



DISTRICT STRUCTURE PLAN

Packham North

Prepared by: City of Cockburn Strategic Planning

August 2011

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PACKHAM NORTH DISTRICT STRUCTURE PLAN

PART ONE - BACKGROUND

1.0 INTRODUCTION

1.1 Background

The land subject of this structure plan, referred to as the Packham North District Structure Plan ("Packham North DSP") comprises 75 lots located east of the Port Coogee development and bounded by Cross Road, Mell Road, Rockingham Road and the railway reserve, 19km south of the Perth CBD.

The subject area was previously largely affected by the Watson's Foods odour buffer ("the buffer"), which was one of the main reasons the area could not be rezoned to 'Development' for future residential purposes under the City of Cockburn's Town Planning Scheme No. 3 ("TPS No. 3"). In mid 2008, George Weston Foods formally announced their intention to close the Watsons plant and subsequently the closure took effect in April 2009. The closure of the plant signified the ending of the odour buffer, which provided the opportunity for rezoning to occur.

Council at its meeting held on 12th February 2009 resolved to initiate Amendment No. 70 to TPS No. 3 to rezone the 'Watsons' site and the surrounding land, previously affected by the buffer, for residential purposes with the requirement for the preparation of structure plans for the whole area and infrastructure cost-sharing arrangements. Prior to formal advertising, the City arranged an information night on 31 August 2009 and invited all landowners (including representatives) to the meeting. This had a primary purpose to help landowners better understand the planning process with respect to the amendment, and also the subsequent requirements for structure planning. Approximately 50 people attended the information night, with many asking questions in relation to both the future process and timeframes to achieve ultimate subdivision and development. Overall, there was a clear positive and supportive view to the work which the City was undertaking in leading the planning and Scheme amendment process for the land.

Amendment No. 70 was granted final approval by the Minister for Planning on 15 October 2010 and the subject area is now zoned 'Development' under TPS No. 3. This therefore allows the land to be subdivided and developed once structure plans and all relevant approvals including a Local Water Management Strategy have been prepared and adopted.

1.2 Purpose

The purpose of this District Structure Plan is to facilitate the development of the former Watsons plant (Special Use 5 area) and surrounding land that was within the odour buffer of the plant for residential and associated uses. The Packham North DSP shows the broad land use framework including the major road network, neighbourhood structure, commercial, and significant public open space areas. It will form the basis of coordinating and considering Local Structure Plans ("LSP's") and plans of subdivision to be prepared by landowners in the area.

1.3 Planning Area

The subject land comprises 75 lots located west of the Port Coogee development and bounded by Cross Road, Mell Road, Rockingham Road and a railway reserve 19km south of the Perth CBD. The extent of the area is shown on the Location Plan (**refer to Figure 1 – Site Location**).

The surrounding areas to the subject land are predominantly residential and the site is within close proximity to the District Centre which includes Phoenix Shopping Centre, City of Cockburn Council Administration building and a range of other community services, as well as other urban facilities including public transport. The location within close proximity to these services makes the site suitable for future residential development. A portion of the Beeliar Regional Park lies on the western side of Cross Road and is located in between the Port Coogee development and the subject area.

1.4 Land Ownership

The total area of the subject land (75 lots) is approximately 75ha with lot sizes ranging from 483sqm to 10.74ha. The lots are owned by various landowners including George Weston Foods Ltd, the owner of the former Watsons Plant (Lots 132 and 4).

1.5 Adoption of the Packham North District Structure Plan

It is proposed to adopt the Packham North DSP by resolution of Council as a “guiding document”. It is not adopted pursuant to Part 6 of TPS No. 3 and therefore does not implement zoning or apply land uses.

The Packham North DSP gives guidance to the assessment of LSP’s, which will be advertised, considered and determined pursuant to Part 6 of TPS No. 3.

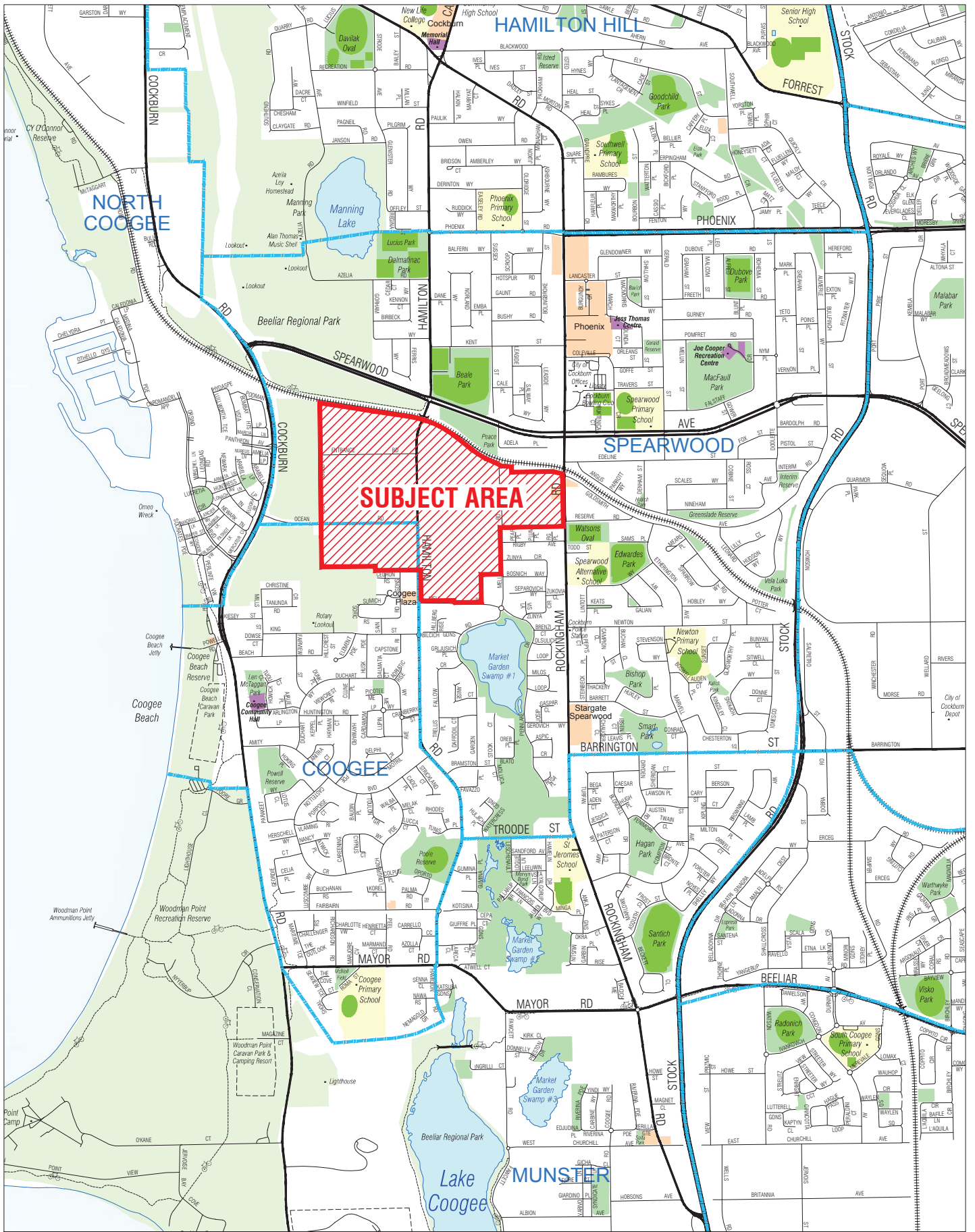
2.0 STATUTORY AND STRATEGIC PLANNING CONSIDERATIONS

2.1 Metropolitan Region Scheme

The subject land is zoned ‘Urban’ under the Metropolitan Region Scheme (“MRS”). It is bounded to the north by an MRS Railways Reserve and to the east by Primary Regional Road and Parks & Recreation Reserves (**refer to Figure 2 – Metropolitan Region Scheme Zoning**).

2.2 City of Cockburn Town Planning Scheme No. 3

Under the City of Cockburn TPS No. 3 the land is zoned ‘Development’ with subdivision and development to be in accordance with a structure plans adopted pursuant to Section 6.2 of the Scheme. The subject area is referred to as Development Area No.31 (“DA 31”) in TPS No. 3 (**refer to Figure 3 – Town Planning Scheme No. 3 Zoning**).

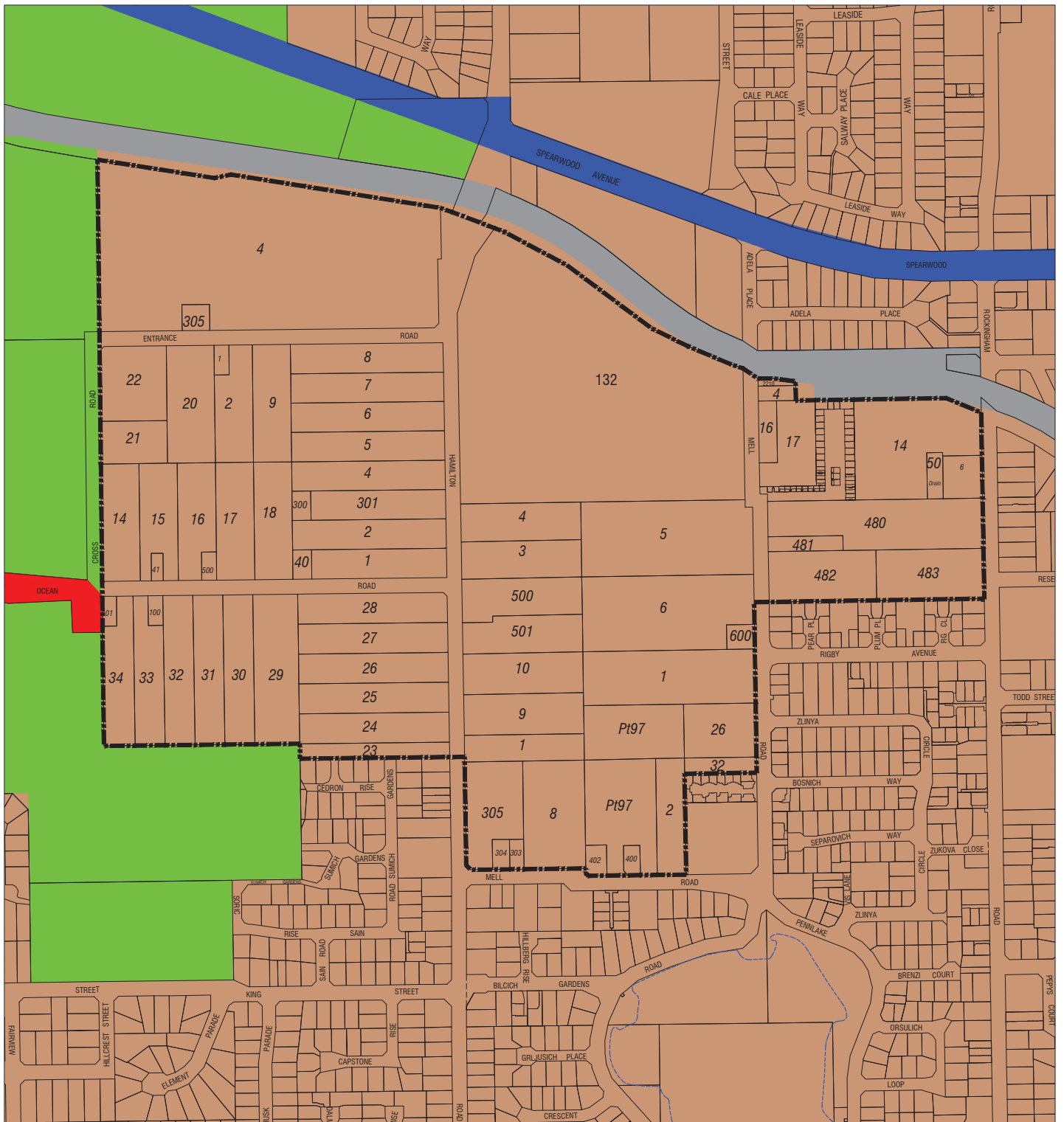


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SITE LOCATION

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 1



RESERVED LANDS

- Parks & Recreation
- Railways
- Primary Regional Roads
- Other Regional Roads

ZONES

- Urban

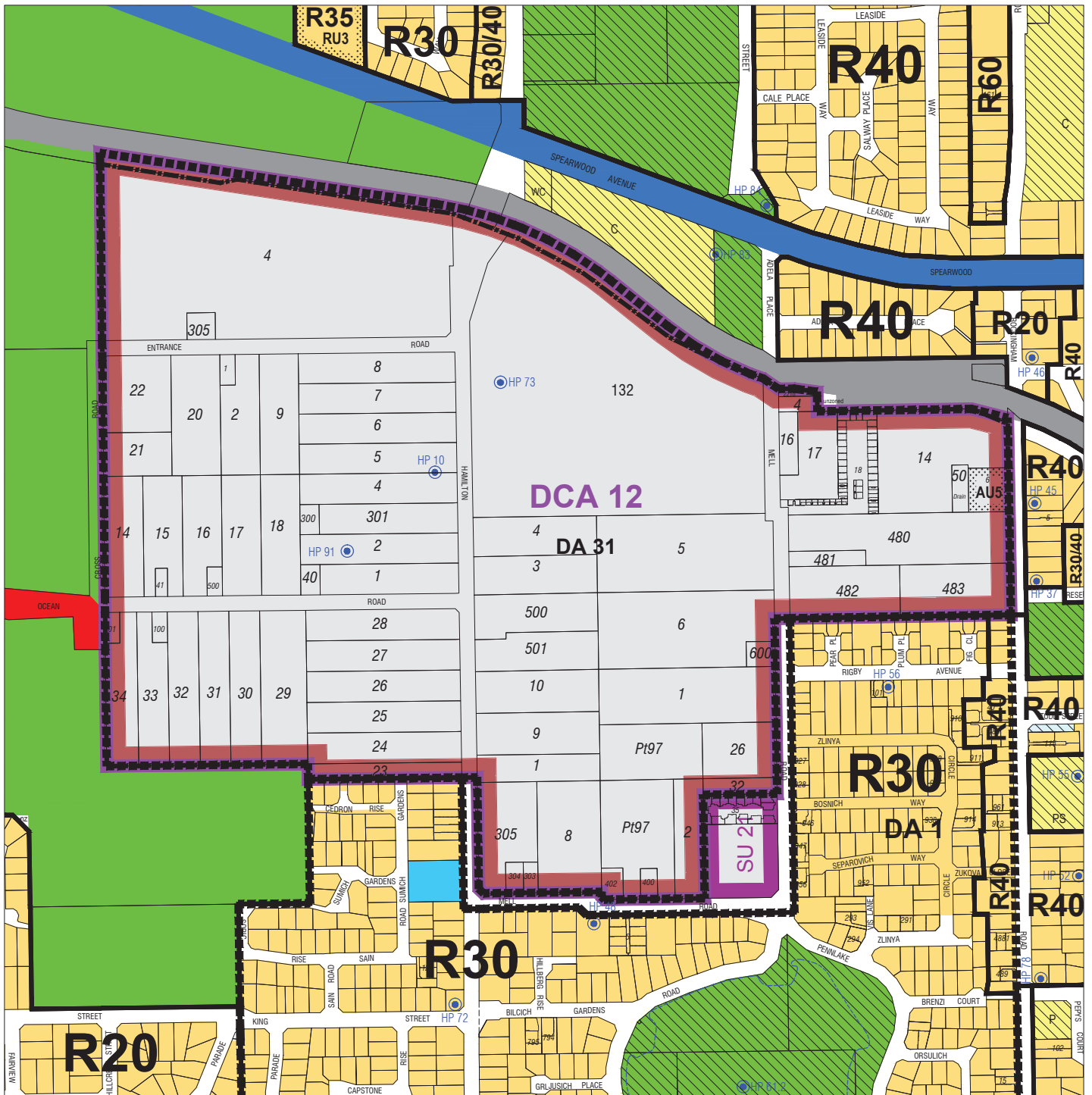


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METROPOLITAN REGION SCHEME ZONING

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 2



GENERAL

- R20** Residential Density Codes
- AU 1** Additional Uses
- RU 1** Restricted Uses
- HP 13** Heritage Place

SPECIAL CONTROL AREAS:

- DA 1** Development Areas

REGION RESERVES

- Parks & Recreation
- Railways
- Primary Regional Roads
- Other Regional Roads

LOCAL RESERVES

- Parks & Recreation
 - Lakes & Drainage
 - Local Road
 - Public Purposes
- DENOTED AS FOLLOWS:
- C - Civic
 - P - Police
 - TE - Telstra
 - WC - Water Corporation

ZONES

- Residential
- Local Centre
- Light & Service Industry
- Special Use



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TOWN PLANNING SCHEME No.3

ZONING

PACKHAM NORTH

DISTRICT STRUCTURE PLAN

Figure 3

The subject area is also proposed to be subject to Development Contribution Area 12 ("DCA 12") provisions through draft Amendment No. 87 to TPS No.3 which is progressing through the relevant approval process. The purpose of implementing DCA 12 provisions in Schedule 12 of TPS No.3 is to ensure that all owners within the subject area equitably contribute to the associated development costs. These include items of infrastructure such as public open space, road widenings/extensions, drainage, overall costs including preliminary studies and open space development that are required for the residential development area.

2.3 Directions 2031 and Draft Outer Metropolitan Perth and Peel Sub-Regional Strategy

Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon ("Directions 2031") was adopted by the Western Australian Planning Commission ("WAPC") in August 2010 and is the latest spatial planning framework for Perth and Peel and outlines the planning vision and direction which will guide the planning of the City to 2031 and beyond.

Directions 2031 recognises the benefits of a more consolidated city, which include;

- A reduced overall need for travel;
- Supports the use of public transport, cycling and walking for access to services, facilities and employment; and
- A more energy efficient urban form.

Directions 2031 aims to provide for different lifestyle choices, vibrant nodes for economic and social activity and a more sustainable urban transport network. It states the role and function of centres will vary depending on their catchment, centres should generally:

- provide services, employment and activities that are appropriate for and accessible to the communities they support;
- be integrated with and encourage the efficient operation of the transport network, with particular emphasis on promoting public transport, walking and cycling and reducing the number and length of trips;
- be designed based on transit oriented development principles;
- provide opportunities as places to live through higher density housing and the development of social and cultural networks;
- encourage the agglomeration of economic activity and cultivation of business synergies; and
- support the development of local identity and sense of place.

Directions 2031 seeks a 50 per cent improvement on current infill residential development trends of 30 and 35 per cent; and, has set a target of 47 per cent or 154,000 of the required 328,000 dwellings as infill development. This translates to 11,100 new dwellings as part of infill/redevelopment opportunities within the City of Cockburn.

Directions 2031 seeks a 50 per cent increase in the current average residential density of 10 dwellings per gross urban zoned hectare; and, has set a target of 15 dwellings per gross urban zoned hectare of land in new development areas. This translates to 18,280 new dwellings as part of greenfield development opportunities within the City of Cockburn.

The Draft Outer Metropolitan Perth and Peel Sub-Regional Strategy ("Draft Strategy") forms an integral part of Directions 2031. The Draft Strategy along with its counterpart for Central Metropolitan Perth provides the strategic spatial

plan which will achieve the objectives of Direction 2031. The Strategy identifies the subject area as an 'Urban Zone Undeveloped' area and classifies it as 'WAT1', with the potential to deliver 900+ dwellings in the future.

2.4 State Planning Policy 4.2 – Activity Centres for Perth and Peel

State Planning Policy 4.2 – Activity Centres for Perth and Peel ("SPP 4.2") replaces the WAPC's Metropolitan Centres Policy. The main purpose of SPP 4.2 is to specify broad requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel. It is mainly concerned with the distribution, function, broad land use and urban design criteria of activity centres, and with coordinating their land use and infrastructure planning.

Other purposes of the policy include the integration of activity centres with public transport; ensuring they contain a range of activities to promote community benefits through infrastructure efficiency and economic benefits of business clusters; and lower transport energy use and associated carbon emissions. The policy also reflects the WAPC intention to encourage and consolidate residential and commercial development in activity centres so that they contribute to a balanced network.

SPP 4.2 identifies Cockburn Central as a 'Secondary Centre' and Phoenix Park as a 'District Centre' which is within close proximity to the subject area. SPP 4.2 does not identify Neighborhood or Local Centres, rather these centres are designated through the structure planning process.

2.5 City of Cockburn Local Commercial Strategy (February 2002)

In February 2002, Shrapnel Urban Planning prepared a Local Commercial ("LCS") Strategy for the City of Cockburn consistent with the requirements of the then Metropolitan Centres Policy. The LCS has been used as the basis for decisions on retail centres for the locality.

In respect to the subject area, the Strategy identifies the former Watsonia factory site as an 'Industrial Complex' and a Neighbourhood/Local Centre on Rockingham Road. The strategy identifies the potential for some minor additional neighbourhood/local retail floorspace within the Main Roads Zone that the subject land is located in.

In response to the recent release of SPP 4.2, a review of the LCS is warranted. It is not anticipated there will be a great impact on the Packham North DSP area, other than perhaps recommendations to better align housing needs to suit local workforce opportunities. This can be dealt with at the local structure planning stage.

2.6 City of Cockburn Local Planning Strategy

The Packham North DSP is consistent with the following actions that are identified within the City of Cockburn Local Planning Strategy:

- promote higher density and mixed use developments to reduce car use and promote cycling, walking and public transport;

- ensure there is an appropriate housing and density mix to fulfill existing and potential demand from various groups;
- promote medium and high density housing in and near regional and district centres and near public transport facilities;
- provide a range of housing opportunities; and
- promote mixed land uses in communities, especially through the location of housing in commercial centres.

2.7 Phoenix Central Revitalisation Strategy and Action Plan

The City of Cockburn's Phoenix Central Revitalisation Strategy and Activity Plan, released in May 2009, provides a strategic framework for improvements to the Phoenix town centre, and parts of the suburbs of Spearwood and Hamilton Hill for the next ten years.

The subject land on the east side of Hamilton Road is identified as Precinct 6 within the strategy's study area, and recommends a Scheme Amendment and Structure Plan to determine the future land use of the area.

2.8 Environmental Protection - Swan Coastal Lakes Policy 1992 and Wetlands Areas

There are no statutory environmental policies that apply to the development of the site.

Environmental issues that are relevant to the site include:

- Wetlands
- Contamination.

Proposed LSP's will need to ensure these issues are investigated and managed in accordance with relevant government guidance documents, including:

- Position Statement No. 4 – Environmental Protection of Wetlands (EPA 2004)
- Contaminated Sites Management Series (DEC 2001 – 2006).

2.9 Bush Forever

In December 2000, the WAPC published Bush Forever as a 10 year strategic plan to protect regionally significant bushland of at least 10% of each of the original 26 vegetation complexes of the Swan Coastal Plain portion of the Perth Metropolitan Region. Bush Forever replaces the System 6 recommendations for the Swan Coastal Plain portion of the Perth Metropolitan Region. In June 2010, the WAPC released a State of Planning Policy 2.8 - Bushland Policy for the Perth Metropolitan Region ("SPP 2.8").

Whilst there are no sites identified within the Packham North DSP area for Bush Forever, Market Garden Swamp which is located to the southeast of the subject area is included as a Bush Forever site. Given existing development and Mell Road separates the subject area from Market Garden Swamp, future development created by the Packham North DSP is not expected to impact on the Bush Forever site.

In addition to the sites outlined in the Bush Forever report of December 2000, the Bush Forever office is examining additional sites that were identified for inclusion.

The City is not aware of any other land within the structure plan area that is currently under consideration for inclusion as a Bush Forever site.

2.10 City of Cockburn Greening Plan

The City's Greening Plan adopted in June 2001 is a long-term strategic plan for the maintenance and enhancement of remnant vegetation, the revegetation of previously cleared areas, road reserves, public land and the enhancement of ecological landscape, streetscape values and community amenity within the City of Cockburn.

3.0 SITE CONTEXT AND ANALYSIS

3.1 Physical Description

The Packham North DSP area is located on the Swan Coastal Plain within the Aeolian Deposits of the Cottesloe Dune System. This System is generally described as low hilly landscape with shallow brown sands over limestone with exposed limestone outcropping (Department of Agriculture, 2003).

Geomorphologic classification for the structure plan area reported in the Perth Metropolitan Region 1:50,000 Environmental Geology Series, Rockingham (Part of Sheets 2033 I and 2033 IV) (Gozzard, 1983) indicates that the general geology of the area consists primarily of the following soil types:

- (i) Spearwood Sand formed during the Pleistocene era. This sand is described as a pale yellowish brown, medium to coarse-grained, sub-angular quartz, trace of feldspar, moderately sorted and of residual origin (Gozzard, 1983). Tamala limestone (quartz) is the potential origin of the sand. The Spearwood Sand is considered to have high permeability, with a low to moderate load bearing capacity (Gozzard, 1983); and
- (ii) Limestone soil types also formed during the Pleistocene era described as pale yellowish brown, fine to coarse grained, sub-angular to well rounded, quartz, trace of feldspar, shell debris, variably lithified, surface kankar and of aeolian origin (Gozzard, 1983). The permeability of limestone is described as high, with a variable load bearing capacity (Cardno BSD, 2009).

A further review of geological maps suggest there are small pockets within the structure plan area which form part of an inter-dunal wetland chain. The wetland areas are composed primarily of silt formed in the Holocene era. The silt is described as brownish grey, calcareous in part, soft, some fine sand content in places and of lacustrine origin (Gozzard, 1983). The permeability of the silt is low, with a low load bearing capacity. This soil unit is strongly related in areas of lower elevation and wetland within the structure plan (Cardno BSD, 2009).

The topography of the structure plan area varies in the range of 1.0 AHD to 25.0 AHD. The predominant landforms within the structure plan area are the two low depressions forming wetland areas in the central and western areas and elevated heights in the western and north-east portions of the structure plan area.

There are two natural depressions of low elevation (1.0 – 2.0 AHD) within the structure plan, both of which form wetland areas. One low depression area is found on the western side of Hamilton Road, primarily within Lots 1 – 2. The

other low depression area is located on the eastern side of Hamilton Road. Characteristically, it forms a central spinal low depression between Hamilton Road and Mell Road primarily on Lots 132, 5 – 6, 1 and 310. These low areas form part of an inter-dunal wetland chain in the district, which includes Lake Coogee to the south and wetlands within Beeliar Regional Park.

The western boundary contains the highest elevations within the structure plan area, where the topography generally slopes upward from the wetland on Lots 1 – 2 Hamilton Road at 4.0 – 8.0 AHD to 25.0 AHD at the south-west corner and 17.0 AHD in the north-west corner. The upward sloping gradient ranges between 10 – 20 degrees. The western portion of the structure plan area forms part of the sand dune system, which continues to rise west outside of the structure plan area to a maximum height of approximately 37.0 AHD, which then slopes down towards the coast (Port Coogee Marina).

On the eastern side of Hamilton Road, the topography slopes down (less than 10 degrees) from Hamilton Road (4.0 – 8.0 AHD) into the central wetland spine (1.0 – 2.0 AHD) then from the wetland slopes upwards to higher ground east of Mell Road which ranges 9.0 – 13.0 AHD.

Most of the structure plan area has been cleared for agriculture (including semi-rural and market gardens), establishment of the former Watsonia factory, light and service industry and residential development. Pastures of exotic grasses, weeds and remnants of existing crops, lupin and large spice plants have mostly replaced the original vegetation in undeveloped areas.

Some wetland vegetation is found in the low depressions including sedges, reeds, rushes and *Melaleuca* paperbarks (Cardno BSD, 2009). Most stands of vegetation can be found in the low lying depressions and wetland areas and these vegetation communities should be considered for protection within public open space. Flora and Vegetation Surveys should be undertaken as part of the detailed investigations prior to subdivision and or development rather than at this broad phase of the planning process.

The vegetation in the wetland areas have largely been disturbed in the past for a variety of purposes, including semi-rural pursuits. Very few wetland attributes remain, which is reflected in the 'Multiple Use' management category assigned by the Department of Environment and Conservation ("DEC"). Further investigation as to the management and multiple use of wetland areas as identified by DEC is to be undertaken at the local structure plan process for the area.

The Perth Groundwater Atlas (Department of Water, 2003) identifies the structure plan area as being within an area where groundwater table contours are at 1.0 metre below surface level. In the lower lying depressions of the structure plan area the water levels can seasonally be at or near the surface. Accordingly, there may be a need for bulk earthworks within parts of the structure plan area to achieve the required 1.2 metre minimum separation distance between the finished lot levels and the groundwater table and this will require further investigations.

Within the lower lying areas or depressions as stated, it is possible that these areas could contain peaty or clayey materials. In these areas detailed geotechnical investigations will need to be undertaken prior to subdivision and or development and appropriate remediation works completed as part of the development works. Geotechnical investigations will also be required for construction of roads, retaining walls and other infrastructure, particularly in areas where there may be shallow limestone outcropping.

3.2 Existing Land Uses

Virtually all of the structure plan area has been extensively cleared and used for a variety of purposes including semi-rural, market gardening, residential, food factory and light/service industry (**refer to Figure 4 – Aerial Photography**). A large portion of the structure plan area was previously affected by the Watson’s Foods odour buffer which was a primary reason why the area was not considered for urban development. In 2009, the Watson’s food factory on Lot 132 was closed, ending the need for an odour buffer.

Current land uses in the Packham North DSP area include residential, market gardening, light and service industry, the now closed Watson’s Food Factory, public purpose and commercial. There are approximately 75 lots within the structure plan area and an estimate of the percentage composition of land uses is provided as follows:

Land Use within Structure Plan Area	Percentage of land use within Structure Plan Area
○ Vacant	47%
○ Residential/ Rural Living	37%
○ Former Watson’s food factory	13%
○ Light & Service Industry	2%
○ Local Centre (Commercial)	0.7%
○ Public Utilities	0.3%

(Refer to Figure 5 – Existing Land Uses)

The typical residential land use comprises of a single dwelling on large lots (generally 7,000m² – 8,000m²), where the dwellings are situated close to the street and the rear of the lots is utilised for semi-rural pursuit/market gardening activities and contain outbuildings. This indicates that although approximately 37% of the lots within the structure plan area are currently being used for residential purposes, of these lots, approximately 80 – 90% of the land contains no buildings/development. This makes structure planning less cumbersome as the amount of vacant land within the structure plan area is significant.

Some market gardening has been undertaken in the structure plan area in the past and accordingly as part of any subdivision and development, appropriate geotechnical investigation is required, to identify any potential soil contamination, due to any past use of fertilisers and harmful pesticides. Some lots are still being used for small commercial and/or domestic market gardening purposes.

Most of the existing dwellings are original dwellings constructed circa 1950s to early 1970s with some constructed more recently. Many of the dwellings are in good condition and are proposed to be retained by landowners (in the medium – long term) as part of the subdivision and development of the land. Some dwellings are considered too old and costly to maintain and will be demolished as part of subdivision.

In the north-eastern area of the structure plan, there approximately 2 existing light/service industry businesses, which operate from Lots 16 & 17 Mell Road from original buildings.



Date of Aerial Photography: January 2011



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AERIAL PHOTOGRAPHY

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 4



- | | |
|--|--|
|  Rural Living |  Service Station |
|  Rural - Vacant |  Sewerage Pump Station |
|  Residential |  Telephone Exchange |
|  Former Watsons Plant |  Light Industrial |
|  Council Sump |  Light Industrial - Vacant |



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EXISTING LAND USE

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 5

New light industrial buildings have recently been constructed on Lot 18, which provide for a range of smaller light industrial strata units. A telecommunications public utility building is also located within this area adjacent to the northern boundary at Lot 123 and Lot 2210 Mell Road.

The existing Watson's Food Factory (now closed) on Lot 132 and Lot 4 Hamilton Road is a dominant development within the structure plan area. The combined floor area of factory buildings, including offices, storage and the food factory is between 1.5 – 2.0 hectares. Most of the buildings are located on the western portion of Lot 132, adjacent to Hamilton Road and on Lot 4 Hamilton Road. There are ponds in the central part of Lot 132 with most of the south eastern portion of the lot is undeveloped and there are buildings and car parking adjacent to Mell Road.

The northern portion of Lot 132 contains the staff and employee car parking for the factory, which is approximately 1.3 hectares. There may be opportunities to retain or re-use some of the buildings and improvements at the Watson's Food Factory as part of the development and subdivision of the land. This will be further considered by the landowner and the City as part of the local structure planning process. A geotechnical investigation is required prior to subdivision and development of the land which provided for the former food factory operations, in order to identify any soil contamination and appropriate remediation of contaminated land.

With regards to existing buildings within the structure plan area, the decision to retain or demolish buildings and improvements on the land can be made by the various landowners at the time of preparing local structure plans and detailed plans of subdivision. The City is keen to ensure the retention of significant structures and/or vegetation which preserves the historical character of the area.

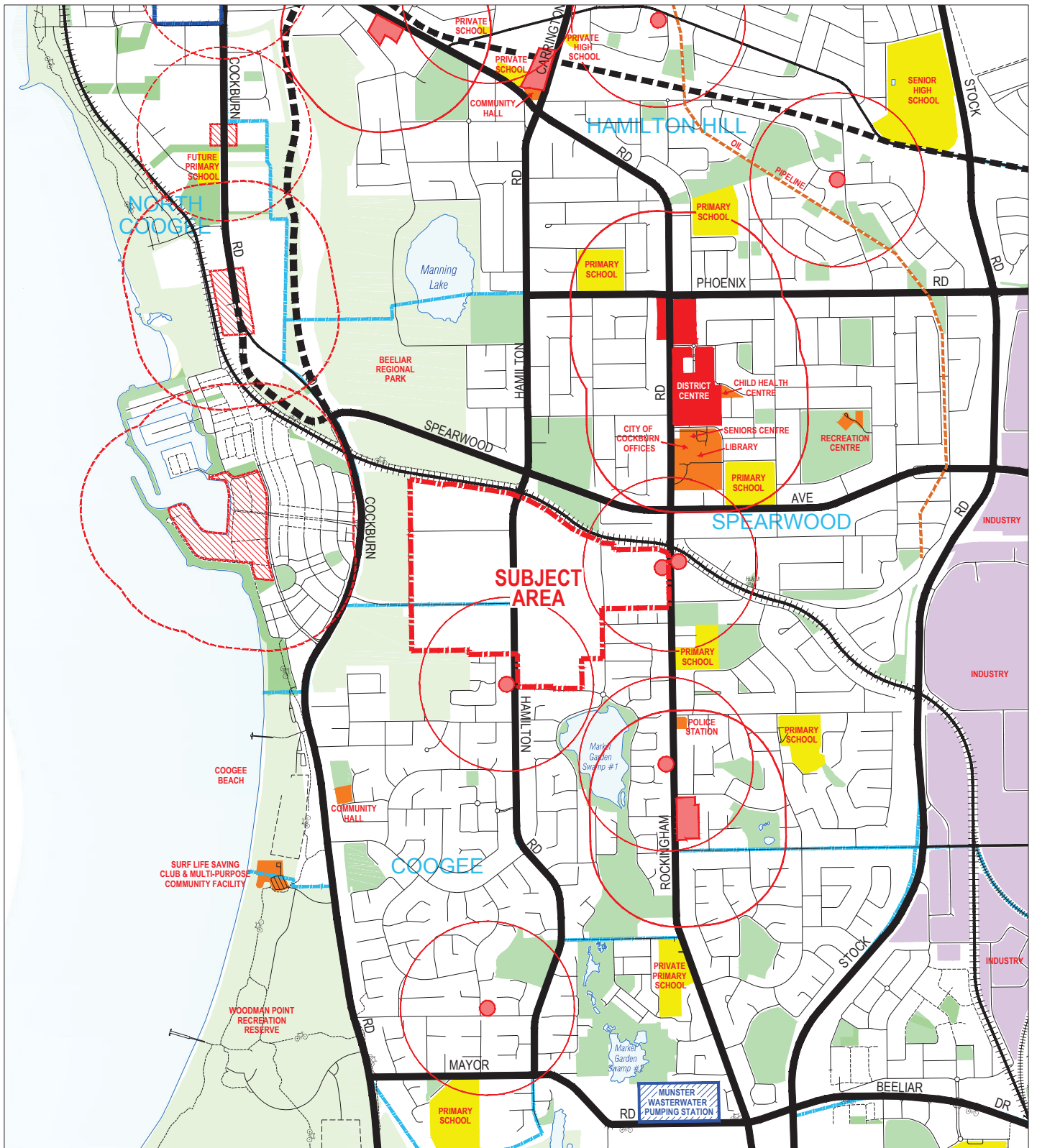
3.3 Adjoining Land Uses

The surrounding areas to the subject land are predominantly residential uses and within close proximity (1km) to the District Centre including Phoenix Shopping Centre, Council Administration building and a range of other community services, as well as other urban facilities including public transport (**refer to Figure 6 – Contextual Analysis**). A portion of Beeliar Regional Park on the western side of Cross Road is located in between the Port Coogee development and the subject area. The location within close proximity to these services and amenities makes the site suitable for future residential development.

3.4 Wetlands

A sumpland located in an area bounded by Hamilton Road, Mell Road and the freight rail line is identified as a Multiple Use Wetland (MUW) under the Department of Environment and Conservation's Geomorphic Wetlands dataset (DEC 2008). The area has been cleared and historically used for a variety of purposes including semi-rural pursuits. As such, very few wetland attributes or functions remain, however, the MUW should still be managed in respect of strategic planning (i.e. drainage) and best management catchment planning.

A small wetland also exists in part on Lots 1, 2, 40, 300 and 301 Hamilton Road. The wetland is not identified in the Geomorphic Wetlands dataset (DEC 2008), however has been recorded in the City of Cockburn's Municipal Heritage Inventory ("MHI") as a place of heritage significance. This wetland will be



- | | | | | | |
|--|---|--|----------------------|--|-------------------|
| | District Centre & Catchment Area | | Region Reserve | | Industry |
| | Neighbourhood Centre & Catchment Area | | Local Park | | Water Corporation |
| | Local Centre & Catchment Area | | School | | Oil Pipeline |
| | (Proposed) Local Activity Node & Catchment Area | | Community Facilities | | Freight Railway |



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CONTEXTUAL ANALYSIS

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 6

retained within public open space as recommended by the MHI. The local structure plan for this land will identify appropriate ongoing management measures, such as drainage, weed control and rehabilitation.

3.5 Site Contamination and Uncontrolled Fill

Given the nature and historical longevity of Watsonia factory operations on Lot 132, the site is likely to contain legacy contamination. Accordingly, a memorial is registered on the title of the property by the DEC under the Contaminated Sites Act 2003, advising that the site has been classified as 'possibly contaminated – investigation required'.

The Contaminated Sites Act 2003 is the main mechanism for identifying and managing known and suspected contaminated sites and operates in parallel to the land use planning process. The DEC Contaminated Sites Management Series (2001-2006) provides defining requirements for the assessment, management, remediation and validation of on-site contamination.

George Weston Foods has engaged RPS as consultants to undertake a strategic environmental assessment for all of its Spearwood landholding, in accordance with the requirements of the Contaminated Sites Act 2003, associated regulations and DEC Contaminated Sites Management Series. This contamination assessment has commenced and is being undertaken in the following steps:

- Stage 1a – Preliminary Site Investigation ("PSI").
 - *Site identification*
 - *Site history*
 - *Site conditions and surrounding environment*
 - *Site Inspection findings*
 - *Contamination Status (identifying potential contaminants of concern and potential risk to human health and environment).*
- Stage 1b – Contaminated Sites Auditor to review PSI.
- Stage 2a – Sampling and Analysis Plan ("SAP").
 - *Outlines the methodology for the proposed investigative works to assess the presence, nature, extent and magnitude of any potential areas of contamination identified in the PSI*
- Stage 2b – Contaminated sites auditor to review SAP report.
- Stage 2c – Incorporate auditor comments into SAP report and finalise.
- Stage 3a – Detailed Site Investigation ("DSI").
 - *Summarise the findings of the PSI and SAP*
 - *Assess the potential presence, nature, extent and magnitude of contamination*
 - *Assess the results of the soil, sediment, groundwater and surface water investigations*
 - *Assess the human health and environmental risks from any identified contamination*
 - *Assess the suitability and outline any further works required to render the site suitable for re-development as proposed*
- Stage 3b – Contaminated sites auditor to review DSI report.
- Stage 4a – Site Management Plan ("SMP") and Remediation Action Plan (RAP).
 - *Outline the preferred remediation option for the identified contamination.*
 - *Describe the proposed remediation program.*
 - *Outline the management measures that will be required during the remediation program.*

- *Present the validation sampling and analysis plan for the remediation areas.*
- Stage 4b – Contaminated sites auditor to review SMP / RAP report.
- Stage 4c – Incorporate auditor comments into SMP / RAP report and finalise.
- Stage 5a – Remediation & Validation Report (“RVR”).
 - *Document compliance with the SMP / RAP during remedial works.*
 - *Present the findings of the validation sampling and analysis program.*
- Stage 5b – Contaminated sites auditor to review RVR report.
- Stage 5c – Incorporate auditor comments into RVR report and finalise.
- Stage 5d – Contaminated sites auditor to prepare Mandatory Auditor Report (“MAR”) and issue MAR to DEC for clearance.

Undertaking investigations in accordance with the above process will ensure that site contamination is effectively identified, assessed, managed and remediated to allow for the safe and suitable redevelopment of the land.

The above investigations are typically required to be undertaken at subdivision or development stage. In the case of the subject site, however, the landowner has already commenced the process to meet their obligations under the Contaminated Sites Act 2003, so the commencement of development is not significantly delayed following completion of the structure planning processes.

RPS was also engaged to undertake a Hazardous Materials Audit to assess the potential presence and nature of hazardous materials on the George Weston Foods land. A Hazardous Materials Management Plan (“HMMP”) has been prepared, which outlines the management of any such materials in preparation for demolition and site works. The main material of concern identified on site is asbestos containing material (“ACM”), which in its current state does not represent a significant human health risk.

Only friable ACM poses a significant risk due to the potential release of asbestos fibres once disturbed. The HMMP clearly outlines the correct methods of handling, transport and disposal for all hazardous materials within the site. The HMMP also describes the occupational and public health and safety requirements with which the demolition contractor must comply to ensure workers, site visitors and the general public are protected from exposure to hazardous materials.

3.6 Sites of Indigenous Heritage Significance

A desktop review through the Department of Indigenous Affairs (“DIA”) Aboriginal Heritage Inquiry System (“AHIS”), found no archaeological or ethnographical Aboriginal Sites listed in the study area.

It is possible that sites that have not yet been listed on the Register System may exist. The Aboriginal Heritage Act 1972 protects all Aboriginal sites in Western Australia whether they are known to the DIA or not.

An archaeological and ethnographic survey of the study area prior to any development may identify sites which have not yet been recorded. This issue should be addressed by individual proponents in consultation with DIA.

3.7 Sites of European Heritage Significance

The following three places within the structure plan area are identified by the City of Cockburn as having cultural heritage significance:

- Lot 132 (No. 174) Hamilton Road – Watsonia Factory

The Watsonia Factory is listed as Place No. 73 in the City of Cockburn Municipal Heritage Inventory ("MHI"), however it is not on the Heritage List under TPS No. 3. The MHI identifies the Watsonia Factory as having historic and social cultural heritage significance due to its contribution to local employment since 1909.

The factory is identified as having a 'Category D' conservation classification, which means the site is "significant but not essential to an understanding of the history of the district". The MHI recommends the site be photographically recorded prior to any major redevelopment or demolition.

- Lots 4 and 5 (Nos. 189 and 193) Hamilton Road – Cottages Opposite Watson's Factory

The cottage on Lot 5 and adjacent ruins of a second cottage are listed as Place No. 10 in the MHI and included in the Heritage List under TPS No. 3. The cottages, which were built for Watsonia Factory workers, are identified as a reminder of the contribution made by William Watson to the development of industry in Cockburn.

The place has a 'Category B' classification in the MHI, which means conservation is encouraged and more detailed heritage assessment should be undertaken before approval is granted for any major redevelopment and/or demolition.

- Lots 1, 2, 4, 300 and 301 Hamilton Road - Wetlands

This small wetland is listed as Place 91 in the MHI, however it is not identified in the DEC Geomorphic Wetlands dataset (DEC 2008). The Statement of Significance notes it is all that remains of what would have been an extensive feature of the area and is close to the Watson's cottages. The MHI recommends the wetland is protected by reserving it for Parks and Recreation purposes under TPS No. 3. The wetland is not included in the Heritage List under TPS No. 3.

A cultural heritage investigation report is required to be prepared to inform the local structure plan for these sites and to identify opportunities for interpreting the sites' cultural heritage significance in future development.

3.8 Implications for Urban Development

Implications for the subdivision and development of the area for residential and associated uses as a result of previous or existing land use activities are as follows:

- Some land will need to be filled to achieve adequate vertical clearances to the high groundwater levels.
- Geotechnical investigations will need to be undertaken on areas that have been subject to uncontrolled fill and the lower areas to substantiate suitable ground conditions.
- Completion of soil contamination surveys will need to be undertaken on land previously used for agricultural and horticultural purposes to ensure its suitability for residential purposes.

- An archaeological and ethnographic survey of the study area prior to any development may identify sites of Indigenous Heritage which have not yet been recorded. This issue should be addressed by individual proponents in consultation with DIA.
- Site characteristics will influence the principles and objectives of the Packham North DSP and these will need to be embodied and implemented through both the local structure plans and subdivision approvals.

These requirements are normal within the City of Cockburn and do not affect the suitability of the area for urban development but rather represent matters that need to be addressed at the detailed planning and development phase.

4.0 DEVELOPMENT OPPORTUNITIES AND CONSTRAINTS

The previous sections have identified a number of opportunities and constraints that have an influence on the planning of the structure plan area. These together with other factors are shown within **Figure 7 - Opportunities & Constraints** map and described in the following section.

4.1 Buffers

The following buffers affect the area:

4.1.1 Market Gardens

The DEC's general recommendation is that residential development should not be within 500 metres of a market gardens or turf farms unless the developer can demonstrate that specific circumstances justify a lesser buffer. This position is based on Environmental Protection Authority's ("EPA") - Guidance Statement No. 3 on the Separation Distances between Industrial and Sensitive Land Uses ("GS No.3").

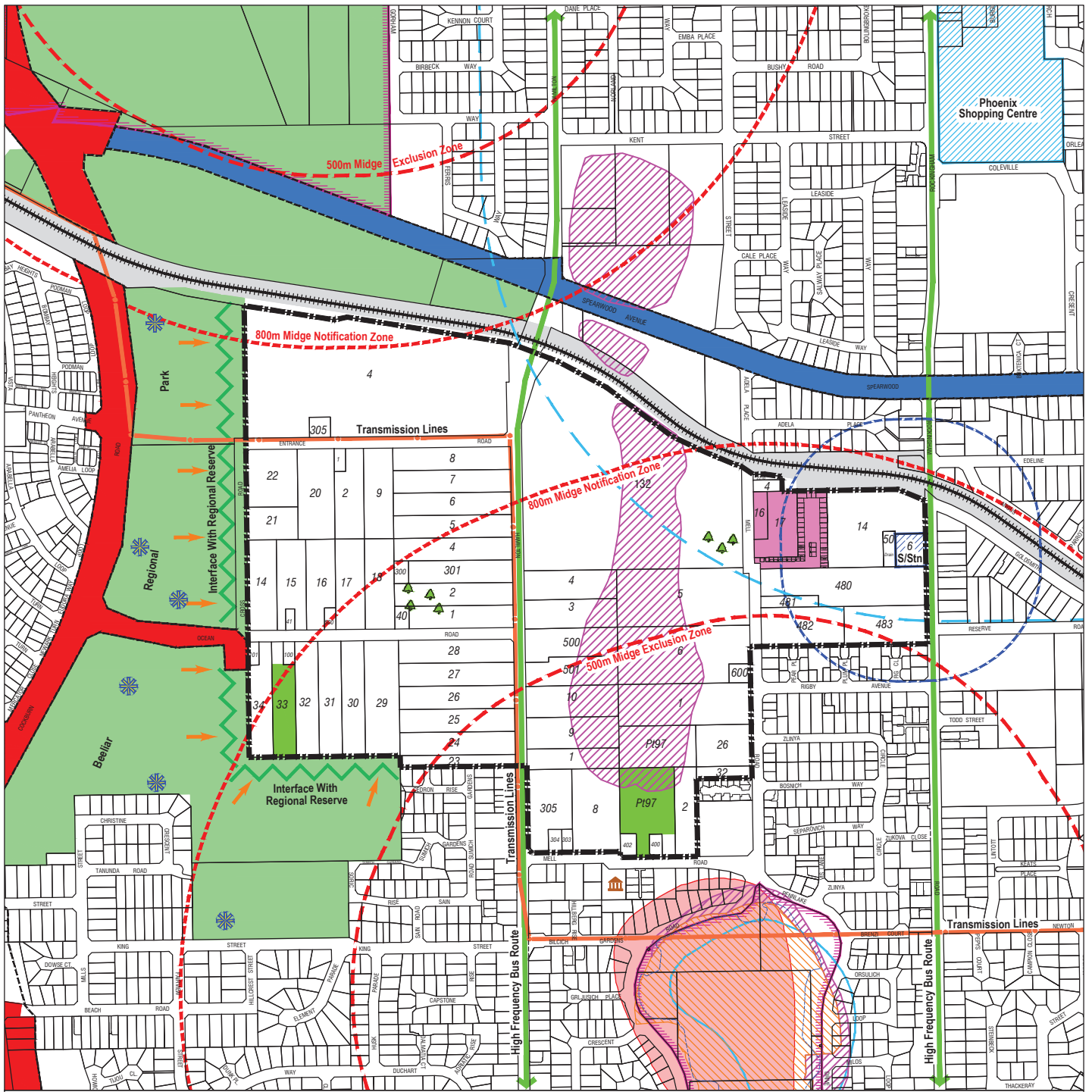
GS No.3 is intended to provide advice on generic separation distances between specific industry and sensitive land uses to avoid or minimise the potential for land use conflict. The recommended 500m buffer distance is not intended to be an absolute separation distance, rather a default distance for the purposes of:

- identifying the need for specific separation distance or buffer definition studies; and
- providing general guidance on separation distances in the absence of site specific technical studies.

The DEC will also consider management options such as retention of a vegetated buffer, construction of a separation wall and Memorials on Titles to mitigate against negative impacts from turf farms and market gardens.

The WAPC's State Planning Policy 4.1 State Industrial Buffer ("SPP 4.1") states that proposals satisfying the recommended buffer distances set out in the EPA's GS No. 3 are deemed to comply with the objectives of the policy.

However, the WAPC's Planning Bulletin 63 - Policy for Dealing with Potential Conflicts Between Residential Subdivision and Market Gardens in East Wanneroo ("PB63"), requires only specially designed fencing, together with a protected and maintained vegetation buffer of one line of evergreen trees or bushes (minimum 1.5m high) for residential lots abutting a market garden, for land zoned Urban or Urban Deferred in the MRS.



- | | | | |
|---|------------------------------|--|--|
| Subject Area | Bush Forever Site | 500m Midge Exclusion Zone Boundary | Lookout and/or Views |
| GEOMORPHIC WETLANDS WETLAND CLASSIFICATION | Light Industry Uses | 800m Midge Notification Zone Boundary | Significant Vegetation |
| Resource Enhancement | Primary Regional Roads (MRS) | Market Garden | Landmark |
| Multiple Use | Other Regional Roads (MRS) | Interface with Parks & Recreation Regional Reserve | Phoenix Shopping Centre with 800m Walkable Catchment |
| Acid Sulphate Soils - High to Moderate Risk | Parks & Recreation (MRS) | Fire Risk | Service Station with 200m Buffer |
| EPP Lakes | Railways (MRS) | High Frequency Bus Route | * No known sites of Declared Rare Flora |
| | Freight Railway Line | Transmission Lines | * No Aboriginal Sites |



0 200m
SCALE

OPPORTUNITIES & CONSTRAINTS

PACKHAM NORTH DISTRICT STRUCTURE PLAN

Figure 7

There appears to be a large discrepancy between the EPA's GS No. 3 and the WAPC's SPP 4.1 and the approach taken by the WAPC in PB63 regarding appropriate setbacks between residential development and market gardens or turf farms. As the EPA's GS No.3 and WAPC's SPP 4.1 are higher order policy documents, they must be used to guide buffer distances to any existing market gardens within the Packham North DSP area.

Existing market gardens are shown on the Opportunities and Constraints plan and associated buffers will be determined on a case by case basis at the local structure plan and subdivision phases.

4.1.2 Service Station

The EPA's GS No.3 recommends is that residential development should not be within 200 metres of a 24-hour service station which includes vehicle cleaning/detailing facilities, retailing of spare parts and foodstuffs. As discussed in section 4.1.1, the generic buffer is not an absolute buffer and can be reduced subject to further investigations and/or studies. It should also be noted that there are many examples across the City and the Perth Metropolitan area where residential development is located adjacent to service stations.

The existing service station site is shown on the Opportunities and Constraints plan with a notional 200 metre buffer. The requirement for an associated buffer will be determined at the local structure plan and subdivision stages.

4.1.3 Midges

Within the City of Cockburn, there is a problem of seasonal midge swarms in the vicinity of lakes and wetlands, which adversely affects the quality of life of nearby residents. The City receives complaints from residents living within 1km from wetlands subject to midge infestation on an annual basis. Market Garden Swamp and Manning Lake are known sources of midge nuisance and is identified within the City's Local Planning Policy No. 6 - Residential Rezoning and Subdivision Adjoining Midge Infested Lakes and Wetlands ("LPP No.6").

It is therefore recommended that a notification in the form of a memorial be placed on the Certificates of Title of all future lots within 800 metres of wetland/lake edges in accordance with LPP No. 6 at the time of subdivision and/or development.

4.2 Acid Sulfate Soils

The WAPC's Planning Bulletin No. 64 – Acid Sulfate Soils ("PB No. 64") sets out the issues relating to acid sulfate soils and provides guidance on the matter. Maps forming part of PB No. 64 show no known risk of Acid Sulfate Soils ("ASS") occurring within 3 m of natural soil surface (or deeper).

However, a detailed investigation undertaken by Cardno in May 2009 over a portion of the Packham North DSP area indicated that there is a strong possibility of ASS being present. It recommends that further investigations are necessary within the overall study area to determine the actual presence and extent of ASS. Investigations will be required where subdivision works involve removing organic soils, dewatering and or soil disturbance immediately above or below the groundwater table.

4.3 Freight Rail

The Cockburn Coast District Structure Plan ("CCDSP") identifies the freight rail line on the northern boundary of the Packham North DSP area as a significant component of the State's import and export industries and its operation will continue in the long term. The WAPC's State Planning Policy 5.4 - Road and Rail Transport Noise and Freight Considerations in Land Use Planning ("SPP5.4") addresses transport noise from within major transport corridors, including primary freight routes, and its impact on nearby noise-sensitive land uses. SPP5.4 is relevant to the Packham North DSP as its provisions apply where "a proposed new noise-sensitive development in the vicinity of an existing or future major road, rail or freight handling facility". Future development therefore needs to appropriately accommodate any impacts associated with the freight rail line in accordance with SPP5.4.

Lloyd George Acoustics has prepared a draft Transportation Noise Assessment report that indicates there are limited noise and vibration impacts for residential development from the freight rail line. However, future LSP's for sites adjoining the freight rail line will still be required to address this matter in further detail and ensure compliance with the requirements of SPP5.4.

4.4 Power Lines

The existing 132kV overhead power lines within the road reserves on the northern side of Entrance Road and the western side of Hamilton Road present a challenge in terms of easement requirements that restrict development and landscaping and their visual impacts. Removal, relocation or undergrounding of these lines is likely to be cost prohibitive.

4.5 Fire Risk

Beeliar Regional Park is an important conservation reserve. Like all conservation reserves, it poses a fire risk and accordingly residential development should be separated from the reserve boundary by a subdivision road or similar separating interface. The use of a perimeter road (public street) and public open space areas are the preferred interface treatments. Well designed, these can significantly reduce the risk of bush fire hazard.

The use of a perimeter road and/or public open space areas can also provide opportunities for better land management of the Beeliar Regional Park and to minimise potential issues and problems associated with illegal dumping and anti-social behaviour by maximising passive surveillance.

In addition to the use of perimeter roads and/or public open space areas, other innovative design solutions to create an appropriate interface between the structure plan area and Beeliar Regional Park can be investigated at the local structure plan and subdivision stage. Requirements for fire management will need to be prepared at the subdivision stage.

4.6 Elevated Land & View Corridors

The elevated land particularly in the western portion of the structure plan area provides the opportunity for innovative designs which capture internal and external views.

Within the Packham North DSP area there are several landmarks and natural features which provide good opportunities to add interest and visual quality to future subdivision and development. Examples include the large stand of Norfolk Pines within the former Watsonia plant site, the Parish Hall on Mell Road, the vegetated ridge of the Beeliar Regional Park etc. It is therefore important to preserve views to these features through the LSP process when designing road layouts, neighbourhood cells and public open space areas.

4.7 Open Space Opportunities

Public parkland used by people living or working in urban areas can significantly promote quality of life and amenity. Regional, district and local open space (neighbourhood parks) provided for in structure planning can contribute towards legibility, identity and sense of place that helps build community.

Almost half of the Packham North DSP area is vacant undeveloped land which provides opportunity to strategically locate public open space areas within the design. Given that much of the land is vacant and cleared, this provides the ability to develop open space areas without the need for extensive clearing of existing bushland and vegetation.

The natural features, such as the low lying depressions, within the structure plan area, provide opportunity to create multiple use drainage and public open space areas for both passive and active recreation. The larger central low lying depression between Hamilton Road and Mell Road is proposed to be utilised to create a large central spine of public open space, incorporating grassed swale areas for drainage function.

Areas of good quality vegetation within the structure plan area can be included into neighbourhood parks. This in turn provides opportunity to retain vegetation and increase the amenity of the neighbourhood parks. The low lying wetland depression on the western side of Hamilton Road is a likely location for a neighbourhood park given the quality of existing vegetation and its central location in the western half of the structure plan area.

Sites for community purposes, such as community centres, child day care centres, meeting halls and kindergartens are also important for building and servicing community. No community purpose sites have been identified at this stage, given the established community infrastructure in the locality. Notwithstanding, opportunities to provide community purpose site/s should be further investigated as part of the LSP process.

4.8 Urban Water Management

Consistent with the requirements of the Department of Planning's Better Urban Water Management ("BUWM") and the objectives of State Planning Policy 2.9 - Water Resources ("SPP 2.9"), a District/Local Water Management Strategy ("DWMS/LWMS") has been prepared for the Packham North DSP area by Cardno. The DWMS/LWMS has informed the preparation of the Packham North DSP and

will form the basis for future LSP's and Local Water Management Strategies ("LWMS's").

As per BUWM, the Packham North DWMS/LWMS:

- Defines catchment objectives and design objectives for water quality, quantity and conservation for local planning and subdivision;
- Defines best water management practice;
- Determines the potential impact of proposed land use change on catchment hydrology;
- Provides detailed ecological, surface and groundwater investigations and modelling, focusing on potential risk, including acid sulphate soils;
- Provides detailed mapping of catchments;
- Identify appropriate sources for drinking water and other uses; and
- Defines ongoing management arrangements and responsibilities for urban water management.

The Packham North DWMS/LWMS demonstrates that the Packham North DSP area is capable of supporting urban development and able to achieve appropriate urban water management outcomes.

4.8.1 Water Management Objectives

The DWMS/LWMS and consequently the Packham North DSP is based on best practice integrated urban water management ("IUWM") and water sensitive urban design ("WSUD"). The principles and objectives of best practice IUWM and WSUD that guided the DWMS/LWMS are drawn from the following documents:

- Stormwater Management Manual for Western Australia (DoW, 2007);
- Liveable Neighbourhoods Edition 4 (WAPC, 2007); and
- Better Urban Water Management (WAPC, 2008).

Refer to **Appendix 1** for a copy of the Packham North DWMS/LWMS 2011.

PART TWO – DISTRICT STRUCTURE PLAN

5.0 DISTRICT STRUCTURE PLAN DESIGN

5.1 Development Principles

The key development principles of the Packham North District Structure Plan, as shown in **Figure 8** are to:

1. Provide a framework for urban land uses within the District Structure Plan area that integrates with the Sub Regional context;
2. Respond to the social and economic needs of the community in a timely way;
3. Provide a framework for future Local Structure Planning and subdivision, allowing for refinement of detail and recognition of previous uses;
4. Provide for a variety of housing choice through a range of densities, with higher codings being located near public open space, centres and along high frequency public transport routes.
5. Define a robust road network reflecting and accommodating public and private transport priorities, responding to the Sub Regional transport network;
6. Main-street based centres;
7. An integrated open space, conservation and drainage network, balancing environmental, recreational and drainage objectives;

NOTES:

PUBLIC OPEN SPACE AND DRAINAGE

Public Open Space and Drainage areas are indicative only and subject to detailed design and modeling at the Local Structure Plan stage.

TOWN CENTRE

Uses within the Town Centre are as per the City of Cockburn's Town Planning Scheme No.3 use class table with an emphasis on encouraging a main street style local centre.

RESIDENTIAL

Uses within the Residential areas are as per the City of Cockburn's Town Planning Scheme No.3 use class table. Residential densities are indicative only and shall be confirmed at the local structure plan stage aiming to achieve a minimum density of R25 across the structure plan area with higher densities concentrated around high frequency public transport routes, public open spaces, commercial centres and schools.

LOCAL STRUCTURE PLANS

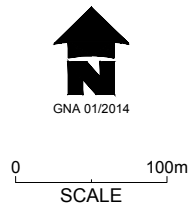
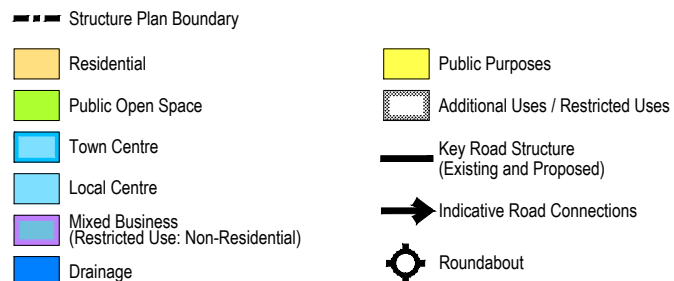
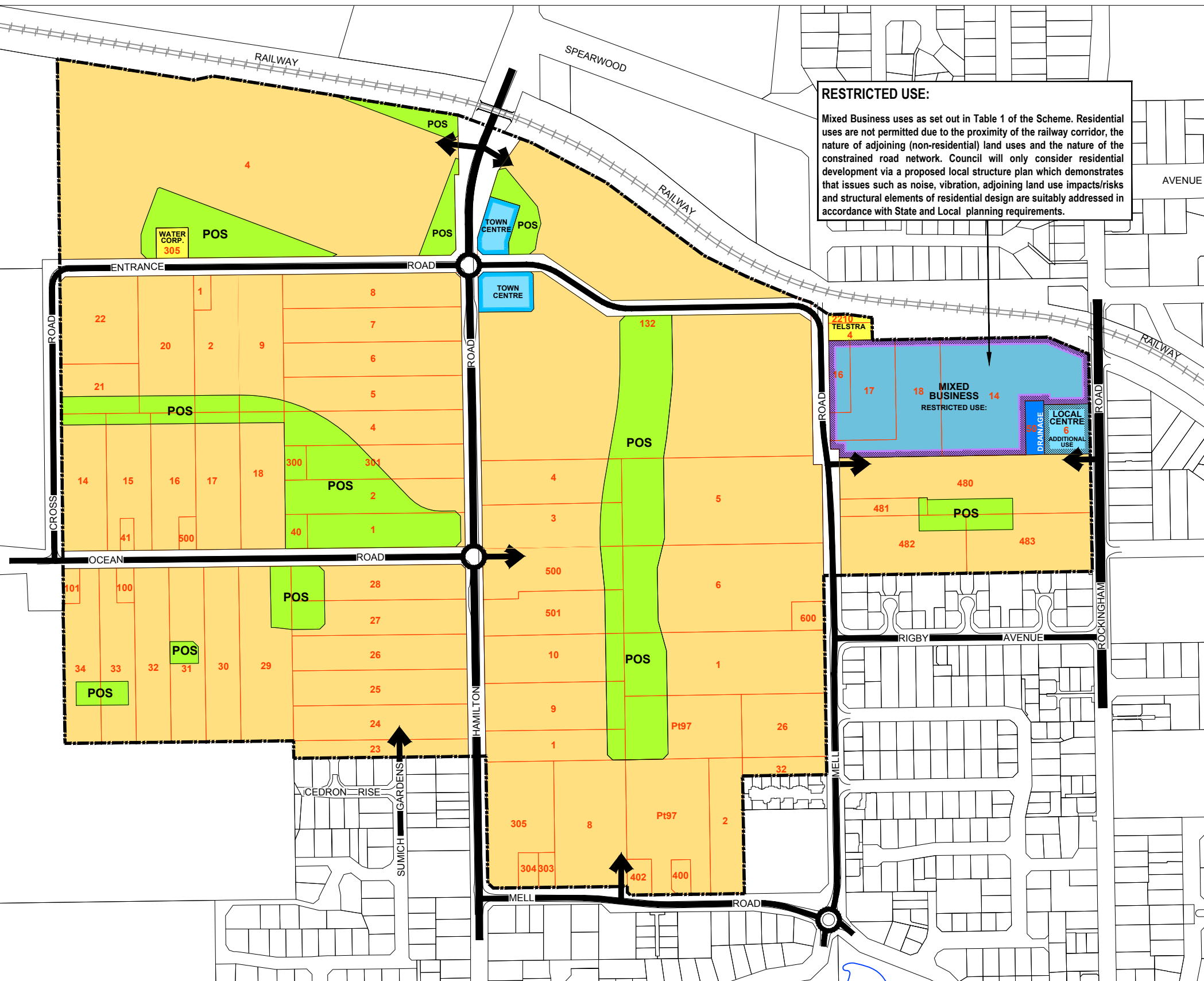
Subdivision and development of the subject area is to be in accordance with an endorsed applicable local structure plan.

DEVELOPER CONTRIBUTIONS

Development in this area is also subject to developer contributions. Schedule 12 of Town Planning Scheme No.3 details Developer Contribution Area provisions. Persons or companies proposing to undertake subdivision in this area should review Schedule 12 and also contact the City's Strategic Planning team to ascertain there are no pending amendments to this schedule.

RESTRICTED USE:

Mixed Business uses as set out in Table 1 of the Scheme. Residential uses are not permitted due to the proximity of the railway corridor, the nature of adjoining (non-residential) land uses and the nature of the constrained road network. Council will only consider residential development via a proposed local structure plan which demonstrates that issues such as noise, vibration, adjoining land use impacts/risks and structural elements of residential design are suitably addressed in accordance with State and Local planning requirements.



**DISTRICT STRUCTURE PLAN
PACKHAM NORTH
SPEARWOOD / COOGEE**

8. Provide for sustainable land use and lot design that responds to solar orientation principles as well as Crime Prevention Through Environmental Design (“CPTED”);
9. Reflect and integrate the development area with surrounding land uses.

5.2 Neighbourhood Structure

Planning of the area is based on walkable catchments of:

- 400 metres (5 minute walk) which focus on centres, significant areas of public open space and public transport.

The internal road system within the neighbourhood structure should be permeable and maximise walkability, particularly to public transport, commercial, recreation, education and community facilities in and surrounding the Packham North DSP area.

5.3 Transport and Access Network

5.3.1 Major Road Network

The Packham North DSP retains the existing road network within the study area. Hamilton Road is a neighbourhood connector and the main north-south road that extends between Mayor Road to the south and Rockingham Road and Carrington Street to the north. Hamilton Road provides a link to Spearwood Avenue just north of the structure plan area. Rockingham Road is also a north-south neighbourhood connector that forms the eastern boundary of the structure plan area.

Ocean Road is a neighbourhood connector that provides an east-west link between Hamilton Road and Cockburn Road to the west of the structure plan area. Entrance Road and Cross Road are local streets that link Hamilton Road and Ocean Road. Mell Road is a local street connection between Hamilton Road and the rail line.

A new east-west road will connect Hamilton Road and Mell Road through the northern section of the former Watsons Factory site.

5.3.2 Traffic management

Traffic management devices will be required along Hamilton Road. These will need to be assessed in detail at the LSP stage.

5.3.3 Shared paths/connections

An interconnecting network of shared paths will be provided within the structure plan area utilising the existing road network. New pedestrian links will also provide connections to the existing and proposed local centres on Hamilton Road and to the new areas of public open space. LSP’s will identify key links into the main shared path network.

5.4 Residential Development

The Packham North District Structure Plan area will ultimately comprise a range of residential densities, housing types and tenures. The detail, including specification of R-Codings, will be clarified through both the LSP and subdivision processes.

5.4.1 Housing Principles

The housing principles for the Packham North DSP area to guide future structure planning and subdivision are:

1. Provide diversity in housing choice, lot sizes and tenure;
2. Achieve minimum targets of 15 dwellings per gross urban zoned hectare of land and 22 dwellings per site hectare of residential land;
3. Higher density dwellings and aged persons/independent living accommodation within 400 metres of centres, public open space and along high frequency bus routes;
4. Promoting mixed use development around and within commercial centres;
5. Housing design, lot layout and access arrangements that create attractive streetscapes; and
6. Environmentally sustainable design approaches in terms of solar orientation of lots.

5.4.2 Residential Densities and Housing Types

The location and layout of R-Code boundaries will be determined at the LSP stage followed by detailed subdivision design. LSP's will be required to demonstrate the achievement of a minimum 15 dwellings per gross urban zoned hectare of land and a minimum of 22 dwellings per site hectare of residential land.

In accordance with the DA 31 (Packham North) provisions of TPS No. 3, each subdivision and development application is required to achieve at least 85% of the potential number of dwellings achievable under the R-Code designated for the application area in any endorsed LSP.

The following provides a summary of locational criteria for residential land uses within the Packham North DSP area, providing a framework for the designation of R-Codings at the LSP stage but does not preclude other density responses within the structure plan area.

Variations to the densities prescribed under the Packham North DSP will be assessed against the housing principles set out in section 5.4.1 - Housing Principles, and the locational criteria set out below.

5.4.2.1 Locational Criteria – Low Density - Residential R20 - R25 (base)

1. Residential R20 – R25 will be the minimum base coding over the Packham North District Structure Plan area. Allowing for the provision of traditional single dwelling lots (ranging from 350m² to 500m²).

5.4.2.2 Locational Criteria - Medium Density - Residential R30-R60

1. Generally surrounding areas of high amenity, such as open space;
2. Located so as to maximise access to and use of services and facilities such as public open space, commercial centres and public transport routes; and

3. Located to enhance passive surveillance of public spaces.

5.4.2.3 Locational Criteria – High Density - Residential R80

1. Located within or adjacent to the Town Centre;
2. Located to enhance passive surveillance of public spaces.

5.4.2.4 Locational Criteria – Aged and Dependant Persons’ Dwellings

1. Generally surrounding areas of high amenity, such as open space;
2. Located so as to maximise access to and use of services and facilities such as public open space, commercial centres and public transport routes: and
3. Located to enhance passive surveillance of public spaces.

5.4.3 Lot Yield Estimates

Based on the locational criteria set out in section 5.4.2.4, the Packham North DSP is forecast to yield approximately 1300 dwellings. **Table 1** below outlines how the 1300 dwelling target is expected to be delivered within the R20/R25, R30-R60 and R80 coded residential areas.

Table 1 – Packham North DSP Estimated Lot Yields			
Density	Estimated Average Lot Size	Total Area (site hectare)	Estimated Yield
R20 – R25	425 m ²	22.7 ha	534
R30 – R60	240 m ²	18.1 ha	780
R80	120 m ²	0.26 ha	22
Total		41.06 ha	1336
Dwelling Units per hectare			32.5

Based on the above, the Packham North DSP notionally achieves an average residential density of 17.8 dwellings per gross urban zoned hectare which is in accordance with the density target of 15 dwellings for greenfield developments set out in *Directions 2031*. The forecast of approximately 1300 dwelling units for Packham North is also consistent with the Draft Outer Metropolitan Perth and Peel Sub-Regional Strategy which identifies the subject area as having the potential to deliver 900+ dwellings in the future.

It should be noted however that R-Codes, are not applicable to multiple dwellings in areas codes R30 or greater under the R-Codes as amended in November 2010. As there are many sites proposed to be coded R30 and above under the Packham North DSP, that have the potential to be developed as multiple dwellings, the site hectare dwelling calculations can be considered relatively conservative.

These densities and yields are indicative only and will be refined and developed as part of Local Structure Planning and subdivision design.

5.4.4 Aged Persons Accommodation/Independent Living

Specific sites for such a facility have not been identified on the Packham North DSP. However in order to ensure the design of any proposed aged person’s accommodation integrates with the surrounding urban fabric the following principles apply in the preparation of LSP’s:

1. Located so as to maximise access to and use of services and facilities such as public open space, centres and public transport routes;

2. Development to address and survey surrounding public streets, with visually permeable fencing and major openings addressing the street;
3. Development integrated with surrounding land uses, including pedestrian access and permeability; and
4. Any community/shared facilities to address the primary street.

Detailed Area Plans will be required to be prepared for aged persons/ independent living sites in accordance with these principles at subdivision stage. The City may waive this requirement only where matters relating to development design have been satisfactorily addressed at the LSP stage.

All proposed aged persons/ independent living sites will also need to demonstrate compliance with the requirements of the City's Local Planning Policy No.12 - Aged Or Dependent Persons' Accommodation - Development Guidelines ("LPP12"). APD 12 includes specific locational and site planning criteria which needs to be met as part of any aged persons/ independent living development.

5.5 Education Facilities

The Department for Education and Training ("DET") has advised that based upon the lot yield anticipated within the project area, increased student numbers can be accommodated within the existing local primary schools (Phoenix and Newton primary schools). Therefore, the Packham North DSP does not provide any sites for educational facilities.

5.6 Parks and Recreation

5.6.1 Regional/District Parks and Recreation

There is no provision for regional open space within the structure plan as there are no park and recreation areas of regional significance, such as Bush Forever sites, foreshores or significant conservation areas. Furthermore, there is no requirement within the current town planning framework (State and Local) for regional sporting and recreational facilities within the structure plan area. Accordingly no provision has been made in the structure plan for regional parks and recreation, however, an appropriate interface is to be provided between the structure plan area and adjacent Beeliar Regional Park to the west.

5.6.2 Neighbourhood/Local POS – location and designation

A series of neighbourhood and local parks have been shown throughout the residential areas on the Packham North DSP. The selection of the POS sites was based on the following:

1. Securing bushland not only in recognition of the quality of the bushland in the area but also the potential difficulty in securing an adequate water allocation for irrigation purposes;
2. Along ownership boundaries to enable owners to be able to satisfy their 10% public open space (POS) requirements within their own land holding;
3. In reasonably close proximity to existing wetlands to provide a high level of amenity for the surrounding proposed high/medium density; and
4. Where possible in lower lying areas of the lots to allow for the integration of drainage facilities.

The Packham North DSP allocates POS areas based on the above principles. Where land holdings are to be consolidated and developed comprehensively, the POS areas can be amalgamated into larger parks which will reduce the City's maintenance costs. In areas where consolidation is not contemplated, public open space arrangements have been designed so that each land owner is able and required to satisfy their open space requirements on their own landholding. The City will only accept cash-in-lieu of POS for lots which are fragmented, isolated and relative small in nature and where the provision of land would result in a very small and impractical area being provided.

The Packham North District Structure Plan requires that where ever possible, established trees should be incorporated into future development either in parks or road reserves. Established trees will assist in giving additional character as well as providing shade opportunities which are often lacking in new estates.

Table 2 below contains the Packham North DSP POS Schedule. These areas are notional only and will be refined as part of the future LSP processes.

Table 2 –Packham North DSP Public Open Space Schedule		
Site Area		
Total		74.559 Ha
Deductions		
Town Centre A	0.227 Ha	
Town Centre B (Residential @ 50%)	0.145 Ha	
Commercial (Existing Local Centre site)	0.303 Ha	
Mixed Business (Non-Residential)	3.551 Ha	
Telstra site	0.145 Ha	
Water Corporation site	0.129 Ha	
Existing City Drainage Sump site	0.133 Ha	
Total	4.633 Ha	
Gross subdivisible area		69.926 Ha
Public Open Space @ 10 %		6.993 Ha
Public Open Space Contribution Requirements (as per LN4)		
May Comprise:		
minimum 80% unrestricted open space	5.594 ha	
maximum 20% restricted open space	1.399 ha	
Public Open Space Provision*		
Packham North DSP POS areas		8.676 Ha (11.64%)
Notional surplus of POS*		1.683 Ha

*Note: the above POS provision figures are solely based on physical areas and do not take into account drainage functions of the POS areas. Subsequent LSP's will need to demonstrate compliance with the POS requirements of the WAPC and City respectively.

POS, credits and expenditure of cash-in-lieu for POS will be determined in accordance with the relevant WAPC policies, practices and legislation at the LSP and subdivision stages.

5.6.3 Neighbourhood/Local POS – design and embellishment

These parklands are intended to serve the regular small scale needs of the immediate residential population within a five to ten minute walking distance. The predominant use should be for informal recreation for individuals and households, especially low level children’s play, dog walking and relaxation. They are not intended for any formal/organized active team sports and should not therefore warrant parking on-site.

Embellishment with infrastructure pitched above this role will not be accepted. Similarly, design of these parklands which have higher than average (for the City of Cockburn) maintenance or whole of life cycle costs will not be accepted.

The types of supporting amenities could include paths, shade, seating, children’s play spaces etc

5.6.4 Neighbourhood/Local POS – ongoing planning

The following additional POS information will be required at the LSP stage:

- Preliminary landscape design concepts setting out key design features and principles, where development is proposed;
- Landscape management regime and asset cost schedule.

5.7 Public Transport

The Packham North DSP area is currently served by existing bus routes along Hamilton and Rockingham Roads which provides links to Phoenix Shopping Centre, Cockburn Central and Fremantle. It is not envisaged that additional services will need to be provided by the Public Transport Authority (“PTA”) to service the area however it is anticipated that modifications to existing routes will be required. This will be confirmed once the neighbourhood street network has been further refined through the LSP processes.

5.8 Commercial Facilities

5.8.1 Location and Hierarchy

The Packham North District Structure Plan identifies a Local Centre at the northern end of Hamilton Road. Consistent with the SPP 4.2, such a centre will provide “shopping facilities to serve the daily needs of the local community. These are expected to be located within convenient walking and cycling distance of most homes.” The local centre will also provide opportunities for other (non-retail) small businesses and local employment, consistent with the aims of SPP 4.2.

The proposed centre’s location falls outside the 400m walkable catchment area of the existing local centres on Hamilton Road and Rockingham Road. As such it will serve the daily needs of new residents and will be within convenient walking and cycling distance (i.e. within 400m) of most new homes in the northern section of the structure plan area. Other new residents will be within convenient distance of the existing Hamilton Road local centre south of structure plan area.

5.8.2 Mixed Business Precinct

A Mixed Business area is identified within the northeast of the Packham North DSP area. The area was previously zoned Light and Service Industry and 75% of

the lots have been developed and are currently used for such purposes. The majority of landowners have indicated that there is no intention to redevelop the sites for residential or similar uses. As uses such as light industry and warehouses are permitted within the Mixed Business zone it is not appropriate to allow residential uses within this precinct given the land use conflicts that can occur. Therefore in order to cater for the existing uses being undertaken in the area, a Mixed Business zoning with a restriction on residential uses is appropriate. This will ensure the existing businesses are not negatively restricted by zoning changes however it does provide a degree of flexibility should they wish to develop in the future. The sites identified for Public Purposes (Telstra), Local Centre (Additional Use) and Drainage are reflective of their current use and no changes are proposed under the Packham North DSP.

6.0 SERVICING INFRASTRUCTURE

6.1 Sewerage

The Packham North DSP area is part of the Water Corporation's Spearwood waste water reticulation system, and preliminary planning has been undertaken to develop strategies for providing deep sewerage to all proposed urban land within the subject area. The structure plan area is proposed to be serviced by a permanent sewer pump station, Spearwood Pump Station J, proposed to be located approximately in the centre of the area bound by the existing freight rail line and Hamilton and Mell Roads. This pump station will pump east and discharge to an existing DN915 collector sewer located in Reserve Road.

Investigations by (Cardno BSD, 2008) indicates the availability of the structure plan area being serviced by Water Corporation reticulated sewerage. The structure plan area can be divided into three separate scheme wastewater catchments.

All lots (2210, 4, 6, 14, 16 – 18, 5 & 480 – 483) which are located on the eastern side of Mell Road, bounded by Rockingham Road and the railway reservation could be serviced by extension of existing gravity sewer in Rockingham Road adjacent to Lot 232 and extension of existing sewer main adjacent to Lot 203 Mell Road.

All lots (1 – 6, 8 – 10, P97, 305, 500 – 501, 26 & 132) which are bounded by Mell Road, Hamilton Road and the railway reservation fall into the future (Type 40) Spearwood (J-066) wastewater pumping station.

This pumping station is proposed to be located adjacent to the Fremantle Mount Pleasant Diversion Pressure Main on Lot 6 Mell Road. The pumping station would be constructed by the developer (included as a structure plan infrastructure cost) and will be located within public open space. The exact location of the pumping station and its design will be determined at the detailed design stage of subdivision.

All lots (24 – 34, 100, 101, 1, 2, 300, 301, 4 – 9, 1, 2, 14 – 18, 20 – 22, 41 & 500) which are located on the western side of Hamilton Road and east side of Cross Road fall into the future (Type 40) Spearwood (J-066) wastewater treatment pumping station.

Lot 23 falls into the existing wastewater Catchment No. 6118-066 and can be serviced by extension of existing gravity mains in Kedron Rise. Verification and

confirmation of various catchment boundaries are required at the detailed design stage.

6.2 Water

The structure plan area is located within the boundary of the Water Corporation's Water Supply Scheme. The subject land could be served by connection to the existing DN300 distribution main watermain that currently terminates at the intersection of Hamilton Road and Mell Road.

6.3 Power

An existing dual circuit 132kV overhead powerline is located within the road reserves on the northern side of Entrance Road and the western side of Hamilton Road.

Three existing 22kV overhead power lines are also located within the road reserves on the northern side of Ocean Road, the eastern side of Hamilton Road and the eastern side of Mell Road. All existing overhead 22kV lines will be required to be removed and replaced with new underground cables at the subdivision stage.

6.4 Natural Gas

Alinta Gas advises that the structure plan area can be supplied with reticulated gas via an extension from existing reticulated gas mains in Hamilton Road, Ocean Road and Mell Road.

6.5 Telecommunications

The structure plan area can be serviced by the existing telecommunications infrastructure within Mell Road. This includes the potential for expansion and upgrade of the existing telecommunications exchange in Mell Road.

6.6 Upgrade of Existing Roads

In accordance with normal practice, developers will be required to pay the cost of upgrading these roads to residential standards. The normal formula applied is to pay half the cost of upgrading that section which abuts an owner's property including any required traffic management devices.

Preliminary recommendations provided by the City of Cockburn's Engineering Services suggest that Hamilton Road may not need to be widened to cater for additional traffic resulted from the proposed residential development. However, traffic management devices are required to be placed at the intersection of Hamilton and Entrance Roads, and the intersection of Hamilton and Ocean Roads. It considered that roundabouts would be suitable for traffic calming purposes and are the preferred treatments however their suitability and any possible alternatives will be subject to detailed analysis at the LSP stage.

7.0 IMPLEMENTATION

7.1 Metropolitan Region Scheme Zoning

The subject land is zoned 'Urban' under the provisions of the MRS. The future land uses identified in the Packham North DSP is consistent with the "Urban" zoning.

7.2 City of Cockburn Town Planning Scheme Zonings

The subject land is zoned 'Development' in Town Planning Scheme No.3 with all subdivision and development being in accordance with an adopted structure plan as provided by the Development Area provisions contained in Schedule 11 of Town Planning Scheme No.3. This District Structure Plan sets the general framework, however it will still be necessary for individual or groups of owners to prepare local structure plans for their land.

7.3 Development Area and Development Contribution Area requirements

Development areas within the City are the subject of specific requirements set out in Schedule 11 (Development Areas) and Schedule 12 (Development Contributions).

7.3.1 Designation of Development Area requirements

The Packham North DSP area is designated as Development Area 31 under the City's TPS No.3. Schedule 11 describes the Development Areas in detail and sets out the specific purposes and requirements that apply to the Development Areas. DA31 specifically requires:

1. Structure Plan adopted in accordance with Clause 6.2 of the Scheme to guide subdivision, land use and development;
2. To provide for residential development and compatible land uses;
3. The provisions of the Scheme shall apply to the land use classified under the Structure Plan in accordance with Clause 6.2.6.3;
4. Each subdivision and development application in the Development Area shall achieve at least 85% of the potential number of dwellings achievable under the R Code designated for the application area in the endorsed Structure Plan.

7.3.2 Designation of Development Contribution Area requirements

The structure plan area is affected by draft Development Contribution Area 12 (Packham North) and all landowners will be required to make a contribution to drainage, public open space, roads, traffic management devices and professional services in accordance with Schedule 12 and Section 6.3 of TPS No 3. These contributions will be payable at the subdivision approval and clearance stage.

Public open space has been allocated on the basis that the areas to be provided represent 10% of the subject properties and where no open space is provided that cash-in-lieu will be accepted as detailed in Section 5.6 of this report. No further arrangements will be required.

7.4 Planning Control

The Packham North District Structure Plan shows the broad allocation and location of land use activities and will form the basis of assessing detailed proposals for individual properties. The District Structure Plan is a “guiding document” adopted by the Council and is not a structure plan adopted pursuant to section 6.2.9 of the City’s TPS No. 3. Therefore land uses and zones are not given the full effect as though they are part TPS No.3.

To progress the subdivision and development of a land holding it will be necessary for landowners or groups of small landowners to prepare and submit a detailed LSP and supporting report for their land. Each structure plan should be generally in accordance with the DSP, and should show detail including the proposed road and lot layout, detail areas of POS, R-Codes and other information set in the Development Area provisions of TPS No 3.

Any significant departures from the DSP would need to be identified and justified. All LSP’s are to be adopted by Council and endorsed by the WAPC in accordance with the Development Area provisions of the Scheme.

8.0 LAND AVAILABILITY

There are considerable lead times to have planning/development approvals in place. Planning formalities required to be completed include the following:

- Adoption of local structure plans for individual projects;
- Approval of detailed plans of subdivision; and
- Approval of Detailed Area Plans.