

Part 3 - Site Conditions and Environment

3.1 ENVIRONMENTAL ASSETS AND CONSTRAINTS

3.1.1 VEGETATION

The vegetation and flora within the Structure Plan area has been subjected to long term degradation processes such as weed invasion, altered water regimes, fire and development. This has resulted in only isolated pockets of vegetation remaining. Any remnant native vegetation remaining within the site belongs to the Cottesloe Complex - Central and South. Investigations regarding the occurrence of vegetation and flora within the site have revealed the following conclusions:

- No species of Declared Rare or Priority Flora were found within the site (refer to Appendix B – Environmental Report – Planning Area 2 Local Structure Plan, RPS, October 2011).
- A search of the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) Protected Matters Search Tool identified three plant species that may potentially be present within the Structure Plan area and/or within a 3 km radius of the site. Given the degraded nature of the site and the lack of suitable remnant vegetation possible of supporting these species, it has been concluded that the likelihood of any or all of the three plants occurring within the Structure Plan area is low.
- Buffers from a Priority 3 Ecological Community intersect the subject land. Given the lack of vegetation within the subject land it is likely that the Priority 3 Ecological Community is present in Beeliar Regional Park.
- No Threatened Ecological Communities were identified by the HVWRP Biodiversity Strategy (2007) within the Structure Plan area.
- There are no Bush Forever Sites located within the Structure Plan area, however Beeliar Regional Park is located in close proximity to the western boundary (categorised as Bush Forever Site No. 346). This includes Brownman Swamp and Lake Mount Brown. The Site is separated by Rockingham Road and is therefore unlikely to have an adverse or non-direct impact upon the Bush Forever Site No. 346.

3.1.2 FAUNA

The site has been subject to substantial amounts of development, with much of the native vegetation having been cleared. Despite the level of development and clearing, there are some scattered overstorey trees throughout the site.

A search of the DEC's *Threatened Fauna* database was undertaken to identify whether species which are declared as "Rare or likely to become extinct", "Birds protected under international agreement" and "Other specially protected fauna" occur within a 5 km radius of the site. Table 1 of the Environmental Report provided in Appendix B identifies the species that have the potential to utilise the site. Table 1 also discusses the potential for the individual species to be present upon the site. A search of the SEWPaC Protected Matters Search Tool was also undertaken. Table 2 of the Environmental Report (Appendix B) identifies the terrestrial fauna species that have potential to utilise the subject land.

Given the existing lack of remnant vegetation remaining within the subject area, and the high quality and large extent of the remnant vegetation within the Beeliar Regional Park, the impact of the LSP is likely to be low on any protected fauna.

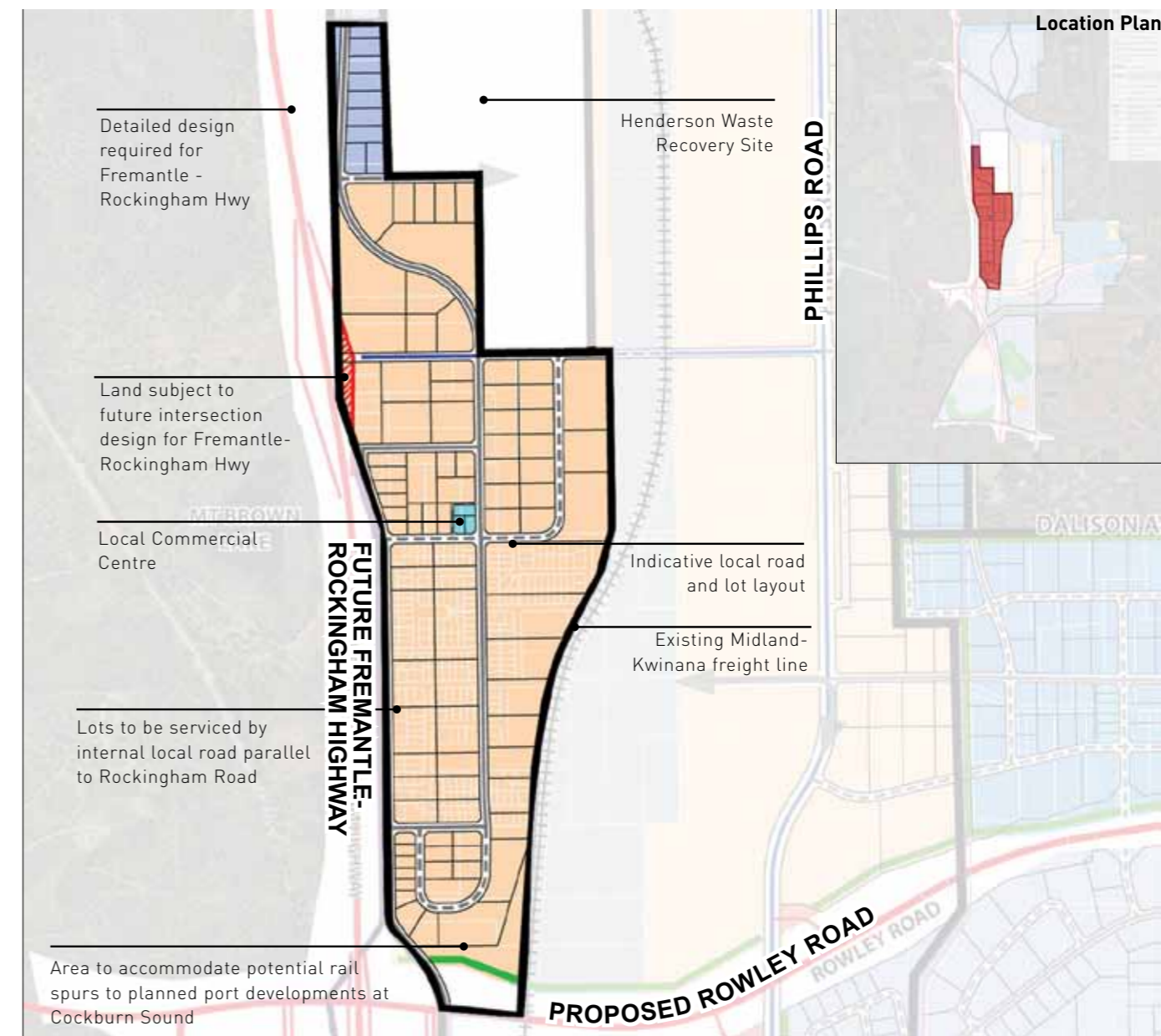
3.1.3 ECOLOGICAL LINKAGE

The intent of the ecological linkages within Latitude 32 is to facilitate local fauna (i.e. bird and reptile) movements across the site. The HVWRP Biodiversity Strategy identifies ecological linkages as non-continuous natural areas that connect larger natural areas by forming stepping stones that allow the movement over time of fauna between larger natural areas.

The HVWRP Biodiversity Strategy identifies three primary east-west linkages along Dalison Avenue, Wattleup Road and the proposed extension of Rowley Road. In comparison, the Latitude District Structure Plan identifies one east-west environmental linkage within the Planning Area 2 Structure Plan area. The linkage is proposed to occur within the northern side of the future Rowley Road reserve.

REFER TO FIGURE 13 - DISTRICT STRUCTURE PLAN - PLANNING AREA 2

FIGURE 13 - DISTRICT STRUCTURE PLAN - PLANNING AREA 2



Legend:

- Primary Regional Road (Existing & Proposed)
- ▨ Proposed additional Primary Regional Road reservation (if require)
- Other Regional Road

MASTER PLAN

- LAND USE
- General Industry
 - Transport Industry
 - Local Commercial Centre

DISTRICT STRUCTURE PLAN

- Indicative subdivision cadastre
- Existing cadastre
- Environmental Linkages (North-South, East-West)

3.1.4 WETLANDS

No geomorphic wetlands occur within the Structure Plan area, however the Conservation Category Wetlands of Brownman Swamp (6372 Sumpland Conservation) and Lake Mount Brown (6374 Sumpland Conservation) are located to west and north-west of the site. These wetlands are both protected under the *Environmental Protection (Swan Coastal Lakes) Policy 1992* and are located within Beelihar Regional Park.

The required buffer distances for wetlands depend on the land use, with 50 metres being the minimum buffer distance advocated by the DEC for Conservation Category Wetlands. Additionally, damplands and palusplains have a secondary 200 metre zone of influence. The Lake Mount Brown wetland buffer of 200 metres extends into a portion of the Structure Plan area.

The following items are to be addressed at the development application stage when assessing the applicability of proposed individual developments within the 200 metre Zone of Secondary Influence from Lake Mount Brown:

- Type of development and its operational activities i.e. whether it would be considered to be a prescribed premises under Part V of the Environmental Protection Act 1986 and Regulations 1987.
- Developer and operator's past track record of environmental practices.
- Proposed management for development and operations, for example, operational Environmental Management System.
- Storage, handling and management of dangerous goods and chemical based substances on site.
- Development containment i.e. closed system where no discharges on and/or off site (LandCorp 2011).

In addition to the above, a proposed development must also be in accordance with the requirements of the HVWRP Biodiversity Strategy and the HVWRP Water Management Strategy. The secondary management measure to ensure that the environmental values and functions of the Lake Mount Brown and Brownman Swamp wetlands are maintained and protected is through the implementation of a Local Water Management Strategy, which has been developed for the LSP area.

REFER TO FIGURE 14 - WETLANDS

It is noted the subject site is separated from the Brownman swamp and Lake Mount Brown by the Rockingham Road reservation. It is therefore unlikely that any development of the LSP area would significantly impact on the value of either the swamp or wetlands.

FIGURE 14 - WETLANDS





3.2 LANDSCAPE AND SOILS

The existing landform within the Structure Plan area has largely been modified and changed by development over many years. Generally, the site rises from the west to the east and then drops away again on the eastern side of the site near the rail line. The site though sloped, is largely flat and has been used for commercial applications such as market gardens and turf farms, as well as for residential housing.

At the northern end of the site, there has been significant disturbance to the site levels, where resource extraction and waste recovery areas are located and are in operation. There are large mounds of fill acting as bunds and stockpiles, creating artificial landforms through this area.

A combination of the existing resource extraction licences, resource recovery areas and site disturbances, cut and fill requirements across the site to link the fixed levels in the east and the west and the current site having no significant landform features has meant that there is no significant areas of landform to be retained as part of the development. It has also resulted in the removal of almost all remnant native vegetation onsite. There are some individual native trees onsite that are located within existing park areas, however none of these have been assessed as having any significance. While their retention is desirable, it is not a key factor in the overall Structure Plan design.

Latitude 32 is part of the Swan Coastal Plain, within the Spearwood Dune System, which comprises north-south elongated Aeolian sand dunes, with intervening swales and wetlands. The site is underlain by sands and limestone of the Tamala Formation.

The geology of the site shows that two geological formations are present. The eastern portion of the subject land is comprised of Tamala Limestone of eolian origin and in the western portion of the site lies fine to course grained sands which are pale yellowish brown in colour.

The site is identified as having a low to no risk of acid sulfate soils (ASS) occurring at depths of greater than 3 metres.

3.3 GROUNDWATER AND SURFACE WATER

Latitude 32 is located within the Cockburn Sound water catchment area. Cockburn Sound is a significant marine environment with a multitude of environmental, social and economic values, which require protection from catchment based impacts. Catchment management within Latitude 32 is therefore a crucial part of protecting the environmental values of Cockburn Sound, as well as meeting the requirements of the State Environmental (Cockburn Sound) Policy 2005. The Structure Plan is informed by the Hope Valley Wattleup Redevelopment Project Water Management Strategy which provides measures to improve water quality, in order to respect the environmental values of the Cockburn Sound.

Groundwater flow is generally in a westerly direction, although small local directional variations do occur, toward the Cockburn Sound. Groundwater depth decreases in a westerly direction from approximately 10 m AHD in the east to less than 5 m AHD at Rockingham Road in the west.

There are no streams, creeks or any other watercourses within the Structure Plan area. Nor are there any geomorphic wetlands that occur within the site.

3.3.1 STORMWATER MANAGEMENT

Stormwater management and drainage design and its integration into the proposed development will be addressed through the implementation of the Better Urban Water Management principles which requires a District Water Management Strategy (DWMS) to be prepared and a subsequent Local Water Management Strategy (LWMS) at the local structure planning stage.

A DWMS has been prepared for the District Structure Plan area, and a LWMS is currently being finalised for this Structure Plan area. The principles behind the LWMS are discussed further in section 5.5.9 (Stormwater Design).

3.4 HERITAGE

A search of the Department of Indigenous Affairs (DIA) Aboriginal Heritage Inquiry System revealed that no sites were identified as occurring within the Structure Plan area.

A search of the Heritage Council of Western Australia's Places Database revealed that no matches were found within the Structure Plan area.

3.5 CONTAMINATED SITES

The contaminated sites legislation in Western Australia has been formulated to protect the health of the local population and safe guard the natural environment from serious harm. Under the *Contaminated Sites Act 2003*, polluted sites may need to be investigated and ameliorated, if required, to protect the interests of the owners and occupiers of the specific landholding.

A search of the DEC's Contaminated Sites Database revealed one site within the Structure Plan area. Contaminated Site ID: 38570 was identified as occurring upon the landholding at 13 Musson Road, Henderson. The site has been classified as "Contaminated – restricted use". Recycled construction and demolition waste, contaminated with fragments of Asbestos Containing Material (ACM) has been used as fill material across the western portion of Lot 4. The impacted fill material extends to approximately 0.2 m below current ground level across the western portion of the site.

Due to the presence of ACM in the fill material across the western portion of the site, a site specific health and safety plan is required to address potential health risks to any workers disturbing the layer.

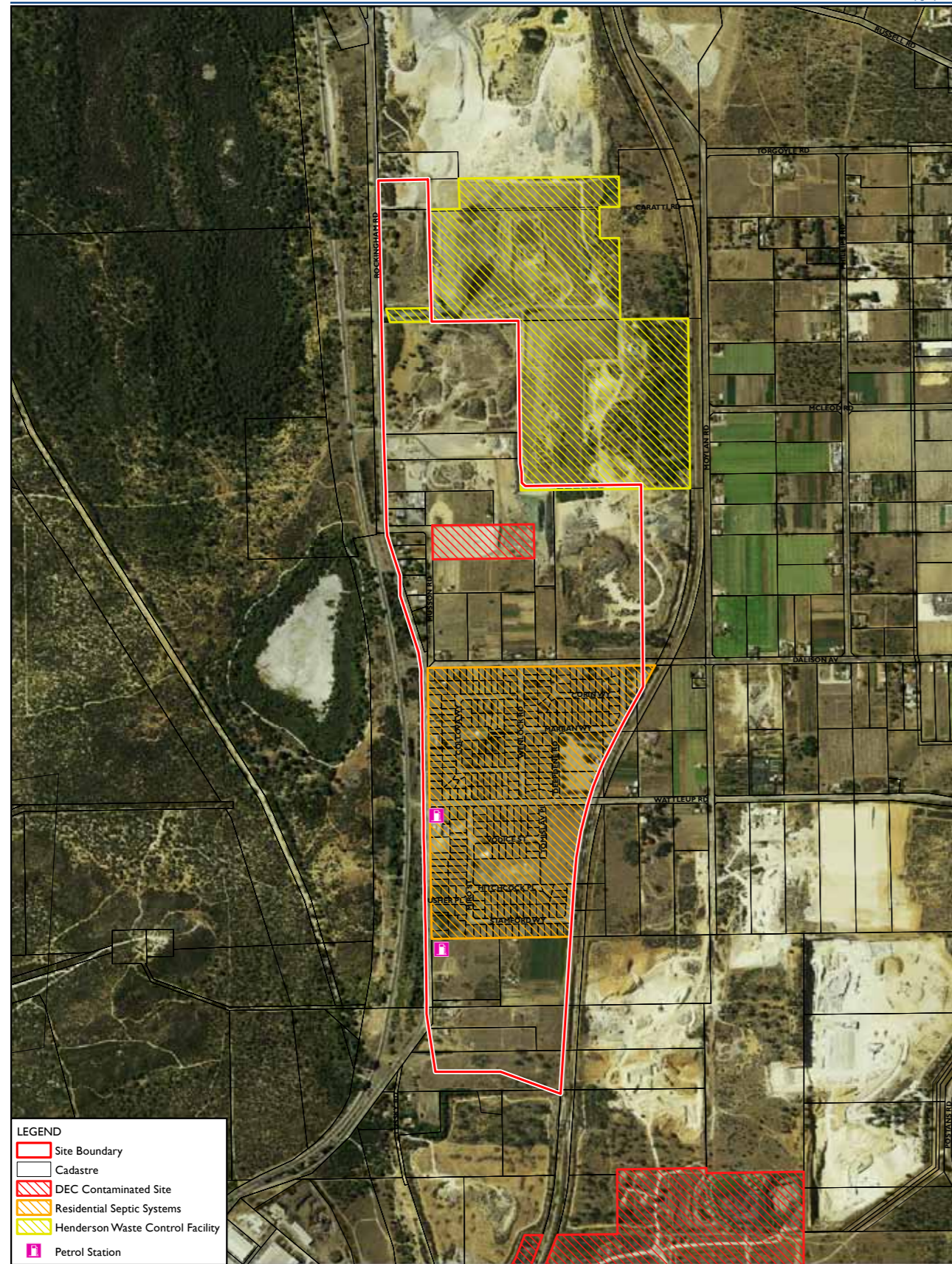
The HVWRP Water Management Strategy identifies areas and sources of potential soil and groundwater contamination exist in the project area and include:

- municipal waste landfill sites;
- horticultural properties including market gardens;
- unsewered residential areas; and
- petrol stations.

These sources of potential contamination are present within the site.

REFER TO FIGURE 15 - CONTAMINATED SITES

FIGURE 15 - CONTAMINATED SITES



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