough Beach Road.
- Widening of King Edward Road to 25m.
- Future freeway interchange at King Edward Street.
- Widening of Hutton Street to 30m and extension to Jon Sanders Drive.
- Bridge at McDonald Street.
- Full freeway interchange at Powis St.
The work undertaken highlighted significant volumes of additional traffic compared with the 2011 modelling undertaken for the Stirling City Centre and this is now being investigated by the Department of Transport. Various issues with 2013 modelling have been identified and are currently under peer review. The Herdsman Glendalough area does not have any freeway interchanges and is predominantly immune from the issues identified in the Stirling City Centre area. The only issue within the Herdsman Glendalough area are intersection designs along Scarborough Beach Road to cope with the expected traffic increase. It is considered that the 42m wide reserve provides sufficient flexibility to deal with these issues.

5.5.6 INTEGRATED TRANSPORT STRATEGY

An Integrated Transport Strategy has been prepared by SKM (refer Appendix 5), with the principles contained guiding further more detailed planning for the area.

The redevelopment of the subject area will be defined by a transformation in the movement of residents, workers and visitors to and from the subject area. The use of public transport, walking and cycling will constitute a larger proportion of the total mode of travel, with private car use declining. This will occur in part due to the change in land use (i.e. from manufacturing employment to residential) and will be facilitated with investment in public transport, cycling and pedestrian infrastructure and management of car parking provision and availability. The implementation of these measures will serve to limit the additional demand placed on the existing road infrastructure, with redevelopment able to be accommodated accordingly.

It is anticipated that the introduction of urban land uses, enabling residential, retail and commercial development, will facilitate higher levels of employment self-containment and consequently further reducing the need for vehicle travel to work.

5.6 SERVICING INFRASTRUCTURE

GHD has undertaken a comprehensive assessment of the existing servicing infrastructure within the Herdsman Glendalough area. Full details are included within Appendix 6 – Utilities Infrastructure Strategy and the key items are summarised below.

5.6.1 SEWER

The subject area consists of two sewer catchments, which can be described as follows:

- A small sub catchment in the north that gravitates to a local pump station, which ultimately pumps to the Hamersley main gravity sewer and then into the Beenyup Waste Water Treatment Plant; and

- The majority of the site gravitates to one of two pump stations located within the site – one on the corner of Hasler Road and Jon Sanders Road and the other located in Lot 24 off Walters Drive. Both pump stations pump into the Perth main sewer, and then into the Subiaco Waste Water Treatment Plant.

The Water Corporation has suggested that a high density redevelopment will create the need for these two pump stations to be upgraded.
Most of the site located on the western side of Mitchell Freeway gravitates towards a DN305 vitrified clay sewer main. This sewer main starts upstream on the western boundary of the site on Scarborough Beach Road and extends approximately 2 km south east through the lots adjacent to Scarborough Beach Road until it reaches the pump station located off Walters Drive. An unknown portion of the effluent from the DN305 main is diverted to the Hasler Road Pump Station through a sewer gate located in lot 3. This diverted flow gravitates approximately 1.5 km west through a DN300 vitrified main to reach the pump station.

The portion of the site located on the eastern side of the Mitchell Freeway (excluding the small northern sub-catchment), and a small section west of the freeway gravitates towards a 305 mm vitrified clay sewer main that starts upstream on Baden Street. This main crosses the freeway and continues south west through several lots until it connects to the Harborne Street Pump Station.

5.6.2 WATER

There are two large diameter mains that run through the subject land. The site is within the Water Corporation Mount Hawthorn Water Supply Scheme and is currently serviced by the Mount Hawthorn Water Pump Station located approximately 500 m away from the eastern site boundary. The site is currently serviced by a DN460 steel main which enters the site through Roberts Road. This main passes underneath the Mitchell Freeway, and then continues approximately 500 m south west down Drake Street. This main then continues west through Scarborough Beach Road for approximately 1.2 km before reaching the development boundary.

Within the site boundary, the DN460 main feeds a DN305 reinforced concrete main pumping north up Edward Street and a 300 mm diameter steel main branching off Albert Street. The pump station services a DN535 main that also enters the site through Roberts Road. This pipe is connected to the DN460 main near Frobisher Street, however diverts north away from the site up Frobisher Street.

5.6.3 POWER

The area to the west of the Mitchell Freeway is serviced by the Osborne Park Zone substation located at the corner Scarborough Beach Road and Ellen Stirling Boulevard. Overhead High Voltage (HV) distribution feeders exit the substation and run along both sides of Scarborough Beach Road into the designated area.

The area to the east of the Mitchell Freeway is serviced by the Yokine Zone substation located East of Wanneroo Road and on Darch Street East, between Cape and Hector Streets. Overhead HV distribution feeders run west along Cape, Roberts, Powell and Green Streets into the designated area. There is some limited overlap of the Yokine Zone substation network across the Mitchell Freeway into area to the west.
5.6.4 GAS

The existing ATCO Gas network appears to cover the entire Herdsman Glendalough study area, and is fed by a high pressure gas supply on Morley Drive from the north. A 230 mm main enters the study area along Frobisher Street, branches off with a 200 mm link on Scarborough Beach Road to the portion of the study area east of Mitchell Freeway. From here it reduces in size substantially, which could suggest that this may be close to the end of a specific servicing zone. The area west of Mitchell Freeway has a reticulation service consisting primarily of a 100 mm diameter system which supplies the industrial/commercial areas. The same methodology applies directly east of Mitchell Freeway, but tapers off to smaller diameters ranging between 50 mm and 100 mm where it enters the residential boundary.

5.6.5 TELECOMMUNICATIONS

The subject area is extensively serviced by Telstra. Other providers in the area include NextGen and it is anticipated that Optus may have services within the subject area as well. There appears to be a main corridor for communications services along Scarborough Beach Road that links the study area separated by Mitchell Freeway, but most of the existing services focus on distribution/reticulation. There is also another link that crosses Mitchell Freeway towards the north and in-line with Roberts Street.

Of the information gathered for communications, no existing information pertaining to the implementation of the National Broadband Network (NBN) could be found. The NBN rollout plan (refer to the NBN rollout website) however indicates that the construction for a fibre network may commence within one year for the City of Stirling area. Although the Herdsman Glendalough study area falls only halfway within this rollout development boundary, these are indicative only. If the existing communications pattern is any indication, the entire subject area should be serviced with fibre optic within the next few years.
6 OPPORTUNITIES & ISSUES

6.1 OPPORTUNITIES & ISSUES

The site is characterised by a number of factors which have been relevant in the formulation of the Structure Plan and have influenced the design. The outcomes of the opportunities and issues analysis of the area are divided into Land Use, Built Form, Movement Network and Landscape and Public Realm. The key opportunities and issues are discussed further below.

6.1.1 LAND USE

The following land use opportunities and issues are evident for the Structure Plan area, as illustrated in Figure 22:

- Promote active land uses along Scarborough Beach Road to support increased rapid bus services and the proposed light rail system.
- Accommodate existing land uses in their current locations so that current rights are honoured.
- Integrate large-format retailing with mixed-use development along Scarborough Beach Road.
- Promote retail land use intensification around public transport.
- Promote residential land use throughout the entire subject area with intensification adjacent to Herdsman Lake, along Scarborough Beach Road and adjacent to public transport.
- Consider buffers from poultry-processing sites.
- Promote retention of light industrial businesses/land uses.
- Consider land use and built form transition and compatibility.

6.1.2 BUILT FORM

Stirling City Centre is identified as a ‘Strategic Metropolitan Centre’ in SPP 4.2. The future scale and growth of the City Centre is very likely to act as a catalyst for growth and intensity in the Structure Plan area. The existing built form is therefore vastly underutilising the potential of the location. Significant opportunity exists for a substantial increase in built form density and height to facilitate development to accommodate and sustain the large numbers of residents and workers forecast in the area. The following built form opportunities and issues are evident in the HGA, as illustrated in Figure 23:

- Opportunity for intensity of built form, particularly with respect to height.
- Built form to respond to desire for active and safe pedestrian environments.
- Opportunity for landmark built form at key gateway points along Scarborough Beach Road and Walters Drive.
- Opportunity for built form height along Jon Sanders Drive with views over Herdsman Lake.
- Opportunity for built form height around train station and between Jon Sanders Drive and Scarborough Beach Road.
- Lower building heights to provide for an appropriate interface with adjacent existing residents.
- Recognise and respect lower building heights in existing light industrial areas.
- Opportunity to provide a well-defined built form edge to Scarborough Beach Road creating a relationship between ground floor uses and the public domain.
VIEWS ACROSS HERDSMAN LAKE

CONSIDER INCREASED BUILT FORM TO TAKE ADVANTAGE OF BEACH ROAD

PROMOTE A WELL-DEFINED BUILT FORM EDGE TO SCARBOROUGH WITH ADJACENT EXISTING RESIDENTS

PROVIDE LOWER BUILDING HEIGHTS FOR AN APPROPRIATE INTERFACE BETWEEN JON SANDERS DRIVE AND SCARBOROUGH BEACH ROAD.

PROVIDE OPTIMAL BUILDING HEIGHTS AROUND TRAIN STATION AND ROAD

ENABLE SIGNIFICANT BUILT FORM ALONG SCARBOROUGH BEACH ROAD

CONSIDER TALL AND LANDMARK BUILT FORM AT KEY GATEWAY AND NODAL POINTS

CONSIDER INCREASED BUILT FORM HEIGHT TO TAKE ADVANTAGE OF VIEWS ACROSS HERDSMAN LAKE.
• Opportunity to retain existing heritage features and facades, including the Schweppes building facade.

### 6.1.3 MOVEMENT NETWORK

With the vehicle, pedestrian and cycle movement throughout the site a significant issue, there is an opportunity to improve the movement network to become more efficient whilst facilitating redevelopment. The following movement network opportunities and issues are evident in the HGA, as illustrated in Figure 24:

• Opportunity to widen Scarborough Beach Road to 42m providing the opportunity for a Rapid Transit System, improved vehicle movement efficiency and safe cycle and pedestrian movement.

• Provide a Rapid Transit System with opportunity to position Transit Stations in strategic locations to support intensification of development at key intersections along Scarborough Beach Road.

• Opportunity to facilitate development by creating strategically located road connections through large street blocks improving vehicular movement, internal traffic distribution and access, whilst creating the potential for more efficient development parcels.

• Opportunity to ease traffic congestion in the precinct by creating an additional Freeway crossing/underpass.

• Opportunity to improve the pedestrian and cycle network through the precinct and to support an integrated network within the study area supported by the existing Principal Shared Path network (strategic routes).

• Consider closure of Hasler Drive to increase development opportunities.

Table 6 below illustrates the proposed shift in transport mode required to alleviate the congestion in Stirling in order to revitalise the streets and public places in the HGA in line with the vision emerging from the stakeholder workshops and current strategic planning goals.

#### TABLE 6: PROPOSED SHIFT IN TRANSPORT MODE

<table>
<thead>
<tr>
<th></th>
<th>Average Mode Share (%) Metropolitan Perth (2010)</th>
<th>Average Mode Share (%) Metropolitan Perth (2040/50)</th>
<th>Estimated Mode Share Stirling City Centre (2040/50)</th>
<th>Estimated Mode Share Herdsman/Glendalough (2040/50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Driver</td>
<td>58%</td>
<td>48%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>Car Passenger</td>
<td>22%</td>
<td>20%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>Public Transport</td>
<td>6%</td>
<td>12%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Walking/Cycling</td>
<td>14%</td>
<td>20%</td>
<td>32%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Of particular importance is the potential demand for better cycle paths as part of a shared network with pedestrians or as an integrated system within the road network. Plates 3-5 below demonstrate a variety of solutions that can be incorporated as redevelopment progresses.
6.1.4 LANDSCAPING AND PUBLIC REALM

Wide scale regeneration is needed for the public realm within the Structure Plan area and public realm improvements should be ‘big and bold’ to signal change and the establishment of a new local character. The changes, however, are likely to be implemented on an incremental basis as site based detailed planning proceeds. Scarborough Beach Road is the primary piece of private vehicle infrastructure within the Structure Plan area, with other modes of transportation largely marginalised. Redevelopment in the area should consider both the functional and aesthetic outcome, with public realm improvements fostering a new landscape character and contributing to a new culture of walking, cycling and public transport use. New publically accessible space should be provided to encourage community formation, through chance encounters and lingering.

The following landscaping and public realm opportunities and issues are evident in the HGA, as illustrated in Figure 25:

- Herdsman Lake offers a major environmental resource that already has affected adjacent property uses and values beneficially due to its aesthetic qualities. Many businesses now look over the reserve. Actual use of the reserve for recreation is seemingly low and not related to adjacent land uses. Crossing points of Jon Sanders Drive are few and paths are not linked into crossing points. The road is a major obstacle to pedestrian and cycle use.

- A clear absence of passive surveillance is a major issue at the Glendalough station, placing the public as risk. Furthermore, the dominant daytime use patterns associated with the station contribute to its lack of safety at other times during the day. Parking and property security is an issue as well, in addition to pedestrian well being. The typical response has been with hard infrastructure measures (i.e. fencing, shutters, security cameras etc). Major physical changes are needed to enable a comprehensive character change, which in turn would allow community perceptions and the use of the space to change.

- General lack of suitable pedestrian infrastructure, lack of safe pedestrian crossings and refuges across the whole of the Structure Plan area.

- Dominance of car parking to all available spaces/verges. Parking and vehicle accommodation adversely affects public realm/verge/potential for upgrade.

- Commercial signage has been allowed to compete to such a level that it is difficult to discern.

- Overhead power lines dominate streetscapes and form a constraint to street trees.

- Comprehensive lack of vegetation across the area, which leads to the following:
  - Poor visual amenity;
  - Poor locality character;
  - Lack of shade for pedestrian respite/enjoyment;
  - Creation of an urban heat island; and
  - Lack of carbon absorption.

- Hard surfaces and roofs generate significant drainage.

- Poor and inconsistent lighting levels to streets, affecting pedestrian use.

- Poor legibility throughout Structure Plan area, with orientation dominated by built form mass.

- Possible green roof initiative, with enhanced amenity and environmental impacts (i.e. reduce runoff, reduce heat hot spot, broader environmental benefits including for fauna etc).
- Possible development of green corridor from core urban areas to Herdsman Lake. This could incorporate primary pedestrian routes and possible drainage as integrated passive irrigation and hydrocarbon runoff management.

- Possible use of exotic species for environmental and amenity gains (i.e. shade and solar access, growth characteristics in urban areas etc).

With limited existing public open space throughout the subject area, there remains a significant opportunity to develop a network of usable public open spaces that are specifically designed to meet the needs of landowners, residents, employees and visitors of the local area.

PUBLIC SPACE NETWORK

Additional public space improvement opportunities throughout the subject area may be focused on the improvement of key streets to ensure that they are more attractive and usable environments. Such streetscape improvement would focus primarily on key pedestrian linkages, notably Scarborough Beach Road and John Sanders Drive, particularly integrating the existing recreation opportunities at Herdsman Lake area. The street connections considered to offer substantial opportunity are further outlined in Figure 25.

POCKET PARK NETWORK

The redevelopment of existing large lots, particularly in key locations of pedestrian movement and residential development, will also provide an opportunity for the development of a network of ‘pocket parks’ specifically designed for passive recreation. These spaces do not need to be substantial in area provided that they are located and designed to ensure that they are highly functional and usable for passive purposes, safe and easily accessible. There are numerous examples of the development of such public spaces, both within private and public land, throughout the metropolitan area, as shown in Plates 6 and 7 below.

PLATE 6: SMALL WELL-USED AND PURPOSE DESIGNED PUBLIC SPACE INCORPORATED WITHIN HIGH DENSITY URBAN DEVELOPMENT (WEST PERTH)
ACTIVE OPEN SPACE

The fragmented nature of land ownership and the lack of suitable government owned land will likely present a constraint to the acquisition and development of substantial active playing fields within the study area. The identification and acquisition of land for such a purpose would be limited to:

a) The co-ordinated residential or mixed use development of existing adjacent large landholdings and the consequential ceding of 10% of the subdivision area for public open space; or

b) The identification and subsequent reservation of privately held land for public open space purposes.

Whilst both of these options are potentially feasible under a co-ordinated and agreed development framework, they will each require detailed and careful consideration of financial feasibility to achieve the desired outcome.

6.2 ISSUES

6.2.1 MOTIVATION FOR REDEVELOPMENT

The fragmented land ownership within the subject area will continue to present as a significant issue in future redevelopment. The diversity in the age of building stock, the viability of current activities and strata ownership arrangements results in a varied desire for redevelopment that will also act as a significant constraint in achieving the redevelopment outcomes. In order to further understand the complexity of this issue, a redevelopment potential analysis was undertaken in 2013 based on:

- Visual assessment of the age of the building stock;
- Assessment of building height (both existing and proposed where known);
- Total area of the lot;
- Existence of residential development on-site;
- Whether strata-titling or multiple ownership arrangements are in effect; and
- Where a lot was adjacent to another lot with ‘good’ redevelopment potential.
The analysis identified that the key areas with strong redevelopment potential were on large lots immediately adjacent to the Glendale Train station, along with a number of existing large lots on the southern side of Scarborough Beach Road, as depicted in Figure 26. Other areas with strong potential are adjacent to Selby Street North and King Edward Road.

Increased accessibility, public transport and amenity will act as a catalyst for further development. Sites with proximity to Stirling City Centre will also be enticed to redevelop as market interest increases.

6.2.2 LAND USE COMPATIBILITY

INDUSTRIAL LAND USES

It is recognised that there are numerous industrial land uses operating within the study area and surrounding locality that have the potential to impact sensitive land uses within the study area. These impacts may include dust, odour, noise, traffic congestion and/or visual blight that will need to be carefully considered and managed as a component of planning for the subject area.

The protection and retention of these important land uses will be equally vital to the economic sustainability and employment generation for the study area. The location, built form design and screening measures incorporated in new development will be important in ensuring that land use incompatibility is minimised.

POULTRY PROCESSING PLANTS

There are two poultry processing plants, being Steggle’s and Ingham’s, located within the Structure Plan area (refer Figure 22). It is recognised that these operations regularly produce odour that has been cause for concern amongst existing residents throughout the locality. It is understood that the Environmental Protection Authority generally requires that sensitive land uses within 500m of either processing plant be designed to minimise the impact of odour, which will likely restrict the feasibility of some development outcomes.

CONTAMINATED SITES

A search of the Department of Environment Regulation’s (DER’s) Contaminated Sites Register was conducted on 24 June 2013 by GHD in the preparation of the District Water Management Strategy. The search identified seven individual sites within the Structure Plan area, which are summarised in Table 7 below. Two road verges adjacent to the contaminated sites at 7 Hutton Street and 59 Howe Street are also identified as ‘contaminated – remediation required.’

Further investigation may be required to confirm the presence or absence of contamination prior to development of these lots for residential development of other sensitive land uses.
REDEVELOPMENT OPPORTUNITIES PLAN

Herdsman Glendalough Area Structure Plan
A City of Stirling Project

ASSESSMENT OF LOTS FOR REDEVELOPMENT

The assessment of lots for redevelopment opportunities has been undertaken using geographical information, visual inspections and liaison with the City of Stirling regarding recent developments.

The assessment has had regard to:

- Lot of buildings stock (visual assessment)
- Building height (both existing and proposed, where known)
- Lot land area
- Residential component on-site
- Adjacent to another lot with ‘good’ redevelopment potential
- Presence of train station, 400m & 800m radius
- Vacant land (visual assessment)
- Survey strata (INTRAMAPS data)
- Strata title and multiple ownership over lots (where known from the City of Stirling)
- Recent development (visual assessment)
- The assessment of lots for redevelopment

0 - 0/10
1 - 1/10
2 - 2/10
3 - 3/10
4 - 4/10
5 - 5/10
6 - 6/10
7 - 7/10
8 - 8/10
9 - 9/10
10 - 10/10

LEGEND

- STRUCTURE PLAN BOUNDARY
- RECENT DEVELOPMENT (VISUAL ASSESSMENT)
- SURVEY STRATA (INTRAMAPS DATA)
- VACANT LAND (VISUAL ASSESSMENT)
- TRAIN STATION, 400m & 800m RADIUS

ASSUMPTIONS

The assessment of lots for redevelopment opportunities has been undertaken using geographical information, visual inspections and liaison with the City of Stirling regarding recent developments.

The assessment has had regard to:

- Lot of buildings stock (visual assessment)
- Building height (both existing and proposed, where known)
- Lot land area
- Residential component on-site
- Adjacent to another lot with ‘good’ redevelopment potential
- Presence of train station, 400m & 800m radius
- Vacant land (visual assessment)
- Survey strata (INTRAMAPS data)
- Strata title and multiple ownership over lots (where known from the City of Stirling)
- Recent development (visual assessment)
- The assessment of lots for redevelopment

0 - 0/10
1 - 1/10
2 - 2/10
3 - 3/10
4 - 4/10
5 - 5/10
6 - 6/10
7 - 7/10
8 - 8/10
9 - 9/10
10 - 10/10

LEGEND

- STRUCTURE PLAN BOUNDARY
- RECENT DEVELOPMENT (VISUAL ASSESSMENT)
- SURVEY STRATA (INTRAMAPS DATA)
- VACANT LAND (VISUAL ASSESSMENT)
- TRAIN STATION, 400m & 800m RADIUS

ASSESSMENT OF LOTS FOR REDEVELOPMENT

The assessment of lots for redevelopment opportunities has been undertaken using geographical information, visual inspections and liaison with the City of Stirling regarding recent developments.

The assessment has had regard to:

- Lot of buildings stock (visual assessment)
- Building height (both existing and proposed, where known)
- Lot land area
- Residential component on-site
- Adjacent to another lot with ‘good’ redevelopment potential
- Presence of train station, 400m & 800m radius
- Vacant land (visual assessment)
- Survey strata (INTRAMAPS data)
- Strata title and multiple ownership over lots (where known from the City of Stirling)
- Recent development (visual assessment)
- The assessment of lots for redevelopment
<table>
<thead>
<tr>
<th>Location</th>
<th>Classification</th>
<th>Reason for Classification</th>
<th>Nature and Extent of Contamination</th>
<th>Restrictions on Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>480 Scarborough Beach Road (Lot 22 on Diagram 84775)</td>
<td>Contaminated - remediation required</td>
<td>Historically used as a service station.</td>
<td>Hydrocarbons remain in soils at depths of 4.5-5.5 m below ground surface.</td>
<td>Groundwater abstraction not permitted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phase separate hydrocarbons present in groundwater plume. Extent of plume not delineated.</td>
<td>Land use restricted to commercial/industrial use which excludes sensitive uses (e.g. childcare centres, kindergartens, pre-schools and primary schools, recreational open space or residential).</td>
</tr>
<tr>
<td>59 Howe Street (Lot 19 on Diagram 44481)</td>
<td>Contaminated - remediation required</td>
<td>Site affected by groundwater contamination that has migrated from another site.</td>
<td>Hydrocarbons are present in groundwater beneath the site in a plume that extends off-site in a south-westerly direction.</td>
<td>Groundwater abstraction not permitted at this site because of the nature and extent of groundwater contamination.</td>
</tr>
<tr>
<td>401 Scarborough Beach Road (Lot 211 on Diagram 66724)</td>
<td>Contaminated - remediation required</td>
<td>Site historically used as a service station.</td>
<td>Hydrocarbon, metal and dieldrin contamination present in groundwater.</td>
<td>Groundwater abstraction not permitted at this site because of the nature and extent of groundwater contamination.</td>
</tr>
<tr>
<td>405 Scarborough Beach Road (Lot 210 on Diagram 66723)</td>
<td>Contaminated - remediation required</td>
<td>Site affected by groundwater contamination that has migrated from Lot 401 Scarborough Beach Road immediately to the northeast.</td>
<td>Hydrocarbon, metal and dieldrin contamination present in groundwater.</td>
<td>Groundwater abstraction not permitted at this site because of the nature and extent of groundwater contamination.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Land use restricted to commercial/industrial use which excludes sensitive uses (e.g. childcare centres, kindergartens and care homes).</td>
</tr>
<tr>
<td>54 Hasler Road (Lot 108 on Diagram 70404)</td>
<td>Contaminated - remediation required</td>
<td>Site used as a newspaper print facility which includes storage of fuel in underground tanks.</td>
<td>Soils and groundwater beneath the site are impacted by hydrocarbons.</td>
<td>Land use restricted to commercial/industrial use which excludes sensitive uses (e.g. childcare centres, kindergartens and care homes). Should not be developed for more sensitive uses without further investigation and/or remedial works</td>
</tr>
<tr>
<td>133 Hasler Road (Lot 66 on Diagram 61461)</td>
<td>Contaminated – restricted use</td>
<td>Historically used as depot for storage and sales of landscape gardening materials. Site also reclaimed and filled with</td>
<td>Heavy metals present in groundwater underlying the site.</td>
<td>No groundwater may be abstracted from the site.</td>
</tr>
<tr>
<td>Location</td>
<td>Classification</td>
<td>Reason for Classification</td>
<td>Nature and Extent of Contamination</td>
<td>Restrictions on Use</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>88 Roberts Street (Lot 10 on diagram 42069)</td>
<td>Remediated for restricted use</td>
<td>Site historically used as a dewatering equipment facility including fuel storage.</td>
<td>Hydrocarbon impacted soils present in the southern portion of the site.</td>
<td>Excavation or disturbance of soils is restricted until further testing. Land use restricted to commercial/industrial use which excludes sensitive uses.</td>
</tr>
</tbody>
</table>

6.2.3 INFRASTRUCTURE AVAILABILITY

Discussions with the relevant servicing authorities indicates that although certain constraints and limitations exist within the current utility services infrastructure, ultimately the proposed Herdsman Glendalough redevelopment area can be accommodated with essential services (water, sewer and power) and non-essential services (gas, communications etc).

6.2.4 MARKET ACCEPTABILITY

Colliers International have provided input into the design formulation process for the HGA, with these inputs shaping the dwelling types, product mixes, densities that have been tested for the project. A summary of this advice is provided below.

The HGA benefits from several core attributes that should be optimised through the planning process. These include the proximity of the subject area to employment centres, retail facilities and civic and commercial services. Furthermore, the area benefits from good connectivity to key destinations (i.e. Perth CBD, coastline).

COMMERCIAL/RETAIL

Colliers International has identified the following key commercial/retail considerations for the Structure Plan area:

- Role and purpose of the centre/hierarchy;
- Retail trade catchment (primary and secondary);
- Scale and intensity/distribution;
- Competition and alternate supply options;
- Market (investor/tenant/occupier) preferences for location;
- Transport and accessibility;
- Parking requirements and rate of provision;
- Legibility and navigability including physical barriers to access and egress;
- User group profiles including workers, visitors and resident engagement with the centre;
- Geography and spatial constraints;
- Contemplated employment generators/numbers;
- Contemplated staff amenity; and
- Contemplated residential density and catchment population.
RESIDENTIAL

The dwelling preference in WA remains the detached house, however, a shift is occurring in the Perth CBD and surrounds for apartments, which is being driven by higher employment and lifestyle amenity of the CBD. The development of the HGA as a Second CBD is likely to require similar densities and amenity to that of the Perth CBD to support the provision of new residential facilities.

Changing demography through ageing cohorts, immigration, education, career choice and opportunity is influencing change together with an evolving CBD/Activity Centre/Corridor lifestyle. The key locational and built form Demand/Delivery Factors for medium to high density include:

- Employment, civic and community infrastructure and amenity together with accessible transport options critical;
- Product type – targeted sub market; specification and finish-driven (i.e. integrated indoor/outdoor spaces (larger balconies) and utility rooms are currently in demand);
- Product mix and pricing – competitive with other urban regeneration projects in Perth, Subiaco along the Swan River; and
- Time lags – confidence of delivery is essential for the market. Whilst the Structure Plan may enable new uses, infrastructure and other approvals need to be delivered in a timely manner.

PRODUCT MIX

The key to successful delivery and market take up in the Structure Plan area will be to create a location with sufficient attributes that can replace the consumer’s preference for single detached home ownership. These attributes must include town site amenity, employment and transport, a sense of place and a desire for people to want to live and or live/work in the area.

Premised on current price points, market activity and the recent case studies, a notional product mix has been devised, which is outlined in Table 8 below. The average apartment floor area and product mix below equates to 75 m² per dwelling. This meets current market conditions, whereby one and two bedroom dwellings are preferred to meet affordability/price point, and is likely to change over time. Moreover, where there is a desire to encourage more family style households; low rise precincts may be identified where the dominant mix is focused to two and three bedroom product.

TABLE 8: SUMMARY OF RECENT COMPARABLE PRODUCT SIZES

<table>
<thead>
<tr>
<th># APT</th>
<th>Bed Count</th>
<th>Bath</th>
<th>Ancillary</th>
<th>Balcony</th>
<th>Net Area m²</th>
<th>Total Net Area m²</th>
<th>Parking Ratio</th>
<th>Parking Bays</th>
<th>% Apt by Count</th>
<th>% Apt by NLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1</td>
<td>1</td>
<td></td>
<td>12</td>
<td>53</td>
<td>1060</td>
<td>0.75</td>
<td>15</td>
<td>20%</td>
<td>14.1%</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>1</td>
<td></td>
<td>15</td>
<td>58</td>
<td>870</td>
<td>1.00</td>
<td>15</td>
<td>15%</td>
<td>11.6%</td>
</tr>
<tr>
<td>35</td>
<td>2</td>
<td>1</td>
<td></td>
<td>20</td>
<td>75</td>
<td>2625</td>
<td>1.00</td>
<td>35</td>
<td>35%</td>
<td>34.9%</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>20</td>
<td>85</td>
<td>1275</td>
<td>1.00</td>
<td>15</td>
<td>15%</td>
<td>16.9%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td></td>
<td>25</td>
<td>105</td>
<td>1050</td>
<td>1.00</td>
<td>10</td>
<td>10%</td>
<td>13.9%</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>30</td>
<td>130</td>
<td>650</td>
<td>2.00</td>
<td>10</td>
<td>5%</td>
<td>8.6%</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7530</td>
<td></td>
<td>100</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
7 STRUCTURE PLAN

The built form and public realm vision for the Herdsman Glendalough Area Structure Plan is graphically illustrated in the Herdsman Glendalough Masterplan (Figure 27). The rationale for the Structure Plan design and the key development outcomes proposed are further outlined and discussed below.

7.1 DESIGN VISION & PHILOSOPHY

A fundamental pretext of the vision is that the subject area will form one of Australia’s premier urban densification and redevelopment projects, exemplifying high density, mixed-use sustainable development to provide quality urban development outcomes for all stakeholders.

The vision of the Structure Plan is that:

‘The Herdsman Glendalough area, together with the Stirling City Centre, will form Perth’s second central business district, with a vibrant urbanism that embraces mixed use development, dense built form, high frequency public transport and quality public spaces for the enjoyment of residents and employees’.

Three key philosophies fundamental to forming the foundation for the HGA’s regeneration are:

1. Movement, traffic and parking throughout the locality: focused on public transport availability, road connection requirements and the management of existing local parking issues;

2. Land Use and built form opportunities and constraints: focused on the need to increase development potential without unduly impacting upon existing business operations; and

3. Landscaping and the public realm: focused on the need for improvement of urban amenity for pedestrians and cyclists and the provision of quality urban spaces for employees, residents and visitors.

7.2 PRINCIPLES

The following Key Principles were considered in formulating the Herdsman Glendalough Area Structure Plan and consequently the Herdsman Glendalough Masterplan:

• **Facilitate the growth** of the Precinct as one of Perth’s key employment areas as part of a Second CBD.

• Provide an appropriate framework for future development that integrates land use, built form and the public domain while managing the interface between light industry/commercial and existing and proposed residential development.

• Ensure improved public transport infrastructure is well-integrated with new built form and public domain development.

• Effectively manage traffic to facilitate regional traffic flows while improving local amenity.

• Improve the overall public realm amenity and vibrancy of the Structure Plan area.

• Minimise impact on businesses and residents by ensuring road and transit infrastructure development can be implemented and staged well.
Scramble Beach Road upgrade (to 42m wide) to ensure Rapid Transit System is well-integrated with high density built form (36 storey maximum), mixed land uses and public domain development, resulting in a pedestrian friendly environment.

Optimise the built environment surrounding the Rapid Transit Stations by integrating high density mixed use development and quality public spaces.

Landmark building sites (25 storey maximum) located at key corners of the precinct.

New street connections adjacent to Scarborough Beach Road to improve distribution of local traffic whilst keeping driveways and walking out of the street environment.

Existing light industrial development to be retained and interface respected.

Hutton Street extension created as an attractive landscaped street.

Potential for taller office/commercial buildings on strategic corner sites along Town Street, to take advantage of elevated locale and views to and across Herdsman Lake and beyond.

High density/lower mixed use development (25 storey maximum) along Jon Sanders Drive framing Herdsman Lake opposite and taking advantage of views.

Mid rise buildings (16 storey maximum) between Scarborough Beach Road and Jon Sanders Drive creating articulation to the Precincts building mass and skyline.

New road connections between Scarborough Beach Road and Jon Sanders Drive to improve the movement network for pedestrians, cyclists and vehicles, whilst creating more efficient and manageable development sites.

Nodes of Office Gardens with public/private landscaped grounds.

Enhance Herdsman Lake environs optimising its relationship with the Precinct.

Streetscape and pedestrian amenity improvements to Selby Street, Hutton Street and Parkland Road.

Close (portion of) Hasler Drive to allow development up to Jon Sanders Drive to create an active edge and more intimate built environment whilst optimising land efficiency.

Enhance Walters Drive as a high amenity pedestrian friendly boulevard.

Attractive ‘green streets’ connecting Scarborough Beach Road with Herdsman Lake.

Network of Civil/Packet Parks connected via a strong pedestrian network.

Future redevelopment of larger sites to incorporate new streets and open spaces.

Existing Enterprise Park designed to become a focal active civic open space, lined by buildings with active ground floor uses activating and integrating with the adjacent open space.

Glendalough Train Station to create a comprehensive, integrated transit mixed use development outcome that contributes significantly to the surrounding public domain and overall locality.

New road connections creating more efficient and manageable development sites within close proximity to Glendalough Train Station, facilitating high quality, high density mixed use J transit orientated development.

Freeway Crossings providing connections between key points, whilst helping distribute local traffic.

High amenity streetscape upgrades to Main Street supporting an integration of residential, commercial and nodes of retail.

New road connections between the (north-western) residential neighbourhood and Scarborough Beach Road to improve the movement network for pedestrians, cyclists and vehicles to/from Glendalough Train Station.

Local precincts of integrated light industrial and residential streets.

Redevelopment of existing residential neighbourhoods (6 storey maximum) ensuring a pedestrian friendly, livable environment through an improved streetscape.

Upgrade existing local streets with quality streetscapes including footpaths, furniture, landscaping and street trees.

Local parks provided east and west of the freeway providing walkable open space amenity to residents and workers.
• Optimise the relationship between the Precinct and the Herdsman Lake environs.
• Enable the growth of the Precinct residential population to accord with key government policies.
• Private contributions for upgrades to infrastructure and public transport associated with intensification.

7.3 LAND USE

The following Key Principles were considered in locating the land uses identified on the Structure Plan:

• Provide local convenience retail in appropriate locations for residents, workers and public transport users.
• Provide residential densities that have regard for the amenity of existing residents and enable appropriate population growth.
• Provide flexibility for the development and integration of permissible land uses within the Precinct.
• Sustain the presence of large-format retailing and enable the growth of mixed-use development along Scarborough Beach Road.
• Facilitate residential development that responds to the amenity of Herdsman Lake and public transport.
• Create a safe, appealing environment around transit stations and throughout the Precinct through street activation and natural surveillance.

7.3.1 MIXED USE

A key objective is to incorporate mixed use development in the precinct that achieves a sustainable environment integrating living, working and leisure. A total of 96.9 ha of Mixed Use zoned land is proposed across the Structure Plan.

The typical built form typology for mixed use development, as required in the Herdsman Glendalough DAP, consists of office/commercial on the podium levels built up to the zero lot line, with residential apartment towers setback above. Priority should be given to the relationship of ground floor uses and building design with the public domain to ensure that considerations such as space activation and passive surveillance are optimised.

To facilitate residential mixed use development and to support commercial viability, this land use has been located in the high amenity areas within the precinct to facilitate development. The mixed use land use has been consolidated around these high amenity areas to intensify the residential development ensuring that considerations such as space activation and 24/7 passive surveillance are optimised.

The following high amenity areas and considerations were prioritised in strategically locating the mixed use land use:

• Within a 400m radius of the Train Station supporting transit orientated development;
• Along Scarborough Beach Road, leveraging off the future Rapid Transit System and the activation along the precincts primary connector;
• Adjacent to the amenity provided by Herdsman Lake;
• Along the **four high amenity ‘Green Streets’** between Scarborough Beach Road and Jon Sanders Drive (i.e. Selby Street, Gould Street and Parkland Street);

• Along **Main St**, capitalising on the passing trade, high exposure and connectivity to other nearby destinations in the metropolitan area; and

• Adjacent to the amenity provided by Enterprise Park.

### 7.3.2 COMMERCIAL/BUSINESS

The Commercial/Business use is the predominant existing land use within the Herdsman Glendalough business park area and such office-style uses will continue to be encouraged, as part of mixed use development as the area redevelops. A total of 20.4 ha of Commercial/Business zoned land is proposed across the Structure Plan.

Designated areas of Commercial/Business are provided as an interface between the Mixed Use and Industrial areas on the northern side of Scarborough Beach Road and on portion of Edward St on the eastern side of the Mitchell Freeway. It also serves as land use transition between the Industrial and Residential zones on Albert St. Commercial/Business is provided for along Hutton St, which is considered to be a more suitable interface land use than residential or mixed use to this future freight route.

The existing West Australian Newspapers site has been retained as Commercial/Business, as have the surrounding properties. The retention of this zoning for this site protects the existing use of the facility (which is characterised by 24 hour operations) and the similar zoning of surrounding properties ensures that sensitive uses (i.e. residential) are not located in close proximity to the existing operational facility, thus avoid potential future land use conflicts.

### 7.3.3 TRANSITIONAL INDUSTRY

Originally a light industrial precinct, the Herdsman Glendalough area has developed into a Business Park incorporating predominantly office/commercial land uses. However, areas of light industrial still remain along Howe Street and east of the freeway. An objective of the Structure Plan is to recognise and retain these existing areas of active light industrial. A total of 31.1 ha of Transitional Industry zoned land is proposed across the Structure Plan. Land use transition from/to light industrial is intended to occur, with office/commercial generally being located between light industrial and mixed use, ensuring a compatibility of uses is achieved.

### 7.3.4 RESIDENTIAL

The north-eastern quadrant of the Structure Plan area is characterised by existing residential development and the Structure Plan recognises this existing land use. A total of 16.1 ha of Residential zoned land is proposed across the Structure Plan. A combination of single, grouped and multiple residential dwelling developments are permissible within the residential zone. Similarly, a small area at the southern edge of the Structure Plan (east of Harborne St) is zoned residential, reflecting the existing use of the land for this purpose.
7.3.5 ADDITIONAL USE – SHOP

An Additional Use – Shop has been identified around each of the transit stops along Scarborough Beach Road, in the area surrounding the Glendalough train station and along parts of Main St. Notwithstanding the underlying zoning, a ‘Shop’ is a discretionary use, provided that the relevant development criteria outlined in Part 1 are achieved.

The designated locations will enable the provision of new retail facilities that capitalise on increased passing trade associated with the rapid transit system and from the increased population that will reside in the area as redevelopment proceeds. The Additional Use – Shop also recognises the presence of some existing retail facilities on Main Street and the associated zoning in LPS 3.

7.3.6 ADDITIONAL USE – SHOWROOM

An Additional Use – Showroom has been identified for areas within the vicinity of Scarborough Beach Road and along Hutton St and King Edward Road. This recognises the presence of a number of existing large format retail/showroom uses, which are covered by some of the Special Use Areas within the LPS 3. This use is subject to the discretion of the City of Stirling and the fulfilment of the built form criteria outlined in Part 1. The use must form part of a multi-storey development and must orientate to the public realm.

7.3.7 ADDITIONAL USE – OFFICE

An Additional Use – Office is provided for on the corners of Howe St and King Edward Rd, O’Malley St, Sundercombe St, Hutton St and Drake St. This Additional Use is intended to assist in facilitating a suitable built form and land use transition from the Commercial/Business and Mixed Use areas to the south with the industrial land uses to the north. The Additional Use is at the discretion of the City of Stirling, upon consideration of a series of built form criteria.

7.3.8 ADDITIONAL USE – MULTIPLE DWELLINGS

The Structure Plan identifies an Additional Use – Multiple Dwellings for part of the Transitional Industry zone identified on the eastern side of the Mitchell Freeway. This approval of this use is at the discretion of the City of Stirling and the development criteria outlined in Part 1 must be achieved. This Additional Use, where developed, must occur above the ground floor and at the primary street frontage. Of particular note, the multiple dwellings are to be occupied by exclusively by the proprietors or employees of the business or enterprise on site. This Additional Use classification is intended to encourage development of live-work facilities that incorporate residential facilities with a manufacturing or light industrial use, where the combination of such uses is appropriate.

7.3.9 SPECIAL CONTROL AREA – MANDATORY RESIDENTIAL

The Structure Plan identifies several Special Control Areas (SCA) that require the mandatory provision of residential dwellings. The SCA are identified in the same locations as the Additional Use – Shop areas along Scarborough Beach Road in the vicinity of the transit stops. A minimum of 20% of the overall plot ratio of a site that is subject to the SCA is to be provided for residential dwellings.
The intention of this requirement is to ensure that a residential population is provided in the vicinity of the future transit stops, in order to support the viability of a rapid transit system. The mandatory development of residential facilities within the Structure Plan area will also ensure that a resident population lives within close proximity to the activity corridor. This will in turn support the vibrancy of the area with resident activity throughout the course of the day and not just during working hours.

The 10% requirement is not considered unreasonable in the context of the multi-storey development potential that is afforded to sites the subject of the SCA. Suitable built form and/or management measures may be necessitated to mitigate potential noise, odour or dust nuisance impacts on residential facilities.

7.3.10 AFFORDABLE DWELLING PROVISION

It is a requirement of the Structure Plan that a minimum percentage of new residential dwellings developed be provided as ‘Affordable Dwellings’. A minimum of 12% of new dwellings are to be provided as Affordable Dwellings. All new Affordable Dwellings shall be transferred to a recognised affordable housing provider at construction cost and managed by this provider accordingly. A restriction on ownership in perpetuity, to ensure its ongoing use as an affordable purpose, may be required.

For the purposes of implementation, ‘Affordable Dwellings’ are defined as follows in the Structure Plan area:

“Dwellings which are accessible to low income households (the bottom 40% of income distribution) without spending more than 30% of the gross household income on housing costs.”

7.3.11 POTENTIAL REDEVELOPMENT YIELDS

A detailed analysis, to support and inform the preparation of the Structure Plan, has been undertaken to assess the potential floorspace areas, dwelling yields and population for the subject area. A summary of the key elements in included within Table 9 and Table 10 below.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Floor Space (m²)</th>
<th>Yield (Premises)</th>
<th>Employment Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 2021</td>
<td>Year 2031</td>
<td>Year 2021</td>
</tr>
<tr>
<td>Office</td>
<td>94,795</td>
<td>183,954</td>
<td>22</td>
</tr>
<tr>
<td>Retail</td>
<td>8,780</td>
<td>16,815</td>
<td>27</td>
</tr>
<tr>
<td>Industrial</td>
<td>7,769</td>
<td>11,653</td>
<td>4</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td>1,362</td>
<td>3,449</td>
</tr>
<tr>
<td>Other</td>
<td>5,016</td>
<td>8,479</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>116,360</td>
<td>220,901</td>
<td>1,430</td>
</tr>
</tbody>
</table>
### TABLE 10: RESIDENT POPULATION

<table>
<thead>
<tr>
<th></th>
<th>Year 2021</th>
<th>Year 2031</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Population</td>
<td>2,501</td>
<td>6,275</td>
</tr>
</tbody>
</table>

### 7.4 BUILT FORM

The following Key Principles and Objectives were considered with regards to built form and height through the precinct:

- **The height and scale** of new buildings should have an appropriate relationship with existing built fabric.
- **Optimise built form height** to facilitate optimal development potential and flexibility, particularly around high amenity areas.
- Provide built form at the street edge ensuring **activation of the street whilst respecting human scale**.
- Priority given to the relationship of ground floor uses and **building design with the public domain** to ensure that considerations such as space activation and passive surveillance are optimised.
- Create a **well-defined and appealing** public domain.
- Create a **safe, appealing environment** around transit stations and throughout the Precinct through street activation and natural surveillance.
- Provide **architectural qualities** that contribute to the attractiveness of the Precinct.
- Minimise the **visual impact** of surface parking and parking structures on public domain amenity.

#### 7.4.1 BUILT FORM HEIGHT

Building heights have been considered across the Structure Plan area, with the maximum permissible building heights outlined on **Figure 28**. The realisation of these maximum building heights requires compliance with the Herdsman Glendalough Detailed Area Plan, with building height bonuses provided with the achievement of specific development criteria. The heights depicted on Figure 28, and further explained below, incorporate the base permissible building height (excluding any building height bonuses); and the ultimate maximum permissible building height (including all potential building height bonuses), subject to Performance Based Bonus Criteria (refer Herdsman Glendalough Detailed Area Plan).

#### 2 STOREYS/4 STOREYS

Base height limit of 2 storey / Ultimate maximum height limit of 4 storey development is envisaged within the Transitional Industrial zone. Traditionally, light industrial land uses have been accommodated within single storey buildings. However, with existing precedence and as demand and value of land increase, these light industrial areas have the flexibility to be accommodated within multi-storey buildings. A maximum of 4 storeys minimises the impact of the sometimes ‘undesirable’ light industrial uses on surrounding areas. However, north of Scarborough Beach Road it allows for a built form transition from the taller buildings proposed along Scarborough Beach Road down to the existing lower light industrial buildings, north of Howe Street and Powell Street (extension).
BUILDING HEIGHTS PLAN
Herdsman Glendalough Area Structure Plan
A City of Stirling Project

LEGEND

- STRUCTURE PLAN BOUNDARY
- BUILDINGS UP TO 2 Storeys (BASE HEIGHT LIMIT) / 4 Storeys (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)
- BUILDINGS UP TO 3 Storeys (BASE HEIGHT LIMIT) / NO ULTIMATE MAXIMUM HEIGHT LIMIT APPLIES
- BUILDINGS UP TO 4 Storeys (BASE HEIGHT LIMIT) / 10 Storeys (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)
- BUILDINGS UP TO 6 Storeys (BASE HEIGHT LIMIT) / 14 Storeys (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)
- BUILDINGS UP TO 8 Storeys (BASE HEIGHT LIMIT) / 25 Storeys (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)
- BUILDINGS UP TO 10 Storeys (BASE HEIGHT LIMIT) / 22 Storeys (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)

- OPEN SPACE
- HERDSMAN LAKE

- TRAIN STATION

SHOULD A COMMUNITY PARK BE CREATED ADJACENT THESE SITES, THEY MAY BE REDEVELOPED WITH BUILDINGS UP TO 10 STOREYS (BASE HEIGHT LIMIT) / 12 STOREYS (ULTIMATE MAXIMUM HEIGHT LIMIT - SUBJECT TO BONUS CRITERIA)

NUMBER OF BUILDINGS PERMITTED ON SITE UP TO BASE HEIGHT LIMIT OR ULTIMATE MAXIMUM HEIGHT LIMIT (SUBJECT TO BONUS CRITERIA)

28
A 2/4 storey height limit is proposed within the north-eastern quadrant of the subject land between Main Street and the Freeway. This largely encompasses the existing residential and transitional industry areas.

5 STOREYS

Base height limit of 5 storey (no ultimate maximum height limit applies) development is envisaged along Main Street. This height limit encourages and facilitates development areas along Main Street, whilst minimising impact on adjacent residents.

6 STOREYS / 10 STOREYS

Base height limit of 6 storey / Ultimate maximum height limit of 10 storey development is envisaged between Harborne Street/Frobisher Street and the Freeway; and directly north of Parkland Road. This height limit encourages and facilitates development in these areas, whilst minimising impact on adjacent residents.

8 STOREYS / 12 STOREYS

Base height limit of 8 storey / Ultimate maximum height limit of 12 storey development has been proposed as a built form transition between the proposed 10/14 storey buildings along Scarborough Beach Road and the proposed 2/4 storey buildings north of Howe Street and Powell Street (extension). Similarly, a pocket of 8 storey development is proposed directly west of Enterprise Park as a built form transition to the taller 10/14 storey development further westwards.

Further 8/10 storey development has been identified on strategic corners of lateral streets north of Scarborough Beach Road and Howe Street, subject to being developed as Office/Commercial. This additional height encourages built form height to take advantage of views across Herdsman Lake and further westwards to the ocean.

10 STOREYS / 14 STOREYS

Significant base height limit of 10 storey / Ultimate maximum height limit of 14 storey development has been extensively proposed in strategic locations providing flexibility for, and to facilitate, substantial development over time, with the aim of achieving residential and employment targets for the precinct.

West of the Freeway, a blanket of 10/14 storey development is proposed outside of the 6/10 storey development adjacent to existing residents to the south, the 2/4 & 8/12 storey development north of Scarborough Beach Road and the 25 storey development within 400m of the Train Station, along Jon Sanders Drive and the western gateway. East of the Freeway, 10/14 storey development is proposed within 400m of Glendalough Train Station.

Areas of note where 10/14 storey development are proposed are:

- Within 400m of Glendalough Train Station to facilitate Transit Orientated Development.
- Along Scarborough Beach Road to facilitate mixed use development and support the future Rapid Transit System.
- Within the Herdsman Business Park (between Scarborough Beach Road and Jon Sanders Drive), facilitating significant mixed use and office/commercial development.
25 STOREYS

Ultimate maximum 25 storey development is provided for in high amenity mixed use areas within the precinct to facilitate and encourage tall, high density built form development.

The following high amenity areas have been prioritised for the provision of 25 storey development:

- North-west of Glendalough Train Station, facilitating large scale development to support transit orientated development principles.
- Surrounding arguably the precincts most prominent intersection, Scarborough Beach Road and Harborne Street, creating an Eastern Gateway to the precinct.
- Along Jon Sanders Drive, adjacent to the amenity provided by Herdsman Lake.
- North-east and south-east of the Scarborough Beach Road/Selby Street intersection, creating a western gateway to the precinct and ‘bookending’ Scarborough Beach Road.

7.4.2 DESIGN GUIDANCE

The scale and diversity of the redevelopment area necessitates that the detailed design guidance is provided to inform and control development proposals in a manner that will: be easy to understand and administer; be flexible enough to encourage and facilitate redevelopment; deliver the vision; and, comprehensively address the various built form considerations. The Herdsman Glendalough Detailed Area Plan has been prepared to this end and all development within the Structure Plan area is to occur in accordance with the DAP, as stated in Part 1.

7.5 MOVEMENT NETWORK

The following Key Principles and Objectives considered with regards to improving the movement network within the precinct:

- Support development of a funding model to provide additional public transport.
- Support the short and long term optimisation of public transport use, with the provision of dedicated transit lanes/light rail along Scarborough Beach Road.
- Improve the connectivity of vehicle, pedestrian and cycle movement through the Precinct.
- Provide a pedestrian network that is safe, enjoyable and linked to key destinations.
- Provide a cycle network that adopts world best standard.
- Ensure the key distributor roads combine traffic functionality with high attractiveness for pedestrian and cyclists.
- Ensure traffic movement is distributed rather than concentrated; slow-speed and legible.
- Support management of demand for car travel through parking policies.

A Street Character Type approach has been adopted for the Herdsman Glendalough area and the different types are graphically outlined in Figure 29. A key feature of the Street Character Type approach is its intrinsic relationship with both the built form and public realm. Each Street Character defines the public realm and the way in which development addresses the street. A Street Character may define the following elements:
• Road reserve width;
• Street planting;
• Verge Planting;
• Setbacks;
• Parking within the street and lot boundaries;
• Vehicular Access and Crossovers;
• Corner requirements;
• Articulation and fenestration;
• Entry;
• Openings;
• Balconies;
• Lighting;
• Awnings and Canopies;
• Signage;
• Landscape design within the front setback;
• Built Form elements such as roof form, materials and colour;
• Fences;
• Service elements;
• Staging; and
• Indicative preferred land use distribution (in accordance with Table A of Part 1 of the LSP).

A description of each Street Character present within the Structure Plan area is provided below.

7.5.1 STREET CHARACTER TYPE 1

Street Character Type 1 relates to Scarborough Beach Road, Jon Sanders Drive and Harborne Street (south of Scarborough Beach Road). These streets are the well-integrated primary streets that serve as important traffic corridors. The key aim for Street Character Type 1 is to create a grand urban boulevard with a scale that suggests a sense of power and creates striking edges to the Precinct.

The desired outcome is for a more pedestrian-friendly environment to include safe crossing points and the provision of a safe cycling environment. Kings Park Road is a good example of the typology for Jon Sanders Drive (refer Plate 8) and Harborne Street. Scarborough Beach Road is planned to feature high-frequency transit in the central median.
The development vision for Street Character Type 1 is for:

- Diverse mixed-use urban form with office/commercial, shops, residential, restaurants/cafes.
- Buildings are to be located close to street edges with height up to six storeys. Building height up to 10 storeys may be supported where set back further from the street, with 14-25 storey buildings able to be considered if development bonuses are achieved.
- The streets will be landscaped to provide good tree cover and appealing pedestrian amenity whilst allowing for ground level tenancies to have good exposure to passing traffic.

A key objective in revitalising the Herdsman Glendale Area is the upgrade of the primary distributor, Scarborough Beach Road. To improve the vehicle, pedestrian and cycle movement along Scarborough Beach Road, the Masterplan proposes to widen the existing road reserve from a varying width of between 25-30m to 42m. This 42m wide road reserve, as illustrated in Figure 30 below, would incorporate:

- 7.0m for a future Rapid Transit System (in the centre);
- 2.5m for separators to either side of the Rapid Transit System infrastructure;
- 6.2m for two lanes of vehicle traffic in each direction;
- 2.5m for on-street parking and nib tree planting on both sides;
- 1.0m for separation between on-street parking and cycle path (combination of hard/soft landscaping);
- 1.8m Copenhagen-style cycle path; and
- 3.5m verge (combination of hard/soft landscaping) for pedestrian movement.

![Figure 30: Indicative Scarborough Beach Road Cross-Section](image)

Due to a substantially inefficient road reserve width shared by Jon Sanders Drive and Hasler Drive, the Structure Plan proposes the closure of a portion of Hasler Drive between the proposed Hutton Street Extension and the Hasler Road. This closure of a portion of Hasler Road results in potentially 20m of road reserve being available for development. In addition, a redesign of the Jon Sanders Drive cross section is proposed. The proposed cross section of Jon Sanders, as illustrated in Figure 31 below, incorporates additional public amenity including on-street parking, an independent pedestrian and cycle lane and street trees; whilst adjacent private land could gain access directly off Jon Sanders Drive.
Due to Jon Sanders Drive (north of Hutton Street) being a heavy freight transport route, vehicles would not be able to gain direct access off Jon Sanders Drive. This would require the Hasler CAP road to be retained with the rationalising of the Jon Sanders Drive/Hasler Road cross section, as illustrated in Figure 32 below.
7.5.2 STREET CHARACTER TYPE 2

Street Character Type 2 streets are predominantly situated in the area between Howe Street and Jon Sanders Drive, with some other Type 2 streets east of the Mitchell Freeway. These streets form a secondary movement network which provides access to office and light industrial businesses from the busier Street Character Type 1 streets.

These streets will experience major transformations with buildings lining the streets and improvements to the streetscapes. Most Street Character Type 2 streets will be 20-25m wide, and include tree planting, wide footpaths, on-street parking, slower traffic speeds and safe pedestrian crossings (refer Figure 33). The Hutton Street road reserve, however, is required to be 30m. Murray Street in West Perth is an example of an attractively landscaped street that would befit the Type 2 vision.

The development vision for Street Character Type 2 is for:

- Diverse mixed-use urban form that supports residential development.
- Buildings are to be located close to street edges with height up to four storeys. Building height up to 6-10 storeys may be supported where set back further from the street, with 10-14 storey buildings able to be considered if development bonuses are achieved.
- The wider Type 2 streets to be distinctly characterised by the plentiful tree planting and soft landscaping in the road reserve. This will be enhanced by additional soft landscaping that is encouraged in the front building setback.
- The narrower Type 2 streets will have a more intense urban quality, as there is less space for trees and soft landscaping. For these streets, a greater focus will be on attractive hard-landscape design outcomes.

![FIGURE 33: INDICATIVE STREET CHARACTER TYPE 2 & 3 CROSS-SECTION](image-url)
7.5.3 STREET CHARACTER TYPE 3

Street Character Type 3 streets are situated predominantly around Glendalough Train Station and along Main Street. These streets will have the ability to accommodate mixed-use development within low to mid-rise buildings, taking advantage of the proximity to Glendalough Station and the exposure along Main Street. The existing Type 3 streets will be upgraded and, together with future street links, will provide appealing conditions for pedestrians, cyclists, residents and businesses.

The majority of streets will be 20m wide and comprise street trees, improved pathways, on-street parking, slower traffic speeds and safe pedestrian crossings at intersections. The vision for Main Street, with a width of 25m, is to become similar to Beaufort Street in Mount Lawley, with ‘Clearway’ lanes that allow parking outside of peak traffic times and new verge paving and landscaping that responds to mixed-use development.

The development vision for Street Character Type 3 is for:

- Diverse mixed-use urban form that particularly fosters residential development at ground and upper floor levels, and facilitates local retail development in designated locations.
- Buildings are to be located close to street edges with height up to four storeys. Building height up to 6-10 storeys may be supported where set back further from the street, with 10-14 storey buildings able to be considered if development bonuses are achieved.
- Main Street buildings will be allowed up to five storeys at the street edge, with three storeys adjacent to existing residential development.
- Streets will be characterised by the plentiful tree planting and soft landscaping in the road reserve. This will be enhanced by additional soft landscaping in front yards and in any front building setback of mixed-use developments.

7.5.4 STREET CHARACTER TYPE 4

A number of local access streets currently exist in low to medium density residential area in the northeastern corner of the Structure Plan area. The lack of public open space in the area north of Powell Street means that the streets become vital as spaces for informal recreation activity.

Street Character Type 4 streets are 20m wide (refer Figure 34), with room for footpaths on each side, the establishment of more frequent tree planting and on-street parking. The strategy for Type 4 streets is to redesign sections of streets to create slow-speed (10-30kph), child-safe environments similar to the Home Zone streets in the UK and Woonerf streets in Europe.

Street Character Type 4 streets accommodate residential development, with opportunity for home-based businesses.

The development vision for Street Character Type 4 is for:

- The accommodation of greater residential density and an opportunity for home based businesses;
- Built form to have a reduced front setback and be up to four storeys high, with new development above two storeys created on larger sites and designed with regard to the amenity of adjacent residences.
As with all streets in the Precinct, removing overhead powerlines in Type 4 streets will significantly improve the ability to create high amenity streetscapes. Verges (some of which will be widened) will be seen with elements such as closely-spaced trees, vegetable gardens, play equipment, visitor parking, seating and shelter.

**FIGURE 34: INDICATIVE STREET CHARACTER TYPE 4 & 5 CROSS-SECTION**

### 7.5.5 STREET CHARACTER TYPE 5

Street Character Type 5 streets accommodate the existing light industrial development. These streets will be upgraded to improve streetscape amenity whilst supporting the function of light industrial businesses and allowing the flexibility for ancillary residential uses above ground level in certain areas.

The streets will have a carriageway that enables large-vehicle access, on-street parking bays, footpaths on each side and street trees that do not affect access into the properties. Brown Street in East Perth is a good example of the type of design outcome that envisaged for Street Character Type 5.

The focus for Howe Street, and the area between Roberts Street and Powell Street, will be for the continuation of light industrial businesses. However, an opportunity will exist for commercial development (subject to performance criteria and acceptance of development bonuses) to be established on the southern side of the various Howe Street corners between King Edward Road and Drake Street.

Light industrial enterprises between Roberts Street and MacDonald Street will continue to be fostered, with the added opportunity for low-key, sensitively-incorporated cottage residential use to be added within these Type 5 streets.

Street Character Type 5 streets will be able to accommodate four-storey buildings, which can be located close to the street edge. Large blank facades facing the street need to be avoided. Future development should incorporate small but effective architectural measures to enhance the appearance of the buildings.
Whilst Type 5 streets will have a largely utilitarian function, the incorporation of street trees, wide footpaths and easy-to-maintain verges will serve to create a much more appealing environment than currently exists.

7.5.6 ADDITIONAL SPECIFIC ROAD RESERVE REQUIREMENTS

In addition to the Street Character Type information provided above, a number of roads within the Structure Plan area may have different road reservation and cross-section requirements in order to achieve specific movement network objectives. These roads are as follows:

- Hutton St – 30m to accommodate regional freight traffic;
- King Edward Rd & Selby St – 25m to accommodate four lanes of traffic if the future King Edward freeway interchange is constructed;
- Main St – 25m to potentially accommodate peak hour bus lanes and right turn pockets;
- Frobisher St – 25m to accommodate potential future traffic.
- Harborne St – 32.4m to accommodate possible future light rail.

The required road reservation and cross-section details shall be agreed to with the City of Stirling at the design stage.

7.5.7 PROPOSED ROAD CONNECTIONS

Improving the vehicle, pedestrian and cycle movement is a key objective of the Structure Plan. Various road connections have been proposed through the existing large street block creating a more efficient transport distribution network whilst providing the potential for more efficient development parcels.

Generally, all proposed road connections have been strategically located to primarily improve connectivity to Scarborough Beach Road and public transport; and to the amenity provided by Herdsman Lake. The road connections south of Scarborough Beach Road have been provided to improve vehicle, pedestrian and cycle movement between Scarborough Beach Road and Jon Sanders Drive. In addition, these connections also contribute to distribution of local traffic improving traffic congestion.

Proposed north-south road connections west of Glendalough Train Station improve vehicle, pedestrian and cycle movement to the Train Station facilitating Transit orientated development. Similarly, road connections proposed east of the freeway improve the transport network, facilitate transit orientated development and provide more efficient transport routes south of Roberts Road to Scarborough Beach Road and Glendalough Train Station.

The location of ‘Local Road Reserves’ identified on the Structure Plan is fixed, as these particular linkages (i.e. extension of Sundercombe, Hutton and Drake Streets) are key to the overall improvement of the movement system within the Structure Plan area.

The ‘Proposed Local Road Reserves’ identified on the Structure Plan are road connections that shall be provided to improve network connectivity, however the exact locations, alignments and width are subject to confirmation and agreement at the subdivision and detailed design stage. The specifics of these roads may alter, however a link must be implemented.
7.5.8 ADDITIONAL MOVEMENT NETWORK CONSIDERATIONS

LANEWAYS

Laneways have been provided in strategic locations to primarily facilitate more efficient development land parcels, in addition to increasing local traffic distribution. New laneways will play a particularly important role in providing rear access to lots fronting onto Scarborough Beach Road. This will enable the removal of vehicle access and crossover from Scarborough Beach Road and assist in improving the amenity of the road for pedestrians.

FREEWAY CROSSINGS

A contributing factor to high traffic congestion along Scarborough Beach Road is the divide caused by the Mitchell Freeway. With current local freeway crossing locations only at Hutton Street and Scarborough Beach Road, local traffic is fed onto these two roads. Additional freeway crossings have been considered between Collingwood and McDonald Streets and Baden and Neil Streets to increase the local traffic distribution and alleviate traffic congestion.

IMPROVED PEDESTRIAN AND CYCLE NETWORK

As identified within the Opportunities and Issues Analysis, the existing pedestrian and cycle network is minimal and poorly connected. An extensive shared path network is proposed within the Structure Plan area. Pedestrian paths are proposed on both sides on all existing and proposed roads.

7.6 STREETSCAPE AND PUBLIC SPACE

The overall area has an urban character that is devoid of green living things and presents a harsh, hard landscape character dominated by commercial signage, overhead power lines, and concrete and asphalt surfaces. Changes to improve this overall character, transforming the location into a more desirable, people friendly environment, need to be big and bold but achieved incrementally through planning controls and planning gain.

The landscape has to be big in scale and robust enough to be meaningful within the built form and scale of streets that structure the Herdsman Glendale precinct. The proposed urban landscape will provide a hierarchy of street characters, local spaces and civic places that will form a strong and resilient vegetative structure throughout the area. The landscape structure is formed by creating the following:

- **Primary East West Avenue:** Scarborough Beach Road.
- **Secondary Streets:** Street tree and associated pedestrian infrastructure established to emphasize the street hierarchy and demarcate streets that define the precinct and lead down to Herdsman Lake.
- **Tertiary Streets:** Verge tree planting.
- **Green & Civic Spaces:** Small quality spaces that will provide meeting places and destinations that promote communal activity and commercial opportunities.
- **Private Open Space:** Green space provided as part of development that is open for the use of the public.

All landscape elements and spaces will provide more than an aesthetic enhancement. They will contribute to effective environmental management of the urban space by providing integrated urban drainage, cooling shade, nutrient management of run-off and local wind speed reduction.
SCARBOROUGH BEACH ROAD

Scarborough Beach Road is the primary physical and aesthetic urban element that establishes the character of the area. It is intended that this road develops as a major avenue of large trees that are the dominant feature balancing the scale and nature of the movement corridor. The avenue will consist of very large trees that mature to have a high canopy allowing clear views beneath. The avenue will not be a monoculture but consist of varied species that are of the same scale. This will prevent an urban landscape statement from being undermined by a single species contracting disease or changing growing conditions adversely affecting the whole avenue. By using a variety of species of a similar size and nature, risk of wholesale poor growth and failures in an initially inhospitable urban environment are minimized.

- Angophora costata – Smooth barked apple (15-25m)
- Euc sideroxylon – “Rosea” Red Ironbark (15-25m)
- Euc camaldulensis – River Red Gum (24-30m)
- Corymbia calophylla – Marri (large fruiting nuts) (30m+)
- Corymbia citriodora – Lemon scented gum (30m)

SECONDARY STREETS

These streets will have a strong pedestrian friendly environment accommodating footpaths and verges. The verge treatment where practical will incorporate urban water treatment devices that will also provide passive irrigation for street trees.

- Agonis flexuosa – Peppermint (7-10m)
- Corymbia ficifolia – Red flowering Gum (8-15m)
- Melaleuca quinquinervia – Broad leaved Paperbark (10-15m)
- Melaleuca preissiana – Moonah paperbark (10-15m)

TERTIARY STREETS

The network of smaller streets will be subject to tree planting where possible. The streets will not be avenues but will be less formal with groups and irregularly space trees located where appropriate within parking and access arrangements. Species will not be defined allowing diversity of smaller specimens.

SPACES AND PLACES

The creation of quality urban spaces at strategic locations will complement the development opportunities and provide much needed punctuation within the built form. These spaces will create and respond to community use. They will provide valued passive recreation opportunities and enhance the potential for adjacent commercial uses. Within these spaces there is an opportunity to co locate drainage as integrated passive irrigation and hydrocarbon runoff management. It is anticipated that these spaces will incorporate highlight species, including (but not limited to) the following:

- Pheonix canariensis – Canary Palm (15m+)
- Tipuana tipu – South American Rosewood (7m)
- Erythrina indica – Flame or Coral tree (7-10m)
- Platanus x acerifolia – Spanish or London Plane (20-30m)
- Ficus macrophylla – Morton Bay Fig (up to 60m over a long time)
Herdsman Lake offers a major environmental resource that already has affected adjacent property uses and values beneficially due to its aesthetic qualities. Many businesses now look over the reserve. Actual use of the reserve for recreation is low and not related to adjacent land uses. It is proposed to integrate a range of facilities that will enhance recreation potential while still respecting and conserving the environmental qualities of the lake and its environs. Greater managed access routes will link pedestrian and cycle routes to passive activity nodes. The nodes may include interpretive sites, sites for public repose, areas for meeting and linked health and fitness courses.

**ENTERPRISE PARK**

Enterprise Park (4765m²) is in a prominent location that has the potential to be transformed into a major gateway open space. The removal of the eastern road and abutting development against the POS will provide opportunity for food and beverage retail and/or a similar commercial outlet taking advantage of an outlook west onto the park. The park is of a size to accommodate a large public art piece or structure announcing the precinct and becoming a signature element expressing the new growth direction of the area. This large green space is of high value in a hard urban environment, the use of which should be maximised. The link from the park through to the Station along the south side of Scarborough Beach Road could extend park tree canopy or reference a built structure within the park creating a strong visual connection.

**NORTHERN COMMUNITY PARK**

The northern Community Park (3864m²) will provide the opportunity for informal recreation and social interaction. This area east of the freeway will contain a larger residential population and it is important to have a local park serving this neighbourhood in a central location. This space will:

- Be safe and easily observed form surrounding development and streets;
- Accommodate venues for the community to come together for picnics and gatherings;
- Potentially accommodate community gardens and food gardens;
- Potentially include informal open space as a kick about, one-on-one basket ball, boules, table tennis and exercise equipment; and
- Opportunities for public and community art, enriching the recreational experiences of users.

**GREENLINK DRAINAGE RESERVE**

The existing drain that runs down the western freeway boundary has the potential to be transformed from a utilitarian trapezoidal ditch into a “Living Stream” linear parkland link to Scarborough Beach Road. The corridor can be reformatted to still function as an effective drain but designed as a habitat corridor of riparian plants and trees within which cycle and pedestrian movement is accommodated.

**INTEGRATED DRAINAGE MANAGEMENT**

The use and promotion of Water Sensitive Urban Design (WSUD) techniques and approaches is to be utilised wherever possible. The space for nutrient stripping swales is limited but the use of linear and incidental ‘rain gardens’ and ‘nutrient sinks’ can be implemented discretely in road verges. These devises should be fully integrated with the road drainage promoting passive irrigation of street vegetation and controlling hydrocarbon runoff. Within the context of a dense urban area, the design of these WSUD devises need not be natural in appearance but can be incorporated within the urban public realm infrastructure. The use of permeable pavements and porous asphalt treatments in key locations possibly associated with lower level threshold treatments of road junctions, should be incorporated as a component of the approach to integrated drainage management.
ROAD TREATMENTS

The road hierarchy and overall legibility of the precinct can be improved with the use of varied road and footpath treatments. Consideration should be given to use of block pavers at road junction or to create varying precincts with the development areas. The selected paving treatments of tertiary roads can significantly change the character of streets especially in locations where separated pedestrian access is limited. All paving detailing at junctions and associated with pedestrian circulation should address both the need to reduce traffic speeds, manage drainage and create a distinctive character.

PRIVATELY OWNED PUBLIC OPEN SPACE

The provision of privately owned, publicly accessible open space areas are encouraged to be provided as open space areas that will are privately owned as a component of a subject landholding, but will be available for use by the wider public for all but a single day of any calendar year.

The creation of such areas within an individual development shall be available to any applicant with respect to a land parcel that is partially or wholly zoned ‘Mixed Use’, ‘Commercial/Business’ or ‘Transitional Industry’, provided that the proposed space meets all of the following criteria:

a) The privately owned public open space area is both highly visible and directly accessible from an adjacent Local Road Reserve or Local Scheme Reserve – Public Open Space;

b) The privately owned, publically accessible open space area has an effective total minimum area no less than 100m²;

c) The privately owned, publically accessible open space area is to be drained, developed and landscaped to a high quality to the satisfaction of the City of Stirling, and maintained to this standard at the cost of the subject landowner for the life of the subject development.

7.7 WATER MANAGEMENT

A comprehensive District Water Management Strategy has been prepared to provide guidance to achieve sustainable management of all aspects of the water cycle of the Herdsman Glendalough area (refer Appendix 7). The DWMS undertakes this by considering integrated water cycle management providing design and management objectives on water conservation, water quality and water quantity. Table 11 below outlines the key principles of the DWMS to guide redevelopment within the HGA.

<table>
<thead>
<tr>
<th>TABLE 11: KEY WATER MANAGEMENT PRINCIPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Conservation</strong></td>
</tr>
<tr>
<td>Fit for purpose water to be used within the development with the use of water to be as efficient as possible. No potable water should be used outside of homes and buildings. Achieve the sustainable management of all aspects of the water cycle within the development.</td>
</tr>
</tbody>
</table>
### Water Conservation

<table>
<thead>
<tr>
<th>Water Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The post-development annual stormwater discharge volumes and peak flows are to be at minimum maintained relative to pre-development conditions, unless otherwise established through determination of ecological water requirements for sensitive environments. Manage and minimise changes in groundwater levels following development.</td>
</tr>
<tr>
<td>Minimise changes in hydrology to prevent impacts on receiving environments. Seek opportunities to disconnect existing properties from the drainage network and increase infiltration on site where practicable. Retain and/or infiltrate runoff from new impervious surfaces generated by the critical 1-year 1 hour annual recurrence interval (ARI) event close to source, using soakwells, permeable pavements, flush kerbing, rainwater tanks, vegetated swales or bottomless pits in piped systems. Protect groundwater as a resource. Protect infrastructure and assets from flooding and inundation by high seasonal groundwater levels, perching and/or soil moisture. Ensure serviceability of roads and infrastructure in minor storms through the use of flush kerbing and swales where practicable. Runoff from the 5-year ARI (residential) and 10-year ARI (commercial or industrial) events should be managed within new or existing stormwater conveyance systems and landscaped areas such as swales, basins and open space. Habitable floors at least 500 millimetres above the 100-year ARI flood event or storage level at any location. Ensure best management practises are considered.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain surface and groundwater quality at pre-development levels (winter concentrations) and if possible, improve the quality of water within and leaving the development area to maintain and restore ecological systems.</td>
</tr>
<tr>
<td>If the pollutant outputs of development (measured or modelled concentrations) exceed catchment ambient conditions, the proponent shall achieve water quality improvements in the development area or, alternatively, arrange equivalent water quality improvement offsets inside the catchment. If these conditions have not been determined, the development should meet relevant water quality guidelines stipulated in the National Water Quality Management Strategy (ANZECC and ARMCANZ, 2000). Ensure that all runoff contained in the drainage infrastructure network receives treatment prior to discharge to a receiving environment consistent with the Stormwater Management Manual (DoW, 2004 – 2007). Protect groundwater dependent ecosystems from the impacts of urban runoff. Protect groundwater as a resource. Ensuring acid sulfate soil management protocols are in place during construction.</td>
</tr>
</tbody>
</table>
7.7.1 WATER MANAGEMENT IMPLEMENTATION

The objectives and strategies contained in the DWMS are to be implemented as part of the preparation of appropriate water management documents which are to accompany Subdivision and Development Applications, consistent with the requirements of Better Urban Water Management (WAPC, 2008).

As the Structure Plan area is an existing developed area, the implementation of the water management strategy will occur as development and redevelopment proposals are approved and constructed. Key opportunities for improvements in water management outcomes in the study area include:

- The construction of the new roads;
- Rezoning of majority of the study area to medium density mixed use;
- Infill development in existing residential areas east of the Mitchell Freeway;
- Upgrades to water and wastewater supply infrastructure; and
- Where appropriate, disconnecting properties currently discharging directly into the drainage network and maximise opportunities for infiltration on site.

During future planning stages, the strategies and design criteria outlined in this DWMS will need to be further developed as more detailed design, planning and staging is undertaken. The following aspects are to be investigated and documented further as detailed planning and design progresses:

- Demonstration that the principles and objectives contained within the DWMS have been addressed.
- An Urban Water Management Plan will need to be prepared and accompany the submission of Development Applications covering elements typically addressed in a Local Water Management Strategy and are not covered in the DWMS.
- Further drainage modelling is recommended during detailed design to determine flood levels and associated finished floor levels, drainage upgrades, and if detention storage is required to mitigate downstream flooding.
- Where new roads are proposed, the drainage requirements for the new roads will need to be confirmed and agreed with the City of Stirling. It will also need to be demonstrated through hydraulic modelling that there will be no impact on the existing drainage network due to presence of the new roads. Design details for the stormwater system will be required by the City of Stirling.
- A description of the strategies proposed to detain the stormwater on lot will need to be prepared at the Development Application stage.
- Detailed planning for the eastern precincts will need to include the location of new open space areas as well as documenting any water detention function the open space areas will perform.
- Implementation details of the proposed retrofitting of existing streets with WSUD elements to improve detention at source and water quality.
- Identification of acid sulfate soils and contaminated sites as necessary during the Development Application stage.
7.8 SERVICING INFRASTRUCTURE

GHD has undertaken a thorough assessment of the servicing infrastructure in place within the Herdsman Glendalough area and outlined a strategy for the provision of future services to support redevelopment. Full details are included within Appendix 6 – Utilities Infrastructure Strategy and the key items are summarised below.

7.8.1 SEWER

The critical elements to the wastewater system are the Hasler Road and Harborne Street Pump Stations. It is anticipated that the Water Corporation will ultimately be able to provide sufficient pump station capacity to service the full extent of the proposed Herdsman Glendalough redevelopment area.

Another critical element involves the private pump stations that are located on the northern boundary of the redevelopment area west of Frobisher Street. The reasons behind their existence vary, but would fall into the following categories (or a combination of these):

- The original use (industrial) may not have required a sewer connection, but have been rezoned since;
- The area was not comprehensibly serviced by sewer initially, and mains extensions and sewer connections were done on a lot by lot basis; and/or
- Without broader planning, gravity sewers were too high, would require substantial extensions, would be costly to extend or would have insufficient capacity (diameter) to connect into.

These constraints can be overcome by requiring all new lots/developments within the redevelopment area (with emphasis on the constrained areas) to make provision for gravity sewer connections. This may require a wastewater review of neighbouring sewer catchments. The potential exists for the discharge of wastewater to catchments north and north-west of the redevelopment area, but an ultimate result may depend on future Water Corporation planning studies that have not yet been undertaken.

7.8.2 WATER

Water Corporation planning to date has not considered substantial growth to the Herdsman Glendalough area. Water Corporation has indicated that the long term capacity will be looked at in a future review. Water Corporation will be responsible for ensuring that sufficient capacity exists within the water distribution system for pipe diameters above DN300. It is envisaged that water reticulation upgrades will be required perpendicular to the alignment of the existing DN460 distributions mains that services the majority of site currently and that these reticulation services will need to be provided as part of the redevelopment.

7.8.3 ELECTRICITY

Western Power has undertaken a feasibility study which indicates that the existing distribution 11 kV power network which currently supplies the proposed redevelopment area is unable to support the projected 2021 and 2031 increase in demand without significant network reinforcement. Western Power expects the need for a transmission solution being the construction of a new zone substation. A site for this purpose has been purchased on Edwards Street.
Zone substation solutions are generally financed by Western Power as part of the ‘organic’ load growth. However, the feasibility study implies that if an area requires significant infrastructure in the short term then Western Power would seek some financial assistance with this infrastructure.

Ultimately, at least ten high voltage distribution feeders are expected to be extended from the zone substation into the growth area which would be funded by developers. This would also include other associated infrastructure (i.e. new transformers, ring main unit (RMU) switchgear, low voltage network, removal of the existing power lines). The feasibility study is very high level and provides feedback based on the total expected 50 MVA load demand.

7.8.4 GAS

Gas is considered a non-essential service and ATCO Gas usually keeps up with areas being developed within the Perth metropolitan area, including centres marked for redevelopment. The redevelopment area appears to be well reticulated with gas services, and this will be confirmed when looking at the growth strategy with ATCO Gas once the future demand has been determined.

7.8.5 TELECOMMUNICATIONS

Telecommunication upgrades will occur as required as development proceeds, as outlined in Section 5.3.5.

7.9 COMMUNITY INFRASTRUCTURE

The CIP (refer Appendix 4) has been prepared to assess existing and determine future community infrastructure demands within the locality as redevelopment of the Structure Plan area proceeds.

The CIP has identified a number of new facilities that will need to be provided to support the new community within and surrounding the Structure Plan area. These facilities are outlined in Table 12.
<table>
<thead>
<tr>
<th>Community Infrastructure</th>
<th>Recommended Provision</th>
<th>Locational Requirements</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Childcare                | 2 Long Day Care Centres.  
2 Out of School Hours Care facility.  
1 Play group integrated within the neighbourhood centre. | ● Away from main roads and electricity substations.  
● Directly near bus stop and high quality pedestrian access.  
● Corner sites preferred.  
● Walking distance to residential areas and shops.  
● Parking/drop off/pick up required.  
● High levels of public safety.  
● Sites around 2500m².  
● Locate near schools, parks and public facilities to reduce conflict with other uses. | City of Stirling to work with private providers to encourage provision of service.  
A playgroup could be hosted in the Osborne Community Centre or any proposed multipurpose facility. The demand for childcare facilities needs to also consider the demand from the existing and forecasted worker population. |
| Multipurpose Community Centre (include recreation facilities, community meeting rooms etc) | 1 Neighbourhood centre or small local meeting room GFA of ~300m².  
Appropriate access to a district facility within the neighbouring suburbs (i.e. Stirling City Centre). | ● Co-ordinator to develop programs.  
● Public transport access.  
● Potential for on-site parking/service vehicles.  
● High levels of public safety day, night and weekend.  
● Fully accessible.  
● Affordable user fees for community groups. | This could be collocated with other community facilities such as a childcare centre or library. The City of Stirling could investigate the provision of a larger facility by combining the centre with some of the facilities in the Stirling City Centre. |
| Health Facilities        | Additional primary health care services. | ● On public transport route/high quality pedestrian access.  
● Walking distance to residential areas.  
● In commercial centre and neighbourhood shopping centre but affordable locations.  
● Meets accessibility requirements for people with a disability/limited mobility. | Work with Perth North Metro Medicare Local and the North Metropolitan Health Service to develop a strategy for increasing the provision of health services in the area.  
Health care services could be offered through existing and proposed community centres. |
| Library                  | Expansion of existing facilities or the provision of one neighbourhood library. | ● Public transport access.  
● Potential for on-site parking/service vehicles.  
● Visually prominent.  
● High levels of public safety day, night and weekend.  
● Fully accessible.  
● Ground floor. | A neighbourhood library could be one of the facilities within a multipurpose community centre. Alternatively, the facility could be combined with a new library in the Stirling City Centre. |
<table>
<thead>
<tr>
<th>Community Infrastructure</th>
<th>Recommended Provision</th>
<th>Locational Requirements</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Public open space and recreational facilities | Four local parks with a 400m catchment. Each park to be between 0.2 and 2ha. Two neighbourhood parks with 800m catchment to be between 0.5 to 5ha. Public open space to incorporate one sportsground with two playing fields. |  | Public transport access including walking/bicycle routes.  
  - Near schools.  
  - Potential for on-site parking.  
  - High levels of public safety day, night and weekend.  
  - Fully accessible.  
  - Low maintenance costs.  
  - Flat, non-floodable sites.  
  - Allows for multipurpose use.  
  - Allowance for floodlighting of fields and glare for adjoining uses. | The parks should be distributed across the wider locality. Local parks should be in close proximity to areas with increased numbers of apartment buildings that are greater than three storeys.  
Access and capacity of existing public open space, such as the Herdsman Lake Glendalough Open Space should be improved. |
| Local shopping centres including supermarket, fresh food outlets, convenience stores, cafes and pubs | Additional services to be provided by the private sector. The Structure Plan envisages that this will be provided along Main Street and in the Glendalough District Activity Centre. | High level of public transport access.  
  - Fully accessible with high quality, accessible pedestrian environment.  
  - High level of public safety. | Structure Plan provides appropriate zoning. |
| Education facilities | Incremental growth of existing schools to accommodate the increased residential population.                                                                                                                      | To be located in accordance with the guidelines outlined in Liveable Neighbourhoods.                                                                                                                                  | Further consultation with the Department of Education and private schools in the area. |
| Pedestrian and cycling amenity | Increased provision of pedestrian and cycling facilities. Improvement in pedestrian and cycling amenity.                                                                                                           | Low grades, high levels of public safety and link to key destinations (i.e. schools, shops, community facilities).  
  - Pedestrian/bicycle facilities need to integrate with existing network and to adjoining provision.  
  - Bus routes to be provided.  
  - Public transport infrastructure required (i.e. bus shelters, bicycle parking etc)  
  - Parking code at shopping centre/workplaces to give priority to bicycles/motorbikes/pedestrians | Addressed in Structure Plan.  
Facilities for the improvement of pedestrian and cycling amenity should be developed in accordance with the City of Stirling’s Integrated Cycling Strategy. |
<p>| Emergency Services | Incremental expansion of existing emergency services.                                                                                                                                                              | To be determined by the appropriate agency.                                                                                                                                                                           | Further consultation with WA Police (including Superintendent for the region), WA Fire and St John Ambulance. |</p>
<table>
<thead>
<tr>
<th>Community Infrastructure</th>
<th>Recommended Provision</th>
<th>Locational Requirements</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural facilities including museums, art galleries,</td>
<td>Ensure access to Perth Cultural Precinct</td>
<td>• N/A</td>
<td>Ensure liaison with Department of Culture and the Arts.</td>
</tr>
<tr>
<td>performing arts etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skaterpark</td>
<td>Provision of one neighbourhood facility within the locality as well as suitable access</td>
<td>• To be developed in accordance with the City of Stirling Skate and BMX Facility Strategy.</td>
<td>Provision of one neighbourhood/ incidental skatepark facility within existing public open space.</td>
</tr>
<tr>
<td></td>
<td>to a district facility within the broader region.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social and health care services</td>
<td>Ensure existing services have capacity. These include:</td>
<td>• Within existing centres.</td>
<td>Work with existing services to confirm capacity.</td>
</tr>
<tr>
<td></td>
<td>• Maternal and child health services;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Multi-agency service centres;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Aged day care; and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Seniors centre.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment assistance program</td>
<td>Service provided by the Osborne Community Centre.</td>
<td>• Provided as part of a youth centre/space within an existing community centre.</td>
<td>Confirm that the Osborne Community Centre offers employment assistance services.</td>
</tr>
</tbody>
</table>
8 IMPLEMENTATION

8.1 ADOPTION OF LOCAL STRUCTURE PLAN

In accordance with Clause 6A.12 of the Scheme, this Structure Plan shall come into operation when it is certified by the Western Australian Planning Commission (WAPC) pursuant to Clause 6A.12.1a) of the Scheme or adopted, signed and sealed by the Council pursuant to Clause 6A.12.1b) of the Scheme, whichever is the latter.

8.2 MANAGEMENT PLANS

A number of management plans may be required to support further detailed planning proposals within the Structure Plan area. Where applicable, these may include the following:

- Urban Water Management Plans, as a component of subdivision proposals;
- Environmental Management Plans, for proposals in close proximity to Herdsman Lake and within the Poultry Plant Processing buffers;
- Road and Rail Transport Noise Assessment Report, for areas in proximity to the Freeway, Scarborough Beach Road and Glendalough Train Station;
- Contaminated Sites Remediation Plan, for affected sites;
- Mosquitoes and Midges Management Plan, where applicable; and
- Acid Sulphate Soil Management Plans, for the area generally south of Scarborough Beach Road.

8.3 STAGING

Given the fragmented nature of landownership within the Structure Plan, it is difficult to spatially and temporally define how the redevelopment of the Herdsman Glendalough area will proceed. The Structure Plan and Detailed Area Plan establish a land use and built form control framework. It will be the prerogative of each individual private landowner as to whether they opt to redevelop their land to capitalise on the benefit provide to them as part of the planning framework. If private landowners do choose to redevelop, then the timing of when they do so is also at their discretion. The private sector will determine how and when redevelopment occurs.

8.4 POLICY DEVELOPMENT

A number of local planning policies may be prepared by the City of Stirling to assist in the realisation of the redevelopment vision for the Herdsman Glendalough area. Some possible policies are considered below.
8.4.1 CAR PARKING POLICY

A local planning policy for car parking may be prepare to assist in achieving one of the objectives of the Structure Plan, namely the reduction in private vehicle use. The policy may address the provision of parking and charges associated with public parking. The policy could form the basis of mechanisms (e.g. cash-in-lieu when reduced parking is provided, annual levy on non-residential parking) to generate a source of funding for improved public transport and cycling and walking facilities.

8.4.2 PUBLIC ART POLICY

A local planning policy may be prepared to require the provision of permanent public art installations or financial contributions to enable the City to commission public art pieces. Public art has the potential to deliver improved amenity within the Structure Plan area; something which is particularly important given the current standard of the public realm. The policy may provide guidance on the development value that would trigger the need to provide public art and outline the City’s approval and installation process expectations.

8.4.3 DEVELOPER CONTRIBUTIONS POLICY

A Developer Contributions Plan may be prepared to provide a mechanism for the City to collect contributions prior to finalisation and adoption of a Developer Contributions Plan (DCP) and Scheme. This would be used to ensure that landowners who choose to develop prior to the implementation of a DCP still make a contribution for common infrastructure, open space and/or road improvements. Where used elsewhere in the Perth metropolitan area, a per lot (or per m²) rate is used to calculate the contribution owing for a particularly development, with this being a condition of development approval. The payment of this contribution discharges the landowner/developer obligations and provides the City with some funds to use on common works.
9 REFERENCES

Economic and Employment Lands Strategy, p. 37
Economic and Employment Lands Strategy, p. 44
Draft Public Transport for Perth in 2031, p. 42
Draft Stirling City Centre Structure Plan, p. 27
Draft Stirling City Centre Structure Plan, p. 50
Draft Stirling City Centre Structure Plan, p. 78
Draft Scarborough Beach Road Activity Corridor Framework
Draft Scarborough Beach Road Activity Corridor Framework, p. 10
Herdsman and Glendalough Concept Structure Plan 2011, p. 20
Herdsman and Glendalough Concept Structure Plan 2011, p. 50
APPENDIX 3
RETAIL NEEDS ANALYSIS
APPENDIX 6
UTILITIES SERVICING STRATEGY
APPENDIX 7
DISTRICT WATER MANAGEMENT STRATEGY